

FCC SAR Test Report

APPLICANT : Motorola Mobility LLC
EQUIPMENT : Mobile Cellular Phone
BRAND NAME : Motorola
MODEL NAME : XT2343-1
FCC ID : IHDT56AM4
STANDARD : FCC 47 CFR Part 2 (2.1093)

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

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



Approved by: Si Zhang

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People's Republic of China



Table of Contents

1. Statement of Compliance 4
2. Administration Data 6
3. Guidance Applied 6
4. Equipment Under Test (EUT) Information 7
4.1 General Information 7
4.2 General LTE SAR Test and Reporting Considerations 10
4.3 General 5G NR SAR Test and Reporting Considerations 14
5. Proximity Sensor Triggering Test 16
6. RF Exposure Limits 18
6.1 Uncontrolled Environment 18
6.2 Controlled Environment 18
7. Specific Absorption Rate (SAR) 19
7.1 Introduction 19
7.2 SAR Definition 19
8. System Description and Setup 20
8.1 E-Field Probe 21
8.2 Data Acquisition Electronics (DAE) 21
8.3 Phantom 22
8.4 Device Holder 23
9. Measurement Procedures 24
9.1 Spatial Peak SAR Evaluation 24
9.2 Power Reference Measurement 25
9.3 Area Scan 25
9.4 Zoom Scan 26
9.5 Volume Scan Procedures 26
9.6 Power Drift Monitoring 26
10. Test Equipment List 27
11. System Verification 28
11.1 Tissue Simulating Liquids 28
11.2 Tissue Verification 28
11.3 System Performance Check Results 30
12. RF Exposure Positions 32
12.1 Ear and handset reference point 32
12.2 Definition of the cheek position 33
12.3 Definition of the tilt position 34
12.4 Body Worn Accessory 35
12.5 Product Specific 10g SAR Exposure 36
12.6 Wireless Router 36
13. Conducted RF Output Power (Unit: dBm) 37
14. Antenna Location 54
15. SAR Test Results 55
15.1 Head SAR 59
15.2 Hotspot SAR 66
15.3 Body Worn Accessory SAR 73
15.4 Product specific 10g SAR 80
15.5 Repeated SAR Measurement 85
16. Simultaneous Transmission Analysis 86
16.1 Head Exposure Conditions 87
16.2 Hotspot Exposure Conditions 90
16.3 Body-Worn Accessory Exposure Conditions 96
16.4 Product specific 10g SAR Exposure Conditions 100
16.5 SPLSR Evaluation and Analysis 102
17. Uncertainty Assessment 158
18. References 159
Appendix A. Plots of System Performance Check
Appendix B. Plots of High SAR Measurement
Appendix C. DASY Calibration Certificate
Appendix D. Test Setup Photos
Appendix E. Conducted RF Output Power Table



Revision History

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FA352916	Rev. 01	Initial issue of report.	Jul. 28, 2023
FA352916	Rev. 02	Modify n78 Frequency typo on page 14	Aug. 01, 2023



1. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for **Motorola Mobility LLC, Mobile Cellular Phone, XT2343-1**, 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	0.64	1.20	1.20	1.59
		GSM1900	<0.10	1.28	1.13	
	WCDMA	WCDMA II	0.14	1.29	1.38	
		WCDMA IV	0.17	1.23	1.23	
		WCDMA V	0.44	1.33	1.33	
	LTE	LTE Band 2	1.16	1.23	1.36	
		LTE Band 5	0.52	0.54	0.54	
		LTE Band 7	0.93	1.34	1.34	
		LTE Band 12/17	0.21	0.60	0.60	
		LTE Band 13	0.26	1.06	1.06	
		LTE Band 25/2	0.15	1.35	1.37	
		LTE Band 26/5	0.52	1.16	1.16	
		LTE Band 66/4	0.98	1.10	1.17	
		LTE Band 41/38	0.47	1.38	1.38	
	5G NR	LTE Band 42	0.90	0.65	0.86	
		FR1 n2	0.92	1.26	1.23	
		FR1 n5	0.49	0.86	0.86	
		FR1 n7	1.10	1.39	1.39	
FR1 n26		0.26	1.19	1.19		
FR1 n66		1.02	1.34	1.35		
DTS	WLAN	FR1 n78	1.08	0.99	1.07	
NII		2.4GHz WLAN	0.93	0.65	1.39	
DSS	Bluetooth	5GHz WLAN	1.19	0.71	1.13	
		2.4GHz Bluetooth	0.47	0.49	0.44	
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	GSM850	3.35			3.95
		GSM1900	3.45			
	WCDMA	WCDMA II	3.48			
		WCDMA IV	3.45			
		WCDMA V	2.51			
	LTE	LTE Band 2	2.71			
		LTE Band 7	2.35			
		LTE Band 25/2	3.20			
		LTE Band 66/4	3.05			
		LTE Band 41/38	2.26			
	5G NR	LTE Band 42	2.09			
		FR1 n2	3.15			
		FR1 n7	3.06			
		FR1 n66	2.84			
DTS	WLAN	FR1 n78	2.78			
NII		2.4GHz WLAN	2.10			
		5GHz WLAN	1.91			



Date of Testing:	2023/6/20 ~ 2023/7/12
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Remark:
 1. 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. (Kunshan) is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.02.

Testing Laboratory			
Test Firm	Sporton International Inc. (Kunshan)		
Test Site Location	No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300 People's Republic of China TEL : +86-512-57900158 FAX : +86-512-57900958		
Test Site No.	Sporton Site No.	FCC Designation No.	FCC Test Firm Registration No.
	SAR03-KS	CN1257	314309

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 447498 D01 General RF Exposure Guidance v06
- FCC KDB 648474 D04 SAR Evaluation Considerations for Wireless Handsets v01r03
- FCC KDB 248227 D01 802.11 Wi-Fi SAR v02r02
- FCC KDB 616217 D04 SAR for laptop and tablets v01r02
- FCC KDB 941225 D01 3G SAR Procedures v03r01
- FCC KDB 941225 D05 SAR for LTE Devices v02r05
- FCC KDB 941225 D05A Rel.10 LTE SAR Test Guidance v01r02
- FCC KDB 941225 D06 Hotspot Mode SAR v02r01



4. Equipment Under Test (EUT) Information

4.1 General Information

Product Feature & Specification	
Equipment Name	Mobile Cellular Phone
Brand Name	Motorola
Model Name	XT2343-1
FCC ID	IHDT56AM4
IMEI Code	Sample 1: IMEI 1: 352326290031775 IMEI 2: 352326290031783 Sample 2: IMEI 1: 359679320010430 IMEI 2: 359679320010448 Sample 3: IMEI 1: 352326290039257 IMEI 2: 352326290039265
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 66: 1710 MHz ~ 1780 MHz LTE Band 38: 2570 MHz ~ 2620 MHz LTE Band 41: 2496 MHz ~ 2690 MHz LTE Band 42: 3450 MHz ~ 3550 MHz 5G NR n2 : 1850 MHz ~ 1910 MHz 5G NR n5 : 824 MHz ~ 849 MHz 5G NR n7 : 2500 MHz ~ 2570 MHz 5G NR n26 : 814 MHz ~ 849 MHz 5G NR n66 : 1710 MHz ~ 1780 MHz 5G NR 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 ~ 5720 MHz WLAN 5.8GHz Band: 5745 MHz ~ 5825 MHz Bluetooth: 2402 MHz ~ 2480 MHz NFC: 13.56 MHz
Mode	GSM/GPRS/EGPRS AMR / RMC 12.2Kbps HSDPA HSUPA DC-HSDPA HSPA+ (16QAM uplink is supported) LTE: QPSK, 16QAM, 64QAM 5G NR : CP-OFDM / DFT-s-OFDM, PI/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM WLAN 2.4GHz : 802.11b/g/n HT20 WLAN 5GHz : 802.11a/n/ac HT20/HT40/VHT20/VHT40/VHT80 Bluetooth BR/EDR/LE NFC:ASK



HW Version	DVT2
SW Version	TTD33.32
GSM / (E)GPRS Transfer mode	Class B – EUT cannot support Packet Switched and Circuit Switched Network simultaneously but can automatically switch between Packet and Circuit Switched Network.
EUT Stage	Identical Prototype

Remark:

1. This device 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. There are two different types of EUT. They are single SIM card mobile and dual SIM card mobile. The others are the same including circuit design, PCB board, structure and all components. After pre-scan two types of EUT, we found test result of the sample that dual SIM was the worst, so we chose dual SIM card mobile to perform all tests.
6. For dual SIM card mobile has two SIM slots and supports dual SIM dual standby. The WWAN radio transmission will be enabled by either one SIM at a time (single active). After pre-scan two SIM cards power, we found test result of the SIM1 was the worse, so we chose SIM1 slot to perform all tests.
7. The device implements Proximity sensors/receiver detect mechanism/hotspot trigger reduced power for the power management for SAR compliance at different exposure conditions (head, body-worn, hotspot, extremity). The device will invoke corresponding work scenarios power level base on frequency bands/antennas, which can refer to appendix E. power table.
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 power level is higher than hotspot power level, so front/back sensor on SAR can represent hotspot conservatively.
10. For 5G NR test, using FTM (Factory Test Mode) to perform SAR with default 100% transmission.
11. For 5G NR FDD/TDD supports SCS15KHz and SCS30KHz, after verification for 30KHz at FDD power level is less than 15KHz at FDD power level, also verification for 15KHz at TDD power level is less than 30KHz at TDD power level, so only show 15KHz at FDD power and 30KHz at TDD power, and chose higher power which is SCS15KHz for FDD bands and SCS30KHz for TDD bands to perform SAR testing.
12. There are three samples, the different between them refer to the XT2343-1_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 2/3 to verify the worst case of sample 1.
13. For 5G NR EN-DC mode, standalone SAR performed for 5G NR NSA band with the maximum power, EN-DC SAR summed EN-DC mode 5G NR standalone SAR and LTE standalone SAR, the result of EN-DC SAR is more conservatively.
14. This device has NFC function and the NFC SAR report will be separately submitted.
15. 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, 25, 30
			30	10, 15, 20, 25, 30
	n5	FDD	15	5, 10, 15, 20, 25
			30	10, 15, 20, 25
	n7	FDD	15	5, 10, 15, 20, 25, 30, 40, 50
			30	10, 15, 20, 25, 30, 40, 50
	n66	FDD	15	5, 10, 15, 20, 25, 30, 35, 40, 45
			30	10, 15, 20, 25, 30, 35, 40, 45
	n78	TDD	15	10, 15, 20, 30, 40, 50
			30	10, 15, 20, 30, 40, 50, 60, 70, 80, 90, 100
SA	n2	FDD	15	5, 10, 15, 20, 25, 30
			30	10, 15, 20, 25, 30
	n5	FDD	15	5, 10, 15, 20, 25
			30	10, 15, 20, 25
	n7	FDD	15	5, 10, 15, 20, 25, 30, 40, 50
			30	10, 15, 20, 25, 30, 40, 50
	n26	FDD	15	5, 10, 15, 20
			30	10, 15, 20
	n66	FDD	15	5, 10, 15, 20, 25, 30, 35, 40, 45
			30	10, 15, 20, 25, 30, 35, 40, 45
	n78	TDD	15	10, 15, 20, 30, 40, 50
			30	10, 15, 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	IHDT56AM4																																																														
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																																																														
LTE Voice / Data requirements	Voice and Data																																																														
LTE Release Version	R15, Cat13																																																														
CA Support	Supported, Uplink and Downlink																																																														
LTE MPR permanently built-in by design	<p>Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 1, 2 and 3</p> <table border="1"> <thead> <tr> <th rowspan="2">Modulation</th> <th colspan="6">Channel bandwidth / Transmission bandwidth (N_{RB})</th> <th rowspan="2">MPR (dB)</th> </tr> <tr> <th>1.4 MHz</th> <th>3.0 MHz</th> <th>5 MHz</th> <th>10 MHz</th> <th>15 MHz</th> <th>20 MHz</th> </tr> </thead> <tbody> <tr> <td>QPSK</td> <td>> 5</td> <td>> 4</td> <td>> 8</td> <td>> 12</td> <td>> 16</td> <td>> 18</td> <td>≤ 1</td> </tr> <tr> <td>16 QAM</td> <td>≤ 5</td> <td>≤ 4</td> <td>≤ 8</td> <td>≤ 12</td> <td>≤ 16</td> <td>≤ 18</td> <td>≤ 1</td> </tr> <tr> <td>16 QAM</td> <td>> 5</td> <td>> 4</td> <td>> 8</td> <td>> 12</td> <td>> 16</td> <td>> 18</td> <td>≤ 2</td> </tr> <tr> <td>64 QAM</td> <td>≤ 5</td> <td>≤ 4</td> <td>≤ 8</td> <td>≤ 12</td> <td>≤ 16</td> <td>≤ 18</td> <td>≤ 2</td> </tr> <tr> <td>64 QAM</td> <td>> 5</td> <td>> 4</td> <td>> 8</td> <td>> 12</td> <td>> 16</td> <td>> 18</td> <td>≤ 3</td> </tr> <tr> <td>256 QAM</td> <td colspan="6">≥ 1</td> <td>≤ 5</td> </tr> </tbody> </table>	Modulation	Channel bandwidth / Transmission bandwidth (N_{RB})						MPR (dB)	1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz	20 MHz	QPSK	> 5	> 4	> 8	> 12	> 16	> 18	≤ 1	16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 1	16 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2	64 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 2	64 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 3	256 QAM	≥ 1						≤ 5
Modulation	Channel bandwidth / Transmission bandwidth (N_{RB})						MPR (dB)																																																								
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256 QAM	≥ 1						≤ 5																																																								
LTE A-MPR	In the base station simulator configuration, Network Setting value is set to NS_01 to disable A-MPR during SAR testing and the LTE SAR tests was transmitting on all TTI frames (Maximum TTI)																																																														
Spectrum plots for RB configuration	A properly configured base station simulator was used for the SAR and power measurement; therefore, spectrum plots for each RB allocation and offset configuration are not included in the SAR report.																																																														
Power reduction applied to satisfy SAR compliance	Yes, when operating in Proximity sensors/receiver/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 13.																																																														
LTE Carrier Aggregation Combinations	Inter-Band and Intra-Band possible combinations and the detail power verification please referred to section 13.																																																														
LTE Carrier Aggregation Additional Information	1. This device supports LTE Carrier Aggregation (CA) in the uplink for intra-band and inter-band with two component carriers in the uplink. SAR Measurements and conducted powers were evaluated per FCC Guidance. 2. This device supports maximum of 3 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		Bandwidth 15 MHz		Bandwidth 20 MHz		
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	
L	20407	824.7	20415	825.5	20425	826.5	20425	826.5	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	20625	846.5	20600	844	20600	844	
LTE Band 7													
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz		
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	
L	20775	2502.5	20800	2505	20825	2507.5	20825	2507.5	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	21375	2562.5	21350	2560	21350	2560	
LTE Band 12													
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz		
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	
L	23017	699.7	23025	700.5	23035	701.5	23035	701.5	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	23155	713.5	23130	711	23130	711	
LTE Band 13													
	Bandwidth 5 MHz				Bandwidth 10 MHz				Bandwidth 15 MHz				Bandwidth 20 MHz
	Channel #	Freq.(MHz)			Channel #	Freq.(MHz)			Channel #	Freq.(MHz)			Channel #
L	23205	779.5			23230	782			23230	782			782
M	23230	782				782							
H	23255	784.5				782							
LTE Band 17													
	Bandwidth 5 MHz				Bandwidth 10 MHz				Bandwidth 15 MHz				Bandwidth 20 MHz
	Channel #	Freq.(MHz)			Channel #	Freq.(MHz)			Channel #	Freq.(MHz)			Channel #
L	23755	706.5			23780	709			23780	709			709
M	23790	710			23790	710			23790	710			710
H	23825	713.5			23800	711			23800	711			711
LTE Band 25													
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz		
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	
L	26047	1850.7	26055	1851.5	26065	1852.5	26090	1855	26115	1857.5	26140	1860	
M	26340	1880	26340	1880	26340	1880	26340	1880	26340	1880	26340	1880	
H	26683	1914.3	26675	1913.5	26665	1912.5	26640	1910	26615	1907.5	26590	1905	
LTE Band 26													
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz		
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	
L	26697	814.7	26705	815.5	26715	816.5	26740	819	26765	821.5	26765	821.5	
M	26865	831.5	26865	831.5	26865	831.5	26865	831.5	26865	831.5	26865	831.5	
H	27033	848.3	27025	847.5	27015	846.5	26990	844	26965	841.5	26965	841.5	



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

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

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

<3450 MHz ~ 3550 MHz>

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



<For LTE Overlap Bands Description>

1) LTE Bands BW

Band	1.4 MHz	3 MHz	5 MHz	10 MHz	15 MHz	20 MHz
LTE Band 4	Yes	Yes	Yes	Yes	Yes	Yes
LTE Band 66	Yes	Yes	Yes	Yes	Yes	Yes
LTE Band 12	Yes	Yes	Yes	Yes		
LTE Band 17			Yes	Yes		
LTE Band 2	Yes	Yes	Yes	Yes	Yes	Yes
LTE Band 25	Yes	Yes	Yes	Yes	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:

Band	Antenna	Head	Body Worn	Hotspot	Extremity	Sensor Off	Default
		ECI 2	ECI 3	ECI 7	ECI 6	ECI4	Tune-up Limit
		Receiver on	Sensor on	Tune-up Limit	Handheld	Tune-up Limit	
		Tune-up Limit	Tune-up Limit		Tune-up Limit		
LTE Band 12	Ant 0	24.00	24.00	24.00	24.00	24.00	24.00
LTE Band 17		24.00	24.00	24.00	24.00	24.00	24.00
LTE Band 2	Ant 0	24.00	16.50	15.00	17.00	24.00	24.00
LTE Band 25		24.00	17.00	16.50	19.50	24.00	24.00
LTE Band 5	Ant 0	24.00	24.00	24.00	24.00	24.00	24.00
LTE Band 26		24.00	24.00	24.00	24.00	24.00	24.00
LTE Band 4	Ant 0	24.00	18.50	17.50	21.50	24.00	24.00
LTE Band 66		24.00	18.50	17.50	21.50	24.00	24.00
LTE Band 4_Other PA	Ant 0	23.00	17.50	16.50	20.50	23.00	23.00
LTE Band 66_Other PA		23.00	17.50	16.50	20.50	23.00	23.00
LTE Band 38	Ant 1	24.00	22.00	22.00	22.50	24.00	24.00
LTE Band 41		24.00	22.00	22.00	22.50	24.00	24.00
LTE Band 4	Ant 4	20.50	21.00	19.50	21.50	21.50	21.50
LTE Band 66		20.50	21.00	19.50	21.50	21.50	21.50
LTE Band 4_Other PA	Ant 4	20.00	22.00	20.00	24.00	24.00	24.00
LTE Band 66_Other PA		20.00	22.00	20.00	24.00	24.00	24.00



4.3 General 5G NR SAR Test and Reporting Considerations

5G NR Information	
Operating Frequency Range of each 5G NR transmission band	5G NR n2 : 1850 MHz ~ 1910 MHz 5G NR n5: 824 MHz ~ 849 MHz 5G NR n7: 2500 MHz ~ 2570 MHz 5G NR n26 : 814 MHz ~ 849 MHz 5G NR n66: 1710 MHz ~ 1780 MHz 5G NR n78: 3450 MHz ~ 3550 MHz
Channel Bandwidth	The detail please refers to section 4.1 5G NR FR1 bands table.
SCS	FDD/TDD:: SCS15KHz/SCS30KHz
uplink modulations used	DFT-s-OFDM: PI/2 BPSK / QPSK / 16QAM / 64QAM / 256QAM CP-OFDM: QPSK / 16QAM / 64QAM / 256QAM
A-MPR (Additional MPR) disabled for SAR Testing?	Yes
LTE Anchor Bands for n2	LTE B5/7/66
LTE Anchor Bands for n5	LTE B2
LTE Anchor Bands for n7	LTE B2/5/66
LTE Anchor Bands for n66	LTE B2/5/7
LTE Anchor Bands for n78	LTE B2/4/5/7/26/38/66

Transmission (H, M, L) channel numbers and frequencies in each 5G NR band												
NR Band 2 SCS15KHz												
	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 25MHz		Bandwidth 30MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	370500	1852.5	371000	1855	371500	1857.5	372000	1860	372500	1862.5	373000	1865
M	376000	1880	376000	1880	376000	1880	376000	1880	376000	1880	376000	1880
H	381500	1907.5	381000	1905	380500	1902.5	380000	1900	379500	1897.5	379000	1895

NR Band 2 SCS30KHz										
	Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 25MHz		Bandwidth 30MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	371000	1855	371500	1857.5	372000	1860	372500	1862.5	373000	1865
M	376000	1880	376000	1880	376000	1880	376000	1880	376000	1880
H	381000	1905	380500	1902.5	380000	1900	379500	1897.5	379000	1895

NR Band 5 SCS15KHz										
	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 25MHz	
	Ch. #	Freq. (MHz)	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	167300	836.5
H	169300	846.5	168800	844	168300	841.5	167800	839		

NR Band 5 SCS30KHz									
	Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 25MHz		
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	
L	165800	829	166300	831.5	166800	834			
M	167300	836.5	167300	836.5	167300	836.5	167300	836.5	836.5
H	168800	844	168300	841.5	167800	839			

NR Band 7 SCS15KHz																
	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 25MHz		Bandwidth 30MHz		Bandwidth 40MHz		Bandwidth 50MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	500500	2502.5	501000	2505	501500	2507.5	502000	2510	502500	2512.5	503000	2515	504000	2520	505000	2525
M	507000	2535	507000	2535	507000	2535	507000	2535	507000	2535	507000	2535	507000	2535	507000	2535
H	513500	2567.5	513000	2565	512500	2562.5	512000	2560	511500	2557.5	511000	2555	510000	2550	509000	2545

NR Band 7 SCS30KHz														
	Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 25MHz		Bandwidth 30MHz		Bandwidth 40MHz		Bandwidth 50MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	501000	2505	501500	2507.5	502000	2510	502500	2512.5	503000	2515	504000	2520	505000	2525
M	507000	2535	507000	2535	507000	2535	507000	2535	507000	2535	507000	2535	507000	2535
H	513000	2565	512500	2562.5	512000	2560	511500	2557.5	511000	2555	510000	2550	509000	2545



NR Band 26 SCS15KHz								
	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	163300	816.5	163800	819	164300	821.5	164800	824
M	166300	831.5	166300	831.5	166300	831.5	166300	831.5
H	169300	846.5	168800	844	168300	841.5	167800	839

NR Band 26 SCS30KHz						
	Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	163800	819	164300	821.5	164800	824
M	166300	831.5	166300	831.5	166300	831.5
H	168800	844	168300	841.5	167800	839

NR Band 66 SCS15KHz																		
	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 25MHz		Bandwidth 30MHz		Bandwidth 35MHz		Bandwidth 40MHz		Bandwidth 45MHz	
	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	342500	1712.5	343000	1715	343500	1717.5	344000	1720	344500	1722.5	345000	1725	345500	1727.5	346000	1730	365000	1732.5
M	349000	1745	349000	1745	349000	1745	349000	1745	349000	1745	349000	1745	349000	1745	349000	1745	349000	1745
H	355500	1777.5	355000	1775	354500	1772.5	354000	1770	353500	1767.5	353000	1765	352500	1762.5	352000	1760	351500	1757.5

NR Band 66 SCS30KHz																
	Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 25MHz		Bandwidth 30MHz		Bandwidth 35MHz		Bandwidth 40MHz		Bandwidth 45MHz	
	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	343000	1715	343500	1717.5	344000	1720	344500	1722.5	345000	1725	345500	1727.5	346000	1730	365000	1732.5
M	349000	1745	349000	1745	349000	1745	349000	1745	349000	1745	349000	1745	349000	1745	349000	1745
H	355000	1775	354500	1772.5	354000	1770	353500	1767.5	353000	1765	352500	1762.5	352000	1760	351500	1757.5

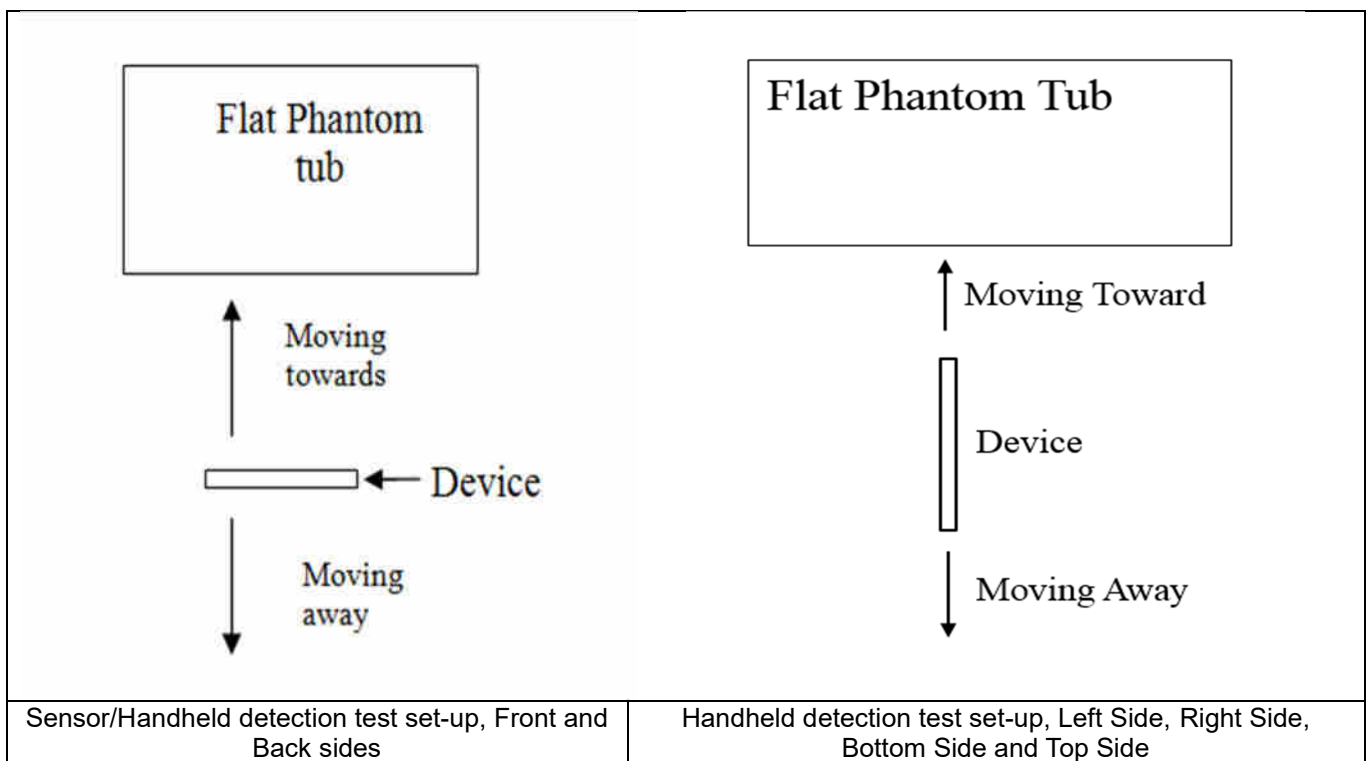
NR Band 78 SCS15KHz												
	Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 30MHz		Bandwidth 40MHz		Bandwidth 50MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	630334	3455.01	630500	3457.5	630668	3460.02	631000	3465	631334	3470.01	631668	3475.02
M	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01
H	636334	3545.01	636168	3542.52	636000	3540	635668	3535.02	635334	3530.01	635000	3525

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

5. 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 (5850MHz) and lowest (835MHz) 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	13	17	18	25

<Handheld for ANT 0>

Proximity Sensor Triggering Distance (mm)								
Position	Front		Back		Right Side		Bottom Side	
	Moving towards	Moving away	Moving towards	Moving away	Moving towards	Moving away	Moving towards	Moving away
Minimum	10	13	17	20	5	9	14	18

<Handheld for ANT1>

Proximity Sensor Triggering Distance (mm)								
Position	Front		Back		Left Side		Bottom Side	
	Moving towards	Moving away	Moving towards	Moving away	Moving towards	Moving away	Moving towards	Moving away
Minimum	5	9	10	14	8	11	10	13

<Handheld for ANT4>

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	8	14	12	17	6	12	15	18

<Handheld for ANT5>

Proximity Sensor Triggering Distance (mm)						
Position	Front		Back		Top Side	
	Moving towards	Moving away	Moving towards	Moving away	Moving towards	Moving away
Minimum	7	8	14	16	16	19

<Handheld for ANT6>

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	5	12	11	15	5	9	12	17

6. RF Exposure Limits

6.1 Uncontrolled Environment

Uncontrolled Environments are defined as locations where there is the exposure of individuals who have no knowledge or control of their exposure. The general population/uncontrolled exposure limits are applicable to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Members of the general public would come under this category when exposure is not employment-related; for example, in the case of a wireless transmitter that exposes persons in its vicinity.

6.2 Controlled Environment

Controlled Environments are defined as locations where there is exposure that may be incurred by persons who are aware of the potential for exposure, (i.e. as a result of employment or occupation). In general, occupational/controlled exposure limits are applicable to situations in which persons are exposed as a consequence of their employment, who have been made fully aware of the potential for exposure and can exercise control over their exposure. The exposure category is also applicable when the exposure is of a transient nature due to incidental passage through a location where the exposure levels may be higher than the general population/uncontrolled limits, but the exposed person is fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

Limits for Occupational/Controlled Exposure (W/kg)

Whole-Body	Partial-Body	Hands, Wrists, Feet and Ankles
0.4	8.0	20.0

Limits for General Population/Uncontrolled Exposure (W/kg)

Whole-Body	Partial-Body	Hands, Wrists, Feet and Ankles
0.08	1.6	4.0

Whole-Body SAR is averaged over the entire body, partial-body SAR is averaged over any 1gram of tissue defined as a tissue volume in the shape of a cube. SAR for hands, wrists, feet and ankles is averaged over any 10 grams of tissue defined as a tissue volume in the shape of a cube.

7. Specific Absorption Rate (SAR)

7.1 Introduction

SAR is related to the rate at which energy is absorbed per unit mass in an object exposed to a radio field. The SAR distribution in a biological body is complicated and is usually carried out by experimental techniques or numerical modeling. The standard recommends limits for two tiers of groups, occupational/controlled and general population/uncontrolled, based on a person's awareness and ability to exercise control over his or her exposure. In general, occupational/controlled exposure limits are higher than the limits for general population/uncontrolled.

7.2 SAR Definition

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

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

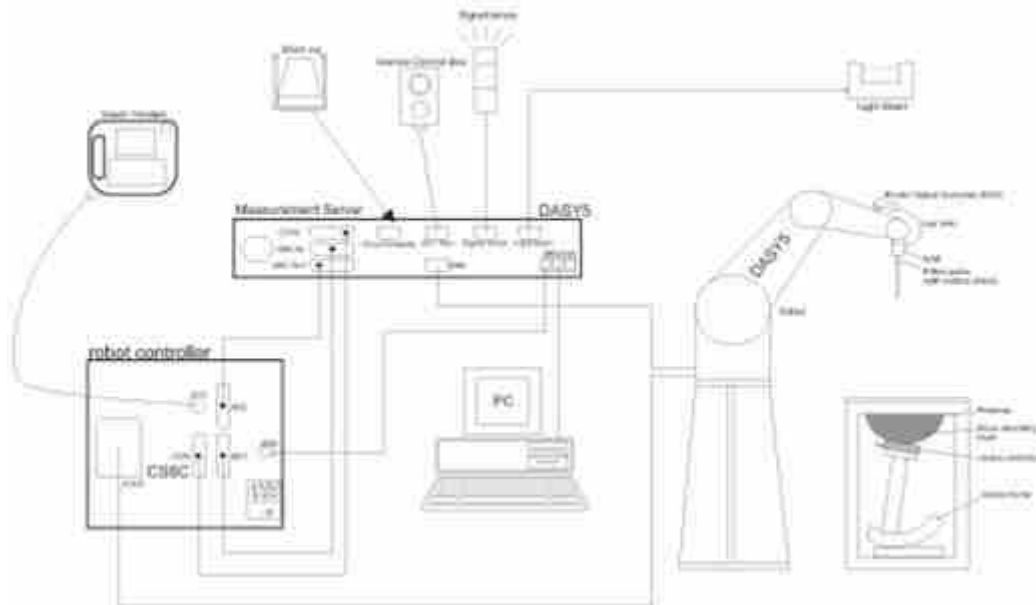
SAR is expressed in units of Watts per kilogram (W/kg)

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

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

8. 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.

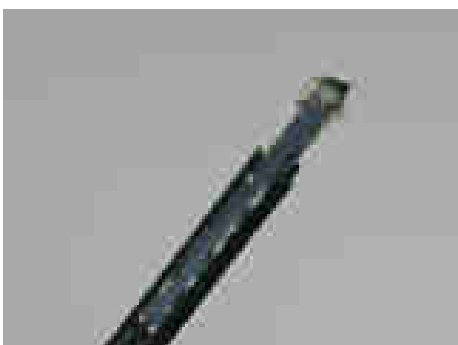
8.1 E-Field Probe

The SAR measurement is conducted with the dosimetric probe (manufactured by SPEAG).The probe is specially designed and calibrated for use in liquid with high permittivity. The dosimetric probe has special calibration in liquid at different frequency. This probe has a built in optical surface detection system to prevent from collision with phantom.

<EX3DV4 Probe>

Construction	Symmetric design with triangular core Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)	
Frequency	10 MHz – >6 GHz Linearity: ±0.2 dB (30 MHz – 6 GHz)	
Directivity	±0.3 dB in TSL (rotation around probe axis) ±0.5 dB in TSL (rotation normal to probe axis)	
Dynamic Range	10 µW/g – >100 mW/g Linearity: ±0.2 dB (noise: typically <1 µW/g)	
Dimensions	Overall length: 337 mm (tip: 20 mm) Tip diameter: 2.5 mm (body: 12 mm) Typical distance from probe tip to dipole centers: 1 mm	

<ES3DV3 Probe>

Construction	Symmetric design with triangular core Interleaved sensors Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)	
Frequency	10 MHz – 4 GHz; Linearity: ±0.2 dB (30 MHz – 4 GHz)	
Directivity	±0.2 dB in TSL (rotation around probe axis) ±0.3 dB in TSL (rotation normal to probe axis)	
Dynamic Range	5 µW/g – >100 mW/g; Linearity: ±0.2 dB	
Dimensions	Overall length: 337 mm (tip: 20 mm) Tip diameter: 3.9 mm (body: 12 mm) Distance from probe tip to dipole centers: 3.0 mm	

8.2 Data Acquisition Electronics (DAE)

The data acquisition electronics (DAE) consists of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16 bit AD-converter and a command decoder and control logic unit. Transmission to the measurement server is accomplished through an optical downlink for data and status information as well as an optical uplink for commands and the clock.


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



Photo of DAE

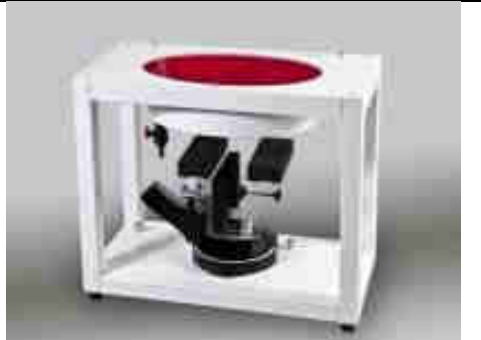
8.3 Phantom

<SAM Twin Phantom>

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

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

<ELI Phantom>

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

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

8.4 Device Holder

<Mounting Device for Hand-Held Transmitter>

In combination with the Twin SAM V5.0/V5.0c or ELI phantoms, the Mounting Device for Hand-Held Transmitters enables rotation of the mounted transmitter device to specified spherical coordinates. At the heads, the rotation axis is at the ear opening. Transmitter devices can be easily and accurately positioned according to IEC 62209-1, IEEE 1528, FCC, or other specifications. The device holder can be locked for positioning at different phantom sections (left head, right head, flat). And upgrade kit to Mounting Device to enable easy mounting of wider devices like big smart-phones, e-books, small tablets, etc. It holds devices with width up to 140 mm.



Mounting Device for Hand-Held Transmitters



Mounting Device Adaptor for Wide-Phones

<Mounting Device for Laptops and other Body-Worn Transmitters>

The extension is lightweight and made of POM, acrylic glass and foam. It fits easily on the upper part of the mounting device in place of the phone positioned. The extension is fully compatible with the SAM Twin and ELI phantoms.



Mounting Device for Laptops

9. Measurement Procedures

The measurement procedures are as follows:

<Conducted power measurement>

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

<SAR measurement>

- (a) Use base station simulator to configure EUT WWAN transmission in radiated connection, and engineering software to configure EUT WLAN/BT continuously transmission, at maximum RF power, in the highest power channel.
- (b) Place the EUT in the positions as Appendix D demonstrates.
- (c) Set scan area, grid size and other setting on the DASY software.
- (d) Measure SAR results for the highest power channel on each testing position.
- (e) Find out the largest SAR result on these testing positions of each band
- (f) Measure SAR results for other channels in worst SAR testing position if the reported SAR of highest power channel is larger than 0.8 W/kg

According to the test standard, the recommended procedure for assessing the peak spatial-average SAR value consists of the following steps:

- (a) Power reference measurement
- (b) Area scan
- (c) Zoom scan
- (d) Power drift measurement

9.1 Spatial Peak SAR Evaluation

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

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

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

- (a) Extraction of the measured data (grid and values) from the Zoom Scan
- (b) Calculation of the SAR value at every measurement point based on all stored data (A/D values and measurement parameters)
- (c) Generation of a high-resolution mesh within the measured volume
- (d) Interpolation of all measured values 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

9.2 Power Reference Measurement

The Power Reference Measurement and Power Drift Measurements are for monitoring the power drift of the device under test in the batch process. The minimum distance of probe sensors to surface determines the closest measurement point to phantom surface. This distance cannot be smaller than the distance of sensor calibration points to probe tip as defined in the probe properties.

9.3 Area Scan

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

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

	≤ 3 GHz	> 3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface	5 ± 1 mm	$\frac{1}{2} \cdot \delta \cdot \ln(2) \pm 0.5$ 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.	

9.4 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.				

9.5 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.

9.6 Power Drift Monitoring

All SAR testing is under the EUT install full charged battery and transmit maximum output power. In DASYS measurement software, the power reference measurement and power drift measurement procedures are used for monitoring the power drift of EUT during SAR test. Both these procedures measure the field at a specified reference position before and after the SAR testing. The software will calculate the field difference in dB. If the power drifts more than 5%, the SAR will be retested.



10. Test Equipment List

Manufacturer	Name of Equipment	Type/Model	Serial Number	Calibration	
				Last Cal.	Due Date
SPEAG	750MHz System Validation Kit	D750V3	1087	2022/2/24	2025/2/23
SPEAG	835MHz System Validation Kit	D835V2	4d091	2022/8/19	2023/8/18
SPEAG	1750MHz System Validation Kit	D1750V2	1090	2022/2/24	2025/2/23
SPEAG	1900MHz System Validation Kit	D1900V2	5d118	2022/3/30	2025/3/29
SPEAG	2450MHz System Validation Kit	D2450V2	1040	2023/4/25	2024/4/24
SPEAG	2600MHz System Validation Kit	D2600V2	1061	2020/11/26	2023/11/24
SPEAG	3500MHz System Validation Kit	D3500V2	1037	2020/11/25	2023/11/23
SPEAG	5000MHz System Validation Kit	D5GHzV2	1113	2022/9/23	2023/9/22
SPEAG	Data Acquisition Electronics	DAE4	1338	2022/12/15	2023/12/14
SPEAG	Dosimetric E-Field Probe	ES3DV3	3279	2022/9/5	2023/9/4
SPEAG	Dosimetric E-Field Probe	EX3DV4	3857	2022/12/14	2023/12/13
SPEAG	SAM Twin Phantom	SAM Twin	TP-1697	NCR	NCR
CHIGO	Thermo-Hygrometer	HTC-1	55011	2023/1/8	2024/1/7
SPEAG	Phone Positioner	N/A	N/A	NCR	NCR
Anritsu	Radio Communication Analyzer	MT8821C	6262306175	2022/7/14	2023/7/13
Agilent	ENA Series Network Analyzer	E5071C	MY46111157	2022/9/2	2023/9/1
SPEAG	Dielectric Probe Kit	DAK-3.5	1144	2022/8/15	2023/8/14
Anritsu	Vector Signal Generator	MG3710A	6201682672	2023/1/5	2024/1/4
Rohde & Schwarz	Power Meter	NRVD	102081	2022/7/14	2023/7/13
Rohde & Schwarz	Power Sensor	NRV-Z5	100538	2022/7/14	2023/7/13
Rohde & Schwarz	Power Sensor	NRV-Z5	100539	2022/7/14	2023/7/13
R&S	BLUETOOTH TESTER	CBT	101246	2023/5/15	2024/5/14
Rohde & Schwarz	Spectrum Analyzer	FSV7	101631	2022/10/12	2023/10/11
TES	DIGITAC THERMOMETER	1310	220305411	2023/1/8	2024/1/7
ARRA	Power Divider	A3200-2	N/A	Note 1	
MCL	Attenuation1	BW-S10W5+	N/A	Note 1	
MCL	Attenuation2	BW-S10W5+	N/A	Note 1	
MCL	Attenuation3	BW-S10W5+	N/A	Note 1	
BONN	POWER AMPLIFIER	BLMA 0830-3	087193A	Note 1	
BONN	POWER AMPLIFIER	BLMA 2060-2	087193B	Note 1	
Agilent	Dual Directional Coupler	778D	20500	Note 1	
Agilent	Dual Directional Coupler	11691D	MY48151020	Note 1	

Note:

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

11. System Verification

11.1 Tissue Simulating Liquids

For the measurement of the field distribution inside the SAM phantom with DASY, the phantom must be filled with around 25 liters of homogeneous body tissue simulating liquid. For head SAR testing, the liquid height from the ear reference point (ERP) of the phantom to the liquid top surface is larger than 15 cm, which is shown in Fig. 11.1. For body SAR testing, the liquid height from the center of the flat phantom to the liquid top surface is larger than 15 cm, which is shown in Fig. 11.2.



Fig 11.1 Photo of Liquid Height for Head SAR

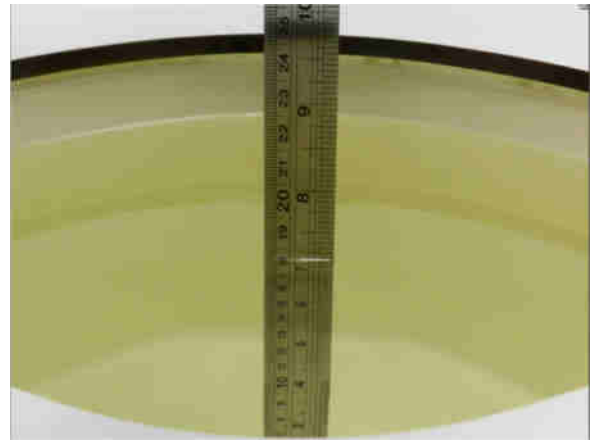


Fig 11.2 Photo of Liquid Height for Body SAR

11.2 Tissue Verification

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

Frequency (MHz)	Water (%)	Sugar (%)	Cellulose (%)	Salt (%)	Preventol (%)	DGBE (%)	Conductivity (σ)	Permittivity (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	22.9	0.906	42.768	0.89	41.90	1.80	2.07	±5	2023/6/20
835	Head	22.6	0.936	42.529	0.90	41.50	4.00	2.48	±5	2023/6/21
1750	Head	22.9	1.344	38.993	1.37	40.10	-1.90	-2.76	±5	2023/6/22
1900	Head	22.7	1.427	38.737	1.40	40.00	1.93	-3.16	±5	2023/6/23
2600	Head	22.7	1.979	40.629	1.96	39.00	0.97	4.18	±5	2023/6/24
3500	Head	22.8	2.849	38.663	2.91	37.90	-2.10	2.01	±5	2023/6/25
750	Head	22.6	0.899	41.179	0.89	41.90	1.01	-1.72	±5	2023/6/26
835	Head	22.6	0.930	40.926	0.90	41.50	3.33	-1.38	±5	2023/6/28
1750	Head	22.7	1.409	40.665	1.37	40.10	2.85	1.41	±5	2023/7/1
1900	Head	22.9	1.422	39.310	1.40	40.00	1.57	-1.72	±5	2023/7/3
2600	Head	22.9	1.924	38.251	1.96	39.00	-1.84	-1.92	±5	2023/7/5
3500	Head	22.8	2.850	38.662	2.91	37.90	-2.06	2.01	±5	2023/7/7
2450	Head	22.7	1.805	38.557	1.80	39.20	0.28	-1.64	±5	2023/7/9
5250	Head	22.7	4.562	35.992	4.71	35.90	-3.14	0.26	±5	2023/7/11
5600	Head	22.6	4.960	35.440	5.07	35.50	-2.17	-0.17	±5	2023/7/12
5750	Head	22.8	5.131	35.243	5.22	35.40	-1.70	-0.44	±5	2023/7/12

11.3 System Performance Check Results

Comparing to the original SAR value provided by SPEAG, the verification data should be within its specification of 10 %. Below table shows the target SAR and measured SAR after normalized to 1W input power. The table below indicates the system performance check can meet the variation criterion and the plots can be referred to Appendix A of this report.

<1g SAR>

Date	Frequency (MHz)	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 (%)
2023/6/20	750	Head	50	1087	3279	1338	0.407	8.58	8.14	-5.13
2023/6/21	835	Head	50	4d091	3279	1338	0.509	9.45	10.18	7.72
2023/6/22	1750	Head	50	1090	3279	1338	1.710	37.00	34.2	-7.57
2023/6/23	1900	Head	50	5d118	3279	1338	1.880	39.30	37.6	-4.33
2023/6/24	2600	Head	50	1061	3279	1338	2.640	56.60	52.8	-6.71
2023/6/25	3500	Head	50	1037	3857	1338	3.270	68.00	65.4	-3.82
2023/6/26	750	Head	50	1087	3279	1338	0.401	8.58	8.02	-6.53
2023/6/28	835	Head	50	4d091	3279	1338	0.497	9.45	9.94	5.19
2023/7/1	1750	Head	50	1090	3279	1338	1.790	37.00	35.8	-3.24
2023/7/3	1900	Head	50	5d118	3279	1338	1.870	39.30	37.4	-4.83
2023/7/5	2600	Head	50	1061	3279	1338	2.660	56.60	53.2	-6.01
2023/7/7	3500	Head	50	1037	3857	1338	3.290	68.00	65.8	-3.24
2023/7/9	2450	Head	50	1040	3857	1338	2.450	52.70	49	-7.02
2023/7/11	5250	Head	50	1113	3857	1338	3.790	81.50	75.8	-6.99
2023/7/12	5600	Head	50	1113	3857	1338	4.090	82.60	81.8	-0.97
2023/7/12	5750	Head	50	1113	3857	1338	3.810	80.80	76.2	-5.69

<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 (%)
2023/6/20	750	Head	50	1087	3279	1338	0.267	5.65	5.34	-5.49
2023/6/21	835	Head	50	4d091	3279	1338	0.333	6.22	6.66	7.07
2023/6/22	1750	Head	50	1090	3279	1338	0.907	19.50	18.14	-6.97
2023/6/23	1900	Head	50	5d118	3279	1338	0.972	20.40	19.44	-4.71
2023/6/24	2600	Head	50	1061	3279	1338	1.190	25.10	23.8	-5.18
2023/6/25	3500	Head	50	1037	3857	1338	1.260	25.40	25.2	-0.79
2023/6/26	750	Head	50	1087	3279	1338	0.263	5.65	5.26	-6.90
2023/6/28	835	Head	50	4d091	3279	1338	0.321	6.22	6.42	3.22
2023/7/1	1750	Head	50	1090	3279	1338	0.948	19.50	18.96	-2.77
2023/7/3	1900	Head	50	5d118	3279	1338	0.969	20.40	19.38	-5.00
2023/7/5	2600	Head	50	1061	3279	1338	1.180	25.10	23.6	-5.98
2023/7/7	3500	Head	50	1037	3857	1338	1.270	25.40	25.4	0.00
2023/7/9	2450	Head	50	1040	3857	1338	1.140	24.60	22.8	-7.32
2023/7/11	5250	Head	50	1113	3857	1338	1.090	23.30	21.8	-6.44
2023/7/12	5600	Head	50	1113	3857	1338	1.150	23.70	23	-2.95
2023/7/12	5750	Head	50	1113	3857	1338	1.080	23.00	21.6	-6.09

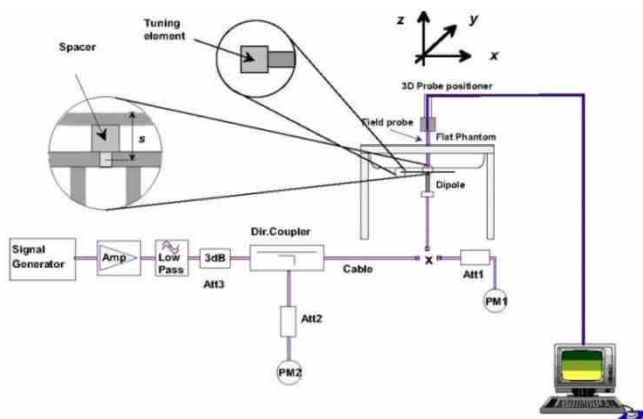


Fig 11.3.1 System Performance Check Setup



Fig 11.3.2 Setup Photo

12. RF Exposure Positions

12.1 Ear and handset reference point

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

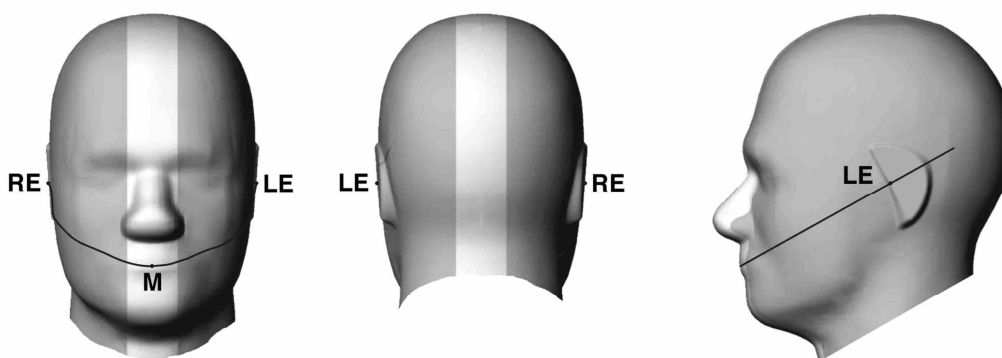


Fig 12.1.1 Front, back, and side views of SAM twin phantom

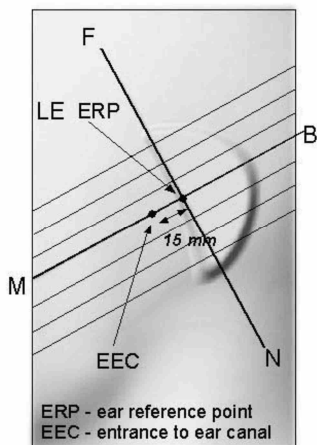


Fig 12.1.2 Close-up side view of phantom showing the ear region.

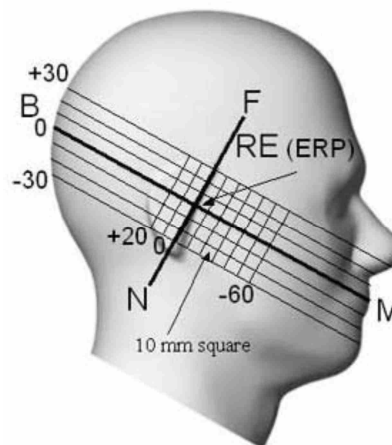


Fig 12.1.3 Side view of the phantom showing relevant markings and seven cross-sectional plane locations

12.2 Definition of the cheek position

1. Ready the handset for talk operation, if necessary. For example, for handsets with a cover piece (flip cover), open the cover. If the handset can transmit with the cover closed, both configurations must be tested.
2. Define two imaginary lines on the handset—the vertical centerline and the horizontal line. The vertical centerline passes through two points on the front side of the handset—the midpoint of the width 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.

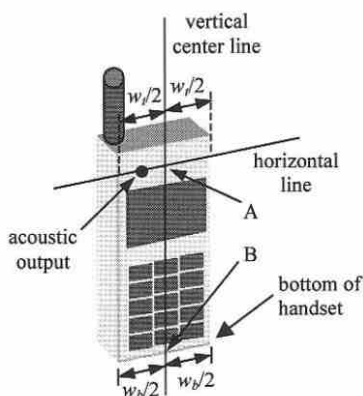


Fig 12.2.1 Handset vertical and horizontal reference lines—“fixed case”

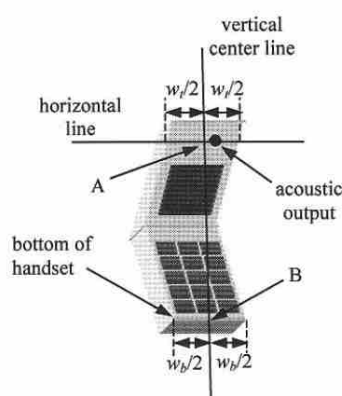


Fig 12.2.2 Handset vertical and horizontal reference lines—“clam-shell case”

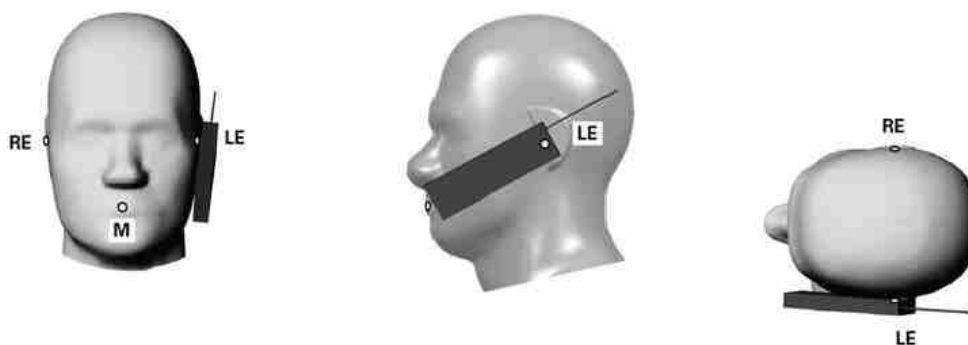


Fig 12.2.3 cheek or touch position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which establish the Reference Plane for handset positioning, are indicated.

12.3 Definition of the tilt position

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

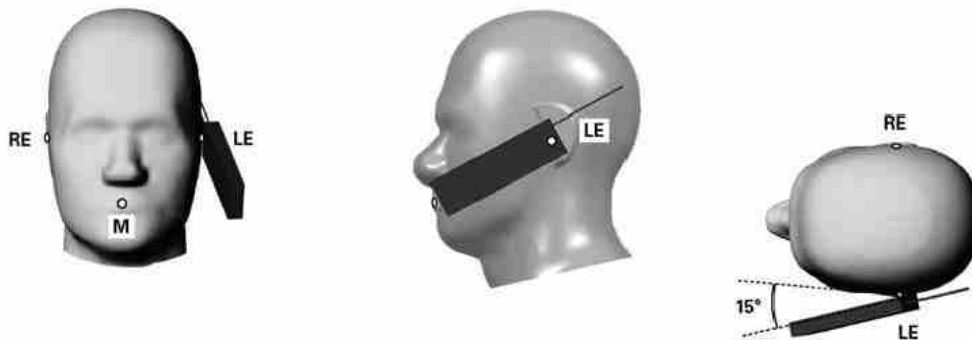


Fig 12.3.1 Tilt position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which define the Reference Plane for handset positioning, are indicated.

12.4 Body Worn Accessory

Body-worn operating configurations are tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in a normal use configuration (see Figure 11.4). Per KDB648474 D04v01r03, body-worn accessory exposure is typically related to voice mode operations when handsets are carried in body-worn accessories. The body-worn accessory procedures in FCC KDB 447498 D01v06 should be used to test for body-worn accessory SAR compliance, without a headset connected to it. This enables the test results for such configuration to be compatible with that required for hotspot mode when the body-worn accessory test separation distance is greater than or equal to that required for hotspot mode, when applicable. When the reported SAR for body-worn accessory, measured without a headset connected to the handset is $> 1.2 \text{ W/kg}$, 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 test with the device with each accessory. If multiple accessories share an identical metallic component (i.e. the same metallic belt-chip used with different holsters with no other metallic components) only the accessory that dictates the closest spacing to the body is tested.

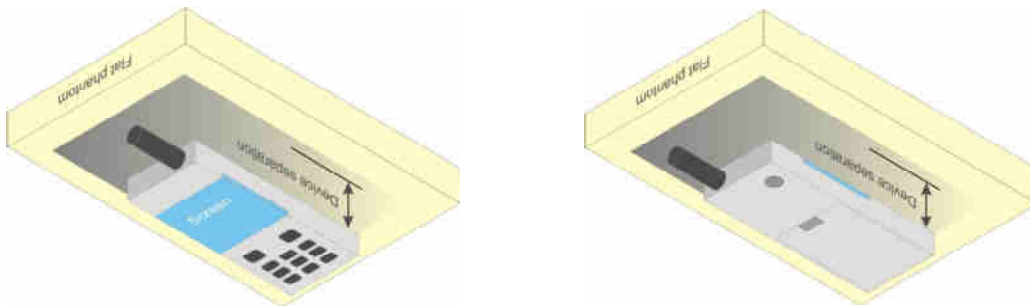


Fig 12.4 Body Worn Position



12.5 Product Specific 10g SAR Exposure

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

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

12.6 Wireless Router

Some battery-operated handsets have the capability to transmit and receive user through simultaneous transmission of WIFI simultaneously with a separate licensed transmitter. The FCC has provided guidance in FCC KDB Publication 941225 D06 v02r01 where SAR test considerations for handsets ($L \times W \geq 9$ 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 D01v06 publication procedures. The "Portable Hotspot" feature on the handset was NOT activated during SAR assessments, to ensure the SAR measurements were evaluated for a single transmission frequency RF signal at a time.

13. Conducted RF Output Power (Unit: dBm)

The detailed conducted power table can refer to Appendix E.

<GSM Conducted Power>

1. Per KDB 447498 D01v06, the maximum output power channel is used for SAR testing and for further SAR test reduction.
2. Per KDB 941225 D01v03r01, for SAR test reduction for GSM / GPRS / EDGE modes is determined by the source-based time-averaged output power including tune-up tolerance. The mode with highest specified time-averaged output power should be tested for SAR compliance in the applicable exposure conditions. For modes with the same specified maximum output power and tolerance, the higher number time-slot configuration should be tested.
3. Other configurations of GSM / GPRS / EDGE are considered as secondary modes. The 3G SAR test reduction procedure is applied, when the maximum output power and tune-up tolerance specified for production units in a secondary mode is $\leq \frac{1}{4}$ 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 HSPA+ devices supporting 16 QAM in the uplink, power measurements procedure is according to the configurations in Table C.11.1.4 of 3GPP TS 34.121-1.
4. For DC-HSDPA, the device was configured according to the H-Set 12, Fixed Reference Channel (FRC) configuration in Table C.8.1.12 of 3GPP TS 34.121-1, with the primary and the secondary serving HS-DSCH Cell enabled during the power measurement.

A summary of these settings are illustrated below:

HSDPA Setup Configuration:

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

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

Sub-test	β_c	β_d	β_d (SF)	β_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.		

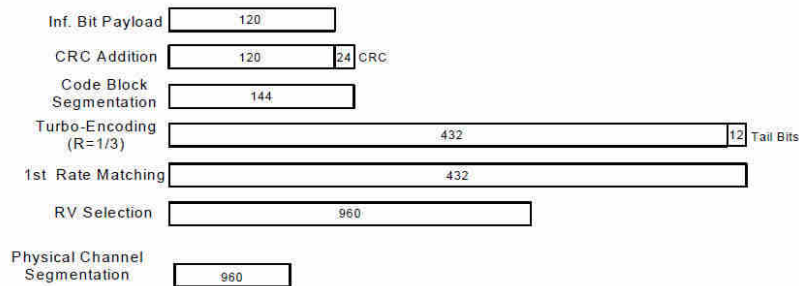


Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK) Setup Configuration

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

1. The EUT was connected to Base Station Agilent E5515C referred to the Setup Configuration.
2. The RF path losses were compensated into the measurements.
3. A call was established between EUT and Base Station with following setting * :
 - i. Call Configs = 5.2E:HSPA+:UL with 16QAM
 - ii. Set the Gain Factors (β_c and β_d) and parameters (AG Index) were set according to each specific sub-test in the following table, C11.1.4, quoted from the TS 34.121-1 s5.2E
 - iii. Set Channel Parm
 - iv. Set Cell Power = -86 dBm
 - v. Set Channel Type = HSPA
 - vi. Set UE Target Power =21 dBm
 - vii. Power Ctrl Mode= All Up Bits
 - viii. Set Manual Uplink DPCH Bc/Bd = Manual
 - ix. Set Manual Uplink DPCH Bc and Bd=15,15(for 34.121-1 v8.10.0 table C11.1.4 sub-test 1)
 - x. Set HSPA Conn DL Channel Levels
 - xi. Set HS-SCCH Configs
 - xii. Set RB Test Mode Setup
 - xiii. Set Common HSUPA Parameters
 - xiv. Set Serving Grant
 - xv. Confirm that E-TFCI is equal to the target E-TFCI of 105 for sub-test 1, and other subtest's E-TFCI
4. The transmitted maximum output power was recorded.

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

Sub-test	β_c (Note3)	β_d	β_{HS} (Note1)	β_{ec}	β_{ed} (2xSF2) (Note 4)	β_{ed} (2xSF4) (Note 4)	CM (dB) (Note 2)	MPR (dB) (Note 2)	AG Index (Note 4)	E-TFCI (Note 5)	E-TFCI (boost)
1	1	0	30/15	30/15	β_{ed1} : 30/15 β_{ed2} : 30/15	β_{ed3} : 24/15 β_{ed4} : 24/15	3.5	2.5	14	105	105

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

Note 2: CM = 3.5 and the MPR is based on the relative CM difference, MPR = MAX(CM-1,0).

Note 3: DPDCH is not configured, therefore the β_c is set to 1 and $\beta_d = 0$ by default.

Note 4: β_{ed} can not be set directly; it is set by Absolute Grant Value.

Note 5: All the sub-tests require the UE to transmit 2SF2+2SF4 16QAM EDCH and they apply for UE using E-DPDCH category 7. E-DCH TTI is set to 2ms TTI and E-DCH table index = 2. To support these E-DCH configurations DPDCH is not allocated. The UE is signaled to use the extrapolation algorithm.

Setup Configuration



<WCDMA Conducted Power>

General Note:

1. Per KDB 941225 D01v03r01, for SAR testing is measured using a 12.2 kbps RMC with TPC bits configured to all "1's".
2. Per KDB 941225 D01v03r01, RMC 12.2kbps setting is used to evaluate SAR. The maximum output power and tune-up tolerance specified for production units in HSDPA / HSUPA / DC-HSDPA / HSPA+ is $\leq \frac{1}{4}$ 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 / HSPA+ to RMC12.2Kbps and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA / HSPA+, and according to the following RF output power, the output power results of the secondary modes (HSDPA / HSUPA / DC-HSDPA / HSPA+) are less than $\frac{1}{4}$ dB higher than the primary modes; therefore, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA / HSPA+.

<LTE Conducted Power>

General Note:

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



<TDD LTE SAR Measurement>

TDD LTE configuration setup for SAR measurement

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

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

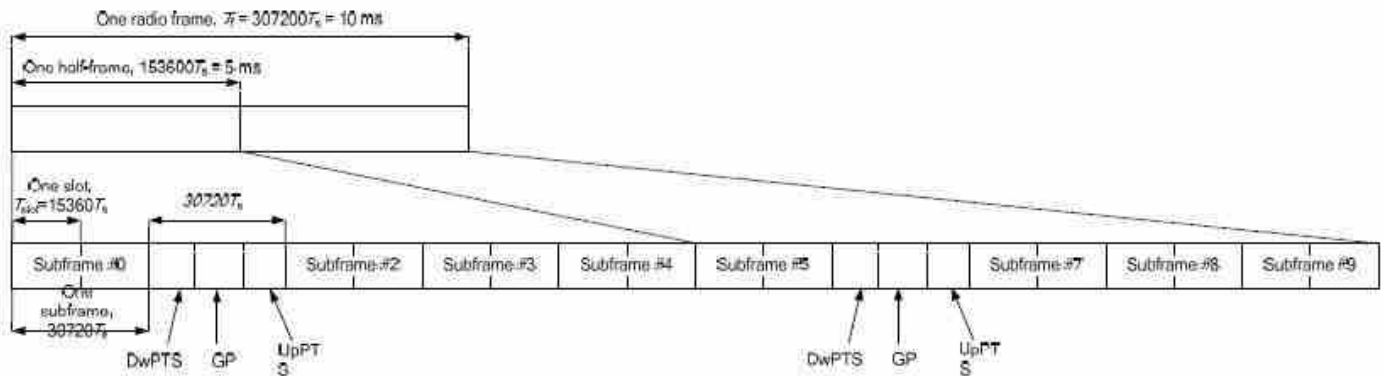


Figure 4.2-1: Frame structure type 2 (for 5 ms switch-point periodicity).

Table 4.2-2: Uplink-downlink configurations.

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

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

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

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

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

The highest duty factor is resulted from:

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

<LTE Carrier Aggregation>

General Note:

5. 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.
6. 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.
7. The gray color table is covered by other combinations and no need to verify power

2CC Downlink Carrier Aggregation				3CC Downlink Carrier Aggregation			
Number	Combination	4X4 MIMO	Covered by Measurement Superset	Number	Combination	4X4 MIMO	Covered by Measurement Superset
1	CA_26A-66A	66A		1	CA_2A-4A-5A	4A, 2A	
2	CA_2A-2A	2A-2A, 2A		2	CA_2A-4A-7A	7A, 4A, 2A	
3	CA_2A-4A	4A, 2A	3CC-1	3	CA_2A-5A-7A	7A, 2A	
4	CA_2A-5A	2A	3CC-1	4	CA_2A-66A-66A	66A, 2A	
5	CA_2A-66A	66A, 2A	3CC-4	5	CA_2A-7A-66A	7A, 66A, 2A	
6	CA_2A-7A	2A-7A, 7A, 2A	3CC-5	6	CA_2A-7A-7A	7A, 2A	
7	CA_2C	2C, 2A		7	CA_2A-7C	2A	
8	CA_38A-66A	66A	3CC-11	8	CA_4A-7A-7A	7A, 4A	
9	CA_38C			9	CA_4A-7C	4A	
10	CA_41A-42A	42A		10	CA_5A-7C		
11	CA_41C			11	CA_7A-38A-66A	66A	
12	CA_42C	42C, 42A		12	CA_7A-66A-66A	7A, 66A	
13	CA_4A-4A	4A-4A, 4A		13			
14	CA_4A-5A	4A	3CC-1	14			
15	CA_4A-7A	4A-7A, 7A, 4A	3CC-2	15			
16	CA_5A-38A			16			
17	CA_5A-66A	66A		17			
18	CA_5A-7A	7A	3CC-3	18			
19	CA_66A-66A	66A-66A, 66A	3CC-12	19			
20	CA_7A-26A	7A		20			
21	CA_7A-42A	7A-42A, 7A, 42A		21			
22	CA_7A-66A	7A-66A, 7A, 66A	3CC-12	22			
23	CA_7A-7A	7A-7A, 7A	3CC-6	23			
24	CA_7B	7B, 7A		24			
25	CA_7C	7C, 7A	3CC-7	25			
26	CA_66B	66B, 66A		26			
27	CA_66C	66C, 66A		27			
28				28			
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 2/4/7/66 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 2/4/7/66

LTE Carrier Aggregation Conducted Power (Uplink)

LTE Uplink CA	2CC Uplink Carrier Aggregation
Intra-band	Antenna Tx
CA_7C	Ant 1
CA_38C	Ant 1
CA_41C	Ant 1
CA_66B	Ant 0 &Ant 4
CA_66C	Ant 0 &Ant 4

<Intra-band>

General Note:

- i. The device supports intra-band uplink carrier aggregation for LTE B7/38/41/66 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 Nov. 2017 TCB workshop, the output power with uplink CA active was measured for the configuration with the highest reported SAR with single carrier for each exposure condition. The power was measured with wideband signal integration over both component carriers.
- iv. Additional SAR measurement for LTE UL CA with other DL CA combinations active were not required since the maximum output power for this configuration was not > 0.25dB higher than the maximum output power for UL CA active.
- v. LTE CA 66B test was covered by 66C, therefore, SAR was only assessed for 66C.



<Inter-band uplink carrier aggregation consideration>

LTE Uplink CA	2CC Uplink Carrier Aggregation
Inter-band	Tx
CA_2A-4A	Ant 0 &Ant 4
CA_2A-66A	Ant 0 &Ant 4
CA_2A-7A	Ant 0 &Ant 4
CA_4A-5A	Ant 0 &Ant 4
CA_4A-7A	Ant 0 &Ant 4
CA_5A-7A	Ant 0 &Ant 4

General Note:

1. In inter-band UL CA operation, the each PCC TX power level will be less than or same as the standalone LTE operation. For Inter-band CA co-located SAR analysis is performed using standalone SAR summed together and they are more conservatively for inter band CA.

5G NR Output Power (Unit: dBm)

General Note:

1. 5G NR n2/n5/n7/n66/n78 is NSA mode.
2. 5G NR n2/n5/n7/n26/n66/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. Due to test setup limitations, SAR testing for NR was performed using Factory Test Mode software to establish the connection and perform SAR with 100% transmission.
5. NSA and SA mode should perform SAR separately. For the maximum power of NSA mode is the same as SA total power level, so SA SAR can represent NSA mode SAR.
6. 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.
7. 5G NR supports CP-OFDM and DFT-s-OFDM modulation, for DFT-s-OFDM power is higher than CP-OFDM, so only show DFT-s-OFDM power table and chose DFT-s-OFDM to perform SAR testing.
8. For DFT-s-OFDM and CP-OFDM output power measurement reduction, according to 38.101 maximum power reduction for the CP-OFDM mode will not higher than DFT-s-OFDM mode, therefore, CP-OFDM measurement is unnecessary.
9. For 5G NR EN-DC mode, standalone SAR performed for 5G NR NSA band with the maximum power, EN-DC SAR summed EN-DC mode 5G NR standalone SAR and LTE standalone SAR, the result of EN-DC SAR is more conservatively.

<3GPP 38.101 MPR for EN-DC>

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

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

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

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

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

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

<EN-DC combination>

ENDC	Antenna Tx	
	LTE TX	NR TX
DC_26A_n78A	Ant 0	Ant 5
DC_2A_n5A	Ant 0	Ant 4
DC_2A_n66A	Ant 0	Ant 4
DC_2A_n78A	Ant 0	Ant 5
DC_2A_n7A	Ant 0	Ant 4
DC_38A_n78A	Ant 1	Ant 5
DC_4A_n78A	Ant 0	Ant 5
DC_5A_n2A	Ant 4	Ant 0
DC_5A_n66A	Ant 4	Ant 0
DC_5A_n78A	Ant 0	Ant 5
DC_5A_n7A	Ant 0	Ant 4
DC_66A_n2A	Ant 0	Ant 4
DC_66A_n78A	Ant 0	Ant 5
DC_66A_n7A	Ant 0	Ant 4
DC_7A_n78A	Ant 1	Ant 5
DC_7A_n2A	Ant 1	Ant 4
DC_7A_n66A	Ant 1	Ant 4

<WLAN Conducted Power>

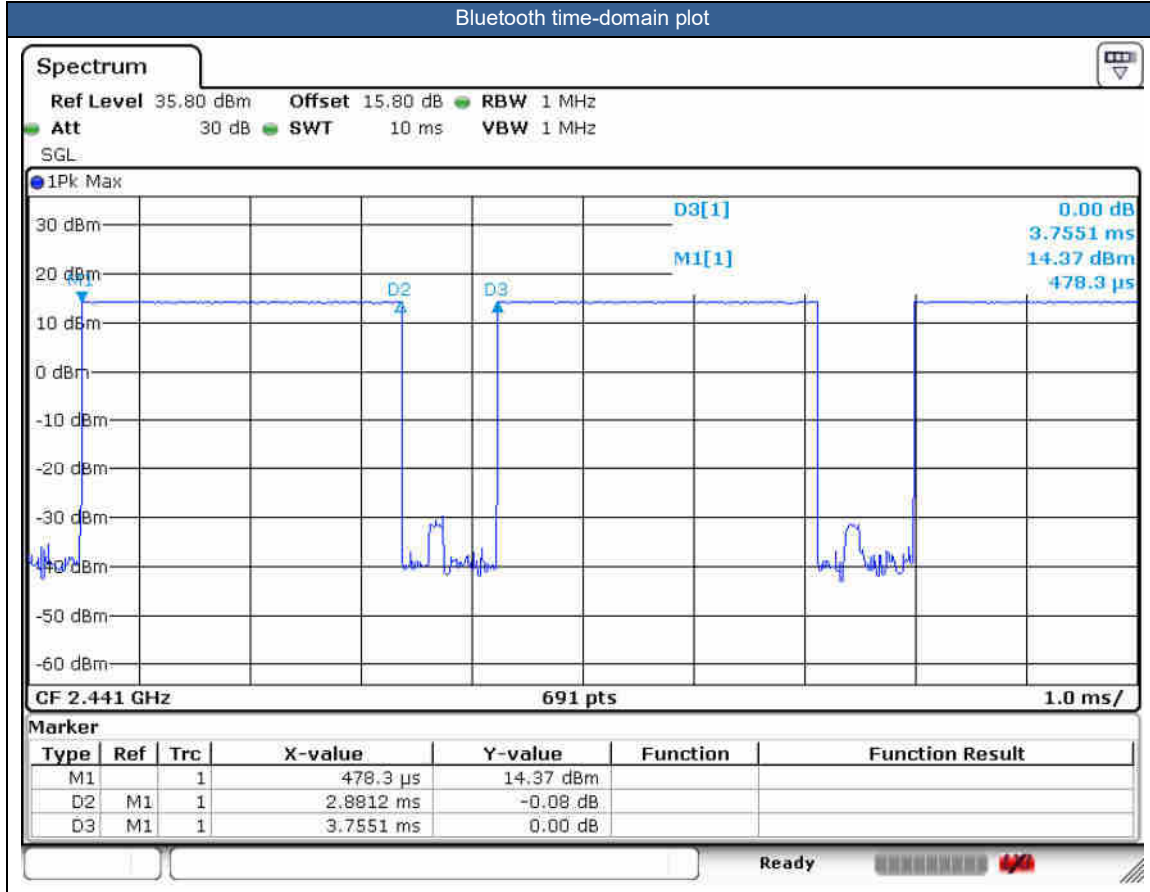
General Note:

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

<2.4GHz Bluetooth>

General Note:

1. For 2.4GHz Bluetooth SAR testing was selected 1Mbps, due to its highest average power.
2. The Bluetooth duty cycle are 76.73% as following figure, Bluetooth SAR scaling need further consideration and the theoretical duty cycle is 83.3%, therefore the actual duty cycle will be scaled up to the theoretical value of Bluetooth reported SAR calculation





14. Antenna Location

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



15. SAR Test Results

General Note:

1. Per KDB 447498 D01v06, the reported SAR is the measured SAR value adjusted for maximum tune-up tolerance.
 - a. Tune-up scaling Factor = tune-up limit power (mW) / EUT RF power (mW), where tune-up limit is the maximum rated power among all production units.
 - b. For SAR testing of WLAN signal with non-100% duty cycle, the measured SAR is scaled-up by the duty cycle scaling factor which is equal to "1/(duty cycle)"
 - c. For SAR testing of Bluetooth signal with 83.3% theoretical duty cycle, the measured SAR is scaled-up by the duty cycle scaling factor which is equal to "1/(duty cycle) *83.3%".
 - d. For WWAN: Reported SAR(W/kg)= Measured SAR(W/kg)*Tune-up Scaling Factor
 - e. For BT/WLAN: Reported SAR(W/kg)= Measured SAR(W/kg)* Duty Cycle scaling factor * Tune-up scaling factor
 - f. For TDD LTE SAR measurement of power class 3, the duty cycle 1:1.59 (62.9 %) was used perform testing and considering the theoretical duty cycle of 63.3% for extended cyclic prefix in the uplink, and the theoretical duty cycle of 62.9% for normal cyclic prefix in uplink, a scaling factor of extended cyclic prefix 63.3%/62.9% = 1.006 is applied to scale-up the measured SAR result. The reported TDD LTE SAR (W/kg) = Measured SAR (W/kg)* Tune-up Scaling Factor* scaling factor for extended cyclic prefix.
2. Per KDB 447498 D01v06, for each exposure position, testing of other required channels within the operating mode of a frequency band is not required when the *reported* 1-g or 10-g SAR for the mid-band or highest output power channel is:
 - ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz
 - ≤ 0.6 W/kg or 1.5 W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz
 - ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz
3. Per KDB 865664 D01v01r04, for each frequency band, repeated SAR measurement is required when the measured SAR is ≥ 0.8 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. The device implements Proximity sensors/receiver detect mechanism/hotspot trigger reduced power for the power management for SAR compliance at different exposure conditions (head, body-worn, hotspot, extremity). The device will invoke corresponding work scenarios power level base on frequency bands/antennas, which can refer to appendix E. power table.
5. 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.
6. For some WWAN bands, sensor on power level is higher than hotspot power level, so front/back sensor on SAR can represent hotspot conservatively.
7. For 5G NR FDD/TDD supports SCS15KHz and SCS30KHz, after verification for 30KHz at FDD power level is less than 15KHz at FDD power level, also verification for 15KHz at TDD power level is less than 30KHz at TDD power level, so only show 15KHz at FDD power and 30KHz at TDD power, and chose higher power which is SCS15KHz for FDD bands and SCS30KHz for TDD bands to perform SAR testing.
8. For 5G NR test, using FTM (Factory Test Mode) to perform SAR with default 100% transmission.
9. 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 (for handheld on state, the maximum full power means reduced 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 GSM850/1900, WCDMA Band II/IV/V, LTE Band 2/4/7/25/66/38/41/42, 5G NR n2/ n7/ n66/ 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.
10. Although the headset SAR is greater than 0.8 W/kg, the headset SAR verified the worst of the non-headset SAR and less than non-headset SAR, so there is no need to be tested other channels.
11. According to Nov. 2017 TCB workshop, when the reported SAR for UL CA configuration 1g SAR is <1.2 W/kg, UL CA SAR is not required for all required test channels (PCC based).



12. LTE B2/4/66 at ant0/4 and LTE B7 at ant4, 5GNR n2/66 at ant0/4 and 5GNR n7 at ant4 support different PAs for some antennas and some LTE/NR bands support Other PA only under ENDC & UL CA. Some LTE/NR bands support different PAs for some antennas, Whether it is the maximum power of Main PA is higher than and very close to the other PA, for RF exposure, after verification all PAs in a same position, so the worst-case PA was chosen to perform full SAR testing to ensure the RF exposure is compliance and another PA verify the worst case.

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 $\leq \frac{1}{4}$ dB higher than the primary mode, SAR measurement is not required for the secondary mode.

WCDMA Note:

1. Per KDB 941225 D01v03r01, for SAR testing is measured using a 12.2 kbps RMC with TPC bits configured to all "1's".
2. Per KDB 941225 D01v03r01, RMC 12.2kbps setting is used to evaluate SAR. The maximum output power and tune-up tolerance specified for production units in HSDPA / HSUPA / DC-HSDPA / HSPA+ is $\leq \frac{1}{4}$ 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 / HSPA+ to RMC12.2Kbps and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA / HSPA+, and according to the following RF output power, the output power results of the secondary modes (HSDPA / HSUPA / DC-HSDPA / HSPA+) are less than $\frac{1}{4}$ dB higher than the primary modes; therefore, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA / HSPA+.

**LTE Note:**

1. Per KDB 941225 D05v02r05, start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.
2. Per KDB 941225 D05v02r05, 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure.
3. Per KDB 941225 D05v02r05, for QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.
4. Per KDB 941225 D05v02r05, 16QAM/64QAM output power for each RB allocation configuration is $>$ not $\frac{1}{2}$ 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 SAR testing is not required.
5. Per KDB 941225 D05v02r05, smaller bandwidth output power for each RB allocation configuration is $>$ not $\frac{1}{2}$ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, smaller bandwidth SAR testing is not required.
6. For LTE B4 / B5 / B12 / B17 / B26 / B38 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 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/n66/n78 the maximum bandwidth does not support three non-overlapping channels, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.



WLAN/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.

ECI status description:

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

Exposure Condition	ECI	Trigger Conditions
Head SAR	ECI 2	Receiver on
Body worn Mode SAR	ECI 3	Receiver off/Sensor On
Hotspot Mode SAR	ECI 7	Hotspot On
Extremity(Handheld) SAR	ECI 6	Receiver off/Sensor On
Sensor Off SAR	ECI 4	Sensor Off



15.1 Head SAR

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Gap (mm)	Antenna	Power State	Ch.	Freq. (MHz)	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	ECI2	23095	707.5	1	22.68	24.00	1.355	-	-	-0.05	0.158	0.214
	LTE Band 12	10M	QPSK	25	0	-	Right Cheek	0mm	Ant 0	ECI2	23095	707.5	1	21.64	23.00	1.368	-	-	-0.11	0.142	0.194
	LTE Band 12	10M	QPSK	1	0	-	Right Tilted	0mm	Ant 0	ECI2	23095	707.5	1	22.68	24.00	1.355	-	-	0.05	0.078	0.106
	LTE Band 12	10M	QPSK	25	0	-	Right Tilted	0mm	Ant 0	ECI2	23095	707.5	1	21.64	23.00	1.368	-	-	-0.12	0.082	0.112
	LTE Band 12	10M	QPSK	1	0	-	Left Cheek	0mm	Ant 0	ECI2	23095	707.5	1	22.68	24.00	1.355	-	-	0.13	0.135	0.183
	LTE Band 12	10M	QPSK	25	0	-	Left Cheek	0mm	Ant 0	ECI2	23095	707.5	1	21.64	23.00	1.368	-	-	-0.19	0.119	0.163
	LTE Band 12	10M	QPSK	1	0	-	Left Tilted	0mm	Ant 0	ECI2	23095	707.5	1	22.68	24.00	1.355	-	-	0.09	0.080	0.108
	LTE Band 12	10M	QPSK	25	0	-	Left Tilted	0mm	Ant 0	ECI2	23095	707.5	1	21.64	23.00	1.368	-	-	0.11	0.062	0.085
02	LTE Band 13	10M	QPSK	1	0	-	Right Cheek	0mm	Ant 0	ECI2	23230	782	1	22.73	24.00	1.340	-	-	0.03	0.193	0.259
	LTE Band 13	10M	QPSK	25	0	-	Right Cheek	0mm	Ant 0	ECI2	23230	782	1	21.72	23.00	1.343	-	-	-0.14	0.157	0.211
	LTE Band 13	10M	QPSK	1	0	-	Right Tilted	0mm	Ant 0	ECI2	23230	782	1	22.73	24.00	1.340	-	-	0.04	0.105	0.141
	LTE Band 13	10M	QPSK	25	0	-	Right Tilted	0mm	Ant 0	ECI2	23230	782	1	21.72	23.00	1.343	-	-	0.04	0.082	0.110
	LTE Band 13	10M	QPSK	1	0	-	Left Cheek	0mm	Ant 0	ECI2	23230	782	1	22.73	24.00	1.340	-	-	-0.12	0.185	0.248
	LTE Band 13	10M	QPSK	25	0	-	Left Cheek	0mm	Ant 0	ECI2	23230	782	1	21.72	23.00	1.343	-	-	0.08	0.143	0.192
	LTE Band 13	10M	QPSK	1	0	-	Left Tilted	0mm	Ant 0	ECI2	23230	782	1	22.73	24.00	1.340	-	-	0.04	0.106	0.142
	LTE Band 13	10M	QPSK	25	0	-	Left Tilted	0mm	Ant 0	ECI2	23230	782	1	21.72	23.00	1.343	-	-	0.03	0.085	0.114
835MHz																					
03	GSM850	-	-	-	-	GPRS (4 Tx slots)	Right Cheek	0mm	Ant 0	ECI2	189	836.4	1	29.32	30.50	1.312	-	-	-0.07	0.491	0.644
	GSM850	-	-	-	-	GPRS (4 Tx slots)	Right Tilted	0mm	Ant 0	ECI2	189	836.4	1	29.32	30.50	1.312	-	-	0.02	0.261	0.342
	GSM850	-	-	-	-	GPRS (4 Tx slots)	Left Cheek	0mm	Ant 0	ECI2	189	836.4	1	29.32	30.50	1.312	-	-	0.02	0.432	0.567
	GSM850	-	-	-	-	GPRS (4 Tx slots)	Left Tilted	0mm	Ant 0	ECI2	189	836.4	1	29.32	30.50	1.312	-	-	-0.14	0.236	0.310
04	WCDMA V	-	-	-	-	RMC 12.2Kbps	Right Cheek	0mm	Ant 0	ECI2	4182	836.4	1	22.93	24.00	1.279	-	-	-0.03	0.344	0.440
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Right Tilted	0mm	Ant 0	ECI2	4182	836.4	1	22.93	24.00	1.279	-	-	-0.18	0.194	0.248
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Left Cheek	0mm	Ant 0	ECI2	4182	836.4	1	22.93	24.00	1.279	-	-	0.05	0.316	0.404
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Left Tilted	0mm	Ant 0	ECI2	4182	836.4	1	22.93	24.00	1.279	-	-	0.01	0.190	0.243
05	LTE Band 26	15M	QPSK	1	0	-	Right Cheek	0mm	Ant 0	ECI2	26865	831.5	1	23.03	24.00	1.250	-	-	0.05	0.272	0.340
	LTE Band 26	15M	QPSK	36	0	-	Right Cheek	0mm	Ant 0	ECI2	26865	831.5	1	22.20	23.00	1.202	-	-	0.19	0.232	0.279
	LTE Band 26	15M	QPSK	1	0	-	Right Tilted	0mm	Ant 0	ECI2	26865	831.5	1	23.03	24.00	1.250	-	-	0.15	0.155	0.194
	LTE Band 26	15M	QPSK	36	0	-	Right Tilted	0mm	Ant 0	ECI2	26865	831.5	1	22.20	23.00	1.202	-	-	0.04	0.127	0.153
	LTE Band 26	15M	QPSK	1	0	-	Left Cheek	0mm	Ant 0	ECI2	26865	831.5	1	23.03	24.00	1.250	-	-	0.04	0.261	0.326
	LTE Band 26	15M	QPSK	36	0	-	Left Cheek	0mm	Ant 0	ECI2	26865	831.5	1	22.20	23.00	1.202	-	-	0.05	0.216	0.260
	LTE Band 26	15M	QPSK	1	0	-	Left Tilted	0mm	Ant 0	ECI2	26865	831.5	1	23.03	24.00	1.250	-	-	0.07	0.159	0.199
	LTE Band 26	15M	QPSK	36	0	-	Left Tilted	0mm	Ant 0	ECI2	26865	831.5	1	22.20	23.00	1.202	-	-	-0.16	0.130	0.156
06	LTE Band 5_UL_CA	10M	QPSK	1	0	-	Right Cheek	0mm	Ant 4	ECI2	20525	836.5	1	21.96	22.50	1.132	-	-	-0.05	0.458	0.519
	LTE Band 5_UL_CA	10M	QPSK	25	0	-	Right Cheek	0mm	Ant 4	ECI2	20525	836.5	1	21.01	21.50	1.119	-	-	0.13	0.389	0.435
	LTE Band 5_UL_CA	10M	QPSK	1	0	-	Right Tilted	0mm	Ant 4	ECI2	20525	836.5	1	21.96	22.50	1.132	-	-	-0.14	0.393	0.445
	LTE Band 5_UL_CA	10M	QPSK	25	0	-	Right Tilted	0mm	Ant 4	ECI2	20525	836.5	1	21.01	21.50	1.119	-	-	-0.18	0.326	0.365
	LTE Band 5_UL_CA	10M	QPSK	1	0	-	Left Cheek	0mm	Ant 4	ECI2	20525	836.5	1	21.96	22.50	1.132	-	-	-0.16	0.321	0.364
	LTE Band 5_UL_CA	10M	QPSK	25	0	-	Left Cheek	0mm	Ant 4	ECI2	20525	836.5	1	21.01	21.50	1.119	-	-	-0.13	0.268	0.300
	LTE Band 5_UL_CA	10M	QPSK	1	0	-	Left Tilted	0mm	Ant 4	ECI2	20525	836.5	1	21.96	22.50	1.132	-	-	0.12	0.284	0.322
	LTE Band 5_UL_CA	10M	QPSK	25	0	-	Left Tilted	0mm	Ant 4	ECI2	20525	836.5	1	21.01	21.50	1.119	-	-	0.02	0.248	0.278
	FR1 n26	20M	QPSK	1	1	DFT-SCS-15KHz	Right Cheek	0mm	Ant 0	ECI2	166300	831.5	1	22.94	24.00	1.276	-	-	-0.16	0.184	0.235
07	FR1 n26	20M	QPSK	50	28	DFT-SCS-15KHz	Right Cheek	0mm	Ant 0	ECI2	166300	831.5	1	22.89	24.00	1.291	-	-	-0.04	0.201	0.260
	FR1 n26	20M	QPSK	1	1	DFT-SCS-15KHz	Right Tilted	0mm	Ant 0	ECI2	166300	831.5	1	22.94	24.00	1.276	-	-	-0.11	0.101	0.129
	FR1 n26	20M	QPSK	50	28	DFT-SCS-15KHz	Right Tilted	0mm	Ant 0	ECI2	166300	831.5	1	22.89	24.00	1.291	-	-	0.04	0.121	0.156
	FR1 n26	20M	QPSK	1	1	DFT-SCS-15KHz	Left Cheek	0mm	Ant 0	ECI2	166300	831.5	1	22.94	24.00	1.276	-	-	-0.01	0.151	0.193
	FR1 n26	20M	QPSK	50	28	DFT-SCS-15KHz	Left Cheek	0mm	Ant 0	ECI2	166300	831.5	1	22.89	24.00	1.291	-	-	0.06	0.181	0.234
	FR1 n26	20M	QPSK	1	1	DFT-SCS-15KHz	Left Tilted	0mm	Ant 0	ECI2	166300	831.5	1	22.94	24.00	1.276	-	-	0.13	0.095	0.121
	FR1 n26	20M	QPSK	50	28	DFT-SCS-15KHz	Left Tilted	0mm	Ant 0	ECI2	166300	831.5	1	22.89	24.00	1.291	-	-	-0.16	0.110	0.142
	FR1 n5	25M	QPSK	1	1	DFT-SCS-15KHz	Right Cheek	0mm	Ant 0	ECI2	167300	836.5	1	22.92	24.00	1.282	-	-	0.02	0.179	0.230



FCC SAR Test Report

Report No. : FA352916

	FR1 n5	25M	QPSK	64	33	DFT-SCS-15KHz	Right Cheek	0mm	Ant 0	ECI2	167300	836.5	1	22.87	24.00	1.297	-	-	0.09	0.156	0.202
	FR1 n5	25M	QPSK	1	1	DFT-SCS-15KHz	Right Tilted	0mm	Ant 0	ECI2	167300	836.5	1	22.92	24.00	1.282	-	-	0.03	0.108	0.138
	FR1 n5	25M	QPSK	64	33	DFT-SCS-15KHz	Right Tilted	0mm	Ant 0	ECI2	167300	836.5	1	22.87	24.00	1.297	-	-	0.06	0.087	0.113
	FR1 n5	25M	QPSK	1	1	DFT-SCS-15KHz	Left Cheek	0mm	Ant 0	ECI2	167300	836.5	1	22.92	24.00	1.282	-	-	0.05	0.149	0.191
	FR1 n5	25M	QPSK	64	33	DFT-SCS-15KHz	Left Cheek	0mm	Ant 0	ECI2	167300	836.5	1	22.87	24.00	1.297	-	-	-0.07	0.125	0.162
	FR1 n5	25M	QPSK	1	1	DFT-SCS-15KHz	Left Tilted	0mm	Ant 0	ECI2	167300	836.5	1	22.92	24.00	1.282	-	-	0.11	0.091	0.117
	FR1 n5	25M	QPSK	64	33	DFT-SCS-15KHz	Left Tilted	0mm	Ant 0	ECI2	167300	836.5	1	22.87	24.00	1.297	-	-	0.06	0.080	0.104
	FR1 n5_ENDC	25M	QPSK	1	1	DFT-SCS-15KHz	Right Cheek	0mm	Ant 4	ECI2	167300	836.5	1	23.14	24.00	1.219	-	-	0.03	0.381	0.464
08	FR1 n5_ENDC	25M	QPSK	64	33	DFT-SCS-15KHz	Right Cheek	0mm	Ant 4	ECI2	167300	836.5	1	23.08	24.00	1.236	-	-	-0.14	0.398	0.492
	FR1 n5_ENDC	25M	QPSK	1	1	DFT-SCS-15KHz	Right Tilted	0mm	Ant 4	ECI2	167300	836.5	1	23.14	24.00	1.219	-	-	0.03	0.318	0.388
	FR1 n5_ENDC	25M	QPSK	64	33	DFT-SCS-15KHz	Right Tilted	0mm	Ant 4	ECI2	167300	836.5	1	23.08	24.00	1.236	-	-	0.07	0.368	0.455
	FR1 n5_ENDC	25M	QPSK	1	1	DFT-SCS-15KHz	Left Cheek	0mm	Ant 4	ECI2	167300	836.5	1	23.14	24.00	1.219	-	-	-0.08	0.261	0.318
	FR1 n5_ENDC	25M	QPSK	64	33	DFT-SCS-15KHz	Left Cheek	0mm	Ant 4	ECI2	167300	836.5	1	23.08	24.00	1.236	-	-	-0.17	0.287	0.355
	FR1 n5_ENDC	25M	QPSK	1	1	DFT-SCS-15KHz	Left Tilted	0mm	Ant 4	ECI2	167300	836.5	1	23.14	24.00	1.219	-	-	-0.18	0.224	0.273
	FR1 n5_ENDC	25M	QPSK	64	33	DFT-SCS-15KHz	Left Tilted	0mm	Ant 4	ECI2	167300	836.5	1	23.08	24.00	1.236	-	-	0.09	0.270	0.334
1750MHz																					
09	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Right Cheek	0mm	Ant 0	ECI2	1413	1732.6	1	22.77	24.00	1.327	-	-	0.04	0.128	0.170
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Right Tilted	0mm	Ant 0	ECI2	1413	1732.6	1	22.77	24.00	1.327	-	-	-0.04	0.079	0.105
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Left Cheek	0mm	Ant 0	ECI2	1413	1732.6	1	22.77	24.00	1.327	-	-	-0.04	0.108	0.143
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Left Tilted	0mm	Ant 0	ECI2	1413	1732.6	1	22.77	24.00	1.327	-	-	0.07	0.075	0.100
	LTE Band 66_Main PA	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 0	ECI2	132322	1745	1	22.99	24.00	1.262	-	-	0.02	0.142	0.179
	LTE Band 66C	20M	QPSK	1	99	-	Right Cheek	0mm	Ant 0	ECI2	132322+132520	1745+1764.8	1	22.85	24.00	1.303	-	-	0.01	0.123	0.160
	LTE Band 66_Main PA	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 0	ECI2	132322	1745	1	22.11	23.00	1.227	-	-	0.07	0.107	0.131
	LTE Band 66_Main PA	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 0	ECI2	132322	1745	1	22.99	24.00	1.262	-	-	0.01	0.081	0.102
	LTE Band 66_Main PA	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 0	ECI2	132322	1745	1	22.11	23.00	1.227	-	-	-0.02	0.066	0.081
	LTE Band 66_Main PA	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 0	ECI2	132322	1745	1	22.99	24.00	1.262	-	-	-0.13	0.113	0.143
	LTE Band 66_Main PA	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 0	ECI2	132322	1745	1	22.11	23.00	1.227	-	-	0.05	0.090	0.110
	LTE Band 66_Main PA	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 0	ECI2	132322	1745	1	22.99	24.00	1.262	-	-	0.14	0.077	0.097
	LTE Band 66_Main PA	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 0	ECI2	132322	1745	1	22.11	23.00	1.227	-	-	-0.05	0.061	0.075
	LTE Band 66_Other PA_NSA	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 0	ECI2	132322	1745	1	21.92	23.00	1.282	-	-	0.06	0.044	0.056
	LTE Band 66_Other PA_NSA	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 4	ECI2	132322	1745	1	18.85	20.00	1.303	-	-	0.02	0.536	0.698
	LTE Band 66_Other PA_NSA	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 4	ECI2	132322	1745	1	18.78	20.00	1.324	-	-	0.05	0.439	0.581
	LTE Band 66_Other PA_NSA	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 4	ECI2	132322	1745	1	18.85	20.00	1.303	-	-	0.05	0.664	0.865
	LTE Band 66_Other PA_NSA	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 4	ECI2	132072	1720	1	18.78	20.00	1.324	-	-	0.07	0.658	0.871
10	LTE Band 66_Other PA_NSA	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 4	ECI2	132572	1770	1	18.81	20.00	1.315	-	-	0.05	0.745	0.980
	LTE Band 66C	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 4	ECI2	132572+132374	1770+1750.2	1	19.74	20.50	1.191	-	-	0.02	0.699	0.833
	LTE Band 66_Other PA_NSA	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 4	ECI2	132322	1745	1	18.78	20.00	1.324	-	-	0.05	0.617	0.817
	LTE Band 66_Other PA_NSA	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 4	ECI2	132072	1720	1	18.68	20.00	1.355	-	-	0.05	0.575	0.779
	LTE Band 66_Other PA_NSA	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 4	ECI2	132572	1770	1	18.72	20.00	1.343	-	-	0.05	0.582	0.781
	LTE Band 66_Other PA_NSA	20M	QPSK	100	0	-	Right Tilted	0mm	Ant 4	ECI2	132322	1745	1	18.84	20.00	1.306	-	-	0.08	0.563	0.735
	LTE Band 66_Other PA_NSA	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 4	ECI2	132322	1745	1	18.85	20.00	1.303	-	-	-0.07	0.367	0.478
	LTE Band 66_Other PA_NSA	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 4	ECI2	132322	1745	1	18.78	20.00	1.324	-	-	0.05	0.296	0.392
	LTE Band 66_Other PA_NSA	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 4	ECI2	132322	1745	1	18.85	20.00	1.303	-	-	0.04	0.407	0.530
	LTE Band 66_Other PA_NSA	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 4	ECI2	132322	1745	1	18.78	20.00	1.324	-	-	0.04	0.339	0.449
	LTE Band 66_Main PA	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 4	ECI2	132572	1770	1	19.99	20.50	1.125	-	-	-0.01	0.791	0.890
	FR1 n66_Main PA	45M	QPSK	1	120	DFT-SCS-15KHz	Right Cheek	0mm	Ant 0	ECI2	349000	1745	1	22.77	24.00	1.327	-	-	0.03	0.098	0.130
	FR1 n66_Main PA	45M	QPSK	120	60	DFT-SCS-15KHz	Right Cheek	0mm	Ant 0	ECI2	349000	1745	1	22.84	24.00	1.306	-	-	-0.15	0.070	0.091
	FR1 n66_Main PA	45M	QPSK	1	120	DFT-SCS-15KHz	Right Tilted	0mm	Ant 0	ECI2	349000	1745	1	22.77	24.00	1.327	-	-	0.07	0.050	0.066
	FR1 n66_Main PA	45M	QPSK	120	60	DFT-SCS-15KHz	Right Tilted	0mm	Ant 0	ECI2	349000	1745	1	22.84	24.00	1.306	-	-	0.08	0.044	0.057
	FR1 n66_Main PA	45M	QPSK	1	120	DFT-SCS-15KHz	Left Cheek	0mm	Ant 0	ECI2	349000	1745	1	22.77	24.00	1.327	-	-	0.03	0.081	0.108
	FR1 n66_Main PA	45M	QPSK	120	60	DFT-SCS-15KHz	Left Cheek	0mm	Ant 0	ECI2	349000	1745	1	22.84	24.00	1.306	-	-	0.01	0.072	0.094
	FR1 n66_Main PA	45M	QPSK	1	120	DFT-SCS-15KHz	Left Tilted	0mm	Ant 0	ECI2	349000	1745	1	22.77	24.00	1.327	-	-	0.08	0.045	0.060
	FR1 n66_Main PA	45M	QPSK	120	60	DFT-SCS-15KHz	Left Tilted	0mm	Ant 0	ECI2	349000	1745	1	22.84	24.00	1.306	-	-	-0.05	0.033	0.043
	FR1 n66_Other PA_NSA	45M	QPSK	1	120	DFT-SCS-15KHz	Right Cheek	0mm	Ant 0	ECI2	349000	1745	1	21.88	23.00	1.294	-	-	0.09	0.095	0.123
	FR1 n66_Other PA_NSA	45M	QPSK	1	120	DFT-SCS-15KHz	Right Cheek	0mm	Ant 4	ECI2	349000	1745	1	20.67	22.00	1.358	-	-	0.02	0.696	0.945
	FR1 n66_Other PA_NSA	45M	QPSK	120	60	DFT-SCS-15KHz	Right Cheek	0mm	Ant 4	ECI2	349000	1745	1	20.63	22.00	1.371	-	-	-0.02	0.704	0.965



FCC SAR Test Report

Report No. : FA352916

	FR1 n66_Other PA_NSA	45M	QPSK	240	0	DFT-SCS-15KHz	Right Cheek	0mm	Ant 4	ECI2	349000	1745	1	20.61	22.00	1.377	-	-	-0.02	0.684	0.942
	FR1 n66_Other PA_NSA	45M	QPSK	1	120	DFT-SCS-15KHz	Right Tilted	0mm	Ant 4	ECI2	349000	1745	1	20.67	22.00	1.358	-	-	0.04	0.726	0.986
11	FR1 n66_Other PA_NSA	45M	QPSK	120	60	DFT-SCS-15KHz	Right Tilted	0mm	Ant 4	ECI2	349000	1745	1	20.63	22.00	1.371	-	-	0.01	0.745	1.021
	FR1 n66_Other PA_NSA	45M	QPSK	240	0	DFT-SCS-15KHz	Right Tilted	0mm	Ant 4	ECI2	349000	1745	1	20.61	22.00	1.377	-	-	0.01	0.667	0.919
	FR1 n66_Other PA_NSA	45M	QPSK	1	120	DFT-SCS-15KHz	Left Cheek	0mm	Ant 4	ECI2	349000	1745	1	20.67	22.00	1.358	-	-	0.01	0.493	0.670
	FR1 n66_Other PA_NSA	45M	QPSK	120	60	DFT-SCS-15KHz	Left Cheek	0mm	Ant 4	ECI2	349000	1745	1	20.63	22.00	1.371	-	-	0.07	0.503	0.690
	FR1 n66_Other PA_NSA	45M	QPSK	1	120	DFT-SCS-15KHz	Left Tilted	0mm	Ant 4	ECI2	349000	1745	1	20.67	22.00	1.358	-	-	0.08	0.556	0.755
	FR1 n66_Other PA_NSA	45M	QPSK	120	60	DFT-SCS-15KHz	Left Tilted	0mm	Ant 4	ECI2	349000	1745	1	20.63	22.00	1.371	-	-	0.05	0.581	0.796
	FR1 n66_Main PA	45M	QPSK	120	60	DFT-SCS-15KHz	Right Tilted	0mm	Ant 4	ECI2	349000	1745	1	20.69	21.50	1.205	-	-	0.01	0.731	0.881
1900MHz																					
	GSM1900	-	-	-	-	GPRS (4 Tx slots)	Right Cheek	0mm	Ant 0	ECI2	661	1880	1	25.33	26.50	1.309	-	-	0.03	0.043	0.056
	GSM1900	-	-	-	-	GPRS (4 Tx slots)	Right Tilted	0mm	Ant 0	ECI2	661	1880	1	25.33	26.50	1.309	-	-	0.07	0.001	0.001
12	GSM1900	-	-	-	-	GPRS (4 Tx slots)	Left Cheek	0mm	Ant 0	ECI2	661	1880	1	25.33	26.50	1.309	-	-	-0.01	0.059	0.077
	GSM1900	-	-	-	-	GPRS (4 Tx slots)	Left Tilted	0mm	Ant 0	ECI2	661	1880	1	25.33	26.50	1.309	-	-	-0.09	0.001	0.001
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Right Cheek	0mm	Ant 0	ECI2	9400	1880	1	22.65	24.00	1.365	-	-	-0.01	0.060	0.082
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Right Tilted	0mm	Ant 0	ECI2	9400	1880	1	22.65	24.00	1.365	-	-	0.07	0.044	0.060
13	WCDMA II	-	-	-	-	RMC 12.2Kbps	Left Cheek	0mm	Ant 0	ECI2	9400	1880	1	22.65	24.00	1.365	-	-	-0.07	0.100	0.136
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Left Tilted	0mm	Ant 0	ECI2	9400	1880	1	22.65	24.00	1.365	-	-	0.12	0.043	0.059
	LTE Band 2_Main PA	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 0	ECI2	18900	1880	1	22.66	24.00	1.361	-	-	0.08	0.058	0.079
	LTE Band 2_Main PA	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 0	ECI2	18900	1880	1	21.65	23.00	1.365	-	-	0.02	0.046	0.063
	LTE Band 2_Main PA	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 0	ECI2	18900	1880	1	22.66	24.00	1.361	-	-	0.17	0.048	0.065
	LTE Band 2_Main PA	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 0	ECI2	18900	1880	1	21.65	23.00	1.365	-	-	0.14	0.001	0.001
	LTE Band 2_Main PA	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 0	ECI2	18900	1880	1	22.66	24.00	1.361	-	-	0.06	0.095	0.129
	LTE Band 2_Main PA	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 0	ECI2	18900	1880	1	21.65	23.00	1.365	-	-	-0.05	0.076	0.104
	LTE Band 2_Main PA	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 0	ECI2	18900	1880	1	22.66	24.00	1.361	-	-	-0.12	0.047	0.064
	LTE Band 2_Main PA	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 0	ECI2	18900	1880	1	21.65	23.00	1.365	-	-	0.09	0.001	0.001
	LTE Band 2_Other PA_NSA	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 0	ECI2	18900	1880	1	21.98	23.00	1.265	-	-	0.08	0.042	0.053
	LTE Band 2_Main PA	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 4	ECI2	18900	1880	1	16.67	18.00	1.358	-	-	0.04	0.617	0.838
	LTE Band 2_Main PA	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 4	ECI2	18700	1860	1	16.64	18.00	1.368	-	-	-0.05	0.557	0.762
	LTE Band 2_Main PA	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 4	ECI2	19100	1900	1	16.58	18.00	1.387	-	-	0.02	0.793	1.100
	LTE Band 2_Main PA	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 4	ECI2	18900	1880	1	16.64	18.00	1.368	-	-	0.07	0.592	0.810
	LTE Band 2_Main PA	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 4	ECI2	18700	1860	1	16.62	18.00	1.374	-	-	-0.05	0.553	0.760
	LTE Band 2_Main PA	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 4	ECI2	19100	1900	1	16.60	18.00	1.380	-	-	0.04	0.627	0.866
	LTE Band 2_Main PA	20M	QPSK	100	0	-	Right Cheek	0mm	Ant 4	ECI2	18900	1880	1	16.61	18.00	1.377	-	-	0.05	0.557	0.767
	LTE Band 2_Main PA	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 4	ECI2	18900	1880	1	16.67	18.00	1.358	-	-	-0.03	0.813	1.104
	LTE Band 2_Main PA	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 4	ECI2	18700	1860	1	16.64	18.00	1.368	-	-	0.05	0.733	1.003
14	LTE Band 2_Main PA	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 4	ECI2	19100	1900	1	16.58	18.00	1.387	-	-	0.05	0.838	1.162
	LTE Band 2	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 4	ECI2	19100	1900	2	16.58	18.00	1.387	-	-	0.02	0.503	0.698
	LTE Band 2	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 4	ECI2	19100	1900	3	16.58	18.00	1.387	-	-	-0.01	0.613	0.850
	LTE Band 2_Main PA	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 4	ECI2	18900	1880	1	16.64	18.00	1.368	-	-	-0.02	0.708	0.968
	LTE Band 2_Main PA	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 4	ECI2	18700	1860	1	16.62	18.00	1.374	-	-	0.04	0.597	0.820
	LTE Band 2_Main PA	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 4	ECI2	19100	1900	1	16.60	18.00	1.380	-	-	0.07	0.828	1.143
	LTE Band 2_Main PA	20M	QPSK	100	0	-	Right Tilted	0mm	Ant 4	ECI2	18900	1880	1	16.61	18.00	1.377	-	-	-0.04	0.728	1.003
	LTE Band 2_Main PA	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 4	ECI2	18900	1880	1	16.67	18.00	1.358	-	-	0.01	0.382	0.519
	LTE Band 2_Main PA	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 4	ECI2	18900	1880	1	16.64	18.00	1.368	-	-	0.08	0.332	0.454
	LTE Band 2_Main PA	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 4	ECI2	18900	1880	1	16.67	18.00	1.358	-	-	0.07	0.422	0.573
	LTE Band 2_Main PA	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 4	ECI2	18900	1880	1	16.64	18.00	1.368	-	-	0.05	0.359	0.491
	LTE Band 2_Other PA_NSA	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 4	ECI2	19100	1900	1	20.09	21.00	1.233	-	-	0.09	0.719	0.887
	LTE Band 25	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 0	ECI2	26340	1880	1	22.81	24.00	1.315	-	-	0.16	0.070	0.092
	LTE Band 25	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 0	ECI2	26340	1880	1	21.79	23.00	1.321	-	-	0.02	0.055	0.073
	LTE Band 25	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 0	ECI2	26340	1880	1	22.81	24.00	1.315	-	-	0.05	0.049	0.064
	LTE Band 25	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 0	ECI2	26340	1880	1	21.79	23.00	1.321	-	-	-0.1	0.001	0.001
15	LTE Band 25	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 0	ECI2	26340	1880	1	22.81	24.00	1.315	-	-	0.03	0.111	0.146
	LTE Band 25	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 0	ECI2	26340	1880	1	21.79	23.00	1.321	-	-	0.02	0.092	0.122
	LTE Band 25	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 0	ECI2	26340	1880	1	22.81	24.00	1.315	-	-	-0.07	0.054	0.071
	LTE Band 25	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 0	ECI2	26340	1880	1	21.79	23.00	1.321	-	-	0.06	0.001	0.001



FCC SAR Test Report

Report No. : FA352916

	FR1 n2_Main PA	30M	QPSK	1	1	DFT-SCS-15KHz	Right Cheek	0mm	Ant 0	ECI2	376000	1880	1	22.32	24.00	1.472	-	-	-0.11	0.001	0.001
	FR1 n2_Main PA	30M	QPSK	80	40	DFT-SCS-15KHz	Right Cheek	0mm	Ant 0	ECI2	376000	1880	1	22.29	24.00	1.483	-	-	-0.06	0.001	0.001
	FR1 n2_Main PA	30M	QPSK	1	1	DFT-SCS-15KHz	Right Tilted	0mm	Ant 0	ECI2	376000	1880	1	22.32	24.00	1.472	-	-	-0.16	0.001	0.001
	FR1 n2_Main PA	30M	QPSK	80	40	DFT-SCS-15KHz	Right Tilted	0mm	Ant 0	ECI2	376000	1880	1	22.29	24.00	1.483	-	-	-0.12	0.001	0.001
	FR1 n2_Main PA	30M	QPSK	1	1	DFT-SCS-15KHz	Left Cheek	0mm	Ant 0	ECI2	376000	1880	1	22.32	24.00	1.472	-	-	0.02	0.057	0.084
	FR1 n2_Main PA	30M	QPSK	80	40	DFT-SCS-15KHz	Left Cheek	0mm	Ant 0	ECI2	376000	1880	1	22.29	24.00	1.483	-	-	-0.02	0.063	0.093
	FR1 n2_Main PA	30M	QPSK	1	1	DFT-SCS-15KHz	Left Tilted	0mm	Ant 0	ECI2	376000	1880	1	22.32	24.00	1.472	-	-	0.12	0.001	0.001
	FR1 n2_Main PA	30M	QPSK	80	40	DFT-SCS-15KHz	Left Tilted	0mm	Ant 0	ECI2	376000	1880	1	22.29	24.00	1.483	-	-	0.09	0.001	0.001
	FR1 n2_Other PA_NSA	30M	QPSK	80	40	DFT-SCS-15KHz	Left Cheek	0mm	Ant 0	ECI2	376000	1880	1	21.56	23.00	1.393	-	-	0.01	0.042	0.059
	FR1 n2_Main PA	30M	QPSK	1	1	DFT-SCS-15KHz	Right Cheek	0mm	Ant 4	ECI2	376000	1880	1	17.34	19.00	1.466	-	-	0.01	0.503	0.737
	FR1 n2_Main PA	30M	QPSK	80	40	DFT-SCS-15KHz	Right Cheek	0mm	Ant 4	ECI2	376000	1880	1	17.32	19.00	1.472	-	-	0.06	0.591	0.870
	FR1 n2_Main PA	30M	QPSK	160	0	DFT-SCS-15KHz	Right Cheek	0mm	Ant 4	ECI2	376000	1880	1	17.28	19.00	1.486	-	-	0.06	0.558	0.829
	FR1 n2_Main PA	30M	QPSK	1	1	DFT-SCS-15KHz	Right Tilted	0mm	Ant 4	ECI2	376000	1880	1	17.34	19.00	1.466	-	-	0.03	0.533	0.781
16	FR1 n2_Main PA	30M	QPSK	80	40	DFT-SCS-15KHz	Right Tilted	0mm	Ant 4	ECI2	376000	1880	1	17.32	19.00	1.472	-	-	-0.02	0.622	0.916
	FR1 n2_Main PA	30M	QPSK	160	0	DFT-SCS-15KHz	Right Tilted	0mm	Ant 4	ECI2	376000	1880	1	17.28	19.00	1.486	-	-	-0.02	0.598	0.889
	FR1 n2_Main PA	30M	QPSK	1	1	DFT-SCS-15KHz	Left Cheek	0mm	Ant 4	ECI2	376000	1880	1	17.34	19.00	1.466	-	-	0.03	0.332	0.487
	FR1 n2_Main PA	30M	QPSK	80	40	DFT-SCS-15KHz	Left Cheek	0mm	Ant 4	ECI2	376000	1880	1	17.32	19.00	1.472	-	-	0.01	0.358	0.527
	FR1 n2_Main PA	30M	QPSK	1	1	DFT-SCS-15KHz	Left Tilted	0mm	Ant 4	ECI2	376000	1880	1	17.34	19.00	1.466	-	-	-0.02	0.396	0.580
	FR1 n2_Main PA	30M	QPSK	80	40	DFT-SCS-15KHz	Left Tilted	0mm	Ant 4	ECI2	376000	1880	1	17.32	19.00	1.472	-	-	0.04	0.425	0.626
	FR1 n2_Other PA_NSA	30M	QPSK	80	40	DFT-SCS-15KHz	Right Tilted	0mm	Ant 4	ECI2	376000	1880	1	21.38	22.00	1.153	-	-	0.17	0.752	0.867
2600MHz																					
	LTE Band 7	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 1	ECI2	21100	2535	1	23.04	24.00	1.247	-	-	-0.05	0.244	0.304
	LTE Band 7	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 1	ECI2	21100	2535	1	22.01	23.00	1.256	-	-	-0.17	0.207	0.260
	LTE Band 7	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 1	ECI2	21100	2535	1	23.04	24.00	1.247	-	-	-0.05	0.202	0.252
	LTE Band 7	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 1	ECI2	21100	2535	1	22.01	23.00	1.256	-	-	0.03	0.162	0.203
	LTE Band 7	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 1	ECI2	21100	2535	1	23.04	24.00	1.247	-	-	0.06	0.412	0.514
	LTE Band 7C	20M	QPSK	1	99	-	Left Cheek	0mm	Ant 1	ECI2	21100+21298	2535+2554.8	1	22.81	24.00	1.315	-	-	0.03	0.386	0.508
	LTE Band 7	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 1	ECI2	21100	2535	1	22.01	23.00	1.256	-	-	0.03	0.338	0.425
	LTE Band 7	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 1	ECI2	21100	2535	1	23.04	24.00	1.247	-	-	0.04	0.135	0.168
	LTE Band 7	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 1	ECI2	21100	2535	1	22.01	23.00	1.256	-	-	0.02	0.111	0.139
	LTE Band 7_Other PA_UL_CA	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 4	ECI2	21100	2535	1	13.47	14.50	1.268	-	-	-0.13	0.605	0.767
	LTE Band 7_Other PA_UL_CA	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 4	ECI2	21100	2535	1	13.45	14.50	1.274	-	-	-0.17	0.508	0.647
	LTE Band 7_Other PA_UL_CA	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 4	ECI2	21100	2535	1	13.47	14.50	1.268	-	-	-0.17	0.711	0.901
	LTE Band 7_Other PA_UL_CA	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 4	ECI2	20850	2510	1	13.37	14.50	1.297	-	-	0.04	0.505	0.655
17	LTE Band 7_Other PA_UL_CA	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 4	ECI2	21350	2560	1	13.43	14.50	1.279	-	-	0.11	0.730	0.934
	LTE Band 7_Other PA_UL_CA	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 4	ECI2	21100	2535	1	13.45	14.50	1.274	-	-	-0.16	0.584	0.744
	LTE Band 7_Other PA_UL_CA	20M	QPSK	100	0	-	Right Tilted	0mm	Ant 4	ECI2	21100	2535	1	13.37	14.50	1.297	-	-	0.02	0.586	0.760
	LTE Band 7_Other PA_UL_CA	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 4	ECI2	21100	2535	1	13.47	14.50	1.268	-	-	0.05	0.264	0.335
	LTE Band 7_Other PA_UL_CA	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 4	ECI2	21100	2535	1	13.45	14.50	1.274	-	-	-0.18	0.216	0.275
	LTE Band 7_Other PA_UL_CA	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 4	ECI2	21100	2535	1	13.47	14.50	1.268	-	-	0.07	0.339	0.430
	LTE Band 7_Other PA_UL_CA	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 4	ECI2	21100	2535	1	13.45	14.50	1.274	-	-	0.09	0.278	0.354
	LTE Band 41	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 1	ECI2	40620	2593	1	22.97	24.00	1.268	62.9	1.006	-0.15	0.228	0.291
	LTE Band 41	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 1	ECI2	40620	2593	1	21.93	23.00	1.279	62.9	1.006	0.17	0.182	0.234
	LTE Band 41	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 1	ECI2	40620	2593	1	22.97	24.00	1.268	62.9	1.006	0.1	0.170	0.217
	LTE Band 41	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 1	ECI2	40620	2593	1	21.93	23.00	1.279	62.9	1.006	-0.17	0.133	0.171
18	LTE Band 41	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 1	ECI2	40620	2593	1	22.97	24.00	1.268	62.9	1.006	0.03	0.370	0.472
	LTE Band 41C	20M	QPSK	1	99	-	Left Cheek	0mm	Ant 1	ECI2	40620+40818	2593+2612.8	1	22.64	24.00	1.368	62.9	1.006	-0.01	0.296	0.407
	LTE Band 41	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 1	ECI2	40620	2593	1	21.93	23.00	1.279	62.9	1.006	0.06	0.293	0.377
	LTE Band 41	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 1	ECI2	40620	2593	1	22.97	24.00	1.268	62.9	1.006	0.02	0.115	0.147
	LTE Band 41	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 1	ECI2	40620	2593	1	21.93	23.00	1.279	62.9	1.006	0.06	0.093	0.120
	FR1 n7	50M	QPSK	1	1	DFT-SCS-15KHz	Right Cheek	0mm	Ant 1	ECI2	507000	2535	1	22.98	24.00	1.265	-	-	-0.02	0.155	0.196
	FR1 n7	50M	QPSK	135	68	DFT-SCS-15KHz	Right Cheek	0mm	Ant 1	ECI2	507000	2535	1	22.93	24.00	1.279	-	-	-0.14	0.232	0.297
	FR1 n7	50M	QPSK	1	1	DFT-SCS-15KHz	Right Tilted	0mm	Ant 1	ECI2	507000	2535	1	22.98	24.00	1.265	-	-	0.07	0.152	0.192
	FR1 n7	50M	QPSK	135	68	DFT-SCS-15KHz	Right Tilted	0mm	Ant 1	ECI2	507000	2535	1	22.93	24.00	1.279	-	-	0.16	0.213	0.273
	FR1 n7	50M	QPSK	1	1	DFT-SCS-15KHz	Left Cheek	0mm	Ant 1	ECI2	507000	2535	1	22.98	24.00	1.265	-	-	0.08	0.283	0.358
	FR1 n7	50M	QPSK	135	68	DFT-SCS-15KHz	Left Cheek	0mm	Ant 1	ECI2	507000	2535	1	22.93	24.00	1.279	-	-	0.01	0.401	0.513



FCC SAR Test Report

Report No. : FA352916

Table with columns for device model, frequency, modulation, power, distance, antenna, and SAR values. Includes a 3500MHz section and multiple rows for FR1 n7 and FR1 n78.



FCC SAR Test Report

Report No. : FA352916

	FR1 n78	100M	QPSK	1	137	DFT-SCS-30KHz	Left Tilted	0mm	Ant 5	ECI2	633334	3500.01	1	15.37	17.00	1.455	-	-	0.13	0.626	0.911
21	FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Left Tilted	0mm	Ant 5	ECI2	633334	3500.01	1	15.31	17.00	1.476	-	-	-0.01	0.732	1.080
	FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Left Tilted	0mm	Ant 5	ECI2	633334	3500.01	2	15.31	17.00	1.476	-	-	0.01	0.664	0.980
	FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Left Tilted	0mm	Ant 5	ECI2	633334	3500.01	3	15.31	17.00	1.476	-	-	0.04	0.607	0.896
	FR1 n78	100M	QPSK	270	0	DFT-SCS-30KHz	Left Tilted	0mm	Ant 5	ECI2	633334	3500.01	1	15.28	17.00	1.486	-	-	0.05	0.543	0.807
	FR1 n78	100M	QPSK	1	137	DFT-SCS-30KHz	Right Cheek	0mm	Ant 7	ECI2	633334	3500.01	1	18.37	19.00	1.156	-	-	0.09	0.242	0.280
	FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Right Cheek	0mm	Ant 7	ECI2	633334	3500.01	1	18.33	19.00	1.167	-	-	0.06	0.291	0.340
	FR1 n78	100M	QPSK	1	137	DFT-SCS-30KHz	Right Tilted	0mm	Ant 7	ECI2	633334	3500.01	1	18.37	19.00	1.156	-	-	0.02	0.185	0.214
	FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Right Tilted	0mm	Ant 7	ECI2	633334	3500.01	1	18.33	19.00	1.167	-	-	0.06	0.218	0.254
	FR1 n78	100M	QPSK	1	137	DFT-SCS-30KHz	Left Cheek	0mm	Ant 7	ECI2	633334	3500.01	1	18.37	19.00	1.156	-	-	0.08	0.735	0.850
	FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Left Cheek	0mm	Ant 7	ECI2	633334	3500.01	1	18.33	19.00	1.167	-	-	-0.01	0.886	1.034
	FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Left Cheek	0mm	Ant 7	ECI2	633334	3500.01	2	18.33	19.00	1.167	-	-	-0.02	0.791	0.923
	FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Left Cheek	0mm	Ant 7	ECI2	633334	3500.01	3	18.33	19.00	1.167	-	-	0.05	0.814	0.950
	FR1 n78	100M	QPSK	270	0	DFT-SCS-30KHz	Left Cheek	0mm	Ant 7	ECI2	633334	3500.01	1	18.30	19.00	1.175	-	-	0.12	0.863	1.014
	FR1 n78	100M	QPSK	1	137	DFT-SCS-30KHz	Left Tilted	0mm	Ant 7	ECI2	633334	3500.01	1	18.37	19.00	1.156	-	-	-0.08	0.400	0.462
	FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Left Tilted	0mm	Ant 7	ECI2	633334	3500.01	1	18.33	19.00	1.167	-	-	0.09	0.448	0.523



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 6	standalone	11	2462	1	17.26	17.50	1.057	100	1.000	0.05	0.208	0.220
	WLAN2.4GHz	802.11b 1Mbps	Right Tilted	0mm	Ant 6	standalone	11	2462	1	17.26	17.50	1.057	100	1.000	-0.02	0.260	0.275
	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	Ant 6	standalone	11	2462	1	17.26	17.50	1.057	100	1.000	0.05	0.653	0.690
	WLAN2.4GHz	802.11b 1Mbps	Left Tilted	0mm	Ant 6	standalone	11	2462	1	17.26	17.50	1.057	100	1.000	0.01	0.782	0.826
22	WLAN2.4GHz	802.11b 1Mbps	Left Tilted	0mm	Ant 6	standalone	6	2437	1	16.94	17.50	1.138	100	1.000	0.02	0.813	0.925
	WLAN2.4GHz	802.11b 1Mbps	Right Cheek	0mm	Ant 6	Simultaneous	6	2437	1	11.69	13.00	1.352	100	1.000	0.01	0.070	0.095
	WLAN2.4GHz	802.11b 1Mbps	Right Tilted	0mm	Ant 6	Simultaneous	6	2437	1	11.69	13.00	1.352	100	1.000	-0.03	0.088	0.119
	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	0mm	Ant 6	Simultaneous	6	2437	1	11.69	13.00	1.352	100	1.000	0.02	0.221	0.299
	WLAN2.4GHz	802.11b 1Mbps	Left Tilted	0mm	Ant 6	Simultaneous	6	2437	1	11.69	13.00	1.352	100	1.000	0.07	0.275	0.372
	Bluetooth	1Mbps	Right Cheek	0mm	Ant 6	Full Power	0	2402	1	14.67	15.50	1.211	76.73	1.086	0.01	0.094	0.124
	Bluetooth	1Mbps	Right Tilted	0mm	Ant 6	Full Power	0	2402	1	14.67	15.50	1.211	76.73	1.086	-0.04	0.120	0.158
	Bluetooth	1Mbps	Left Cheek	0mm	Ant 6	Full Power	0	2402	1	14.67	15.50	1.211	76.73	1.086	0.05	0.299	0.393
23	Bluetooth	1Mbps	Left Tilted	0mm	Ant 6	Full Power	0	2402	1	14.67	15.50	1.211	76.73	1.086	-0.13	0.360	0.473
5000MHz																	
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 6	standalone	58	5290	1	14.27	16.00	1.489	100	1.000	0.05	0.631	0.940
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Right Tilted	0mm	Ant 6	standalone	58	5290	1	14.27	16.00	1.489	100	1.000	0.01	0.689	1.026
24	WLAN5.3GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 6	standalone	58	5290	1	14.27	16.00	1.489	100	1.000	-0.08	0.752	1.120
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Left Tilted	0mm	Ant 6	standalone	58	5290	1	14.27	16.00	1.489	100	1.000	0.07	0.657	0.979
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 6	Simultaneous	58	5290	1	11.22	13.00	1.507	100	1.000	0.02	0.225	0.339
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Right Tilted	0mm	Ant 6	Simultaneous	58	5290	1	11.22	13.00	1.507	100	1.000	0.03	0.246	0.371
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 6	Simultaneous	58	5290	1	11.22	13.00	1.507	100	1.000	0.05	0.268	0.404
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Left Tilted	0mm	Ant 6	Simultaneous	58	5290	1	11.22	13.00	1.507	100	1.000	0.01	0.234	0.353
	WLAN5.5GHz	802.11n-HT40 MCS0	Right Cheek	0mm	Ant 6	standalone	142	5710	1	15.43	17.00	1.435	100	1.000	0.06	0.514	0.738
	WLAN5.5GHz	802.11n-HT40 MCS0	Right Tilted	0mm	Ant 6	standalone	142	5710	1	15.43	17.00	1.435	100	1.000	-0.01	0.583	0.837
	WLAN5.5GHz	802.11n-HT40 MCS0	Right Tilted	0mm	Ant 6	standalone	110	5550	1	15.37	17.00	1.455	100	1.000	0.04	0.392	0.571
25	WLAN5.5GHz	802.11n-HT40 MCS0	Left Cheek	0mm	Ant 6	standalone	142	5710	1	15.43	17.00	1.435	100	1.000	-0.07	0.699	1.003
	WLAN5.5GHz	802.11n-HT40 MCS0	Left Cheek	0mm	Ant 6	standalone	110	5550	1	15.37	17.00	1.455	100	1.000	-0.01	0.438	0.637
	WLAN5.5GHz	802.11n-HT40 MCS0	Left Tilted	0mm	Ant 6	standalone	142	5710	1	15.43	17.00	1.435	100	1.000	0.02	0.456	0.655
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 6	Simultaneous	122	5610	1	12.27	13.50	1.327	100	1.000	0.03	0.208	0.276
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Right Tilted	0mm	Ant 6	Simultaneous	122	5610	1	12.27	13.50	1.327	100	1.000	0.01	0.236	0.313
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 6	Simultaneous	122	5610	1	12.27	13.50	1.327	100	1.000	0.04	0.283	0.376
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Left Tilted	0mm	Ant 6	Simultaneous	122	5610	1	12.27	13.50	1.327	100	1.000	0.02	0.185	0.246
	WLAN5.8GHz	802.11a 6Mbps	Right Cheek	0mm	Ant 6	standalone	149	5745	1	17.59	19.00	1.384	100	1.000	-0.01	0.501	0.693
	WLAN5.8GHz	802.11a 6Mbps	Right Tilted	0mm	Ant 6	standalone	149	5745	1	17.59	19.00	1.384	100	1.000	0.05	0.575	0.796
	WLAN5.8GHz	802.11a 6Mbps	Left Cheek	0mm	Ant 6	standalone	149	5745	1	17.59	19.00	1.384	100	1.000	0.01	0.671	0.928
	WLAN5.8GHz	802.11a 6Mbps	Left Cheek	0mm	Ant 6	standalone	157	5785	1	17.51	19.00	1.409	100	1.000	-0.01	0.632	0.891
	WLAN5.8GHz	802.11a 6Mbps	Left Tilted	0mm	Ant 6	standalone	149	5745	1	17.59	19.00	1.384	100	1.000	0.03	0.771	1.067
26	WLAN5.8GHz	802.11a 6Mbps	Left Tilted	0mm	Ant 6	standalone	157	5785	1	17.51	19.00	1.409	100	1.000	0.19	0.842	1.187
	WLAN5.8GHz	802.11a 6Mbps	Left Tilted	0mm	Ant 6	standalone	157	5785	2	17.51	19.00	1.409	100	1.000	0.03	0.712	1.003
	WLAN5.8GHz	802.11a 6Mbps	Left Tilted	0mm	Ant 6	standalone	157	5785	3	17.51	19.00	1.409	100	1.000	0.01	0.598	0.843
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Right Cheek	0mm	Ant 6	Simultaneous	155	5775	1	12.35	13.50	1.303	100	1.000	0.03	0.167	0.218
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Right Tilted	0mm	Ant 6	Simultaneous	155	5775	1	12.35	13.50	1.303	100	1.000	0.02	0.192	0.250
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 6	Simultaneous	155	5775	1	12.35	13.50	1.303	100	1.000	-0.05	0.224	0.292
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Left Tilted	0mm	Ant 6	Simultaneous	155	5775	1	12.35	13.50	1.303	100	1.000	0.01	0.281	0.366



15.2 Hotspot SAR

Table with columns: 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). Rows are grouped by frequency bands: 750MHz, 835MHz, and LTE Band 26.



FCC SAR Test Report

Report No. : FA352916

	LTE Band 26	15M	QPSK	36	0	-	Right Side	5mm	Ant 0	ECI7	26865	831.5	1	22.20	23.00	1.202	-	-	-0.05	0.327	0.393			
	LTE Band 26	15M	QPSK	1	0	-	Bottom Side	5mm	Ant 0	ECI7	26865	831.5	1	23.03	24.00	1.250	-	-	0.01	0.913	1.141			
	LTE Band 26	15M	QPSK	36	0	-	Bottom Side	5mm	Ant 0	ECI7	26865	831.5	1	22.20	23.00	1.202	-	-	0.07	0.713	0.857			
	LTE Band 26	15M	QPSK	75	0	-	Bottom Side	5mm	Ant 0	ECI7	26865	831.5	1	22.16	23.00	1.213	-	-	0.19	0.720	0.874			
	LTE Band 5_UL_CA	10M	QPSK	1	0	-	Front	5mm	Ant 4	ECI7	20525	836.5	1	21.96	22.50	1.132	-	-	0.02	0.220	0.249			
	LTE Band 5_UL_CA	10M	QPSK	25	0	-	Front	5mm	Ant 4	ECI7	20525	836.5	1	21.01	21.50	1.119	-	-	-0.03	0.171	0.191			
32	LTE Band 5_UL_CA	10M	QPSK	1	0	-	Back	5mm	Ant 4	ECI7	20525	836.5	1	21.96	22.50	1.132	-	-	0.07	0.474	0.537			
	LTE Band 5_UL_CA	10M	QPSK	25	0	-	Back	5mm	Ant 4	ECI7	20525	836.5	1	21.01	21.50	1.119	-	-	0.05	0.375	0.420			
	LTE Band 5_UL_CA	10M	QPSK	1	0	-	Left Side	5mm	Ant 4	ECI7	20525	836.5	1	21.96	22.50	1.132	-	-	0.04	0.068	0.077			
	LTE Band 5_UL_CA	10M	QPSK	25	0	-	Left Side	5mm	Ant 4	ECI7	20525	836.5	1	21.01	21.50	1.119	-	-	-0.01	0.060	0.067			
	LTE Band 5_UL_CA	10M	QPSK	1	0	-	Top Side	5mm	Ant 4	ECI7	20525	836.5	1	21.96	22.50	1.132	-	-	0.04	0.408	0.462			
	LTE Band 5_UL_CA	10M	QPSK	25	0	-	Top Side	5mm	Ant 4	ECI7	20525	836.5	1	21.01	21.50	1.119	-	-	-0.01	0.300	0.336			
	FR1 n26	20M	QPSK	1	1	DFT-SCS-15KHz	Front	5mm	Ant 0	ECI7	166300	831.5	1	22.94	24.00	1.276	-	-	0.03	0.428	0.546			
	FR1 n26	20M	QPSK	50	28	DFT-SCS-15KHz	Front	5mm	Ant 0	ECI7	166300	831.5	1	22.89	24.00	1.291	-	-	-0.04	0.442	0.571			
	FR1 n26	20M	QPSK	1	1	DFT-SCS-15KHz	Back	5mm	Ant 0	ECI7	166300	831.5	1	22.94	24.00	1.276	-	-	0.05	0.860	1.098			
33	FR1 n26	20M	QPSK	50	28	DFT-SCS-15KHz	Back	5mm	Ant 0	ECI7	166300	831.5	1	22.89	24.00	1.291	-	-	0.03	0.922	1.191			
	FR1 n26	20M	QPSK	100	0	DFT-SCS-15KHz	Back	5mm	Ant 0	ECI7	166300	831.5	1	21.96	23.00	1.271	-	-	-0.01	0.824	1.047			
	FR1 n26	20M	QPSK	1	1	DFT-SCS-15KHz	Left Side	5mm	Ant 0	ECI7	166300	831.5	1	22.94	24.00	1.276	-	-	0.05	0.223	0.285			
	FR1 n26	20M	QPSK	50	28	DFT-SCS-15KHz	Left Side	5mm	Ant 0	ECI7	166300	831.5	1	22.89	24.00	1.291	-	-	-0.01	0.224	0.289			
	FR1 n26	20M	QPSK	1	1	DFT-SCS-15KHz	Right Side	5mm	Ant 0	ECI7	166300	831.5	1	22.94	24.00	1.276	-	-	0.03	0.432	0.551			
	FR1 n26	20M	QPSK	50	28	DFT-SCS-15KHz	Right Side	5mm	Ant 0	ECI7	166300	831.5	1	22.89	24.00	1.291	-	-	-0.04	0.432	0.558			
	FR1 n26	20M	QPSK	1	1	DFT-SCS-15KHz	Bottom Side	5mm	Ant 0	ECI7	166300	831.5	1	22.94	24.00	1.276	-	-	0.07	0.676	0.863			
	FR1 n26	20M	QPSK	50	28	DFT-SCS-15KHz	Bottom Side	5mm	Ant 0	ECI7	166300	831.5	1	22.89	24.00	1.291	-	-	-0.01	0.754	0.974			
	FR1 n26	20M	QPSK	100	0	DFT-SCS-15KHz	Bottom Side	5mm	Ant 0	ECI7	166300	831.5	1	21.96	23.00	1.271	-	-	-0.01	0.717	0.911			
	FR1 n5	25M	QPSK	1	1	DFT-SCS-15KHz	Front	5mm	Ant 0	ECI7	167300	836.5	1	22.92	24.00	1.282	-	-	0.01	0.328	0.421			
	FR1 n5	25M	QPSK	64	33	DFT-SCS-15KHz	Front	5mm	Ant 0	ECI7	167300	836.5	1	22.87	24.00	1.297	-	-	0.02	0.280	0.363			
34	FR1 n5	25M	QPSK	1	1	DFT-SCS-15KHz	Back	5mm	Ant 0	ECI7	167300	836.5	1	22.92	24.00	1.282	-	-	0.09	0.669	0.858			
	FR1 n5	25M	QPSK	64	33	DFT-SCS-15KHz	Back	5mm	Ant 0	ECI7	167300	836.5	1	22.87	24.00	1.297	-	-	0.04	0.600	0.778			
	FR1 n5	25M	QPSK	128	0	DFT-SCS-15KHz	Back	5mm	Ant 0	ECI7	167300	836.5	1	21.84	23.00	1.306	-	-	0.04	0.534	0.697			
	FR1 n5	25M	QPSK	1	1	DFT-SCS-15KHz	Left Side	5mm	Ant 0	ECI7	167300	836.5	1	22.92	24.00	1.282	-	-	0.05	0.165	0.212			
	FR1 n5	25M	QPSK	64	33	DFT-SCS-15KHz	Left Side	5mm	Ant 0	ECI7	167300	836.5	1	22.87	24.00	1.297	-	-	0.01	0.051	0.066			
	FR1 n5	25M	QPSK	1	1	DFT-SCS-15KHz	Right Side	5mm	Ant 0	ECI7	167300	836.5	1	22.92	24.00	1.282	-	-	-0.04	0.140	0.180			
	FR1 n5	25M	QPSK	64	33	DFT-SCS-15KHz	Right Side	5mm	Ant 0	ECI7	167300	836.5	1	22.87	24.00	1.297	-	-	0.01	0.110	0.143			
	FR1 n5	25M	QPSK	1	1	DFT-SCS-15KHz	Bottom Side	5mm	Ant 0	ECI7	167300	836.5	1	22.92	24.00	1.282	-	-	0.05	0.462	0.592			
	FR1 n5	25M	QPSK	64	33	DFT-SCS-15KHz	Bottom Side	5mm	Ant 0	ECI7	167300	836.5	1	22.87	24.00	1.297	-	-	-0.03	0.534	0.693			
	FR1 n5_ENDC	25M	QPSK	1	1	DFT-SCS-15KHz	Front	5mm	Ant 4	ECI7	167300	836.5	1	23.14	24.00	1.219	-	-	0.01	0.198	0.241			
	FR1 n5_ENDC	25M	QPSK	64	33	DFT-SCS-15KHz	Front	5mm	Ant 4	ECI7	167300	836.5	1	23.08	24.00	1.236	-	-	-0.04	0.199	0.246			
	FR1 n5_ENDC	25M	QPSK	1	1	DFT-SCS-15KHz	Back	5mm	Ant 4	ECI7	167300	836.5	1	23.14	24.00	1.219	-	-	0.04	0.440	0.536			
	FR1 n5_ENDC	25M	QPSK	64	33	DFT-SCS-15KHz	Back	5mm	Ant 4	ECI7	167300	836.5	1	23.08	24.00	1.236	-	-	0.01	0.488	0.603			
	FR1 n5_ENDC	25M	QPSK	64	33	DFT-SCS-15KHz	Back	5mm	Ant 4	ECI7	167300	836.5	2	23.08	24.00	1.236	-	-	0.02	0.405	0.501			
	FR1 n5_ENDC	25M	QPSK	64	33	DFT-SCS-15KHz	Back	5mm	Ant 4	ECI7	167300	836.5	3	23.08	24.00	1.236	-	-	0.01	0.403	0.498			
	FR1 n5_ENDC	25M	QPSK	1	1	DFT-SCS-15KHz	Left Side	5mm	Ant 4	ECI7	167300	836.5	1	23.14	24.00	1.219	-	-	-0.05	0.064	0.078			
	FR1 n5_ENDC	25M	QPSK	64	33	DFT-SCS-15KHz	Left Side	5mm	Ant 4	ECI7	167300	836.5	1	23.08	24.00	1.236	-	-	0.01	0.063	0.078			
	FR1 n5_ENDC	25M	QPSK	1	1	DFT-SCS-15KHz	Top Side	5mm	Ant 4	ECI7	167300	836.5	1	23.14	24.00	1.219	-	-	-0.06	0.283	0.345			
	FR1 n5_ENDC	25M	QPSK	64	33	DFT-SCS-15KHz	Top Side	5mm	Ant 4	ECI7	167300	836.5	1	23.08	24.00	1.236	-	-	0.07	0.373	0.461			
1750MHz																								
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Front	5mm	Ant 0	ECI7	1413	1732.6	1	15.76	17.00	1.330	-	-	-0.15	0.394	0.524			
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	ECI7	1413	1732.6	1	15.76	17.00	1.330	-	-	0.02	0.651	0.866			
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	ECI7	1312	1712.4	1	15.74	17.00	1.337	-	-	0.03	0.578	0.773			
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	ECI7	1513	1752.6	1	15.73	17.00	1.340	-	-	-0.11	0.746	0.999			
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Left Side	5mm	Ant 0	ECI7	1413	1732.6	1	15.76	17.00	1.330	-	-	0.07	0.053	0.071			
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Right Side	5mm	Ant 0	ECI7	1413	1732.6	1	15.76	17.00	1.330	-	-	0.08	0.061	0.081			
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Bottom Side	5mm	Ant 0	ECI7	1413	1732.6	1	15.76	17.00	1.330	-	-	0.07	0.859	1.143			
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Bottom Side	5mm	Ant 0	ECI7	1312	1712.4	1	15.74	17.00	1.337	-	-	-0.05	0.780	1.043			
35	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Bottom Side	5mm	Ant 0	ECI7	1513	1752.6	1	15.73	17.00	1.340	-	-	0.01	0.917	1.228			
	LTE Band 66_Main PA	20M	QPSK	1	0	-	Front	5mm	Ant 0	ECI7	132322	1745	1	16.50	17.50	1.259	-	-	0.03	0.376	0.473			
	LTE Band 66_Main PA	20M	QPSK	50	0	-	Front	5mm	Ant 0	ECI7	132322	1745	1	16.47	17.50	1.268	-	-	0.01	0.295	0.374			
	LTE Band 66_Main PA	20M	QPSK	1	0	-	Back	5mm	Ant 0	ECI7	132322	1745	1	16.50	17.50	1.259	-	-	0.08	0.650	0.818			



FCC SAR Test Report

Report No. : FA352916

Table with columns for frequency band, power, modulation, and SAR values. Includes rows for LTE Band 66 and FR1 n66, with a sub-section for 1900MHz GSM frequencies.



	WCDMA II	-	-	-	-	RMC 12.2Kbps	Front	5mm	Ant 0	ECI7	9400	1880	1	14.18	15.50	1.355	-	-	0.07	0.201	0.272
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	ECI7	9400	1880	1	14.18	15.50	1.355	-	-	-0.19	0.796	1.079
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	ECI7	9262	1852.4	1	14.13	15.50	1.371	-	-	0.05	0.691	0.947
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	ECI7	9538	1907.6	1	14.11	15.50	1.377	-	-	-0.08	0.715	0.985
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Left Side	5mm	Ant 0	ECI7	9400	1880	1	14.18	15.50	1.355	-	-	0.02	0.027	0.037
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Right Side	5mm	Ant 0	ECI7	9400	1880	1	14.18	15.50	1.355	-	-	-0.16	0.039	0.053
39	WCDMA II	-	-	-	-	RMC 12.2Kbps	Bottom Side	5mm	Ant 0	ECI7	9400	1880	1	14.18	15.50	1.355	-	-	0.07	0.953	1.291
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Bottom Side	5mm	Ant 0	ECI7	9262	1852.4	1	14.13	15.50	1.371	-	-	0.08	0.837	1.147
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Bottom Side	5mm	Ant 0	ECI7	9538	1907.6	1	14.11	15.50	1.377	-	-	0.03	0.850	1.171
	LTE Band 2_Main PA	20M	QPSK	1	0	-	Front	5mm	Ant 0	ECI7	18900	1880	1	13.52	15.00	1.406	-	-	-0.12	0.181	0.254
	LTE Band 2_Main PA	20M	QPSK	50	0	-	Front	5mm	Ant 0	ECI7	18900	1880	1	13.50	15.00	1.413	-	-	-0.06	0.141	0.199
	LTE Band 2_Main PA	20M	QPSK	1	0	-	Back	5mm	Ant 0	ECI7	18900	1880	1	13.52	15.00	1.406	-	-	0.06	0.590	0.830
	LTE Band 2_Main PA	20M	QPSK	1	0	-	Back	5mm	Ant 0	ECI7	18700	1860	1	13.41	15.00	1.442	-	-	0.01	0.582	0.839
	LTE Band 2_Main PA	20M	QPSK	1	0	-	Back	5mm	Ant 0	ECI7	19100	1900	1	13.48	15.00	1.419	-	-	0.02	0.624	0.885
	LTE Band 2_Main PA	20M	QPSK	50	0	-	Back	5mm	Ant 0	ECI7	18900	1880	1	13.50	15.00	1.413	-	-	0.09	0.476	0.672
	LTE Band 2_Main PA	20M	QPSK	100	0	-	Back	5mm	Ant 0	ECI7	18900	1880	1	13.48	15.00	1.419	-	-	0.04	0.495	0.702
	LTE Band 2_Main PA	20M	QPSK	1	0	-	Left Side	5mm	Ant 0	ECI7	18900	1880	1	13.52	15.00	1.406	-	-	0.04	0.026	0.037
	LTE Band 2_Main PA	20M	QPSK	50	0	-	Left Side	5mm	Ant 0	ECI7	18900	1880	1	13.50	15.00	1.413	-	-	-0.03	0.021	0.030
	LTE Band 2_Main PA	20M	QPSK	1	0	-	Right Side	5mm	Ant 0	ECI7	18900	1880	1	13.52	15.00	1.406	-	-	0.07	0.033	0.046
	LTE Band 2_Main PA	20M	QPSK	50	0	-	Right Side	5mm	Ant 0	ECI7	18900	1880	1	13.50	15.00	1.413	-	-	-0.16	0.024	0.034
	LTE Band 2_Main PA	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 0	ECI7	18900	1880	1	13.52	15.00	1.406	-	-	-0.01	0.733	1.031
	LTE Band 2_Main PA	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 0	ECI7	18700	1860	1	13.41	15.00	1.442	-	-	0.03	0.697	1.005
40	LTE Band 2_Main PA	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 0	ECI7	19100	1900	1	13.48	15.00	1.419	-	-	0.03	0.863	1.225
	LTE Band 2_Main PA	20M	QPSK	50	0	-	Bottom Side	5mm	Ant 0	ECI7	18900	1880	1	13.50	15.00	1.413	-	-	-0.14	0.624	0.881
	LTE Band 2_Main PA	20M	QPSK	50	0	-	Bottom Side	5mm	Ant 0	ECI7	18700	1860	1	13.46	15.00	1.426	-	-	0.05	0.563	0.803
	LTE Band 2_Main PA	20M	QPSK	50	0	-	Bottom Side	5mm	Ant 0	ECI7	19100	1900	1	13.43	15.00	1.435	-	-	0.18	0.711	1.021
	LTE Band 2_Main PA	20M	QPSK	100	0	-	Bottom Side	5mm	Ant 0	ECI7	18900	1880	1	13.48	15.00	1.419	-	-	-0.03	0.648	0.920
	LTE Band 2_Other PA_NSA	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 0	ECI7	19100	1900	1	12.92	14.00	1.282	-	-	-0.1	0.304	0.390
	LTE Band 2_Main PA	20M	QPSK	1	0	-	Front	5mm	Ant 4	ECI7	18900	1880	1	15.76	17.00	1.330	-	-	0.03	0.226	0.301
	LTE Band 2_Main PA	20M	QPSK	50	0	-	Front	5mm	Ant 4	ECI7	18900	1880	1	15.73	17.00	1.340	-	-	0.11	0.183	0.245
	LTE Band 2_Main PA	20M	QPSK	1	0	-	Back	5mm	Ant 4	ECI7	18900	1880	1	15.76	17.00	1.330	-	-	0.03	0.402	0.535
	LTE Band 2_Main PA	20M	QPSK	50	0	-	Back	5mm	Ant 4	ECI7	18900	1880	1	15.73	17.00	1.340	-	-	0.07	0.323	0.433
	LTE Band 2_Main PA	20M	QPSK	1	0	-	Left Side	5mm	Ant 4	ECI7	18900	1880	1	15.76	17.00	1.330	-	-	-0.18	0.074	0.098
	LTE Band 2_Main PA	20M	QPSK	50	0	-	Left Side	5mm	Ant 4	ECI7	18900	1880	1	15.73	17.00	1.340	-	-	0.05	0.059	0.079
	LTE Band 2_Main PA	20M	QPSK	1	0	-	Top Side	5mm	Ant 4	ECI7	18900	1880	1	15.76	17.00	1.330	-	-	0.1	0.511	0.680
	LTE Band 2_Main PA	20M	QPSK	50	0	-	Top Side	5mm	Ant 4	ECI7	18900	1880	1	15.73	17.00	1.340	-	-	-0.1	0.466	0.624
	LTE Band 2_Other PA_NSA	20M	QPSK	1	0	-	Top Side	5mm	Ant 4	ECI7	18900	1880	1	19.18	20.00	1.208	-	-	-0.09	0.367	0.443
	LTE Band 25	20M	QPSK	1	0	-	Front	5mm	Ant 0	ECI7	26340	1880	1	15.34	16.50	1.306	-	-	-0.19	0.204	0.266
	LTE Band 25	20M	QPSK	50	0	-	Front	5mm	Ant 0	ECI7	26340	1880	1	15.31	16.50	1.315	-	-	0.13	0.160	0.210
	LTE Band 25	20M	QPSK	1	0	-	Back	5mm	Ant 0	ECI7	26340	1880	1	15.34	16.50	1.306	-	-	0.12	0.803	1.049
	LTE Band 25	20M	QPSK	1	0	-	Back	5mm	Ant 0	ECI7	26140	1860	1	15.30	16.50	1.318	-	-	0.15	0.723	0.953
	LTE Band 25	20M	QPSK	1	0	-	Back	5mm	Ant 0	ECI7	26590	1905	1	15.29	16.50	1.321	-	-	0.04	0.840	1.110
	LTE Band 25	20M	QPSK	50	0	-	Back	5mm	Ant 0	ECI7	26340	1880	1	15.31	16.50	1.315	-	-	0.12	0.644	0.847
	LTE Band 25	20M	QPSK	50	0	-	Back	5mm	Ant 0	ECI7	26140	1860	1	15.28	16.50	1.324	-	-	0.06	0.586	0.776
	LTE Band 25	20M	QPSK	50	0	-	Back	5mm	Ant 0	ECI7	26590	1905	1	15.26	16.50	1.330	-	-	0.05	0.796	1.059
	LTE Band 25	20M	QPSK	100	0	-	Back	5mm	Ant 0	ECI7	26340	1880	1	15.29	16.50	1.321	-	-	0.01	0.633	0.836
	LTE Band 25	20M	QPSK	1	0	-	Left Side	5mm	Ant 0	ECI7	26340	1880	1	15.34	16.50	1.306	-	-	0.02	0.032	0.042
	LTE Band 25	20M	QPSK	50	0	-	Left Side	5mm	Ant 0	ECI7	26340	1880	1	15.31	16.50	1.315	-	-	0.11	0.025	0.033
	LTE Band 25	20M	QPSK	1	0	-	Right Side	5mm	Ant 0	ECI7	26340	1880	1	15.34	16.50	1.306	-	-	0.06	0.037	0.048
	LTE Band 25	20M	QPSK	50	0	-	Right Side	5mm	Ant 0	ECI7	26340	1880	1	15.31	16.50	1.315	-	-	0.01	0.030	0.039
41	LTE Band 25	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 0	ECI7	26340	1880	1	15.34	16.50	1.306	-	-	0.04	1.03	1.345
	LTE Band 25	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 0	ECI7	26140	1860	1	15.30	16.50	1.318	-	-	-0.08	0.947	1.248
	LTE Band 25	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 0	ECI7	26590	1905	1	15.29	16.50	1.321	-	-	-0.05	0.959	1.267
	LTE Band 25	20M	QPSK	50	0	-	Bottom Side	5mm	Ant 0	ECI7	26340	1880	1	15.31	16.50	1.315	-	-	0.02	0.852	1.121
	LTE Band 25	20M	QPSK	50	0	-	Bottom Side	5mm	Ant 0	ECI7	26140	1860	1	15.28	16.50	1.324	-	-	0.11	0.754	0.999
	LTE Band 25	20M	QPSK	50	0	-	Bottom Side	5mm	Ant 0	ECI7	26590	1905	1	15.26	16.50	1.330	-	-	0.19	0.960	1.277
	LTE Band 25	20M	QPSK	100	0	-	Bottom Side	5mm	Ant 0	ECI7	26340	1880	1	15.29	16.50	1.321	-	-	-0.02	0.830	1.097
	FR1 n2_Main PA	30M	QPSK	1	1	DFT-SCS-15KHz	Front	5mm	Ant 0	ECI7	376000	1880	1	14.49	16.00	1.416	-	-	0.05	0.134	0.190



FCC SAR Test Report

Report No. : FA352916

	FR1 n2_Main PA	30M	QPSK	80	40	DFT-SCS-15KHz	Front	5mm	Ant 0	ECI7	376000	1880	1	14.46	16.00	1.426	-	-	0.05	0.135	0.192
	FR1 n2_Main PA	30M	QPSK	1	1	DFT-SCS-15KHz	Back	5mm	Ant 0	ECI7	376000	1880	1	14.49	16.00	1.416	-	-	0.05	0.484	0.685
	FR1 n2_Main PA	30M	QPSK	80	40	DFT-SCS-15KHz	Back	5mm	Ant 0	ECI7	376000	1880	1	14.46	16.00	1.426	-	-	0.05	0.553	0.788
	FR1 n2_Main PA	30M	QPSK	1	1	DFT-SCS-15KHz	Left Side	5mm	Ant 0	ECI7	376000	1880	1	14.49	16.00	1.416	-	-	0.04	0.018	0.025
	FR1 n2_Main PA	30M	QPSK	80	40	DFT-SCS-15KHz	Left Side	5mm	Ant 0	ECI7	376000	1880	1	14.46	16.00	1.426	-	-	-0.01	0.020	0.029
	FR1 n2_Main PA	30M	QPSK	1	1	DFT-SCS-15KHz	Right Side	5mm	Ant 0	ECI7	376000	1880	1	14.49	16.00	1.416	-	-	0.04	0.025	0.035
	FR1 n2_Main PA	30M	QPSK	80	40	DFT-SCS-15KHz	Right Side	5mm	Ant 0	ECI7	376000	1880	1	14.46	16.00	1.426	-	-	0.01	0.028	0.040
	FR1 n2_Main PA	30M	QPSK	1	1	DFT-SCS-15KHz	Bottom Side	5mm	Ant 0	ECI7	376000	1880	1	14.49	16.00	1.416	-	-	-0.02	0.693	0.981
	FR1 n2_Main PA	30M	QPSK	1	1	DFT-SCS-15KHz	Bottom Side	5mm	Ant 0	ECI7	373000	1865	1	14.43	16.00	1.435	-	-	0.04	0.681	0.978
	FR1 n2_Main PA	30M	QPSK	1	1	DFT-SCS-15KHz	Bottom Side	5mm	Ant 0	ECI7	379000	1895	1	14.46	16.00	1.426	-	-	-0.04	0.838	1.195
	FR1 n2_Main PA	30M	QPSK	80	40	DFT-SCS-15KHz	Bottom Side	5mm	Ant 0	ECI7	376000	1880	1	14.46	16.00	1.426	-	-	0.01	0.747	1.065
	FR1 n2_Main PA	30M	QPSK	80	40	DFT-SCS-15KHz	Bottom Side	5mm	Ant 0	ECI7	373000	1865	1	14.35	16.00	1.462	-	-	0.07	0.686	1.003
42	FR1 n2_Main PA	30M	QPSK	80	40	DFT-SCS-15KHz	Bottom Side	5mm	Ant 0	ECI7	379000	1895	1	14.30	16.00	1.479	-	-	-0.04	0.854	1.263
	FR1 n2_Main PA	30M	QPSK	160	0	DFT-SCS-15KHz	Bottom Side	5mm	Ant 0	ECI7	376000	1880	1	14.43	16.00	1.435	-	-	0.02	0.692	0.993
	FR1 n2_Other PA_NSA	30M	QPSK	80	40	DFT-SCS-15KHz	Bottom Side	5mm	Ant 0	ECI7	379000	1895	1	13.34	15.00	1.466	-	-	-0.01	0.419	0.614
	FR1 n2_Main PA	30M	QPSK	1	1	DFT-SCS-15KHz	Front	5mm	Ant 4	ECI7	376000	1880	1	15.39	17.00	1.449	-	-	0.07	0.150	0.217
	FR1 n2_Main PA	30M	QPSK	80	40	DFT-SCS-15KHz	Front	5mm	Ant 4	ECI7	376000	1880	1	15.37	17.00	1.455	-	-	0.06	0.181	0.263
	FR1 n2_Main PA	30M	QPSK	1	1	DFT-SCS-15KHz	Back	5mm	Ant 4	ECI7	376000	1880	1	15.39	17.00	1.449	-	-	-0.12	0.276	0.400
	FR1 n2_Main PA	30M	QPSK	80	40	DFT-SCS-15KHz	Back	5mm	Ant 4	ECI7	376000	1880	1	15.37	17.00	1.455	-	-	0.04	0.310	0.451
	FR1 n2_Main PA	30M	QPSK	1	1	DFT-SCS-15KHz	Left Side	5mm	Ant 4	ECI7	376000	1880	1	15.39	17.00	1.449	-	-	0.03	0.047	0.068
	FR1 n2_Main PA	30M	QPSK	80	40	DFT-SCS-15KHz	Left Side	5mm	Ant 4	ECI7	376000	1880	1	15.37	17.00	1.455	-	-	0.12	0.057	0.083
	FR1 n2_Main PA	30M	QPSK	1	1	DFT-SCS-15KHz	Top Side	5mm	Ant 4	ECI7	376000	1880	1	15.39	17.00	1.449	-	-	0.02	0.301	0.436
	FR1 n2_Main PA	30M	QPSK	80	40	DFT-SCS-15KHz	Top Side	5mm	Ant 4	ECI7	376000	1880	1	15.37	17.00	1.455	-	-	0.01	0.425	0.619
	FR1 n2_Other PA_NSA	30M	QPSK	80	40	DFT-SCS-15KHz	Top Side	5mm	Ant 4	ECI7	376000	1880	1	19.45	20.00	1.135	-	-	0.07	0.537	0.610
2600MHz																					
	LTE Band 7	20M	QPSK	1	0	-	Front	5mm	Ant 1	ECI7	21100	2535	1	19.18	20.00	1.208	-	-	0.03	0.500	0.604
	LTE Band 7	20M	QPSK	50	0	-	Front	5mm	Ant 1	ECI7	21100	2535	1	19.11	20.00	1.227	-	-	-0.13	0.470	0.577
	LTE Band 7	20M	QPSK	1	0	-	Back	5mm	Ant 1	ECI7	21100	2535	1	19.18	20.00	1.208	-	-	0.03	0.980	1.184
43	LTE Band 7	20M	QPSK	1	0	-	Back	5mm	Ant 1	ECI7	20850	2510	1	19.10	20.00	1.230	-	-	-0.05	1.09	1.341
	LTE Band 7C	20M	QPSK	1	99	-	Back	5mm	Ant 1	ECI7	20850+21048	2510+2529.8	1	18.70	20.00	1.349	-	-	0.02	0.816	1.101
	LTE Band 7	20M	QPSK	1	0	-	Back	5mm	Ant 1	ECI7	21350	2560	1	19.05	20.00	1.245	-	-	0.06	0.876	1.090
	LTE Band 7	20M	QPSK	50	0	-	Back	5mm	Ant 1	ECI7	21100	2535	1	19.11	20.00	1.227	-	-	0.02	0.839	1.030
	LTE Band 7	20M	QPSK	50	0	-	Back	5mm	Ant 1	ECI7	20850	2510	1	19.05	20.00	1.245	-	-	0.09	0.856	1.065
	LTE Band 7	20M	QPSK	50	0	-	Back	5mm	Ant 1	ECI7	21350	2560	1	18.98	20.00	1.265	-	-	-0.01	0.710	0.898
	LTE Band 7	20M	QPSK	100	0	-	Back	5mm	Ant 1	ECI7	21100	2535	1	19.09	20.00	1.233	-	-	-0.07	0.819	1.010
	LTE Band 7	20M	QPSK	1	0	-	Left Side	5mm	Ant 1	ECI7	21100	2535	1	19.18	20.00	1.208	-	-	0.04	0.649	0.784
	LTE Band 7	20M	QPSK	1	0	-	Left Side	5mm	Ant 1	ECI7	20850	2510	1	19.10	20.00	1.230	-	-	0.16	0.697	0.857
	LTE Band 7	20M	QPSK	1	0	-	Left Side	5mm	Ant 1	ECI7	21350	2560	1	19.05	20.00	1.245	-	-	0.02	0.608	0.757
	LTE Band 7	20M	QPSK	50	0	-	Left Side	5mm	Ant 1	ECI7	21100	2535	1	19.11	20.00	1.227	-	-	0.05	0.551	0.676
	LTE Band 7	20M	QPSK	100	0	-	Left Side	5mm	Ant 1	ECI7	21100	2535	1	19.09	20.00	1.233	-	-	-0.14	0.539	0.665
	LTE Band 7	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 1	ECI7	21100	2535	1	19.18	20.00	1.208	-	-	0.02	0.458	0.553
	LTE Band 7	20M	QPSK	50	0	-	Bottom Side	5mm	Ant 1	ECI7	21100	2535	1	19.11	20.00	1.227	-	-	0.05	0.377	0.463
	LTE Band 7_UL_CA	20M	QPSK	1	0	-	Front	5mm	Ant 4	ECI7	21100	2535	1	12.96	14.00	1.271	-	-	-0.01	0.177	0.225
	LTE Band 7_UL_CA	20M	QPSK	50	0	-	Front	5mm	Ant 4	ECI7	21100	2535	1	12.93	14.00	1.279	-	-	-0.01	0.138	0.177
	LTE Band 7_UL_CA	20M	QPSK	1	0	-	Back	5mm	Ant 4	ECI7	21100	2535	1	12.96	14.00	1.271	-	-	0.07	0.237	0.301
	LTE Band 7_UL_CA	20M	QPSK	50	0	-	Back	5mm	Ant 4	ECI7	21100	2535	1	12.93	14.00	1.279	-	-	0.02	0.207	0.265
	LTE Band 7_UL_CA	20M	QPSK	1	0	-	Left Side	5mm	Ant 4	ECI7	21100	2535	1	12.96	14.00	1.271	-	-	0.04	0.048	0.061
	LTE Band 7_UL_CA	20M	QPSK	50	0	-	Left Side	5mm	Ant 4	ECI7	21100	2535	1	12.93	14.00	1.279	-	-	0.05	0.043	0.055
	LTE Band 7_UL_CA	20M	QPSK	1	0	-	Top Side	5mm	Ant 4	ECI7	21100	2535	1	12.96	14.00	1.271	-	-	0.01	0.531	0.675
	LTE Band 7_UL_CA	20M	QPSK	50	0	-	Top Side	5mm	Ant 4	ECI7	21100	2535	1	12.93	14.00	1.279	-	-	-0.01	0.384	0.491
	LTE Band 41	20M	QPSK	1	0	-	Front	5mm	Ant 1	ECI7	40620	2593	1	20.85	22.00	1.303	62.9	1.006	0.18	0.489	0.641
	LTE Band 41	20M	QPSK	1	0	-	Front	5mm	Ant 1	ECI7	39750	2506	1	20.73	22.00	1.340	62.9	1.006	0.05	0.510	0.687
	LTE Band 41	20M	QPSK	1	0	-	Front	5mm	Ant 1	ECI7	40185	2549.5	1	20.72	22.00	1.343	62.9	1.006	0.09	0.491	0.663
	LTE Band 41	20M	QPSK	1	0	-	Front	5mm	Ant 1	ECI7	41055	2636.5	1	20.81	22.00	1.315	62.9	1.006	0.13	0.667	0.883
	LTE Band 41	20M	QPSK	1	0	-	Front	5mm	Ant 1	ECI7	41490	2680	1	20.76	22.00	1.330	62.9	1.006	-0.18	0.642	0.859
	LTE Band 41	20M	QPSK	50	0	-	Front	5mm	Ant 1	ECI7	40620	2593	1	20.82	22.00	1.312	62.9	1.006	-0.12	0.398	0.525
	LTE Band 41	20M	QPSK	100	0	-	Front	5mm	Ant 1	ECI7	40620	2593	1	20.79	22.00	1.321	62.9	1.006	0.07	0.395	0.525
	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 1	ECI7	40620	2593	1	20.85	22.00	1.303	62.9	1.006	0.06	0.765	1.003
	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 1	ECI7	39750	2506	1	20.73	22.00	1.340	62.9	1.006	0.16	0.863	1.163



	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 1	ECI7	40185	2549.5	1	20.72	22.00	1.343	62.9	1.006	-0.16	0.765	1.033
44	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 1	ECI7	41055	2636.5	1	20.81	22.00	1.315	62.9	1.006	0.06	1.04	1.376
	LTE Band 41C	20M	QPSK	1	99	-	Back	5mm	Ant 1	ECI7	41055+41253	2636.5+2656.3	1	20.45	22.00	1.429	62.9	1.006	0.02	0.815	1.172
	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 1	ECI7	41490	2680	1	20.76	22.00	1.330	62.9	1.006	-0.11	0.991	1.326
	LTE Band 41	20M	QPSK	50	0	-	Back	5mm	Ant 1	ECI7	40620	2593	1	20.82	22.00	1.312	62.9	1.006	-0.02	0.606	0.800
	LTE Band 41	20M	QPSK	50	0	-	Back	5mm	Ant 1	ECI7	39750	2506	1	20.76	22.00	1.330	62.9	1.006	-0.09	0.685	0.917
	LTE Band 41	20M	QPSK	50	0	-	Back	5mm	Ant 1	ECI7	40185	2549.5	1	20.79	22.00	1.321	62.9	1.006	0.03	0.618	0.821
	LTE Band 41	20M	QPSK	50	0	-	Back	5mm	Ant 1	ECI7	41055	2636.5	1	20.80	22.00	1.318	62.9	1.006	0.04	0.832	1.103
	LTE Band 41	20M	QPSK	50	0	-	Back	5mm	Ant 1	ECI7	41490	2680	1	20.77	22.00	1.327	62.9	1.006	-0.17	0.771	1.030
	LTE Band 41	20M	QPSK	100	0	-	Back	5mm	Ant 1	ECI7	40620	2593	1	20.79	22.00	1.321	62.9	1.006	0.02	0.599	0.796
	LTE Band 41	20M	QPSK	1	0	-	Left Side	5mm	Ant 1	ECI7	40620	2593	1	20.85	22.00	1.303	62.9	1.006	-0.05	0.489	0.641
	LTE Band 41	20M	QPSK	1	0	-	Left Side	5mm	Ant 1	ECI7	39750	2506	1	20.73	22.00	1.340	62.9	1.006	0.03	0.559	0.753
	LTE Band 41	20M	QPSK	1	0	-	Left Side	5mm	Ant 1	ECI7	40185	2549.5	1	20.72	22.00	1.343	62.9	1.006	0.09	0.472	0.638
	LTE Band 41	20M	QPSK	1	0	-	Left Side	5mm	Ant 1	ECI7	41055	2636.5	1	20.81	22.00	1.315	62.9	1.006	-0.02	0.716	0.947
	LTE Band 41	20M	QPSK	1	0	-	Left Side	5mm	Ant 1	ECI7	41490	2680	1	20.76	22.00	1.330	62.9	1.006	0.06	0.710	0.950
	LTE Band 41	20M	QPSK	50	0	-	Left Side	5mm	Ant 1	ECI7	40620	2593	1	20.82	22.00	1.312	62.9	1.006	0.14	0.432	0.570
	LTE Band 41	20M	QPSK	100	0	-	Left Side	5mm	Ant 1	ECI7	40620	2593	1	20.79	22.00	1.321	62.9	1.006	-0.08	0.418	0.556
	LTE Band 41	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 1	ECI7	40620	2593	1	20.85	22.00	1.303	62.9	1.006	0.14	0.236	0.309
	LTE Band 41	20M	QPSK	50	0	-	Bottom Side	5mm	Ant 1	ECI7	40620	2593	1	20.82	22.00	1.312	62.9	1.006	-0.08	0.185	0.244
	FR1 n7	50M	QPSK	1	1	DFT-SCS-15KHz	Front	5mm	Ant 1	ECI7	507000	2535	1	20.12	21.00	1.225	-	-	0.03	0.609	0.746
	FR1 n7	50M	QPSK	135	68	DFT-SCS-15KHz	Front	5mm	Ant 1	ECI7	507000	2535	1	20.02	21.00	1.253	-	-	-0.04	0.640	0.802
	FR1 n7	50M	QPSK	270	0	DFT-SCS-15KHz	Front	5mm	Ant 1	ECI7	507000	2535	1	20.06	21.00	1.242	-	-	0.05	0.609	0.756
	FR1 n7	50M	QPSK	1	1	DFT-SCS-15KHz	Back	5mm	Ant 1	ECI7	507000	2535	1	20.12	21.00	1.225	-	-	-0.01	1.01	1.237
45	FR1 n7	50M	QPSK	135	68	DFT-SCS-15KHz	Back	5mm	Ant 1	ECI7	507000	2535	1	20.02	21.00	1.253	-	-	-0.09	1.11	1.391
	FR1 n7	50M	QPSK	135	68	DFT-SCS-15KHz	Back	5mm	Ant 1	ECI7	507000	2535	2	20.02	21.00	1.253	-	-	0.02	0.915	1.147
	FR1 n7	50M	QPSK	135	68	DFT-SCS-15KHz	Back	5mm	Ant 1	ECI7	507000	2535	3	20.02	21.00	1.253	-	-	0.07	1.010	1.266
	FR1 n7	50M	QPSK	270	0	DFT-SCS-15KHz	Back	5mm	Ant 1	ECI7	507000	2535	1	20.06	21.00	1.242	-	-	0.04	0.697	0.865
	FR1 n7	50M	QPSK	1	1	DFT-SCS-15KHz	Left Side	5mm	Ant 1	ECI7	507000	2535	1	20.12	21.00	1.225	-	-	0.05	0.733	0.898
	FR1 n7	50M	QPSK	135	68	DFT-SCS-15KHz	Left Side	5mm	Ant 1	ECI7	507000	2535	1	20.02	21.00	1.253	-	-	0.06	0.718	0.900
	FR1 n7	50M	QPSK	270	0	DFT-SCS-15KHz	Left Side	5mm	Ant 1	ECI7	507000	2535	1	20.06	21.00	1.242	-	-	0.01	0.499	0.620
	FR1 n7	50M	QPSK	1	1	DFT-SCS-15KHz	Bottom Side	5mm	Ant 1	ECI7	507000	2535	1	20.12	21.00	1.225	-	-	0.01	0.377	0.462
	FR1 n7	50M	QPSK	135	68	DFT-SCS-15KHz	Bottom Side	5mm	Ant 1	ECI7	507000	2535	1	20.02	21.00	1.253	-	-	-0.01	0.363	0.455
	FR1 n7_ENDC	50M	QPSK	1	135	DFT-SCS-15KHz	Front	5mm	Ant 4	ECI7	507000	2535	1	10.51	11.00	1.119	-	-	-0.02	0.171	0.191
	FR1 n7_ENDC	50M	QPSK	135	68	DFT-SCS-15KHz	Front	5mm	Ant 4	ECI7	507000	2535	1	10.44	11.00	1.138	-	-	0.01	0.198	0.225
	FR1 n7_ENDC	50M	QPSK	1	135	DFT-SCS-15KHz	Back	5mm	Ant 4	ECI7	507000	2535	1	10.51	11.00	1.119	-	-	-0.01	0.318	0.356
	FR1 n7_ENDC	50M	QPSK	135	68	DFT-SCS-15KHz	Back	5mm	Ant 4	ECI7	507000	2535	1	10.44	11.00	1.138	-	-	-0.08	0.402	0.457
	FR1 n7_ENDC	50M	QPSK	1	135	DFT-SCS-15KHz	Left Side	5mm	Ant 4	ECI7	507000	2535	1	10.51	11.00	1.119	-	-	-0.03	0.059	0.066
	FR1 n7_ENDC	50M	QPSK	135	68	DFT-SCS-15KHz	Left Side	5mm	Ant 4	ECI7	507000	2535	1	10.44	11.00	1.138	-	-	0.04	0.082	0.093
	FR1 n7_ENDC	50M	QPSK	1	135	DFT-SCS-15KHz	Top Side	5mm	Ant 4	ECI7	507000	2535	1	10.51	11.00	1.119	-	-	0.01	0.490	0.549
	FR1 n7_ENDC	50M	QPSK	135	68	DFT-SCS-15KHz	Top Side	5mm	Ant 4	ECI7	507000	2535	1	10.44	11.00	1.138	-	-	0.01	0.610	0.694
3500MHz																					
	LTE Band 42	20M	QPSK	1	0	-	Front	5mm	Ant 5	ECI7	42590	3500	1	14.42	16.00	1.439	62.9	1.006	-0.17	0.200	0.289
	LTE Band 42	20M	QPSK	50	0	-	Front	5mm	Ant 5	ECI7	42590	3500	1	14.40	16.00	1.445	62.9	1.006	0.13	0.160	0.233
	LTE Band 42	20M	QPSK	1	0	-	Back	5mm	Ant 5	ECI7	42590	3500	1	14.42	16.00	1.439	62.9	1.006	0.03	0.438	0.634
	LTE Band 42	20M	QPSK	1	0	-	Back	5mm	Ant 5	ECI7	42190	3460	1	14.38	16.00	1.452	62.9	1.006	0.03	0.418	0.611
46	LTE Band 42	20M	QPSK	1	0	-	Back	5mm	Ant 5	ECI7	42990	3540	1	14.39	16.00	1.449	62.9	1.006	-0.05	0.446	0.650
	LTE Band 42	20M	QPSK	50	0	-	Back	5mm	Ant 5	ECI7	42590	3500	1	14.40	16.00	1.445	62.9	1.006	0.07	0.325	0.473
	LTE Band 42	20M	QPSK	100	0	-	Back	5mm	Ant 5	ECI7	42590	3500	1	14.36	16.00	1.459	62.9	1.006	0.15	0.321	0.471
	LTE Band 42	20M	QPSK	1	0	-	Right Side	5mm	Ant 5	ECI7	42590	3500	1	14.42	16.00	1.439	62.9	1.006	0.16	0.043	0.062
	LTE Band 42	20M	QPSK	50	0	-	Right Side	5mm	Ant 5	ECI7	42590	3500	1	14.40	16.00	1.445	62.9	1.006	0.07	0.035	0.051
	LTE Band 42	20M	QPSK	1	0	-	Top Side	5mm	Ant 5	ECI7	42590	3500	1	14.42	16.00	1.439	62.9	1.006	0.06	0.269	0.389
	LTE Band 42	20M	QPSK	50	0	-	Top Side	5mm	Ant 5	ECI7	42590	3500	1	14.40	16.00	1.445	62.9	1.006	0.17	0.213	0.310
	FR1 n78	100M	QPSK	1	137	DFT-SCS-30KHz	Front	5mm	Ant 1	ECI7	633334	3500.01	1	20.73	22.00	1.340	-	-	-0.16	0.369	0.494
	FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Front	5mm	Ant 1	ECI7	633334	3500.01	1	20.70	22.00	1.349	-	-	0.06	0.369	0.498
	FR1 n78	100M	QPSK	1	137	DFT-SCS-30KHz	Back	5mm	Ant 1	ECI7	633334	3500.01	1	20.73	22.00	1.340	-	-	0.07	0.465	0.623
47	FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Back	5mm	Ant 1	ECI7	633334	3500.01	1	20.70	22.00	1.349	-	-	-0.07	0.734	0.990
	FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Back	5mm	Ant 1	ECI7	633334	3500.01	2	20.70	22.00	1.349	-	-	0.01	0.719	0.970
	FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Back	5mm	Ant 1	ECI7	633334	3500.01	3	20.70	22.00	1.349	-	-	0.03	0.505	0.681
	FR1 n78	100M	QPSK	270	0	DFT-SCS-30KHz	Back	5mm	Ant 1	ECI7	633334	3500.01	1	19.41	21.00	1.442	-	-	0.01	0.674	0.972



FCC SAR Test Report

Report No. : FA352916

FR1 n78	100M	QPSK	1	137	DFT-SCS-30KHz	Left Side	5mm	Ant 1	ECI7	633334	3500.01	1	20.73	22.00	1.340	-	-	0.17	0.396	0.531
FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Left Side	5mm	Ant 1	ECI7	633334	3500.01	1	20.70	22.00	1.349	-	-	-0.01	0.505	0.681
FR1 n78	100M	QPSK	1	137	DFT-SCS-30KHz	Bottom Side	5mm	Ant 1	ECI7	633334	3500.01	1	20.73	22.00	1.340	-	-	0.05	0.146	0.196
FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Bottom Side	5mm	Ant 1	ECI7	633334	3500.01	1	20.70	22.00	1.349	-	-	-0.1	0.199	0.268
FR1 n78	100M	QPSK	1	137	DFT-SCS-30KHz	Front	5mm	Ant 2	ECI7	633334	3500.01	1	15.19	16.50	1.352	-	-	0.13	0.037	0.050
FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Front	5mm	Ant 2	ECI7	633334	3500.01	1	15.11	16.50	1.377	-	-	-0.17	0.042	0.058
FR1 n78	100M	QPSK	1	137	DFT-SCS-30KHz	Back	5mm	Ant 2	ECI7	633334	3500.01	1	15.19	16.50	1.352	-	-	-0.07	0.474	0.641
FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Back	5mm	Ant 2	ECI7	633334	3500.01	1	15.11	16.50	1.377	-	-	0.09	0.490	0.675
FR1 n78	100M	QPSK	1	137	DFT-SCS-30KHz	Left Side	5mm	Ant 2	ECI7	633334	3500.01	1	15.19	16.50	1.352	-	-	0.06	0.224	0.303
FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Left Side	5mm	Ant 2	ECI7	633334	3500.01	1	15.11	16.50	1.377	-	-	0.04	0.264	0.364
FR1 n78	100M	QPSK	1	137	DFT-SCS-30KHz	Top Side	5mm	Ant 2	ECI7	633334	3500.01	1	15.19	16.50	1.352	-	-	-0.06	0.026	0.035
FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Top Side	5mm	Ant 2	ECI7	633334	3500.01	1	15.11	16.50	1.377	-	-	-0.18	0.030	0.041
FR1 n78	100M	QPSK	1	137	DFT-SCS-30KHz	Front	5mm	Ant 5	ECI7	633334	3500.01	1	12.58	14.00	1.387	-	-	0.06	0.157	0.218
FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Front	5mm	Ant 5	ECI7	633334	3500.01	1	12.51	14.00	1.409	-	-	0.06	0.191	0.269
FR1 n78	100M	QPSK	1	137	DFT-SCS-30KHz	Back	5mm	Ant 5	ECI7	633334	3500.01	1	12.58	14.00	1.387	-	-	0.14	0.419	0.581
FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Back	5mm	Ant 5	ECI7	633334	3500.01	1	12.51	14.00	1.409	-	-	-0.04	0.431	0.607
FR1 n78	100M	QPSK	1	137	DFT-SCS-30KHz	Right Side	5mm	Ant 5	ECI7	633334	3500.01	1	12.58	14.00	1.387	-	-	0.12	0.042	0.058
FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Right Side	5mm	Ant 5	ECI7	633334	3500.01	1	12.51	14.00	1.409	-	-	-0.17	0.048	0.068
FR1 n78	100M	QPSK	1	137	DFT-SCS-30KHz	Top Side	5mm	Ant 5	ECI7	633334	3500.01	1	12.58	14.00	1.387	-	-	-0.05	0.230	0.319
FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Top Side	5mm	Ant 5	ECI7	633334	3500.01	1	12.51	14.00	1.409	-	-	0.04	0.275	0.388
FR1 n78	100M	QPSK	1	137	DFT-SCS-30KHz	Front	5mm	Ant 7	ECI7	633334	3500.01	1	15.61	16.50	1.227	-	-	0.13	0.260	0.319
FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Front	5mm	Ant 7	ECI7	633334	3500.01	1	15.55	16.50	1.245	-	-	-0.03	0.273	0.340
FR1 n78	100M	QPSK	1	137	DFT-SCS-30KHz	Back	5mm	Ant 7	ECI7	633334	3500.01	1	15.61	16.50	1.227	-	-	0.09	0.437	0.536
FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Back	5mm	Ant 7	ECI7	633334	3500.01	1	15.55	16.50	1.245	-	-	0.09	0.529	0.658
FR1 n78	100M	QPSK	1	137	DFT-SCS-30KHz	Right Side	5mm	Ant 7	ECI7	633334	3500.01	1	15.61	16.50	1.227	-	-	0.06	0.395	0.485
FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Right Side	5mm	Ant 7	ECI7	633334	3500.01	1	15.55	16.50	1.245	-	-	-0.17	0.496	0.617
FR1 n78	100M	QPSK	1	137	DFT-SCS-30KHz	Top Side	5mm	Ant 7	ECI7	633334	3500.01	1	15.61	16.50	1.227	-	-	0.09	0.126	0.155
FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Top Side	5mm	Ant 7	ECI7	633334	3500.01	1	15.55	16.50	1.245	-	-	0.04	0.131	0.163

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 6	standalone	11	2462	1	14.14	15.50	1.368	100	1.000	0.03	0.179	0.245
	WLAN2.4GHz	802.11b 1Mbps	Back	5mm	Ant 6	standalone	11	2462	1	14.14	15.50	1.368	100	1.000	0.05	0.298	0.408
	WLAN2.4GHz	802.11b 1Mbps	Right Side	5mm	Ant 6	standalone	11	2462	1	14.14	15.50	1.368	100	1.000	-0.01	0.161	0.220
48	WLAN2.4GHz	802.11b 1Mbps	Top Side	5mm	Ant 6	standalone	11	2462	1	14.14	15.50	1.368	100	1.000	-0.03	0.477	0.652
	Bluetooth	1Mbps	Front	5mm	Ant 6	Full Power	0	2402	1	14.67	15.50	1.211	76.73	1.086	0.04	0.139	0.183
	Bluetooth	1Mbps	Back	5mm	Ant 6	Full Power	0	2402	1	14.67	15.50	1.211	76.73	1.086	-0.04	0.236	0.310
	Bluetooth	1Mbps	Right Side	5mm	Ant 6	Full Power	0	2402	1	14.67	15.50	1.211	76.73	1.086	-0.01	0.115	0.151
49	Bluetooth	1Mbps	Top Side	5mm	Ant 6	Full Power	0	2402	1	14.67	15.50	1.211	76.73	1.086	-0.03	0.373	0.490
5000MHz																	
	WLAN5.2GHz	802.11ac-VHT80 MCS0	Front	5mm	Ant 6	standalone	42	5210	1	13.41	15.00	1.442	100	1.000	0.04	0.274	0.395
	WLAN5.2GHz	802.11ac-VHT80 MCS0	Back	5mm	Ant 6	standalone	42	5210	1	13.41	15.00	1.442	100	1.000	0.05	0.259	0.374
	WLAN5.2GHz	802.11ac-VHT80 MCS0	Right Side	5mm	Ant 6	standalone	42	5210	1	13.41	15.00	1.442	100	1.000	0.05	0.288	0.415
50	WLAN5.2GHz	802.11ac-VHT80 MCS0	Top Side	5mm	Ant 6	standalone	42	5210	1	13.41	15.00	1.442	100	1.000	0.02	0.429	0.619
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Front	5mm	Ant 6	standalone	155	5775	1	9.77	11.00	1.327	100	1.000	0.07	0.063	0.084
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Back	5mm	Ant 6	standalone	155	5775	1	9.77	11.00	1.327	100	1.000	-0.01	0.367	0.487
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Right Side	5mm	Ant 6	standalone	155	5775	1	9.77	11.00	1.327	100	1.000	0.05	0.101	0.134
51	WLAN5.8GHz	802.11ac-VHT80 MCS0	Top Side	5mm	Ant 6	standalone	155	5775	1	9.77	11.00	1.327	100	1.000	-0.01	0.531	0.705



15.3 Body Worn Accessory SAR

Table with columns: 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). Rows are grouped by frequency bands: 750MHz, 835MHz, and others.



FCC SAR Test Report

Report No. : FA352916

	FR1 n5	25M	QPSK	64	33	DFT-SCS-15KHz	Back	5mm	Ant 0	-	EI3	167300	836.5	1	22.87	24.00	1.297	-	-	0.04	0.600	0.778
	FR1 n5	25M	QPSK	128	0	DFT-SCS-15KHz	Back	5mm	Ant 0	-	EI3	167300	836.5	1	21.84	23.00	1.306	-	-	0.04	0.534	0.697
	FR1 n5_ENDC	25M	QPSK	1	1	DFT-SCS-15KHz	Front	5mm	Ant 4	-	EI3	167300	836.5	1	23.14	24.00	1.219	-	-	0.01	0.198	0.241
	FR1 n5_ENDC	25M	QPSK	64	33	DFT-SCS-15KHz	Front	5mm	Ant 4	-	EI3	167300	836.5	1	23.08	24.00	1.236	-	-	-0.04	0.199	0.246
	FR1 n5_ENDC	25M	QPSK	1	1	DFT-SCS-15KHz	Back	5mm	Ant 4	-	EI3	167300	836.5	1	23.14	24.00	1.219	-	-	0.04	0.488	0.595
	FR1 n5_ENDC	25M	QPSK	64	33	DFT-SCS-15KHz	Back	5mm	Ant 4	-	EI3	167300	836.5	1	23.08	24.00	1.236	-	-	0.01	0.440	0.544
	FR1 n5_ENDC	25M	QPSK	1	1	DFT-SCS-15KHz	Back	5mm	Ant 4	-	EI3	167300	836.5	2	23.14	24.00	1.219	-	-	0.02	0.358	0.436
	FR1 n5_ENDC	25M	QPSK	1	1	DFT-SCS-15KHz	Back	5mm	Ant 4	-	EI3	167300	836.5	3	23.14	24.00	1.219	-	-	-0.04	0.393	0.479
	FR1 n5_ENDC	25M	QPSK	1	1	DFT-SCS-15KHz	Back	17mm	Ant 4	-	EI4	167300	836.5	1	23.14	24.00	1.219	-	-	0.02	0.052	0.063
1750MHz																						
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Front	5mm	Ant 0	-	EI3	1413	1732.6	1	16.74	18.00	1.337	-	-	0.12	0.483	0.646
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	-	EI3	1413	1732.6	1	16.74	18.00	1.337	-	-	-0.11	0.798	1.067
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	-	EI3	1312	1712.4	1	16.69	18.00	1.352	-	-	0.09	0.708	0.957
60	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	-	EI3	1513	1752.6	1	16.71	18.00	1.346	-	-	-0.05	0.915	1.231
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	Headset	EI3	1513	1752.6	1	16.71	18.00	1.346	-	-	-0.05	0.897	1.207
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Front	12mm	Ant 0	-	EI4	1413	1732.6	1	22.77	24.00	1.327	-	-	0.04	0.755	1.002
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Front	12mm	Ant 0	-	EI4	1312	1712.4	1	22.68	24.00	1.355	-	-	0.06	0.731	0.991
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Front	12mm	Ant 0	-	EI4	1513	1752.6	1	22.70	24.00	1.349	-	-	0.01	0.736	0.993
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	17mm	Ant 0	-	EI4	1513	1752.6	1	22.70	24.00	1.349	-	-	0.06	0.718	0.969
	LTE Band 66_Main PA	20M	QPSK	1	0	-	Front	5mm	Ant 0	-	EI3	132322	1745	1	17.57	18.50	1.239	-	-	0.04	0.493	0.611
	LTE Band 66_Main PA	20M	QPSK	50	0	-	Front	5mm	Ant 0	-	EI3	132322	1745	1	17.54	18.50	1.247	-	-	0.19	0.387	0.483
	LTE Band 66_Main PA	20M	QPSK	1	0	-	Back	5mm	Ant 0	-	EI3	132322	1745	1	17.57	18.50	1.239	-	-	0.02	0.852	1.055
	LTE Band 66_Main PA	20M	QPSK	1	0	-	Back	5mm	Ant 0	-	EI3	132072	1720	1	17.51	18.50	1.256	-	-	0.08	0.724	0.909
61	LTE Band 66_Main PA	20M	QPSK	1	0	-	Back	5mm	Ant 0	-	EI3	132572	1770	1	17.48	18.50	1.265	-	-	-0.03	0.926	1.171
	LTE Band 66C	20M	QPSK	1	0	-	Back	5mm	Ant 0	-	EI3	132572+132374	1770+1750.2	1	17.37	18.50	1.297	-	-	0.01	0.856	1.110
	LTE Band 66_Main PA	20M	QPSK	1	0	-	Back	5mm	Ant 0	Headset	EI3	132572	1770	1	17.48	18.50	1.265	-	-	0.02	0.901	1.140
	LTE Band 66_Main PA	20M	QPSK	50	0	-	Back	5mm	Ant 0	-	EI3	132322	1745	1	17.54	18.50	1.247	-	-	0.18	0.685	0.854
	LTE Band 66_Main PA	20M	QPSK	50	0	-	Back	5mm	Ant 0	-	EI3	132072	1720	1	17.51	18.50	1.256	-	-	-0.16	0.581	0.730
	LTE Band 66_Main PA	20M	QPSK	50	0	-	Back	5mm	Ant 0	-	EI3	132572	1770	1	17.49	18.50	1.262	-	-	0.02	0.731	0.922
	LTE Band 66_Main PA	20M	QPSK	100	0	-	Back	5mm	Ant 0	-	EI3	132322	1745	1	17.53	18.50	1.250	-	-	0.1	0.665	0.831
	LTE Band 66_Other PA_NSA	20M	QPSK	1	0	-	Back	5mm	Ant 0	-	EI3	132572	1770	1	16.40	17.50	1.288	-	-	0.05	0.662	0.853
	LTE Band 66_Main PA	20M	QPSK	1	0	-	Front	12mm	Ant 0	-	EI4	132322	1745	1	22.99	24.00	1.262	-	-	-0.06	0.659	0.832
	LTE Band 66_Main PA	20M	QPSK	1	0	-	Front	12mm	Ant 0	-	EI4	132072	1720	1	22.92	24.00	1.282	-	-	0.05	0.648	0.831
	LTE Band 66_Main PA	20M	QPSK	1	0	-	Front	12mm	Ant 0	-	EI4	132572	1770	1	22.97	24.00	1.268	-	-	0.02	0.614	0.778
	LTE Band 66_Main PA	20M	QPSK	1	0	-	Back	17mm	Ant 0	-	EI4	132572	1770	1	22.97	24.00	1.268	-	-	-0.06	0.647	0.820
	LTE Band 66_Main PA	20M	QPSK	1	0	-	Front	5mm	Ant 4	-	EI3	132322	1745	1	20.37	21.00	1.156	-	-	0.08	0.423	0.489
	LTE Band 66_Main PA	20M	QPSK	50	0	-	Front	5mm	Ant 4	-	EI3	132322	1745	1	19.90	20.50	1.148	-	-	0.03	0.337	0.387
	LTE Band 66_Main PA	20M	QPSK	1	0	-	Back	5mm	Ant 4	-	EI3	132322	1745	1	20.37	21.00	1.156	-	-	-0.06	0.708	0.819
	LTE Band 66_Main PA	20M	QPSK	1	0	-	Back	5mm	Ant 4	-	EI3	132072	1720	1	20.31	21.00	1.172	-	-	0.07	0.618	0.724
	LTE Band 66_Main PA	20M	QPSK	1	0	-	Back	5mm	Ant 4	-	EI3	132572	1770	1	20.25	21.00	1.189	-	-	0.09	0.826	0.982
	LTE Band 66C	20M	QPSK	1	0	-	Back	5mm	Ant 4	-	EI3	132572+132374	1770+1750.2	1	20.15	21.00	1.216	-	-	0.02	0.802	0.975
	LTE Band 66_Main PA	20M	QPSK	50	0	-	Back	5mm	Ant 4	-	EI3	132322	1745	1	19.90	20.50	1.148	-	-	0.02	0.563	0.646
	LTE Band 66_Main PA	20M	QPSK	100	0	-	Back	5mm	Ant 4	-	EI3	132322	1745	1	19.98	20.50	1.127	-	-	-0.03	0.526	0.593
	LTE Band 66_Other PA_NSA	20M	QPSK	1	0	-	Back	5mm	Ant 4	-	EI3	132572	1770	1	20.87	22.00	1.297	-	-	-0.03	0.749	0.972
	LTE Band 66_Main PA	20M	QPSK	1	0	-	Front	12mm	Ant 4	-	EI4	132322	1745	1	20.83	21.50	1.167	-	-	0.11	0.161	0.188
	LTE Band 66_Main PA	20M	QPSK	1	0	-	Back	17mm	Ant 4	-	EI4	132572	1770	1	20.74	21.50	1.191	-	-	0.07	0.123	0.147
	FR1 n66_Main PA	45M	QPSK	1	120	DFT-SCS-15KHz	Front	5mm	Ant 0	-	EI3	349000	1745	1	19.84	21.00	1.306	-	-	0.03	0.620	0.810
	FR1 n66_Main PA	45M	QPSK	120	60	DFT-SCS-15KHz	Front	5mm	Ant 0	-	EI3	349000	1745	1	19.77	21.00	1.327	-	-	-0.04	0.570	0.757
	FR1 n66_Main PA	45M	QPSK	240	0	DFT-SCS-15KHz	Front	5mm	Ant 0	-	EI3	349000	1745	1	19.71	21.00	1.346	-	-	0.05	0.458	0.616
	FR1 n66_Main PA	45M	QPSK	1	120	DFT-SCS-15KHz	Back	5mm	Ant 0	-	EI3	349000	1745	1	19.84	21.00	1.306	-	-	-0.01	0.820	1.071
62	FR1 n66_Main PA	45M	QPSK	120	60	DFT-SCS-15KHz	Back	5mm	Ant 0	-	EI3	349000	1745	1	19.77	21.00	1.327	-	-	0.01	1.020	1.354
	FR1 n66_Main PA	45M	QPSK	120	60	DFT-SCS-15KHz	Back	5mm	Ant 0	-	EI3	349000	1745	2	19.77	21.00	1.327	-	-	0.02	0.997	1.323
	FR1 n66_Main PA	45M	QPSK	120	60	DFT-SCS-15KHz	Back	5mm	Ant 0	-	EI3	349000	1745	3	19.77	21.00	1.327	-	-	-0.03	0.942	1.250
	FR1 n66_Main PA	45M	QPSK	120	60	DFT-SCS-15KHz	Back	5mm	Ant 0	Headset	EI3	349000	1745	1	19.77	21.00	1.327	-	-	0.05	0.815	1.082
	FR1 n66_Main PA	45M	QPSK	240	0	DFT-SCS-15KHz	Back	5mm	Ant 0	-	EI3	349000	1745	1	19.71	21.00	1.346	-	-	-0.03	0.755	1.016
	FR1 n66_Other PA_NSA	45M	QPSK	120	60	DFT-SCS-15KHz	Back	5mm	Ant 0	-	EI3	349000	1745	1	18.72	20.00	1.343	-	-	-0.01	0.915	1.229



	FR1 n66_Main PA	45M	QPSK	1	120	DFT-SCS-15KHz	Front	12mm	Ant 0	-	ECI4	349000	1745	1	22.77	24.00	1.327	-	-	0.07	0.509	0.676
	FR1 n66_Main PA	45M	QPSK	1	120	DFT-SCS-15KHz	Back	17mm	Ant 0	-	ECI4	349000	1745	1	22.77	24.00	1.327	-	-	0.08	0.377	0.500
	FR1 n66_Main PA	45M	QPSK	120	60	DFT-SCS-15KHz	Back	17mm	Ant 0	-	ECI4	349000	1745	1	22.84	24.00	1.306	-	-	0.03	0.385	0.503
	FR1 n66_Other PA_NSA	45M	QPSK	1	120	DFT-SCS-15KHz	Front	5mm	Ant 4	-	ECI3	349000	1745	1	19.57	21.00	1.390	-	-	0.04	0.400	0.556
	FR1 n66_Other PA_NSA	45M	QPSK	120	60	DFT-SCS-15KHz	Front	5mm	Ant 4	-	ECI3	349000	1745	1	19.54	21.00	1.400	-	-	-0.01	0.378	0.529
	FR1 n66_Other PA_NSA	45M	QPSK	1	120	DFT-SCS-15KHz	Back	5mm	Ant 4	-	ECI3	349000	1745	1	19.57	21.00	1.390	-	-	-0.05	0.865	1.202
	FR1 n66_Other PA_NSA	45M	QPSK	1	120	DFT-SCS-15KHz	Back	5mm	Ant 4	Headset	ECI3	349000	1745	1	19.57	21.00	1.390	-	-	0.01	0.774	1.076
	FR1 n66_Other PA_NSA	45M	QPSK	1	120	DFT-SCS-15KHz	Back	5mm	Ant 4	-	ECI3	349000	1745	2	19.57	21.00	1.390	-	-	0.01	0.491	0.682
	FR1 n66_Other PA_NSA	45M	QPSK	1	120	DFT-SCS-15KHz	Back	5mm	Ant 4	-	ECI3	349000	1745	3	19.57	21.00	1.390	-	-	0.09	0.784	1.090
	FR1 n66_Other PA_NSA	45M	QPSK	120	60	DFT-SCS-15KHz	Back	5mm	Ant 4	-	ECI3	349000	1745	1	19.54	21.00	1.400	-	-	-0.02	0.797	1.115
	FR1 n66_Other PA_NSA	45M	QPSK	240	0	DFT-SCS-15KHz	Back	5mm	Ant 4	-	ECI3	349000	1745	1	19.49	21.00	1.416	-	-	0.01	0.777	1.100
	FR1 n66_Main PA	45M	QPSK	1	120	DFT-SCS-15KHz	Back	5mm	Ant 4	-	ECI3	349000	1745	1	20.66	21.50	1.213	-	-	0.04	0.490	0.595
	FR1 n66_Other PA_NSA	45M	QPSK	1	120	DFT-SCS-15KHz	Front	12mm	Ant 4	-	ECI4	349000	1745	1	20.66	21.50	1.213	-	-	0.01	0.109	0.132
	FR1 n66_Other PA_NSA	45M	QPSK	1	120	DFT-SCS-15KHz	Back	17mm	Ant 4	-	ECI4	349000	1745	1	22.69	24.00	1.352	-	-	0.04	0.205	0.277
1900MHz																						
	GSM1900	-	-	-	-	GPRS (4 Tx slots)	Front	5mm	Ant 0	-	ECI3	661	1880	1	18.50	19.50	1.259	-	-	-0.15	0.213	0.268
	GSM1900	-	-	-	-	GPRS (4 Tx slots)	Back	5mm	Ant 0	-	ECI3	661	1880	1	18.50	19.50	1.259	-	-	-0.16	0.695	0.875
63	GSM1900	-	-	-	-	GPRS (4 Tx slots)	Back	5mm	Ant 0	-	ECI3	512	1850.2	1	18.46	19.50	1.271	-	-	-0.04	0.891	1.132
	GSM1900	-	-	-	-	GPRS (4 Tx slots)	Back	5mm	Ant 0	-	ECI3	810	1909.8	1	18.30	19.50	1.318	-	-	0.05	0.663	0.874
	GSM1900	-	-	-	-	GPRS (4 Tx slots)	Front	12mm	Ant 0	-	ECI4	661	1880	1	25.33	26.50	1.309	-	-	-0.15	0.414	0.542
	GSM1900	-	-	-	-	GPRS (4 Tx slots)	Back	17mm	Ant 0	-	ECI4	512	1850.2	1	25.29	26.50	1.321	-	-	-0.01	0.685	0.905
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Front	5mm	Ant 0	-	ECI3	9400	1880	1	15.76	17.00	1.330	-	-	0.09	0.263	0.350
64	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	-	ECI3	9400	1880	1	15.76	17.00	1.330	-	-	0.15	1.040	1.384
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	-	ECI3	9400	1880	2	15.76	17.00	1.330	-	-	0.03	1.00	1.330
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	-	ECI3	9400	1880	3	15.76	17.00	1.330	-	-	0.01	0.988	1.314
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	Headset	ECI3	9400	1880	1	15.76	17.00	1.330	-	-	0.01	0.978	1.301
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	-	ECI3	9262	1852.4	1	15.70	17.00	1.349	-	-	0.14	0.903	1.218
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	-	ECI3	9538	1907.6	1	15.71	17.00	1.346	-	-	0.04	0.935	1.258
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Front	12mm	Ant 0	-	ECI4	9400	1880	1	22.65	24.00	1.365	-	-	-0.11	0.494	0.674
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	17mm	Ant 0	-	ECI4	9400	1880	1	22.65	24.00	1.365	-	-	0.07	0.826	1.127
	LTE Band 2_Main PA	20M	QPSK	1	0	-	Front	5mm	Ant 0	-	ECI3	18900	1880	1	15.31	16.50	1.315	-	-	0.05	0.296	0.389
	LTE Band 2_Main PA	20M	QPSK	50	0	-	Front	5mm	Ant 0	-	ECI3	18900	1880	1	15.12	16.50	1.374	-	-	-0.11	0.230	0.316
	LTE Band 2_Main PA	20M	QPSK	1	0	-	Back	5mm	Ant 0	-	ECI3	18900	1880	1	15.31	16.50	1.315	-	-	0.14	0.963	1.267
	LTE Band 2_Main PA	20M	QPSK	1	0	-	Back	5mm	Ant 0	-	ECI3	18700	1860	1	15.27	16.50	1.327	-	-	0.01	0.952	1.264
65	LTE Band 2_Main PA	20M	QPSK	1	0	-	Back	5mm	Ant 0	-	ECI3	19100	1900	1	15.26	16.50	1.330	-	-	0.09	1.020	1.357
	LTE Band 2_Main PA	20M	QPSK	1	0	-	Back	5mm	Ant 0	Headset	ECI3	19100	1900	1	15.26	16.50	1.330	-	-	0.01	0.977	1.300
	LTE Band 2_Main PA	20M	QPSK	50	0	-	Back	5mm	Ant 0	-	ECI3	18900	1880	1	15.12	16.50	1.374	-	-	-0.11	0.778	1.069
	LTE Band 2_Main PA	20M	QPSK	50	0	-	Back	5mm	Ant 0	-	ECI3	18700	1860	1	15.06	16.50	1.393	-	-	-0.01	0.722	1.006
	LTE Band 2_Main PA	20M	QPSK	50	0	-	Back	5mm	Ant 0	-	ECI3	19100	1900	1	15.04	16.50	1.400	-	-	-0.13	0.837	1.171
	LTE Band 2_Main PA	20M	QPSK	100	0	-	Back	5mm	Ant 0	-	ECI3	18900	1880	1	15.10	16.50	1.380	-	-	0.15	0.809	1.117
	LTE Band 2_Other PA_NSA	20M	QPSK	1	0	-	Back	5mm	Ant 0	-	ECI3	19100	1900	1	14.62	15.50	1.225	-	-	-0.03	0.413	0.506
	LTE Band 2_Main PA	20M	QPSK	1	0	-	Front	12mm	Ant 0	-	ECI4	18900	1880	1	22.66	24.00	1.361	-	-	0.02	0.482	0.656
	LTE Band 2_Main PA	20M	QPSK	1	0	-	Back	17mm	Ant 0	-	ECI4	19100	1900	1	22.60	24.00	1.380	-	-	0.06	0.839	1.158
	LTE Band 2_Main PA	20M	QPSK	1	0	-	Front	5mm	Ant 4	-	ECI3	18900	1880	1	16.21	17.50	1.346	-	-	0.09	0.326	0.439
	LTE Band 2_Main PA	20M	QPSK	50	0	-	Front	5mm	Ant 4	-	ECI3	18900	1880	1	16.19	17.50	1.352	-	-	0.07	0.263	0.356
	LTE Band 2_Main PA	20M	QPSK	1	0	-	Back	5mm	Ant 4	-	ECI3	18900	1880	1	16.21	17.50	1.346	-	-	0.04	0.599	0.806
	LTE Band 2_Main PA	20M	QPSK	1	0	-	Back	5mm	Ant 4	-	ECI3	18700	1860	1	16.16	17.50	1.361	-	-	-0.01	0.466	0.634
	LTE Band 2_Main PA	20M	QPSK	1	0	-	Back	5mm	Ant 4	-	ECI3	19100	1900	1	16.19	17.50	1.352	-	-	-0.06	0.682	0.922
	LTE Band 2_Main PA	20M	QPSK	50	0	-	Back	5mm	Ant 4	-	ECI3	18900	1880	1	16.19	17.50	1.352	-	-	0.02	0.466	0.630
	LTE Band 2_Main PA	20M	QPSK	100	0	-	Back	5mm	Ant 4	-	ECI3	18900	1880	1	16.16	17.50	1.361	-	-	0.06	0.462	0.629
	LTE Band 2_Other PA_NSA	20M	QPSK	1	0	-	Back	5mm	Ant 4	-	ECI3	19100	1900	1	19.65	20.50	1.216	-	-	0.04	0.576	0.701
	LTE Band 2_Main PA	20M	QPSK	1	0	-	Front	12mm	Ant 4	-	ECI4	18900	1880	1	19.84	21.00	1.306	-	-	0.04	0.204	0.266
	LTE Band 2_Main PA	20M	QPSK	1	0	-	Back	17mm	Ant 4	-	ECI4	19100	1900	1	19.82	21.00	1.312	-	-	0.12	0.244	0.320
	LTE Band 25	20M	QPSK	1	0	-	Front	5mm	Ant 0	-	ECI3	26340	1880	1	15.82	17.00	1.312	-	-	-0.14	0.251	0.329
	LTE Band 25	20M	QPSK	50	0	-	Front	5mm	Ant 0	-	ECI3	26340	1880	1	15.61	17.00	1.377	-	-	0.11	0.196	0.270
	LTE Band 25	20M	QPSK	1	0	-	Back	5mm	Ant 0	-	ECI3	26340	1880	1	15.82	17.00	1.312	-	-	0.05	0.984	1.291



Table with columns for Band, Modulation, Power, Frequency, Distance, etc. Rows include LTE Band 25 and FR1 n2_Main PA configurations.



FCC SAR Test Report

Report No. : FA352916

Table with columns for Band, Modulation, Power, Frequency, Location, Distance, Antenna, and SAR values. Includes rows for LTE Band 7_UL_CA, LTE Band 41, and FR1 n7.



FCC SAR Test Report

Report No. : FA352916

	LTE Band 42	20M	QPSK	50	0	-	Back	5mm	Ant 5	-	ECI3	42190	3460	1	15.87	17.50	1.455	62.9	1.006	0.08	0.426	0.624
	LTE Band 42	20M	QPSK	50	0	-	Back	5mm	Ant 5	-	ECI3	42990	3540	1	15.81	17.50	1.476	62.9	1.006	-0.13	0.422	0.626
	LTE Band 42	20M	QPSK	100	0	-	Back	5mm	Ant 5	-	ECI3	42590	3500	1	15.92	17.50	1.439	62.9	1.006	0.08	0.414	0.599
	LTE Band 42	20M	QPSK	1	0	-	Front	12mm	Ant 5	-	ECI4	42590	3500	1	22.33	24.00	1.469	62.9	1.006	0.05	0.389	0.575
	LTE Band 42	20M	QPSK	1	0	-	Back	17mm	Ant 5	-	ECI4	42990	3540	1	22.21	24.00	1.510	62.9	1.006	0.07	0.327	0.497
	FR1 n78	100M	QPSK	1	137	DFT-SCS-30KHz	Front	5mm	Ant 1	-	ECI3	633334	3500.01	1	20.73	22.00	1.340	-	-	-0.16	0.369	0.494
	FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Front	5mm	Ant 1	-	ECI3	633334	3500.01	1	20.70	22.00	1.349	-	-	0.06	0.369	0.498
	FR1 n78	100M	QPSK	1	137	DFT-SCS-30KHz	Back	5mm	Ant 1	-	ECI3	633334	3500.01	1	20.73	22.00	1.340	-	-	0.07	0.465	0.623
	FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Back	5mm	Ant 1	-	ECI3	633334	3500.01	1	20.70	22.00	1.349	-	-	-0.07	0.734	0.990
	FR1 n78	100M	QPSK	270	0	DFT-SCS-30KHz	Back	5mm	Ant 1	-	ECI3	633334	3500.01	1	19.41	21.00	1.442	-	-	0.01	0.616	0.888
	FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Back	5mm	Ant 1	-	ECI3	633334	3500.01	2	20.70	22.00	1.349	-	-	0.02	0.730	0.985
	FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Back	5mm	Ant 1	-	ECI3	633334	3500.01	3	20.70	22.00	1.349	-	-	0.01	0.572	0.772
	FR1 n78	100M	QPSK	1	137	DFT-SCS-30KHz	Front	5mm	Ant 2	-	ECI3	633334	3500.01	1	16.59	18.00	1.384	-	-	0.13	0.058	0.080
	FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Front	5mm	Ant 2	-	ECI3	633334	3500.01	1	16.54	18.00	1.400	-	-	-0.17	0.065	0.091
	FR1 n78	100M	QPSK	1	137	DFT-SCS-30KHz	Back	5mm	Ant 2	-	ECI3	633334	3500.01	1	16.59	18.00	1.384	-	-	-0.07	0.739	1.022
72	FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Back	5mm	Ant 2	-	ECI3	633334	3500.01	1	16.54	18.00	1.400	-	-	0.03	0.764	1.069
	FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Back	5mm	Ant 2	-	ECI3	633334	3500.01	2	16.54	18.00	1.400	-	-	0.02	0.634	0.887
	FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Back	5mm	Ant 2	-	ECI3	633334	3500.01	3	16.54	18.00	1.400	-	-	-0.03	0.732	1.024
	FR1 n78	100M	QPSK	270	0	DFT-SCS-30KHz	Back	5mm	Ant 2	-	ECI3	633334	3500.01	1	16.49	18.00	1.416	-	-	-0.14	0.634	0.898
	FR1 n78	100M	QPSK	1	137	DFT-SCS-30KHz	Front	12mm	Ant 2	-	ECI4	633334	3500.01	1	21.52	23.00	1.406	-	-	0.03	0.066	0.093
	FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Front	12mm	Ant 2	-	ECI4	633334	3500.01	1	21.54	23.00	1.400	-	-	0.09	0.073	0.102
	FR1 n78	100M	QPSK	1	137	DFT-SCS-30KHz	Back	17mm	Ant 2	-	ECI4	633334	3500.01	1	21.52	23.00	1.406	-	-	-0.05	0.184	0.259
	FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Back	17mm	Ant 2	-	ECI4	633334	3500.01	1	21.54	23.00	1.400	-	-	0.01	0.189	0.265
	FR1 n78	100M	QPSK	1	137	DFT-SCS-30KHz	Front	5mm	Ant 5	-	ECI3	633334	3500.01	1	14.49	16.00	1.416	-	-	0.06	0.247	0.350
	FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Front	5mm	Ant 5	-	ECI3	633334	3500.01	1	14.38	16.00	1.452	-	-	0.06	0.300	0.436
	FR1 n78	100M	QPSK	1	137	DFT-SCS-30KHz	Back	5mm	Ant 5	-	ECI3	633334	3500.01	1	14.49	16.00	1.416	-	-	0.14	0.656	0.929
	FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Back	5mm	Ant 5	-	ECI3	633334	3500.01	1	14.38	16.00	1.452	-	-	-0.09	0.676	0.982
	FR1 n78	100M	QPSK	270	0	DFT-SCS-30KHz	Back	5mm	Ant 5	-	ECI3	633334	3500.01	1	14.36	16.00	1.459	-	-	-0.03	0.627	0.915
	FR1 n78	100M	QPSK	1	137	DFT-SCS-30KHz	Front	12mm	Ant 5	-	ECI4	633334	3500.01	1	22.47	24.00	1.422	-	-	0.06	0.538	0.765
	FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Front	12mm	Ant 5	-	ECI4	633334	3500.01	1	22.44	24.00	1.432	-	-	0.07	0.552	0.791
	FR1 n78	100M	QPSK	1	137	DFT-SCS-30KHz	Back	17mm	Ant 5	-	ECI4	633334	3500.01	1	22.47	24.00	1.422	-	-	0.03	0.338	0.481
	FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Back	17mm	Ant 5	-	ECI4	633334	3500.01	1	22.44	24.00	1.432	-	-	0.04	0.341	0.488
	FR1 n78	100M	QPSK	1	137	DFT-SCS-30KHz	Front	5mm	Ant 7	-	ECI3	633334	3500.01	1	16.97	18.00	1.268	-	-	0.12	0.375	0.475
	FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Front	5mm	Ant 7	-	ECI3	633334	3500.01	1	16.91	18.00	1.285	-	-	0.07	0.395	0.508
	FR1 n78	100M	QPSK	1	137	DFT-SCS-30KHz	Back	5mm	Ant 7	-	ECI3	633334	3500.01	1	16.97	18.00	1.268	-	-	0.05	0.632	0.801
	FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Back	5mm	Ant 7	-	ECI3	633334	3500.01	1	16.91	18.00	1.285	-	-	-0.09	0.764	0.982
	FR1 n78	100M	QPSK	270	0	DFT-SCS-30KHz	Back	5mm	Ant 7	-	ECI3	633334	3500.01	1	16.85	18.00	1.303	-	-	-0.1	0.602	0.785
	FR1 n78	100M	QPSK	1	137	DFT-SCS-30KHz	Front	12mm	Ant 7	-	ECI4	633334	3500.01	1	20.30	21.00	1.175	-	-	0.03	0.186	0.219
	FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Front	12mm	Ant 7	-	ECI4	633334	3500.01	1	20.28	21.00	1.180	-	-	0.07	0.201	0.237
	FR1 n78	100M	QPSK	1	137	DFT-SCS-30KHz	Back	17mm	Ant 7	-	ECI4	633334	3500.01	1	20.30	21.00	1.175	-	-	0.06	0.107	0.126
	FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Back	17mm	Ant 7	-	ECI4	633334	3500.01	1	20.28	21.00	1.180	-	-	0.01	0.119	0.140



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 6	-	Standalone	11	2462	1	19.16	20.50	1.361	100	1.000	0.04	0.631	0.859
	WLAN2.4GHz	802.11b 1Mbps	Front	5mm	Ant 6	-	Standalone	6	2437	1	18.89	20.50	1.449	100	1.000	-0.01	0.741	1.074
73	WLAN2.4GHz	802.11b 1Mbps	Back	5mm	Ant 6	-	Standalone	11	2462	1	19.16	20.50	1.361	100	1.000	0.18	1.020	1.389
	WLAN2.4GHz	802.11b 1Mbps	Back	5mm	Ant 6	-	Standalone	11	2462	2	19.16	20.50	1.361	100	1.000	0.01	0.871	1.186
	WLAN2.4GHz	802.11b 1Mbps	Back	5mm	Ant 6	-	Standalone	11	2462	3	19.16	20.50	1.361	100	1.000	0.05	0.860	1.171
	WLAN2.4GHz	802.11b 1Mbps	Back	5mm	Ant 6	Headset	Standalone	11	2462	1	19.16	20.50	1.361	100	1.000	0.01	0.978	1.331
	WLAN2.4GHz	802.11g 6Mbps	Back	5mm	Ant 6	-	Standalone	6	2437	1	18.51	20.00	1.409	100	1.000	0.04	0.975	1.374
	WLAN2.4GHz	802.11n-HT20 MCS0	Back	5mm	Ant 6	-	Standalone	6	2437	1	18.66	20.00	1.361	100	1.000	0.02	0.877	1.194
	WLAN2.4GHz	802.11b 1Mbps	Back	5mm	Ant 6	-	Standalone	6	2437	1	18.89	20.50	1.449	100	1.000	0.05	0.851	1.233
	WLAN2.4GHz	802.11b 1Mbps	Front	12mm	Ant 6	-	Full Power	11	2462	1	19.16	20.50	1.361	100	1.000	0.03	0.179	0.244
	WLAN2.4GHz	802.11b 1Mbps	Back	17mm	Ant 6	-	Full Power	11	2462	1	19.16	20.50	1.361	100	1.000	0.09	0.092	0.125
	WLAN2.4GHz	802.11b 1Mbps	Back	5mm	Ant 6	-	Standalone	1	2412	1	18.81	20.50	1.476	100	1.000	0.02	0.811	1.197
	WLAN2.4GHz	802.11b 1Mbps	Front	5mm	Ant 6	-	Simultaneous	6	2437	1	13.86	15.50	1.459	100	1.000	0.01	0.218	0.318
	WLAN2.4GHz	802.11b 1Mbps	Back	5mm	Ant 6	-	Simultaneous	11	2462	1	14.14	15.50	1.368	100	1.000	0.01	0.322	0.440
	Bluetooth	1Mbps	Front	5mm	Ant 6	-	Full Power	0	2402	1	14.67	15.50	1.211	76.73	1.086	0.01	0.198	0.260
74	Bluetooth	1Mbps	Back	5mm	Ant 6	-	Full Power	0	2402	1	14.67	15.50	1.211	76.73	1.086	-0.05	0.337	0.443
5000MHz																		
	WLAN5.3GHz	802.11a 6Mbps	Front	5mm	Ant 6	-	Standalone	56	5280	1	17.48	19.00	1.419	100	1.000	-0.03	0.709	1.006
	WLAN5.3GHz	802.11a 6Mbps	Front	5mm	Ant 6	-	Standalone	60	5300	1	17.38	19.00	1.452	100	1.000	0.01	0.738	1.072
	WLAN5.3GHz	802.11a 6Mbps	Back	5mm	Ant 6	-	Standalone	56	5280	1	17.48	19.00	1.419	100	1.000	-0.01	0.637	0.904
75	WLAN5.3GHz	802.11a 6Mbps	Back	5mm	Ant 6	-	Standalone	60	5300	1	17.38	19.00	1.452	100	1.000	0.01	0.776	1.127
	WLAN5.3GHz	802.11a 6Mbps	Back	5mm	Ant 6	-	Standalone	60	5300	2	17.38	19.00	1.452	100	1.000	0.01	0.697	1.012
	WLAN5.3GHz	802.11a 6Mbps	Back	5mm	Ant 6	-	Standalone	60	5300	3	17.38	19.00	1.452	100	1.000	0.02	0.629	0.913
	WLAN5.3GHz	802.11a 6Mbps	Front	12mm	Ant 6	-	Full Power	56	5280	1	18.51	20.00	1.409	100	1.000	0.03	0.276	0.389
	WLAN5.3GHz	802.11a 6Mbps	Back	17mm	Ant 6	-	Full Power	56	5280	1	18.51	20.00	1.409	100	1.000	0.06	0.169	0.238
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Front	5mm	Ant 6	-	Simultaneous	58	5290	1	13.35	15.00	1.462	100	1.000	0.02	0.262	0.383
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Back	5mm	Ant 6	-	Simultaneous	58	5290	1	13.35	15.00	1.462	100	1.000	-0.02	0.295	0.431
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Front	5mm	Ant 6	-	Standalone	122	5610	1	12.72	14.00	1.343	100	1.000	0.04	0.277	0.372
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Back	5mm	Ant 6	-	Standalone	122	5610	1	12.72	14.00	1.343	100	1.000	0.01	0.711	0.955
76	WLAN5.5GHz	802.11ac-VHT80 MCS0	Back	5mm	Ant 6	-	Standalone	138	5690	1	12.68	14.00	1.355	100	1.000	-0.06	0.783	1.061
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Back	5mm	Ant 6	-	Standalone	138	5690	2	12.68	14.00	1.355	100	1.000	0.02	0.609	0.825
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Back	5mm	Ant 6	-	Standalone	138	5690	3	12.68	14.00	1.355	100	1.000	0.03	0.769	1.042
	WLAN5.5GHz	802.11a 6Mbps	Front	12mm	Ant 6	-	Full Power	100	5500	1	17.63	19.00	1.371	100	1.000	-0.02	0.188	0.258
	WLAN5.5GHz	802.11a 6Mbps	Back	17mm	Ant 6	-	Full Power	100	5500	1	17.63	19.00	1.371	100	1.000	0.01	0.216	0.296
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Front	5mm	Ant 6	-	Simultaneous	138	5690	1	8.73	10.00	1.340	100	1.000	0.01	0.065	0.087
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Back	5mm	Ant 6	-	Simultaneous	138	5690	1	8.73	10.00	1.340	100	1.000	0.04	0.321	0.430
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Front	5mm	Ant 6	-	Standalone	155	5775	1	12.87	14.00	1.297	100	1.000	0.04	0.140	0.182
77	WLAN5.8GHz	802.11ac-VHT80 MCS0	Back	5mm	Ant 6	-	Standalone	155	5775	1	12.87	14.00	1.297	100	1.000	-0.07	0.813	1.055
	WLAN5.8GHz	802.11a 6Mbps	Front	12mm	Ant 6	-	Full Power	149	5745	1	17.59	19.00	1.384	100	1.000	0.01	0.130	0.180
	WLAN5.8GHz	802.11a 6Mbps	Back	17mm	Ant 6	-	Full Power	149	5745	1	17.59	19.00	1.384	100	1.000	0.05	0.473	0.654
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Front	5mm	Ant 6	-	Simultaneous	155	5775	1	8.74	10.00	1.337	100	1.000	0.01	0.059	0.079
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Back	5mm	Ant 6	-	Simultaneous	155	5775	1	8.74	10.00	1.337	100	1.000	0.01	0.322	0.430



15.4 Product specific 10g SAR

Table with columns: 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). Rows are grouped by frequency bands: 835MHz, 1750MHz, and LTE/FR1 bands.



FCC SAR Test Report

Report No. : FA352916

FR1 n66_ Main PA	45M	QPSK	120	60	DFT-SCS-15KHz	Bottom Side	13mm	Ant 0	ECI4	349000	1745	1	22.84	24.00	1.306	-	-	0.14	0.419	0.547	
1900MHz																					
GSM1900	-	-	-	-	GPRS (4 Tx slots)	Back	0mm	Ant 0	ECI6	661	1880	1	22.76	24.00	1.330	-	-	0.1	1.90	2.528	
GSM1900	-	-	-	-	GPRS (4 Tx slots)	Back	0mm	Ant 0	ECI6	512	1850.2	1	22.65	24.00	1.365	-	-	-0.12	1.94	2.647	
GSM1900	-	-	-	-	GPRS (4 Tx slots)	Back	0mm	Ant 0	ECI6	810	1909.8	1	22.65	24.00	1.365	-	-	0.03	1.68	2.292	
GSM1900	-	-	-	-	GPRS (4 Tx slots)	Bottom Side	0mm	Ant 0	ECI6	661	1880	1	22.76	24.00	1.330	-	-	0.04	2.20	2.927	
83	GSM1900	-	-	-	GPRS (4 Tx slots)	Bottom Side	0mm	Ant 0	ECI6	512	1850.2	1	22.65	24.00	1.365	-	-	0.03	2.53	3.452	
GSM1900	-	-	-	-	GPRS (4 Tx slots)	Bottom Side	0mm	Ant 0	ECI6	810	1909.8	1	22.65	24.00	1.365	-	-	0.04	2.02	2.756	
GSM1900	-	-	-	-	GPRS (4 Tx slots)	Back	16mm	Ant 0	ECI4	512	1850.2	1	25.29	26.50	1.321	-	-	0.03	0.465	0.614	
GSM1900	-	-	-	-	GPRS (4 Tx slots)	Bottom Side	13mm	Ant 0	ECI4	512	1850.2	1	25.29	26.50	1.321	-	-	0.06	0.855	1.130	
WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	0mm	Ant 0	ECI6	9400	1880	1	18.18	19.50	1.355	-	-	0.05	1.90	2.575	
WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	0mm	Ant 0	ECI6	9262	1852.4	1	18.08	19.50	1.387	-	-	0.08	2.02	2.801	
WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	0mm	Ant 0	ECI6	9538	1907.6	1	18.17	19.50	1.358	-	-	-0.05	2.00	2.717	
WCDMA II	-	-	-	-	RMC 12.2Kbps	Bottom Side	0mm	Ant 0	ECI6	9400	1880	1	18.18	19.50	1.355	-	-	0.17	2.22	3.009	
84	WCDMA II	-	-	-	RMC 12.2Kbps	Bottom Side	0mm	Ant 0	ECI6	9262	1852.4	1	18.08	19.50	1.387	-	-	0.01	2.51	3.481	
WCDMA II	-	-	-	-	RMC 12.2Kbps	Bottom Side	0mm	Ant 0	ECI6	9262	1852.4	2	18.08	19.50	1.387	-	-	0.02	2.13	2.954	
WCDMA II	-	-	-	-	RMC 12.2Kbps	Bottom Side	0mm	Ant 0	ECI6	9262	1852.4	3	18.08	19.50	1.387	-	-	0.01	2.47	3.425	
WCDMA II	-	-	-	-	RMC 12.2Kbps	Bottom Side	0mm	Ant 0	ECI6	9538	1907.6	1	18.17	19.50	1.358	-	-	0.04	2.02	2.744	
WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	16mm	Ant 0	ECI4	9262	1852.4	1	22.57	24.00	1.390	-	-	-0.12	0.461	0.641	
WCDMA II	-	-	-	-	RMC 12.2Kbps	Bottom Side	13mm	Ant 0	ECI4	9262	1852.4	1	22.57	24.00	1.390	-	-	0.03	0.884	1.229	
LTE Band 2_ Main PA	20M	QPSK	1	0	-	Back	0mm	Ant 0	ECI6	18900	1880	1	15.51	17.00	1.409	-	-	0.04	1.71	2.410	
LTE Band 2_ Main PA	20M	QPSK	1	0	-	Back	0mm	Ant 0	ECI6	18700	1860	1	15.47	17.00	1.422	-	-	0.01	1.32	1.877	
LTE Band 2_ Main PA	20M	QPSK	1	0	-	Back	0mm	Ant 0	ECI6	19100	1900	1	15.48	17.00	1.419	-	-	-0.04	1.54	2.185	
LTE Band 2_ Main PA	20M	QPSK	50	0	-	Back	0mm	Ant 0	ECI6	18900	1880	1	15.50	17.00	1.413	-	-	-0.1	1.46	2.062	
LTE Band 2_ Main PA	20M	QPSK	50	0	-	Back	0mm	Ant 0	ECI6	18700	1860	1	15.42	17.00	1.439	-	-	-0.06	1.14	1.640	
LTE Band 2_ Main PA	20M	QPSK	50	0	-	Back	0mm	Ant 0	ECI6	19100	1900	1	15.45	17.00	1.429	-	-	0.08	1.68	2.401	
LTE Band 2_ Main PA	20M	QPSK	100	0	-	Back	0mm	Ant 0	ECI6	18900	1880	1	15.47	17.00	1.422	-	-	-0.04	1.46	2.077	
LTE Band 2_ Main PA	20M	QPSK	1	0	-	Bottom Side	0mm	Ant 0	ECI6	18900	1880	1	15.51	17.00	1.409	-	-	-0.04	1.83	2.579	
LTE Band 2_ Main PA	20M	QPSK	1	0	-	Bottom Side	0mm	Ant 0	ECI6	18700	1860	1	15.47	17.00	1.422	-	-	-0.03	1.71	2.432	
85	LTE Band 2_ Main PA	20M	QPSK	1	0	-	Bottom Side	0mm	Ant 0	ECI6	19100	1900	1	15.48	17.00	1.419	-	-	0.03	1.91	2.710
LTE Band 2_ Main PA	20M	QPSK	50	0	-	Bottom Side	0mm	Ant 0	ECI6	18900	1880	1	15.50	17.00	1.413	-	-	-0.12	1.64	2.317	
LTE Band 2_ Main PA	20M	QPSK	50	0	-	Bottom Side	0mm	Ant 0	ECI6	18700	1860	1	15.42	17.00	1.439	-	-	-0.09	1.39	2.000	
LTE Band 2_ Main PA	20M	QPSK	50	0	-	Bottom Side	0mm	Ant 0	ECI6	19100	1900	1	15.45	17.00	1.429	-	-	0.08	1.85	2.643	
LTE Band 2_ Main PA	20M	QPSK	100	0	-	Bottom Side	0mm	Ant 0	ECI6	18900	1880	1	15.47	17.00	1.422	-	-	-0.1	1.80	2.560	
LTE Band 2_ Other PA_NSA	20M	QPSK	1	0	-	Bottom Side	0mm	Ant 0	ECI6	19100	1900	1	14.96	16.00	1.271	-	-	-0.1	0.730	0.928	
LTE Band 2_ Main PA	20M	QPSK	1	0	-	Back	16mm	Ant 0	ECI4	18900	1880	1	22.66	24.00	1.361	-	-	0.17	0.465	0.633	
LTE Band 2_ Main PA	20M	QPSK	1	0	-	Bottom Side	13mm	Ant 0	ECI4	19100	1900	1	22.60	24.00	1.380	-	-	0.06	0.990	1.367	
LTE Band 2_ Main PA	20M	QPSK	1	0	-	Top Side	0mm	Ant 4	ECI6	18900	1880	1	18.32	19.50	1.312	-	-	0.06	1.59	2.086	
LTE Band 2_ Main PA	20M	QPSK	1	0	-	Top Side	0mm	Ant 4	ECI6	18700	1860	1	18.28	19.50	1.324	-	-	-0.18	1.44	1.907	
LTE Band 2_ Main PA	20M	QPSK	1	0	-	Top Side	0mm	Ant 4	ECI6	19100	1900	1	18.21	19.50	1.346	-	-	0.06	1.75	2.355	
LTE Band 2_ Main PA	20M	QPSK	50	0	-	Top Side	0mm	Ant 4	ECI6	18900	1880	1	18.30	19.50	1.318	-	-	0.06	1.10	1.450	
LTE Band 2_ Main PA	20M	QPSK	100	0	-	Top Side	0mm	Ant 4	ECI6	18900	1880	1	18.31	19.50	1.315	-	-	0.16	1.09	1.434	
LTE Band 2_ Other PA_NSA	20M	QPSK	1	0	-	Top Side	0mm	Ant 4	ECI6	19100	1900	1	20.56	21.50	1.242	-	-	0.07	1.81	2.247	
LTE Band 2_ Main PA	20M	QPSK	1	0	-	Top Side	14mm	Ant 4	ECI4	19100	1900	1	19.82	21.00	1.312	-	-	0.05	0.160	0.210	
LTE Band 25	20M	QPSK	1	0	-	Back	0mm	Ant 0	ECI6	26340	1880	1	18.36	19.50	1.300	-	-	0.18	1.88	2.444	
LTE Band 25	20M	QPSK	1	0	-	Back	0mm	Ant 0	ECI6	26140	1860	1	18.30	19.50	1.318	-	-	0.12	2.13	2.808	
LTE Band 25	20M	QPSK	1	0	-	Back	0mm	Ant 0	ECI6	26590	1905	1	18.31	19.50	1.315	-	-	0.14	1.93	2.538	
LTE Band 25	20M	QPSK	50	0	-	Back	0mm	Ant 0	ECI6	26340	1880	1	18.33	19.50	1.309	-	-	-0.04	1.90	2.487	
LTE Band 25	20M	QPSK	50	0	-	Back	0mm	Ant 0	ECI6	26140	1860	1	18.21	19.50	1.346	-	-	0.07	1.73	2.328	
LTE Band 25	20M	QPSK	50	0	-	Back	0mm	Ant 0	ECI6	26590	1905	1	18.25	19.50	1.334	-	-	0.04	1.96	2.614	
LTE Band 25	20M	QPSK	100	0	-	Back	0mm	Ant 0	ECI6	26340	1880	1	18.30	19.50	1.318	-	-	-0.18	1.97	2.597	
LTE Band 25	20M	QPSK	1	0	-	Bottom Side	0mm	Ant 0	ECI6	26340	1880	1	18.36	19.50	1.300	-	-	0.15	2.22	2.886	
86	LTE Band 25	20M	QPSK	1	0	-	Bottom Side	0mm	Ant 0	ECI6	26140	1860	1	18.30	19.50	1.318	-	-	0.07	2.43	3.203
LTE Band 25	20M	QPSK	1	0	-	Bottom Side	0mm	Ant 0	ECI6	26590	1905	1	18.31	19.50	1.315	-	-	0.02	2.05	2.696	
LTE Band 25	20M	QPSK	50	0	-	Bottom Side	0mm	Ant 0	ECI6	26340	1880	1	18.33	19.50	1.309	-	-	0.18	2.17	2.841	
LTE Band 25	20M	QPSK	50	0	-	Bottom Side	0mm	Ant 0	ECI6	26140	1860	1	18.21	19.50	1.346	-	-	-0.06	1.99	2.678	



FCC SAR Test Report

Report No. : FA352916

Table with columns for Band, Power, Modulation, Frequency, Location, Antenna, EIRP, and SAR values. Includes rows for LTE Bands 25, 7, and 41, and FR1 n2/FR1 n7 test results.



FCC SAR Test Report

Report No. : FA352916

	FR1 n7	50M	QPSK	1	1	DFT-SCS-15KHz	Back	9mm	Ant 1	ECI4	507000	2535	1	22.98	24.00	1.265	-	-	0.05	0.322	0.407
	FR1 n7_ENDC	50M	QPSK	1	135	DFT-SCS-15KHz	Back	0mm	Ant 4	ECI6	507000	2535	1	17.21	18.00	1.199	-	-	0.06	1.250	1.499
	FR1 n7_ENDC	50M	QPSK	135	68	DFT-SCS-15KHz	Back	0mm	Ant 4	ECI6	507000	2535	1	17.19	18.00	1.205	-	-	0.01	1.210	1.458
	FR1 n7_ENDC	50M	QPSK	270	0	DFT-SCS-15KHz	Back	0mm	Ant 4	ECI6	507000	2535	1	17.15	18.00	1.216	-	-	-0.04	1.148	1.396
	FR1 n7_ENDC	50M	QPSK	1	135	DFT-SCS-15KHz	Top Side	0mm	Ant 4	ECI6	507000	2535	1	17.21	18.00	1.199	-	-	0.02	1.38	1.655
	FR1 n7_ENDC	50M	QPSK	1	135	DFT-SCS-15KHz	Top Side	0mm	Ant 4	ECI6	507000	2535	2	17.21	18.00	1.199	-	-	0.02	0.928	1.113
	FR1 n7_ENDC	50M	QPSK	1	135	DFT-SCS-15KHz	Top Side	0mm	Ant 4	ECI6	507000	2535	3	17.21	18.00	1.199	-	-	0.04	1.190	1.427
	FR1 n7_ENDC	50M	QPSK	135	68	DFT-SCS-15KHz	Top Side	0mm	Ant 4	ECI6	507000	2535	1	17.19	18.00	1.205	-	-	0.04	1.030	1.241
	FR1 n7_ENDC	50M	QPSK	270	0	DFT-SCS-15KHz	Top Side	0mm	Ant 4	ECI6	507000	2535	1	17.15	18.00	1.216	-	-	0.01	0.979	1.191
	FR1 n7_ENDC	50M	QPSK	1	135	DFT-SCS-15KHz	Back	11mm	Ant 4	ECI4	507000	2535	1	23.22	24.00	1.197	-	-	0.12	0.852	1.020
	FR1 n7_ENDC	50M	QPSK	1	135	DFT-SCS-15KHz	Top Side	14mm	Ant 4	ECI4	507000	2535	1	23.22	24.00	1.197	-	-	0.17	0.923	1.105
3500MHz																					
	LTE Band 42	20M	QPSK	1	0	-	Back	0mm	Ant 5	ECI6	42590	3500	1	19.84	21.50	1.466	62.9	1.006	0.03	1.37	2.020
	LTE Band 42	20M	QPSK	1	0	-	Back	0mm	Ant 5	ECI6	42190	3460	1	19.81	21.50	1.476	62.9	1.006	0.12	1.24	1.841
91	LTE Band 42	20M	QPSK	1	0	-	Back	0mm	Ant 5	ECI6	42990	3540	1	19.72	21.50	1.507	62.9	1.006	0.04	1.38	2.092
	LTE Band 42	20M	QPSK	50	0	-	Back	0mm	Ant 5	ECI6	42590	3500	1	19.80	21.50	1.479	62.9	1.006	0.06	1.03	1.533
	LTE Band 42	20M	QPSK	100	0	-	Back	0mm	Ant 5	ECI6	42590	3500	1	19.76	21.50	1.493	62.9	1.006	-0.16	1.02	1.532
	LTE Band 42	20M	QPSK	1	0	-	Top Side	0mm	Ant 5	ECI6	42590	3500	1	19.84	21.50	1.466	62.9	1.006	0.08	0.920	1.356
	LTE Band 42	20M	QPSK	50	0	-	Top Side	0mm	Ant 5	ECI6	42590	3500	1	19.80	21.50	1.479	62.9	1.006	0.07	0.740	1.101
	LTE Band 42	20M	QPSK	1	0	-	Back	13mm	Ant 5	ECI4	42990	3540	1	22.21	24.00	1.510	62.9	1.006	0.07	0.259	0.393
	LTE Band 42	20M	QPSK	1	0	-	Top Side	15mm	Ant 5	ECI4	42590	3500	1	22.33	24.00	1.469	62.9	1.006	0.11	0.159	0.235
	FR1 n78	100M	QPSK	1	137	DFT-SCS-30KHz	Back	0mm	Ant 2	ECI4	633334	3500.01	1	18.52	20.00	1.406	-	-	0.02	1.86	2.615
92	FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Back	0mm	Ant 2	ECI4	633334	3500.01	1	18.50	20.00	1.413	-	-	-0.02	1.97	2.783
	FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Back	0mm	Ant 2	ECI4	633334	3500.01	2	18.50	20.00	1.413	-	-	0.05	1.85	2.613
	FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Back	0mm	Ant 2	ECI4	633334	3500.01	3	18.50	20.00	1.413	-	-	0.09	1.87	2.641
	FR1 n78	100M	QPSK	270	0	DFT-SCS-30KHz	Back	0mm	Ant 2	ECI4	633334	3500.01	1	18.42	20.00	1.439	-	-	0.08	1.66	2.388
	FR1 n78	100M	QPSK	1	137	DFT-SCS-30KHz	Left Side	0mm	Ant 2	ECI4	633334	3500.01	1	18.52	20.00	1.406	-	-	0.17	0.880	1.237
	FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Left Side	0mm	Ant 2	ECI4	633334	3500.01	1	18.50	20.00	1.413	-	-	-0.13	0.840	1.187
	FR1 n78	100M	QPSK	1	137	DFT-SCS-30KHz	Back	0mm	Ant 5	ECI6	633334	3500.01	1	18.59	20.00	1.384	-	-	0.14	1.33	1.840
	FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Back	0mm	Ant 5	ECI6	633334	3500.01	1	18.51	20.00	1.409	-	-	-0.05	1.49	2.100
	FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Back	0mm	Ant 5	ECI6	633334	3500.01	2	18.51	20.00	1.409	-	-	0.02	1.47	2.072
	FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Back	0mm	Ant 5	ECI6	633334	3500.01	3	18.51	20.00	1.409	-	-	0.01	1.48	2.086
	FR1 n78	100M	QPSK	270	0	DFT-SCS-30KHz	Back	0mm	Ant 5	ECI6	633334	3500.01	1	18.47	20.00	1.422	-	-	0.05	1.10	1.565
	FR1 n78	100M	QPSK	1	137	DFT-SCS-30KHz	Back	13mm	Ant 5	ECI4	633334	3500.01	1	22.47	24.00	1.422	-	-	0.09	0.306	0.435
	FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Back	13mm	Ant 5	ECI4	633334	3500.01	1	22.44	24.00	1.432	-	-	-0.1	0.252	0.361
	FR1 n78	100M	QPSK	1	137	DFT-SCS-30KHz	Back	0mm	Ant 7	ECI4	633334	3500.01	1	20.30	21.00	1.175	-	-	0.05	0.861	1.012
	FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Back	0mm	Ant 7	ECI4	633334	3500.01	1	20.28	21.00	1.180	-	-	-0.09	1.07	1.263
	FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Back	0mm	Ant 7	ECI4	633334	3500.01	2	20.28	21.00	1.180	-	-	0.02	0.955	1.127
	FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Back	0mm	Ant 7	ECI4	633334	3500.01	3	20.28	21.00	1.180	-	-	-0.01	1.03	1.216
	FR1 n78	100M	QPSK	1	137	DFT-SCS-30KHz	Right Side	0mm	Ant 7	ECI4	633334	3500.01	1	20.30	21.00	1.175	-	-	-0.08	0.223	0.262
	FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Right Side	0mm	Ant 7	ECI4	633334	3500.01	1	20.28	21.00	1.180	-	-	0.14	1.01	1.192



FCC SAR Test Report

Report No. : FA352916

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 6	Full Power	11	2462	1	19.16	20.50	1.361	100	1.000	0.04	1.130	1.538	
93	WLAN2.4GHz	802.11b 1Mbps	Top Side	0mm	Ant 6	Full Power	11	2462	1	19.16	20.50	1.361	100	1.000	-0.01	1.540	2.097	
	WLAN2.4GHz	802.11b 1Mbps	Top Side	0mm	Ant 6	Full Power	11	2462	2	19.16	20.50	1.361	100	1.000	0.01	1.24	1.688	
	WLAN2.4GHz	802.11b 1Mbps	Top Side	0mm	Ant 6	Full Power	11	2462	3	19.16	20.50	1.361	100	1.000	0.05	1.18	1.607	
	WLAN2.4GHz	802.11b 1Mbps	Top Side	0mm	Ant 6	Full Power	6	2437	1	18.89	20.50	1.449	100	1.000	-0.02	1.37	1.985	
	WLAN2.4GHz	802.11b 1Mbps	Back	0mm	Ant 6	Simultaneous	11	2462	1	17.21	18.50	1.346	100	1.000	0.03	0.645	0.868	
	WLAN2.4GHz	802.11b 1Mbps	Top Side	0mm	Ant 6	Simultaneous	11	2462	1	17.21	18.50	1.346	100	1.000	0.02	0.876	1.179	
5000MHz																		
94	WLAN5.2GHz	802.11a 6Mbps	Top Side	0mm	Ant 6	Full Power	44	5220	1	17.96	19.50	1.426	100	1.000	-0.07	1.080	1.540	
	WLAN5.2GHz	802.11n-HT40 MCS0	Top Side	0mm	Ant 6	Non DBS	46	5230	1	15.72	17.00	1.343	100	1.000	-0.05	0.665	0.893	
	WLAN5.3GHz	802.11a 6Mbps	Front	0mm	Ant 6	Full Power	56	5280	1	18.51	20.00	1.409	100	1.000	0.06	0.497	0.700	
	WLAN5.3GHz	802.11a 6Mbps	Back	0mm	Ant 6	Full Power	56	5280	1	18.51	20.00	1.409	100	1.000	-0.01	0.693	0.977	
	WLAN5.3GHz	802.11a 6Mbps	Right Side	0mm	Ant 6	Full Power	56	5280	1	18.51	20.00	1.409	100	1.000	0.01	0.598	0.843	
95	WLAN5.3GHz	802.11a 6Mbps	Top Side	0mm	Ant 6	Full Power	56	5280	1	18.51	20.00	1.409	100	1.000	-0.04	1.270	1.790	
	WLAN5.3GHz	802.11a 6Mbps	Top Side	0mm	Ant 6	Full Power	56	5280	2	18.51	20.00	1.409	100	1.000	0.02	1.10	1.550	
	WLAN5.3GHz	802.11a 6Mbps	Top Side	0mm	Ant 6	Full Power	56	5280	3	18.51	20.00	1.409	100	1.000	0.01	1.01	1.423	
	WLAN5.3GHz	802.11n-HT40 MCS0	Back	0mm	Ant 6	Simultaneous	54	5270	1	16.23	17.50	1.340	100	1.000	-0.02	0.610	0.817	
	WLAN5.3GHz	802.11n-HT40 MCS0	Top Side	0mm	Ant 6	Simultaneous	54	5270	1	16.23	17.50	1.340	100	1.000	0.01	0.763	1.022	
	WLAN5.5GHz	802.11a 6Mbps	Front	0mm	Ant 6	Full Power	100	5500	1	17.63	19.00	1.371	100	1.000	0.07	0.590	0.809	
	WLAN5.5GHz	802.11a 6Mbps	Back	0mm	Ant 6	Full Power	100	5500	1	17.63	19.00	1.371	100	1.000	-0.01	0.545	0.747	
	WLAN5.5GHz	802.11a 6Mbps	Right Side	0mm	Ant 6	Full Power	100	5500	1	17.63	19.00	1.371	100	1.000	0.01	0.300	0.411	
96	WLAN5.5GHz	802.11a 6Mbps	Top Side	0mm	Ant 6	Full Power	100	5500	1	17.63	19.00	1.371	100	1.000	0.09	1.130	1.549	
	WLAN5.5GHz	802.11a 6Mbps	Top Side	0mm	Ant 6	Full Power	100	5500	2	17.63	19.00	1.371	100	1.000	0.02	1.08	1.481	
	WLAN5.5GHz	802.11a 6Mbps	Top Side	0mm	Ant 6	Full Power	100	5500	3	17.63	19.00	1.371	100	1.000	0.04	1.04	1.426	
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Top Side	0mm	Ant 6	Simultaneous	122	5610	1	14.28	15.50	1.324	100	1.000	0.03	0.682	0.903	
	WLAN5.8GHz	802.11a 6Mbps	Back	0mm	Ant 6	Full Power	149	5745	1	17.59	19.00	1.384	100	1.000	0.04	1.190	1.646	
97	WLAN5.8GHz	802.11a 6Mbps	Top Side	0mm	Ant 6	Full Power	149	5745	1	17.59	19.00	1.384	100	1.000	0.07	1.380	1.909	
	WLAN5.8GHz	802.11a 6Mbps	Top Side	0mm	Ant 6	Full Power	149	5745	2	17.59	19.00	1.384	100	1.000	-0.05	1.27	1.757	
	WLAN5.8GHz	802.11a 6Mbps	Top Side	0mm	Ant 6	Full Power	149	5745	3	17.59	19.00	1.384	100	1.000	0.07	0.976	1.350	
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Back	0mm	Ant 6	Simultaneous	155	5775	1	14.25	15.50	1.334	100	1.000	-0.02	0.647	0.863	
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Top Side	0mm	Ant 6	Simultaneous	155	5775	1	14.25	15.50	1.334	100	1.000	-0.01	0.769	1.025	



15.5 Repeated SAR Measurement

<1g>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Gap (mm)	Antenna	Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Ratio	Reported 1g SAR (W/kg)
1st	FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Left Cheek	0mm	Ant 7	ECI2	633334	3500.01	18.33	19.00	1.167	-	-	-0.01	0.886	1.0	1.034
2nd	FR1 n78	100M	QPSK	135	69	DFT-SCS-30KHz	Left Cheek	0mm	Ant 7	ECI2	633334	3500.01	18.33	19.00	1.167	-	-	0.02	0.863	1.027	1.007
1st	WLAN5GHz	-	-	-	-	802.11a 6Mbps	Left Tilted	0mm	Ant 6	standalone	157	5785	17.51	19.00	1.409	100	1.000	0.19	0.842	1.0	1.187
2nd	WLAN5GHz	-	-	-	-	802.11a 6Mbps	Left Tilted	0mm	Ant 6	standalone	157	5785	17.51	19.00	1.409	100	1.000	0.01	0.778	1.082	1.096
1st	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	ECI7	4233	846.6	21.89	23.00	1.291	-	-	0.06	1.03	1.0	1.330
2nd	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	ECI7	4233	846.6	21.89	23.00	1.291	-	-	0.01	0.95	1.084	1.231
1st	FR1 n7	50M	QPSK	135	68	DFT-SCS-15KHz	Back	5mm	Ant 1	ECI7	507000	2535	20.02	21.00	1.253	-	-	-0.09	1.11	1.0	1.391
2nd	FR1 n7	50M	QPSK	135	68	DFT-SCS-15KHz	Back	5mm	Ant 1	ECI7	507000	2535	20.02	21.00	1.253	-	-	0.02	1.02	1.088	1.278
1st	FR1 n66_Main PA	45M	QPSK	120	60	DFT-SCS-15KHz	Back	5mm	Ant 0	ECI3	349000	1745	19.77	21.00	1.327	-	-	0.01	1.020	1.0	1.354
2nd	FR1 n66_Main PA	45M	QPSK	120	60	DFT-SCS-15KHz	Back	5mm	Ant 0	ECI3	349000	1745	19.77	21.00	1.327	-	-	0.05	0.986	1.034	1.309
1st	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	ECI3	9400	1880	15.76	17.00	1.330	-	-	0.15	1.040	1.0	1.384
2nd	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	ECI3	9400	1880	15.76	17.00	1.330	-	-	0.06	0.991	1.049	1.318
1st	WLAN2.4GHz	-	-	-	-	802.11b 1Mbps	Back	5mm	Ant 6	Standalone	11	2462	19.16	20.50	1.361	100	1.000	0.18	1.020	1.0	1.389
2nd	WLAN2.4GHz	-	-	-	-	802.11b 1Mbps	Back	5mm	Ant 6	Standalone	11	2462	19.16	20.50	1.361	100	1.000	0.18	0.995	1.025	1.355

<10g>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Gap (mm)	Antenna	Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 10g SAR (W/kg)	Ratio	Reported 10g SAR (W/kg)
1st	GSM850	-	-	-	-	GPRS (4 Tx slots)	Bottom Side	0mm	Ant 0	ECI6	128	824.2	28.83	30.00	1.309	-0.01	2.56	1	3.352
2nd	GSM850	-	-	-	-	GPRS (4 Tx slots)	Bottom Side	0mm	Ant 0	ECI6	128	824.2	28.83	30.00	1.309	0.03	2.45	1.045	3.207
1st	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Bottom Side	0mm	Ant 0	ECI6	1513	1752.6	19.76	21.00	1.330	0.08	2.59	1	3.446
2nd	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Bottom Side	0mm	Ant 0	ECI6	1513	1752.6	19.76	21.00	1.330	0.01	2.44	1.061	3.246
1st	GSM1900	-	-	-	-	GPRS (4 Tx slots)	Bottom Side	0mm	Ant 0	ECI6	512	1850.2	22.65	24.00	1.365	0.03	2.53	1	3.452
2nd	GSM1900	-	-	-	-	GPRS (4 Tx slots)	Bottom Side	0mm	Ant 0	ECI6	512	1850.2	22.65	24.00	1.365	0.01	2.42	1.045	3.302
1st	FR1 n7	50M	QPSK	1	1	DFT-SCS-15KHz	Back	0mm	Ant 1	ECI6	507000	2535	20.81	22.00	1.315	0.05	2.33	1	3.064
2nd	FR1 n7	50M	QPSK	1	1	DFT-SCS-15KHz	Back	0mm	Ant 1	ECI6	507000	2535	20.81	22.00	1.315	0.09	2.21	1.054	2.907

General Note:

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

16. Simultaneous Transmission Analysis

No.	Simultaneous Transmission Configurations	Portable Handset			
		Head	Body-worn	Hotspot	Product specific 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 + WLAN2.4GHz + NFC				Yes
5.	WWAN + WLAN5GHz + NFC				Yes
6.	WWAN + 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 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.
- 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).
- According to the EUT characteristic, WLAN 5GHz and Bluetooth can not transmit simultaneously.
- According to the EUT characteristic, WLAN 5GHz and WLAN 2.4GHz can not transmit simultaneously.
- WLAN 2.4GHz and Bluetooth share the same antenna and they cannot transmit simultaneously.
- NFC can transmit simultaneously with other Radios in extremity exposure condition.
- The worst case 5 GHz WLAN SAR for each configuration was used for SAR summation.
- For Headset SAR and non-Headset SAR always chose higher SAR to do co-located analysis.
- For 5GNR EN-DC mode, standalone SAR performed for 5GNR NSA band with the maximum power, EN-DC SAR summed EN-DC mode 5GNR standalone SAR and LTE standalone SAR, the result of EN-DC SAR is more conservatively.
- When stand-alone SAR is not required for a transmitter or antenna, its SAR is considered zero in the SAR summing process to assess Multi-band transmission SAR compliance.
- For standalone WWAN, always choose the highest SAR among all WWAN bands for Head SAR and body-worn distance SAR each exposure position to perform simultaneous transmission analysis with WLAN/BT. This is the worst co-located analysis and can represent each bands.
- For standalone WWAN, always choose the highest SAR among all WWAN bands within the selected antenna for each exposure position (except Head exposure Conditions) to perform simultaneous transmission analysis with WLAN/BT. This is the worst co-located analysis and can represent each bands. If the co-located analysis within standalone SAR is higher SAR limit (1.6W/kg for 1g SAR, 4.0W/kg for 10g SAR), always choose the highest SAR among the selected WWAN bands within the selected antenna for each exposure position to perform simultaneous transmission analysis with WLAN/BT.
- For inter-band UL CA SAR co-located with WLAN/Bluetooth, chose the worst SAR among the selected LTE bands within the selected antenna per each test position to do co-located with WLAN/Bluetooth. This is the worst co-located analysis and can represent each LTE bands.
- For EN-DC SAR co-located with WLAN/Bluetooth, chose the worst SAR among the selected LTE bands within the selected antenna per each test position and also the worst SAR of the selected 5GNR Bands within the selected antenna to do co-located with WLAN/Bluetooth. This is the worst co-located analysis and can represent each LTE bands and each 5GNR bands.
- For Headset SAR and non-Headset SAR always chose higher SAR to do co-located analysis
- The maximum SAR summation is calculated based on the same configuration and test position.
- Per KDB 447498 D01v06, 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 16.5.



16.1 Head Exposure Conditions

WWAN Band	Exposure Position	1	2	3	4	1+2	1+3	1+4
		WWAN	WLAN2.4GHz Ant 6	WLAN5GHz Ant 6	Bluetooth Ant 6	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)
WWAN All Bands	Right Cheek	1.100	0.095	0.339	0.124	1.20	1.44	1.22
	Right Tilted	1.162	0.119	0.371	0.158	1.28	1.53	1.32
	Left Cheek	1.034	0.299	0.404	0.393	1.33	1.44	1.43
	Left Tilted	1.080	0.372	0.366	0.473	1.45	1.45	1.55

UL CA

WWAN Band	WWAN Band	Exposure Position	1	2	3	4	5	1+2+3	1+2+4	1+2+5
			WWAN	WWAN	WLAN2.4GHz Ant 6	WLAN5GHz Ant 6	Bluetooth Ant 6	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(2,66(4),5) Ant0	LTE Band(5,7,66(4)) Ant4	Right Cheek	0.340	0.767	0.095	0.339	0.124	1.20	1.45	1.23
		Right Tilted	0.194	0.980	0.119	0.371	0.158	1.29	1.55	1.33
		Left Cheek	0.326	0.478	0.299	0.404	0.393	1.10	1.21	1.20
		Left Tilted	0.199	0.530	0.372	0.366	0.473	1.10	1.10	1.20



EN-DC

WWAN Band	WWAN Band	Exposure Position	1	2	3	4	5	1+2+3	1+2+4	1+2+5	Case No
			WWA N	WWA N	WLAN2.4GHz Ant 6	WLAN5GHz Ant 6	Bluetooth Ant 6	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 26(5) Ant 0	FR1 n78 Ant 5	Right Cheek	0.340	0.719	0.095	0.339	0.124	1.15	1.40	1.18	
		Right Tilted	0.194	0.854	0.119	0.371	0.158	1.17	1.42	1.21	
		Left Cheek	0.326	0.974	0.299	0.404	0.393	1.60	1.70	1.69	1&2&3
		Left Tilted	0.199	1.080	0.372	0.366	0.473	1.65	1.65	1.75	4&5&6
LTE Band 2 Ant 0	FR1 n5 Ant 4	Right Cheek	0.079	0.492	0.095	0.339	0.124	0.67	0.91	0.70	
		Right Tilted	0.065	0.455	0.119	0.371	0.158	0.64	0.89	0.68	
		Left Cheek	0.129	0.355	0.299	0.404	0.393	0.78	0.89	0.88	
		Left Tilted	0.064	0.334	0.372	0.366	0.473	0.77	0.76	0.87	
LTE Band 2 Ant 0	FR1 n66 Ant 4	Right Cheek	0.079	0.965	0.095	0.339	0.124	1.14	1.38	1.17	
		Right Tilted	0.065	1.021	0.119	0.371	0.158	1.21	1.46	1.24	
		Left Cheek	0.129	0.690	0.299	0.404	0.393	1.12	1.22	1.21	
		Left Tilted	0.064	0.796	0.372	0.366	0.473	1.23	1.23	1.33	
LTE Band 2 Ant 0	FR1 n78 Ant 5	Right Cheek	0.079	0.719	0.095	0.339	0.124	0.89	1.14	0.92	
		Right Tilted	0.065	0.854	0.119	0.371	0.158	1.04	1.29	1.08	
		Left Cheek	0.129	0.974	0.299	0.404	0.393	1.40	1.51	1.50	
		Left Tilted	0.064	1.080	0.372	0.366	0.473	1.52	1.51	1.62	7
LTE Band 2 Ant 0	FR1 n7 Ant 4	Right Cheek	0.079	0.923	0.095	0.339	0.124	1.10	1.34	1.13	
		Right Tilted	0.065	1.100	0.119	0.371	0.158	1.28	1.54	1.32	
		Left Cheek	0.129	0.396	0.299	0.404	0.393	0.82	0.93	0.92	
		Left Tilted	0.064	0.512	0.372	0.366	0.473	0.95	0.94	1.05	
LTE Band 41(38) Ant 1	FR1 n78 Ant 5	Right Cheek	0.291	0.719	0.095	0.339	0.124	1.11	1.35	1.13	
		Right Tilted	0.217	0.854	0.119	0.371	0.158	1.19	1.44	1.23	
		Left Cheek	0.472	0.974	0.299	0.404	0.393	1.75	1.85	1.84	8&9&10
		Left Tilted	0.147	1.080	0.372	0.366	0.473	1.60	1.59	1.70	11&13
LTE Band 66(4) Ant 0	FR1 n78 Ant 5	Right Cheek	0.179	0.719	0.095	0.339	0.124	0.99	1.24	1.02	
		Right Tilted	0.102	0.854	0.119	0.371	0.158	1.08	1.33	1.11	
		Left Cheek	0.143	0.974	0.299	0.404	0.393	1.42	1.52	1.51	
		Left Tilted	0.097	1.080	0.372	0.366	0.473	1.55	1.54	1.65	14
LTE Band 5 Ant 4	FR1 n2 Ant 0	Right Cheek	0.519	0.001	0.095	0.339	0.124	0.62	0.86	0.64	
		Right Tilted	0.445	0.001	0.119	0.371	0.158	0.57	0.82	0.60	
		Left Cheek	0.364	0.093	0.299	0.404	0.393	0.76	0.86	0.85	
		Left Tilted	0.322	0.001	0.372	0.366	0.473	0.70	0.69	0.80	
LTE Band 5 Ant 4	FR1 n66 Ant 0	Right Cheek	0.519	0.130	0.095	0.339	0.124	0.74	0.99	0.77	
		Right Tilted	0.445	0.066	0.119	0.371	0.158	0.63	0.88	0.67	
		Left Cheek	0.364	0.108	0.299	0.404	0.393	0.77	0.88	0.87	
		Left Tilted	0.322	0.060	0.372	0.366	0.473	0.75	0.75	0.86	
LTE Band 26(5) Ant 0	FR1 n7 Ant 4	Right Cheek	0.340	0.923	0.095	0.339	0.124	1.36	1.60	1.39	16
		Right Tilted	0.194	1.100	0.119	0.371	0.158	1.41	1.67	1.45	18
		Left Cheek	0.326	0.396	0.299	0.404	0.393	1.02	1.13	1.12	
		Left Tilted	0.199	0.512	0.372	0.366	0.473	1.08	1.08	1.18	
LTE Band 66 Ant 0	FR1 n2 Ant 4	Right Cheek	0.179	0.870	0.095	0.339	0.124	1.14	1.39	1.17	
		Right Tilted	0.102	0.916	0.119	0.371	0.158	1.14	1.39	1.18	
		Left Cheek	0.143	0.527	0.299	0.404	0.393	0.97	1.07	1.06	
		Left Tilted	0.097	0.626	0.372	0.366	0.473	1.10	1.09	1.20	
LTE Band 66 Ant 0	FR1 n7 Ant 4	Right Cheek	0.179	0.923	0.095	0.339	0.124	1.20	1.44	1.23	
		Right Tilted	0.102	1.100	0.119	0.371	0.158	1.32	1.57	1.36	
		Left Cheek	0.143	0.396	0.299	0.404	0.393	0.84	0.94	0.93	
		Left Tilted	0.097	0.512	0.372	0.366	0.473	0.98	0.98	1.08	
LTE Band 7 Ant 1	FR1 n78 Ant 5	Right Cheek	0.304	0.719	0.095	0.339	0.124	1.12	1.36	1.15	
		Right Tilted	0.252	0.854	0.119	0.371	0.158	1.23	1.48	1.26	
		Left Cheek	0.514	0.974	0.299	0.404	0.393	1.79	1.89	1.88	21&22&23



FCC SAR Test Report

Report No. : FA352916

LTE Band 7 Ant 1	FR1 n2 Ant 4	Left Tilted	0.168	1.080	0.372	0.366	0.473	1.62	1.61	1.72	24&25&26
		Right Cheek	0.304	0.870	0.095	0.339	0.124	1.27	1.51	1.30	
		Right Tilted	0.252	0.916	0.119	0.371	0.158	1.29	1.54	1.33	
		Left Cheek	0.514	0.527	0.299	0.404	0.393	1.34	1.45	1.43	
		Left Tilted	0.168	0.626	0.372	0.366	0.473	1.17	1.16	1.27	
LTE Band 7 Ant 1	FR1 n66 Ant 4	Right Cheek	0.304	0.965	0.095	0.339	0.124	1.36	1.61	1.39	28
		Right Tilted	0.252	1.021	0.119	0.371	0.158	1.39	1.64	1.43	30
		Left Cheek	0.514	0.690	0.299	0.404	0.393	1.50	1.61	1.60	31&32
		Left Tilted	0.168	0.796	0.372	0.366	0.473	1.34	1.33	1.44	



16.2 Hotspot Exposure Conditions

WWAN Band	Exposure Position	1	2	3	4	1+2	1+3	1+4	Case No
		WWAN	WLAN2.4GHz Ant 6	WLAN5GHz Ant 6	Bluetooth Ant 6	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)	
All Bands Ant2&4&5&7	Front	0.398	0.245	0.395	0.183	0.64	0.79	0.58	
	Back	0.675	0.408	0.487	0.310	1.08	1.16	0.99	
	Left side	0.364				0.36	0.36	0.36	
	Right side	0.617	0.220	0.415	0.151	0.84	1.03	0.77	
	Top side	0.719	0.652	0.705	0.490	1.37	1.42	1.21	
	Bottom side					0.00	0.00	0.00	
GSM850 Ant 0	Front	0.624	0.245	0.395	0.183	0.87	1.02	0.81	
	Back	1.199	0.408	0.487	0.310	1.61	1.69	1.51	33&34
	Left side	0.227				0.23	0.23	0.23	
	Right side	0.475	0.220	0.415	0.151	0.70	0.89	0.63	
	Top side		0.652	0.705	0.490	0.65	0.71	0.49	
	Bottom side	1.191				1.19	1.19	1.19	
GSM1900 Ant 0	Front	0.268	0.245	0.395	0.183	0.51	0.66	0.45	
	Back	1.132	0.408	0.487	0.310	1.54	1.62	1.44	36
	Left side	0.029				0.03	0.03	0.03	
	Right side	0.054	0.220	0.415	0.151	0.27	0.47	0.21	
	Top side		0.652	0.705	0.490	0.65	0.71	0.49	
	Bottom side	1.283				1.28	1.28	1.28	
WCDMA II Ant 0	Front	0.272	0.245	0.395	0.183	0.52	0.67	0.46	
	Back	1.079	0.408	0.487	0.310	1.49	1.57	1.39	
	Left side	0.037				0.04	0.04	0.04	
	Right side	0.053	0.220	0.415	0.151	0.27	0.47	0.20	
	Top side		0.652	0.705	0.490	0.65	0.71	0.49	
	Bottom side	1.291				1.29	1.29	1.29	
WCDMA IV Ant 0	Front	0.524	0.245	0.395	0.183	0.77	0.92	0.71	
	Back	0.999	0.408	0.487	0.310	1.41	1.49	1.31	
	Left side	0.071				0.07	0.07	0.07	
	Right side	0.081	0.220	0.415	0.151	0.30	0.50	0.23	
	Top side		0.652	0.705	0.490	0.65	0.71	0.49	
	Bottom side	1.228				1.23	1.23	1.23	
WCDMA V Ant 0	Front	0.519	0.245	0.395	0.183	0.76	0.91	0.70	
	Back	1.330	0.408	0.487	0.310	1.74	1.82	1.64	37&38&39
	Left side	0.266				0.27	0.27	0.27	
	Right side	0.515	0.220	0.415	0.151	0.74	0.93	0.67	
	Top side		0.652	0.705	0.490	0.65	0.71	0.49	
	Bottom side	1.234				1.23	1.23	1.23	
LTE Band 2 Ant 0	Front	0.254	0.245	0.395	0.183	0.50	0.65	0.44	
	Back	0.885	0.408	0.487	0.310	1.29	1.37	1.20	
	Left side	0.037				0.04	0.04	0.04	
	Right side	0.046	0.220	0.415	0.151	0.27	0.46	0.20	
	Top side		0.652	0.705	0.490	0.65	0.71	0.49	
	Bottom side	1.225				1.23	1.23	1.23	
LTE Band 12 Ant 0	Front	0.275	0.245	0.395	0.183	0.52	0.67	0.46	
	Back	0.599	0.408	0.487	0.310	1.01	1.09	0.91	
	Left side	0.267				0.27	0.27	0.27	
	Right side	0.516	0.220	0.415	0.151	0.74	0.93	0.67	
	Top side		0.652	0.705	0.490	0.65	0.71	0.49	
	Bottom side	0.529				0.53	0.53	0.53	
LTE Band 13 Ant 0	Front	0.481	0.245	0.395	0.183	0.73	0.88	0.66	
	Back	1.058	0.408	0.487	0.310	1.47	1.55	1.37	



	Left side	0.283				0.28	0.28	0.28	
	Right side	0.606	0.220	0.415	0.151	0.83	1.02	0.76	
	Top side		0.652	0.705	0.490	0.65	0.71	0.49	
	Bottom side	1.034				1.03	1.03	1.03	
LTE Band 26(5) Ant 0	Front	0.549	0.245	0.395	0.183	0.79	0.94	0.73	
	Back	1.159	0.408	0.487	0.310	1.57	1.65	1.47	40
	Left side	0.271				0.27	0.27	0.27	
	Right side	0.513	0.220	0.415	0.151	0.73	0.93	0.66	
	Top side		0.652	0.705	0.490	0.65	0.71	0.49	
LTE Band 25 Ant 0	Bottom side	1.141				1.14	1.14	1.14	
	Front	0.266	0.245	0.395	0.183	0.51	0.66	0.45	
	Back	1.110	0.408	0.487	0.310	1.52	1.60	1.42	41
	Left side	0.042				0.04	0.04	0.04	
	Right side	0.048	0.220	0.415	0.151	0.27	0.46	0.20	
LTE Band 66(4) Ant 0	Top side		0.652	0.705	0.490	0.65	0.71	0.49	
	Bottom side	1.345				1.35	1.35	1.35	
	Front	0.473	0.245	0.395	0.183	0.72	0.87	0.66	
	Back	0.893	0.408	0.487	0.310	1.30	1.38	1.20	
	Left side	0.057				0.06	0.06	0.06	
LTE Band 7 Ant 1	Right side	0.055	0.220	0.415	0.151	0.28	0.47	0.21	
	Top side		0.652	0.705	0.490	0.65	0.71	0.49	
	Bottom side	1.095				1.10	1.10	1.10	
	Front	0.604	0.245	0.395	0.183	0.85	1.00	0.79	
	Back	1.341	0.408	0.487	0.310	1.75	1.83	1.65	42&43&44
LTE Band 41(38) Ant 1	Left side	0.857				0.86	0.86	0.86	
	Right side		0.220	0.415	0.151	0.22	0.42	0.15	
	Top side		0.652	0.705	0.490	0.65	0.71	0.49	
	Bottom side	0.553				0.55	0.55	0.55	
	Front	0.883	0.245	0.395	0.183	1.13	1.28	1.07	
FR1 n2 Ant 0	Back	1.376	0.408	0.487	0.310	1.78	1.86	1.69	45&46&47
	Left side	0.950				0.95	0.95	0.95	
	Right side		0.220	0.415	0.151	0.22	0.42	0.15	
	Top side		0.652	0.705	0.490	0.65	0.71	0.49	
	Bottom side	0.309				0.31	0.31	0.31	
FR1 n5 Ant 0	Front	0.192	0.245	0.395	0.183	0.44	0.59	0.38	
	Back	0.788	0.408	0.487	0.310	1.20	1.28	1.10	
	Left side	0.029				0.03	0.03	0.03	
	Right side	0.040	0.220	0.415	0.151	0.26	0.46	0.19	
	Top side		0.652	0.705	0.490	0.65	0.71	0.49	
FR1 n26 Ant 0	Bottom side	1.263				1.26	1.26	1.26	
	Front	0.421	0.245	0.395	0.183	0.67	0.82	0.60	
	Back	0.858	0.408	0.487	0.310	1.27	1.35	1.17	
	Left side	0.212				0.21	0.21	0.21	
	Right side	0.180	0.220	0.415	0.151	0.40	0.60	0.33	
FR1 n66 Ant 0	Top side		0.652	0.705	0.490	0.65	0.71	0.49	
	Bottom side	0.693				0.69	0.69	0.69	
	Front	0.571	0.245	0.395	0.183	0.82	0.97	0.75	
	Back	1.191	0.408	0.487	0.310	1.60	1.68	1.50	48&49
	Left side	0.289				0.29	0.29	0.29	
FR1 n66 Ant 0	Right side	0.558	0.220	0.415	0.151	0.78	0.97	0.71	
	Top side		0.652	0.705	0.490	0.65	0.71	0.49	
	Bottom side	0.974				0.97	0.97	0.97	
	Front	0.651	0.245	0.395	0.183	0.90	1.05	0.83	
FR1 n66 Ant 0	Back	1.156	0.408	0.487	0.310	1.56	1.64	1.47	50
	Left side	0.081				0.08	0.08	0.08	
	Right side	0.099	0.220	0.415	0.151	0.32	0.51	0.25	



	Top side		0.652	0.705	0.490	0.65	0.71	0.49	
	Bottom side	1.338				1.34	1.34	1.34	
FR1 n7 Ant 1	Front	0.802	0.245	0.395	0.183	1.05	1.20	0.99	
	Back	1.391	0.408	0.487	0.310	1.80	1.88	1.70	51&52&53
	Left side	0.900				0.90	0.90	0.90	
	Right side		0.220	0.415	0.151	0.22	0.42	0.15	
	Top side		0.652	0.705	0.490	0.65	0.71	0.49	
	Bottom side	0.462				0.46	0.46	0.46	
FR1 n78 Ant 1	Front	0.498	0.245	0.395	0.183	0.74	0.89	0.68	
	Back	0.990	0.408	0.487	0.310	1.40	1.48	1.30	
	Left side	0.681				0.68	0.68	0.68	
	Right side		0.220	0.415	0.151	0.22	0.42	0.15	
	Top side		0.652	0.705	0.490	0.65	0.71	0.49	
	Bottom side	0.268				0.27	0.27	0.27	



UL CA

WWAN Band	WWAN Band	Exposure Position	1	2	3	4	5	1+2+3	1+2+4	1+2+5	Case No
			WWAN	WWAN	WLAN2.4GHz Ant 6	WLAN5GHz Ant 6	Bluetooth Ant 6	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 2 Ant 0	LTE Band 66(4) Ant 4	Front	0.254	0.321	0.245	0.395	0.183	0.82	0.97	0.76	
		Back	0.885	0.535	0.408	0.487	0.310	1.83	1.91	1.73	54&55&56
		Left side	0.037	0.093				0.13	0.13	0.13	
		Right side	0.046		0.220	0.415	0.151	0.27	0.46	0.20	
		Top side		0.654	0.652	0.705	0.490	1.31	1.36	1.14	
		Bottom side	1.225					1.23	1.23	1.23	
LTE Band 2 Ant 0	LTE Band 7 Ant 4	Front	0.254	0.225	0.245	0.395	0.183	0.72	0.87	0.66	
		Back	0.885	0.301	0.408	0.487	0.310	1.59	1.67	1.50	57
		Left side	0.037	0.061				0.10	0.10	0.10	
		Right side	0.046		0.220	0.415	0.151	0.27	0.46	0.20	
		Top side		0.675	0.652	0.705	0.490	1.33	1.38	1.17	
		Bottom side	1.225					1.23	1.23	1.23	
LTE Band 66(4) Ant 0	LTE Band 5 Ant 4	Front	0.473	0.249	0.245	0.395	0.183	0.97	1.12	0.91	
		Back	0.893	0.537	0.408	0.487	0.310	1.84	1.92	1.74	58&59&60
		Left side	0.057	0.077				0.13	0.13	0.13	
		Right side	0.055		0.220	0.415	0.151	0.28	0.47	0.21	
		Top side		0.462	0.652	0.705	0.490	1.11	1.17	0.95	
		Bottom side	1.095					1.10	1.10	1.10	
LTE Band 66(4) Ant 0	LTE Band 7 Ant 4	Front	0.473	0.225	0.245	0.395	0.183	0.94	1.09	0.88	
		Back	0.893	0.301	0.408	0.487	0.310	1.60	1.68	1.50	61&62
		Left side	0.057	0.061				0.12	0.12	0.12	
		Right side	0.055		0.220	0.415	0.151	0.28	0.47	0.21	
		Top side		0.675	0.652	0.705	0.490	1.33	1.38	1.17	
		Bottom side	1.095					1.10	1.10	1.10	
LTE Band 26(5) Ant 0	LTE Band 7 Ant 4	Front	0.549	0.225	0.245	0.395	0.183	1.02	1.17	0.96	
		Back	1.159	0.301	0.408	0.487	0.310	1.87	1.95	1.77	64&65&66
		Left side	0.271	0.061				0.33	0.33	0.33	
		Right side	0.513		0.220	0.415	0.151	0.73	0.93	0.66	
		Top side		0.675	0.652	0.705	0.490	1.33	1.38	1.17	
		Bottom side	1.141					1.14	1.14	1.14	



EN-DC

WWAN Band	WWAN Band	Exposure Position	1	2	3	4	5	1+2+3	1+2+4	1+2+5	Case No
			WWAN	WWAN	WLAN2.4GHz Ant 6	WLAN5GHz Ant 6	Bluetooth Ant 6	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 2 Ant 0	FR1 n5 Ant 4	Front	0.254	0.246	0.245	0.395	0.183	0.75	0.90	0.68	
		Back	0.885	0.603	0.408	0.487	0.310	1.90	1.98	1.80	67&68&69
		Left side	0.037	0.078				0.12	0.12	0.12	
		Right side	0.046		0.220	0.415	0.151	0.27	0.46	0.20	
		Top side		0.461	0.652	0.705	0.490	1.11	1.17	0.95	
		Bottom side	1.225					1.23	1.23	1.23	
LTE Band 2 Ant 0	FR1 n66 Ant 4	Front	0.254	0.398	0.245	0.395	0.183	0.90	1.05	0.84	
		Back	0.885	0.639	0.408	0.487	0.310	1.93	2.01	1.83	70&71&72
		Left side	0.037	0.118				0.16	0.16	0.16	
		Right side	0.046		0.220	0.415	0.151	0.27	0.46	0.20	
		Top side		0.719	0.652	0.705	0.490	1.37	1.42	1.21	
		Bottom side	1.225					1.23	1.23	1.23	
LTE Band 2 Ant 0	FR1 n78 Ant 5	Front	0.254	0.269	0.245	0.395	0.183	0.77	0.92	0.71	
		Back	0.885	0.607	0.408	0.487	0.310	1.90	1.98	1.80	73&74&75
		Left side	0.037					0.04	0.04	0.04	
		Right side	0.046	0.068	0.220	0.415	0.151	0.33	0.53	0.27	
		Top side		0.388	0.652	0.705	0.490	1.04	1.09	0.88	
		Bottom side	1.225					1.23	1.23	1.23	
LTE Band 2 Ant 0	FR1 n7 Ant 4	Front	0.254	0.225	0.245	0.395	0.183	0.72	0.87	0.66	
		Back	0.885	0.457	0.408	0.487	0.310	1.75	1.83	1.65	76&77&78
		Left side	0.037	0.093				0.13	0.13	0.13	
		Right side	0.046		0.220	0.415	0.151	0.27	0.46	0.20	
		Top side		0.694	0.652	0.705	0.490	1.35	1.40	1.18	
		Bottom side	1.225					1.23	1.23	1.23	
LTE Band 41(38) Ant 1	FR1 n78 Ant 5	Front	0.531	0.269	0.245	0.395	0.183	1.05	1.20	0.98	
		Back	1.002	0.607	0.408	0.487	0.310	2.02	2.10	1.92	79&80&81
		Left side	0.064					0.06	0.06	0.06	
		Right side	0.062	0.068	0.220	0.415	0.151	0.35	0.55	0.28	
		Top side		0.388	0.652	0.705	0.490	1.04	1.09	0.88	
		Bottom side	1.229					1.23	1.23	1.23	
LTE Band 5 Ant 4	FR1 n2 Ant 0	Front	0.249	0.192	0.245	0.395	0.183	0.69	0.84	0.62	
		Back	0.537	0.788	0.408	0.487	0.310	1.73	1.81	1.64	82&83&84
		Left side	0.077	0.029				0.11	0.11	0.11	
		Right side		0.040	0.220	0.415	0.151	0.26	0.46	0.19	
		Top side	0.462		0.652	0.705	0.490	1.11	1.17	0.95	
		Bottom side		1.263				1.26	1.26	1.26	
LTE Band 5 Ant 4	FR1 n66 Ant 0	Front	0.249	0.651	0.245	0.395	0.183	1.15	1.30	1.08	
		Back	0.537	1.156	0.408	0.487	0.310	2.10	2.18	2.00	85&86&87
		Left side	0.077	0.081				0.16	0.16	0.16	
		Right side		0.099	0.220	0.415	0.151	0.32	0.51	0.25	
		Top side	0.462		0.652	0.705	0.490	1.11	1.17	0.95	
		Bottom side		1.338				1.34	1.34	1.34	
LTE Band 26(5) Ant 0	FR1 n78 Ant 5	Front	0.549	0.269	0.245	0.395	0.183	1.06	1.21	1.00	
		Back	1.159	0.607	0.408	0.487	0.310	2.17	2.25	2.08	88&89&90
		Left side	0.271					0.27	0.27	0.27	
		Right side	0.513	0.068	0.220	0.415	0.151	0.80	1.00	0.73	
		Top side		0.388	0.652	0.705	0.490	1.04	1.09	0.88	
		Bottom side	1.141					1.14	1.14	1.14	
LTE Band 26(5) Ant 0	FR1 n7 Ant 4	Front	0.549	0.225	0.245	0.395	0.183	1.02	1.17	0.96	
		Back	1.159	0.457	0.408	0.487	0.310	2.02	2.10	1.93	91&92&93
		Left side	0.271	0.093				0.36	0.36	0.36	



		Right side	0.513		0.220	0.415	0.151	0.73	0.93	0.66	
		Top side		0.694	0.652	0.705	0.490	1.35	1.40	1.18	
		Bottom side	1.141					1.14	1.14	1.14	
LTE Band 66 Ant 0	FR1 n2 Ant 4	Front	0.473	0.263	0.245	0.395	0.183	0.98	1.13	0.92	
		Back	0.893	0.451	0.408	0.487	0.310	1.75	1.83	1.65	94&95&96
		Left side	0.057	0.083				0.14	0.14	0.14	
		Right side	0.055		0.220	0.415	0.151	0.28	0.47	0.21	
		Top side		0.619	0.652	0.705	0.490	1.27	1.32	1.11	
		Bottom side	1.095					1.10	1.10	1.10	
LTE Band 66 Ant 0	FR1 n78 Ant 5	Front	0.473	0.269	0.245	0.395	0.183	0.99	1.14	0.93	
		Back	0.893	0.607	0.408	0.487	0.310	1.91	1.99	1.81	97&98&99
		Left side	0.057					0.06	0.06	0.06	
		Right side	0.055	0.068	0.220	0.415	0.151	0.34	0.54	0.27	
		Top side		0.388	0.652	0.705	0.490	1.04	1.09	0.88	
		Bottom side	1.095					1.10	1.10	1.10	

WWAN Band	WWAN Band	Exposure Position	1	2	3	4	5	1+2+3	1+2+4	1+2+5	Case No
			WWAN	WWAN	WLAN2.4GHz Ant 6	WLAN5GHz Ant 6	Bluetooth Ant 6	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 66 Ant 0	FR1 n7 Ant 4	Front	0.473	0.225	0.245	0.395	0.183	0.94	1.09	0.88	
		Back	0.893	0.457	0.408	0.487	0.310	1.76	1.84	1.66	100&101&102
		Left side	0.057	0.093				0.15	0.15	0.15	
		Right side	0.055		0.220	0.415	0.151	0.28	0.47	0.21	
		Top side		0.694	0.652	0.705	0.490	1.35	1.40	1.18	
		Bottom side	1.095					1.10	1.10	1.10	
LTE Band 7 Ant 1	FR1 n78 Ant 5	Front	0.604	0.269	0.245	0.395	0.183	1.12	1.27	1.06	
		Back	1.341	0.607	0.408	0.487	0.310	2.36	2.44	2.26	103&104&105
		Left side	0.857					0.86	0.86	0.86	
		Right side		0.068	0.220	0.415	0.151	0.29	0.48	0.22	
		Top side		0.388	0.652	0.705	0.490	1.04	1.09	0.88	
		Bottom side	0.553					0.55	0.55	0.55	
LTE Band 7 Ant 1	FR1 n2 Ant 4	Front	0.604	0.263	0.245	0.395	0.183	1.11	1.26	1.05	
		Back	1.341	0.451	0.408	0.487	0.310	2.20	2.28	2.10	106&107&108
		Left side	0.857	0.083				0.94	0.94	0.94	
		Right side			0.220	0.415	0.151	0.22	0.42	0.15	
		Top side		0.619	0.652	0.705	0.490	1.27	1.32	1.11	
		Bottom side	0.553					0.55	0.55	0.55	
LTE Band 7 Ant 1	FR1 n66 Ant 4	Front	0.604	0.398	0.245	0.395	0.183	1.25	1.40	1.19	
		Back	1.341	0.639	0.408	0.487	0.310	2.39	2.47	2.29	109&110&111
		Left side	0.857	0.118				0.98	0.98	0.98	
		Right side			0.220	0.415	0.151	0.22	0.42	0.15	
		Top side		0.719	0.652	0.705	0.490	1.37	1.42	1.21	
		Bottom side	0.553					0.55	0.55	0.55	



16.3 Body-Worn Accessory Exposure Conditions

WWAN Band	Exposure Position	1	2	3	4	1+2	1+3	1+4	Case No
		WWAN	WLAN2.4GHz Ant 6	WLAN5GHz Ant 6	Bluetooth Ant 6	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)	
All Bands Ant2&4&5&7	Front	0.508	0.318	0.383	0.260	0.83	0.89	0.77	
	Back	1.069	0.440	0.431	0.443	1.51	1.50	1.51	
GSM850 Ant 0	Front	0.624	0.318	0.383	0.260	0.94	1.01	0.88	
	Back	1.199	0.440	0.431	0.443	1.64	1.63	1.64	128&130&&131
GSM1900 Ant 0	Front	0.268	0.318	0.383	0.260	0.59	0.65	0.53	
	Back	1.132	0.440	0.431	0.443	1.57	1.56	1.58	
WCDMA II Ant 0	Front	0.350	0.318	0.383	0.260	0.67	0.73	0.61	
	Back	1.384	0.440	0.431	0.443	1.82	1.82	1.83	132&133&134
WCDMA IV Ant 0	Front	0.646	0.318	0.383	0.260	0.96	1.03	0.91	
	Back	1.231	0.440	0.431	0.443	1.67	1.66	1.67	135&&136&137
WCDMA V Ant 0	Front	0.519	0.318	0.383	0.260	0.84	0.90	0.78	
	Back	1.330	0.440	0.431	0.443	1.77	1.76	1.77	138&139&140
LTE Band 2 Ant 0	Front	0.389	0.318	0.383	0.260	0.71	0.77	0.65	
	Back	1.357	0.440	0.431	0.443	1.80	1.79	1.80	141&142&143
LTE Band 12 Ant 0	Front	0.275	0.318	0.383	0.260	0.59	0.66	0.54	
	Back	0.599	0.440	0.431	0.443	1.04	1.03	1.04	
LTE Band 13 Ant 0	Front	0.481	0.318	0.383	0.260	0.80	0.86	0.74	
	Back	1.058	0.440	0.431	0.443	1.50	1.49	1.50	
LTE Band 26(5) Ant 0	Front	0.549	0.318	0.383	0.260	0.87	0.93	0.81	
	Back	1.159	0.440	0.431	0.443	1.60	1.59	1.60	145&146
LTE Band 25 Ant 0	Front	0.329	0.318	0.383	0.260	0.65	0.71	0.59	
	Back	1.374	0.440	0.431	0.443	1.81	1.81	1.82	147&148&149
LTE Band 66(4) Ant 0	Front	0.611	0.318	0.383	0.260	0.93	0.99	0.87	
	Back	1.171	0.440	0.431	0.443	1.61	1.60	1.61	150&151&152
LTE Band 7 Ant 1	Front	0.604	0.318	0.383	0.260	0.92	0.99	0.86	
	Back	1.341	0.440	0.431	0.443	1.78	1.77	1.78	153&154&155
LTE Band 41(38) Ant 1	Front	0.883	0.318	0.383	0.260	1.20	1.27	1.14	
	Back	1.376	0.440	0.431	0.443	1.82	1.81	1.82	156&157&158
FR1 n2 Ant 0	Front	0.246	0.318	0.383	0.260	0.56	0.63	0.51	
	Back	1.230	0.440	0.431	0.443	1.67	1.66	1.67	159&160&161
FR1 n5 Ant 0	Front	0.421	0.318	0.383	0.260	0.74	0.80	0.68	
	Back	0.858	0.440	0.431	0.443	1.30	1.29	1.30	
FR1 n26 Ant 0	Front	0.571	0.318	0.383	0.260	0.89	0.95	0.83	
	Back	1.191	0.440	0.431	0.443	1.63	1.62	1.63	162&163&164
FR1 n66 Ant 0	Front	0.810	0.318	0.383	0.260	1.13	1.19	1.07	
	Back	1.354	0.440	0.431	0.443	1.79	1.79	1.80	165&&167&168
FR1 n7 Ant 1	Front	0.802	0.318	0.383	0.260	1.12	1.19	1.06	
	Back	1.391	0.440	0.431	0.443	1.83	1.82	1.83	169&170&171
FR1 n78 Ant 1	Front	0.498	0.318	0.383	0.260	0.82	0.88	0.76	
	Back	0.990	0.440	0.431	0.443	1.43	1.42	1.43	



UL CA

WWAN Band	WWAN Band	Exposure Position	1	2	3	4	5	1+2+3	1+2+4	1+2+5	Case No
			WWAN	WWAN	WLAN2.4GHz Ant 6	WLAN5GHz Ant 6	Bluetooth Ant 6	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 2 Ant 0	LTE Band 66 Ant 4	Front	0.389	0.489	0.318	0.383	0.260	1.20	1.26	1.14	172&173&174
		Back	1.357	0.982	0.440	0.431	0.443	2.78	2.77	2.78	
LTE Band 2 Ant 0	LTE Band 7 Ant 4	Front	0.389	0.467	0.318	0.383	0.260	1.17	1.24	1.12	175&176&&177
		Back	1.357	1.016	0.440	0.431	0.443	2.81	2.80	2.82	
LTE Band 66(4) Ant 0	LTE Band 5 Ant 4	Front	0.611	0.249	0.318	0.383	0.260	1.18	1.24	1.12	178&179&180
		Back	1.171	0.537	0.440	0.431	0.443	2.15	2.14	2.15	
LTE Band 66(4) Ant 0	LTE Band 7 Ant 4	Front	0.611	0.467	0.318	0.383	0.260	1.40	1.46	1.34	181&182&183
		Back	1.171	1.016	0.440	0.431	0.443	2.63	2.62	2.63	
LTE Band 26(5) Ant 0	LTE Band 7 Ant 4	Front	0.549	0.467	0.318	0.383	0.260	1.33	1.40	1.28	184&185&186
		Back	1.159	1.016	0.440	0.431	0.443	2.62	2.61	2.62	

EN-DC

WWAN Band	FR1 Band	Exposure Position	1	2	3	4	5	1+2+3	1+2+4	1+2+5	Case No
			WWAN	FR1 Band	WLAN2.4GHz Ant 6	WLAN5GHz Ant 6	Bluetooth Ant 6	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 2 Ant 0	FR1 n5 Ant 4	Front	0.389	0.246	0.318	0.383	0.260	0.95	1.02	0.90	187&188&189
		Back	1.357	0.595	0.440	0.431	0.443	2.39	2.38	2.40	
LTE Band 2 Ant 0	FR1 n66 Ant 4	Front	0.389	0.556	0.318	0.383	0.260	1.26	1.33	1.21	190&191&192
		Back	1.357	1.202	0.440	0.431	0.443	3.00	2.99	3.00	
LTE Band 2 Ant 0	FR1 n78 Ant 5	Front	0.389	0.436	0.318	0.383	0.260	1.14	1.21	1.09	193&194&195
		Back	1.357	0.982	0.440	0.431	0.443	2.78	2.77	2.78	
LTE Band 2 Ant 0	FR1 n7 Ant 4	Front	0.389	0.480	0.318	0.383	0.260	1.19	1.25	1.13	196&197&198
		Back	1.357	1.147	0.440	0.431	0.443	2.94	2.94	2.95	
LTE Band 41(38) Ant 1	FR1 n78 Ant 5	Front	0.389	0.436	0.318	0.383	0.260	1.14	1.21	1.09	199&200&201
		Back	1.357	0.982	0.440	0.431	0.443	2.78	2.77	2.78	
LTE Band 5 Ant 4	FR1 n2 Ant 0	Front	0.249	0.246	0.318	0.383	0.260	0.81	0.88	0.76	202&203&204
		Back	0.537	1.230	0.440	0.431	0.443	2.21	2.20	2.21	
LTE Band 5 Ant 4	FR1 n66 Ant 0	Front	0.249	0.810	0.318	0.383	0.260	1.38	1.44	1.32	205&206&207
		Back	0.537	1.354	0.440	0.431	0.443	2.33	2.32	2.33	
LTE Band 26(5) Ant 0	FR1 n78 Ant 5	Front	0.549	0.436	0.318	0.383	0.260	1.30	1.37	1.25	208&209&210
		Back	1.159	0.982	0.440	0.431	0.443	2.58	2.57	2.58	
LTE Band 26(5) Ant 0	FR1 n7 Ant 4	Front	0.549	0.480	0.318	0.383	0.260	1.35	1.41	1.29	211&212&213
		Back	1.159	1.147	0.440	0.431	0.443	2.75	2.74	2.75	
LTE Band 66 Ant 0	FR1 n2 Ant 4	Front	0.611	0.364	0.318	0.383	0.260	1.29	1.36	1.24	214&&215&216
		Back	1.171	0.921	0.440	0.431	0.443	2.53	2.52	2.54	
LTE Band 66 Ant 0	FR1 n78 Ant 5	Front	0.611	0.436	0.318	0.383	0.260	1.37	1.43	1.31	217&218&219
		Back	1.171	0.982	0.440	0.431	0.443	2.59	2.58	2.60	
LTE Band 66 Ant 0	FR1 n7 Ant 4	Front	0.611	0.480	0.318	0.383	0.260	1.41	1.47	1.35	220&221&222
		Back	1.171	1.147	0.440	0.431	0.443	2.76	2.75	2.76	
LTE Band 7 Ant 1	FR1 n78 Ant 5	Front	0.604	0.436	0.318	0.383	0.260	1.36	1.42	1.30	223&224&225
		Back	1.341	0.982	0.440	0.431	0.443	2.76	2.75	2.77	
LTE Band 7 Ant 1	FR1 n2 Ant 4	Front	0.604	0.364	0.318	0.383	0.260	1.29	1.35	1.23	226&227&228
		Back	1.341	0.921	0.440	0.431	0.443	2.70	2.69	2.71	
LTE Band 7 Ant 1	FR1 n66 Ant 4	Front	0.604	0.556	0.318	0.383	0.260	1.48	1.54	1.42	229&230&231
		Back	1.341	1.202	0.440	0.431	0.443	2.98	2.97	2.99	



Sensor-Off

WWAN Band	Exposure Position	1	2	3	4	1+2	1+3	1+4	SPLSR
		WWAN 1g SAR (W/kg)	WLAN2.4GHz Ant 6 1g SAR (W/kg)	WLAN5GHz Ant 6 1g SAR (W/kg)	Bluetooth Ant 6 1g SAR (W/kg)	Summed 1g SAR (W/kg)	Summed 1g SAR (W/kg)	Summed 1g SAR (W/kg)	
All Bands Ant1&2&4&5&7	Front at 12mm	1.022	0.244	0.389	0.260	1.27	1.41	1.28	
	Back at 17mm	0.838	0.125	0.654	0.443	0.96	1.49	1.28	
GSM850 Ant 0	Front at 12mm	0.428	0.244	0.389	0.260	0.67	0.82	0.69	
	Back at 17mm	0.512	0.125	0.654	0.443	0.64	1.17	0.96	
GSM1900 Ant 0	Front at 12mm	0.542	0.244	0.389	0.260	0.79	0.93	0.80	
	Back at 17mm	0.905	0.125	0.654	0.443	1.03	1.56	1.35	
WCDMA II Ant 0	Front at 12mm	0.674	0.244	0.389	0.260	0.92	1.06	0.93	
	Back at 17mm	1.127	0.125	0.654	0.443	1.25	1.78	1.57	232
WCDMA IV Ant 0	Front at 12mm	1.002	0.244	0.389	0.260	1.25	1.39	1.26	
	Back at 17mm	0.969	0.125	0.654	0.443	1.09	1.62	1.41	233
WCDMA V Ant 0	Front at 12mm	0.319	0.244	0.389	0.260	0.56	0.71	0.58	
	Back at 17mm	0.351	0.125	0.654	0.443	0.48	1.01	0.79	
LTE Band 2 Ant 0	Front at 12mm	0.656	0.244	0.389	0.260	0.90	1.05	0.92	
	Back at 17mm	1.158	0.125	0.654	0.443	1.28	1.81	1.60	234&235
LTE Band 25 Ant 0	Front at 12mm	0.627	0.244	0.389	0.260	0.87	1.02	0.89	
	Back at 17mm	1.212	0.125	0.654	0.443	1.34	1.87	1.66	236&237
LTE Band 66(4) Ant 0	Front at 12mm	0.832	0.244	0.389	0.260	1.08	1.22	1.09	
	Back at 17mm	0.820	0.125	0.654	0.443	0.95	1.47	1.26	
FR1 n2 Ant 0	Front at 12mm	0.402	0.244	0.389	0.260	0.65	0.79	0.66	
	Back at 17mm	0.785	0.125	0.654	0.443	0.91	1.44	1.23	
FR1 n66 Ant 0	Front at 12mm	0.676	0.244	0.389	0.260	0.92	1.07	0.94	
	Back at 17mm	0.503	0.125	0.654	0.443	0.63	1.16	0.95	

UL CA

WWAN Band	WWAN Band	Exposure Position	1	2	3	4	5	1+2+3	1+2+4	1+2+5	SPLSR
			WWAN 1g SAR (W/kg)	WWAN 1g SAR (W/kg)	WLAN2.4 GHz Ant 6 1g SAR (W/kg)	WLAN5 GHz Ant 6 1g SAR (W/kg)	Bluetooth Ant 6 1g SAR (W/kg)	Summed 1g SAR (W/kg)	Summed 1g SAR (W/kg)	Summed 1g SAR (W/kg)	
LTE Band 2 Ant 0	LTE Band 66 Ant 4	Front at 12mm	0.656	0.188	0.244	0.389	0.260	1.09	1.23	1.10	
		Back at 17mm	1.158	0.147	0.125	0.654	0.443	1.43	1.96	1.75	238&239
LTE Band 2 Ant 0	LTE Band 7 Ant 4	Front at 12mm	0.656	0.835	0.244	0.389	0.260	1.74	1.88	1.75	240&241&242
		Back at 17mm	1.158	0.824	0.125	0.654	0.443	2.11	2.64	2.43	243&244&245
LTE Band 66(4) Ant 0	LTE Band 5 Ant 4	Front at 12mm	0.832	0.249	0.244	0.389	0.260	1.33	1.47	1.34	
		Back at 17mm	0.820	0.063	0.125	0.654	0.443	1.01	1.54	1.33	
LTE Band 66(4) Ant 0	LTE Band 7 Ant 4	Front at 12mm	0.832	0.835	0.244	0.389	0.260	1.91	2.06	1.93	246&247&248
		Back at 17mm	0.820	0.824	0.125	0.654	0.443	1.77	2.30	2.09	249&250&251
LTE Band 26(5) Ant 0	LTE Band 7 Ant 4	Front at 12mm	0.233	0.835	0.244	0.389	0.260	1.31	1.46	1.33	
		Back at 17mm	0.280	0.824	0.125	0.654	0.443	1.23	1.76	1.55	252



EN-DC

WWAN Band	FR1 Band	Exposure Position	1	2	3	4	5	1+2+3	1+2+4	1+2+5	SPLSR
			WWAN	FR1 Band	WLAN2.4GHz	WLAN5GHz	Bluetooth	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 2 Ant 0	FR1 n5 Ant 4	Front at 12mm	0.656	0.246	0.244	0.389	0.260	1.15	1.29	1.16	
		Back at 17mm	1.158	0.063	0.125	0.654	0.443	1.35	1.88	1.66	253&254
LTE Band 2 Ant 0	FR1 n66 Ant 4	Front at 12mm	0.656	0.132	0.244	0.389	0.260	1.03	1.18	1.05	
		Back at 17mm	1.158	0.277	0.125	0.654	0.443	1.56	2.09	1.88	255&256
LTE Band 2 Ant 0	FR1 n78 Ant 5	Front at 12mm	0.656	0.791	0.244	0.389	0.260	1.69	1.84	1.71	257&258&259
		Back at 17mm	1.158	0.488	0.125	0.654	0.443	1.77	2.30	2.09	260&261&262
LTE Band 2 Ant 0	FR1 n7 Ant 4	Front at 12mm	0.656	1.022	0.244	0.389	0.260	1.92	2.07	1.94	263&264&265
		Back at 17mm	1.158	0.838	0.125	0.654	0.443	2.12	2.65	2.44	266&267&268
LTE Band 41(38) Ant 1	FR1 n78 Ant 5	Front at 12mm	0.513	0.791	0.244	0.389	0.260	1.55	1.69	1.56	269
		Back at 17mm	0.334	0.488	0.125	0.654	0.443	0.95	1.48	1.27	
LTE Band 5 Ant 4	FR1 n2 Ant 0	Front at 12mm	0.249	0.402	0.244	0.389	0.260	0.90	1.04	0.91	
		Back at 17mm	0.063	0.785	0.125	0.654	0.443	0.97	1.50	1.29	
LTE Band 5 Ant 4	FR1 n66 Ant 0	Front at 12mm	0.249	0.676	0.244	0.389	0.260	1.17	1.31	1.19	
		Back at 17mm	0.063	0.503	0.125	0.654	0.443	0.69	1.22	1.01	
LTE Band 26(5) Ant 0	FR1 n78 Ant 5	Front at 12mm	0.233	0.791	0.244	0.389	0.260	1.27	1.41	1.28	
		Back at 17mm	0.280	0.488	0.125	0.654	0.443	0.89	1.42	1.21	
LTE Band 26(5) Ant 0	FR1 n7 Ant 4	Front at 12mm	0.233	1.022	0.244	0.389	0.260	1.50	1.64	1.52	270
		Back at 17mm	0.280	0.838	0.125	0.654	0.443	1.24	1.77	1.56	271
LTE Band 66 Ant 0	FR1 n2 Ant 4	Front at 12mm	0.832	0.173	0.244	0.389	0.260	1.25	1.39	1.27	
		Back at 17mm	0.820	0.218	0.125	0.654	0.443	1.16	1.69	1.48	272
LTE Band 66 Ant 0	FR1 n78 Ant 5	Front at 12mm	0.832	0.791	0.244	0.389	0.260	1.87	2.01	1.88	273&274&275
		Back at 17mm	0.820	0.488	0.125	0.654	0.443	1.43	1.96	1.75	276&277
LTE Band 66 Ant 0	FR1 n7 Ant 4	Front at 12mm	0.832	1.022	0.244	0.389	0.260	2.10	2.24	2.11	278&279&280
		Back at 17mm	0.820	0.838	0.125	0.654	0.443	1.78	2.31	2.10	281&282&283
LTE Band 7 Ant 1	FR1 n78 Ant 5	Front at 12mm	0.349	0.791	0.244	0.389	0.260	1.38	1.53	1.40	
		Back at 17mm	0.224	0.488	0.125	0.654	0.443	0.84	1.37	1.16	
LTE Band 7 Ant 1	FR1 n2 Ant 4	Front at 12mm	0.349	0.173	0.244	0.389	0.260	0.77	0.91	0.78	
		Back at 17mm	0.224	0.218	0.125	0.654	0.443	0.57	1.10	0.89	
LTE Band 7 Ant 1	FR1 n66 Ant 4	Front at 12mm	0.349	0.132	0.244	0.389	0.260	0.73	0.87	0.74	
		Back at 17mm	0.224	0.277	0.125	0.654	0.443	0.63	1.16	0.94	

16.4 Product specific 10g SAR Exposure Conditions

Remark:

- 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	2	3	5	1+2+5	1+3+5
		WWAN	WLAN2.4GHz Ant 6	WLAN5GHz Ant 6	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)
WWAN All Bands	Front	1.618		0.809	0.001	1.62	2.43
	Back	3.064	0.868	0.863	0.022	3.95	3.95
	Left side	1.237				1.24	1.24
	Right side	1.192		0.843		1.19	2.04
	Top side	2.689	1.179	1.025		3.87	3.71
	Bottom side	3.481			0.010	3.49	3.49

UL CA

WWAN Band	WWAN Band	Exposure Position	1	2	3	4	5	1+2+3+5	1+2+4+5
			WWAN	WWAN	WLAN2.4GHz Ant 6	WLAN5GHz Ant 6	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)	10g SAR (W/kg)
LTE Band(2,66(4),5) Ant0	LTE Band(5,7,66(4)) Ant4	Front	1.543			0.809	0.001	1.54	2.35
		Back	2.410		0.868	0.863	0.022	3.30	3.30
		Left side						0.00	0.00
		Right side				0.843		0.00	0.84
		Top side		1.667	1.179	1.025		2.85	2.69
		Bottom side	3.045				0.010	3.06	3.06



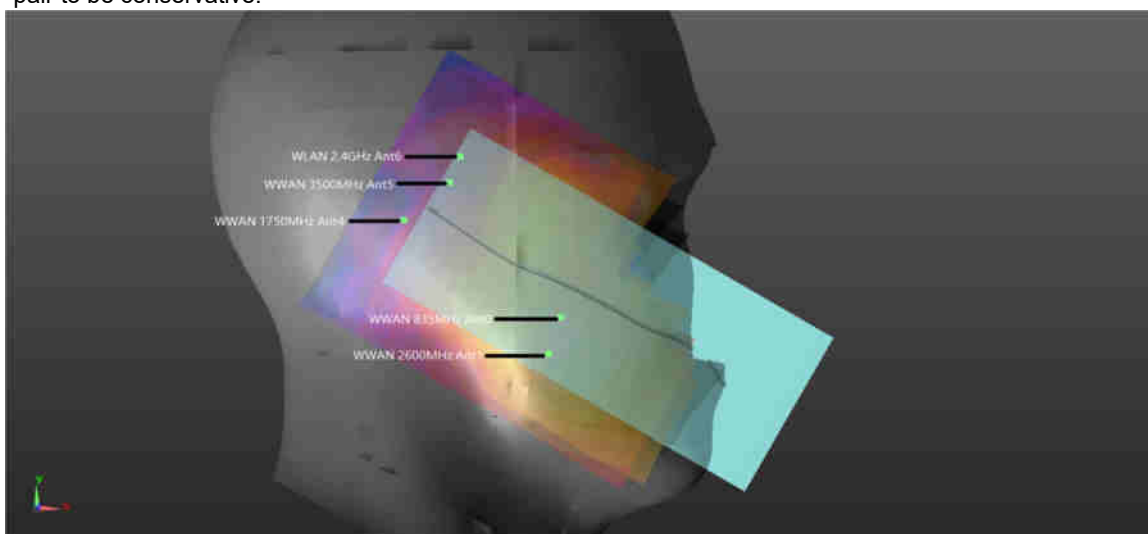
EN-DC

WWAN Band	FR1 Band	Exposure Position	1	2	3	4	5	1+2+3+5	1+2+4+5	Case No
			WWAN	FR1	WLAN2.4GHz Ant 6	WLAN5GHz Ant 6	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)	10g SAR (W/kg)	
LTE Band 2 Ant 0	FR1 n78 Ant 5	Front				0.809	0.001	0.00	0.81	
		Back	2.410	2.100	0.868	0.863	0.022	5.40	5.40	112&113
		Left side						0.00	0.00	
		Right side				0.843		0.00	0.84	
		Top side			1.179	1.025		1.18	1.03	
		Bottom side	2.710				0.010	2.72	2.72	
LTE Band 2 Ant 0	FR1 n7 Ant 4	Front				0.809	0.001	0.00	0.81	
		Back	2.410	1.499	0.868	0.863	0.022	4.80	4.79	114&&115
		Left side						0.00	0.00	
		Right side				0.843		0.00	0.84	
		Top side		1.655	1.179	1.025		2.83	2.68	
		Bottom side	2.710				0.010	2.72	2.72	
LTE Band 41(38) Ant 1	FR1 n78 Ant 5	Front				0.809	0.001	0.00	0.81	
		Back	2.260	2.100	0.868	0.863	0.022	5.25	5.25	116&117
		Left side						0.00	0.00	
		Right side				0.843		0.00	0.84	
		Top side			1.179	1.025		1.18	1.03	
		Bottom side					0.010	0.01	0.01	
LTE Band 66 Ant 0	FR1 n2 Ant 4	Front	1.543			0.809	0.001	1.54	2.35	
		Back	1.745		0.868	0.863	0.022	2.64	2.63	
		Left side						0.00	0.00	
		Right side				0.843		0.00	0.84	
		Top side		2.689	1.179	1.025		3.87	3.71	
		Bottom side	3.045				0.010	3.06	3.06	
LTE Band 66 Ant 0	FR1 n78 Ant 5	Front	1.543			0.809	0.001	1.54	2.35	
		Back	1.745	2.100	0.868	0.863	0.022	4.74	4.73	123&124
		Left side						0.00	0.00	
		Right side				0.843		0.00	0.84	
		Top side			1.179	1.025		1.18	1.03	
		Bottom side	3.045				0.010	3.06	3.06	
LTE Band 66 Ant 0	FR1 n7 Ant 4	Front	1.543			0.809	0.001	1.54	2.35	
		Back	1.745	1.499	0.868	0.863	0.022	4.13	4.13	125&126
		Left side						0.00	0.00	
		Right side				0.843		0.00	0.84	
		Top side		1.655	1.179	1.025		2.83	2.68	
		Bottom side	3.045				0.010	3.06	3.06	
LTE Band 7 Ant 1	FR1 n78 Ant 5	Front				0.809	0.001	0.00	0.81	
		Back	2.350	2.100	0.868	0.863	0.022	5.34	5.34	127&128
		Left side						0.00	0.00	
		Right side				0.843		0.00	0.84	
		Top side			1.179	1.025		1.18	1.03	
		Bottom side					0.010	0.01	0.01	
LTE Band 7 Ant 1	FR1 n2 Ant 4	Front				0.809	0.001	0.00	0.81	
		Back	2.350		0.868	0.863	0.022	3.24	3.24	
		Left side						0.00	0.00	
		Right side				0.843		0.00	0.84	
		Top side		2.689	1.179	1.025		3.87	3.71	
		Bottom side					0.010	0.01	0.01	

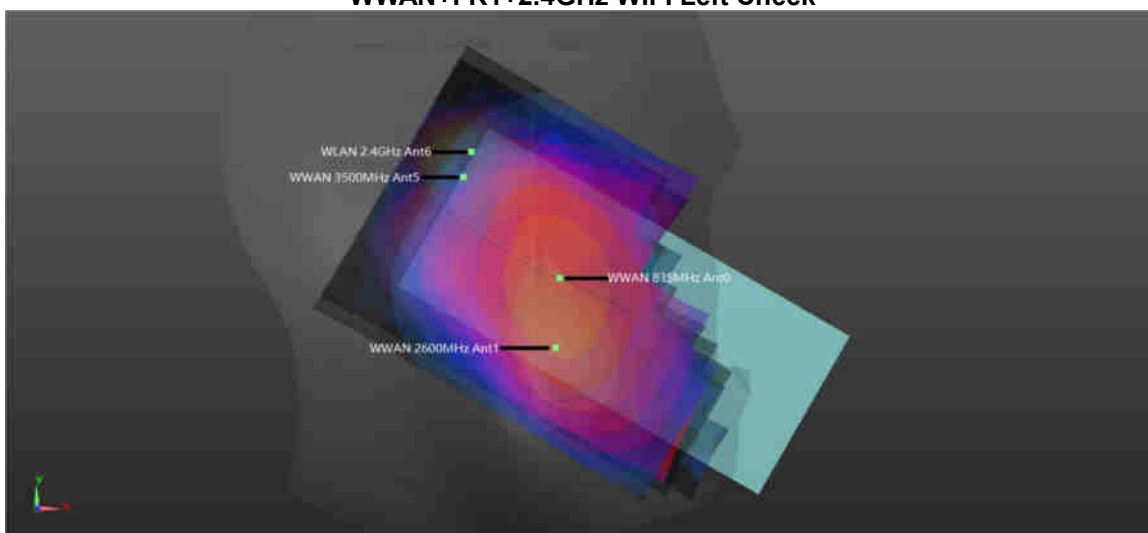
16.5 SPLSR Evaluation and Analysis

General Note:

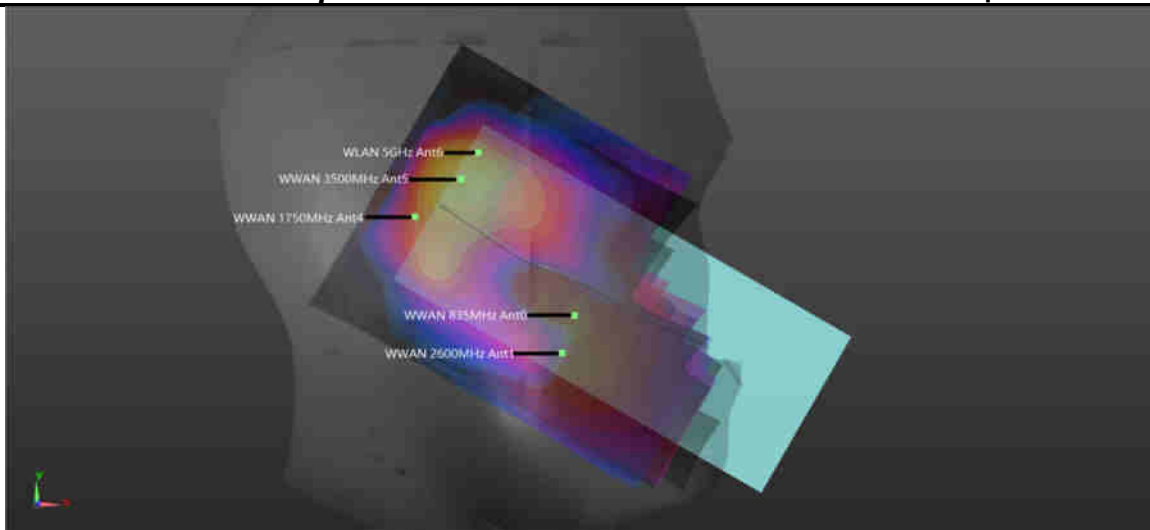
1. When standalone SAR is measured for both antennas in the pair, the peak location separation distance is computed by the square root of $[(x1-x2)^2 + (y1-y2)^2 + (z1-z2)^2]$, where $(x1, y1, z1)$ and $(x2, y2, z2)$ are the coordinates in the area scans or extrapolated peak SAR locations in the zoom scans, as appropriate.
2. $SPLSR = (SAR1 + SAR2)1.5 / (\text{min. separation distance, mm})$. If $SPLSR \leq 0.04$ for 1g SAR and $SPLSR \leq 0.10$ for 10g SAR, simultaneously transmission SAR measurement is not necessary.
3. Per April 2022 TCB Workshop Notes, WWAN band antenna 4/5 was summed algebraically with the NFC and BT/WIFI Antenna 6 separately for the purposes of hybrid SPLSR combination and they are located at the top of the device.
4. Per April 2022 TCB Workshop, instead of doing a small volume scan over a co-located antenna pair, used summing the SAR values of the co-located pair and using that value in SPLSR calculation. In the calculation used the minimum distance between the spatially separated antenna and the closest antenna of the co-located antenna pair to be conservative.



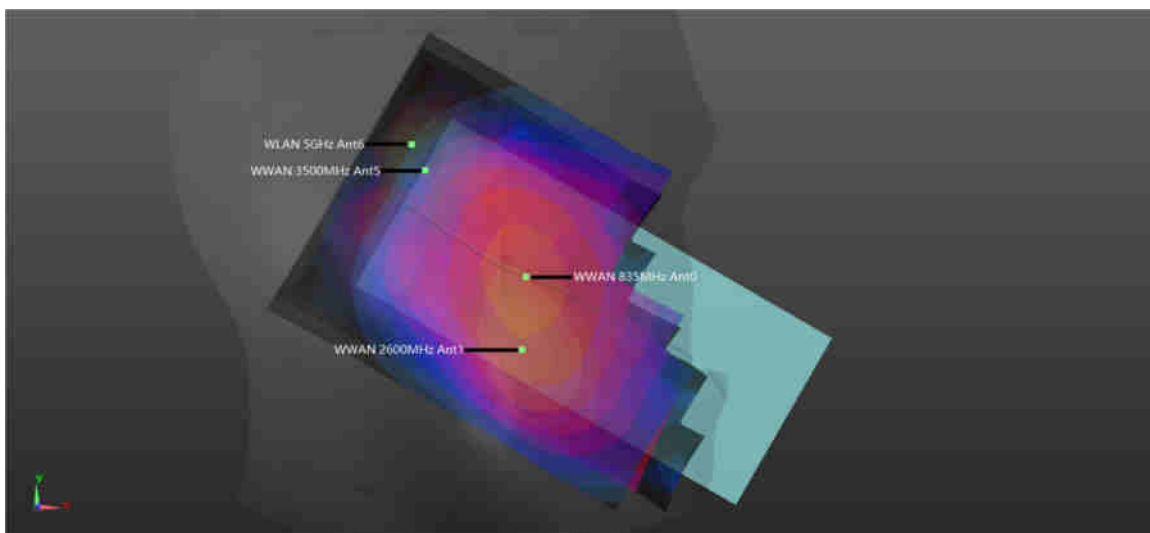
WWAN+FR1+2.4GHz WIFI Left Cheek



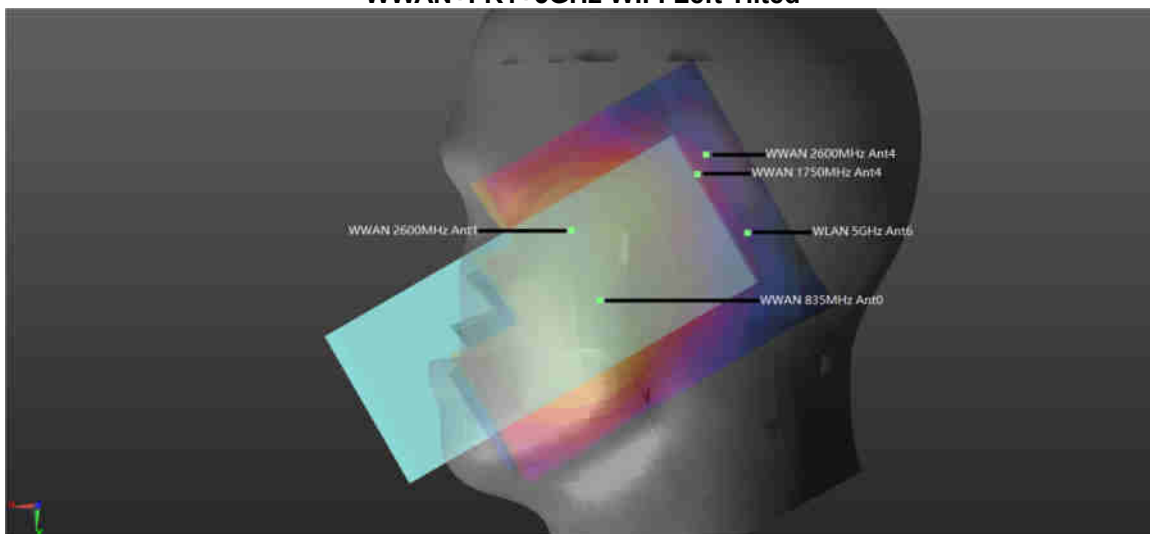
WWAN+FR1+2.4GHz WIFI Left Tilted



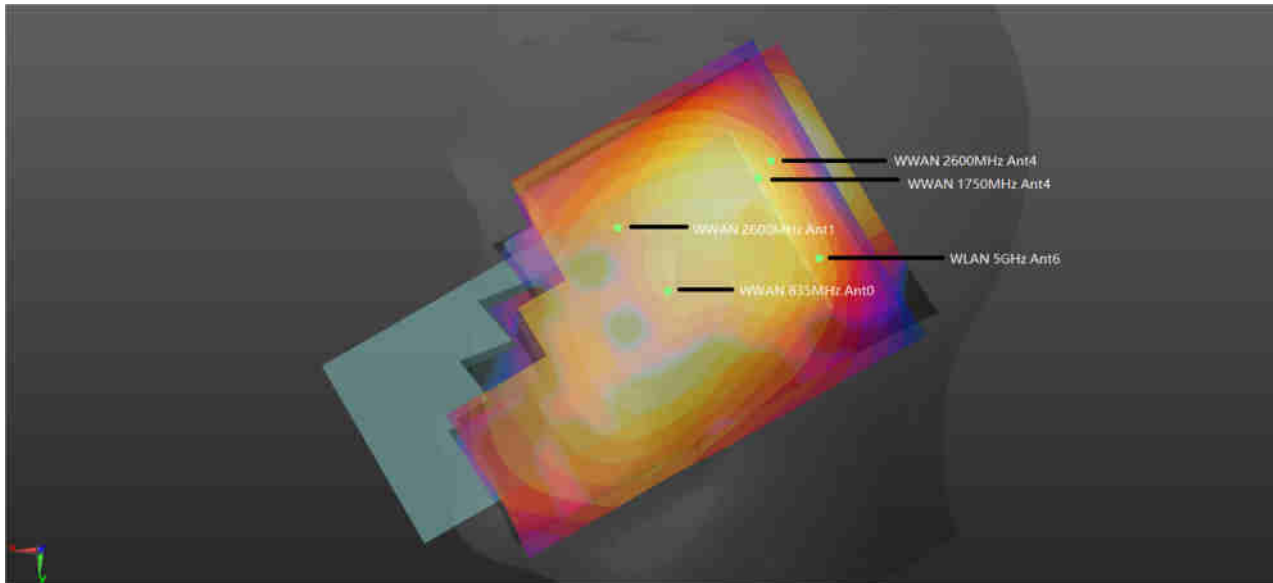
WWAN+FR1+5GHz WIFI Left Cheek



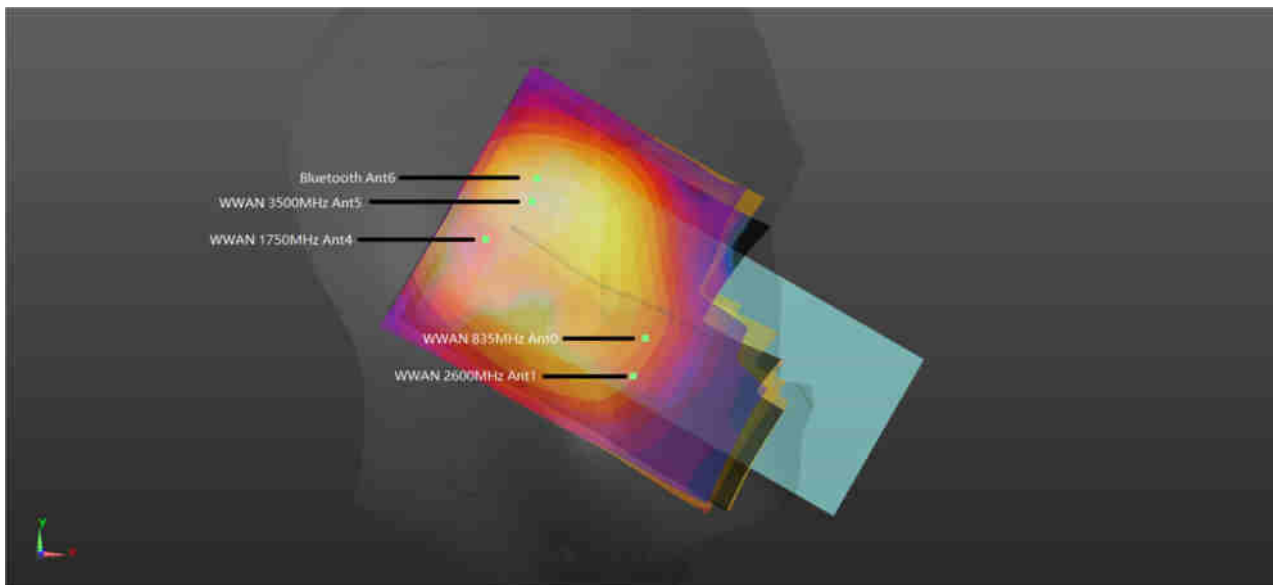
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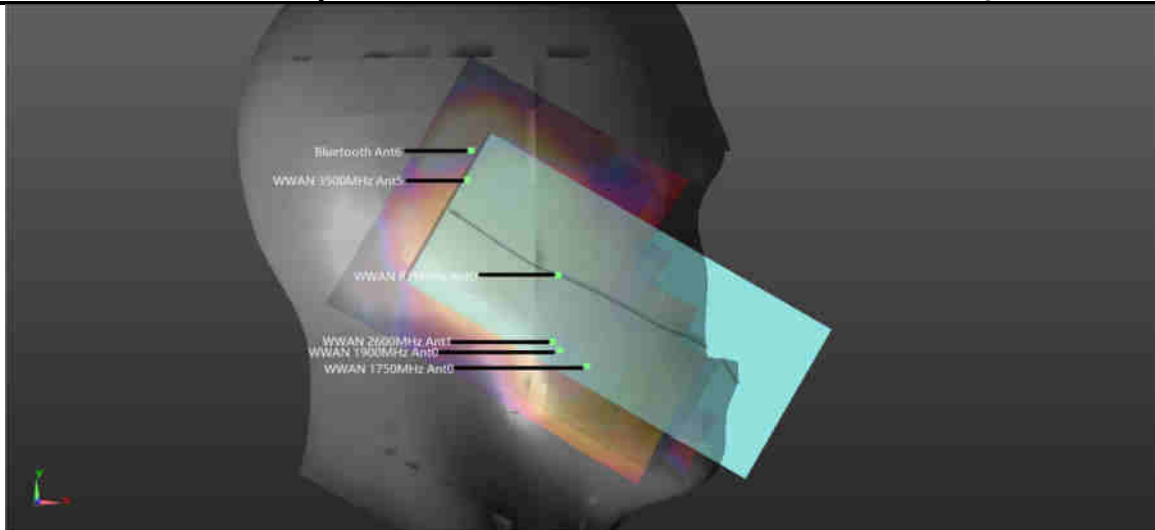
WWAN+FR1+5GHz WIFI Right Cheek



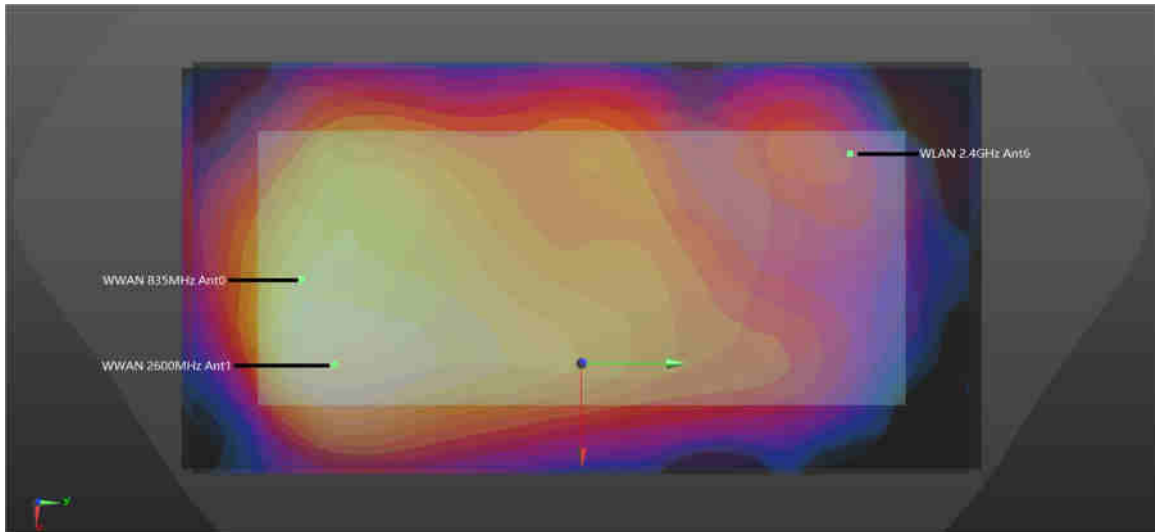
WWAN+FR1+5GHz WIFI Right Tilted



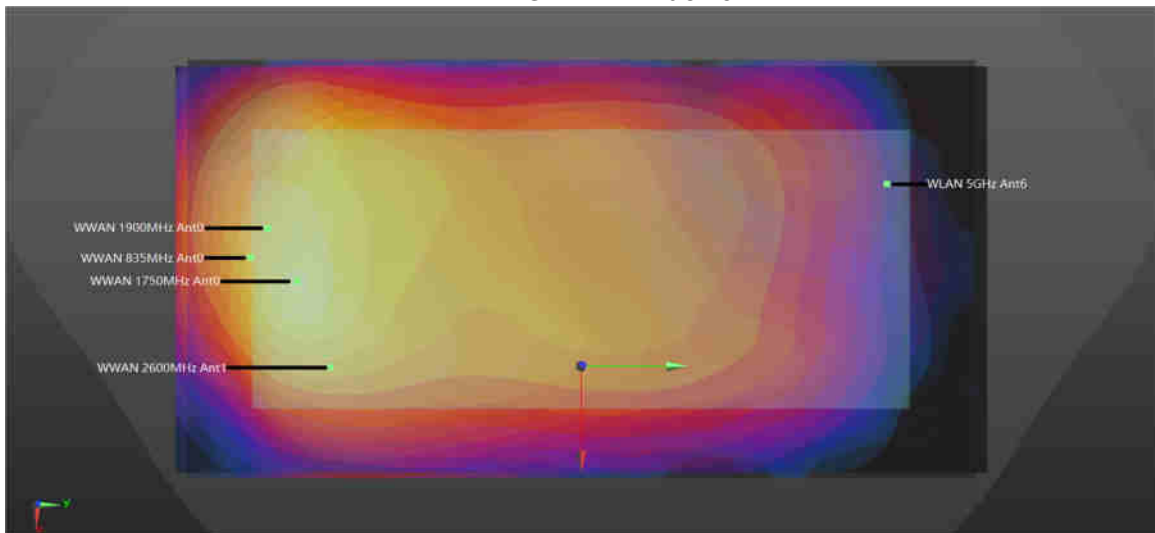
WWAN+FR1+BT Left Cheek



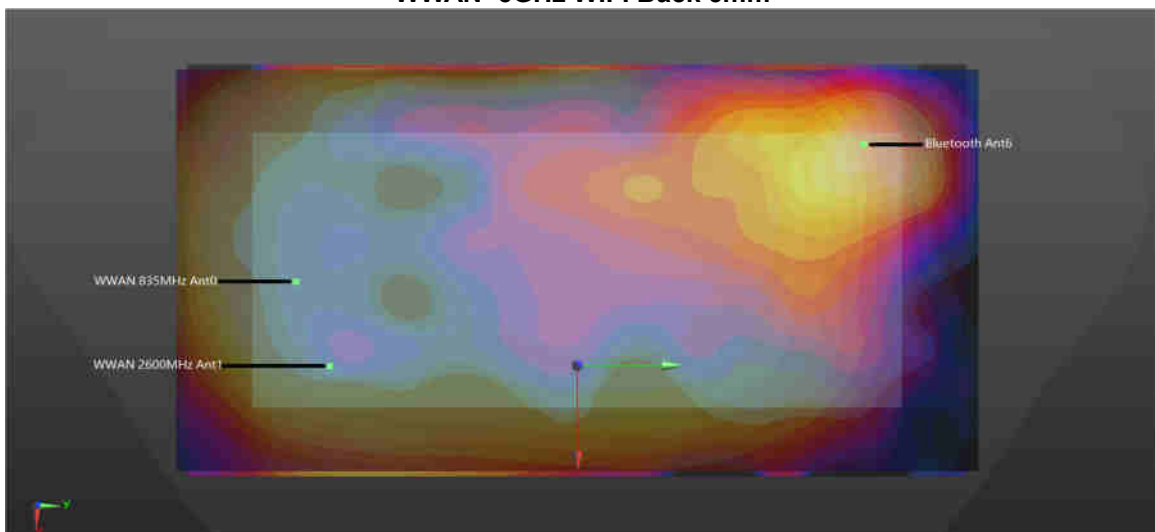
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WWAN+2.4GHz WIFI Back 5mm



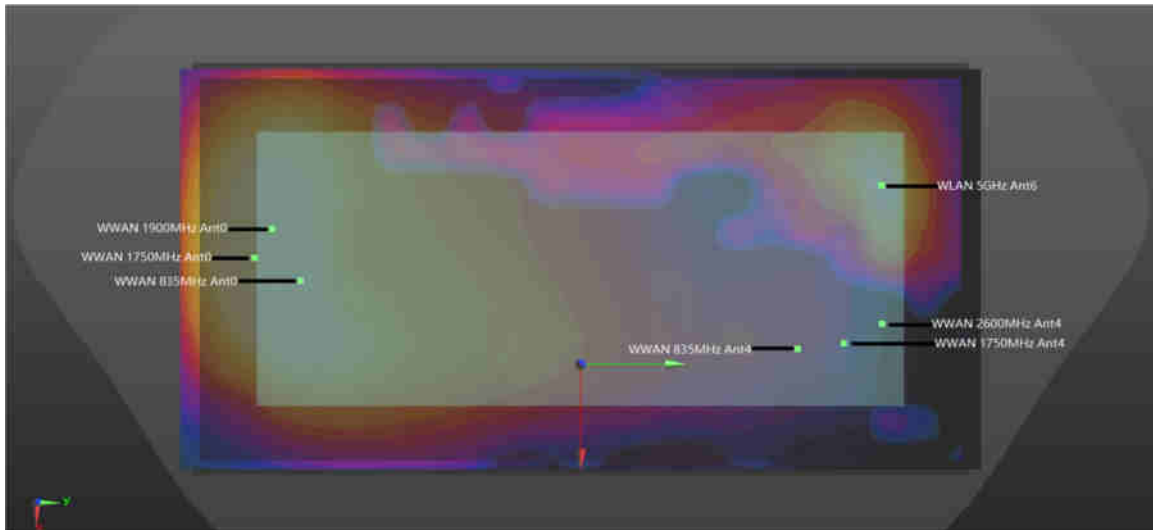
WWAN+5GHz WIFI Back 5mm



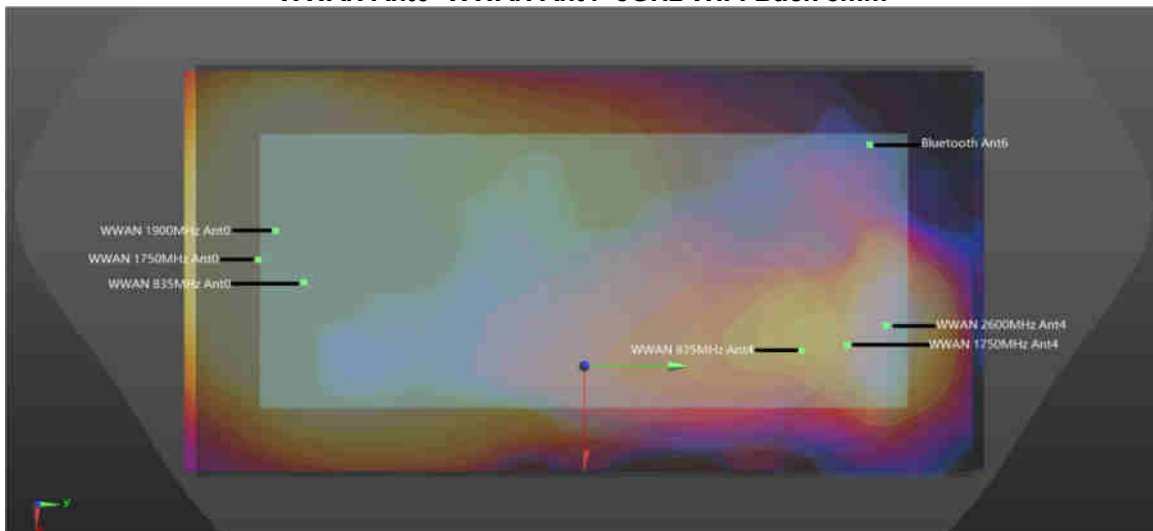
WWAN+BT Back 5mm



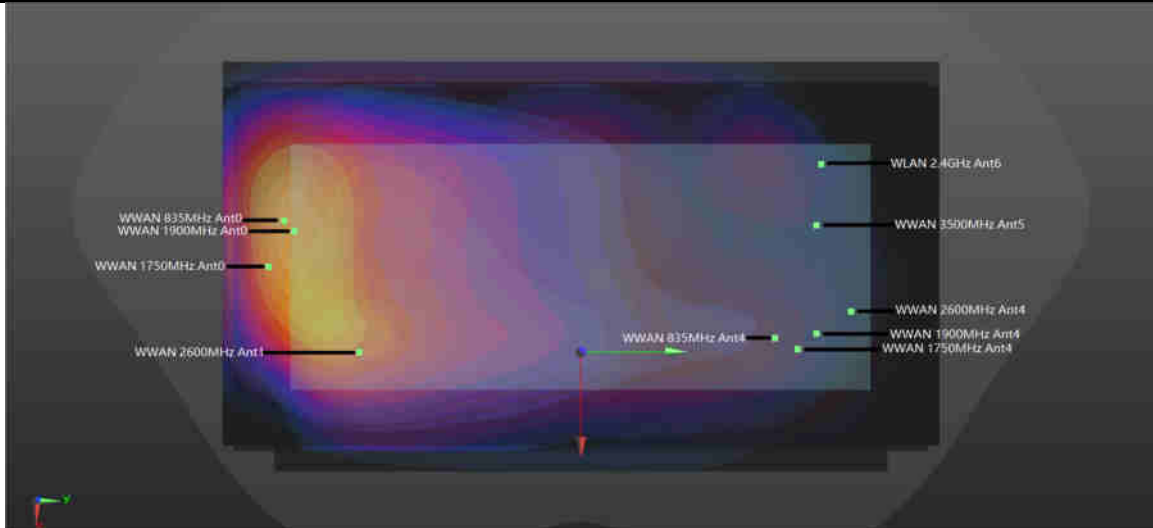
WWAN Ant0+WWAN Ant4+2.4GHz WIFI Back 5mm



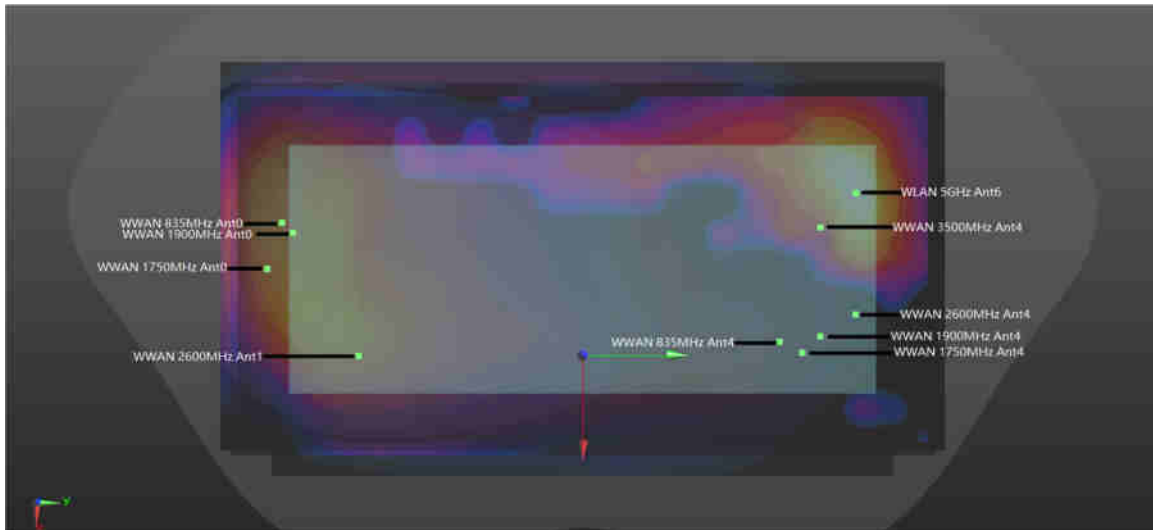
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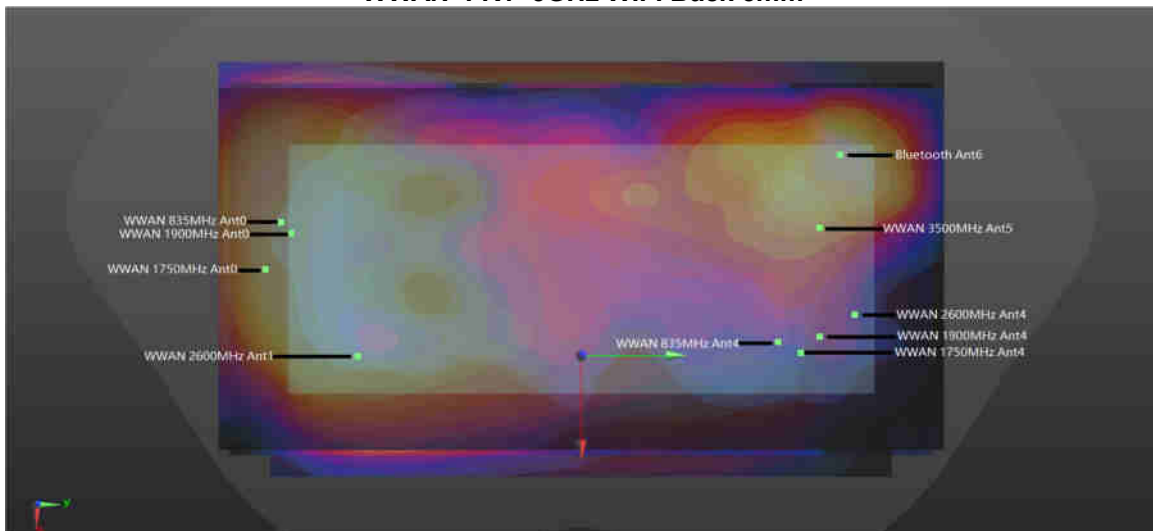
WWAN Ant0+WWAN Ant4+BT Back 5mm



WWAN+FR1+2.4GHz WIFI Back 5mm



WWAN+FR1+5GHz WIFI Back 5mm



WWAN+FR1+BT Back 5mm