

FCC SAR Test Report

APPLICANT : Motorola Mobility LLC
EQUIPMENT : Mobile Cellular Phone
BRAND NAME : Motorola
MODEL NAME : XT2619-1, XT2619-2, XT2619-3, XT2619V
FCC ID : IHDT56AT8
STANDARD : FCC 47 CFR Part 2 (2.1093)

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

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



Approved by: Si Zhang



Sporton International Inc. (Kunshan)

**No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300
People's Republic of China**

Table of Contents

1. Statement of Compliance	4
2. Administration Data	6
3. Guidance Applied	7
4. Equipment Under Test (EUT) Information	8
4.1 General Information.....	8
4.2 General LTE SAR Test and Reporting Considerations	11
4.3 General 5G NR SAR Test and Reporting Considerations	15
5. Smart Transmit feature for RF Exposure compliance.....	19
6. Proximity Sensor Triggering Test.....	23
7. RF Exposure Limits.....	25
7.1 Uncontrolled Environment	25
7.2 Controlled Environment.....	25
7.3 RF Exposure limit for above 6GHz	26
8. Specific Absorption Rate (SAR)	27
8.1 Introduction	27
8.2 SAR Definition	27
9. System Description and Setup.....	28
9.1 E-Field Probe	29
9.2 Data Acquisition Electronics (DAE)	29
9.3 Phantom.....	30
9.4 Device Holder.....	31
10. Measurement Procedures.....	32
10.1 Spatial Peak SAR Evaluation	32
10.2 Power Reference Measurement.....	33
10.3 Area Scan.....	33
10.4 Zoom Scan.....	34
10.5 Volume Scan Procedures.....	34
10.6 Power Drift Monitoring	34
11. Test Equipment List	35
12. System Verification	37
12.1 Tissue Simulating Liquids	37
12.2 Tissue Verification	37
12.3 System Performance Check Results.....	38
12.4 PD System Verification Results	40
13. RF Exposure Positions	41
13.1 Ear and handset reference point	41
13.2 Definition of the cheek position	42
13.3 Definition of the tilt position	43
13.4 Body Worn Accessory	44
13.5 Product Specific 10g SAR Exposure	45
13.6 Wireless Router.....	45
13.7 Miscellaneous Testing Considerations	45
14. Conducted RF Output Power (Unit: dBm).....	46
15. SAR Test Results	55
15.1 Head SAR	59
15.2 Hotspot SAR	63
15.3 Body Worn Accessory SAR	66
15.4 Product specific 10g SAR.....	69
15.5 6GHz PD Test Result	72
15.6 Repeated SAR Measurement	73
15.7 TDD LTE and 5G NR Linearity Data Analysis.....	75
16. Simultaneous Transmission Analysis	87
16.1 Sub6 Antenna Groups	88
16.2 Head Exposure Conditions.....	89
16.3 Hotspot Exposure Conditions.....	91
16.4 Body-Worn Accessory Exposure Conditions	93
16.5 Product specific 10g SAR Exposure Conditions.....	96
16.6 SPLSR Evaluation and Analysis.....	98
16.7 Maximum Reported SAR and SAR Peak Locations	128
17. Uncertainty Assessment.....	139
18. References.....	142
Appendixes	143
Appendix A. Plots of System Performance Check.....	143



Appendix B. Plots of High SAR Measurement	143
Appendix C. DASY Calibration Certificate.....	143
Appendix D. Test Setup Photos.....	143
Appendix E. Conducted RF Output Power Table	143

Revision History

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FA591602	Rev. 01	Initial issue of report.	Nov. 20, 2025
FA591602	Rev. 02	Updated SPLSR Evaluation and Analysis in section 16.6. This report is an updated version, replacing the report issued on Nov. 20, 2025.	Nov. 27, 2025

1. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for **Motorola Mobility LLC, Mobile Cellular Phone, XT2619-1, XT2619-2, XT2619-3, XT2619V**, 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)			1g SAR (W/kg)	
Licensed	GSM	GSM850	0.16	1.05	1.05	1.57	
		GSM1900	<0.10	1.20	1.08		
	WCDMA	WCDMA II	0.66	1.16	1.09		
		WCDMA IV	0.88	1.09	1.09		
		WCDMA V	0.87	1.20	1.20		
	LTE	LTE Band 7	0.79	1.25	1.25		
		LTE Band 12/17	0.83	0.71	0.71		
		LTE Band 13	0.80	0.78	0.78		
		LTE Band 14	0.81	0.99	0.92		
		LTE Band 25/2	0.70	1.04	1.11		
		LTE Band 26/5	0.73	1.22	1.22		
		LTE Band 30	0.84	1.16	1.16		
		LTE Band 66/4	0.72	1.27	1.07		
		LTE Band 71	0.81	0.71	0.71		
		LTE Band 41/38	0.87	1.23	1.27		
		LTE Band 42	0.86	1.28	1.28		
		LTE Band 48	0.87	1.28	1.29		
		5G NR	FR1 n7	0.84	1.05		1.05
			FR1 n12	0.71	0.60		0.64
			FR1 n14	0.88	0.65		0.85
	FR1 n30		0.71	1.17	1.17		
	FR1 n25/n2		0.88	1.26	1.29		
	FR1 n26/n5		0.89	0.74	0.74		
	FR1 n66		0.88	1.05	1.28		
	FR1 n70		0.75	1.29	1.23		
	FR1 n71		0.71	0.58	0.61		
FR1 n41/n38	0.89		1.13	1.13			
FR1 n48	0.89	1.14	1.14				
FR1 n77/n78	0.87	1.03	1.19				
DTS	WLAN	2.4GHz WLAN	1.13	0.50	1.12	1.57	
NII		5GHz WLAN	1.18	0.54	1.15	1.59	
6XD		WLAN 6GHz	0.30		0.44	1.59	
DSS	Bluetooth	2.4GHz Bluetooth	0.41	0.26	0.38	1.59	

Highest 10g SAR Summary				
Equipment Class	Frequency Band		Product Specific 10g SAR (W/kg) (Separation 0mm)	Highest Simultaneous Transmission 10g SAR (W/kg)
Licensed	GSM	GSM1900	2.68	3.98
		WCDMA II	3.21	
	WCDMA	WCDMA IV	2.92	
		WCDMA V	1.04	
	LTE	LTE Band 7	2.98	
		LTE Band 26/5	0.99	
		LTE Band 25/2	2.63	
		LTE Band 30	2.87	
		LTE Band 66/4	2.92	
		LTE Band 41/38	2.65	
		LTE Band 42	3.13	
		LTE Band 48	2.68	
	5G NR	FR1 n7	2.68	
		FR1 n25	2.67	
		FR1 n30	3.01	
		FR1 n66	2.80	
		FR1 n70	2.93	
		FR1 n41/n38	3.03	
		FR1 n48	2.42	
		FR1 n77/n78	2.10	
DTS	WLAN	2.4GHz WLAN	2.76	3.98
NII		5GHz WLAN	2.97	3.98
6XD		WLAN 6GHz	0.30	3.98
DXX	NFC	13.56MHz	<0.10	3.98

Equipment Class	Frequency Band	Measured APD			Reported PD
		Head (W/m ²)	Body Worn (W/m ²)	Phablet (W/m ²)	psPD (W/m ²)
6XD	6GHz WLAN	1.53	2.09	4.16	7.64
Date of Testing:		2025/10/16 ~ 2025/11/5			

Remark:

- This device supports LTE B2 / B4 / B5 / B17 / B38 and B25 / B66 / B26 / B12 / B41. Since the supported frequency span for LTE 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.
- This device supports 5GNR n38/n5/n78 and n41/n26/n77. Since the supported frequency span for 5GNR n38/n5/n78 falls completely within the supports frequency span for n41/n26/n77, both 5GNR bands have the same target power, and both 5GNR bands share the same transmission path; therefore, SAR was only assessed for n41/n26/n77.
- This is a variant report for XT2619-1, XT2619-2, XT2619-3, XT2619V. The different between them refer to the XT2619-1, XT2619-2, XT2619-3, XT2619V_Operational Description of Product Equality Declaration which is exhibit separately. According to the difference, only the following table bands/antennas performed full SAR testing. For all other bands, the worst cases from original test report (Sporton Report Number FA4O3003, FA4O3003C and FA4O3003A) were verified for the differences.

Exposure Condition	Full Test Bands
Head	LTE Band 13 Ant1, LTE Band 42 / FR1 n48/77 Ant7, WLAN 5.2/5.3/5.5GHz
Hotspot	FR1 n77 Ant9, WLAN 5.8GHz
Body worn	FR1 n77 Ant9, WLAN 5.2/5.3/5.5GHz/5.8GHz
Extremity	LTE Band 66 Ant0, LTE Band 42 Ant9, 5G NR n77 Ant7

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 Human Exposure to RF Radiation Limits (1.0 mW/cm²=10 W/m²) specified in FCC 47 CFR part 1.1310 and ANSI/IEEE C95.1-1992, and had been tested in accordance with the measurement methods and procedures specified in IEEE 1528-2013 and FCC KDB publications.

2. Administration Data

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

Testing Laboratory			
Test Firm	Sporton International Inc. (Kunshan)		
Test Site Location	No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300 People's Republic of China TEL : +86-512-57900158		
Test Site No.	Sporton Site No.	FCC Designation No.	FCC Test Firm Registration No.
	SAR05-KS SAR03-KS SAR04-KS SAR06-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
- IEC/IEEE 62209-1528:2020
- 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
- IEC TR 63170:2018
- IEC 62479:2010
- SPEAG DASY6 Application Note (Interim Procedure for Device Operation at 6GHz-10GHz)

4. Equipment Under Test (EUT) Information

4.1 General Information

Product Feature & Specification	
Equipment Name	Mobile Cellular Phone
Brand Name	Motorola
Model Name	XT2619-1, XT2619-2, XT2619-3, XT2619V
FCC ID	IHDT56AT8
IMEI Code	Sample 1 350200180017578/350200180017586, 350200180017115/350200180017123 350200180017719/350200180017727, 350200180016117/350200180016125 Sample 2 356714590022212/356714590022220
Wireless Technology and Frequency Range	GSM850: 824 MHz ~ 849 MHz GSM1900: 1850MHz ~ 1910MHz 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 14: 788 MHz ~ 798 MHz LTE Band 17: 704 MHz ~ 716 MHz LTE Band 25: 1850 MHz ~ 1915 MHz LTE Band 26: 814 MHz ~ 849 MHz LTE Band 30: 2305 MHz ~ 2315 MHz LTE Band 38: 2570 MHz ~ 2620 MHz LTE Band 41: 2496 MHz ~ 2690 MHz LTE Band 42: 3450 MHz ~ 3550 MHz LTE Band 48: 3550 MHz ~ 3700 MHz LTE Band 66: 1710 MHz ~ 1780 MHz LTE Band 71: 663 MHz ~ 698 MHz 5G NR n2 : 1850 MHz ~ 1910 MHz 5G NR n5 : 824 MHz ~ 849 MHz 5G NR n7 : 2500 MHz ~ 2570 MHz 5G NR n12 : 699 MHz ~ 716 MHz 5G NR n14 : 788 MHz ~ 798 MHz 5G NR n25 : 1850 MHz ~ 1915 MHz 5G NR n26 : 814 MHz ~ 849 MHz 5G NR n30 : 2305 MHz ~ 2315 MHz 5G NR n38 : 2570 MHz ~ 2620 MHz 5G NR n41 : 2496 MHz ~ 2690 MHz 5G NR n48 : 3550 MHz ~ 3700 MHz 5G NR n66 : 1710 MHz ~ 1780 MHz 5G NR n70 : 1695 MHz ~ 1710 MHz 5G NR n71 : 663 MHz ~ 698 MHz 5G NR n77: 3700 MHz ~ 3980 MHz, 3450MHz ~ 3550MHz 5G NR n78: 3700 MHz ~ 3800 MHz, 3450MHz ~ 3550MHz 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 WLAN 6GHz U-NII 5: 5925 MHz ~ 6425 MHz WLAN 6GHz U-NII 6: 6425 MHz ~ 6525 MHz WLAN 6GHz U-NII 7: 6525 MHz ~ 6875 MHz WLAN 6GHz U-NII 8: 6875 MHz ~ 7125 MHz

	Bluetooth: 2402 MHz ~ 2480 MHz NFC : 13.56 MHz
Mode	GSM/GPRS/EGPRS RMC/AMR 12.2Kbps HSDPA/HSUPA DC-HSDPA HSPA+ (16QAM uplink is supported) LTE: QPSK, 16QAM, 64QAM, 256QAM 5G NR: DFT-s-OFDM/CP-OFDM, Pi/2 BPSK/QPSK/16QAM/64QAM/256QAM WLAN 2.4GHz 802.11b/g/n HT20/HT40 WLAN 2.4GHz 802.11ax HE20/HE40 WLAN 5GHz 802.11a/n HT20/HT40 WLAN 5GHz 802.11ac VHT20/VHT40/VHT80/VHT160 WLAN 5GHz 802.11ax HE20/HE40/HE80/HE160 WLAN 6GHz 802.11a/ax HE20/HE40/HE80/HE160 Bluetooth BR/EDR/LE NFC: ASK
HW Version	DVT2
SW Version	W2WD36.30
GSM / (E)GPRS Transfer mode	Class B – EUT cannot support Packet Switched and Circuit Switched Network simultaneously but can automatically switch between Packet and Circuit Switched Network.
EUT Stage	Identical Prototype
Remark: <ol style="list-style-type: none"> 1. This device supports VoIP in GPRS, EGPRS, WCDMA, LTE and 5G NR (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). WLAN 6GHz has no hotspot function. 4. This device does not support DTM operation and supports GPRS/EGPRS mode up to multi-slot class 12. 5. This device supports dual SIM dual standby. The WWAN radio transmission will be enabled by either one SIM at a time (single active). 6. The device implements the power management and proximity sensor /receiver detection/hotspot mode for SAR compliance at different exposure conditions (head, body-worn, hotspot, extremity) and the Qualcomm smart transmit will manage to ensure the power level not exceeding the associated power table. Details about the power management decision and sensor detection are provided in the operational description. And the device will invoke corresponding work scenarios power level base on frequency bands/antennas, which can refer to power table at appendix E and original report. 7. For WLAN/BT when transmit simultaneously with each other, or when transmit simultaneous with WWAN/BT, power reduction will be activated to head exposure condition. For WLAN when transmit simultaneous with WWAN and Proximity sensors trigger, power reduction will be activated to body-worn and extremity exposure conditions. 8. This device supports HPUE mode for LTE Band41 and 5G NR n41/n77/n78 with higher power. For HPUE power is higher than power class 3 but with lower duty cycle, the maximum average power for class 2 and class 3 is almost the same, so we chose power class 3 full SAR testing and power class 2 verify the worst case of power class 3 SAR. 9. For 5G NR n41/n77/n78 HPUE, 5G NR n41/n77/n78 PC2 Maximum Duty Cycle is 50%, using FTM (Factory Test Mode) with 50% duty cycle is considered during SAR testing. For 5G NR other bands, using FTM to perform SAR with default 100% transmission. 10. 5G NR n41/n48/n77/n78 supports UL MIMO mode. And please refer to MIMO analysis results in the original report. 11. The device supports HPUE (power class 2) under SISO mode and HPUE (power class 1.5) under UL MIMO mode for 5G NR n41/n77. 12. The different model names XT2619-1, XT2619-2, XT2619-3, XT2619V are only for market segment purpose, there is no other difference. 13. There are two samples. The difference between them could be referred to the XT2619-1, XT2619-2, XT2619-3, XT2619V_Operational Description of Product Equality Declaration which is exhibited separately. According to the difference, sample 1 was chosen to perform full testing and sample 2 verified the worst case of sample 1. 14. The TAS Part2 report for XT2619-1, XT2619-2, XT2619-3, XT2619V are referenced from the approved reference model XT2517-1, XT2517-2, XT2517-3, XT2517V. No additional Part 2 testing was required since the changes do not impact the essential test cases evaluated in the original evaluation. The original evaluation includes at least one band of evaluation with same output power characteristics, and therefore, any additional evaluation for Part 2 smart transmit algorithm verification was not necessary. Therefore, the TAS Part2 report from the reference model are considered fully representative of the XT2619-1, XT2619-2, XT2619-3, XT2619V variant. 15. This device supports 5G NR FR1 bands as following table, including NSA mode and SA mode. 	



performed SAR separately.

<5G NR>

Mode	Band	Duplex	SCS(KHz)	Bandwidths(BW)
NSA	n2	FDD	15	5, 10, 15, 20
	n5	FDD	15	5, 10, 15, 20
	n7	FDD	15	5, 10, 15, 20, 25, 30, 40
	n12	FDD	15	5, 10, 15
	n25	FDD	15	5, 10, 15, 20, 25, 30, 35, 40
	n26	FDD	15	5, 10, 15, 20
	n66	FDD	15	5, 10, 15, 20, 25, 30, 35, 40
	n71	FDD	15	5, 10, 15, 20
	n41	TDD	30	10, 15, 20, 30, 40, 50, 60, 70, 80, 90, 100
	n77	TDD	30	10, 15, 20, 25, 30, 40, 50, 60, 70, 80, 90, 100
	n78	TDD	30	10, 15, 20, 25, 30, 40, 50, 60, 70, 80, 90, 100
SA	n2	FDD	15	5, 10, 15, 20, 25, 30
	n5	FDD	15	5, 10, 15, 20
	n7	FDD	15	5, 10, 15, 20, 25, 30, 40, 50
	n12	FDD	15	5, 10, 15
	n14	FDD	15	5, 10
	n25	FDD	15	5, 10, 15, 20, 25, 30, 35, 40
	n26	FDD	15	5, 10, 15, 20
	n30	FDD	15	5, 10
	n66	FDD	15	5, 10, 15, 20, 25, 30, 35, 40
	n70	FDD	15	5, 10, 15
	n71	FDD	15	5, 10, 15, 20
	n38	TDD	30	10, 15, 20, 30, 40
	n41	TDD	30	10, 15, 20, 30, 40, 50, 60, 70, 80, 90, 100
	n48	TDD	30	10, 20, 30, 40
	n77	TDD	30	10, 15, 20, 25, 30, 40, 50, 60, 70, 80, 90, 100
	n78	TDD	30	10, 15, 20, 25, 30, 40, 50, 60, 70, 80, 90, 100

4.2 General LTE SAR Test and Reporting Considerations

Summarized necessary items addressed in KDB 941225 D05 v02r05																																																																									
FCC ID	IHDT56AT8																																																																								
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 14: 788 MHz ~ 798 MHz LTE Band 17: 704 MHz ~ 716 MHz LTE Band 25: 1850 MHz ~ 1915 MHz LTE Band 26: 814 MHz ~ 849 MHz LTE Band 30: 2305 MHz ~ 2315 MHz LTE Band 38: 2570 MHz ~ 2620 MHz LTE Band 41: 2496 MHz ~ 2690 MHz LTE Band 42: 3450 MHz ~ 3550 MHz LTE Band 48: 3550 MHz ~ 3700 MHz LTE Band 66: 1710 MHz ~ 1780 MHz LTE Band 71: 663 MHz ~ 698 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 14: 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 30: 5MHz, 10MHz LTE Band 38: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 41: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 42: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 48: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 66:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz LTE Band 71: 5MHz, 10MHz, 15MHz, 20MHz																																																																								
uplink modulations used	QPSK / 16QAM / 64QAM / 256QAM																																																																								
LTE Voice / Data requirements	Voice and Data																																																																								
LTE Release Version	R16																																																																								
CA Support	Supported, Uplink and Downlink																																																																								
LTE MPR permanently built-in by design	<table><tr><th colspan="8">Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 1, 2 and 3</th></tr><tr><th rowspan="2">Modulation</th><th colspan="6">Channel bandwidth / Transmission bandwidth (N_{RB})</th><th rowspan="2">MPR (dB)</th></tr><tr><th>1.4 MHz</th><th>3.0 MHz</th><th>5 MHz</th><th>10 MHz</th><th>15 MHz</th><th>20 MHz</th></tr><tr><td>QPSK</td><td>> 5</td><td>> 4</td><td>> 8</td><td>> 12</td><td>> 16</td><td>> 18</td><td>≤ 1</td></tr><tr><td>16 QAM</td><td>≤ 5</td><td>≤ 4</td><td>≤ 8</td><td>≤ 12</td><td>≤ 16</td><td>≤ 18</td><td>≤ 1</td></tr><tr><td>16 QAM</td><td>> 5</td><td>> 4</td><td>> 8</td><td>> 12</td><td>> 16</td><td>> 18</td><td>≤ 2</td></tr><tr><td>64 QAM</td><td>≤ 5</td><td>≤ 4</td><td>≤ 8</td><td>≤ 12</td><td>≤ 16</td><td>≤ 18</td><td>≤ 2</td></tr><tr><td>64 QAM</td><td>> 5</td><td>> 4</td><td>> 8</td><td>> 12</td><td>> 16</td><td>> 18</td><td>≤ 3</td></tr><tr><td>256 QAM</td><td colspan="6">≥ 1</td><td>≤ 5</td></tr></table>			Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 1, 2 and 3								Modulation	Channel bandwidth / Transmission bandwidth (N _{RB})						MPR (dB)	1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz	20 MHz	QPSK	> 5	> 4	> 8	> 12	> 16	> 18	≤ 1	16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 1	16 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2	64 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 2	64 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 3	256 QAM	≥ 1						≤ 5
Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 1, 2 and 3																																																																									
Modulation	Channel bandwidth / Transmission bandwidth (N _{RB})						MPR (dB)																																																																		
	1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz	20 MHz																																																																			
QPSK	> 5	> 4	> 8	> 12	> 16	> 18	≤ 1																																																																		
16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 1																																																																		
16 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2																																																																		
64 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 2																																																																		
64 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 3																																																																		
256 QAM	≥ 1						≤ 5																																																																		
LTE A-MPR	In the base station simulator configuration, Network Setting value is set to NS_01 to disable A-MPR during SAR testing and the LTE SAR tests was transmitting on all TTI frames (Maximum TTI)																																																																								
Spectrum plots for RB configuration	A properly configured base station simulator was used for the SAR and power measurement; therefore, spectrum plots for each RB allocation and offset configuration are not included in the SAR report.																																																																								
Power reduction applied to satisfy SAR compliance	Yes, when operating in Proximity sensors/receiver/hotspot detect mechanism, head/body-worn /hotspot/extremity will trigger reduced power for some bands applied to satisfy SAR compliance, the detail please referred to section 14 and original report.																																																																								
LTE Carrier Aggregation Combinations	Inter-Band and Intra-Band possible combinations and the detail power verification please referred to section 14 and original report.																																																																								
LTE Carrier Aggregation Additional Information	1. This device supports LTE Carrier Aggregation (CA) in the uplink for intra-band and inter-band with two component carriers in the uplink. SAR Measurements and conducted																																																																								

powers were evaluated per FCC Guidance.
2. This device supports maximum of 2 carriers in the uplink.

Transmission (H, M, L) channel numbers and frequencies in each LTE band												
LTE Band 2												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	18607	1850.7	18615	1851.5	18625	1852.5	18650	1855	18675	1857.5	18700	1860
M	18900	1880	18900	1880	18900	1880	18900	1880	18900	1880	18900	1880
H	19193	1909.3	19185	1908.5	19175	1907.5	19150	1905	19125	1902.5	19100	1900
LTE Band 4												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	19957	1710.7	19965	1711.5	19975	1712.5	20000	1715	20025	1717.5	20050	1720
M	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5
H	20393	1754.3	20385	1753.5	20375	1752.5	20350	1750	20325	1747.5	20300	1745
LTE Band 5												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz					
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	20407	824.7	20415	825.5	20425	826.5	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					
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	20775	2502.5	20800	2505	20825	2507.5	20850	2510	20850	2510	20850	2510
M	21100	2535	21100	2535	21100	2535	21100	2535	21100	2535	21100	2535
H	21425	2567.5	21400	2565	21375	2562.5	21350	2560	21350	2560	21350	2560
LTE Band 12												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz					
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	23017	699.7	23025	700.5	23035	701.5	23060	704	23060	704	23060	704
M	23095	707.5	23095	707.5	23095	707.5	23095	707.5	23095	707.5	23095	707.5
H	23173	715.3	23165	714.5	23155	713.5	23130	711	23130	711	23130	711
LTE Band 13												
	Bandwidth 5 MHz				Bandwidth 10 MHz							
	Channel #		Freq.(MHz)		Channel #		Freq.(MHz)		Channel #		Freq.(MHz)	
L	23205		779.5		23230		782					
M	23230		782									
H	23255		784.5									
LTE Band 14												
	Bandwidth 5 MHz				Bandwidth 10 MHz							
	Channel #		Channel #		Channel #		Freq.(MHz)					
L	23305		790.5		23330		793					
M	23330		793									
H	23355		795.5									
LTE Band 17												
	Bandwidth 5 MHz				Bandwidth 10 MHz							
	Channel #		Freq.(MHz)		Channel #		Freq. (MHz)					
L	23755		706.5		23780		709					
M	23790		710		23790		710					
H	23825		713.5		23800		711					
LTE Band 25												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	26047	1850.7	26055	1851.5	26065	1852.5	26090	1855	26115	1857.5	26140	1860
M	26340	1880	26340	1880	26340	1880	26340	1880	26340	1880	26340	1880
H	26683	1914.3	26675	1913.5	26665	1912.5	26640	1910	26615	1907.5	26590	1905

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

LTE Band 30				
	Bandwidth 5 MHz		Bandwidth 10 MHz	
	Channel #	Freq.(MHz)	Channel #	Freq.(MHz)
L	27685	2307.5	27710	2310
M	27710	2310		
H	27735	2312.5		

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)	Freq. (MHz)
L	37775	2572.5	37800	2575	37825	2577.5	37850	2580	2580
M	38000	2595	38000	2595	38000	2595	38000	2595	2595
H	38225	2617.5	38200	2615	38175	2612.5	38150	2610	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)	Freq. (MHz)
L	39675	2498.5	39700	2501	39725	2503.5	39750	2506	2506
LM	40148	2545.8	40160	2547	40173	2548.3	40185	2549.5	2549.5
M	40620	2593	40620	2593	40620	2593	40620	2593	2593
HM	41093	2640.3	41080	2639	41068	2637.8	41055	2636.5	2636.5
H	41565	2687.5	41540	2685	41515	2682.5	41490	2680	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

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)	Freq. (MHz)
L	42115	3452.5	42140	3455	42165	3457.5	42190	3460	3460
M	42590	3500	42590	3500	42590	3500	42590	3500	3500
H	43065	3547.5	43040	3545	43015	3542.5	42990	3540	3540

LTE Band 48									
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz		
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Freq. (MHz)
L	55265	3552.5	55290	3555	55315	3557.5	55340	3560	3560
LM	55810	3607	55815	3607.5	55820	3608	55830	3609	3609
MH	56170	3643	56165	3642.5	56160	3642	56150	3641	3641
H	56715	3697.5	56690	3695	56665	3692.5	56640	3690	3690

LTE Band 71									
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz		
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Freq. (MHz)
L	133147	665.5	133172	668	133197	670.5	133222	673	673
M	133247	675.5	133272	678	133297	680.5	133322	683	683
H	133447	695.5	133422	693	133397	690.5	133372	688	688

<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 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
LTE Band 25	Yes	Yes	Yes	Yes	Yes	Yes
LTE Band 2	Yes	Yes	Yes	Yes	Yes	Yes

2) LTE Bands tune up:

Band	Antenna	Head	Bodyworn	Hotspot	Extremity	Sensor Off	Default Tune-up Limit
		DSI 2 Tune-up Limit	DSI 3 Tune-up Limit	DSI 7 Tune-up Limit	DSI 6 Tune-up Limit	DSI 4 Tune-up Limit	
LTE Band 66(4)	Ant 0	24.0	19.0	19.0	20.5	24.0	24.0
LTE Band 66(4) PA (Reference Designator)	Ant 0	24.0	19.0	19.0	20.5	24.0	24.0
LTE Band 66(4)	Ant 1	17.9	19.3	17.2	20.8	24.0	24.0
LTE Band 66(4) PA (Reference Designator)	Ant 1	17.9	19.3	17.2	20.8	24.0	24.0
LTE Band 12(17)	Ant 0	24.0	24.0	24.0	24.0	24.0	24.0
LTE Band 12(17)	Ant 1	23.3	24.0	23.8	24.0	24.0	24.0
LTE Band 26(5)	Ant 0	24.0	24.0	24.0	24.0	24.0	24.0
LTE Band 26(5)	Ant 1	21.5	23.1	22.3	24.0	24.0	24.0
LTE Band 41(38)	Ant 9	24.0	22.3	22.3	24.0	24.0	24.0
LTE Band 41 HPUE	Ant 9	27.0	23.9	23.9	25.6	27.0	27.0
LTE Band 41(38)	Ant 1	16.8	17.3	12.0	21.1	24.0	24.0
LTE Band 41 HPUE	Ant 1	18.4	18.9	13.6	22.7	27.0	27.0
LTE Band 38	Ant 6	23.1	21.8	20.2	24.0	24.0	24.0
LTE Band 41	Ant 6	23.0	21.8	20.2	23.0	23.0	23.0
LTE Band 41 HPUE	Ant 6	24.7	23.4	21.8	26.0	26.0	26.0
LTE Band 38	Ant 3	17.0	17.0	17.0	17.0	17.0	17.0
LTE Band 41	Ant 3	18.0	20.0	18.3	20.0	20.0	20.0
LTE Band 41 HPUE	Ant 3	19.6	21.7	19.9	23.0	23.0	23.0
LTE Band 25(2)	Ant 0	24.0	17.2	15.4	21.3	24.0	24.0
LTE Band 2 PA (Reference Designator)	Ant 0	24.0	17.2	15.4	21.3	24.0	24.0
LTE Band 25(2)	Ant 1	15.8	18.4	15.9	20.4	24.0	24.0
LTE Band 2 PA (Reference Designator)	Ant 1	15.8	18.4	15.9	20.4	24.0	24.0

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 n12 : 699 MHz ~ 716 MHz 5G NR n14 : 788 MHz ~ 798 MHz 5G NR n25 : 1850 MHz ~ 1915 MHz 5G NR n26 : 814 MHz ~ 849 MHz 5G NR n30 : 2305 MHz ~ 2315 MHz 5G NR n38 : 2570 MHz ~ 2620 MHz 5G NR n41 : 2496 MHz ~ 2690 MHz 5G NR n48 : 3550 MHz ~ 3700 MHz 5G NR n66 : 1710 MHz ~ 1780 MHz 5G NR n70 : 1695 MHz ~ 1710 MHz 5G NR n71 : 663 MHz ~ 698 MHz 5G NR n77 : 3700 MHz ~ 3980 MHz, 3450MHz ~ 3550MHz 5G NR n78 : 3700 MHz ~ 3800 MHz, 3450MHz ~ 3550MHz
Channel Bandwidth	The detail please refers to section 4.1 5G NR FR1 bands table.
SCS	FDD: SCS15KHz, TDD: SCS30KHz
uplink modulations used	DFT-s-OFDM: PI/2 BPSK / QPSK / 16QAM / 64QAM / 256QAM CP-OFDM: QPSK / 16QAM / 64QAM / 256QAM
A-MPR (Additional MPR) disabled for SAR Testing?	Yes
LTE Anchor Bands for n2	LTE B4/5/7/12/13/14/30/66/48/71
LTE Anchor Bands for n5	LTE B2/7/30/66/48
LTE Anchor Bands for n7	LTE B2/4/5/12/66
LTE Anchor Bands for n12	LTE B2/66
LTE Anchor Bands for n25	LTE B7/12/26/66
LTE Anchor Bands for n26	LTE B7
LTE Anchor Bands for n66	LTE B2/5/7/12/13/14/30/48/71
LTE Anchor Bands for n71	LTE B2/748/66
LTE Anchor Bands for n41	LTE B2/4/5/12/25/26/66/71
LTE Anchor Bands for n77	LTE B2/5/7/12/13/14/25/30/41/66/71
LTE Anchor Bands for n78	LTE B2/4/5/7/12/13/25/26/38/66/41/71

Transmission (H, M, L) channel numbers and frequencies in each 5G NR band								
NR Band 2								
	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	370500	1852.5	371000	1855	371500	1857.5	372000	1860
M	376000	1880	376000	1880	376000	1880	376000	1880
H	381500	1907.5	381000	1905	380500	1902.5	380000	1900
NR Band 5								
	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	165300	826.5	165800	829	166300	831.5	166800	834
M	167300	836.5	167300	836.5	167300	836.5	167300	836.5
H	169300	846.5	168800	844	168300	841.5	167800	839
NR Band 7								
	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	500500	2502.5	501000	2505	501500	2507.5	502000	2510
M	507000	2535	507000	2535	507000	2535	507000	2535
H	513500	2567.5	513000	2565	512500	2562.5	512000	2560
NR Band 12								
	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	140300	701.5	140800	704	141300	706.5	141800	709
M	141500	707.5	141500	707.5	141500	707.5	141500	707.5
H	142700	713.5	142200	711	141700	708.5	141200	706

NR Band 14				
	Bandwidth 5MHz		Bandwidth 10MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	158100	790.5	158600	793
M	158600	793		
H	159100	795.5		

NR Band 25																
	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 25MHz		Bandwidth 30MHz		Bandwidth 35MHz		Bandwidth 40MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	370500	1852.5	371000	1855	371500	1857.5	372000	1860	372500	1862.5	373000	1865	373500	1867.5	374000	1870
M	376500	1882.5	376500	1882.5	376500	1882.5	376500	1882.5	376500	1882.5	376500	1882.5	376500	1882.5	376500	1882.5
H	382500	1912.5	382000	1910	381500	1907.5	381000	1905	380500	1902.5	380000	1900	379500	1897.5	379000	1895

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

NR Band 30					
	Bandwidth 5MHz			Bandwidth 10MHz	
	Ch. #	Freq. (MHz)		Ch. #	Freq. (MHz)
L	461500	2307.5		462000	2310
M	462000	2310			
H	462500	2312.5			

NR Band 66																
	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 25MHz		Bandwidth 30MHz		Bandwidth 35MHz		Bandwidth 40MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	342500	1712.5	343000	1715	343500	1717.5	344000	1720	344500	1722.5	345000	1725	345500	1727.5	346000	1730
M	349000	1745	349000	1745	349000	1745	349000	1745	349000	1745	349000	1745	349000	1745	349000	1745
H	355500	1777.5	355000	1775	354500	1772.5	354000	1770	353500	1767.5	353000	1765	352500	1762.5	352000	1760

NR Band 71								
	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	133100	665.5	133600	668	134100	670.5	134600	673
M	136100	680.5	136100	680.5	136100	680.5	136100	680.5
H	139100	695.5	138600	693	138100	690.5	137600	688

NR Band 70							
	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	
L	339500	1697.5	340000	1700	340500	1702.5	
M	340500	1702.5	340500	1702.5			
H	341500	1707.5	341000	1705			

NR Band 38										
	Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 30MHz		Bandwidth 40MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	515004	2575.02	515502	2577.51	516000	2580	517002	2585.01	518004	2590.02
M	519000	2595	519000	2595	519000	2595	519000	2595	519000	2595
H	522996	2614.98	522498	2612.49	522000	2610	520998	2604.99	519996	2599.98

NR Band 41																						
	Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 30MHz		Bandwidth 40MHz		Bandwidth 50MHz		Bandwidth 60MHz		Bandwidth 70MHz		Bandwidth 80MHz		Bandwidth 90MHz		Bandwidth 100MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	500202	2501.01	500700	2503.5	501204	2506.02	502200	2511	503202	2516.01	504204	2521.02	505200	2526	500202	2501.01	507204	2536.02	508200	2541	509202	2546.01
M	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99
H	537000	2685	536496	2682.48	535998	2679.99	534996	2674.98	534000	2670	532998	2664.99	531996	2659.98	531000	2655	529998	2649.99	528996	2644.98	528000	2640



NR Band 77 SCS30KHz																								
Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 25MHz		Bandwidth 30MHz		Bandwidth 40MHz		Bandwidth 50MHz		Bandwidth 60MHz		Bandwidth 70MHz		Bandwidth 80MHz		Bandwidth 90MHz		Bandwidth 100MHz		
Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	
L	647000	3705	647168	3707.52	647334	3710.01	647500	3712.5	647668	3715.02	648000	3720	648334	3725.01	648668	3730.02	649000	3735	649334	3740.01	649668	3745.02	650000	3750
M	656000	3840	656000	3840	656000	3840	656000	3840.00	656000	3840.00	656000	3840	656000	3840	656000	3840	656000	3840	656000	3840	656000	3840	656000	3840
H	665000	3975	664832	3972.48	664666	3969.99	664500	3967.50	664332	3964.98	664000	3960	663666	3954.99	663332	3949.98	663000	3945	662666	3939.99	662332	3934.98	662000	3930

NR Band 78 SCS30KHz																								
Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 25MHz		Bandwidth 30MHz		Bandwidth 40MHz		Bandwidth 50MHz		Bandwidth 60MHz		Bandwidth 70MHz		Bandwidth 80MHz		Bandwidth 90MHz		Bandwidth 100MHz		
Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	
L	647000	3705	647168	3707.52	647334	3710.01	647500	3712.5	647668	3715.02	648000	3720	648334	3725.01	648668	3730.02	649000	3735	649334	3740.01	649668	3745.02		
M	650000	3750	650000	3750	650000	3750	650000	3750.00	650000	3750.00	650000	3750	650000	3750	650000	3750	650000	3750	650000	3750	650000	3750	650000	3750
H	653000	3795	652834	3792.51	652668	3790.02	652500	3787.5	652334	3785.01	652000	3780	651668	3775.02	651334	3770.01	651000	3765	650668	3760.02	650334	3755.01		

NR Band 48									
Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 30MHz		Bandwidth 40MHz	
Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	637000		3555		637168		3557.52		637334
M	641666		3624.99		641666		3624.99		641666
H	646332		3694.98		646166		3692.49		646000

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

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

<For NR Overlap Bands Description>

1) NR Bands BW

Band	5 MHz	10 MHz	15 MHz	20 MHz	25 MHz	30 MHz	35 MHz	40 MHz	45 MHz	50 MHz	60 MHz	70 MHz	80 MHz	90 MHz	100 MHz
FR1 n5	Yes	Yes	Yes	Yes											
FR1 n26	Yes	Yes	Yes	Yes											
FR1 n38		Yes	Yes	Yes		Yes		Yes							
FR1 n41		Yes	Yes	Yes		Yes		Yes		Yes	Yes	Yes	Yes	Yes	Yes
FR1 n77		Yes	Yes	Yes	Yes	Yes		Yes		Yes	Yes	Yes	Yes	Yes	Yes
FR1 n78		Yes	Yes	Yes	Yes	Yes		Yes		Yes	Yes	Yes	Yes	Yes	Yes
FR1 n2	Yes	Yes	Yes	Yes											
FR1 n25	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes							

2) NR Bands Tune up:

Band	Antenna	Head	Bodyworn	Hotspot	Extremity	Sensor Off	Default Tune-up Limit
		DSI 2 Tune-up Limit	DSI 3 Tune-up Limit	DSI 7 Tune-up Limit	DSI 6 Tune-up Limit	DSI 4 Tune-up Limit	
FR1 n25(2)	Ant 0	24	19.3	16.9	22.2	24	24
FR1 n25(2) PA (Reference Designator)	Ant 0	24	19.3	16.9	22.2	24	24
FR1 n25(2)	Ant 1	16.5	18.5	16.8	21.6	24	24
FR1 n25(2) PA (Reference Designator)	Ant 1	16.5	18.5	16.8	21.6	24	24
FR1 n26(5)	Ant 0	24	24	24	24	24	24
FR1 n26(5)	Ant 1	23	24	23.1	24	24	24
FR1 n41(38)	Ant 9	25	19.8	19.8	22	25	25
FR1 n41 HPUE	Ant 9	28	22.8	22.8	25	28	28
FR1 n41 PA (Reference Designator)	Ant 9	24	19.8	19.8	22	24	24



FR1 n41 HPUE PA (Reference Designator)	Ant 9	24	22.8	22.8	25	27	27
FR1 n41(38)	Ant 1	16.5	16.8	10.8	19	24	24
FR1 n41 HPUE	Ant 1	19.5	19.8	13.8	22	24	24
FR1 n41 PA (Reference Designator)	Ant 1	16.5	16.8	10.9	19.3	24	24
FR1 n41 HPUE PA (Reference Designator)	Ant 1	19.5	19.8	13.9	22.3	27	27
FR1 n41(38)	Ant 6	22.7	23.5	19.3	25	25	25
FR1 n41 HPUE	Ant 6	25.7	26	22.3	26	26	26
FR1 n41 PA (Reference Designator)	Ant 6	22.7	19.5	19.3	23	23	23
FR1 n41 HPUE PA (Reference Designator)	Ant 6	24	22.5	22.3	24	24	24
FR1 n38	Ant 3	13	16	14	16.5	16.5	16.5
FR1 n41	Ant 3	13	16	14	19	22	22
FR1 n41 HPUE	Ant 3	16	19	17	22	22	22
FR1 n41 PA (Reference Designator)	Ant 3	14.1	18.4	16.7	22	23	23
FR1 n41 HPUE PA (Reference Designator)	Ant 3	17.1	21.4	19.7	23	23	23
FR1 n77(78) Part 27O PC3	Ant 7	12.8	17.5	12.5	17.8	24	24
FR1 n77(78) Part 27Q PC3	Ant 7	12.8	17.5	12.5	17.8	24	24
FR1 n77(78) Part 27O PC3 PA (Reference Designator)	Ant 7	12.8	17.5	12.5	17.8	24	24
FR1 n77(78) Part 27Q PC3 PA (Reference Designator)	Ant 7	12.8	17.5	12.5	17.8	24	24
FR1 n77(78) Part 27O PC2	Ant 7	15.8	20.5	15.5	20.8	27	27
FR1 n77(78) Part 27Q PC2	Ant 7	15.8	20.5	15.5	20.8	27	27
FR1 n77(78) Part 27O PC2 PA (Reference Designator)	Ant 7	15.8	20.5	15.5	20.8	27	27
FR1 n77(78) Part 27Q PC2 PA (Reference Designator)	Ant 7	15.8	20.5	15.5	20.8	27	27
FR1 n77(78) Part 27O PC3	Ant 4	19	15	14	18.5	23	23
FR1 n77(78) Part 27Q PC3	Ant 4	19	15	14	18.5	24	24
FR1 n77(78) Part 27O PC3 PA (Reference Designator)	Ant 4	21	16.1	13.9	20.2	24	24
FR1 n77(78) Part 27Q PC3 PA (Reference Designator)	Ant 4	21	16.1	13.9	20.2	24	24
FR1 n77(78) Part 27O PC2	Ant 4	22	18	17	21.5	25	25
FR1 n77(78) Part 27Q PC2	Ant 4	22	18	17	21.5	25	25
FR1 n77(78) Part 27O PC2 PA (Reference Designator)	Ant 4	24	19.1	16.9	23.2	27	27
FR1 n77(78) Part 27Q PC2 PA (Reference Designator)	Ant 4	24	19.1	16.9	23.2	27	27
FR1 n77(78) Part 27O PC3	Ant 8	17.7	16.4	14.7	20.6	24	24
FR1 n77(78) Part 27Q PC3	Ant 8	17.7	16.4	14.7	20.6	24	24
FR1 n77(78) Part 27O PC3 PA (Reference Designator)	Ant 8	16	15	13	19	22.5	22.5
FR1 n77(78) Part 27Q PC3 PA (Reference Designator)	Ant 8	16	15	13	19	22.5	22.5
FR1 n77(78) Part 27O PC2	Ant 8	20.7	19.4	17.7	23.6	26	26
FR1 n77(78) Part 27Q PC2	Ant 8	20.7	19.4	17.7	23.6	26	26
FR1 n77(78) Part 27O PC2 PA (Reference Designator)	Ant 8	19	18	16	22	22.5	22.5
FR1 n77(78) Part 27Q PC2 PA (Reference Designator)	Ant 8	19	18	16	22	22.5	22.5
FR1 n77(78) Part 27O PC3	Ant 9	22	20.2	20.2	22	22	22
FR1 n77(78) Part 27Q PC3	Ant 9	24	20.2	20.2	22.2	24	24
FR1 n77(78) Part 27O PC3 PA (Reference Designator)	Ant 9	24	20.2	20.2	20.8	24	24
FR1 n77(78) Part 27Q PC3 PA (Reference Designator)	Ant 9	24	20.2	20.2	20.8	24	24
FR1 n77(78) Part 27O PC2	Ant 9	22	22	22	22	22	22
FR1 n77(78) Part 27Q PC2	Ant 9	24	23.2	23.2	24	24	24
FR1 n77(78) Part 27O PC2 PA (Reference Designator)	Ant 9	27	23.2	23.2	23.8	27	27
FR1 n77(78) Part 27Q PC2 PA (Reference Designator)	Ant 9	27	23.2	23.2	23.8	27	27

5. Smart Transmit feature for RF Exposure compliance

Qualcomm® Smart Transmit™ 3.0 of Smart Transmit (GEN2) Feature operates based on pre-defined sub6 antenna groups (AG). This Device is enabled with the Qualcomm® Smart Transmit Gen2 feature. The RF exposure limit is defined based on time-averaged RF exposure. The product implements Qualcomm Smart Transmit feature which controls the instantaneous transmitting power for WWAN transmitter to ensure the product in compliance with RF exposure limit over a defined time window, for SAR (transmit frequency ≤ 6GHz). To control and manage transmitting power in real time and to ensure at all times the time-averaged RF exposure is compliant to the regulation requirement.

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

This report describes the procedures for the SAR char generation, and the parameters obtained from SAR characterization (referred to as SAR char, respectively) will be used as input for Smart Transmit. SAR char will be entered via the Embedded File System (EFS) version 20 to enable the Smart Transmit Gen2 Feature.

<Terminologies in this report>

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

<SAR Characterization>

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

Antenna Group:

Antenna Group 0 (AG0)	ANT1 & ANT3 & ANT4 & ANT6 & ANT7 & ANT8
Antenna Group 1 (AG1)	ANT0 & ANT9

<SAR design target and uncertainty>

Item	Uncertainty dB (k=2)
Total uncertainty	1.5

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

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



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

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

<P_{limit} for supported technologies and bands (P_{limit} in EFS file)>

Band	Antenna	Head DSI2	Body-worn DSI3	Hotspot DSI7	Extremity DSI6	Sensor off DSI4	Pmax
GSM850	Ant 0	31.2	24.6	23.4	22.5	22.5	22.5
GSM1900	Ant 0	35.7	16.7	14.5	19.3	19.0	19.0
WCDMA II	Ant 0	35.3	16.7	15.1	20.0	23.0	23.0
WCDMA II	Ant 1	16.1	17.0	14.1	19.7	23.0	23.0
WCDMA IV	Ant 0	32.2	18.2	18.2	21.8	23.0	23.0
WCDMA IV	Ant 1	16.7	18.7	15.9	21.4	23.0	23.0
WCDMA V	Ant 0	29.4	23.1	23.1	27.8	23.0	23.0
WCDMA V	Ant 1	20.9	22.0	20.2	25.2	23.0	23.0
LTE Band 25(2)	Ant 0	32.6	16.2	14.4	20.3	23.0	23.0
LTE Band 2 PA (Reference Designator)	Ant 0	32.2	16.2	14.4	20.3	23.0	23.0
LTE Band 25(2)	Ant 1	14.8	17.4	14.9	19.4	23.0	23.0
LTE Band 2PA (Reference Designator)	Ant 1	14.8	17.4	14.9	19.4	23.0	23.0
LTE Band 66(4)	Ant 0	32.4	18.0	18.0	19.5	23.0	23.0
LTE Band 66(4) PA (Reference Designator)	Ant 0	32.4	18.0	18.0	19.5	23.0	23.0
LTE Band 66(4)	Ant 1	16.9	18.3	16.2	19.8	23.0	23.0
LTE Band 66(4) PA (Reference Designator)	Ant 1	16.9	18.3	16.2	19.8	23.0	23.0
LTE Band 7	Ant 9	26.8	19.5	19.5	21.4	23.0	23.0
LTE Band 7	Ant 1	12.9	14.8	10.3	16.3	22.0	22.0
LTE Band 12(17)	Ant 0	32.0	24.9	24.9	23.0	23.0	23.0
LTE Band 12(17)	Ant 1	22.3	23.4	22.8	23.0	23.0	23.0
LTE Band 13	Ant 0	30.5	24.2	24.2	23.0	23.0	23.0
LTE Band 13	Ant 1	21.4	22.7	21.6	23.0	23.0	23.0
LTE Band 14	Ant 0	30.0	23.6	23.6	23.0	23.0	23.0
LTE Band 14	Ant 1	21.5	22.3	21.4	23.0	23.0	23.0
LTE Band 26(5)	Ant 0	30.2	23.2	23.2	28.0	23.0	23.0
LTE Band 26(5)	Ant 1	20.5	22.1	21.3	23.0	23.0	23.0
LTE Band 30	Ant 9	29.0	21.2	21.2	21.9	23.0	23.0
LTE Band 30	Ant 1	13.1	15.6	11.8	17.1	22.0	22.0
LTE Band 41(38) PC3	Ant 9	26.4	19.3	19.3	21.0	22.4	21.0
LTE Band 41 PC2	Ant 9	26.4	19.3	19.3	21.0	22.4	22.4
LTE Band 41(38) PC3	Ant 1	13.8	14.3	9.0	18.1	22.4	21.0
LTE Band 41 PC2	Ant 1	13.8	14.3	9.0	18.1	22.4	22.4
LTE Band 38	Ant 6	20.1	18.8	17.2	21.4	21.4	21.0
LTE Band 41 PC3	Ant 6	20.1	18.8	17.2	21.4	21.4	20.0
LTE Band 41 PC2	Ant 6	20.1	18.8	17.2	21.4	21.4	21.4
LTE Band 38	Ant 3	15.0	17.1	15.3	18.4	14.0	14.0
LTE Band 41 PC3	Ant 3	15.0	17.1	15.3	18.4	18.4	17.0
LTE Band 41 PC2	Ant 3	15.0	17.1	15.3	18.4	18.4	18.4
LTE Band 42	Ant 4	22.9	14.9	13.7	17.9	22.0	22.0
LTE Band 42	Ant 7	12.1	16.1	12.9	17.5	20.5	20.5
LTE Band 42	Ant 8	14.3	15.2	12.6	19.4	20.0	20.0
LTE Band 42	Ant 9	28.6	19.4	19.4	21.0	22.0	22.0
LTE Band 48	Ant 7	13.5	15.6	11.7	17.2	20.5	20.5
LTE Band 48 PA (Reference Designator)	Ant 7	13.5	14.0	9.5	15.5	20.5	20.5
LTE Band 48	Ant 4	21.7	14.3	13.4	19.2	21.0	21.0
LTE Band 48 PA (Reference Designator)	Ant 4	21.7	14.3	13.4	18.5	21.0	21.0
LTE Band 48	Ant 8	13.5	14.1	11.0	19.6	20.0	20.0
LTE Band 48 PA (Reference Designator)	Ant 8	13.5	12.0	11.0	17.5	20.0	20.0



LTE Band 48	Ant 9	26.2	20.5	20.5	20.4	21.0	21.0
LTE Band 48 PA (Reference Designator)	Ant 9	26.2	18.5	18.5	20.0	21.0	21.0
LTE Band 71	Ant 0	32.5	25.3	25.3	23.0	23.0	23.0
LTE Band 71	Ant 1	22.0	23.2	22.0	23.0	23.0	23.0
FR1 n7	Ant 9	28.5	18.3	18.3	21.3	23.0	23.0
FR1 n7	Ant 1	13.4	14.1	9.9	16.3	23.0	23.0
FR1 n12	Ant 0	34.9	27.2	27.2	23.0	23.0	23.0
FR1 n12	Ant 1	22.5	24.3	22.8	23.0	23.0	23.0
FR1 n14	Ant 0	32.8	25.8	25.8	23.0	23.0	23.0
FR1 n14	Ant 1	21.9	23.2	21.7	23.0	23.0	23.0
FR1 n25(2)	Ant 0	34.8	18.3	15.9	21.2	23.0	23.0
FR1 n25(2) PA (Reference Designator)	Ant 0	34.8	18.3	15.9	21.2	23.0	23.0
FR1 n25(2)	Ant 1	15.5	17.5	15.8	20.6	23.0	23.0
FR1 n25(2) PA (Reference Designator)	Ant 1	15.5	17.5	15.8	20.6	23.0	23.0
FR1 n26(5)	Ant 0	33.6	25.0	25.0	23.0	23.0	23.0
FR1 n26(5)	Ant 1	22.0	23.7	22.1	23.0	23.0	23.0
FR1 n30	Ant 9	30.5	21.5	21.5	22.7	23.0	23.0
FR1 n30	Ant 1	12.9	15.3	11.3	18.5	23.0	23.0
FR1 n66	Ant 0	33.9	18.6	16.6	20.7	23.0	23.0
FR1 n66 PA (Reference Designator)	Ant 0	33.9	18.6	16.6	20.7	23.0	23.0
FR1 n66	Ant 1	16.6	18.8	16.5	21.4	23.0	23.0
FR1 n66 PA (Reference Designator)	Ant 1	16.6	18.8	16.5	21.4	23.0	23.0
FR1 n70	Ant 0	34.1	19.8	19.3	22.4	23.0	23.0
FR1 n70	Ant 1	17.8	21.2	18.2	22.1	23.0	23.0
FR1 n71	Ant 0	35.7	27.1	27.1	23.0	23.0	23.0
FR1 n71	Ant 1	22.5	24.0	22.0	23.0	23.0	23.0
FR1 n41(38) PC3	Ant 9	27.9	18.8	18.8	21.0	24.0	24.0
FR1 n41 PC2	Ant 9	27.9	18.8	18.8	21.0	24.0	24.0
FR1 n41 PC3 PA (Reference Designator)	Ant 9	27.9	18.8	18.8	21.0	23.0	23.0
FR1 n41 PC2 PA (Reference Designator)	Ant 9	27.9	18.8	18.8	21.0	23.0	23.0
FR1 n41(38) PC3	Ant 1	15.5	15.8	9.8	18.0	23.0	23.0
FR1 n41 PC2	Ant 1	15.5	15.8	9.8	18.0	23.0	20.0
FR1 n41 PC3 PA (Reference Designator)	Ant 1	15.5	15.8	9.9	18.3	23.0	23.0
FR1 n41 PC2 PA (Reference Designator)	Ant 1	15.5	15.8	9.9	18.3	23.0	23.0
FR1 n41(38) PC3	Ant 6	21.7	22.5	18.3	24.0	24.0	24.0
FR1 n41 PC2	Ant 6	21.7	22.5	18.3	24.0	24.0	22.0
FR1 n41 PC3 PA (Reference Designator)	Ant 6	21.7	18.5	18.3	22.5	24.0	22.0
FR1 n41 PC2 PA (Reference Designator)	Ant 6	21.7	18.5	18.3	22.5	24.0	20.0
FR1 n38 PC3	Ant 3	12.0	15.0	13.0	18.0	21.0	15.5
FR1 n41 PC3	Ant 3	12.0	15.0	13.0	18.0	21.0	21.0
FR1 n41 PC2	Ant 3	12.0	15.0	13.0	18.0	21.0	18.0
FR1 n41 PC3 PA (Reference Designator)	Ant 3	13.1	17.4	15.7	21.0	22.0	22.0
FR1 n41 PC2 PA (Reference Designator)	Ant 3	13.1	17.4	15.7	21.0	22.0	19.0
FR1 n48	Ant 7	12.8	16.8	13.0	18.6	23.0	23.0
FR1 n48 PA (Reference Designator)	Ant 7	12.8	16.8	13.0	18.6	23.0	23.0
FR1 n48	Ant 4	21.1	15.5	13.6	20.3	23.0	23.0
FR1 n48 PA (Reference Designator)	Ant 4	21.1	15.5	13.6	20.3	23.0	23.0
FR1 n48	Ant 8	14.6	14.8	13.7	21.3	23.0	23.0
FR1 n48 PA (Reference Designator)	Ant 8	14.6	14.8	13.7	21.3	23.0	23.0
FR1 n48	Ant 9	27.2	20.2	20.2	20.5	24.0	24.0
FR1 n48 PA (Reference Designator)	Ant 9	27.2	20.2	20.2	20.5	24.0	24.0
FR1 n77(78) Part 270 PC3	Ant 7	11.8	16.5	11.5	16.8	23.0	23.0
FR1 n77(78) Part 27Q PC3	Ant 7	11.8	16.5	11.5	16.8	23.0	23.0
FR1 n77(78) Part 270 PC3 PA (Reference Designator)	Ant 7	11.8	16.5	11.5	16.8	23.0	23.0
FR1 n77(78) Part 27Q PC3 PA (Reference Designator)	Ant 7	11.8	16.5	11.5	16.8	23.0	23.0
FR1 n77(78) Part 270 PC2	Ant 7	11.8	16.5	11.5	16.8	23.0	23.0

FR1 n77(78) Part 27Q PC2	Ant 7	11.8	16.5	11.5	16.8	23.0	23.0
FR1 n77(78) Part 27O PC2 PA (Reference Designator)	Ant 7	11.8	16.5	11.5	16.8	23.0	23.0
FR1 n77(78) Part 27Q PC2 PA (Reference Designator)	Ant 7	11.8	16.5	11.5	16.8	23.0	23.0
FR1 n77(78) Part 27O PC3	Ant 4	18.0	14.0	13.0	17.5	23.0	22.0
FR1 n77(78) Part 27Q PC3	Ant 4	18.0	14.0	13.0	17.5	23.0	23.0
FR1 n77(78) Part 27O PC3 PA (Reference Designator)	Ant 4	20.0	15.1	12.9	19.2	23.0	23.0
FR1 n77(78) Part 27Q PC3 PA (Reference Designator)	Ant 4	20.0	15.1	12.9	19.2	23.0	23.0
FR1 n77(78) Part 27O PC2	Ant 4	18.0	14.0	13.0	17.5	23.0	21.0
FR1 n77(78) Part 27Q PC2	Ant 4	18.0	14.0	13.0	17.5	23.0	21.0
FR1 n77(78) Part 27O PC2 PA (Reference Designator)	Ant 4	20.0	15.1	12.9	19.2	23.0	23.0
FR1 n77(78) Part 27Q PC2 PA (Reference Designator)	Ant 4	20.0	15.1	12.9	19.2	23.0	23.0
FR1 n77(78) Part 27O PC3	Ant 8	16.7	15.4	13.7	19.6	23.0	23.0
FR1 n77(78) Part 27Q PC3	Ant 8	16.7	15.4	13.7	19.6	23.0	23.0
FR1 n77(78) Part 27O PC3 PA (Reference Designator)	Ant 8	15.0	14.0	12.0	18.0	23.0	21.5
FR1 n77(78) Part 27Q PC3 PA (Reference Designator)	Ant 8	15.0	14.0	12.0	18.0	23.0	21.5
FR1 n77(78) Part 27O PC2	Ant 8	16.7	15.4	13.7	19.6	23.0	22.0
FR1 n77(78) Part 27Q PC2	Ant 8	16.7	15.4	13.7	19.6	23.0	22.0
FR1 n77(78) Part 27O PC2 PA (Reference Designator)	Ant 8	15.0	14.0	12.0	18.0	23.0	18.5
FR1 n77(78) Part 27Q PC2 PA (Reference Designator)	Ant 8	15.0	14.0	12.0	18.0	23.0	18.5
FR1 n77(78) Part 27O PC3	Ant 9	24.8	19.2	19.2	21.2	23.0	21.0
FR1 n77(78) Part 27Q PC3	Ant 9	24.8	19.2	19.2	21.2	23.0	23.0
FR1 n77(78) Part 27O PC3 PA (Reference Designator)	Ant 9	24.8	19.2	19.2	19.8	23.0	23.0
FR1 n77(78) Part 27Q PC3 PA (Reference Designator)	Ant 9	24.8	19.2	19.2	19.8	23.0	23.0
FR1 n77(78) Part 27O PC2	Ant 9	24.8	19.2	19.2	21.2	23.0	18.0
FR1 n77(78) Part 27Q PC2	Ant 9	24.8	19.2	19.2	21.2	23.0	20.0
FR1 n77(78) Part 27O PC2 PA (Reference Designator)	Ant 9	24.8	19.2	19.2	19.8	23.0	23.0
FR1 n77(78) Part 27Q PC2 PA (Reference Designator)	Ant 9	24.8	19.2	19.2	19.8	23.0	23.0

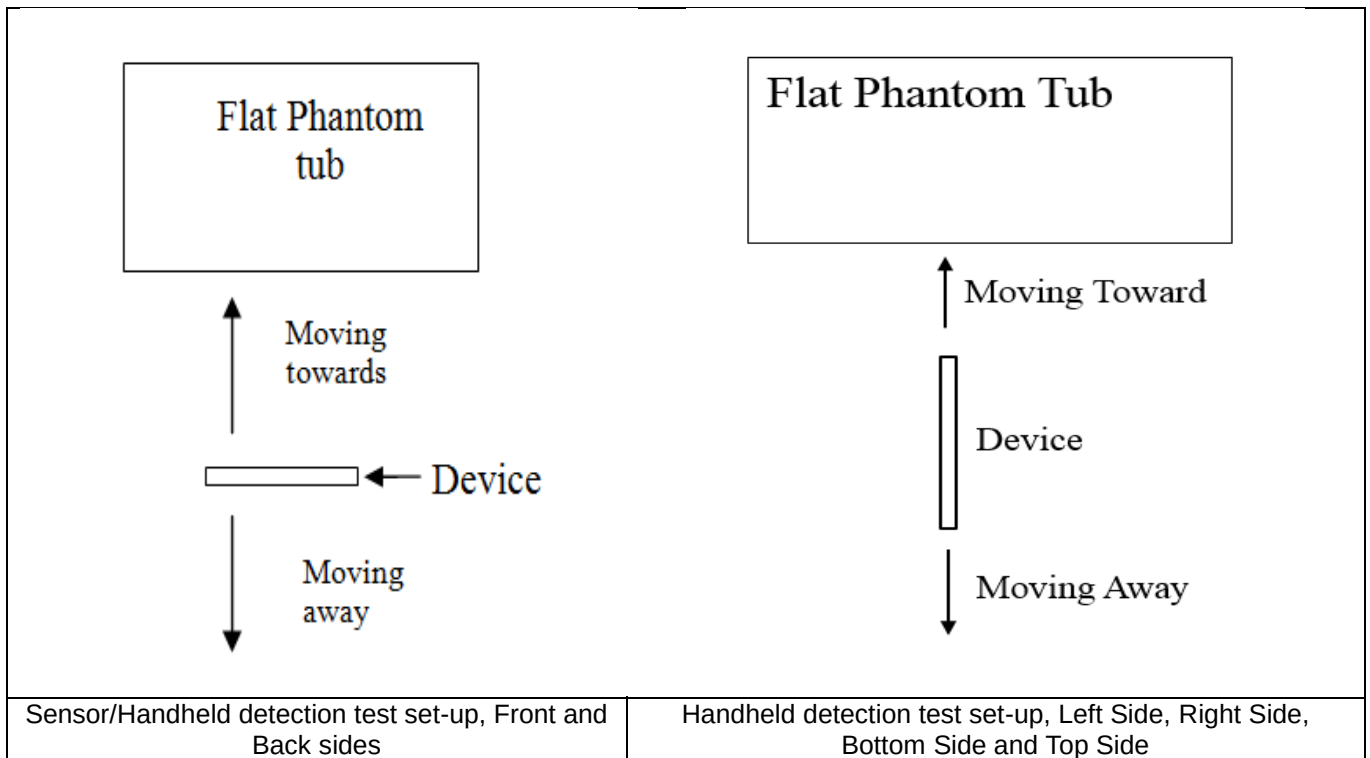
Note:

- 1) *Pmax is used for RF tune up procedure. The maximum allowed output power is equal to Pmax + 1.0 dB device uncertainty.
- 2) All Plimit power levels entered in the Table correspond to average power levels after accounting for duty cycle in the case TDD modulation schemes (for e.g., GSM & LTE TDD & NR TDD).
- 3) The max allowed output power is the Plimit + 1.0 dB device uncertainty, and if Plimit is higher than Pmax, the device output power will be Pmax instead.

6. Proximity Sensor Triggering Test

<Proximity Sensor Triggering Distance>:

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



<P-Sensor>

Proximity Sensor Triggering Distance (mm)				
Position	Front		Back	
	Moving towards	Moving away	Moving towards	Moving away
Minimum	16	21	20	25

<Handheld for ANT 0>

Proximity Sensor Triggering Distance (mm)						
Position	Front		Back		Bottom Side	
	Moving towards	Moving away	Moving towards	Moving away	Moving towards	Moving away
Minimum	5	11	9	15	10	16

<Handheld for ANT9>

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	11	9	15	4	9	10	16

<Handheld for ANT1&4>

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	6	12	10	15	5	10	11	16

<Handheld for ANT2&3&2+3&5&7&8&5+8>

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	7	11	10	15	10	16	10	15

7. RF Exposure Limits

7.1 Uncontrolled Environment

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

7.2 Controlled Environment

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

Limits for Occupational/Controlled Exposure (W/kg)

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

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

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

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

7.3 RF Exposure limit for above 6GHz

According to ANSI/IEEE C95.1-1992, the criteria listed in Table 1 shall be used to evaluate the environmental impact of human exposure to radio frequency (RF) radiation as specified in §1.1310. The unit of power density evaluation is W/m² or mW/cm².

Peak Spatially Averaged Power Density was evaluated over a square area of 4cm² per interim FCC Guidance for near-field power density evaluations per October 2018 TCB Workshop notes

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3-3.0	614	1.63	*(100)	6
3.0-30	1842/f	4.89/f	*(900/f ²)	6
30-300	61.4	0.163	1.0	6
300-1500			f/300	6
1500-100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f ²)	30
30-300	27.5	0.073	0.2	30
300-1500			f/1500	30
1500-100,000			1.0	30

Note: 1.0 mW/cm² is 10 W/m²

8. Specific Absorption Rate (SAR)

8.1 Introduction

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

8.2 SAR Definition

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

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

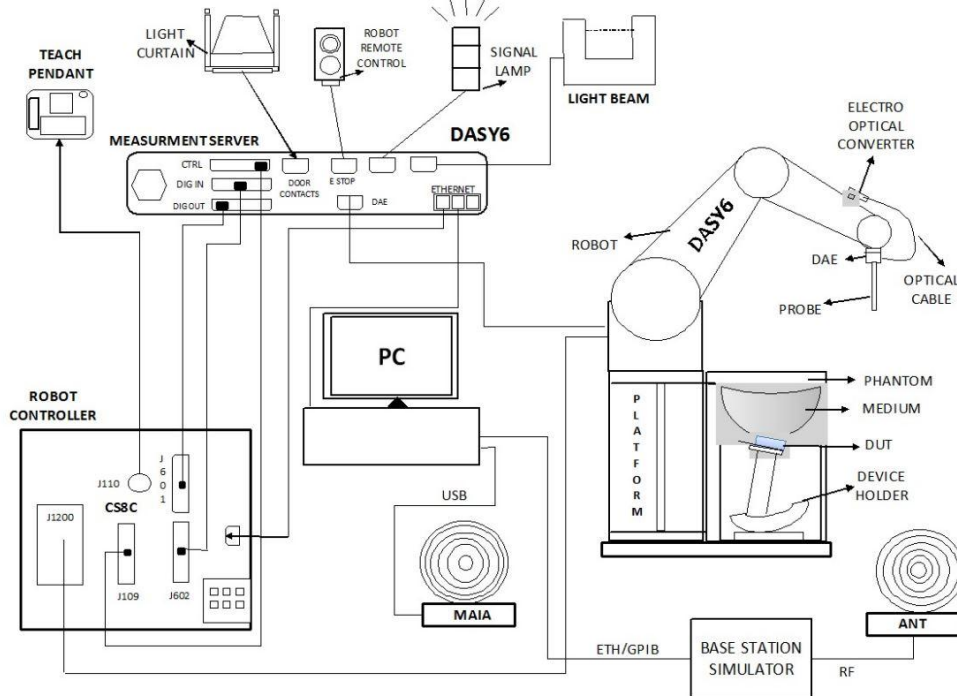
SAR is expressed in units of Watts per kilogram (W/kg)

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

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

9. System Description and Setup

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



- A standard high precision 6-axis robot with controller, teach pendant and software. An arm extension for accommodating the data acquisition electronics (DAE).
- An isotropic Field probe optimized and calibrated for the targeted measurement.
- A data acquisition electronics (DAE) which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.
- The Electro-optical converter (EOC) performs the conversion from optical to electrical signals for the digital communication to the DAE. To use optical surface detection, a special version of the EOC is required. The EOC signal is transmitted to the measurement server.
- The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- The Light Beam used is for probe alignment. This improves the (absolute) accuracy of the probe positioning.
- A computer running Win7 or Win10 and the DASY5 or DASY6⁽¹⁾ 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.

Note: 1. DASY6 software used: cDASY6 Module mmWave V3.2.0.1840 and older generations and used the developed Plane-to-Plane Phase Reconstruction (PTP-PR) Algorithm which was used in PD measurement.

9.1 E-Field Probe

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

<EX3DV4 Probe>

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

9.2 Data Acquisition Electronics (DAE)

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

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



Photo of DAE

9.3 Phantom

<SAM Twin Phantom>

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

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

<ELI Phantom>

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

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

9.4 Device Holder

<Mounting Device for Hand-Held Transmitter>

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



Mounting Device for Hand-Held Transmitters



Mounting Device Adaptor for Wide-Phones

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

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



Mounting Device for Laptops

10. Measurement Procedures

The measurement procedures are as follows:

<Conducted power measurement>

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

<SAR measurement>

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

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

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

10.1 Spatial Peak SAR Evaluation

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

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

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

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

10.2 Power Reference Measurement

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

10.3 Area Scan

The area scan is used as a fast scan in two dimensions to find the area of high field values, before doing a fine measurement around the hot spot. The sophisticated interpolation routines implemented in DASY software can find the maximum found in the scanned area, within a range of the global maximum. The range (in dB) 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: $\Delta x_{\text{Area}}, \Delta y_{\text{Area}}$	≤ 2 GHz: ≤ 15 mm $2 - 3$ GHz: ≤ 12 mm	$3 - 4$ GHz: ≤ 12 mm $4 - 6$ GHz: ≤ 10 mm
	When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be $\leq$ the corresponding x or y dimension of the test device with at least one measurement point on the test device.	

10.4 Zoom Scan

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

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

			≤ 3 GHz	> 3 GHz
Maximum zoom scan spatial resolution: $\Delta x_{\text{Zoom}}, \Delta y_{\text{Zoom}}$			≤ 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: $\Delta z_{\text{Zoom}}(n)$		≤ 5 mm	3 – 4 GHz: ≤ 4 mm 4 – 5 GHz: ≤ 3 mm 5 – 6 GHz: ≤ 2 mm
	graded grid	$\Delta z_{\text{Zoom}}(1)$: 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
		$\Delta z_{\text{Zoom}}(n>1)$: between subsequent points	$\leq 1.5 \cdot \Delta z_{\text{Zoom}}(n-1)$	
Minimum zoom scan volume	x, y, z		≥ 30 mm	3 – 4 GHz: ≥ 28 mm 4 – 5 GHz: ≥ 25 mm 5 – 6 GHz: ≥ 22 mm
Note: δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see draft standard IEEE P1528-2011 for details.				
* When zoom scan is required and the <i>reported</i> SAR from the <i>area scan based 1-g SAR estimation</i> procedures of KDB 447498 is ≤ 1.4 W/kg, ≤ 8 mm, ≤ 7 mm and ≤ 5 mm zoom scan resolution may be applied, respectively, for 2 GHz to 3 GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz.				

10.5 Volume Scan Procedures

The volume scan is used to assess overlapping SAR distributions for antennas transmitting in different frequency bands. It is equivalent to an oversized zoom scan used in standalone measurements. The measurement volume will be used to enclose all the simultaneous transmitting antennas. For antennas transmitting simultaneously in different frequency bands, the volume scan is measured separately in each frequency band. In order to sum correctly to compute the 1g aggregate SAR, the EUT remain in the same test position for all measurements and all volume scan use the same spatial resolution and grid spacing. When all volume scan were completed, the software, SEMCAD postprocessor can combine and subsequently superpose these measurement data to calculating the multiband SAR.

10.6 Power Drift Monitoring

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

11. Test Equipment List

Manufacturer	Name of Equipment	Type/Model	Serial Number	Calibration	
				Last Cal.	Due Date
SPEAG	750MHz System Validation Kit	D750V3	1099	2024/12/13	2025/12/12
SPEAG	835MHz System Validation Kit	D835V2	4d162	2024/12/13	2025/12/12
SPEAG	1750MHz System Validation Kit	D1750V2	1090	2025/3/12	2026/3/11
SPEAG	1900MHz System Validation Kit	D1900V2	5d182	2024/12/16	2025/12/15
SPEAG	2300MHz System Validation Kit	D2300V2	1055	2023/8/21	2026/8/19
SPEAG	2450MHz System Validation Kit	D2450V2	1095	2024/2/8	2026/2/6
SPEAG	2600MHz System Validation Kit	D2600V2	1112	2023/12/18	2025/12/16
SPEAG	3500MHz System Validation Kit	D3500V2	1037	2023/11/20	2025/11/18
SPEAG	3700MHz System Validation Kit	D3700V2	1008	2023/11/20	2025/11/18
SPEAG	3900MHz System Validation Kit	D3900V2	1048	2023/3/9	2026/3/6
SPEAG	5000MHz System Validation Kit	D5GHzV2	1113	2025/9/17	2026/9/16
SPEAG	6500MHz System Validation Kit	D6.5GHzV2	1026	2025/1/28	2026/1/27
SPEAG	5G Verification Source	10GHz	2005	2024/12/4	2025/12/3
SPEAG	13MHz System Validation Kit	CLA13	1020	2025/6/5	2026/6/4
SPEAG	Data Acquisition Electronics	DAE4	1691	2025/6/4	2026/6/3
SPEAG	Data Acquisition Electronics	DAE4	1650	2024/11/25	2025/11/24
SPEAG	Data Acquisition Electronics	DAE4	1358	2025/7/15	2026/7/14
SPEAG	Dosimetric E-Field Probe	EX3DV4	3857	2025/2/19	2026/2/18
SPEAG	Dosimetric E-Field Probe	EX3DV4	7774	2025/7/25	2026/7/24
SPEAG	EUmmWV Probe Tip Protection	EUmmWV4	9553	2024/11/15	2025/11/14
SPEAG	Dosimetric E-Field Probe	EX3DV4	7706	2025/5/22	2026/5/21
SPEAG	mmWave Phantom	mmWave	1065	NCR	NCR
SPEAG	SAM Twin Phantom	SAM Twin	TP-1697	NCR	NCR
SPEAG	SAM Twin Phantom	SAM Twin	TP-2022	NCR	NCR
SPEAG	ELI Phantom	ELI V8.0	TP-2135	NCR	NCR
Beichuang	Thermo-Hygrometer	HTC-1	1959628	2025/5/27	2026/5/26
Beichuang	Thermo-Hygrometer	HTC-1	1959632	2025/5/27	2026/5/26
Testo	Thermo-Hygrometer	HTC-1	55011	2025/1/2	2026/1/1
Beichuang	Thermo-Hygrometer	HTC-1	1959630	2025/5/27	
SPEAG	Phone Positioner	N/A	N/A	NCR	NCR
Anritsu	Radio Communication Analyzer	MT8820C	6201563900	2025/7/2	2026/7/1
Agilent	ENA Series Network Analyzer	E5071C	MY46112129	2025/7/2	2026/7/1
SPEAG	Dielectric Probe Kit	DAK-3.5	1071	2025/2/24	2026/2/23
SPEAG	Dielectric Probe Kit	DAK-12	1173	2024/11/19	2025/11/18
Anritsu	Vector Signal Generator	MG3710A	6201682672	2025/1/3	2026/1/2
Rohde & Schwarz	Signal Generator	SMB100A	100455	2025/1/2	2026/1/1
Rohde & Schwarz	Vector Signal Generator	SMBV100A	258305	2025/1/2	2026/1/1
Rohde & Schwarz	Power Meter	NRVD	102081	2025/7/2	2026/7/1
Rohde & Schwarz	Power Sensor	NRV-Z5	100538	2025/7/2	2026/7/1
Rohde & Schwarz	Power Sensor	NRV-Z5	100539	2025/7/2	2026/7/1
Rohde & Schwarz	Power Sensor	NRP50S	101385	2025/10/14	2026/10/13
R&S	BLUETOOTH TESTER	CBT	101246	2025/7/3	2026/7/2
Keysight	Preamplifier	83017A	MY57280106	2025/4/18	2026/4/17
Rohde & Schwarz	Spectrum Analyzer	FSV7	101631	2025/10/11	2026/10/10
TES	DIGITAC THERMOMETER	TYPE-K	220305411	2025/1/2	2026/1/1

ARRA	Power Divider	A3200-2	N/A	Note 1
MCL	Attenuation1	BW-S10W5+	N/A	Note 1
MCL	Attenuation2	BW-S10W5+	N/A	Note 1
MCL	Attenuation3	BW-S10W5+	N/A	Note 1
mini-circuits	amplifier	ZVE-3W-83+	162601250	Note 1
BONN	POWER AMPLIFIER	BLMA 0830-3	087193A	Note 1
BONN	POWER AMPLIFIER	BLMA 2060-2	087193B	Note 1
BONN Elektronik	Power Amplifier	BSA 0125-150	076577A	Note 1
Agilent	Dual Directional Coupler	778D	20500	Note 1
Agilent	Dual Directional Coupler	11691D	MY48151020	Note 1
ET Industries	Dual Directional Coupler	C-058-10	N/A	Note 1
ATM	Dual Directional Coupler	C122H-10	P610410z-02	Note 1

Note:

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

12. System Verification

12.1 Tissue Simulating Liquids

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

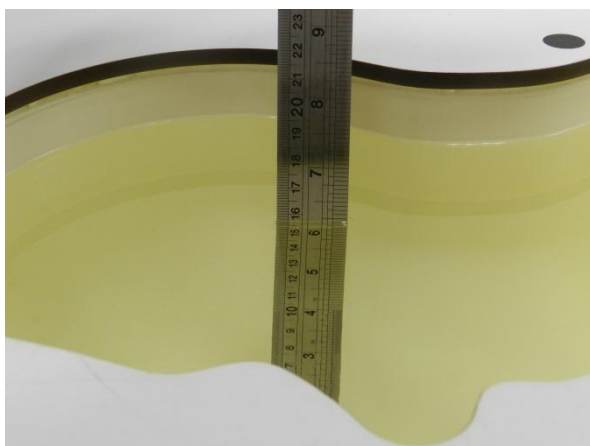


Fig 11.1 Photo of Liquid Height for Head SAR



Fig 11.2 Photo of Liquid Height for Body SAR

12.2 Tissue Verification

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

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

Simulating Liquid for 5GHz, Manufactured by SPEAG

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

<Tissue Dielectric Parameter Check Results>

Frequency (MHz)	Tissue Type	Liquid Temp. (°C)	Conductivity (σ)	Permittivity (ε _r)	Conductivity Target (σ)	Permittivity Target (ε _r)	Delta (σ) (%)	Delta (ε _r) (%)	Limit (%)	Date
750	Head	22.7	0.886	42.907	0.89	41.90	-0.45	2.40	±5	2025/10/16
835	Head	22.8	0.914	42.456	0.90	41.50	1.56	2.30	±5	2025/10/16
1750	Head	22.6	1.375	40.111	1.37	40.10	0.36	0.03	±5	2025/10/17
1900	Head	22.6	1.449	39.089	1.40	40.00	3.50	-2.28	±5	2025/10/17
2300	Head	22.6	1.608	39.584	1.67	39.50	-3.71	0.21	±5	2025/10/18
2600	Head	22.6	1.917	38.754	1.96	39.00	-2.19	-0.63	±5	2025/10/19
3500	Head	22.8	2.967	37.714	2.91	37.90	1.96	-0.49	±5	2025/10/19
3700	Head	22.9	3.177	37.505	3.12	37.70	1.83	-0.52	±5	2025/10/20
3900	Head	22.6	3.389	37.356	3.33	37.51	1.77	-0.41	±5	2025/10/20
2450	Head	22.9	1.761	39.275	1.80	39.20	-2.17	0.19	±5	2025/10/18
5250	Head	22.7	4.683	36.409	4.71	35.95	-0.57	1.28	±5	2025/10/21
5600	Head	22.9	5.054	35.952	5.07	35.50	-0.32	1.27	±5	2025/10/21
5800	Head	22.6	5.182	35.491	5.27	35.30	-1.67	0.54	±5	2025/10/21
6500	Head	22.8	6.09	34.3	6.07	34.50	0.33	-0.58	±5	2025/11/5
13	Head	22.7	0.744	56.2	0.75	55.00	-0.80	2.18	±5	2025/10/21

12.3 System Performance Check Results

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

Date	Frequency (MHz)	Tissue Type	Input Power (mW)	Dipole S/N	Probe S/N	DAE S/N	Measured 1g SAR (W/kg)	Targeted 1g SAR (W/kg)	Normalized 1g SAR (W/kg)	Deviation (%)	Measured 10g SAR (W/kg)	Targeted 10g SAR (W/kg)	Normalized 10g SAR (W/kg)	Deviation (%)
2025/10/16	750	Head	50	1099	3857	1691	0.437	8.280	8.74	5.56	0.290	5.370	5.8	8.01
2025/10/16	835	Head	50	4d162	3857	1691	0.493	9.080	9.86	8.59	0.318	5.850	6.36	8.72
2025/10/17	1750	Head	50	1090	3857	1691	1.870	36.600	37.4	2.19	0.999	19.500	19.98	2.46
2025/10/17	1900	Head	50	5d182	3857	1691	2.140	39.800	42.8	7.54	1.110	21.000	22.2	5.71
2025/10/18	2300	Head	50	1055	3857	1691	2.330	48.400	46.6	-3.72	1.110	23.700	22.2	-6.33
2025/10/19	2600	Head	50	1112	3857	1691	2.710	55.100	54.2	-1.63	1.220	24.800	24.4	-1.61
2025/10/19	3500	Head	50	1037	3857	1691	3.270	65.400	65.4	0.00	1.250	24.700	25	1.21
2025/10/20	3700	Head	50	1008	3857	1691	3.650	67.200	73	8.63	1.330	24.400	26.6	9.02
2025/10/20	3900	Head	50	1048	3857	1691	3.750	69.100	75	8.54	1.310	24.100	26.2	8.71
2025/10/18	2450	Head	50	1095	3857	1691	2.570	52.600	51.4	-2.28	1.190	24.700	23.8	-3.64
2025/10/21	5250	Head	50	1113	3857	1691	4.000	78.100	80	2.43	1.140	22.400	22.8	1.79
2025/10/21	5600	Head	50	1113	3857	1691	4.400	80.000	88	10.00	1.250	23.000	25	8.70
2025/10/21	5800	Head	50	1113	3857	1691	3.960	77.900	79.2	1.67	1.140	22.300	22.8	2.24
2025/11/5	6500	Head	50	1026	7774	1650	14.5	296.00	290	-2.03	2.92	54.80	58.4	6.57
2025/10/21	13	Head	1000	1020	7706	1358	0.527	0.548	0.527	-4.18	0.331	0.338	0.331	-2.65

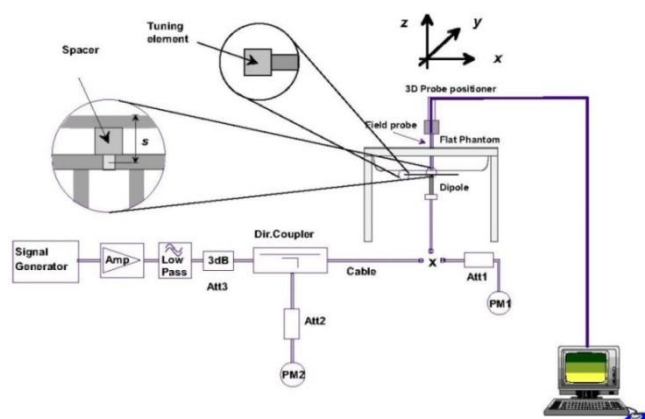


Fig 11.3.1 System Performance Check Setup



Fig 11.3.2 Setup Photo



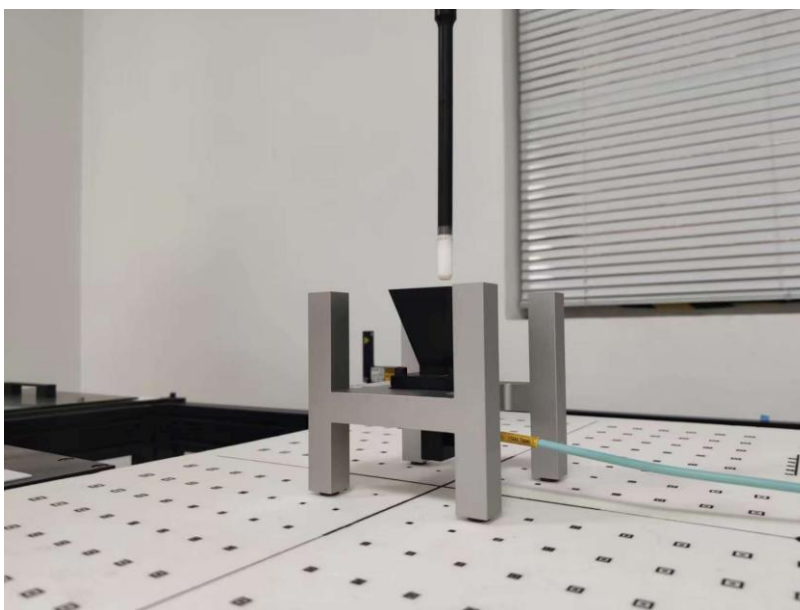
Fig 8.3.2 Setup Photo

12.4 PD System Verification Results

The system was verified to be within ± 0.66 dB of the power density targets on the calibration certificate according to the test system specification in the user's manual and calibration facility recommendation. The 0.66 dB deviation threshold represents the expanded uncertainty for system performance checks using SPEAG's mmWave verification sources. The same spatial resolution and measurement region used in the source calibration was applied during the system check. The measured power density distribution of verification source was also confirmed through visual inspection to have no noticeable differences, both spatially (shape) and numerically (level) from the distribution provided by the manufacturer, per November 2017 TCBC Workshop Notes.

Frequency (GHz)	5G Verification Source	Probe S/N	DAE S/N	Distance (mm)	Prad (mW)	Measured psPDn+ 4 cm ² (W/m ²)	Normalized 4 cm ² (W/m ²)	Targeted psPDn+ 4 cm ² (W/m ²)	Deviation (dB)	Measured psPDtot+ 4 cm ² (W/m ²)	Normalized 4 cm ² (W/m ²)	Targeted psPDtot+ 4 cm ² (W/m ²)	Deviation (dB)	Measured psPDmod+ 4 cm ² (W/m ²)	Normalized 4 cm ² (W/m ²)	Targeted psPDmod+ 4 cm ² (W/m ²)	Deviation (dB)	Test date
10	10GHz_2005	9553	1691	10	100	95.1	150.7	171	-0.55	95.5	151.3	172	-0.56	97.3	154.2	177	-0.60	2025/10/29

Note: (1) means the measured PD was normalized to Prad power which can be referred to DASY Calibration Certificate in appendix C.



System Verification Setup Photo

13. RF Exposure Positions

13.1 Ear and handset reference point

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

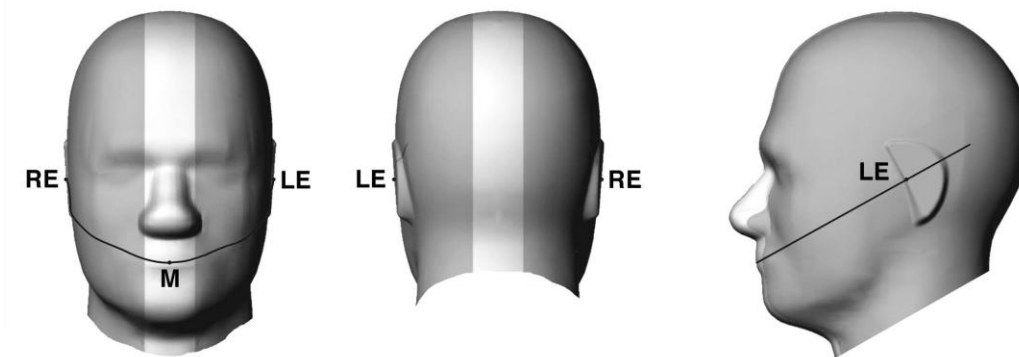


Fig 12.1.1 Front, back, and side views of SAM twin phantom

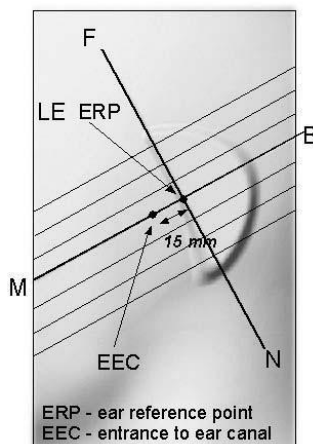


Fig 12.1.2 Close-up side view of phantom showing the ear region.

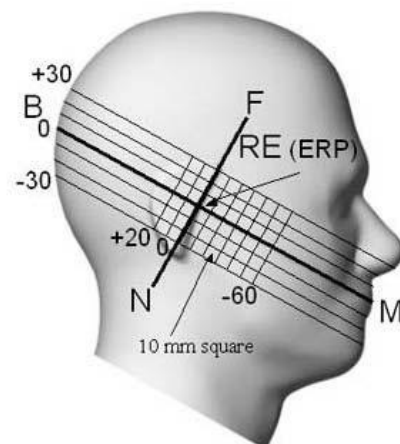


Fig 12.1.3 Side view of the phantom showing relevant markings and seven cross-sectional plane locations

13.2 Definition of the cheek position

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

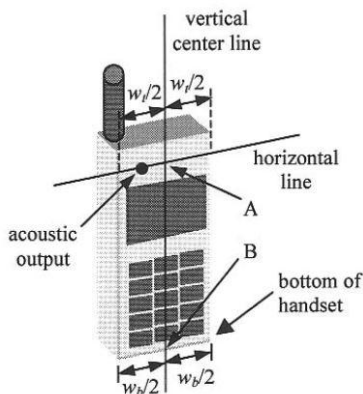


Fig 12.2.1 Handset vertical and horizontal reference lines—"fixed case"

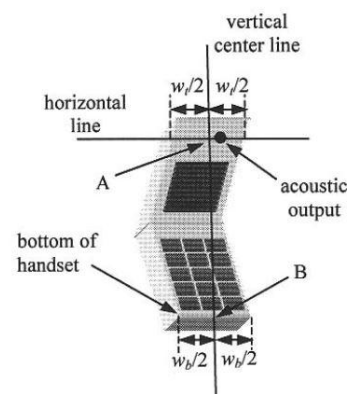


Fig 12.2.2 Handset vertical and horizontal reference lines—"clam-shell case"

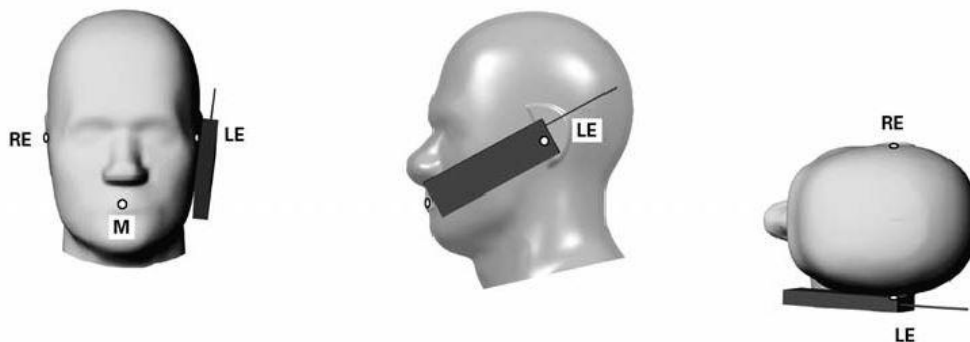


Fig 12.2.3 cheek or touch position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which establish the Reference Plane for handset positioning, are indicated.

13.3 Definition of the tilt position

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

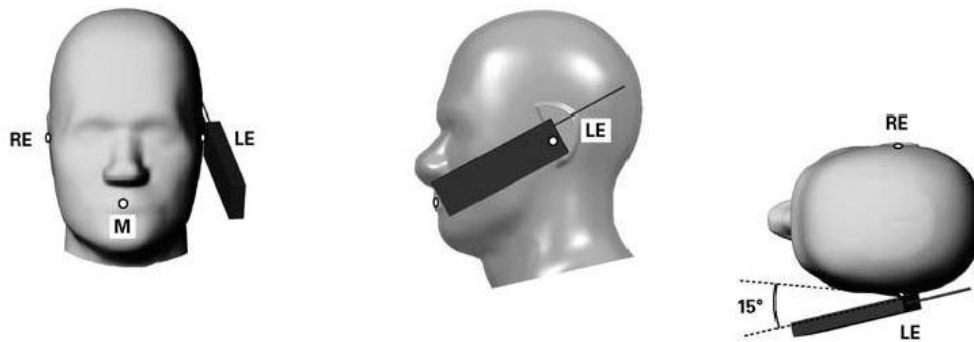


Fig 12.3.1 Tilt position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which define the Reference Plane for handset positioning, are indicated.

13.4 Body Worn Accessory

Body-worn operating configurations are tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in a normal use configuration (see Figure 11.4). Per KDB648474 D04v01r03, body-worn accessory exposure is typically related to voice mode operations when handsets are carried in body-worn accessories. The body-worn accessory procedures in FCC KDB 447498 D01v06 should be used to test for body-worn accessory SAR compliance, without a headset connected to it. This enables the test results for such configuration to be compatible with that required for hotspot mode when the body-worn accessory test separation distance is greater than or equal to that required for hotspot mode, when applicable. When the reported SAR for body-worn accessory, measured without a headset connected to the handset is $> 1.2 \text{ W/kg}$, the highest reported SAR configuration for that wireless mode and frequency band should be repeated for that body-worn accessory with a handset attached to the handset.

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

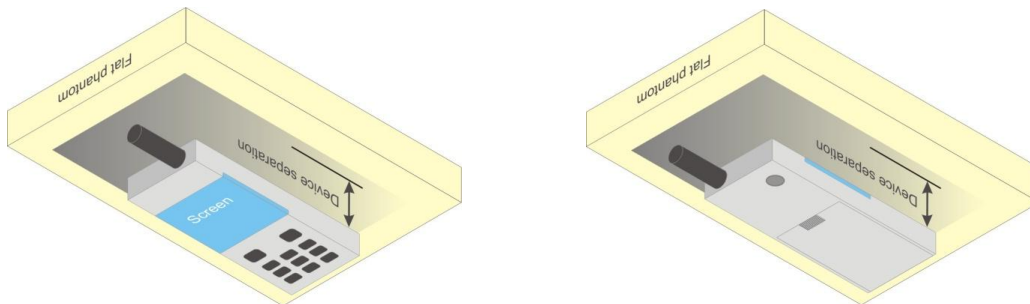


Fig 12.4 Body Worn Position

13.5 Product Specific 10g SAR Exposure

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

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

13.6 Wireless Router

Some battery-operated handsets have the capability to transmit and receive user through simultaneous transmission of WIFI simultaneously with a separate licensed transmitter. The FCC has provided guidance in FCC KDB Publication 941225 D06 v02r01 where SAR test considerations for handsets ($L \times W \geq 9 \text{ cm} \times 5 \text{ cm}$) 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.

13.7 Miscellaneous Testing Considerations

- Evaluate SAR using 6-7 GHz parameters per IEC/IEEE 62209-1528:2020.
- Per procedures of KDB Pubs. 447498 and 248227, and applicable product-specific procedures among KDB Pubs. 648474 (handsets/phablets).
- Where supported by the test system, also report estimated absorbed (epithelial) power density (for reference purposes only, not specifically for compliance) and estimated incident PD, derived from measured SAR.
- In addition, for the highest SAR test configurations evaluate incident PD using the mmw near-field probe and total-field/power-density reconstruction method (2 mm closest meas. plane)

Adjust measured results per amount that measurement uncertainty exceeds 30 % (see e.g. IEC 62479:2010)

14. Conducted RF Output Power (Unit: dBm)

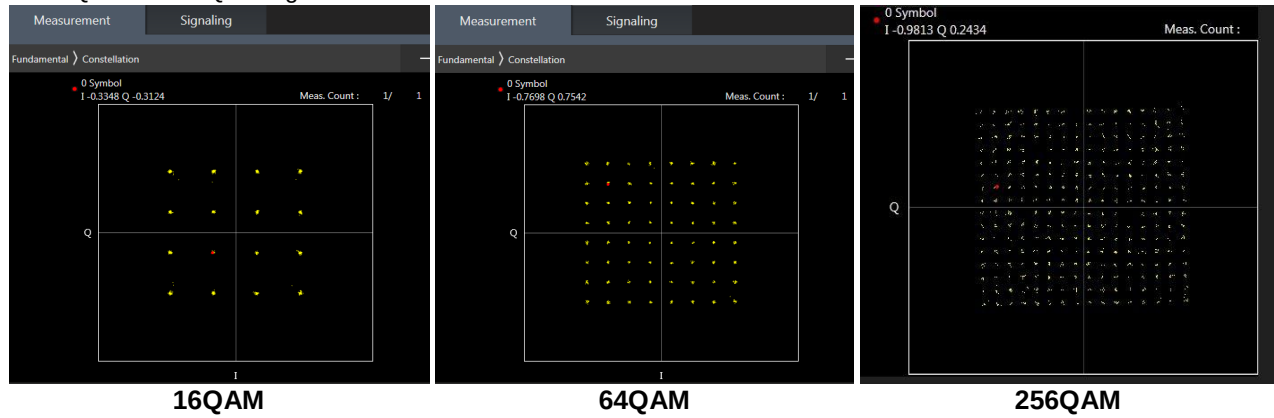
The detailed conducted power table can refer to Appendix E.

<LTE Conducted Power>

General Note:

1. Anritsu MT8820C base station simulator was used to setup the connection with EUT; the frequency band, channel bandwidth, RB allocation configuration, modulation type are set in the base station simulator to configure EUT transmitting at maximum power and at different configurations which are requested to be reported to FCC, for conducted power measurement and SAR testing.
2. Per KDB 941225 D05v02r05, when a properly configured base station simulator is used for the SAR and power measurements, spectrum plots for each RB allocation and offset configuration is not required.
3. Per KDB 941225 D05v02r05, start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.
4. Per KDB 941225 D05v02r05, 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure.
5. Per KDB 941225 D05v02r05, for QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.
6. Per KDB 941225 D05v02r05, 16QAM/64QAM/256QAM output power for each RB allocation configuration is $>$ not $\frac{1}{2}$ dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, 16QAM/64QAM/256QAM SAR testing is not required.
7. Per KDB 941225 D05v02r05, smaller bandwidth output power for each RB allocation configuration is $>$ not $\frac{1}{2}$ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, smaller bandwidth SAR testing is not required.
8. For LTE B4 / B5 / B12 / B17 / B26 / B38 /B71 the maximum bandwidth does not support three non-overlapping channels, per KDB 941225 D05v02r05, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.
9. LTE B2 / B4 / B5 / B17 / B38 SAR test was covered by B25 / B66 / B26 / B12 / B41; according to April 2015 TCB workshop, SAR test for overlapping LTE bands can be reduced if
 - a. the maximum output power, including tolerance, for the smaller band is $\leq$ the larger band to qualify for the SAR test exclusion
 - b. the channel bandwidth and other operating parameters for the smaller band are fully supported by the larger band

10. According to May 2017 TCB workshop, for 16QAM and 64QAM, 256QAM should be verified by checking the signal constellation with a call box to avoid incorrect maximum power levels due to MPR and other requirements associated with signal modulation, and the following figure is taken from the "Fundamental Measurement >> Modulation Analysis >> constellation" mode of the device connect to the MT8821C base station, therefore, the device 256QAM, 64QAM and 16QAM signal modulation are correct.



<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.

- 3GPP TS 36.211 section 4.2 for Type 2 Frame Structure and Table 4.2-2 for uplink-downlink configurations
- “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
- Establishing connections with base station simulators ensure a consistent means for testing SAR and recommended for evaluating SAR. The Anritsu MT8820C (firmware: #22.52#004) was used for LTE output power measurements and SAR testing.

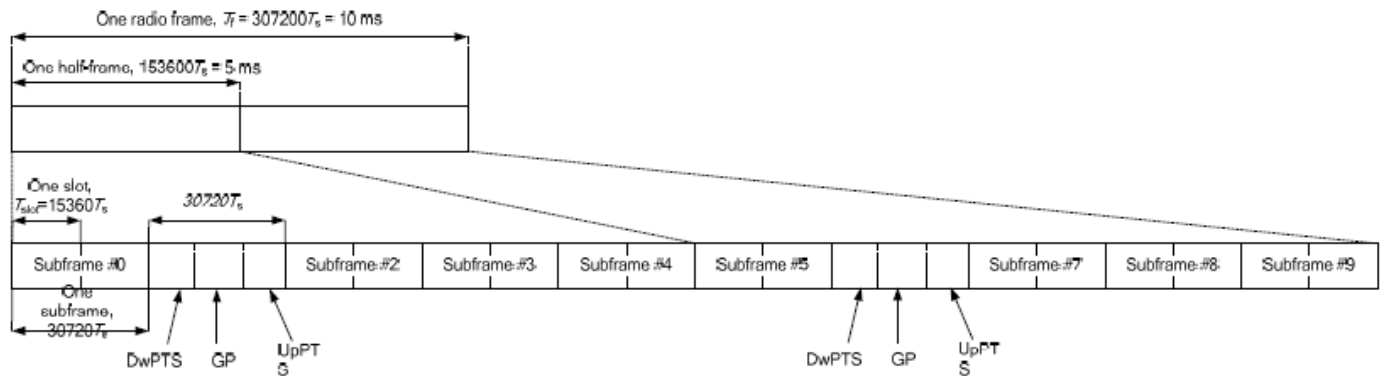


Figure 4.2-1: Frame structure type 2 (for 5 ms switch-point periodicity).

Table 4.2-2: Uplink-downlink configurations.

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

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

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

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

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

The highest duty factor is resulted from:

For LTE TDD Power class 2

- Uplink-downlink configuration: 1. In a half-frame consisted of 5 subframes, uplink operation is in 2 uplink subframes and 1 special subframe.
- special subframe configuration: 5-9 for normal cyclic prefix in downlink, 4-7 for extended cyclic prefix in downlink
- for special subframe with extended cyclic prefix in uplink, the total uplink duty factor in one half-frame is: $(2+0.167)/5 = 43.3\%$
- for special subframe with normal cyclic prefix in uplink, the total uplink duty factor in one half-frame is: $(2+0.143)/5 = 42.9\%$
- For TDD LTE SAR measurement, the duty cycle 1:2.33 (42.9 %) was used perform testing and considering the theoretical duty cycle of 43.3% for extended cyclic prefix in the uplink, and the theoretical duty cycle of 42.9% for normal cyclic prefix in uplink, a scaling factor of extended cyclic prefix $43.3\%/42.9\% = 1.009$ is applied to scale-up the measured SAR result. The scaled TDD LTE SAR = measured SAR (W/kg)* Tune-up Scaling Factor* scaling factor for extended cyclic prefix.

For LTE TDD Power class 3

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

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

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

5G NR Output Power (Unit: dBm)

General Note:

1. 5G NR n2/n5/n7/n12/n25/n26/n41/n66/n71/n77/n78 is NSA mode.
2. 5G NR n2/n5/n7/n12/n14/n25/n26/n30/n38/n41/n48/n66/n70/n71/n77/n78 is SA mode.
3. For 5G NR test procedure was following step similar FCC KDB 941225 D05:
 - a. For DFT-OFDM and CP-OFDM output power measurement reduction, according to 38.101 maximum power reduction for power class2 and 3, the CP-OFDM mode will not higher than DFT-OFDM mode, therefore, similar FCC KDB 941225 D05 procedure for other modulation output power for each RB allocation configuration is > not ½ dB higher than the same configuration in DFT-s QPSK and the reported SAR for the DFT-s QPSK configuration is ≤ 1.45 W/kg; CP-OFDM testing is not required.
 - b. For DFT-OFDM output power measurement reduction, according to 38.101 maximum power reduction for power class2 and 3, for 16QAM/64QAM/256QAM and smaller bandwidth output power will spot check largest channel bandwidth worst RB configuration to ensure the 16QAM/64QAM/256QAM and smaller bandwidth output power will not ½ dB higher than the same configuration in the largest supported bandwidth.
 - c. SAR testing start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel
 - d. 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure
 - e. QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested
 - f. PI/2 BPSK/16QAM/64QAM/256QAM output powers according to 3GPP MPR will not ½ dB higher than the same configuration in QPSK, also reported SAR for the QPSK configuration is less than 1.45 W/kg, PI/2 BPSK /16QAM/64QAM/256QAM SAR testing are not required.
 - g. Smaller bandwidth output power for each RB allocation configuration for this device will not ½ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg, smaller bandwidth SAR testing is not required for this device
4. 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.
5. 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.
6. 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.
7. 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.
8. When channel bandwidth of SA and NSA is same, 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. When channel bandwidth of SA and NSA is different, chose the largest channel bandwidth mode among SA and NSA to perform power measurement.
9. For the NR bands, when channel bandwidth of SA and NSA is same, and the maximum power of NSA mode is same as SA total power level, SA SAR can represent NSA mode SAR. For the bands, when channel bandwidth of SA and NSA is different, choose the largest channel bandwidth with maximum power to perform SAR testing, so the largest channel bandwidth SAR can represent the smallest channel bandwidth SAR.
10. This device supports HPUE mode for 5G NR n41/n77/n78 with higher power. For HPUE power is higher than power class 3 but with lower duty cycle, the maximum average power for class 2 and class 3 is almost the same, so we chose power class 3 full SAR testing and power class 2 verify the worst case of power class 3 SAR.
11. For 5G NR n41/n77/n78 HPUE, 5G NR n41/n77/n78 PC2 Maximum Duty Cycle is 50%, using FTM (Factory Test Mode) with 50% duty cycle is considered during SAR testing. For 5G NR other bands, using FTM to perform SAR with default 100% transmission.
12. For 5G NR inter-band CA mode, Qualcomm Smart Transmit algorithm in WWAN adds directly the time-averaged RF exposure between two 5G NR bands. Smart Transmit algorithm controls the total RF exposure base on 5G NR inter CA bands to not exceed FCC limit.
13. 5G NR n41/n48/n77/n78 supports UL MIMO mode.

<3GPP 38.101 MPR for EN-DC>

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

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

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

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

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

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

<EN-DC combination>

ENDC	LTE TX	NR TX	LTE TX	NR TX
DC_12A_n25A	Ant 0	Ant 1	Ant 1	Ant 0
DC_12A_n2A	Ant 0	Ant 1	Ant 1	Ant 0
DC_12A_n41A	Ant 0	Ant 1	Ant 9	Ant 0
DC_12A_n66A	Ant 0	Ant 1	Ant 1	Ant 0
DC_12A_n77A	Ant 0	Ant 4	Ant 1	Ant 7/9/8
DC_12A_n78A	Ant 0	Ant 4	Ant 1	Ant 7/9/8
DC_12A_n7A	Ant 0	Ant 1	Ant 9	Ant 0
DC_13A_n2A	Ant 0	Ant 1	Ant 1	Ant 0
DC_13A_n66A	Ant 0	Ant 1	Ant 1	Ant 0
DC_13A_n77A	Ant 0	Ant 4	Ant 1	Ant 7/9/8
DC_13A_n78A	Ant 0	Ant 4	Ant 1	Ant 7/9/8
DC_14A_n2A	Ant 0	Ant 1	Ant 1	Ant 0
DC_14A_n66A	Ant 0	Ant 1	Ant 1	Ant 0
DC_14A_n77A	Ant 0	Ant 4	Ant 1	Ant 7/9/8
DC_25A_n41A	Ant 0	Ant 1	Ant 9	Ant 0
DC_25A_n77A	Ant 0	Ant 7	Ant 1	ANT4/8/9
DC_25A_n78A	Ant 0	Ant 7	Ant 1	ANT4/8/9
DC_26A_n25A	Ant 0	Ant 1	Ant 1	Ant 0
DC_26A_n41A	Ant 0	Ant 1	Ant 9	Ant 0
DC_26A_n78A	Ant 0	Ant 4	Ant 1	Ant 7/9/8
DC_2A_n12A	Ant 0	Ant 1	Ant 1	Ant 0
DC_2A_n41A	Ant 0	Ant 1	Ant 9	Ant 0
DC_2A_n5A	Ant 0	Ant 1	Ant 1	Ant 0
DC_2A_n66A	Ant 0	Ant 1	Ant 1	Ant 0
DC_2A_n71A	Ant 0	Ant 1	Ant 1	Ant 0
DC_2A_n77A	Ant 0	Ant 7	Ant 1	ANT4/8/9
DC_2A_n78A	Ant 0	Ant 7	Ant 1	ANT4/8/9
DC_2A_n7A	Ant 0	Ant 1	Ant 9	Ant 0

DC_30A_n2A	Ant 9	Ant 1	Ant 1	Ant 0
DC_30A_n5A	Ant 9	Ant 1	Ant 1	Ant 0
DC_30A_n66A	Ant 9	Ant 1	Ant 1	Ant 0
DC_30A_n77A	Ant 9	Ant 7	Ant 1	ANT4/8/9
DC_38A_n78A	Ant 9	Ant 7	Ant 1	ANT4/8/9
DC_41A_n77A	Ant 9	Ant 7	Ant 1	ANT4/8/9
DC_41A_n78A	Ant 9	Ant 7	Ant 1	ANT4/8/9
DC_48A_n2A	Ant 7	Ant 0	ANT4/8/9	Ant 1
DC_48A_n5A	Ant 4	Ant 0	Ant 7/9/8	Ant 1
DC_48A_n66A	Ant 7	Ant 0	ANT4/8/9	Ant 1
DC_48A_n71A	Ant 4	Ant 0	Ant 7/9/8	Ant 1
DC_4A_n2A	Ant 0	Ant 1	Ant 1	Ant 0
DC_4A_n41A	Ant 0	Ant 1	Ant 1	Ant 9
DC_4A_n78A	Ant 0	Ant 7	Ant 1	ANT4/8/9
DC_4A_n7A	Ant 0	Ant 1	Ant 1	Ant 9
DC_5A_n2A	Ant 0	Ant 1	Ant 1	Ant 0
DC_5A_n41A	Ant 0	Ant 1	Ant 1	Ant 9
DC_5A_n66A	Ant 0	Ant 1	Ant 1	Ant 0
DC_5A_n77A	Ant 0	Ant 4	Ant 1	Ant 7/9/8
DC_5A_n78A	Ant 0	Ant 4	Ant 1	Ant 7/9/8
DC_5A_n7A	Ant 0	Ant 1	Ant 1	Ant 9
DC_66A_n12A	Ant 0	Ant 1	Ant 1	Ant 0
DC_66A_n25A	Ant 0	Ant 1	Ant 1	Ant 0
DC_66A_n2A	Ant 0	Ant 1	Ant 1	Ant 0
DC_66A_n41A	Ant 0	Ant 1	Ant 1	Ant 9
DC_66A_n5A	Ant 0	Ant 1	Ant 1	Ant 0
DC_66A_n71A	Ant 0	Ant 1	Ant 1	Ant 0
DC_66A_n77A	Ant 0	Ant 7	Ant 1	ANT4/8/9
DC_66A_n78A	Ant 0	Ant 7	Ant 1	ANT4/8/9
DC_66A_n7A	Ant 0	Ant 1	Ant 1	Ant 9
DC_71A_n2A	Ant 0	Ant 1	Ant 1	Ant 0
DC_71A_n41A	Ant 0	Ant 1	Ant 1	Ant 9
DC_71A_n66A	Ant 0	Ant 1	Ant 1	Ant 0
DC_71A_n77A	Ant 0	Ant 4	Ant 1	Ant 7/9/8
DC_71A_n78A	Ant 0	Ant 4	Ant 1	Ant 7/9/8
DC_7A_n25A	Ant 9	Ant 1	Ant 1	Ant 0
DC_7A_n26A	Ant 9	Ant 1	Ant 1	Ant 0
DC_7A_n2A	Ant 9	Ant 1	Ant 1	Ant 0
DC_7A_n5A	Ant 9	Ant 1	Ant 1	Ant 0
DC_7A_n66A	Ant 9	Ant 1	Ant 1	Ant 0
DC_7A_n71A	Ant 9	Ant 1	Ant 1	Ant 0
DC_7A_n77A	Ant 9	Ant 1	Ant 1	Ant 0
DC_7A_n78A	Ant 9	Ant 1	Ant 1	Ant 0

UL MIMO combination:

ULMIMO	Antenna Tx	
n41	Ant9+Ant1	/
n48	Ant7+Ant4	Ant8+Ant4
n77	Ant7+Ant4	Ant8+Ant4
n78	Ant7+Ant4	Ant8+Ant4

**Inter-Band CA Configuration:**

NR Uplink CA	2CC Uplink Carrier Aggregation	
Inter-band	Antenna Tx	
CA_n12A-n30A	Ant 0 + Ant 1	Ant 1 + Ant 9
CA_n12A-n66A	Ant 0 + Ant 1	Ant 1 + Ant 0
CA_n12A-n77A	Ant 0 + Ant 4	Ant 1 + Ant 7/9/8
CA_n14A-n30A	Ant 1 + Ant 9	Ant 0 + Ant 1
CA_n14A-n66A	Ant 1 + Ant 9	Ant 0 + Ant 1
CA_n14A-n77A	Ant 0 + Ant 4	Ant 1 + Ant 7/9/8
CA_n5A-n7A	Ant 1 + Ant 9	Ant 0 + Ant 1
CA_n5A-n25A	Ant 0 + Ant 1	Ant 1 + Ant 0
CA_n5A-n30A	Ant 0 + Ant 1	Ant 1 + Ant 9
CA_n5A-n48A	Ant 0 + Ant 4	Ant 1 + Ant 7/9/8
CA_n5A-n66A	Ant 0 + Ant 1	Ant 1 + Ant 0
CA_n5A-n77A	Ant 0 + Ant 4	Ant 1 + Ant 7/9/8
CA_n5A-n78A	Ant 0 + Ant 4	Ant 1 + Ant 7/9/8
CA_n7A-n25A	Ant 9 + Ant 1	Ant 1 + Ant 0
CA_n7A-n26A	Ant 9 + Ant 1	Ant 1 + Ant 0
CA_n7A-n66A	Ant 9 + Ant 1	Ant 1 + Ant 0
CA_n7A-n77A	Ant 9 + Ant 7	Ant 1 + Ant 4/8/9
CA_n7A-n78A	Ant 9 + Ant 7	Ant 1 + Ant 4/8/9
CA_n25A-n41A	Ant 0 + Ant 1	Ant 1 + Ant 9/3/6
CA_n25A-n48A	Ant 0 + Ant 7	Ant 1 + Ant 4/8/9
CA_n25A-n66A	Ant 0 + Ant 1	Ant 1 + Ant 0
CA_n25A-n71A	Ant 0 + Ant 1	Ant 1 + Ant 0
CA_n25A-n77A	Ant 0 + Ant 7	Ant 1 + Ant 4/8/9
CA_n25A-n78A	Ant 0 + Ant 7	Ant 1 + Ant 4/8/9
CA_n26A-n77A	Ant 0 + Ant 4	Ant 1 + Ant 7/9/8
CA_n2A-n12A	Ant 0 + Ant 1	Ant 1 + Ant 0
CA_n2A-n14A	Ant 0 + Ant 1	Ant 1 + Ant 0
CA_n2A-n30A	Ant 1 + Ant 9	Ant 0 + Ant 1
CA_n2A-n48A	Ant 0 + Ant 7	Ant 1 + Ant 4/8/9
CA_n2A-n5A	Ant 0 + Ant 1	Ant 1 + Ant 0
CA_n2A-n66A	Ant 0 + Ant 1	Ant 1 + Ant 0
CA_n2A-n71A	Ant 0 + Ant 1	Ant 1 + Ant 0
CA_n2A-n77A	Ant 0 + Ant 7	Ant 1 + Ant 4/8/9
CA_n30A-n66A	Ant 9 + Ant 1	Ant 1 + Ant 0
CA_n30A-n77A	Ant 9 + Ant 7	Ant 1 + Ant 4/8/9
CA_n3A-n78A	Ant 0 + Ant 7	Ant 1 + Ant 4/8/9
CA_n41A-n66A	Ant 9 + Ant 1	Ant 1 + Ant 0
CA_n41A-n71A	Ant 9 + Ant 1	Ant 1 + Ant 0
CA_n48A-n66A	Ant 7 + Ant 0	Ant 4/8/9 + Ant 1
CA_n48A-n71A	Ant 4 + Ant 0	Ant 7/9/8 + Ant 1
CA_n66A-n71A	Ant 0 + Ant 1	Ant 1 + Ant 0
CA_n66A-n77A	Ant 0 + Ant 7	Ant 1 + Ant 4/8/9
CA_n66A-n78A	Ant 0 + Ant 7	Ant 1 + Ant 4/8/9
CA_n70A-n71A	Ant 0 + Ant 1	Ant 1 + Ant 0
CA_n71A-n77A	Ant 0 + Ant 4	Ant 1 + Ant 7/9/8
CA_n71A-n78A	Ant 0 + Ant 4	Ant 1 + Ant 7/9/8

<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.
6. The 2.4GHz/5GHz WLAN can transmit in MIMO antenna mode only and it has no SISO antenna mode.
7. For the conducted power measurement is MIMO chains transmitting simultaneously and measured the separately conducted power for both chains and then based on the conducted power of two antennas respectively to calculate sum of the power for MIMO mode.
8. 802.11 ax supports both full tone size mode and partial tone size mode, after verification on partial tone size mode that partial size tone mode power will not be higher than full tone size mode, therefore, full tone mode power was chosen to be measured in this report.

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 the power management and proximity sensor /receiver detection/hotspot mode for SAR compliance at different exposure conditions (head, body-worn, hotspot, extremity) and the Qualcomm smart transmit will manage to ensure the power level not exceeding the associated power table. Details about the power management decision and sensor detection are provided in the operational description. And the device will invoke corresponding work scenarios power level base on frequency bands/antennas, which can refer to power table at appendix E and original report.
5. For WLAN/BT when transmit simultaneously with each other, or when transmit simultaneous with WWAN/BT, power reduction will be activated to head exposure condition. For WLAN when transmit simultaneous with WWAN and Proximity sensors trigger, power reduction will be activated to body-worn and extremity exposure conditions.
6. Per KDB648474 D04v01r03, for smart phones with a display diagonal dimension > 15.0 cm or an overall diagonal dimension > 16.0 cm, when hotspot mode applies, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg, however, when power reduction applies to hotspot mode the measured SAR must be scaled to the maximum output power, including tolerance, allowed for phablet modes to compare with the 1.2 W/kg SAR test reduction threshold.
 - a. For this device SAR for WWAN/WLAN transmitter scaled to maximum output power mode for product specific 10g SAR is higher than 1.2W/kg of GSM1900, WCDMA Band II/IV/V, LTE Band 2/4/5/7/25/30/66/38/41/42/48, 5GNR n2/n25/n7/n30/n38/n41/n48/n66/n70/n77/n78, WLAN2.4GHz/5.2GHz/5.8GHz, therefore product specific 10g SAR is necessary.
 - b. WLAN 5.3/5.5GHz/6GHz 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.
7. 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.
8. According to Nov. 2017 TCB workshop, when the reported 1gSAR for UL CA configuration is <1.2 W/kg, UL CA 1gSAR is not required for all required test channels (PCC based).
9. LTE B2/4/66 at ant0/1, LTE B48 at ant4/7/8/9, and 5GNR n2/25/66 at ant0/1, 5GNR n41 at ant1/3/6/9, 5GNR n48/77/78 at ant4/7/8/9 support different PAs for same antennas. And some LTE/NR bands support PA (Reference Designator) 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 PA (Reference Designator), 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 verified the worst case.

10. SAR is not required because the distance from the antenna to the edge is > 25 mm as per KDB 941225 D06 Hotspot SAR.
11. For Phablet devices, when hotspot mode is not supported, Product specific 10-g SAR is required for all surfaces and edges with an antenna located at ≤ 25 mm from that surface or edge in direct contact with a flat phantom, to address interactive hand use exposure conditions.
12. For WLAN 6GHz doesn't support wireless router capability.
13. Per FCC guidance, SAR was performed using 6.5 GHz SAR probe calibration factors.
14. Per October 2020 TCB Workshop Interim procedures, start instead with a minimum of 5 test channels across the full band, then adapt and apply conducted power and SAR test reduction procedures of KDB Pub. 248227 v02r02.
15. Absorbed power density (APD) using a 4cm^2 averaging area is reported based on SAR measurements.
16. For testing the WLAN 6GHz of this DUT, the selection of test channels was based on FCC guidance, with five channels selected across the entire WLAN 6GHz Bands.

LTE Note:

1. Per KDB 941225 D05v02r05, start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.
2. Per KDB 941225 D05v02r05, 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure.
3. Per KDB 941225 D05v02r05, for QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.
4. Per KDB 941225 D05v02r05, 16QAM/64QAM/256QAM output power for each RB allocation configuration is > not $\frac{1}{2}$ dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, 16QAM/64QAM/256QAM SAR testing is not required.
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 / B71 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/n26/n66 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.
6. For determination of the scaling factor for report SAR of MIMO mode, if the hot spots are separated the scaling factors are individually determined from each transmit chain. Further simplification chose the worse SAR value and the worst scaling factor from each transmit chain perform reported SAR calculation conservatively. If the hot spots are not spatially separated, the scaling factor is determined from the worst number of each transmit chain.

Power Density General Notes:

1. The manufacturer has confirmed that the devices tested have the same physical, mechanical and thermal characteristics and are within operational tolerances expected for production units.
2. Batteries are fully charged at the beginning of the measurements.
3. Absorbed power density (APD) using a 4cm^2 averaging area is reported based on SAR measurements.
4. Power density was calculated by repeated E-field measurements on two measurement planes separated by $\lambda/4$.
5. The device was configured to transmit continuously at the required data rate, channel bandwidth and signal modulation, using the highest transmission duty factor supported by the test mode tools.
6. Per FCC guidance and equipment manufacturer guidance, power density results were scaled according to IEC 62479:2010 for the portion of the measurement uncertainty $> 30\%$. Total expanded uncertainty of 2.68 dB (85.4%) was used to determine the psPD measurement scaling factor.
7. Per April 2021 TCB Workshop and KDB 388624 D02v18r08, For the highest SAR test configurations also measure incident PD (total) using power-density reconstruction method in 2 mm closest measurement plane.
8. Per October 2020 TCB Workshop, PTP-PR algorithm was used during psPD measurement and calculations.
9. Since this device is considered a phablet and there is no different PD limit on different exposure conditions, therefore select highest phablet SAR at 0 mm test distance and configurations evaluate power density. Since there is no different PD limit on different exposure conditions, therefore the PD test was performed of a 2mm separation between Probe sensor and EUT surface to cover r all exposure conditions of phablet.



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 71	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 0	DSI 2	133322	683	1	22.98	24.00	1.265	-	-	0.02	0.098	0.124
	LTE Band 71	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 1	DSI 2	133322	683	1	21.99	23.00	1.262	-	-	-0.02	0.640	0.808
02	LTE Band 12	10M	QPSK	1	0	-	Right Cheek	0mm	Ant 0	DSI 2	23095	707.5	1	23.10	24.00	1.230	-	-	0.03	0.115	0.141
	LTE Band 12	10M	QPSK	1	0	-	Right Tilted	0mm	Ant 1	DSI 2	23095	707.5	1	22.29	23.30	1.262	-	-	0.12	0.658	0.830
	LTE Band 13	10M	QPSK	1	0	-	Right Cheek	0mm	Ant 0	DSI 2	23230	782	1	23.10	24.00	1.230	-	-	0.18	0.141	0.173
	LTE Band 13	10M	QPSK	1	0	-	Right Cheek	0mm	Ant 1	DSI 2	23230	782	1	21.41	22.40	1.256	-	-	0.08	0.626	0.786
	LTE Band 13	10M	QPSK	25	0	-	Right Cheek	0mm	Ant 1	DSI 2	23230	782	1	21.39	22.40	1.262	-	-	0.01	0.504	0.636
	LTE Band 13	10M	QPSK	1	0	-	Right Tilted	0mm	Ant 1	DSI 2	23230	782	1	21.41	22.40	1.256	-	-	0.07	0.637	0.800
	LTE Band 13	10M	QPSK	25	0	-	Right Tilted	0mm	Ant 1	DSI 2	23230	782	1	21.39	22.40	1.262	-	-	0.03	0.489	0.617
	LTE Band 13	10M	QPSK	50	0	-	Right Tilted	0mm	Ant 1	DSI 2	23230	782	1	21.36	22.40	1.271	-	-	-0.08	0.504	0.640
	LTE Band 13	10M	QPSK	1	0	-	Left Cheek	0mm	Ant 1	DSI 2	23230	782	1	21.41	22.40	1.256	-	-	-0.08	0.437	0.549
	LTE Band 13	10M	QPSK	25	0	-	Left Cheek	0mm	Ant 1	DSI 2	23230	782	1	21.39	22.40	1.262	-	-	0.1	0.346	0.437
	LTE Band 13	10M	QPSK	1	0	-	Left Tilted	0mm	Ant 1	DSI 2	23230	782	1	21.41	22.40	1.256	-	-	-0.18	0.442	0.555
	LTE Band 13	10M	QPSK	25	0	-	Left Tilted	0mm	Ant 1	DSI 2	23230	782	1	21.39	22.40	1.262	-	-	0.1	0.341	0.430
04	LTE Band 14	10M	QPSK	1	0	-	Right Cheek	0mm	Ant 0	DSI 2	23330	793	1	22.93	24.00	1.279	-	-	0.16	0.165	0.211
	LTE Band 14	10M	QPSK	50	0	-	Right Cheek	0mm	Ant 1	DSI 2	23330	793	1	21.61	22.50	1.227	-	-	-0.07	0.658	0.808
05	FR1 n71	20M	QPSK	1	1	DFT-SCS-15KHz	Left Cheek	0mm	Ant 0	DSI 2	136100	680.5	1	23.84	24.00	1.038	-	-	0.03	0.062	0.064
	FR1 n71	20M	QPSK	1	1	DFT-SCS-15KHz	Right Tilted	0mm	Ant 1	DSI 2	136100	680.5	1	22.36	23.50	1.300	-	-	-0.03	0.548	0.712
06	FR1 n12	15M	QPSK	36	22	DFT-SCS-15KHz	Left Cheek	0mm	Ant 0	DSI 2	141500	707.5	1	23.36	24.00	1.159	-	-	0.15	0.068	0.079
	FR1 n12	15M	QPSK	36	22	DFT-SCS-15KHz	Right Tilted	0mm	Ant 1	DSI 2	141500	707.5	1	22.14	23.50	1.368	-	-	-0.04	0.522	0.714
07	FR1 n14	10M	QPSK	1	1	DFT-SCS-15KHz	Right Cheek	0mm	Ant 0	DSI 2	158600	793	1	23.15	24.00	1.216	-	-	-0.05	0.109	0.133
	FR1 n14	10M	QPSK	1	1	DFT-SCS-15KHz	Right Cheek	0mm	Ant 1	DSI 2	158600	793	1	22.07	22.90	1.211	-	-	-0.03	0.724	0.876
	FR1 n14	10M	QPSK	1	1	DFT-SCS-15KHz	Right Cheek	0mm	Ant 1	DSI 2	158600	793	2	22.07	22.90	1.211	-	-	0.01	0.701	0.849
835MHz																					
08	GSM850	-	-	-	-	GPRS (4 Tx slots)	Right Cheek	0mm	Ant 0	DSI 2	189	836.4	1	25.17	26.50	1.358	-	-	0.02	0.120	0.163
09	WCDMA V	-	-	-	-	RMC 12.2Kbps	Right Cheek	0mm	Ant 0	DSI 2	4182	836.4	1	23.03	24.00	1.250	-	-	-0.1	0.227	0.284
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Right Cheek	0mm	Ant 1	DSI 2	4182	836.4	1	20.52	21.90	1.374	-	-	-0.01	0.635	0.873
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Right Cheek	0mm	Ant 1	DSI 2	4182	836.4	2	20.52	21.90	1.374	-	-	0.02	0.617	0.848
	LTE Band 26	15M	QPSK	1	0	-	Right Cheek	0mm	Ant 0	DSI 2	26865	831.5	1	22.94	24.00	1.276	-	-	0.07	0.188	0.240
10	LTE Band 26	15M	QPSK	1	0	-	Right Cheek	0mm	Ant 1	DSI 2	26865	831.5	1	21.21	21.50	1.069	-	-	0.05	0.678	0.725
11	FR1 n26	20M	QPSK	50	28	-	Right Cheek	0mm	Ant 0	DSI 2	166300	831.5	1	23.23	24.00	1.194	-	-	0.05	0.088	0.105
	FR1 n26	20M	QPSK	1	1	-	Right Cheek	0mm	Ant 1	DSI 2	166300	831.5	1	21.36	23.00	1.459	-	-	0.05	0.607	0.886
	FR1 n26	20M	QPSK	1	1	-	Right Cheek	0mm	Ant 1	DSI 2	166300	831.5	2	21.36	23.00	1.459	-	-	0.05	0.593	0.865
1750MHz																					
12	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Left Cheek	0mm	Ant 0	DSI 2	1413	1732.6	1	23.19	24.00	1.205	-	-	0.18	0.111	0.134
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Right Cheek	0mm	Ant 1	DSI 2	1513	1752.6	1	16.85	17.70	1.216	-	-	-0.04	0.720	0.876
13	LTE Band 66	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 0	DSI 2	132322	1745	1	22.92	24.00	1.282	-	-	-0.1	0.105	0.135
	LTE Band 66	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 1	DSI 2	132572	1770	1	16.52	17.90	1.374	-	-	-0.05	0.523	0.719
14	FR1 n70	15M	QPSK	1	1	DFT-SCS-15KHz	Left Cheek	0mm	Ant 0	DSI 2	340500	1702.5	1	23.58	24.00	1.102	-	-	0.02	0.076	0.084
	FR1 n70	15M	QPSK	36	22	DFT-SCS-15KHz	Right Tilted	0mm	Ant 1	DSI 2	340500	1702.5	1	17.57	18.80	1.327	-	-	0.05	0.568	0.754
15	FR1 n66 Main PA	40M	QPSK	1	1	DFT-SCS-15KHz	Left Cheek	0mm	Ant 0	DSI 2	349000	1745	1	23.43	24.00	1.140	-	-	0.1	0.072	0.082
	FR1 n66 PA (Reference Designator)	40M	QPSK	108	54	DFT-SCS-15KHz	Right Tilted	0mm	Ant 1	DSI 2	349000	1745	1	16.22	17.60	1.374	-	-	0.05	0.641	0.881
1900MHz																					
16	GSM1900	-	-	-	-	GPRS (2 Tx slots)	Left Cheek	0mm	Ant 0	DSI 2	661	1880	1	25.41	26.50	1.285	-	-	0.03	0.052	0.067
17	WCDMA II	-	-	-	-	RMC 12.2Kbps	Left Cheek	0mm	Ant 0	DSI 2	9400	1880	1	23.11	24.00	1.227	-	-	0.01	0.055	0.068
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Right Tilted	0mm	Ant 1	DSI 2	9400	1880	1	16.11	17.10	1.256	-	-	-0.07	0.523	0.657
18	LTE Band 25	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 0	DSI 2	26340	1880	1	22.78	24.00	1.324	-	-	-0.15	0.086	0.114
	LTE Band 25	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 1	DSI 2	26340	1880	1	15.04	15.80	1.191	-	-	0.01	0.588	0.700
	FR1 n25	40M	QPSK	1	1	DFT-SCS-15KHz	Left Cheek	0mm	Ant 0	DSI 2	376500	1882.5	1	23.33	24.00	1.167	-	-	-0.15	0.070	0.082



FCC SAR Test Report

Report No. : FA591602

19	FR1 n25 PA (Reference Designator)	40M	QPSK	1	1	DFT-SCS-15KHz	Right Tilted	0mm	Ant 1	DSI 2	376500	1882.5	1	15.52	16.50	1.253	-	-	-0.06	0.701	0.878
2300MHz																					
	LTE Band 30	10M	QPSK	1	0	-	Left Cheek	0mm	Ant 9	DSI 2	27710	2310	1	23.18	24.00	1.208	-	-	0.19	0.253	0.306
20	LTE Band 30	10M	QPSK	1	0	-	Right Tilted	0mm	Ant 1	DSI 2	27710	2310	1	12.98	14.10	1.294	-	-	-0.07	0.652	0.844
	FR1 n30	10M	QPSK	25	14	DFT-SCS-15KHz	Left Cheek	0mm	Ant 9	DSI 2	462000	2310	1	23.40	24.00	1.148	-	-	0.05	0.177	0.203
21	FR1 n30	10M	QPSK	1	1	DFT-SCS-15KHz	Right Tilted	0mm	Ant 1	DSI 2	462000	2310	1	12.78	13.90	1.294	-	-	0.02	0.545	0.705
2600MHz																					
	LTE Band 7	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 9	DSI 2	21100	2535	1	23.29	24.00	1.178	-	-	0.07	0.244	0.287
22	LTE Band 7	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 1	DSI 2	21350	2560	1	12.53	13.90	1.371	-	-	0.09	0.578	0.792
	LTE Band 41 PC2	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 9	DSI 2	40620	2593	1	26.14	27.00	1.219	42.9	1.009	-0.18	0.196	0.241
	LTE Band 41 PC2	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 1	DSI 2	40185	2549.5	1	17.56	18.40	1.213	42.9	1.009	0.01	0.594	0.727
	LTE Band 41 PC2	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 6	DSI 2	41055	2636.5	1	23.01	24.70	1.476	42.9	1.009	0.03	0.566	0.843
23	LTE Band 41	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 3	DSI 2	40185	2549.5	1	16.84	18.00	1.306	62.9	1.006	0.02	0.659	0.866
	LTE Band 41	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 3	DSI 2	40185	2549.5	2	16.84	18.00	1.306	62.9	1.006	0.05	0.651	0.855
	FR1 n7	50M	QPSK	135	68	DFT-SCS-15KHz	Left Cheek	0mm	Ant 9	DSI 2	507000	2535	1	23.49	24.00	1.125	-	-	0.05	0.318	0.358
24	FR1 n7	50M	QPSK	1	1	DFT-SCS-15KHz	Right Tilted	0mm	Ant 1	DSI 2	507000	2535	1	13.81	14.40	1.146	-	-	0.01	0.735	0.842
	FR1 n41	100M	QPSK	135	69	DFT-SCS-30KHz	Left Cheek	0mm	Ant 9	DSI 2	518598	2592.99	1	23.53	25.00	1.403	-	-	-0.15	0.244	0.342
25	FR1 n41 PA (Reference Designator)	100M	QPSK	1	1	DFT-SCS-30KHz	Right Tilted	0mm	Ant 1	DSI 2	518598	2592.99	1	14.99	16.50	1.416	-	-	-0.01	0.627	0.888
	FR1 n41	100M	QPSK	1	1	DFT-SCS-30KHz	Right Tilted	0mm	Ant 1	DSI 2	518598	2592.99	2	14.99	16.50	1.416	-	-	0.02	0.617	0.874
	FR1 n41	100M	QPSK	1	1	DFT-SCS-30KHz	Right Cheek	0mm	Ant 6	DSI 2	518598	2592.99	1	21.42	22.70	1.343	-	-	0.01	0.647	0.869
	FR1 n41	100M	QPSK	1	1	DFT-SCS-30KHz	Right Cheek	0mm	Ant 6	DSI 2	518598	2592.99	2	21.42	22.70	1.343	-	-	0.07	0.635	0.853
	FR1 n41 PA (Reference Designator)	100M	QPSK	1	1	DFT-SCS-30KHz	Left Cheek	0mm	Ant 3	DSI 2	518598	2592.99	1	13.18	14.10	1.236	-	-	0.07	0.598	0.739
3500MHz																					
	LTE Band 42 Part 27Q	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 4	DSI 2	42990	3540	1	24.03	25.00	1.250	62.9	1.006	-0.15	0.511	0.643
	LTE Band 42 Part 27Q	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 7	DSI 2	42590	3500	1	14.41	15.10	1.172	62.9	1.006	0.12	0.337	0.397
	LTE Band 42 Part 27Q	20M	QPSK	50	0	-	Right Cheek	0mm	Ant 7	DSI 2	42590	3500	1	14.37	15.10	1.183	62.9	1.006	0.08	0.271	0.323
	LTE Band 42 Part 27Q	20M	QPSK	1	0	-	Right Tilted	0mm	Ant 7	DSI 2	42590	3500	1	14.41	15.10	1.172	62.9	1.006	-0.17	0.439	0.518
	LTE Band 42 Part 27Q	20M	QPSK	50	0	-	Right Tilted	0mm	Ant 7	DSI 2	42590	3500	1	14.37	15.10	1.183	62.9	1.006	-0.03	0.350	0.417
	LTE Band 42 Part 27Q	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 7	DSI 2	42590	3500	1	14.41	15.10	1.172	62.9	1.006	0.14	0.526	0.620
	LTE Band 42 Part 27Q	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 7	DSI 2	42190	3460	1	14.37	15.10	1.183	62.9	1.006	0.11	0.583	0.694
	LTE Band 42 Part 27Q	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 7	DSI 2	42990	3540	1	14.32	15.10	1.197	62.9	1.006	-0.05	0.530	0.638
	LTE Band 42 Part 27Q	20M	QPSK	50	0	-	Left Cheek	0mm	Ant 7	DSI 2	42590	3500	1	14.37	15.10	1.183	62.9	1.006	0.18	0.426	0.507
	LTE Band 42 Part 27Q	20M	QPSK	100	0	-	Left Cheek	0mm	Ant 7	DSI 2	42590	3500	1	14.33	15.10	1.194	62.9	1.006	0.14	0.435	0.523
	LTE Band 42 Part 27Q	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 7	DSI 2	42590	3500	1	14.41	15.10	1.172	62.9	1.006	-0.17	0.670	0.790
26	LTE Band 42 Part 27Q	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 7	DSI 2	42190	3460	1	14.37	15.10	1.183	62.9	1.006	0.01	0.724	0.862
	LTE Band 42 Part 27Q	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 7	DSI 2	42190	3460	2	14.37	15.10	1.183	62.9	1.006	0.03	0.718	0.855
	LTE Band 42 Part 27Q	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 7	DSI 2	42990	3540	1	14.32	15.10	1.197	62.9	1.006	-0.05	0.658	0.792
	LTE Band 42 Part 27Q	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 7	DSI 2	42590	3500	1	14.37	15.10	1.183	62.9	1.006	0.01	0.530	0.631
	LTE Band 42 Part 27Q	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 7	DSI 2	42190	3460	1	14.34	15.10	1.191	62.9	1.006	0.1	0.654	0.784
	LTE Band 42 Part 27Q	20M	QPSK	50	0	-	Left Tilted	0mm	Ant 7	DSI 2	42990	3540	1	14.15	15.10	1.245	62.9	1.006	-0.17	0.533	0.667
	LTE Band 42 Part 27Q	20M	QPSK	100	0	-	Left Tilted	0mm	Ant 7	DSI 2	42590	3500	1	14.33	15.10	1.194	62.9	1.006	0.04	0.546	0.656
	LTE Band 42 Part 27Q	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 9	DSI 2	42590	3500	1	24.83	25.00	1.040	62.9	1.006	-0.08	0.255	0.267
	LTE Band 42 Part 27Q	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 8	DSI 2	42990	3540	1	15.86	17.30	1.393	62.9	1.006	-0.08	0.613	0.859
	LTE Band 48	20M	QPSK	1	0	-	Left Tilted	0mm	Ant 7	DSI 2	56640	3690	1	16.34	16.50	1.038	62.9	1.006	-0.08	0.613	0.640
27	LTE Band 48	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 4	DSI 2	56640	3690	1	22.46	24.00	1.426	62.9	1.006	0.08	0.608	0.872
	LTE Band 48	20M	QPSK	1	0	-	Right Cheek	0mm	Ant 4	DSI 2	56640	3690	2	22.46	24.00	1.426	62.9	1.006	0.02	0.602	0.863
	LTE Band 48	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 8	DSI 2	56640	3690	1	15.48	16.50	1.265	62.9	1.006	0.17	0.616	0.784
	LTE Band 48	20M	QPSK	1	0	-	Left Cheek	0mm	Ant 9	DSI 2	55830	3609	1	23.28	24.00	1.180	62.9	1.006	0.18	0.277	0.329
	FR1 n48	40M	QPSK	1	1	DFT-SCS-30KHz	Right Cheek	0mm	Ant 7	DSI 2	641666	3624.99	1	13.30	13.80	1.122	-	-	0.03	0.377	0.423
	FR1 n48	40M	QPSK	50	28	DFT-SCS-30KHz	Right Cheek	0mm	Ant 7	DSI 2	641666	3624.99	1	13.19	13.80	1.151	-	-	-0.15	0.451	0.519
	FR1 n48	40M	QPSK	1	1	DFT-SCS-30KHz	Right Tilted	0mm	Ant 7	DSI 2	641666	3624.99	1	13.30	13.80	1.122	-	-	-0.15	0.501	0.562
	FR1 n48	40M	QPSK	50	28	DFT-SCS-30KHz	Right Tilted	0mm	Ant 7	DSI 2	641666	3624.99	1	13.19	13.80	1.151	-	-	0.11	0.561	0.646
	FR1 n48	40M	QPSK	1	1	DFT-SCS-30KHz	Left Cheek	0mm	Ant 7	DSI 2	641666	3624.99	1	13.30	13.80	1.122	-	-	-0.08	0.575	0.645
	FR1 n48	40M	QPSK	50	28	DFT-SCS-30KHz	Left Cheek	0mm	Ant 7	DSI 2	641666	3624.99	1	13.19	13.80	1.151	-	-	-0.17	0.684	0.787
	FR1 n48	40M	QPSK	1	1	DFT-SCS-30KHz	Left Tilted	0mm	Ant 7	DSI 2	641666	3624.99	1	13.30	13.80	1.122	-	-	0.17	0.700	0.785



FCC SAR Test Report

Report No. : FA591602

28	FR1 n48	40M	QPSK	50	28	DFT-SCS-30KHz	Left Tilted	0mm	Ant 7	DSI 2	641666	3624.99	1	13.19	13.80	1.151	-	-	-0.02	0.769	0.885
	FR1 n48	40M	QPSK	50	28	DFT-SCS-30KHz	Left Tilted	0mm	Ant 7	DSI 2	641666	3624.99	2	13.19	13.80	1.151	-	-	0.03	0.755	0.869
	FR1 n48	40M	QPSK	50	28	DFT-SCS-30KHz	Left Tilted	0mm	Ant 7	DSI 2	638000	3570	1	13.03	13.80	1.194	-	-	0.18	0.703	0.839
	FR1 n48	40M	QPSK	50	28	DFT-SCS-30KHz	Left Tilted	0mm	Ant 7	DSI 2	645332	3679.98	1	13.06	13.80	1.186	-	-	-0.04	0.696	0.825
	FR1 n48	40M	QPSK	100	0	DFT-SCS-30KHz	Left Tilted	0mm	Ant 7	DSI 2	641666	3624.99	1	13.18	13.80	1.153	-	-	-0.08	0.661	0.762
	FR1 n48 PA (Reference Designator)	40M	QPSK	50	28	DFT-SCS-30KHz	Left Tilted	0mm	Ant 7	DSI 2	641666	3624.99	1	13.19	13.80	1.151	-	-	-0.13	0.746	0.858
	FR1 n48 PA (Reference Designator)	40M	QPSK	100	0	DFT-SCS-30KHz	Right Cheek	0mm	Ant 4	DSI 2	641666	3624.99	1	21.09	22.10	1.262	-	-	-0.04	0.570	0.719
	FR1 n48 PA (Reference Designator)	40M	QPSK	50	28	DFT-SCS-30KHz	Left Cheek	0mm	Ant 8	DSI 2	641666	3624.99	1	15.07	15.60	1.130	-	-	-0.08	0.635	0.717
	FR1 n48 PA (Reference Designator)	40M	QPSK	1	1	DFT-SCS-30KHz	Left Cheek	0mm	Ant 9	DSI 2	641666	3624.99	1	23.84	25.00	1.306	-	-	-0.13	0.233	0.304
	FR1 n77 Part 27O	100M	QPSK	1	1	DFT-SCS-30KHz	Right Cheek	0mm	Ant 7	DSI 2	656000	3840	1	12.19	12.80	1.151	-	-	-0.03	0.447	0.514
	FR1 n77 Part 27O	100M	QPSK	135	69	DFT-SCS-30KHz	Right Cheek	0mm	Ant 7	DSI 2	656000	3840	1	12.14	12.80	1.164	-	-	-0.03	0.241	0.281
	FR1 n77 Part 27O	100M	QPSK	1	1	DFT-SCS-30KHz	Right Tilted	0mm	Ant 7	DSI 2	656000	3840	1	12.19	12.80	1.151	-	-	0.08	0.565	0.650
	FR1 n77 Part 27O	100M	QPSK	135	69	DFT-SCS-30KHz	Right Tilted	0mm	Ant 7	DSI 2	656000	3840	1	12.14	12.80	1.164	-	-	-0.07	0.308	0.359
	FR1 n77 Part 27O	100M	QPSK	1	1	DFT-SCS-30KHz	Left Cheek	0mm	Ant 7	DSI 2	656000	3840	1	12.19	12.80	1.151	-	-	0.05	0.577	0.664
	FR1 n77 Part 27O	100M	QPSK	135	69	DFT-SCS-30KHz	Left Cheek	0mm	Ant 7	DSI 2	656000	3840	1	12.14	12.80	1.164	-	-	-0.11	0.322	0.375
29	FR1 n77 Part 27O	100M	QPSK	1	1	DFT-SCS-30KHz	Left Tilted	0mm	Ant 7	DSI 2	656000	3840	1	12.19	12.80	1.151	-	-	0.07	0.756	0.870
	FR1 n77 Part 27O	100M	QPSK	1	1	DFT-SCS-30KHz	Left Tilted	0mm	Ant 7	DSI 2	656000	3840	2	12.19	12.80	1.151	-	-	0.02	0.747	0.860
	FR1 n77 Part 27O	100M	QPSK	135	69	DFT-SCS-30KHz	Left Tilted	0mm	Ant 7	DSI 2	656000	3840	1	12.14	12.80	1.164	-	-	0.03	0.395	0.460
	FR1 n77 Part 27O	100M	QPSK	270	0	DFT-SCS-30KHz	Left Tilted	0mm	Ant 7	DSI 2	656000	3840	1	12.10	12.80	1.175	-	-	-0.16	0.358	0.421
	FR1 n77 Part 27O PC2	100M	QPSK	1	1	DFT-SCS-30KHz	Left Tilted	0mm	Ant 7	DSI 2	656000	3840	1	15.33	15.80	1.114	50	1.000	-0.02	0.722	0.805
	FR1 n77 Part 27O PA (Reference Designator)	100M	QPSK	1	1	DFT-SCS-30KHz	Left Tilted	0mm	Ant 7	DSI 2	656000	3840	1	12.19	12.80	1.151	-	-	0.15	0.338	0.389
	FR1 n77 Part 27O PC2 PA (Reference Designator)	100M	QPSK	1	1	DFT-SCS-30KHz	Left Tilted	0mm	Ant 7	DSI 2	656000	3840	1	15.33	15.80	1.114	50	1.000	-0.09	0.316	0.352
	FR1 n77 Part 27Q	100M	QPSK	1	1	DFT-SCS-30KHz	Right Cheek	0mm	Ant 7	DSI 2	633334	3500.01	1	12.34	12.80	1.112	-	-	-0.13	0.191	0.212
	FR1 n77 Part 27Q	100M	QPSK	135	69	DFT-SCS-30KHz	Right Cheek	0mm	Ant 7	DSI 2	633334	3500.01	1	12.17	12.80	1.156	-	-	0.06	0.193	0.223
	FR1 n77 Part 27Q	100M	QPSK	1	1	DFT-SCS-30KHz	Right Tilted	0mm	Ant 7	DSI 2	633334	3500.01	1	12.34	12.80	1.112	-	-	-0.03	0.255	0.283
	FR1 n77 Part 27Q	100M	QPSK	135	69	DFT-SCS-30KHz	Right Tilted	0mm	Ant 7	DSI 2	633334	3500.01	1	12.17	12.80	1.156	-	-	-0.03	0.247	0.286
	FR1 n77 Part 27Q	100M	QPSK	1	1	DFT-SCS-30KHz	Left Cheek	0mm	Ant 7	DSI 2	633334	3500.01	1	12.34	12.80	1.112	-	-	0.08	0.309	0.344
	FR1 n77 Part 27Q	100M	QPSK	135	69	DFT-SCS-30KHz	Left Cheek	0mm	Ant 7	DSI 2	633334	3500.01	1	12.17	12.80	1.156	-	-	-0.07	0.311	0.360
	FR1 n77 Part 27Q	100M	QPSK	1	1	DFT-SCS-30KHz	Left Tilted	0mm	Ant 7	DSI 2	633334	3500.01	1	12.34	12.80	1.112	-	-	-0.11	0.405	0.450
	FR1 n77 Part 27Q	100M	QPSK	135	69	DFT-SCS-30KHz	Left Tilted	0mm	Ant 7	DSI 2	633334	3500.01	1	12.17	12.80	1.156	-	-	0.05	0.386	0.446
	FR1 n77 Part 27Q PC2	100M	QPSK	1	1	DFT-SCS-30KHz	Left Tilted	0mm	Ant 7	DSI 2	633334	3500.01	1	15.30	15.80	1.122	50	1.000	0.03	0.384	0.431
	FR1 n77 Part 27Q PA (Reference Designator)	100M	QPSK	1	1	DFT-SCS-30KHz	Left Tilted	0mm	Ant 7	DSI 2	633334	3500.01	1	12.15	12.80	1.161	-	-	-0.16	0.376	0.437
	FR1 n77 Part 27Q PC2 PA (Reference Designator)	100M	QPSK	1	1	DFT-SCS-30KHz	Left Tilted	0mm	Ant 7	DSI 2	633334	3500.01	1	15.30	15.80	1.122	50	1.000	-0.02	0.363	0.407
	FR1 n77 Part 27O PA (Reference Designator)	100M	QPSK	1	1	DFT-SCS-30KHz	Right Cheek	0mm	Ant 4	DSI 2	656000	3840	1	17.81	19.00	1.315	-	-	0.15	0.606	0.797
	FR1 n77 Part 27O PA (Reference Designator)	100M	QPSK	1	1	DFT-SCS-30KHz	Right Cheek	0mm	Ant 4	DSI 2	656000	3840	2	17.81	19.00	1.315	-	-	0.05	0.601	0.790
	FR1 n77 Part 27Q	100M	QPSK	135	69	DFT-SCS-30KHz	Right Cheek	0mm	Ant 4	DSI 2	633334	3500.01	1	18.19	19.00	1.205	-	-	-0.09	0.251	0.302
	FR1 n77 Part 27O	100M	QPSK	1	1	DFT-SCS-30KHz	Left Cheek	0mm	Ant 8	DSI 2	656000	3840	1	16.20	17.70	1.413	-	-	0.11	0.515	0.727
	FR1 n77 Part 27Q	100M	QPSK	135	69	DFT-SCS-30KHz	Left Cheek	0mm	Ant 8	DSI 2	633334	3500.01	1	16.68	17.70	1.265	-	-	-0.05	0.527	0.667
	FR1 n77 Part 27O PA (Reference Designator)	100M	QPSK	135	69	DFT-SCS-30KHz	Left Cheek	0mm	Ant 9	DSI 2	656000	3840	1	22.64	24.00	1.368	-	-	-0.08	0.202	0.276
	FR1 n77 Part 27Q PA (Reference Designator)	100M	QPSK	135	69	DFT-SCS-30KHz	Left Cheek	0mm	Ant 9	DSI 2	633334	3500.01	1	23.45	24.00	1.135	-	-	0.16	0.273	0.310



Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Power Reduction	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																	
30	WLAN2.4GHz	802.11b 1Mbps	Left Tilted	0mm	Ant 2+3(2)	Standalone	1	2412	1	14.27	16.00	1.489	98.29	1.017	-0.04	0.749	1.134
	WLAN2.4GHz	802.11b 1Mbps	Left Tilted	0mm	Ant 2+3(2)	Standalone	1	2412	2	14.27	16.00	1.489	98.29	1.017	0.01	0.733	1.110
31	Bluetooth	1Mbps	Left Cheek	0mm	Ant 3	Standalone	39	2441	1	13.50	14.50	1.259	76.96	1.082	0.11	0.301	0.410
	Bluetooth	1Mbps	Left Cheek	0mm	Ant 3	Standalone	39	2441	2	13.50	14.50	1.259	76.96	1.082	0.03	0.298	0.406
	Bluetooth	1Mbps	Left Cheek	0mm	Ant 2	Standalone	0	2402	1	15.21	16.00	1.199	76.9	1.083	0.05	0.111	0.144
5000MHz																	
	WLAN5GHz	802.11ac-VHT160 MCS0	Right Cheek	0mm	Ant 5+8(8)	Standalone	50	5250	1	16.55	18.00	1.396	100	1.000	0.13	0.229	0.320
	WLAN5GHz	802.11ac-VHT160 MCS0	Right Tilted	0mm	Ant 5+8(8)	Standalone	50	5250	1	16.55	18.00	1.396	100	1.000	-0.18	0.207	0.289
32	WLAN5GHz	802.11ac-VHT160 MCS0	Left Cheek	0mm	Ant 5+8(8)	Standalone	50	5250	1	16.55	18.00	1.396	100	1.000	-0.06	0.718	1.003
	WLAN5GHz	802.11ac-VHT160 MCS0	Left Tilted	0mm	Ant 5+8(8)	Standalone	50	5250	1	16.55	18.00	1.396	100	1.000	0.02	0.371	0.518
	WLAN5GHz	802.11ac-VHT160 MCS0	Right Cheek	0mm	Ant 5+8(8)	Simultaneous	50	5250	1	12.08	13.50	1.387	100	1.000	0.16	0.076	0.105
	WLAN5GHz	802.11ac-VHT160 MCS0	Right Tilted	0mm	Ant 5+8(8)	Simultaneous	50	5250	1	12.08	13.50	1.387	100	1.000	-0.03	0.069	0.096
	WLAN5GHz	802.11ac-VHT160 MCS0	Left Cheek	0mm	Ant 5+8(8)	Simultaneous	50	5250	1	12.08	13.50	1.387	100	1.000	0.07	0.279	0.387
	WLAN5GHz	802.11ac-VHT160 MCS0	Left Tilted	0mm	Ant 5+8(8)	Simultaneous	50	5250	1	12.08	13.50	1.387	100	1.000	0	0.124	0.172
	WLAN5GHz	802.11ac-VHT160 MCS0	Right Cheek	0mm	Ant 5+8(8)	Standalone	114	5570	1	15.82	17.50	1.472	100	1.000	0.01	0.178	0.262
	WLAN5GHz	802.11ac-VHT160 MCS0	Right Tilted	0mm	Ant 5+8(8)	Standalone	114	5570	1	15.82	17.50	1.472	100	1.000	-0.01	0.323	0.476
33	WLAN5GHz	802.11ac-VHT160 MCS0	Left Cheek	0mm	Ant 5+8(8)	Standalone	114	5570	1	15.82	17.50	1.472	100	1.000	-0.09	0.799	1.176
	WLAN5GHz	802.11ac-VHT160 MCS0	Left Cheek	0mm	Ant 5+8(8)	Standalone	114	5570	2	15.82	17.50	1.472	100	1.000	0.03	0.783	1.153
	WLAN5GHz	802.11ac-VHT160 MCS0	Left Tilted	0mm	Ant 5+8(8)	Standalone	114	5570	1	15.82	17.50	1.472	100	1.000	-0.06	0.524	0.771
	WLAN5GHz	802.11ac-VHT160 MCS0	Right Cheek	0mm	Ant 5+8(8)	Simultaneous	114	5570	1	10.81	12.50	1.476	100	1.000	-0.04	0.056	0.083
	WLAN5GHz	802.11ac-VHT160 MCS0	Right Tilted	0mm	Ant 5+8(8)	Simultaneous	114	5570	1	10.81	12.50	1.476	100	1.000	-0.09	0.088	0.130
	WLAN5GHz	802.11ac-VHT160 MCS0	Left Cheek	0mm	Ant 5+8(8)	Simultaneous	114	5570	1	10.81	12.50	1.476	100	1.000	-0.17	0.252	0.372
	WLAN5GHz	802.11ac-VHT160 MCS0	Left Tilted	0mm	Ant 5+8(8)	Simultaneous	114	5570	1	10.81	12.50	1.476	100	1.000	-0.1	0.134	0.198
34	WLAN5GHz	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 5+8(8)	Standalone	155	5775	1	14.86	16.50	1.459	97.25	1.028	-0.01	0.733	1.099

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)	Measured APD (W/m^2)
35	WLAN6GHz	802.11ax-HE160 MCS0	Left Cheek	0mm	Ant 8+5(8)	Full Power	15	6025	1	11.83	13.50	1.469	100	1.000	0.02	0.201	0.295	1.53



15.2 Hotspot SAR

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Gap (mm)	Antenna	Power State	Ch.	Freq. (MHz)	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																					
36	LTE Band 71	20M	QPSK	1	0	-	Back	5mm	Ant 0	DSI7	133322	683	1	22.98	24.00	1.265	-	-	0.08	0.564	0.713
	LTE Band 71	20M	QPSK	1	0	-	Back	5mm	Ant 1	DSI7	133322	683	1	21.97	23.00	1.268	-	-	0.02	0.460	0.583
37	LTE Band 12	10M	QPSK	1	0	-	Back	5mm	Ant 0	DSI7	23095	707.5	1	23.10	24.00	1.230	-	-	0.05	0.577	0.710
	LTE Band 12	10M	QPSK	1	0	-	Back	5mm	Ant 1	DSI7	23095	707.5	1	23.05	23.80	1.189	-	-	0.07	0.427	0.507
38	LTE Band 13	10M	QPSK	1	0	-	Back	5mm	Ant 0	DSI7	23230	782	1	23.10	24.00	1.230	-	-	0.14	0.637	0.784
	LTE Band 13	10M	QPSK	1	0	-	Back	5mm	Ant 1	DSI7	23230	782	1	21.05	22.60	1.429	-	-	0.16	0.429	0.613
39	LTE Band 14	10M	QPSK	1	0	-	Back	5mm	Ant 0	DSI7	23330	793	1	22.93	24.00	1.279	-	-	0.14	0.771	0.986
	LTE Band 14	10M	QPSK	1	0	-	Back	5mm	Ant 0	DSI7	23330	793	2	22.93	24.00	1.279	-	-	0.02	0.765	0.979
	LTE Band 14	10M	QPSK	1	0	-	Back	5mm	Ant 1	DSI7	23330	793	1	21.59	22.40	1.205	-	-	0.13	0.356	0.529
	FR1 n71	20M	QPSK	1	1	DFT-SCS-15KHz	Back	5mm	Ant 0	DSI7	136100	680.5	1	23.84	24.00	1.038	-	-	0.02	0.449	0.466
40	FR1 n71	20M	QPSK	1	1	DFT-SCS-15KHz	Back	5mm	Ant 1	DSI7	136100	680.5	1	22.30	23.00	1.175	-	-	-0.07	0.491	0.577
	FR1 n12	15M	QPSK	1	1	DFT-SCS-15KHz	Back	5mm	Ant 0	DSI7	141500	707.5	1	23.51	24.00	1.119	-	-	0.01	0.433	0.485
41	FR1 n12	15M	QPSK	36	22	DFT-SCS-15KHz	Back	5mm	Ant 1	DSI7	141500	707.5	1	22.01	23.80	1.510	-	-	0.04	0.394	0.595
42	FR1 n14	10M	QPSK	1	1	DFT-SCS-15KHz	Back	5mm	Ant 0	DSI7	158600	793	1	23.15	24.00	1.216	-	-	0.09	0.531	0.646
	FR1 n14	10M	QPSK	1	1	DFT-SCS-15KHz	Back	5mm	Ant 1	DSI7	158600	793	1	21.54	22.70	1.306	-	-	0.09	0.433	0.566
835MHz																					
43	GSM850	-	-	-	-	GPRS (4 Tx slots)	Back	5mm	Ant 0	DSI7	189	836.4	1	25.17	26.50	1.358	-	-	0.03	0.771	1.047
44	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	DSI7	4132	826.4	1	23.01	24.00	1.256	-	-	0	0.956	1.201
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 1	DSI7	4182	836.4	1	20.52	21.20	1.169	-	-	-0.18	0.469	0.548
45	LTE Band 26	15M	QPSK	1	0	-	Back	5mm	Ant 0	DSI7	26865	831.5	1	22.94	24.00	1.276	-	-	0.04	0.959	1.224
	LTE Band 26	15M	QPSK	1	0	-	Back	5mm	Ant 0	DSI7	26865	831.5	2	22.94	24.00	1.276	-	-	0.01	0.951	1.214
	LTE Band 26	15M	QPSK	1	0	-	Back	5mm	Ant 1	DSI7	26865	831.5	1	20.66	22.30	1.459	-	-	0.02	0.411	0.600
46	FR1 n26	20M	QPSK	1	1	-	Back	5mm	Ant 0	DSI7	166300	831.5	1	23.35	24.00	1.161	-	-	-0.04	0.636	0.739
	FR1 n26	20M	QPSK	1	1	-	Back	5mm	Ant 1	DSI7	166300	831.5	1	22.37	23.10	1.183	-	-	0.01	0.583	0.690
1750MHz																					
47	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	DSI7	1513	1752.6	1	18.53	19.20	1.167	-	-	0.06	0.931	1.086
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Top Side	5mm	Ant 1	DSI7	1413	1732.6	1	15.29	16.90	1.449	-	-	0.16	0.405	0.587
48	LTE Band 66	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 0	DSI7	132322	1745	1	17.60	19.00	1.380	-	-	0.06	0.917	1.266
	LTE Band 66 PA (Reference Designator)	20M	QPSK	1	0	-	Top Side	5mm	Ant 1	DSI7	132572	1770	1	15.43	17.20	1.503	-	-	0.07	0.366	0.550
49	FR1 n70	15M	QPSK	36	22	DFT-SCS-15KHz	Bottom Side	5mm	Ant 0	DSI7	340500	1702.5	1	18.92	20.30	1.374	-	-	0.03	0.936	1.286
	FR1 n70	15M	QPSK	36	22	DFT-SCS-15KHz	Bottom Side	5mm	Ant 0	DSI7	340500	1702.5	2	18.92	20.30	1.374	-	-	0.06	0.922	1.267
	FR1 n70	15M	QPSK	1	1	DFT-SCS-15KHz	Top Side	5mm	Ant 1	DSI7	340500	1702.5	1	19.00	19.20	1.047	-	-	0.07	0.564	0.591
50	FR1 n66 PA (Reference Designator)	40M	QPSK	1	1	DFT-SCS-15KHz	Bottom Side	5mm	Ant 0	DSI7	349000	1745	1	16.67	17.60	1.239	-	-	-0.02	0.847	1.049
	FR1 n66 PA (Reference Designator)	40M	QPSK	108	54	DFT-SCS-15KHz	Top Side	5mm	Ant 1	DSI7	349000	1745	1	16.22	17.50	1.343	-	-	0.02	0.463	0.622
1900MHz																					
51	GSM1900	-	-	-	-	GPRS (4 Tx slots)	Bottom Side	5mm	Ant 0	DSI7	661	1880	1	17.23	18.50	1.340	-	-	0.09	0.895	1.199
52	WCDMA II	-	-	-	-	RMC 12.2Kbps	Bottom Side	5mm	Ant 0	DSI7	9400	1880	1	14.93	16.10	1.309	-	-	0.04	0.882	1.155
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Top Side	5mm	Ant 1	DSI7	9400	1880	1	14.93	16.10	1.309	-	-	0.01	0.433	0.567
53	LTE Band 25	20M	QPSK	1	0	-	Bottom Side	5mm	Ant 0	DSI7	26340	1880	1	14.36	15.40	1.271	-	-	0.06	0.817	1.038
	LTE Band 25	20M	QPSK	1	0	-	Top Side	5mm	Ant 1	DSI7	26340	1880	1	14.58	15.90	1.355	-	-	-0.06	0.435	0.590
54	FR1 n25 Main PA	40M	QPSK	1	1	DFT-SCS-15KHz	Bottom Side	5mm	Ant 0	DSI7	376500	1882.5	1	15.42	16.90	1.406	-	-	-0.07	0.893	1.256
	FR1 n25 PA (Reference Designator)	40M	QPSK	1	1	DFT-SCS-15KHz	Top Side	5mm	Ant 1	DSI7	376500	1882.5	1	15.26	16.80	1.426	-	-	0.05	0.452	0.644
2300MHz																					
55	LTE Band 30	10M	QPSK	1	0	-	Back	5mm	Ant 9	DSI7	27710	2310	1	21.00	22.20	1.318	-	-	-0.01	0.882	1.163
	LTE Band 30	10M	QPSK	1	0	-	Top Side	5mm	Ant 1	DSI7	27710	2310	1	12.35	12.80	1.109	-	-	-0.09	0.550	0.610
56	FR1 n30	10M	QPSK	25	14	DFT-SCS-15KHz	Back	5mm	Ant 9	DSI7	462000	2310	1	21.42	22.50	1.282	-	-	-0.03	0.909	1.166
	FR1 n30	10M	QPSK	25	14	DFT-SCS-15KHz	Back	5mm	Ant 9	DSI7	462000	2310	2	21.42	22.50	1.282	-	-	0.08	0.895	1.148
	FR1 n30	10M	QPSK	1	1	DFT-SCS-15KHz	Top Side	5mm	Ant 1	DSI7	462000	2310	1	11.32	12.30	1.253	-	-	0.03	0.485	0.608



2600MHz																					
57	LTE Band 7	20M	QPSK	1	0	-	Back	5mm	Ant 9	DSI7	21100	2535	1	19.39	20.50	1.291	-	-	-0.03	0.969	1.251
	LTE Band 7	20M	QPSK	1	0	-	Top Side	5mm	Ant 1	DSI7	21100	2535	1	9.68	11.30	1.452	-	-	-0.1	0.393	0.571
58	LTE Band 41 PC2	20M	QPSK	1	0	-	Back	5mm	Ant 9	DSI7	41055	2636.5	1	23.37	23.90	1.130	42.9	1.009	-0.06	1.080	1.231
	LTE Band 41	20M	QPSK	1	0	-	Top Side	5mm	Ant 1	DSI7	41055	2636.5	1	11.76	12.00	1.057	62.9	1.006	-0.17	0.499	0.531
	LTE Band 41 PC2	20M	QPSK	1	0	-	Left Side	5mm	Ant 6	DSI7	40620	2593	1	20.59	21.80	1.321	42.9	1.009	-0.05	0.418	0.557
	LTE Band 41 PC2	20M	QPSK	1	0	-	Back	5mm	Ant 3	DSI7	40620	2593	1	18.72	19.90	1.312	42.9	1.009	0	0.388	0.514
59	FR1 n7	50M	QPSK	270	0	DFT-SCS-15KHz	Back	5mm	Ant 9	DSI7	507000	2535	1	18.36	19.30	1.242	-	-	0.08	0.847	1.052
	FR1 n7	50M	QPSK	1	1	DFT-SCS-15KHz	Top Side	5mm	Ant 1	DSI7	507000	2535	1	10.45	10.90	1.109	-	-	0.05	0.491	0.545
60	FR1 n41 Main PA	100M	QPSK	135	69	DFT-SCS-30KHz	Back	5mm	Ant 9	DSI7	518598	2592.99	1	18.52	19.80	1.343	-	-	-0.02	0.842	1.131
	FR1 n41 PA (Reference Designator)	100M	QPSK	1	1	DFT-SCS-30KHz	Top Side	5mm	Ant 1	DSI7	518598	2592.99	1	10.12	10.90	1.197	-	-	0.05	0.515	0.616
	FR1 n41 Main PA	100M	QPSK	1	1	DFT-SCS-30KHz	Left Side	5mm	Ant 6	DSI7	518598	2592.99	1	18.21	19.30	1.285	-	-	0.01	0.401	0.515
	FR1 n41 PA (Reference Designator)	100M	QPSK	1	1	DFT-SCS-30KHz	Back	5mm	Ant 3	DSI7	518598	2592.99	1	12.89	14.00	1.291	-	-	0.07	0.369	0.476
3500MHz																					
	LTE Band 42 Part 27Q	20M	QPSK	1	0	-	Back	5mm	Ant 4	DSI7	42590	3500	1	15.35	16.70	1.365	62.9	1.006	-0.13	0.374	0.513
	LTE Band 42 Part 27Q	20M	QPSK	1	0	-	Top Side	5mm	Ant 7	DSI7	42190	3460	1	14.79	15.90	1.291	62.9	1.006	0.02	0.468	0.608
61	LTE Band 42 Part 27Q	20M	QPSK	1	0	-	Front	5mm	Ant 9	DSI7	42990	3540	1	21.21	22.40	1.315	62.9	1.006	0.08	0.970	1.283
	LTE Band 42 Part 27Q	20M	QPSK	1	0	-	Back	5mm	Ant 8	DSI7	42990	3540	1	14.25	15.60	1.365	62.9	1.006	0	0.443	0.608
	LTE Band 48	20M	QPSK	1	0	-	Top Side	5mm	Ant 7	DSI7	56640	3690	1	12.94	14.70	1.500	62.9	1.006	-0.02	0.403	0.608
	LTE Band 48	20M	QPSK	1	0	-	Back	5mm	Ant 4	DSI7	56150	3641	1	15.31	16.40	1.285	62.9	1.006	0.1	0.457	0.591
	LTE Band 48 PA (Reference Designator)	20M	QPSK	1	0	-	Back	5mm	Ant 8	DSI7	56640	3690	1	13.26	14.00	1.186	62.9	1.006	0.13	0.452	0.539
62	LTE Band 48	20M	QPSK	1	0	-	Front	5mm	Ant 9	DSI7	55830	3609	1	22.57	23.50	1.239	62.9	1.006	-0.04	1.030	1.284
	FR1 n48 Main PA	40M	QPSK	50	28	DFT-SCS-30KHz	Top Side	5mm	Ant 7	DSI7	641666	3624.99	1	12.20	14.00	1.514	-	-	-0.11	0.402	0.608
	FR1 n48 PA (Reference Designator)	40M	QPSK	50	28	DFT-SCS-30KHz	Back	5mm	Ant 4	DSI7	641666	3624.99	1	13.52	14.60	1.282	-	-	-0.15	0.389	0.499
	FR1 n48 Main PA	40M	QPSK	50	28	DFT-SCS-30KHz	Back	5mm	Ant 8	DSI7	641666	3624.99	1	13.47	14.70	1.327	-	-	-0.14	0.401	0.532
63	FR1 n48 PA (Reference Designator)	40M	QPSK	1	1	DFT-SCS-30KHz	Front	5mm	Ant 9	DSI7	641666	3624.99	1	20.20	21.20	1.259	-	-	0.04	0.907	1.142
	FR1 n77 Part 27Q	100M	QPSK	1	1	DFT-SCS-30KHz	Top Side	5mm	Ant 7	DSI7	656000	3840	1	10.80	12.50	1.479	-	-	0.05	0.409	0.605
	FR1 n77 Part 27Q	100M	QPSK	135	69	DFT-SCS-30KHz	Top Side	5mm	Ant 7	DSI7	633334	3500.01	1	10.63	12.50	1.538	-	-	0.01	0.279	0.429
	FR1 n77 Part 27Q PA (Reference Designator)	100M	QPSK	1	1	DFT-SCS-30KHz	Back	5mm	Ant 4	DSI7	656000	3840	1	13.71	13.90	1.045	-	-	-0.05	0.422	0.441
	FR1 n77 Part 27Q PA (Reference Designator)	100M	QPSK	135	69	DFT-SCS-30KHz	Back	5mm	Ant 4	DSI7	633334	3500.01	1	13.57	13.90	1.079	-	-	0.08	0.392	0.423
	FR1 n77 Part 27Q PA (Reference Designator)	100M	QPSK	1	1	DFT-SCS-30KHz	Back	5mm	Ant 8	DSI7	656000	3840	1	12.57	13.00	1.104	-	-	0.01	0.441	0.487
	FR1 n77 Part 27Q Main PA	100M	QPSK	1	1	DFT-SCS-30KHz	Right Side	5mm	Ant 8	DSI7	633334	3500.01	1	14.34	14.70	1.086	-	-	0.1	0.433	0.470
	FR1 n77 Part 27Q	100M	QPSK	1	1	DFT-SCS-30KHz	Front	5mm	Ant 9	DSI7	656000	3840	1	19.93	20.20	1.064	-	-	0.03	0.645	0.686
	FR1 n77 Part 27Q	100M	QPSK	135	69	DFT-SCS-30KHz	Front	5mm	Ant 9	DSI7	656000	3840	1	19.81	20.20	1.094	-	-	0	0.516	0.564
	FR1 n77 Part 27Q	100M	QPSK	270	0	DFT-SCS-30KHz	Front	5mm	Ant 9	DSI7	656000	3840	1	19.29	20.20	1.233	-	-	-0.11	0.353	0.435
	FR1 n77 Part 27Q	100M	QPSK	1	1	DFT-SCS-30KHz	Back	5mm	Ant 9	DSI7	656000	3840	1	19.93	20.20	1.064	-	-	-0.06	0.420	0.447
	FR1 n77 Part 27Q	100M	QPSK	135	69	DFT-SCS-30KHz	Back	5mm	Ant 9	DSI7	656000	3840	1	19.81	20.20	1.094	-	-	-0.15	0.462	0.505
	FR1 n77 Part 27Q	100M	QPSK	1	1	DFT-SCS-30KHz	Left Side	5mm	Ant 9	DSI7	656000	3840	1	19.93	20.20	1.064	-	-	0.03	0.244	0.260
	FR1 n77 Part 27Q	100M	QPSK	135	69	DFT-SCS-30KHz	Left Side	5mm	Ant 9	DSI7	656000	3840	1	19.81	20.20	1.094	-	-	-0.13	0.198	0.217
	FR1 n77 Part 27Q	100M	QPSK	1	1	DFT-SCS-30KHz	Right Side	5mm	Ant 9	DSI7	656000	3840	1	19.93	20.20	1.064	-	-	0.16	0.339	0.361
	FR1 n77 Part 27Q	100M	QPSK	135	69	DFT-SCS-30KHz	Right Side	5mm	Ant 9	DSI7	656000	3840	1	19.81	20.20	1.094	-	-	-0.15	0.389	0.426
	FR1 n77 Part 27Q	100M	QPSK	1	1	DFT-SCS-30KHz	Bottom Side	5mm	Ant 9	DSI7	656000	3840	1	19.93	20.20	1.064	-	-	-0.02	0.333	0.354
	FR1 n77 Part 27Q	100M	QPSK	135	69	DFT-SCS-30KHz	Bottom Side	5mm	Ant 9	DSI7	656000	3840	1	19.81	20.20	1.094	-	-	-0.09	0.242	0.265
	FR1 n77 Part 27Q	100M	QPSK	270	0	DFT-SCS-30KHz	Bottom Side	5mm	Ant 9	DSI7	656000	3840	1	19.29	20.20	1.233	-	-	0.14	0.440	0.543
	FR1 n77 Part 270 PC2	100M	QPSK	1	1	DFT-SCS-30KHz	Front	5mm	Ant 9	DSI7	656000	3840	1	21.25	22.00	1.189	50	1.000	0.1	0.413	0.491
	FR1 n77 Part 270 PA (Reference Designator)	100M	QPSK	1	1	DFT-SCS-30KHz	Front	5mm	Ant 9	DSI7	656000	3840	1	18.81	20.20	1.377	-	-	-0.09	0.438	0.603
	FR1 n77 Part 270 PC2 PA (Reference Designator)	100M	QPSK	1	1	DFT-SCS-30KHz	Front	5mm	Ant 9	DSI7	656000	3840	1	21.76	23.20	1.393	50	1.000	0.07	0.458	0.638
	FR1 n77 Part 27Q	100M	QPSK	1	1	DFT-SCS-30KHz	Front	5mm	Ant 9	DSI7	633334	3500.01	1	19.43	20.20	1.194	-	-	-0.15	0.643	0.768
64	FR1 n77 Part 27Q	100M	QPSK	135	69	DFT-SCS-30KHz	Front	5mm	Ant 9	DSI7	633334	3500.01	1	19.31	20.20	1.227	-	-	-0.03	0.841	1.032
	FR1 n77 Part 27Q	100M	QPSK	270	0	DFT-SCS-30KHz	Front	5mm	Ant 9	DSI7	633334	3500.01	1	19.20	20.20	1.259	-	-	-0.18	0.789	0.993
	FR1 n77 Part 27Q	100M	QPSK	1	1	DFT-SCS-30KHz	Back	5mm	Ant 9	DSI7	633334	3500.01	1	19.43	20.20	1.194	-	-	0.03	0.431	0.515
	FR1 n77 Part 27Q	100M	QPSK	135	69	DFT-SCS-30KHz	Back	5mm	Ant 9	DSI7	633334	3500.01	1	19.31	20.20	1.227	-	-	-0.15	0.539	0.662
	FR1 n77 Part 27Q	100M	QPSK	1	1	DFT-SCS-30KHz	Left Side	5mm	Ant 9	DSI7	633334	3500.01	1	19.43	20.20	1.194	-	-	-0.15	0.525	0.627



FCC SAR Test Report

Report No. : FA591602

	FR1 n77 Part 27Q	100M	QPSK	135	69	DFT-SCS-30KHz	Left Side	5mm	Ant 9	DS17	633334	3500.01	1	19.31	20.20	1.227	-	-	0.11	0.558	0.685
	FR1 n77 Part 27Q	100M	QPSK	1	1	DFT-SCS-30KHz	Right Side	5mm	Ant 9	DS17	633334	3500.01	1	19.43	20.20	1.194	-	-	-0.08	0.226	0.270
	FR1 n77 Part 27Q	100M	QPSK	135	69	DFT-SCS-30KHz	Right Side	5mm	Ant 9	DS17	633334	3500.01	1	19.31	20.20	1.227	-	-	-0.17	0.215	0.264
	FR1 n77 Part 27Q	100M	QPSK	1	1	DFT-SCS-30KHz	Bottom Side	5mm	Ant 9	DS17	633334	3500.01	1	19.43	20.20	1.194	-	-	-0.08	0.444	0.530
	FR1 n77 Part 27Q	100M	QPSK	135	69	DFT-SCS-30KHz	Bottom Side	5mm	Ant 9	DS17	633334	3500.01	1	19.31	20.20	1.227	-	-	-0.04	0.658	0.808
	FR1 n77 Part 27Q PC2	100M	QPSK	135	69	DFT-SCS-30KHz	Front	5mm	Ant 9	DS17	633334	3500.01	1	22.32	23.20	1.225	50	1.000	0.17	0.793	0.971
	FR1 n77 Part 27Q Main PA	100M	QPSK	135	69	DFT-SCS-30KHz	Front	5mm	Ant 9	DS17	633334	3500.01	1	20.15	20.20	1.012	-	-	0.18	0.735	0.744
	FR1 n77 Part 27Q PC2 Main PA	100M	QPSK	135	69	DFT-SCS-30KHz	Front	5mm	Ant 9	DS17	633334	3500.01	1	22.12	23.20	1.282	50	1.000	-0.04	0.585	0.750

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Power Reduction	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																	
65	WLAN2.4GHz	802.11b 1Mbps	Top Side	5mm	Ant 2+3(2)	Simultaneous	1	2412	1	11.27	13.00	1.489	98.29	1.017	0.08	0.331	0.501
66	Bluetooth	1Mbps	Top Side	5mm	Ant 3	Simultaneous	39	2441	1	12.58	13.00	1.102	76.96	1.082	0.19	0.216	0.257
	Bluetooth	1Mbps	Back	5mm	Ant 2	Simultaneous	39	2441	1	12.07	12.50	1.104	76.9	1.083	-0.08	0.170	0.203
5000MHz																	
67	WLAN5GHz	802.11ac-VHT80 MCS0	Back	5mm	Ant 5+8(8)	Simultaneous	42	5210	1	9.92	11.50	1.439	97.25	1.028	-0.09	0.351	0.519
	WLAN5GHz	802.11ac-VHT80 MCS0	Front	5mm	Ant 5+8(5)	Simultaneous	155	5775	1	9.45	11.00	1.429	97.25	1.028	-0.09	0.174	0.256
68	WLAN5GHz	802.11ac-VHT80 MCS0	Back	5mm	Ant 5+8(5)	Simultaneous	155	5775	1	9.45	11.00	1.429	97.25	1.028	-0.09	0.369	0.542
	WLAN5GHz	802.11ac-VHT80 MCS0	Left Side	5mm	Ant 5+8(5)	Simultaneous	155	5775	1	9.45	11.00	1.429	97.25	1.028	-0.08	0.036	0.053
	WLAN5GHz	802.11ac-VHT80 MCS0	Right Side	5mm	Ant 5+8(5)	Simultaneous	155	5775	1	9.45	11.00	1.429	97.25	1.028	0.13	0.185	0.272
	WLAN5GHz	802.11ac-VHT80 MCS0	Top Side	5mm	Ant 5+8(5)	Simultaneous	155	5775	1	9.45	11.00	1.429	97.25	1.028	0.12	0.100	0.147



15.3 Body Worn Accessory SAR

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Gap (mm)	Antenna	Headset	Power State	Ch.	Freq. (MHz)	Sample	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
750MHz																						
69	LTE Band 71	20M	QPSK	1	0	-	Back	5mm	Ant 0	-	DSI3	133322	683	1	22.98	24.00	1.265	-	-	0.08	0.564	0.713
	LTE Band 71	20M	QPSK	1	0	-	Back	5mm	Ant 1	-	DSI3	133322	683	1	22.89	24.00	1.291	-	-	0.02	0.522	0.674
70	LTE Band 12	10M	QPSK	1	0	-	Back	5mm	Ant 0	-	DSI3	23095	707.5	1	23.10	24.00	1.230	-	-	0.05	0.577	0.710
	LTE Band 12	10M	QPSK	1	0	-	Back	5mm	Ant 1	-	DSI3	23095	707.5	1	23.05	24.00	1.245	-	-	0.07	0.526	0.655
71	LTE Band 13	10M	QPSK	1	0	-	Back	5mm	Ant 0	-	DSI3	23230	782	1	23.10	24.00	1.230	-	-	0.14	0.637	0.784
	LTE Band 13	10M	QPSK	1	0	-	Back	5mm	Ant 1	-	DSI3	23230	782	1	22.85	24.00	1.303	-	-	0.12	0.551	0.718
72	LTE Band 14	10M	QPSK	1	0	-	Back	5mm	Ant 0	-	DSI3	23330	793	1	22.93	23.70	1.194	-	-	0.14	0.771	0.921
	LTE Band 14	10M	QPSK	1	0	-	Back	5mm	Ant 1	-	DSI3	23330	793	1	22.99	23.30	1.074	-	-	0.06	0.745	0.800
	FR1 n71	20M	QPSK	1	1	DFT-SCS-15KHz	Back	5mm	Ant 0	-	DSI3	136100	680.5	1	23.84	24.00	1.038	-	-	0.02	0.449	0.466
73	FR1 n71	20M	QPSK	1	1	DFT-SCS-15KHz	Back	5mm	Ant 1	-	DSI3	136100	680.5	1	23.86	24.00	1.033	-	-	0.01	0.589	0.608
	FR1 n12	15M	QPSK	1	1	DFT-SCS-15KHz	Back	5mm	Ant 0	-	DSI3	141500	707.5	1	23.51	24.00	1.119	-	-	0.02	0.433	0.485
74	FR1 n12	15M	QPSK	36	22	DFT-SCS-15KHz	Back	5mm	Ant 1	-	DSI3	141500	707.5	1	23.68	24.00	1.076	-	-	0.06	0.597	0.643
	FR1 n14	10M	QPSK	1	1	DFT-SCS-15KHz	Back	5mm	Ant 0	-	DSI3	158600	793	1	23.15	24.00	1.216	-	-	0.18	0.504	0.613
75	FR1 n14	10M	QPSK	1	1	DFT-SCS-15KHz	Back	5mm	Ant 1	-	DSI3	158600	793	1	23.09	24.00	1.233	-	-	0.02	0.688	0.848
835MHz																						
76	GSM850	-	-	-	-	GPRS (4 Tx slots)	Back	5mm	Ant 0	-	DSI3	189	836.4	1	25.17	26.50	1.358	-	-	0.03	0.771	1.047
77	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	-	DSI3	4132	826.4	1	23.01	24.00	1.256	-	-	0	0.956	1.201
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 1	-	DSI3	4182	836.4	1	22.02	23.00	1.253	-	-	0.13	0.612	0.767
78	LTE Band 26	15M	QPSK	1	0	-	Back	5mm	Ant 0	-	DSI3	26865	831.5	1	22.94	24.00	1.276	-	-	0.04	0.959	1.224
	LTE Band 26	15M	QPSK	1	0	-	Back	5mm	Ant 1	-	DSI3	26865	831.5	1	22.29	23.10	1.205	-	-	-0.08	0.653	0.787
79	FR1 n26	20M	QPSK	1	1	-	Back	5mm	Ant 0	-	DSI3	166300	831.5	1	23.35	24.00	1.161	-	-	-0.04	0.636	0.739
	FR1 n26	20M	QPSK	50	28	-	Back	5mm	Ant 1	-	DSI3	166300	831.5	1	23.36	24.00	1.159	-	-	-0.05	0.610	0.707
1750MHz																						
80	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	-	DSI3	1513	1752.6	1	18.53	19.20	1.167	-	-	0.06	0.931	1.086
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 1	-	DSI3	1513	1752.6	1	18.58	19.70	1.294	-	-	0.01	0.663	0.858
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 1	-	DSI3	1513	1752.6	2	18.58	19.70	1.294	-	-	0.03	0.658	0.852
81	LTE Band 66 Main PA	20M	QPSK	1	0	-	Back	5mm	Ant 0	-	DSI3	132322	1745	1	17.60	19.00	1.380	-	-	0.09	0.774	1.068
	LTE Band 66 Main PA	20M	QPSK	1	0	-	Back	5mm	Ant 1	-	DSI3	132572	1770	1	18.06	19.30	1.330	-	-	0.02	0.630	0.838
82	FR1 n70	15M	QPSK	36	22	DFT-SCS-15KHz	Back	5mm	Ant 0	-	DSI3	340500	1702.5	1	19.95	20.80	1.216	-	-	0.02	1.010	1.228
	FR1 n70	15M	QPSK	36	22	DFT-SCS-15KHz	Back	5mm	Ant 1	-	DSI3	340500	1702.5	1	20.93	22.20	1.340	-	-	0.02	0.677	0.907
	FR1 n70	15M	QPSK	36	22	DFT-SCS-15KHz	Back	5mm	Ant 1	-	DSI3	340500	1702.5	2	20.93	22.20	1.340	-	-	0.06	0.664	0.890
83	FR1 n66 PA (Reference Designator)	40M	QPSK	108	54	DFT-SCS-15KHz	Back	5mm	Ant 0	-	DSI3	349000	1745	1	18.77	19.60	1.211	-	-	0.01	1.060	1.283
	FR1 n66 PA (Reference Designator)	40M	QPSK	108	54	DFT-SCS-15KHz	Back	5mm	Ant 0	-	DSI3	349000	1745	2	18.77	19.60	1.211	-	-	0.03	1.010	1.223
	FR1 n66 PA (Reference Designator)	40M	QPSK	216	0	DFT-SCS-15KHz	Back	5mm	Ant 1	-	DSI3	349000	1745	1	19.24	19.80	1.138	-	-	0.05	0.737	0.838
1900MHz																						
84	GSM1900	-	-	-	-	GPRS (4 Tx slots)	Back	5mm	Ant 0	-	DSI3	512	1850.2	1	19.53	20.70	1.309	-	-	0.05	0.823	1.077
85	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 0	-	DSI3	9400	1880	1	16.53	17.70	1.309	-	-	0.08	0.830	1.087
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	5mm	Ant 1	-	DSI3	9538	1907.6	1	16.92	17.70	1.197	-	-	0.06	0.675	0.808
86	LTE Band 25 Main PA	20M	QPSK	1	0	-	Back	5mm	Ant 0	-	DSI3	26340	1880	1	16.44	17.20	1.191	-	-	0.04	0.931	1.109
	LTE Band 25 Main PA	20M	QPSK	1	0	-	Back	5mm	Ant 1	-	DSI3	26340	1880	1	17.09	18.40	1.352	-	-	-0.03	0.659	0.891
	LTE Band 25 Main PA	20M	QPSK	1	0	-	Back	5mm	Ant 1	-	DSI3	26340	1880	2	17.09	18.40	1.352	-	-	0.06	0.652	0.882
87	FR1 n25 Main PA	40M	QPSK	108	54	DFT-SCS-15KHz	Back	5mm	Ant 0	-	DSI3	376500	1882.5	1	18.33	19.30	1.250	-	-	0.05	1.030	1.288
	FR1 n25 Main PA	40M	QPSK	108	54	DFT-SCS-15KHz	Back	5mm	Ant 0	-	DSI3	376500	1882.5	2	18.33	19.30	1.250	-	-	0.03	0.998	1.248
	FR1 n25	40M	QPSK	108	54	DFT-SCS-15KHz	Back	5mm	Ant 1	-	DSI3	376500	1882.5	1	17.23	18.50	1.340	-	-	0.06	0.643	0.861
2300MHz																						
88	LTE Band 30	10M	QPSK	1	0	-	Back	5mm	Ant 9	-	DSI3	27710	2310	1	21.00	22.2	1.318	-	-	-0.01	0.882	1.163



FCC SAR Test Report

Report No. : FA591602

	LTE Band 30	10M	QPSK	1	0	-	Back	5mm	Ant 1	-	DSI3	27710	2310	1	15.60	16.60	1.259	-	-	0.01	0.664	0.836
89	FR1 n30	10M	QPSK	25	14	DFT-SCS-15KHz	Back	5mm	Ant 9	-	DSI3	462000	2310	1	21.42	22.50	1.282	-	-	-0.03	0.909	1.166
	FR1 n30	10M	QPSK	1	1	DFT-SCS-15KHz	Back	5mm	Ant 1	-	DSI3	462000	2310	1	15.81	16.30	1.119	-	-	0.06	0.765	0.856
	FR1 n30	10M	QPSK	1	1	DFT-SCS-15KHz	Back	5mm	Ant 1	-	DSI3	462000	2310	2	15.81	16.30	1.119	-	-	0.01	0.755	0.845
2600MHz																						
90	LTE Band 7	20M	QPSK	1	0	-	Back	5mm	Ant 9	-	DSI3	21100	2535	1	19.39	20.50	1.291	-	-	-0.03	0.969	1.251
	LTE Band 7	20M	QPSK	1	0	-	Back	5mm	Ant 1	-	DSI3	21350	2560	1	14.51	15.80	1.346	-	-	0.09	0.629	0.847
91	LTE Band 41 PC2	20M	QPSK	1	0	-	Back	5mm	Ant 9	-	DSI3	41055	2636.5	1	23.22	23.90	1.169	42.9	1.009	-0.06	1.080	1.274
	LTE Band 41 PC2	20M	QPSK	1	0	-	Back	5mm	Ant 9	-	DSI3	41055	2636.5	2	23.22	23.90	1.169	42.9	1.009	0.01	1.010	1.192
	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 1	-	DSI3	41055	2636.5	1	16.43	17.30	1.222	62.9	1.006	0.03	0.719	0.884
	LTE Band 41 PC2	20M	QPSK	1	0	-	Back	5mm	Ant 6	-	DSI3	40620	2593	1	21.94	23.40	1.400	42.9	1.009	0.06	0.602	0.850
	LTE Band 41	20M	QPSK	1	0	-	Back	5mm	Ant 3	-	DSI3	40185	2549.5	1	18.57	20.00	1.390	62.9	1.006	0.05	0.566	0.791
92	FR1 n7	50M	QPSK	270	0	DFT-SCS-15KHz	Back	5mm	Ant 9	-	DSI3	507000	2535	1	18.36	19.30	1.242	-	-	0.08	0.847	1.052
	FR1 n7	50M	QPSK	1	1	DFT-SCS-15KHz	Back	5mm	Ant 1	-	DSI3	507000	2535	1	13.89	15.10	1.321	-	-	0.01	0.664	0.877
93	FR1 n41 Main PA	100M	QPSK	135	69	DFT-SCS-30KHz	Back	5mm	Ant 9	-	DSI3	518598	2592.99	1	18.52	19.80	1.343	-	-	-0.02	0.842	1.131
	FR1 n41 PA (Reference Designator)	100M	QPSK	1	1	DFT-SCS-30KHz	Back	5mm	Ant 1	-	DSI3	518598	2592.99	1	15.80	16.80	1.259	-	-	0.05	0.704	0.886
	FR1 n41 Main PA	100M	QPSK	270	0	DFT-SCS-30KHz	Back	5mm	Ant 6	-	DSI3	518598	2592.99	1	22.03	23.50	1.403	-	-	0.02	0.615	0.863
	FR1 n41 PA (Reference Designator)	100M	QPSK	1	1	DFT-SCS-30KHz	Back	5mm	Ant 3	-	DSI3	518598	2592.99	1	17.35	18.40	1.274	-	-	0.05	0.659	0.839
3500MHz																						
	LTE Band 42 Part 27Q	20M	QPSK	1	0	-	Back	5mm	Ant 4	-	DSI3	42590	3500	1	16.54	17.90	1.368	62.9	1.006	0.03	0.520	0.715
	LTE Band 42 Part 27Q	20M	QPSK	1	0	-	Back	5mm	Ant 7	-	DSI3	42190	3460	1	18.37	19.10	1.183	62.9	1.006	0.09	0.709	0.844
94	LTE Band 42 Part 27Q	20M	QPSK	1	0	-	Front	5mm	Ant 9	-	DSI3	42990	3540	1	21.21	22.40	1.315	62.9	1.006	0.08	0.970	1.283
	LTE Band 42 Part 27Q	20M	QPSK	1	0	-	Front	5mm	Ant 9	-	DSI3	42990	3540	2	21.21	22.40	1.315	62.9	1.006	0.01	0.963	1.274
	LTE Band 42 Part 27Q	20M	QPSK	1	0	-	Back	5mm	Ant 8	-	DSI3	42990	3540	1	16.85	18.20	1.365	62.9	1.006	0.08	0.639	0.877
	LTE Band 42 Part 27Q	20M	QPSK	1	0	-	Back	5mm	Ant 8	-	DSI3	42990	3540	2	16.85	18.20	1.365	62.9	1.006	0.01	0.633	0.869
	LTE Band 48 Main PA	20M	QPSK	1	0	-	Back	5mm	Ant 7	-	DSI3	56640	3690	1	17.34	18.60	1.337	62.9	1.006	0.03	0.654	0.879
	LTE Band 48 Main PA	20M	QPSK	1	0	-	Back	5mm	Ant 4	-	DSI3	56150	3641	1	16.29	17.30	1.262	62.9	1.006	-0.08	0.556	0.706
	LTE Band 48 Main PA	20M	QPSK	1	0	-	Back	5mm	Ant 8	-	DSI3	56640	3690	1	15.95	17.10	1.303	62.9	1.006	-0.08	0.562	0.737
95	LTE Band 48 Main PA	20M	QPSK	1	0	-	Front	5mm	Ant 9	-	DSI3	55830	3609	1	22.56	23.50	1.242	62.9	1.006	-0.04	1.030	1.287
	LTE Band 48	20M	QPSK	1	0	-	Front	5mm	Ant 9	-	DSI3	55830	3609	2	22.56	23.50	1.242	62.9	1.006	0.08	0.992	1.239
	FR1 n48 Main PA	40M	QPSK	1	1	DFT-SCS-30KHz	Back	5mm	Ant 7	-	DSI3	641666	3624.99	1	16.38	17.80	1.387	-	-	0.1	0.633	0.878
	FR1 n48 PA (Reference Designator)	40M	QPSK	50	28	DFT-SCS-30KHz	Back	5mm	Ant 4	-	DSI3	641666	3624.99	1	15.22	16.50	1.343	-	-	-0.18	0.565	0.759
	FR1 n48 Main PA	40M	QPSK	50	28	DFT-SCS-30KHz	Back	5mm	Ant 8	-	DSI3	641666	3624.99	1	14.89	15.80	1.233	-	-	0.1	0.703	0.867
	FR1 n48 Main PA	40M	QPSK	50	28	DFT-SCS-30KHz	Back	5mm	Ant 8	-	DSI3	641666	3624.99	2	14.89	15.80	1.233	-	-	0.06	0.698	0.861
96	FR1 n48 PA (Reference Designator)	40M	QPSK	1	1	DFT-SCS-30KHz	Front	5mm	Ant 9	-	DSI3	645332	3679.98	1	19.82	21.20	1.374	-	-	0.03	0.829	1.139
	FR1 n77 Part 27Q Main PA	100M	QPSK	1	1	DFT-SCS-30KHz	Back	5mm	Ant 7	-	DSI3	656000	3840	1	16.66	17.50	1.213	-	-	0.12	0.709	0.860
	FR1 n77 Part 27Q Main PA	100M	QPSK	135	69	DFT-SCS-30KHz	Back	5mm	Ant 7	-	DSI3	633334	3500.01	1	16.55	17.50	1.245	-	-	0.08	0.603	0.750
	FR1 n77 Part 27Q PA (Reference Designator)	100M	QPSK	1	1	DFT-SCS-30KHz	Back	5mm	Ant 4	-	DSI3	656000	3840	1	15.29	16.10	1.205	-	-	-0.17	0.542	0.653
	FR1 n77 Part 27Q PA (Reference Designator)	100M	QPSK	135	69	DFT-SCS-30KHz	Back	5mm	Ant 4	-	DSI3	633334	3500.01	1	15.22	16.10	1.225	-	-	-0.03	0.604	0.740
	FR1 n77 Part 27Q PA (Reference Designator)	100M	QPSK	135	69	DFT-SCS-30KHz	Back	5mm	Ant 4	-	DSI3	633334	3500.01	2	15.22	16.10	1.225	-	-	0.05	0.594	0.727
	FR1 n77 Part 27Q Main PA	100M	QPSK	1	1	DFT-SCS-30KHz	Back	5mm	Ant 8	-	DSI3	656000	3840	1	15.21	16.40	1.315	-	-	0.14	0.665	0.875
	FR1 n77 Part 27Q Main PA	100M	QPSK	1	1	DFT-SCS-30KHz	Back	5mm	Ant 8	-	DSI3	656000	3840	2	15.21	16.40	1.315	-	-	0.01	0.658	0.865
	FR1 n77 Part 27Q PA (Reference Designator)	100M	QPSK	270	0	DFT-SCS-30KHz	Back	5mm	Ant 8	-	DSI3	633334	3500.01	1	13.38	15.00	1.452	-	-	0.11	0.490	0.712
	FR1 n77 Part 27Q	100M	QPSK	1	1	DFT-SCS-30KHz	Front	5mm	Ant 9	-	DSI3	656000	3840	1	19.93	20.20	1.064	-	-	-0.05	0.645	0.686
	FR1 n77 Part 27Q	100M	QPSK	1	1	DFT-SCS-30KHz	Front	5mm	Ant 9	-	DSI3	656000	3840	2	19.93	20.20	1.064	-	-	0.08	0.641	0.682
	FR1 n77 Part 27Q	100M	QPSK	135	69	DFT-SCS-30KHz	Front	5mm	Ant 9	-	DSI3	656000	3840	1	19.81	20.20	1.094	-	-	0.18	0.516	0.564
	FR1 n77 Part 27Q	100M	QPSK	1	1	DFT-SCS-30KHz	Back	5mm	Ant 9	-	DSI3	656000	3840	1	19.93	20.20	1.064	-	-	-0.17	0.420	0.447
	FR1 n77 Part 27Q	100M	QPSK	135	69	DFT-SCS-30KHz	Back	5mm	Ant 9	-	DSI3	656000	3840	1	19.81	20.20	1.094	-	-	0.17	0.462	0.505
	FR1 n77 Part 27Q PC2	100M	QPSK	1	1	DFT-SCS-30KHz	Front	5mm	Ant 9	-	DSI3	656000	3840	1	21.25	22.00	1.189	50	1.000	-0.05	0.407	0.484
	FR1 n77 Part 27Q PA (Reference Designator)	100M	QPSK	1	1	DFT-SCS-30KHz	Front	5mm	Ant 9	-	DSI3	656000	3840	1	18.81	20.20	1.377	-	-	0.01	0.438	0.603
	FR1 n77 Part	100M	QPSK	1	1	DFT-SCS-30KHz	Front	5mm	Ant 9	-	DSI3	656000	3840	1	21.76	23.20	1.393	50	1.000	0.1	0.458	0.638



FCC SAR Test Report

Report No. : FA591602

	270 PC2 PA (Reference Designator)																					
	FR1 n77 Part 270	100M	QPSK	1	1	DFT-SCS-30KHz	Front	15mm	Ant 9	-	DSI4	656000	3840	1	21.25	22.00	1.189	-	-	-0.17	0.281	0.334
	FR1 n77 Part 270 PC2	100M	QPSK	1	1	DFT-SCS-30KHz	Front	15mm	Ant 9	-	DSI4	656000	3840	1	21.25	22.00	1.189	50	1.000	0.04	0.142	0.169
	FR1 n77 Part 270	100M	QPSK	1	1	DFT-SCS-30KHz	Back	19mm	Ant 9	-	DSI4	656000	3840	1	21.25	22.00	1.189	-	-	-0.01	0.133	0.158
	FR1 n77 Part 270	100M	QPSK	135	69	DFT-SCS-30KHz	Back	19mm	Ant 9	-	DSI4	656000	3840	1	21.20	22.00	1.202	-	-	0.05	0.129	0.155
	FR1 n77 Part 270 PC2	100M	QPSK	1	1	DFT-SCS-30KHz	Back	19mm	Ant 9	-	DSI4	656000	3840	1	21.25	22.00	1.189	50	1.000	-0.08	0.080	0.095
	FR1 n77 Part 27Q	100M	QPSK	1	1	DFT-SCS-30KHz	Front	5mm	Ant 9	-	DSI3	633334	3500.01	1	18.81	20.20	1.377	-	-	0.08	0.643	0.886
97	FR1 n77 Part 27Q	100M	QPSK	135	69	DFT-SCS-30KHz	Front	5mm	Ant 9	-	DSI3	633334	3500.01	1	18.70	20.20	1.413	-	-	-0.03	0.841	1.188
	FR1 n77 Part 27Q	100M	QPSK	135	69	DFT-SCS-30KHz	Front	5mm	Ant 9	Headset	DSI3	633334	3500.01	1	18.70	20.20	1.413	-	-	0.01	0.828	1.170
	FR1 n77 Part 27Q	100M	QPSK	270	0	DFT-SCS-30KHz	Front	5mm	Ant 9	-	DSI3	633334	3500.01	1	18.46	20.20	1.493	-	-	0.03	0.789	1.178
	FR1 n77 Part 27Q	100M	QPSK	1	1	DFT-SCS-30KHz	Back	5mm	Ant 9	-	DSI3	633334	3500.01	1	18.81	20.20	1.377	-	-	-0.08	0.431	0.594
	FR1 n77 Part 27Q	100M	QPSK	135	69	DFT-SCS-30KHz	Back	5mm	Ant 9	-	DSI3	633334	3500.01	1	18.70	20.20	1.413	-	-	-0.08	0.539	0.761
	FR1 n77 Part 27Q PC2	100M	QPSK	135	69	DFT-SCS-30KHz	Front	5mm	Ant 9	-	DSI3	633334	3500.01	1	21.55	23.20	1.462	50	1.000	0.1	0.799	1.168
	FR1 n77 Part 27Q Main PA	100M	QPSK	135	69	DFT-SCS-30KHz	Front	5mm	Ant 9	-	DSI3	633334	3500.01	1	20.15	20.20	1.012	-	-	-0.18	0.735	0.744
	FR1 n77 Part 27Q PC2 Main PA	100M	QPSK	135	69	DFT-SCS-30KHz	Front	5mm	Ant 9	-	DSI3	633334	3500.01	1	22.12	23.20	1.282	50	1.000	0.1	0.572	0.733
	FR1 n77 Part 27Q	100M	QPSK	1	1	DFT-SCS-30KHz	Front	15mm	Ant 9	-	DSI4	633334	3500.01	1	22.90	24.00	1.288	-	-	0.12	0.355	0.457
	FR1 n77 Part 27Q	100M	QPSK	135	69	DFT-SCS-30KHz	Front	15mm	Ant 9	-	DSI4	633334	3500.01	1	22.80	24.00	1.318	-	-	0.08	0.438	0.577
	FR1 n77 Part 27Q PC2	100M	QPSK	135	69	DFT-SCS-30KHz	Front	15mm	Ant 9	-	DSI4	633334	3500.01	1	26.15	27.00	1.216	50	1.000	-0.17	0.465	0.566
	FR1 n77 Part 27Q	100M	QPSK	1	1	DFT-SCS-30KHz	Back	19mm	Ant 9	-	DSI4	633334	3500.01	1	22.90	24.00	1.288	-	-	-0.03	0.130	0.167
	FR1 n77 Part 27Q	100M	QPSK	135	69	DFT-SCS-30KHz	Back	19mm	Ant 9	-	DSI4	633334	3500.01	1	22.80	24.00	1.318	-	-	0.14	0.141	0.186
	FR1 n77 Part 27Q PC2	100M	QPSK	135	69	DFT-SCS-30KHz	Back	19mm	Ant 9	-	DSI4	633334	3500.01	1	26.15	27.00	1.216	50	1.000	0.11	0.134	0.163

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Power Reduction	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																	
98	WLAN2.4GHz	802.11b 1Mbps	Back	5mm	Ant 2+3(2)	Standalone	11	2462	1	16.34	18.00	1.466	98.29	1.017	-0.03	0.752	1.121
	Bluetooth	1Mbps	Back	5mm	Ant 3	Standalone	39	2441	1	13.19	13.50	1.074	76.96	1.082	0.02	0.165	0.192
99	Bluetooth	1Mbps	Back	5mm	Ant 2	Standalone	0	2402	1	14.33	15.00	1.167	76.9	1.083	0.09	0.302	0.382
	Bluetooth	1Mbps	Back	5mm	Ant 2	Standalone	0	2402	2	14.33	15.00	1.167	76.9	1.083	0.02	0.291	0.368
5000MHz																	
	WLAN5GHz	802.11ac-VHT160 MCS0	Front	5mm	Ant 5+8(8)	Standalone	50	5250	1	10.81	12.50	1.476	100	1.000	-0.05	0.074	0.109
100	WLAN5GHz	802.11ac-VHT160 MCS0	Back	5mm	Ant 5+8(8)	Standalone	50	5250	1	10.81	12.50	1.476	100	1.000	-0.04	0.782	1.154
	WLAN5GHz	802.11ac-VHT160 MCS0	Back	5mm	Ant 5+8(8)	Standalone	50	5250	2	10.81	12.50	1.476	100	1.000	0.01	0.776	1.145
	WLAN5GHz	802.11ac-VHT160 MCS0	Front	5mm	Ant 5+8(8)	Simultaneous	50	5250	1	6.49	8.00	1.416	100	1.000	0.14	0.022	0.031
	WLAN5GHz	802.11ac-VHT160 MCS0	Back	5mm	Ant 5+8(8)	Simultaneous	50	5250	1	6.49	8.00	1.416	100	1.000	-0.17	0.241	0.341
	WLAN5GHz	802.11n-HT40 MCS0	Front	15mm	Ant 5+8(8)	Full Power	62	5310	1	20.26	22.00	1.493	100	1.000	0.08	0.068	0.102
	WLAN5GHz	802.11n-HT40 MCS0	Back	19mm	Ant 5+8(8)	Full Power	62	5310	1	20.26	22.00	1.493	100	1.000	0.01	0.388	0.579
	WLAN5GHz	802.11ac-VHT160 MCS0	Front	5mm	Ant 5+8(8)	Standalone	114	5570	1	12.77	14.50	1.489	100	1.000	0.01	0.106	0.158
101	WLAN5GHz	802.11ac-VHT160 MCS0	Back	5mm	Ant 5+8(8)	Standalone	114	5570	1	12.77	14.50	1.489	100	1.000	-0.09	0.757	1.127
	WLAN5GHz	802.11ac-VHT160 MCS0	Front	5mm	Ant 5+8(8)	Simultaneous	114	5570	1	8.33	10.00	1.469	100	1.000	0.04	0.037	0.054
	WLAN5GHz	802.11ac-VHT160 MCS0	Back	5mm	Ant 5+8(8)	Simultaneous	114	5570	1	8.33	10.00	1.469	100	1.000	-0.01	0.238	0.350
	WLAN5GHz	802.11n-HT40 MCS0	Front	15mm	Ant 5+8(8)	Full Power	110	5550	1	20.83	22.50	1.469	100	1.000	0.03	0.106	0.156
	WLAN5GHz	802.11n-HT40 MCS0	Back	19mm	Ant 5+8(8)	Full Power	110	5550	1	20.83	22.50	1.469	100	1.000	-0.08	0.392	0.576
	WLAN5GHz	802.11ac-VHT80 MCS0	Front	5mm	Ant 5+8(5)	Standalone	155	5775	1	12.44	14.00	1.432	97.25	1.028	0.06	0.227	0.334
102	WLAN5GHz	802.11ac-VHT80 MCS0	Back	5mm	Ant 5+8(5)	Standalone	155	5775	1	12.44	14.00	1.432	97.25	1.028	0.05	0.762	1.122
	WLAN5GHz	802.11ac-VHT80 MCS0	Back	5mm	Ant 5+8(5)	Standalone	155	5775	2	12.44	14.00	1.432	97.25	1.028	0.01	0.751	1.106
	WLAN5GHz	802.11ac-VHT80 MCS0	Front	5mm	Ant 5+8(5)	Simultaneous	155	5775	1	7.98	9.50	1.419	97.25	1.028	-0.09	0.079	0.115
	WLAN5GHz	802.11ac-VHT80 MCS0	Back	5mm	Ant 5+8(5)	Simultaneous	155	5775	1	7.98	9.50	1.419	97.25	1.028	-0.08	0.266	0.388
	WLAN5GHz	802.11a 6Mbps	Front	15mm	Ant 5+8(8)	Full Power	149	5745	1	20.85	22.50	1.462	99.32	1.007	-0.08	0.228	0.336
	WLAN5GHz	802.11a 6Mbps	Back	19mm	Ant 5+8(8)	Full Power	149	5745	1	20.85	22.50	1.462	99.32	1.007	0.1	0.422	0.621



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)	Measured APD (W/m^2)
103	WLAN6GHZ	802.11ax-HE160 MCS0	Back	5mm	Ant 8+5(5)	Full Power	207	6985	1	12.45	14.00	1.429	100	1.000	-0.19	0.306	0.437	2.09

15.4 Product specific 10g SAR

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Gap (mm)	Antenna	Power State	Ch.	Freq. (MHz)	Sample	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 10g SAR (W/kg)	Reported 10g SAR (W/kg)
835MHz																					
104	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	0mm	Ant 0	DS16	4182	836.4	1	23.03	24.00	1.250	-	-	0.03	0.830	1.038
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	0mm	Ant 0	DS16	4182	836.4	2	23.03	24.00	1.250	-	-	0.01	0.816	1.020
105	LTE Band 26	15M	QPSK	1	0		Back	0mm	Ant 0	DS16	26865	831.5	1	22.94	24.00	1.276	-	-	-0.01	0.779	0.994
1750MHz																					
106	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Bottom Side	0mm	Ant 0	DS16	1513	1752.6	1	21.89	22.80	1.233	-	-	-0.04	2.370	2.922
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Bottom Side	0mm	Ant 0	DS16	1513	1752.6	2	21.89	22.80	1.233	-	-	0.01	2.290	2.824
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Top Side	0mm	Ant 1	DS16	1513	1752.6	1	20.71	22.40	1.476	-	-	-0.03	1.430	2.110
	LTE Band 66	20M	QPSK	1	0	-	Front	0mm	Ant 0	DS16	132322	1745	1	19.21	20.50	1.346	-	-	0.08	1.500	2.019
	LTE Band 66	20M	QPSK	1	0	-	Front	0mm	Ant 0	DS16	132072	1720	1	18.97	20.50	1.422	-	-	0.01	1.450	2.062
	LTE Band 66	20M	QPSK	1	0	-	Front	0mm	Ant 0	DS16	132572	1770	1	19.15	20.50	1.365	-	-	0.03	1.500	2.047
	LTE Band 66	20M	QPSK	50	0	-	Front	0mm	Ant 0	DS16	132322	1745	1	19.08	20.50	1.387	-	-	-0.08	1.260	1.747
	LTE Band 66	20M	QPSK	100	0	-	Front	0mm	Ant 0	DS16	132322	1745	1	19.05	20.50	1.396	-	-	-0.08	1.290	1.801
	LTE Band 66	20M	QPSK	1	0	-	Back	0mm	Ant 0	DS16	132322	1745	1	19.21	20.50	1.346	-	-	0.1	0.929	1.250
	LTE Band 66	20M	QPSK	50	0	-	Back	0mm	Ant 0	DS16	132322	1745	1	19.08	20.50	1.387	-	-	-0.18	0.727	1.008
	LTE Band 66	20M	QPSK	1	0	-	Bottom Side	0mm	Ant 0	DS16	132322	1745	1	19.21	20.50	1.346	-	-	0.1	1.780	2.396
	LTE Band 66	20M	QPSK	1	0	-	Bottom Side	0mm	Ant 0	DS16	132072	1720	1	18.97	20.50	1.422	-	-	0.12	1.740	2.475
107	LTE Band 66	20M	QPSK	1	0	-	Bottom Side	0mm	Ant 0	DS16	132572	1770	1	19.15	20.50	1.365	-	-	0.07	2.140	2.920
	LTE Band 66	20M	QPSK	50	0	-	Bottom Side	0mm	Ant 0	DS16	132322	1745	1	19.08	20.50	1.387	-	-	0.08	1.500	2.080
	LTE Band 66	20M	QPSK	50	0	-	Bottom Side	0mm	Ant 0	DS16	132072	1720	1	19.00	20.50	1.413	-	-	-0.17	1.410	1.992
	LTE Band 66	20M	QPSK	50	0	-	Bottom Side	0mm	Ant 0	DS16	132572	1770	1	18.98	20.50	1.419	-	-	-0.03	1.820	2.583
	LTE Band 66	20M	QPSK	100	0	-	Bottom Side	0mm	Ant 0	DS16	132322	1745	1	19.05	20.50	1.396	-	-	0.14	1.570	2.192
	LTE Band 66 PA (Reference Designator)	20M	QPSK	1	0	-	Bottom Side	0mm	Ant 0	DS16	132572	1770	1	18.87	20.50	1.455	-	-	0.11	1.610	2.343
	LTE Band 66	20M	QPSK	1	0	-	Front	4mm	Ant 0	DS14	132572	1770	1	22.81	24.00	1.315	-	-	-0.05	0.993	1.306
	LTE Band 66	20M	QPSK	1	0	-	Back	8mm	Ant 0	DS14	132322	1745	1	22.92	24.00	1.282	-	-	0.18	0.851	1.091
	LTE Band 66	20M	QPSK	1	0	-	Bottom Side	9mm	Ant 0	DS14	132572	1770	1	22.81	24.00	1.315	-	-	0.14	0.866	1.139
	LTE Band 66	20M	QPSK	1	0	-	Top Side	0mm	Ant 1	DS16	132572	1770	1	19.76	20.80	1.271	-	-	0	1.700	2.160
108	FR1 n70	15M	QPSK	1	1	DFT-SCS-15KHz	Bottom Side	0mm	Ant 0	DS16	340500	1702.5	1	22.42	23.40	1.253	-	-	0.02	2.340	2.932
	FR1 n70	15M	QPSK	1	1	DFT-SCS-15KHz	Bottom Side	0mm	Ant 0	DS16	340500	1702.5	2	22.42	23.40	1.253	-	-	0.08	2.260	2.832
	FR1 n70	15M	QPSK	75	0	DFT-SCS-15KHz	Top Side	0mm	Ant 1	DS16	340500	1702.5	1	21.42	23.10	1.472	-	-	0.04	1.670	2.459
	FR1 n70	15M	QPSK	75	0	DFT-SCS-15KHz	Top Side	0mm	Ant 1	DS16	340500	1702.5	2	21.42	23.10	1.472	-	-	0.01	1.610	2.370
109	FR1 n66 PA (Reference Designator)	40M	QPSK	216	0	DFT-SCS-15KHz	Bottom Side	0mm	Ant 0	DS16	349000	1745	1	20.60	21.70	1.288	-	-	0.16	2.170	2.796
	FR1 n66 PA (Reference Designator)	40M	QPSK	216	0	DFT-SCS-15KHz	Top Side	0mm	Ant 1	DS16	349000	1745	1	20.78	22.40	1.452	-	-	-0.09	1.650	2.396
	FR1 n66 PA (Reference Designator)	40M	QPSK	216	0	DFT-SCS-15KHz	Top Side	0mm	Ant 1	DS16	349000	1745	2	20.78	22.40	1.452	-	-	0.03	1.610	2.338
1900MHz																					
110	GSM1900	-	-	-	-	GPRS (2 Tx slots)	Bottom Side	0mm	Ant 0	DS16	512	1850.2	1	25.55	26.50	1.245	-	-	-0.01	2.150	2.676
111	WCDMA II	-	-	-	-	RMC 12.2Kbps	Bottom Side	0mm	Ant 0	DS16	9262	1852.4	1	19.67	21.00	1.358	-	-	0.05	2.360	3.206
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Bottom Side	0mm	Ant 0	DS16	9262	1852.4	2	19.67	21.00	1.358	-	-	0.02	2.280	3.097
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Top Side	0mm	Ant 1	DS16	9400	1880	1	19.25	20.70	1.396	-	-	-0.01	1.590	2.220
112	LTE Band 25	20M	QPSK	1	0	-	Bottom Side	0mm	Ant 0	DS16	26140	1860	1	20.34	21.30	1.247	-	-	0.08	2.110	2.632
	LTE Band 25	20M	QPSK	1	0	-	Top Side	0mm	Ant 1	DS16	26340	1880	1	19.24	20.40	1.306	-	-	-0.04	1.770	2.312
	LTE Band 25	20M	QPSK	1	0	-	Top Side	0mm	Ant 1	DS16	26340	1880	2	19.24	20.40	1.306	-	-	0.01	1.720	2.247



FCC SAR Test Report

Report No. : FA591602

113	FR1 n25 Main PA	40M	QPSK	1	1	DFT-SCS-15KHz	Bottom Side	0mm	Ant 0	DSi6	376500	1882.5	1	21.42	22.20	1.197	-	-	-0.04	2.230	2.669
	FR1 n25 PA (Reference Designator)	40M	QPSK	1	1	DFT-SCS-15KHz	Top Side	0mm	Ant 1	DSi6	376500	1882.5	1	20.72	21.60	1.225	-	-	0.06	1.810	2.217
2300MHz																					
114	LTE Band 30	10M	QPSK	1	0	-	Front	0mm	Ant 9	DSi6	27710	2310	1	21.98	22.90	1.236	-	-	0.07	2.320	2.867
	LTE Band 30	10M	QPSK	1	0	-	Top Side	0mm	Ant 1	DSi6	27710	2310	1	17.02	18.10	1.282	-	-	-0.17	1.850	2.372
	LTE Band 30	10M	QPSK	1	0	-	Top Side	0mm	Ant 1	DSi6	27710	2310	2	17.02	18.10	1.282	-	-	0.02	1.780	2.283
115	FR1 n30	10M	QPSK	1	1	DFT-SCS-15KHz	Front	0mm	Ant 9	DSi6	462000	2310	1	22.40	23.70	1.349	-	-	0.05	2.230	3.008
	FR1 n30	10M	QPSK	1	1	DFT-SCS-15KHz	Front	0mm	Ant 9	DSi6	462000	2310	2	22.40	23.70	1.349	-	-	-0.06	2.190	2.954
	FR1 n30	10M	QPSK	25	14	DFT-SCS-15KHz	Top Side	0mm	Ant 1	DSi6	462000	2310	1	18.32	19.50	1.312	-	-	0.05	1.710	2.244
2600MHz																					
116	LTE Band 7	20M	QPSK	1	0	-	Front	0mm	Ant 9	DSi6	21100	2535	1	21.41	22.40	1.256	-	-	-0.09	2.370	2.977
	LTE Band 7	20M	QPSK	1	0	-	Top Side	0mm	Ant 1	DSi6	21100	2535	1	15.96	17.30	1.361	-	-	0.18	1.500	2.042
117	LTE Band 41	20M	QPSK	1	0	-	Front	0mm	Ant 9	DSi6	40620	2593	1	23.12	24.00	1.225	62.9	1.006	0.09	2.150	2.649
	LTE Band 41	20M	QPSK	1	0	-	Top Side	0mm	Ant 1	DSi6	41055	2636.5	1	19.97	21.10	1.297	62.9	1.006	-0.04	1.640	2.140
118	FR1 n7	50M	QPSK	135	68	DFT-SCS-15KHz	Front	0mm	Ant 9	DSi6	507000	2535	1	20.96	22.30	1.361	-	-	0.09	1.970	2.682
	FR1 n7	50M	QPSK	1	1	DFT-SCS-15KHz	Top Side	0mm	Ant 1	DSi6	507000	2535	1	15.92	17.30	1.374	-	-	0.05	1.550	2.130
119	FR1 n41 Main PA	100M	QPSK	135	69	DFT-SCS-30KHz	Front	0mm	Ant 9	DSi6	518598	2592.99	1	20.79	22.00	1.321	-	-	0.09	2.290	3.026
	FR1 n41 Main PA	100M	QPSK	135	69	DFT-SCS-30KHz	Front	0mm	Ant 9	DSi6	518598	2592.99	2	20.79	22.00	1.321	-	-	0.01	2.140	2.828
	FR1 n41 PA (Reference Designator)	100M	QPSK	1	1	DFT-SCS-30KHz	Top Side	0mm	Ant 1	DSi6	518598	2592.99	1	18.01	19.30	1.346	-	-	0.05	1.760	2.369
	FR1 n41 PA (Reference Designator)	100M	QPSK	1	1	DFT-SCS-30KHz	Top Side	0mm	Ant 1	DSi6	518598	2592.99	2	18.01	19.30	1.346	-	-	0.05	1.660	2.234
	FR1 n41 Main PA	100M	QPSK	270	0	DFT-SCS-30KHz	Left Side	0mm	Ant 6	DSi6	518598	2592.99	1	23.58	25.00	1.387	-	-	0.05	1.470	2.039
	FR1 n41 Main PA	100M	QPSK	270	0	DFT-SCS-30KHz	Left Side	0mm	Ant 6	DSi6	518598	2592.99	2	23.58	25.00	1.387	-	-	0.05	1.410	1.955
	FR1 n41 PC2 Main PA	100M	QPSK	1	1	DFT-SCS-30KHz	Top Side	0mm	Ant 3	DSi6	518598	2592.99	1	20.97	22.00	1.268	50	1.000	0.05	1.580	2.003
	FR1 n41 PC2 Main PA	100M	QPSK	1	1	DFT-SCS-30KHz	Top Side	0mm	Ant 3	DSi6	518598	2592.99	2	20.97	22.00	1.268	50	1.000	0.05	1.520	1.927
3500MHz																					
	LTE Band 42 Part 27Q	20M	QPSK	1	0	-	Back	0mm	Ant 4	DSi6	42990	3540	1	19.69	20.90	1.321	62.9	1.006	-0.01	1.550	2.060
	LTE Band 42 Part 27Q	20M	QPSK	1	0	-	Back	0mm	Ant 4	DSi6	42990	3540	2	19.69	20.90	1.321	62.9	1.006	0.03	1.440	1.914
	LTE Band 42 Part 27Q	20M	QPSK	1	0	-	Top Side	0mm	Ant 7	DSi6	42190	3460	1	19.36	20.50	1.300	62.9	1.006	-0.13	1.550	2.027
	LTE Band 42 Part 27Q	20M	QPSK	1	0	-	Top Side	0mm	Ant 7	DSi6	42190	3460	2	19.36	20.50	1.300	62.9	1.006	0.06	1.410	1.844
	LTE Band 42 Part 27Q	20M	QPSK	1	0	-	Front	0mm	Ant 9	DSi6	42590	3500	1	22.71	24.00	1.346	62.9	1.006	-0.17	1.850	2.505
	LTE Band 42 Part 27Q	20M	QPSK	1	0	-	Front	0mm	Ant 9	DSi6	42190	3460	1	22.55	24.00	1.396	62.9	1.006	0.17	1.550	2.177
120	LTE Band 42 Part 27Q	20M	QPSK	1	0	-	Front	0mm	Ant 9	DSi6	42990	3540	1	22.48	24.00	1.419	62.9	1.006	0.03	2.190	3.126
	LTE Band 42 Part 27Q	20M	QPSK	1	0	-	Front	0mm	Ant 9	DSi6	42990	3540	2	22.48	24.00	1.419	62.9	1.006	0.01	2.060	2.941
	LTE Band 42 Part 27Q	20M	QPSK	50	0	-	Front	0mm	Ant 9	DSi6	42590	3500	1	22.64	24.00	1.368	62.9	1.006	-0.05	1.580	2.174
	LTE Band 42 Part 27Q	20M	QPSK	50	0	-	Front	0mm	Ant 9	DSi6	42190	3460	1	22.45	24.00	1.429	62.9	1.006	0.01	1.380	1.984
	LTE Band 42 Part 27Q	20M	QPSK	50	0	-	Front	0mm	Ant 9	DSi6	42990	3540	1	22.39	24.00	1.449	62.9	1.006	0.1	1.910	2.784
	LTE Band 42 Part 27Q	20M	QPSK	100	0	-	Front	0mm	Ant 9	DSi6	42590	3500	1	22.58	24.00	1.387	62.9	1.006	-0.17	1.580	2.204
	LTE Band 42 Part 27Q	20M	QPSK	1	0	-	Front	4mm	Ant 9	DSi4	42990	3540	1	24.73	25.00	1.064	62.9	1.006	0.04	1.230	1.317
	LTE Band 42 Part 27Q	20M	QPSK	1	0	-	Right Side	0mm	Ant 8	DSi6	42990	3540	1	21.48	22.40	1.236	62.9	1.006	-0.04	1.910	2.375
	LTE Band 42 Part 27Q	20M	QPSK	1	0	-	Right Side	0mm	Ant 8	DSi6	42990	3540	2	21.48	22.40	1.236	62.9	1.006	0.01	1.880	2.338
	LTE Band 48C	20M	QPSK	1	0	-	Top Side	0mm	Ant 7	DSi6	56640+56442	3690+3670.2	1	18.58	20.20	1.452	62.9	1.006	0.06	1.660	2.425
	LTE Band 48C	20M	QPSK	1	0	-	Top Side	0mm	Ant 7	DSi6	56640+56442	3690+3670.2	2	18.58	20.20	1.452	62.9	1.006	0.02	1.610	2.352
	LTE Band 48	20M	QPSK	1	0	-	Back	0mm	Ant 4	DSi6	55830	3609	1	21.36	22.20	1.213	62.9	1.006	0.04	2.010	2.454
	LTE Band 48	20M	QPSK	1	0	-	Back	0mm	Ant 4	DSi6	55830	3609	2	21.36	22.20	1.213	62.9	1.006	0.01	1.920	2.344
	LTE Band 48	20M	QPSK	1	0	-	Right Side	0mm	Ant 8	DSi6	56640	3690	1	21.23	22.60	1.371	62.9	1.006	-0.18	1.760	2.427
	LTE Band 48	20M	QPSK	1	0	-	Right Side	0mm	Ant 8	DSi6	56640	3690	2	21.23	22.60	1.371	62.9	1.006	0.03	1.680	2.317
121	LTE Band 48	20M	QPSK	1	0	-	Back	0mm	Ant 9	DSi6	56640	3690	1	22.43	23.40	1.250	62.9	1.006	-0.07	2.130	2.679
	LTE Band 48	20M	QPSK	1	0	-	Back	0mm	Ant 9	DSi6	56640	3690	2	22.43	23.40	1.250	62.9	1.006	0.02	2.080	2.616
	FR1 n48 Main PA	40M	QPSK	50	28	DFT-SCS-30KHz	Top Side	0mm	Ant 7	DSi6	641666	3624.99	1	18.54	19.60	1.276	-	-	-0.16	1.630	2.081
	FR1 n48 PA (Reference Designator)	40M	QPSK	50	28	DFT-SCS-30KHz	Back	0mm	Ant 4	DSi6	641666	3624.99	1	20.07	21.30	1.327	-	-	-0.06	1.440	1.911
	FR1 n48 Main PA	40M	QPSK	50	28	DFT-SCS-30KHz	Right Side	0mm	Ant 8	DSi6	641666	3624.99	1	21.56	22.30	1.186	-	-	-0.19	1.730	2.051
122	FR1 n48 PA (Reference Designator)	40M	QPSK	100	0	DFT-SCS-30KHz	Back	0mm	Ant 9	DSi6	641666	3624.99	1	20.98	21.50	1.127	-	-	-0.09	2.150	2.423
123	FR1 n77 Part 27O	100M	QPSK	1	1	DFT-SCS-30KHz	Top Side	0mm	Ant 7	DSi6	656000	3840	1	16.32	17.80	1.406	-	-	0.05	1.490	2.095
	FR1 n77 Part 27O	100M	QPSK	1	1	DFT-SCS-30KHz	Top Side	0mm	Ant 7	DSi6	656000	3840	2	16.32	17.80	1.406	-	-	0.03	1.370	1.926



FCC SAR Test Report

Report No. : FA591602

	FR1 n77 Part 27O	100M	QPSK	135	69	DFT-SCS-30KHz	Top Side	0mm	Ant 7	DSI6	656000	3840	1	16.20	17.80	1.445	-	-	0.18	1.400	2.024
	FR1 n77 Part 27O	100M	QPSK	270	0	DFT-SCS-30KHz	Top Side	0mm	Ant 7	DSI6	656000	3840	1	16.19	17.80	1.449	-	-	0.16	1.330	1.927
	FR1 n77 Part 27O PC2	100M	QPSK	1	1	DFT-SCS-30KHz	Top Side	0mm	Ant 7	DSI6	656000	3840	1	19.41	20.80	1.377	50	1.000	-0.1	1.390	1.914
	FR1 n77 Part 27O PA (Reference Designator)	100M	QPSK	1	1	DFT-SCS-30KHz	Top Side	0mm	Ant 7	DSI6	656000	3840	1	16.32	17.80	1.406	-	-	0.07	1.050	1.476
	FR1 n77 Part 27O PC2 PA (Reference Designator)	100M	QPSK	1	1	DFT-SCS-30KHz	Top Side	0mm	Ant 7	DSI6	656000	3840	1	19.41	20.80	1.377	50	1.000	0.18	1.030	1.419
	FR1 n77 Part 27O	100M	QPSK	1	1	DFT-SCS-30KHz	Top Side	9mm	Ant 7	DSI4	656000	3840	1	22.71	24.00	1.346	-	-	-0.1	0.815	1.097
	FR1 n77 Part 27O PC2	100M	QPSK	1	1	DFT-SCS-30KHz	Top Side	9mm	Ant 7	DSI4	656000	3840	1	25.69	27.00	1.352	50	1.000	0.01	0.803	1.086
	FR1 n77 Part 27Q	100M	QPSK	1	1	DFT-SCS-30KHz	Top Side	0mm	Ant 7	DSI6	633334	3500.01	1	16.34	17.80	1.400	-	-	0.06	0.799	1.118
	FR1 n77 Part 27Q	100M	QPSK	135	69	DFT-SCS-30KHz	Top Side	0mm	Ant 7	DSI6	633334	3500.01	1	16.18	17.80	1.452	-	-	0.06	1.140	1.655
	FR1 n77 Part 27Q	100M	QPSK	270	0	DFT-SCS-30KHz	Top Side	0mm	Ant 7	DSI6	633334	3500.01	1	15.90	17.80	1.549	-	-	0.02	0.461	0.714
	FR1 n77 Part 27Q PC2	100M	QPSK	135	69	DFT-SCS-30KHz	Top Side	0mm	Ant 7	DSI6	633334	3500.01	1	19.12	20.80	1.472	50	1.000	0.12	1.070	1.575
	FR1 n77 Part 27Q PA (Reference Designator)	100M	QPSK	135	69	DFT-SCS-30KHz	Top Side	0mm	Ant 7	DSI6	633334	3500.01	1	16.18	17.80	1.452	-	-	-0.16	0.772	1.121
	FR1 n77 Part 27Q PC2 PA (Reference Designator)	100M	QPSK	135	69	DFT-SCS-30KHz	Top Side	0mm	Ant 7	DSI6	633334	3500.01	1	19.12	20.80	1.472	50	1.000	-0.12	0.743	1.094
	FR1 n77 Part 27Q	100M	QPSK	135	69	DFT-SCS-30KHz	Top Side	9mm	Ant 7	DSI4	633334	3500.01	1	22.74	24.00	1.337	-	-	0.07	0.456	0.609
	FR1 n77 Part 27Q PC2	100M	QPSK	135	69	DFT-SCS-30KHz	Top Side	9mm	Ant 7	DSI4	633334	3500.01	1	25.70	27.00	1.349	50	1.000	-0.02	0.452	0.610
	FR1 n77 Part 27O PA (Reference Designator)	100M	QPSK	1	1	DFT-SCS-30KHz	Back	0mm	Ant 4	DSI6	656000	3840	1	17.25	18.50	1.334	-	-	-0.13	1.210	1.614
	FR1 n77 Part 27O PA (Reference Designator)	100M	QPSK	1	1	DFT-SCS-30KHz	Back	0mm	Ant 4	DSI6	656000	3840	2	17.25	18.50	1.334	-	-	0.02	1.170	1.560
	FR1 n77 Part 27Q PA (Reference Designator)	100M	QPSK	135	69	DFT-SCS-30KHz	Back	0mm	Ant 4	DSI6	633334	3500.01	1	17.52	18.50	1.253	-	-	0.16	1.570	1.967
	FR1 n77 Part 27O PA (Reference Designator)	100M	QPSK	1	1	DFT-SCS-30KHz	Right Side	0mm	Ant 8	DSI6	656000	3840	1	18.49	19.00	1.125	-	-	-0.16	1.450	1.631
	FR1 n77 Part 27O PA (Reference Designator)	100M	QPSK	1	1	DFT-SCS-30KHz	Right Side	0mm	Ant 8	DSI6	656000	3840	2	18.49	19.00	1.125	-	-	0.05	1.330	1.496
	FR1 n77 Part 27Q Main PA	100M	QPSK	1	1	DFT-SCS-30KHz	Right Side	0mm	Ant 8	DSI6	633334	3500.01	1	20.33	20.60	1.064	-	-	-0.04	1.650	1.756

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Power Reduction	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																	
124	WLAN2.4GHz	802.11b 1Mbps	Top Side	0mm	Ant 2+3(2)	Standalone	1	2412	1	18.26	19.50	1.330	98.29	1.017	-0.03	2.040	2.760
	WLAN2.4GHz	802.11b 1Mbps	Top Side	0mm	Ant 2+3(2)	Standalone	1	2412	2	18.26	19.50	1.330	98.29	1.017	0.01	1.960	2.652
5000MHz																	
125	WLAN5GHz	802.11n-HT40 MCS0	Back	0mm	Ant 5+8(5)	Standalone	46	5230	1	18.82	20.50	1.472	100	1.000	-0.09	1.990	2.930
126	WLAN5GHz	802.11n-HT40 MCS0	Back	0mm	Ant 5+8(5)	Standalone	62	5310	1	18.98	20.50	1.419	100	1.000	-0.03	2.090	2.966
	WLAN5GHz	802.11n-HT40 MCS0	Back	0mm	Ant 5+8(5)	Standalone	62	5310	2	18.98	20.50	1.419	100	1.000	0.01	2.010	2.852
127	WLAN5GHz	802.11n-HT40 MCS0	Back	0mm	Ant 5+8(8)	Standalone	110	5550	1	20.83	22.50	1.469	100	1.000	-0.09	1.830	2.688
	WLAN5GHz	802.11n-HT40 MCS0	Back	0mm	Ant 5+8(8)	Standalone	110	5550	2	20.83	22.50	1.469	100	1.000	0.03	1.740	2.556
128	WLAN5GHz	802.11n-HT20 MCS0	Back	0mm	Ant 5+8(5)	Standalone	149	5745	1	20.20	22.00	1.513	96.35	1.038	-0.06	1.650	2.591
	WLAN5GHz	802.11n-HT20 MCS0	Back	0mm	Ant 5+8(5)	Standalone	149	5745	2	20.20	22.00	1.513	96.35	1.038	0.02	1.580	2.481

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)	Measured APD (W/m^2)
129	WLAN6GHz	802.11ax-HE160 MCS0	Right Side	0mm	Ant 8+5(8)	Full Power	47	6185	1	11.79	13.50	1.483	100	1.000	-0.18	0.201	0.298	4.16

<NFC SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Freq. (MHz)	Sample	Power Drift (dB)	Measured 10g SAR (W/kg)
130	NFC	ASK	Back	0mm	13.56	1	0.12	0.022
	NFC	ASK	Back	0mm	13.56	2	0.07	0.021

15.5 6GHz PD Test Result

<WLAN PD>

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Ch.	Freq. (MHz)	Sample	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Grid Step (λ)	Scaling Factor for measurement uncertainty	Power Drift (dB)	Normal psPD (W/m^2)	Scaled Normal psPD (W/m^2)	Total psPD (W/m^2)	Scaled Total psPD (W/m^2)
01	WLAN6GHz	802.11ax-HE160 MCS0	Right Side	2mm	Ant 8+5(5)	207	6985	1	12.45	14.00	1.429	100	1.000	0.0625	1.5535	0.04	1.960	4.35	3.440	7.64



15.6 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	WLAN5GHz	-	-	-	-	802.11ac-VHT160 MCS0	Left Cheek	0mm	Ant 5+8(8)	Standalone	114	5570	15.82	17.50	1.472	100	1.000	-0.09	0.799	1	1.176
2nd	WLAN5GHz	-	-	-	-	802.11ac-VHT160 MCS0	Left Cheek	0mm	Ant 5+8(8)	Standalone	114	5570	15.82	17.50	1.472	100	1.000	0.02	0.796	1.004	1.172
1st	LTE Band 26	15M	QPSK	1	0	-	Back	5mm	Ant 0	DSI7	26865	831.5	22.94	24.00	1.276	-	-	0.04	0.959	1	1.224
2nd	LTE Band 26	15M	QPSK	1	0	-	Back	5mm	Ant 0	DSI7	26865	831.5	22.94	24.00	1.276	-	-	0.08	0.934	1.027	1.192
1st	FR1 n70	15M	QPSK	36	22	DFT-SCS-15KHz	Bottom Side	5mm	Ant 0	DSI7	340500	1702.5	18.92	20.30	1.374	-	-	0.03	0.936	1	1.286
2nd	FR1 n70	15M	QPSK	36	22	DFT-SCS-15KHz	Bottom Side	5mm	Ant 0	DSI7	340500	1702.5	18.92	20.30	1.374	-	-	0.06	0.911	1.027	1.252
1st	FR1 n25	40M	QPSK	108	54	DFT-SCS-15KHz	Back	5mm	Ant 0	DSI3	376500	1882.5	18.33	19.30	1.250	-	-	0.05	1.030	1	1.288
2nd	FR1 n25	40M	QPSK	108	54	DFT-SCS-15KHz	Back	5mm	Ant 0	DSI3	376500	1882.5	18.33	19.30	1.250	-	-	0.09	0.996	1.034	1.245
1st	FR1 n30	10M	QPSK	25	14	DFT-SCS-15KHz	Back	5mm	Ant 9	DSI7	462000	2310	21.42	22.50	1.282	-	-	-0.03	0.909	1	1.166
2nd	FR1 n30	10M	QPSK	25	14	DFT-SCS-15KHz	Back	5mm	Ant 9	DSI7	462000	2310	21.42	22.50	1.282	-	-	0.08	0.901	1.009	1.155
1st	LTE Band 41 PC2	20M	QPSK	1	0	-	Back	5mm	Ant 9	DSI3	41055	2636.5	23.22	23.90	1.169	42.9	1.009	-0.06	1.080	1	1.274
2nd	LTE Band 41 PC2	20M	QPSK	1	0	-	Back	5mm	Ant 9	DSI3	41055	2636.5	23.22	23.90	1.169	42.9	1.009	0.07	0.999	1.081	1.179
1st	LTE Band 42 Part 27Q	20M	QPSK	1	0	-	Front	5mm	Ant 9	DSI7	42990	3540	21.21	22.40	1.315	62.9	1.006	0.08	0.970	1	1.283
2nd	LTE Band 42 Part 27Q	20M	QPSK	1	0	-	Front	5mm	Ant 9	DSI7	42990	3540	21.21	22.40	1.315	62.9	1.006	0.02	0.954	1.017	1.262
1st	FR1 n77 Part 27O	100M	QPSK	1	1	DFT-SCS-30KHz	Front	5mm	Ant 9	DSI7	656000	3840	19.93	20.20	1.064	-	-	0.03	0.645	1	0.686
2nd	FR1 n77 Part 27O	100M	QPSK	1	1	DFT-SCS-30KHz	Front	5mm	Ant 9	DSI7	656000	3840	19.93	20.20	1.064	-	-	-0.01	0.635	1.016	0.676
1st	FR1 n77 Part 27Q	100M	QPSK	135	69	DFT-SCS-30KHz	Front	5mm	Ant 9	DSI7	633334	3500.01	19.31	20.20	1.227	-	-	-0.03	0.841	1	1.032
2nd	FR1 n77 Part 27Q	100M	QPSK	135	69	DFT-SCS-30KHz	Front	5mm	Ant 9	DSI7	633334	3500.01	19.31	20.20	1.227	-	-	0.07	0.815	1.032	1.000
1st	FR1 n66 PA (Reference Designator)	40M	QPSK	108	54	DFT-SCS-15KHz	Back	5mm	Ant 0	DSI3	349000	1745	18.77	19.60	1.211	-	-	0.01	1.060	1	1.283
2nd	FR1 n66 PA (Reference Designator)	40M	QPSK	108	54	DFT-SCS-15KHz	Back	5mm	Ant 0	DSI3	349000	1745	18.77	19.60	1.211	-	-	0.05	1.000	1.060	1.211
1st	LTE Band 48Main PA	20M	QPSK	1	0	-	Front	5mm	Ant 9	DSI3	55830	3609	22.56	23.50	1.242	62.9	1.006	-0.04	1.030	1	1.287
2nd	LTE Band 48Main PA	20M	QPSK	1	0	-	Front	5mm	Ant 9	DSI3	55830	3609	22.56	23.50	1.242	62.9	1.006	0.06	0.996	1.034	1.244



<10g>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Gap (mm)	Antenna	Power State	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 10g SAR (W/kg)	Ratio	Reported 10g SAR (W/kg)
1st	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Bottom Side	0mm	Ant 0	DSi6	1513	1752.6	21.89	22.80	1.233	-	-	-0.04	2.370	1	2.922
2nd	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Bottom Side	0mm	Ant 0	DSi6	1513	1752.6	21.89	22.80	1.233	-	-	0.06	2.120	1.118	2.614
1st	WCDMA II	-	-	-	-	RMC 12.2Kbps	Bottom Side	0mm	Ant 0	DSi6	9262	1852.4	19.67	21.00	1.358	-	-	0.05	2.360	1	3.206
2nd	WCDMA II	-	-	-	-	RMC 12.2Kbps	Bottom Side	0mm	Ant 0	DSi6	9262	1852.4	19.67	21.00	1.358	-	-	0.02	2.120	1.113	2.880
1st	FR1 n30	10M	QPSK	1	1	DFT-SCS-15KHz	Front	0mm	Ant 9	DSi6	462000	2310	22.40	23.70	1.349	-	-	0.05	2.230	1	3.008
2nd	FR1 n30	10M	QPSK	1	1	DFT-SCS-15KHz	Front	0mm	Ant 9	DSi6	462000	2310	22.40	23.70	1.349	-	-	0.01	2.130	1.047	2.873
1st	FR1 n41	100M	QPSK	135	69	DFT-SCS-30KHz	Front	0mm	Ant 9	DSi6	518598	2592.99	20.79	22.00	1.321	-	-	0.09	2.290	1	3.026
2nd	FR1 n41	100M	QPSK	135	69	DFT-SCS-30KHz	Front	0mm	Ant 9	DSi6	518598	2592.99	20.79	22.00	1.321	-	-	0.03	2.050	1.117	2.709
1st	LTE Band 42 Part 27Q	20M	QPSK	1	0	-	Front	0mm	Ant 9	DSi6	42990	3540	22.48	24.00	1.419	62.9	1.006	0.03	2.190	1	3.126
2nd	LTE Band 42 Part 27Q	20M	QPSK	1	0	-	Front	0mm	Ant 9	DSi6	42990	3540	22.48	24.00	1.419	62.9	1.006	0.06	2.110	1.038	3.012
1st	LTE Band 48	20M	QPSK	1	0	-	Back	0mm	Ant 9	DSi6	56640	3690	22.43	23.40	1.250	62.9	1.006	-0.07	2.130	1	2.679
2nd	LTE Band 48	20M	QPSK	1	0	-	Back	0mm	Ant 9	DSi6	56640	3690	22.43	23.40	1.250	62.9	1.006	0.02	2.030	1.049	2.553
1st	WLAN2.4GHz	-	-	-	-	802.11b 1Mbps	Top Side	0mm	Ant 2+3(2)	Standalone	1	2412	18.26	19.50	1.330	98.29	1.017	-0.03	2.040	1	2.760
2nd	WLAN2.4GHz	-	-	-	-	802.11b 1Mbps	Top Side	0mm	Ant 2+3(2)	Standalone	1	2412	18.26	19.50	1.330	98.29	1.017	-0.03	2.010	1.015	2.720
1st	WLAN5GHz	-	-	-	-	802.11n-HT40 MCS0	Back	0mm	Ant 5+8(5)	Standalone	62	5310	18.98	20.50	1.419	100	1.000	-0.03	2.090	1	2.966
2nd	WLAN5GHz	-	-	-	-	802.11n-HT40 MCS0	Back	0mm	Ant 5+8(5)	Standalone	62	5310	18.98	20.50	1.419	100	1.000	0.06	1.990	1.050	2.824

General Note:

1. Per KDB 865664 D01v01r04, for each frequency band, repeated SAR measurement is required only when the measured SAR is $\geq 0.8\text{W/kg}$.
2. Per KDB 865664 D01v01r04, if the ratio among the repeated measurement is ≤ 1.2 and the measured SAR $< 1.45\text{W/kg}$, only one repeated measurement is required.
3. Per KDB 865664 D01v01r04, if the extremity repeated SAR is necessary, the same procedures should be adapted for measurements according to extremity and occupational exposure limits by applying a factor of 2.5 for extremity exposure and a factor of 5 for occupational exposure to the corresponding SAR thresholds.
4. The ratio is the difference in percentage between original and repeated *measured SAR*.
5. All measurement SAR result is scaled-up to account for tune-up tolerance and is compliant.

15.7 TDD LTE and 5GNR Linearity Data Analysis

General Note:

This device support Power Class 2 and Power Class 3 operations for LTE B41 and 5GNR n41/n77/n78. The highest available duty cycle for Power Class 2 operation is 43.3% for LTE and 50% for 5GNR using UL-DL configuration 1. Per FCC Guidance based on the device behavior, all SAR tests were performed using Power Class 3. Power Class 2 is tested using the highest SAR test configuration in Power Class 3 for each 5GNR configuration and exposure condition combination, according to the highest time averaged power for all applicable uplink-downlink configurations in Power Class 2. When the reported SAR vs. output power is linearly scaled with < 10% discrepancy between power classes and all reported SAR are < 1.4 W/kg for 1g and < 3.5 W/kg for 10g, Separate SAR testing for Power Class 2 is not required.

LTE Band 41(HPUE) Ant 9-Linearity Data for Head			LTE Band 41(HPUE) Ant 1-Linearity Data for Head		
	LTE Band 41 (Power Class 3)	LTE Band 41 (Power Class 2)		LTE Band 41 (Power Class 3)	LTE Band 41 (Power Class 2)
Maximum Tune up Power (dBm)	24.00	27.00	Maximum Tune up Power (dBm)	16.80	18.40
Reported 1g SAR (W/kg)	0.221	0.293	Reported 1g SAR (W/kg)	0.843	0.885
Duty Cycle	63.30%	43.30%	Duty Cycle	63.30%	43.30%
Frame Averaged (mW)	159.00	217.01	Frame Averaged (mW)	30.30	29.96
Linearity SAR (W/kg)	0.302		Linearity SAR (W/kg)	0.834	
% deviation from expected linearity		-2.86%	% deviation from expected linearity		6.18%
LTE Band 41(HPUE) Ant 9-Linearity Data for Body-worn			LTE Band 41(HPUE) Ant 1-Linearity Data for Body-worn		
	LTE Band 41 (Power Class 3)	LTE Band 41 (Power Class 2)		LTE Band 41 (Power Class 3)	LTE Band 41 (Power Class 2)
Maximum Tune up Power (dBm)	22.30	23.90	Maximum Tune up Power (dBm)	17.30	18.90
Reported 1g SAR (W/kg)	1.219	1.274	Reported 1g SAR (W/kg)	0.906	0.885
Duty Cycle	63.30%	43.30%	Duty Cycle	63.30%	43.30%
Frame Averaged (mW)	107.50	106.29	Frame Averaged (mW)	33.99	33.61
Linearity SAR (W/kg)	1.205		Linearity SAR (W/kg)	0.896	
% deviation from expected linearity		5.70%	% deviation from expected linearity		-1.21%
LTE Band 41(HPUE) Ant 9-Linearity Data for Hotspot			LTE Band 41(HPUE) Ant 1-Linearity Data for Hotspot		
	LTE Band 41 (Power Class 3)	LTE Band 41 (Power Class 2)		LTE Band 41 (Power Class 3)	LTE Band 41 (Power Class 2)
Maximum Tune up Power (dBm)	22.30	23.90	Maximum Tune up Power (dBm)	12.00	13.60
Reported 1g SAR (W/kg)	1.175	1.231	Reported 1g SAR (W/kg)	0.625	0.581
Duty Cycle	63.30%	43.30%	Duty Cycle	63.30%	43.30%
Frame Averaged (mW)	107.50	106.29	Frame Averaged (mW)	10.03	9.92
Linearity SAR (W/kg)	1.162		Linearity SAR (W/kg)	0.618	
% deviation from expected linearity		5.96%	% deviation from expected linearity		-5.98%
LTE Band 41(HPUE) Ant 9-Linearity Data for Extremity			LTE Band 41(HPUE) Ant 1-Linearity Data for Extremity		
	LTE Band 41 (Power Class 3)	LTE Band 41 (Power Class 2)		LTE Band 41 (Power Class 3)	LTE Band 41 (Power Class 2)
Maximum Tune up Power (dBm)	24.00	25.60	Maximum Tune up Power (dBm)	22.10	22.70
Reported 10g SAR (W/kg)	3.277	3.154	Reported 10g SAR (W/kg)	2.492	2.033
Duty Cycle	63.30%	43.30%	Duty Cycle	63.30%	43.30%
Frame Averaged (mW)	159.00	157.21	Frame Averaged (mW)	102.66	80.63
Linearity SAR (W/kg)	3.240		Linearity SAR (W/kg)	1.957	
% deviation from expected linearity		-2.66%	% deviation from expected linearity		3.87%

LTE Band 41(HPUE) Ant 6-Linearity Data for Head			LTE Band 41(HPUE) Ant 3-Linearity Data for Head		
	LTE Band 41 (Power Class 3)	LTE Band 41 (Power Class 2)		LTE Band 41 (Power Class 3)	LTE Band 41 (Power Class 2)
Maximum Tune up Power (dBm)	23.00	24.70	Maximum Tune up Power (dBm)	18.00	19.60
Reported 1g SAR (W/kg)	0.841	0.881	Reported 1g SAR (W/kg)	0.895	0.801
Duty Cycle	63.30%	43.30%	Duty Cycle	63.30%	43.30%
Frame Averaged (mW)	126.30	127.79	Frame Averaged (mW)	39.94	39.49
Linearity SAR (W/kg)	0.851		Linearity SAR (W/kg)	0.885	
% deviation from expected linearity		3.54%	% deviation from expected linearity		-9.48%
LTE Band 41(HPUE) Ant 6-Linearity Data for Body-worn			LTE Band 41(HPUE) Ant 3-Linearity Data for Body-worn		
	LTE Band 41 (Power Class 3)	LTE Band 41 (Power Class 2)		LTE Band 41 (Power Class 3)	LTE Band 41 (Power Class 2)
Maximum Tune up Power (dBm)	21.80	23.40	Maximum Tune up Power (dBm)	20.00	21.70
Reported 1g SAR (W/kg)	0.889	0.891	Reported 1g SAR (W/kg)	0.902	0.861



Duty Cycle	63.30%	43.30%		Duty Cycle	63.30%	43.30%
Frame Averaged (mW)	95.81	94.73		Frame Averaged (mW)	63.30	64.05
Linearity SAR (W/kg)	0.879			Linearity SAR (W/kg)	0.913	
% deviation from expected linearity		1.37%		% deviation from expected linearity		-5.66%
LTE Band 41(HPUE) Ant 6-Linearity Data for Hotspot				LTE Band 41(HPUE) Ant 3-Linearity Data for Hotspot		
	LTE Band 41 (Power Class 3)	LTE Band 41 (Power Class 2)			LTE Band 41 (Power Class 3)	LTE Band 41 (Power Class 2)
Maximum Tune up Power (dBm)	20.20	21.80		Maximum Tune up Power (dBm)	18.30	19.90
Reported 1g SAR (W/kg)	0.550	0.577		Reported 1g SAR (W/kg)	0.584	0.625
Duty Cycle	63.30%	43.30%		Duty Cycle	63.30%	43.30%
Frame Averaged (mW)	66.28	65.54		Frame Averaged (mW)	42.80	42.31
Linearity SAR (W/kg)	0.544			Linearity SAR (W/kg)	0.577	
% deviation from expected linearity		6.10%		% deviation from expected linearity		8.24%

FR1 n41(HPUE) Ant 9-Linearity Data for Head				FR1 n41(HPUE) Ant 1-Linearity Data for Head		
	FR1 n41 (Power Class 3)	FR1 n41 (Power Class 2)			FR1 n41 (Power Class 3)	FR1 n41 (Power Class 2)
Maximum Tune up Power (dBm)	25.00	28.00		Maximum Tune up Power (dBm)	16.50	19.50
Reported 1g SAR (W/kg)	0.359	0.339		Reported 1g SAR (W/kg)	0.573	0.539
Duty Cycle	100.00%	50.00%		Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	316.23	315.48		Frame Averaged (mW)	44.67	44.56
Linearity SAR (W/kg)	0.358			Linearity SAR (W/kg)	0.572	
% deviation from expected linearity		-5.35%		% deviation from expected linearity		-5.71%
FR1 n41(HPUE) PA (Reference Designator) Ant 9-Linearity Data for Head				FR1 n41(HPUE) PA (Reference Designator) Ant 1-Linearity Data for Head		
	FR1 n41 (Power Class 3)	FR1 n41 (Power Class 2)			FR1 n41 (Power Class 3)	FR1 n41 (Power Class 2)
Maximum Tune up Power (dBm)	24.00	27.00		Maximum Tune up Power (dBm)	16.50	19.50
Reported 1g SAR (W/kg)	0.236	0.221		Reported 1g SAR (W/kg)	0.899	0.851
Duty Cycle	100.00%	50.00%		Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	251.19	250.59		Frame Averaged (mW)	44.67	44.56
Linearity SAR (W/kg)	0.235			Linearity SAR (W/kg)	0.897	
% deviation from expected linearity		-6.13%		% deviation from expected linearity		-5.11%
FR1 n41(HPUE) Ant 9-Linearity Data for Body-worn				FR1 n41(HPUE) Ant 1-Linearity Data for Body-worn		
	FR1 n41 (Power Class 3)	FR1 n41 (Power Class 2)			FR1 n41 (Power Class 3)	FR1 n41 (Power Class 2)
Maximum Tune up Power (dBm)	19.80	22.80		Maximum Tune up Power (dBm)	16.80	19.80
Reported 1g SAR (W/kg)	1.297	1.248		Reported 1g SAR (W/kg)	0.862	0.848
Duty Cycle	100.00%	50.00%		Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	95.50	95.27		Frame Averaged (mW)	47.86	47.75
Linearity SAR (W/kg)	1.294			Linearity SAR (W/kg)	0.860	
% deviation from expected linearity		-3.55%		% deviation from expected linearity		-1.39%
FR1 n41(HPUE) PA (Reference Designator) Ant 9-Linearity Data for Body-worn				FR1 n41(HPUE) PA (Reference Designator) Ant 1-Linearity Data for Body-worn		
	FR1 n41 (Power Class 3)	FR1 n41 (Power Class 2)			FR1 n41 (Power Class 3)	FR1 n41 (Power Class 2)
Maximum Tune up Power (dBm)	19.80	22.80		Maximum Tune up Power (dBm)	16.80	19.80
Reported 1g SAR (W/kg)	0.906	0.859		Reported 1g SAR (W/kg)	0.905	0.848
Duty Cycle	100.00%	50.00%		Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	95.50	95.27		Frame Averaged (mW)	47.86	47.75
Linearity SAR (W/kg)	0.904			Linearity SAR (W/kg)	0.903	
% deviation from expected linearity		-4.96%		% deviation from expected linearity		-6.08%
FR1 n41(HPUE) Ant 9-Linearity Data for Hotspot				FR1 n41(HPUE) Ant 1-Linearity Data for Hotspot		
	FR1 n41 (Power Class 3)	FR1 n41 (Power Class 2)			FR1 n41 (Power Class 3)	FR1 n41 (Power Class 2)
Maximum Tune up Power (dBm)	19.80	22.80		Maximum Tune up Power (dBm)	10.80	13.80
Reported 1g SAR (W/kg)	1.297	1.248		Reported 1g SAR (W/kg)	0.554	0.556
Duty Cycle	100.00%	50.00%		Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	95.50	95.27		Frame Averaged (mW)	12.02	11.99
Linearity SAR (W/kg)	1.294			Linearity SAR (W/kg)	0.553	
% deviation from expected linearity		-3.55%		% deviation from expected linearity		0.60%
FR1 n41(HPUE) PA (Reference Designator) Ant 9-Linearity Data for Hotspot				FR1 n41(HPUE) PA (Reference Designator) Ant 1-Linearity Data for Hotspot		
	FR1 n41 (Power Class 3)	FR1 n41 (Power Class 2)			FR1 n41 (Power Class 3)	FR1 n41 (Power Class 2)



Maximum Tune up Power (dBm)	19.80	22.80		Maximum Tune up Power (dBm)	10.90	13.90
Reported 1g SAR (W/kg)	0.906	0.859		Reported 1g SAR (W/kg)	0.624	0.603
Duty Cycle	100.00%	50.00%		Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	95.50	95.27		Frame Averaged (mW)	12.30	12.27
Linearity SAR (W/kg)	0.904			Linearity SAR (W/kg)	0.623	
% deviation from expected linearity		-4.96%		% deviation from expected linearity		-3.14%
FR1 n41(HPUE) Ant 9-Linearity Data for Extremity				FR1 n41(HPUE) Ant 1-Linearity Data for Extremity		
	FR1 n41 (Power Class 3)	FR1 n41 (Power Class 2)			FR1 n41 (Power Class 3)	FR1 n41 (Power Class 2)
Maximum Tune up Power (dBm)	22.00	25.00		Maximum Tune up Power (dBm)	19.00	22.00
Reported 10g SAR (W/kg)	3.211	3.154		Reported 10g SAR (W/kg)	2.140	1.928
Duty Cycle	100.00%	50.00%		Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	158.49	158.11		Frame Averaged (mW)	79.43	79.24
Linearity SAR (W/kg)	3.203			Linearity SAR (W/kg)	2.135	
% deviation from expected linearity		-1.54%		% deviation from expected linearity		-9.69%
FR1 n41(HPUE) PA (Reference Designator) Ant 9-Linearity Data for Extremity				FR1 n41(HPUE) PA (Reference Designator) Ant 1-Linearity Data for Extremity		
	FR1 n41 (Power Class 3)	FR1 n41 (Power Class 2)			FR1 n41 (Power Class 3)	FR1 n41 (Power Class 2)
Maximum Tune up Power (dBm)	22.00	25.00		Maximum Tune up Power (dBm)	19.30	22.30
Reported 10g SAR (W/kg)	2.312	2.259		Reported 10g SAR (W/kg)	2.476	2.316
Duty Cycle	100.00%	50.00%		Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	158.49	158.11		Frame Averaged (mW)	85.11	84.91
Linearity SAR (W/kg)	2.307			Linearity SAR (W/kg)	2.470	
% deviation from expected linearity		-2.06%		% deviation from expected linearity		-6.24%

FR1 n41(HPUE) Ant 6-Linearity Data for Head				FR1 n41(HPUE) Ant 3-Linearity Data for Head		
	FR1 n41 (Power Class 3)	FR1 n41 (Power Class 2)			FR1 n41 (Power Class 3)	FR1 n41 (Power Class 2)
Maximum Tune up Power (dBm)	22.70	23.70		Maximum Tune up Power (dBm)	13.00	16.00
Reported 1g SAR (W/kg)	0.877	0.604		Reported 1g SAR (W/kg)	0.501	0.465
Duty Cycle	100.00%	50.00%		Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	186.21	117.21		Frame Averaged (mW)	19.95	19.91
Linearity SAR (W/kg)	0.552			Linearity SAR (W/kg)	0.500	
% deviation from expected linearity		9.41%		% deviation from expected linearity		-6.97%
FR1 n41(HPUE) PA (Reference Designator) Ant 6-Linearity Data for Head				FR1 n41(HPUE) PA (Reference Designator) Ant 3-Linearity Data for Head		
	FR1 n41 (Power Class 3)	FR1 n41 (Power Class 2)			FR1 n41 (Power Class 3)	FR1 n41 (Power Class 2)
Maximum Tune up Power (dBm)	22.70	23.00		Maximum Tune up Power (dBm)	14.10	17.10
Reported 1g SAR (W/kg)	0.861	0.434		Reported 1g SAR (W/kg)	0.880	0.802
Duty Cycle	100.00%	50.00%		Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	186.21	99.76		Frame Averaged (mW)	25.70	25.64
Linearity SAR (W/kg)	0.461			Linearity SAR (W/kg)	0.878	
% deviation from expected linearity		-5.92%		% deviation from expected linearity		-8.65%
FR1 n41(HPUE) Ant 6-Linearity Data for Body-worn				FR1 n41(HPUE) Ant 3-Linearity Data for Body-worn		
	FR1 n41 (Power Class 3)	FR1 n41 (Power Class 2)			FR1 n41 (Power Class 3)	FR1 n41 (Power Class 2)
Maximum Tune up Power (dBm)	23.50	26.00		Maximum Tune up Power (dBm)	16.00	19.00
Reported 1g SAR (W/kg)	0.874	0.843		Reported 1g SAR (W/kg)	0.643	0.606
Duty Cycle	100.00%	50.00%		Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	223.87	199.05		Frame Averaged (mW)	39.81	39.72
Linearity SAR (W/kg)	0.777			Linearity SAR (W/kg)	0.641	
% deviation from expected linearity		8.48%		% deviation from expected linearity		-5.53%
FR1 n41(HPUE) PA (Reference Designator) Ant 6-Linearity Data for Body-worn				FR1 n41(HPUE) PA (Reference Designator) Ant 3-Linearity Data for Body-worn		
	FR1 n41 (Power Class 3)	FR1 n41 (Power Class 2)			FR1 n41 (Power Class 3)	FR1 n41 (Power Class 2)
Maximum Tune up Power (dBm)	21.60	24.00		Maximum Tune up Power (dBm)	18.40	21.40
Reported 1g SAR (W/kg)	0.894	0.813		Reported 1g SAR (W/kg)	0.877	0.809
Duty Cycle	100.00%	50.00%		Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	144.54	125.59		Frame Averaged (mW)	69.18	69.02
Linearity SAR (W/kg)	0.777			Linearity SAR (W/kg)	0.875	
% deviation from expected linearity		4.66%		% deviation from expected linearity		-7.53%

FR1 n41(HPUE) Ant 6-Linearity Data for Hotspot			FR1 n41(HPUE) Ant 3-Linearity Data for Hotspot		
	FR1 n41 (Power Class 3)	FR1 n41 (Power Class 2)		FR1 n41 (Power Class 3)	FR1 n41 (Power Class 2)
Maximum Tune up Power (dBm)	19.30	22.30	Maximum Tune up Power (dBm)	14.00	17.00
Reported 1g SAR (W/kg)	0.612	0.573	Reported 1g SAR (W/kg)	0.476	0.435
Duty Cycle	100.00%	50.00%	Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	85.11	84.91	Frame Averaged (mW)	25.12	25.06
Linearity SAR (W/kg)	0.611		Linearity SAR (W/kg)	0.475	
% deviation from expected linearity		-6.15%	% deviation from expected linearity		-8.40%
FR1 n41(HPUE) PA (Reference Designator) Ant 6-Linearity Data for Hotspot			FR1 n41(HPUE) PA (Reference Designator) Ant 3-Linearity Data for Hotspot		
	FR1 n41 (Power Class 3)	FR1 n41 (Power Class 2)		FR1 n41 (Power Class 3)	FR1 n41 (Power Class 2)
Maximum Tune up Power (dBm)	19.30	22.30	Maximum Tune up Power (dBm)	14.00	17.00
Reported 1g SAR (W/kg)	0.269	0.258	Reported 1g SAR (W/kg)	0.642	0.588
Duty Cycle	100.00%	50.00%	Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	85.11	84.91	Frame Averaged (mW)	25.12	25.06
Linearity SAR (W/kg)	0.268		Linearity SAR (W/kg)	0.640	
% deviation from expected linearity		-3.86%	% deviation from expected linearity		-8.19%
FR1 n41(HPUE) Ant 6-Linearity Data for Extremity			FR1 n41(HPUE) Ant 3-Linearity Data for Extremity		
	FR1 n41 (Power Class 3)	FR1 n41 (Power Class 2)		FR1 n41 (Power Class 3)	FR1 n41 (Power Class 2)
Maximum Tune up Power (dBm)	25.00	25.00	Maximum Tune up Power (dBm)	19.00	22.00
Reported 10g SAR (W/kg)	2.660	1.391	Reported 10g SAR (W/kg)	2.229	2.383
Duty Cycle	100.00%	50.00%	Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	316.23	158.11	Frame Averaged (mW)	79.43	79.24
Linearity SAR (W/kg)	1.330		Linearity SAR (W/kg)	2.224	
% deviation from expected linearity		4.59%	% deviation from expected linearity		7.16%
FR1 n41(HPUE) PA (Reference Designator) Ant 6-Linearity Data for Extremity			FR1 n41(HPUE) PA (Reference Designator) Ant 3-Linearity Data for Extremity		
	FR1 n41 (Power Class 3)	FR1 n41 (Power Class 2)		FR1 n41 (Power Class 3)	FR1 n41 (Power Class 2)
Maximum Tune up Power (dBm)	22.00	23.00	Maximum Tune up Power (dBm)	22.00	23.00
Reported 10g SAR (W/kg)	1.715	1.172	Reported 10g SAR (W/kg)	2.040	1.386
Duty Cycle	100.00%	50.00%	Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	158.49	99.76	Frame Averaged (mW)	158.49	99.76
Linearity SAR (W/kg)	1.080		Linearity SAR (W/kg)	1.284	
% deviation from expected linearity		8.57%	% deviation from expected linearity		7.94%

FR1 n77 Part 270(HPUE) Ant 7-Linearity Data for Head			FR1 n77 Part 270(HPUE) Ant 4-Linearity Data for Head		
	FR1 n77 Part 270 (Power Class 3)	FR1 n77 Part 270 (Power Class 2)		FR1 n77 Part 270 (Power Class 3)	FR1 n77 Part 270 (Power Class 2)
Maximum Tune up Power (dBm)	12.80	15.80	Maximum Tune up Power (dBm)	21.00	24.00
Reported 1g SAR (W/kg)	0.870	0.805	Reported 1g SAR (W/kg)	0.530	0.500
Duty Cycle	100.00%	50.00%	Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	19.05	19.01	Frame Averaged (mW)	125.89	125.59
Linearity SAR (W/kg)	0.868		Linearity SAR (W/kg)	0.529	
% deviation from expected linearity		-7.25%	% deviation from expected linearity		-5.44%
FR1 n77 Part 270(HPUE) PA (Reference Designator) Ant 7-Linearity Data for Head			FR1 n77 Part 270(HPUE) PA (Reference Designator) Ant 4-Linearity Data for Head		
	FR1 n77 Part 270 (Power Class 3)	FR1 n77 Part 270 (Power Class 2)		FR1 n77 Part 270 (Power Class 3)	FR1 n77 Part 270 (Power Class 2)
Maximum Tune up Power (dBm)	12.80	15.80	Maximum Tune up Power (dBm)	19.00	22.00
Reported 1g SAR (W/kg)	0.389	0.352	Reported 1g SAR (W/kg)	0.806	0.775
Duty Cycle	100.00%	50.00%	Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	19.05	19.01	Frame Averaged (mW)	79.43	79.24
Linearity SAR (W/kg)	0.388		Linearity SAR (W/kg)	0.804	
% deviation from expected linearity		-9.30%	% deviation from expected linearity		-3.62%
FR1 n77 Part 270Q(HPUE) Ant 7-Linearity Data for Head			FR1 n77 Part 270Q(HPUE) Ant 4-Linearity Data for Head		
	FR1 n77 Part 270Q (Power Class 3)	FR1 n77 Part 270Q (Power Class 2)		FR1 n77 Part 270Q (Power Class 3)	FR1 n77 Part 270Q (Power Class 2)
Maximum Tune up Power (dBm)	12.80	15.80	Maximum Tune up Power (dBm)	19.00	22.00
Reported 1g SAR (W/kg)	0.450	0.431	Reported 1g SAR (W/kg)	0.305	0.278
Duty Cycle	100.00%	50.00%	Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	19.05	19.01	Frame Averaged (mW)	79.43	79.24



FCC SAR Test Report

Report No. : FA591602

Linearity SAR (W/kg)	0.449		Linearity SAR (W/kg)	0.304	
% deviation from expected linearity		-3.99%	% deviation from expected linearity		-8.64%
FR1 n77 Part 27Q(HPUE) PA (Reference Designator) Ant 7-Linearity Data for Head			FR1 n77 Part 27Q(HPUE) PA (Reference Designator) Ant 4-Linearity Data for Head		
	FR1 n77 Part 27Q (Power Class 3)	FR1 n77 Part 27Q (Power Class 2)		FR1 n77 Part 27Q (Power Class 3)	FR1 n77 Part 27Q (Power Class 2)
Maximum Tune up Power (dBm)	12.80	15.80	Maximum Tune up Power (dBm)	21.00	24.00
Reported 1g SAR (W/kg)	0.437	0.407	Reported 1g SAR (W/kg)	0.273	0.254
Duty Cycle	100.00%	50.00%	Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	19.05	19.01	Frame Averaged (mW)	125.89	125.59
Linearity SAR (W/kg)	0.436		Linearity SAR (W/kg)	0.272	
% deviation from expected linearity		-6.64%	% deviation from expected linearity		-6.74%
FR1 n77 Part 27Q(HPUE) Ant 7-Linearity Data for Body-worn			FR1 n77 Part 27Q(HPUE) Ant 4-Linearity Data for Body-worn		
	FR1 n77 Part 27Q (Power Class 3)	FR1 n77 Part 27Q (Power Class 2)		FR1 n77 Part 27Q (Power Class 3)	FR1 n77 Part 27Q (Power Class 2)
Maximum Tune up Power (dBm)	17.50	20.50	Maximum Tune up Power (dBm)	15.00	18.00
Reported 1g SAR (W/kg)	0.876	0.841	Reported 1g SAR (W/kg)	0.510	0.487
Duty Cycle	100.00%	50.00%	Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	56.23	56.10	Frame Averaged (mW)	31.62	31.55
Linearity SAR (W/kg)	0.874		Linearity SAR (W/kg)	0.509	
% deviation from expected linearity		-3.77%	% deviation from expected linearity		-4.28%
FR1 n77 Part 27Q(HPUE) PA (Reference Designator) Body-worn Ant 7-Linearity Data for			FR1 n77 Part 27Q(HPUE) PA (Reference Designator) Body-worn Ant 4-Linearity Data for		
	FR1 n77 Part 27Q (Power Class 3)	FR1 n77 Part 27Q (Power Class 2)		FR1 n77 Part 27Q (Power Class 3)	FR1 n77 Part 27Q (Power Class 2)
Maximum Tune up Power (dBm)	17.50	20.50	Maximum Tune up Power (dBm)	16.10	19.10
Reported 1g SAR (W/kg)	0.821	0.795	Reported 1g SAR (W/kg)	0.686	0.663
Duty Cycle	100.00%	50.00%	Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	56.23	56.10	Frame Averaged (mW)	40.74	40.64
Linearity SAR (W/kg)	0.819		Linearity SAR (W/kg)	0.684	
% deviation from expected linearity		-2.94%	% deviation from expected linearity		-3.12%
FR1 n77 Part 27Q(HPUE) Ant 7-Linearity Data for Body-worn			FR1 n77 Part 27Q(HPUE) Ant 4-Linearity Data for Body-worn		
	FR1 n77 Part 27Q (Power Class 3)	FR1 n77 Part 27Q (Power Class 2)		FR1 n77 Part 27Q (Power Class 3)	FR1 n77 Part 27Q (Power Class 2)
Maximum Tune up Power (dBm)	17.50	20.50	Maximum Tune up Power (dBm)	15.00	18.00
Reported 1g SAR (W/kg)	0.773	0.749	Reported 1g SAR (W/kg)	0.568	0.522
Duty Cycle	100.00%	50.00%	Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	56.23	56.10	Frame Averaged (mW)	31.62	31.55
Linearity SAR (W/kg)	0.771		Linearity SAR (W/kg)	0.567	
% deviation from expected linearity		-2.87%	% deviation from expected linearity		-7.88%
FR1 n77 Part 27Q(HPUE) PA (Reference Designator) Body-worn Ant 7-Linearity Data for			FR1 n77 Part 27Q(HPUE) PA (Reference Designator) Body-worn Ant 4-Linearity Data for		
	FR1 n77 Part 27Q (Power Class 3)	FR1 n77 Part 27Q (Power Class 2)		FR1 n77 Part 27Q (Power Class 3)	FR1 n77 Part 27Q (Power Class 2)
Maximum Tune up Power (dBm)	17.50	20.50	Maximum Tune up Power (dBm)	16.10	19.10
Reported 1g SAR (W/kg)	0.752	0.678	Reported 1g SAR (W/kg)	0.824	0.740
Duty Cycle	100.00%	50.00%	Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	56.23	56.10	Frame Averaged (mW)	40.74	40.64
Linearity SAR (W/kg)	0.750		Linearity SAR (W/kg)	0.822	
% deviation from expected linearity		-9.63%	% deviation from expected linearity		-9.98%
FR1 n77 Part 27Q(HPUE) Ant 7-Linearity Data for Hotspot			FR1 n77 Part 27Q(HPUE) Ant 4-Linearity Data for Hotspot		
	FR1 n77 Part 27Q (Power Class 3)	FR1 n77 Part 27Q (Power Class 2)		FR1 n77 Part 27Q (Power Class 3)	FR1 n77 Part 27Q (Power Class 2)
Maximum Tune up Power (dBm)	12.50	15.50	Maximum Tune up Power (dBm)	14.00	17.00
Reported 1g SAR (W/kg)	0.611	0.580	Reported 1g SAR (W/kg)	0.392	0.366
Duty Cycle	100.00%	50.00%	Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	17.78	17.74	Frame Averaged (mW)	25.12	25.06
Linearity SAR (W/kg)	0.610		Linearity SAR (W/kg)	0.391	
% deviation from expected linearity		-4.85%	% deviation from expected linearity		-6.41%
FR1 n77 Part 27Q(HPUE) PA (Reference Designator) Hotspot Ant 7-Linearity Data for			FR1 n77 Part 27Q(HPUE) PA (Reference Designator) Hotspot Ant 4-Linearity Data for		
	FR1 n77 Part 27Q (Power Class 3)	FR1 n77 Part 27Q (Power Class 2)		FR1 n77 Part 27Q (Power Class 3)	FR1 n77 Part 27Q (Power Class 2)
Maximum Tune up Power (dBm)	12.50	15.50	Maximum Tune up Power (dBm)	13.90	16.90
Reported 1g SAR (W/kg)	0.451	0.429	Reported 1g SAR (W/kg)	0.449	0.412



Duty Cycle	100.00%	50.00%		Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	17.78	17.74		Frame Averaged (mW)	24.55	24.49
Linearity SAR (W/kg)	0.450			Linearity SAR (W/kg)	0.448	
% deviation from expected linearity		-4.65%		% deviation from expected linearity		-8.02%
FR1 n77 Part 27Q(HPUE) Ant 7-Linearity Data for Hotspot				FR1 n77 Part 27Q(HPUE) Ant 4-Linearity Data for Hotspot		
	FR1 n77 Part 27O (Power Class 3)	FR1 n77 Part 27O (Power Class 2)			FR1 n77 Part 27O (Power Class 3)	FR1 n77 Part 27O (Power Class 2)
Maximum Tune up Power (dBm)	12.50	15.50		Maximum Tune up Power (dBm)	14.00	17.00
Reported 1g SAR (W/kg)	0.432	0.413		Reported 1g SAR (W/kg)	0.457	0.421
Duty Cycle	100.00%	50.00%		Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	17.78	17.74		Frame Averaged (mW)	25.12	25.06
Linearity SAR (W/kg)	0.431			Linearity SAR (W/kg)	0.456	
% deviation from expected linearity		-4.17%		% deviation from expected linearity		-7.66%
FR1 n77 Part 27Q(HPUE) PA (Reference Designator) Ant 7-Linearity Data for Hotspot				FR1 n77 Part 27Q(HPUE) PA (Reference Designator) Ant 4-Linearity Data for Hotspot		
	FR1 n77 Part 27O (Power Class 3)	FR1 n77 Part 27O (Power Class 2)			FR1 n77 Part 27O (Power Class 3)	FR1 n77 Part 27O (Power Class 2)
Maximum Tune up Power (dBm)	12.50	15.50		Maximum Tune up Power (dBm)	13.90	16.90
Reported 1g SAR (W/kg)	0.281	0.256		Reported 1g SAR (W/kg)	0.520	0.475
Duty Cycle	100.00%	50.00%		Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	17.78	17.74		Frame Averaged (mW)	24.55	24.49
Linearity SAR (W/kg)	0.280			Linearity SAR (W/kg)	0.519	
% deviation from expected linearity		-8.68%		% deviation from expected linearity		-8.44%
FR1 n77 Part 27O(HPUE) Ant 7-Linearity Data for Extremity				FR1 n77 Part 27O(HPUE) Ant 4-Linearity Data for Extremity		
	FR1 n77 Part 27O (Power Class 3)	FR1 n77 Part 27O (Power Class 2)			FR1 n77 Part 27O (Power Class 3)	FR1 n77 Part 27O (Power Class 2)
Maximum Tune up Power (dBm)	17.80	20.80		Maximum Tune up Power (dBm)	18.50	21.50
Reported 10g SAR (W/kg)	2.095	1.914		Reported 10g SAR (W/kg)	1.614	1.493
Duty Cycle	100.00%	50.00%		Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	60.26	60.11		Frame Averaged (mW)	70.79	70.63
Linearity SAR (W/kg)	2.090			Linearity SAR (W/kg)	1.610	
% deviation from expected linearity		-8.42%		% deviation from expected linearity		-7.28%
FR1 n77 Part 27O(HPUE) PA (Reference Designator) Ant 7-Linearity Data for Extremity				FR1 n77 Part 27O(HPUE) PA (Reference Designator) Ant 4-Linearity Data for Extremity		
	FR1 n77 Part 27O (Power Class 3)	FR1 n77 Part 27O (Power Class 2)			FR1 n77 Part 27O (Power Class 3)	FR1 n77 Part 27O (Power Class 2)
Maximum Tune up Power (dBm)	17.80	20.80		Maximum Tune up Power (dBm)	18.50	21.50
Reported 10g SAR (W/kg)	1.476	1.419		Reported 10g SAR (W/kg)	1.974	1.797
Duty Cycle	100.00%	50.00%		Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	60.26	60.11		Frame Averaged (mW)	70.79	70.63
Linearity SAR (W/kg)	1.473			Linearity SAR (W/kg)	1.969	
% deviation from expected linearity		-3.63%		% deviation from expected linearity		-8.75%
FR1 n77 Part 27Q(HPUE) Ant 7-Linearity Data for Extremity				FR1 n77 Part 27Q(HPUE) Ant 4-Linearity Data for Extremity		
	FR1 n77 Part 27O (Power Class 3)	FR1 n77 Part 27O (Power Class 2)			FR1 n77 Part 27O (Power Class 3)	FR1 n77 Part 27O (Power Class 2)
Maximum Tune up Power (dBm)	17.80	20.80		Maximum Tune up Power (dBm)	18.50	21.50
Reported 10g SAR (W/kg)	1.655	1.575		Reported 10g SAR (W/kg)	1.842	1.746
Duty Cycle	100.00%	50.00%		Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	60.26	60.11		Frame Averaged (mW)	70.79	70.63
Linearity SAR (W/kg)	1.651			Linearity SAR (W/kg)	1.838	
% deviation from expected linearity		-4.61%		% deviation from expected linearity		-4.99%
FR1 n77 Part 27Q(HPUE) PA (Reference Designator) Ant 7-Linearity Data for Extremity				FR1 n77 Part 27Q(HPUE) PA (Reference Designator) Ant 4-Linearity Data for Extremity		
	FR1 n77 Part 27O (Power Class 3)	FR1 n77 Part 27O (Power Class 2)			FR1 n77 Part 27O (Power Class 3)	FR1 n77 Part 27O (Power Class 2)
Maximum Tune up Power (dBm)	17.80	20.80		Maximum Tune up Power (dBm)	18.50	21.50
Reported 10g SAR (W/kg)	1.121	1.094		Reported 10g SAR (W/kg)	2.118	1.909
Duty Cycle	100.00%	50.00%		Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	60.26	60.11		Frame Averaged (mW)	70.79	70.63
Linearity SAR (W/kg)	1.118			Linearity SAR (W/kg)	2.113	
% deviation from expected linearity		-2.18%		% deviation from expected linearity		-9.65%

FR1 n77 Part 27O(HPUE) Ant 8-Linearity Data for Head			FR1 n77 Part 27O(HPUE) Ant 9-Linearity Data for Head		
	FR1 n77 Part 27O (Power Class 3)	FR1 n77 Part 27O (Power Class 2)		FR1 n77 Part 27O (Power Class 3)	FR1 n77 Part 27O (Power Class 2)
Maximum Tune up Power (dBm)	17.70	20.70	Maximum Tune up Power (dBm)	22.00	22.00
Reported 1g SAR (W/kg)	0.818	0.761	Reported 1g SAR (W/kg)	0.120	0.065
Duty Cycle	100.00%	50.00%	Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	58.88	58.74	Frame Averaged (mW)	158.49	79.24
Linearity SAR (W/kg)	0.816		Linearity SAR (W/kg)	0.060	
% deviation from expected linearity		-6.75%	% deviation from expected linearity		8.33%
FR1 n77 Part 27O(HPUE) PA (Reference Designator) Ant 8-Linearity Data for Head			FR1 n77 Part 27O(HPUE) PA (Reference Designator) Ant 9-Linearity Data for Head		
	FR1 n77 Part 27O (Power Class 3)	FR1 n77 Part 27O (Power Class 2)		FR1 n77 Part 27O (Power Class 3)	FR1 n77 Part 27O (Power Class 2)
Maximum Tune up Power (dBm)	16.00	19.00	Maximum Tune up Power (dBm)	24.00	27.00
Reported 1g SAR (W/kg)	0.338	0.326	Reported 1g SAR (W/kg)	0.287	0.269
Duty Cycle	100.00%	50.00%	Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	39.81	39.72	Frame Averaged (mW)	251.19	250.59
Linearity SAR (W/kg)	0.337		Linearity SAR (W/kg)	0.286	
% deviation from expected linearity		-3.32%	% deviation from expected linearity		-6.05%
FR1 n77 Part 27Q(HPUE) Ant 8-Linearity Data for Head			FR1 n77 Part 27Q(HPUE) Ant 9-Linearity Data for Head		
	FR1 n77 Part 27Q (Power Class 3)	FR1 n77 Part 27Q (Power Class 2)		FR1 n77 Part 27Q (Power Class 3)	FR1 n77 Part 27Q (Power Class 2)
Maximum Tune up Power (dBm)	17.70	20.70	Maximum Tune up Power (dBm)	24.00	24.00
Reported 1g SAR (W/kg)	0.675	0.640	Reported 1g SAR (W/kg)	0.150	0.070
Duty Cycle	100.00%	50.00%	Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	58.88	58.74	Frame Averaged (mW)	251.19	125.59
Linearity SAR (W/kg)	0.673		Linearity SAR (W/kg)	0.075	
% deviation from expected linearity		-4.96%	% deviation from expected linearity		-6.67%
FR1 n77 Part 27Q(HPUE) PA (Reference Designator) Ant 8-Linearity Data for Head			FR1 n77 Part 27Q(HPUE) PA (Reference Designator) Ant 9-Linearity Data for Head		
	FR1 n77 Part 27Q (Power Class 3)	FR1 n77 Part 27Q (Power Class 2)		FR1 n77 Part 27Q (Power Class 3)	FR1 n77 Part 27Q (Power Class 2)
Maximum Tune up Power (dBm)	16.00	19.00	Maximum Tune up Power (dBm)	24.00	27.00
Reported 1g SAR (W/kg)	0.318	0.293	Reported 1g SAR (W/kg)	0.329	0.299
Duty Cycle	100.00%	50.00%	Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	39.81	39.72	Frame Averaged (mW)	251.19	250.59
Linearity SAR (W/kg)	0.317		Linearity SAR (W/kg)	0.328	
% deviation from expected linearity		-7.64%	% deviation from expected linearity		-8.90%
FR1 n77 Part 27O(HPUE) Ant 8-Linearity Data for Body-worn			FR1 n77 Part 27O(HPUE) Ant 9-Linearity Data for Body-worn		
	FR1 n77 Part 27O (Power Class 3)	FR1 n77 Part 27O (Power Class 2)		FR1 n77 Part 27O (Power Class 3)	FR1 n77 Part 27O (Power Class 2)
Maximum Tune up Power (dBm)	16.40	19.40	Maximum Tune up Power (dBm)	20.20	22.00
Reported 1g SAR (W/kg)	0.911	0.847	Reported 1g SAR (W/kg)	0.686	0.484
Duty Cycle	100.00%	50.00%	Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	43.65	43.55	Frame Averaged (mW)	104.71	79.24
Linearity SAR (W/kg)	0.909		Linearity SAR (W/kg)	0.519	
% deviation from expected linearity		-6.80%	% deviation from expected linearity		-6.77%
FR1 n77 Part 27O(HPUE) PA (Reference Designator) Ant 8-Linearity Data for Body-worn			FR1 n77 Part 27O(HPUE) PA (Reference Designator) Ant 9-Linearity Data for Body-worn		
	FR1 n77 Part 27O (Power Class 3)	FR1 n77 Part 27O (Power Class 2)		FR1 n77 Part 27O (Power Class 3)	FR1 n77 Part 27O (Power Class 2)
Maximum Tune up Power (dBm)	15.00	18.00	Maximum Tune up Power (dBm)	20.20	23.20
Reported 1g SAR (W/kg)	0.742	0.732	Reported 1g SAR (W/kg)	0.603	0.638
Duty Cycle	100.00%	50.00%	Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	31.62	31.55	Frame Averaged (mW)	104.71	104.46
Linearity SAR (W/kg)	0.740		Linearity SAR (W/kg)	0.602	
% deviation from expected linearity		-1.11%	% deviation from expected linearity		6.06%
FR1 n77 Part 27Q(HPUE) Ant 8-Linearity Data for Body-worn			FR1 n77 Part 27Q(HPUE) Ant 9-Linearity Data for Body-worn		
	FR1 n77 Part 27Q (Power Class 3)	FR1 n77 Part 27Q (Power Class 2)		FR1 n77 Part 27Q (Power Class 3)	FR1 n77 Part 27Q (Power Class 2)
Maximum Tune up Power (dBm)	16.40	19.40	Maximum Tune up Power (dBm)	20.20	23.20
Reported 1g SAR (W/kg)	0.745	0.702	Reported 1g SAR (W/kg)	0.744	0.733
Duty Cycle	100.00%	50.00%	Duty Cycle	100.00%	50.00%



FCC SAR Test Report

Report No. : FA591602

Frame Averaged (mW)	43.65	43.55		Frame Averaged (mW)	104.71	104.46
Linearity SAR (W/kg)	0.743			Linearity SAR (W/kg)	0.742	
% deviation from expected linearity		-5.55%		% deviation from expected linearity		-1.24%
FR1 n77 Part 27Q(HPUE) PA (Reference Designator) Ant 8-Linearity Data for Body-worn				FR1 n77 Part 27Q(HPUE) PA (Reference Designator) Ant 9-Linearity Data for Body-worn		
	FR1 n77 Part 27Q (Power Class 3)	FR1 n77 Part 27Q (Power Class 2)			FR1 n77 Part 27Q (Power Class 3)	FR1 n77 Part 27Q (Power Class 2)
Maximum Tune up Power (dBm)	15.00	18.00		Maximum Tune up Power (dBm)	20.20	23.20
Reported 1g SAR (W/kg)	0.847	0.780		Reported 1g SAR (W/kg)	1.188	1.168
Duty Cycle	100.00%	50.00%		Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	31.62	31.55		Frame Averaged (mW)	104.71	104.46
Linearity SAR (W/kg)	0.845			Linearity SAR (W/kg)	1.185	
% deviation from expected linearity		-7.69%		% deviation from expected linearity		-1.45%
FR1 n77 Part 27Q(HPUE) Ant 8-Linearity Data for Hotspot				FR1 n77 Part 27Q(HPUE) Ant 9-Linearity Data for Hotspot		
	FR1 n77 Part 27Q (Power Class 3)	FR1 n77 Part 27Q (Power Class 2)			FR1 n77 Part 27Q (Power Class 3)	FR1 n77 Part 27Q (Power Class 2)
Maximum Tune up Power (dBm)	14.70	17.70		Maximum Tune up Power (dBm)	20.20	22.00
Reported 1g SAR (W/kg)	0.610	0.569		Reported 1g SAR (W/kg)	0.686	0.491
Duty Cycle	100.00%	50.00%		Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	29.51	29.44		Frame Averaged (mW)	104.71	79.24
Linearity SAR (W/kg)	0.609			Linearity SAR (W/kg)	0.519	
% deviation from expected linearity		-6.50%		% deviation from expected linearity		-5.42%
FR1 n77 Part 27Q(HPUE) PA (Reference Designator) Ant 8-Linearity Data for Hotspot				FR1 n77 Part 27Q(HPUE) PA (Reference Designator) Ant 9-Linearity Data for Hotspot		
	FR1 n77 Part 27Q (Power Class 3)	FR1 n77 Part 27Q (Power Class 2)			FR1 n77 Part 27Q (Power Class 3)	FR1 n77 Part 27Q (Power Class 2)
Maximum Tune up Power (dBm)	13.00	16.00		Maximum Tune up Power (dBm)	20.20	23.20
Reported 1g SAR (W/kg)	0.651	0.610		Reported 1g SAR (W/kg)	0.603	0.638
Duty Cycle	100.00%	50.00%		Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	19.95	19.91		Frame Averaged (mW)	104.71	104.46
Linearity SAR (W/kg)	0.649			Linearity SAR (W/kg)	0.602	
% deviation from expected linearity		-6.08%		% deviation from expected linearity		6.06%
FR1 n77 Part 27Q(HPUE) Ant 8-Linearity Data for Hotspot				FR1 n77 Part 27Q(HPUE) Ant 9-Linearity Data for Hotspot		
	FR1 n77 Part 27Q (Power Class 3)	FR1 n77 Part 27Q (Power Class 2)			FR1 n77 Part 27Q (Power Class 3)	FR1 n77 Part 27Q (Power Class 2)
Maximum Tune up Power (dBm)	14.70	17.70		Maximum Tune up Power (dBm)	20.20	23.20
Reported 1g SAR (W/kg)	0.570	0.517		Reported 1g SAR (W/kg)	0.744	0.750
Duty Cycle	100.00%	50.00%		Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	29.51	29.44		Frame Averaged (mW)	104.71	104.46
Linearity SAR (W/kg)	0.569			Linearity SAR (W/kg)	0.742	
% deviation from expected linearity		-9.08%		% deviation from expected linearity		1.05%
FR1 n77 Part 27Q(HPUE) PA (Reference Designator) Ant 8-Linearity Data for Hotspot				FR1 n77 Part 27Q(HPUE) PA (Reference Designator) Ant 9-Linearity Data for Hotspot		
	FR1 n77 Part 27Q (Power Class 3)	FR1 n77 Part 27Q (Power Class 2)			FR1 n77 Part 27Q (Power Class 3)	FR1 n77 Part 27Q (Power Class 2)
Maximum Tune up Power (dBm)	13.00	16.00		Maximum Tune up Power (dBm)	20.20	23.20
Reported 1g SAR (W/kg)	0.373	0.362		Reported 1g SAR (W/kg)	1.032	0.971
Duty Cycle	100.00%	50.00%		Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	19.95	19.91		Frame Averaged (mW)	104.71	104.46
Linearity SAR (W/kg)	0.372			Linearity SAR (W/kg)	1.030	
% deviation from expected linearity		-2.72%		% deviation from expected linearity		-5.69%

FR1 n77 Part 27O(HPUE) Ant 8-Linearity Data for Extremity		
	FR1 n77 Part 27O (Power Class 3)	FR1 n77 Part 27O (Power Class 2)
Maximum Tune up Power (dBm)	20.60	23.60
Reported 10g SAR (W/kg)	1.946	1.917
Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	114.82	114.54
Linearity SAR (W/kg)	1.941	
% deviation from expected linearity		-1.26%
FR1 n77 Part 27O(HPUE) PA (Reference Designator) Ant 8-Linearity Data for Extremity		
	FR1 n77 Part 27O (Power Class 3)	FR1 n77 Part 27O (Power Class 2)
Maximum Tune up Power (dBm)	19.00	22.00
Reported 10g SAR (W/kg)	2.013	1.811
Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	79.43	79.24
Linearity SAR (W/kg)	2.008	
% deviation from expected linearity		-9.82%
FR1 n77 Part 27Q(HPUE) Ant 8-Linearity Data for Extremity		
	FR1 n77 Part 27O (Power Class 3)	FR1 n77 Part 27O (Power Class 2)
Maximum Tune up Power (dBm)	20.60	23.60
Reported 10g SAR (W/kg)	1.990	1.934
Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	114.82	114.54
Linearity SAR (W/kg)	1.985	
% deviation from expected linearity		-2.58%
FR1 n77 Part 27Q(HPUE) PA (Reference Designator) Ant 8-Linearity Data for Extremity		
	FR1 n77 Part 27O (Power Class 3)	FR1 n77 Part 27O (Power Class 2)
Maximum Tune up Power (dBm)	19.00	22.00
Reported 10g SAR (W/kg)	1.632	1.609
Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	79.43	79.24
Linearity SAR (W/kg)	1.628	
% deviation from expected linearity		-1.18%

Sensor off

LTE Band 41(HPUE) Ant 9-Linearity Data for Body-worn			LTE Band 41(HPUE) Ant 1-Linearity Data for Body-worn		
	LTE Band 41 (Power Class 3)	LTE Band 41 (Power Class 2)		LTE Band 41 (Power Class 3)	LTE Band 41 (Power Class 2)
Maximum Tune up Power (dBm)	24.00	27.00	Maximum Tune up Power (dBm)	24.00	27.00
Reported 1g SAR (W/kg)	0.515	0.692	Reported 1g SAR (W/kg)	0.608	0.763
Duty Cycle	63.30%	43.30%	Duty Cycle	63.30%	43.30%
Frame Averaged (mW)	159.00	217.01	Frame Averaged (mW)	159.00	217.01
Linearity SAR (W/kg)	0.703		Linearity SAR (W/kg)	0.830	
% deviation from expected linearity		-1.55%	% deviation from expected linearity		-8.05%

LTE Band 41(HPUE) Ant 9-Linearity Data for Extremity			LTE Band 41(HPUE) Ant 1-Linearity Data for Extremity		
	LTE Band 41 (Power Class 3)	LTE Band 41 (Power Class 2)		LTE Band 41 (Power Class 3)	LTE Band 41 (Power Class 2)
Maximum Tune up Power (dBm)	24.00	27.00	Maximum Tune up Power (dBm)	24.00	27.00
Reported 10g SAR (W/kg)	1.602	1.993	Reported 10g SAR (W/kg)	1.815	2.249
Duty Cycle	63.30%	43.30%	Duty Cycle	63.30%	43.30%
Frame Averaged (mW)	159.00	217.01	Frame Averaged (mW)	159.00	217.01
Linearity SAR (W/kg)	2.186		Linearity SAR (W/kg)	2.477	
% deviation from expected linearity		-8.85%	% deviation from expected linearity		-9.21%

LTE Band 41(HPUE) Ant 6-Linearity Data for Body-worn			LTE Band 41(HPUE) Ant 3-Linearity Data for Body-worn		
	LTE Band 41 (Power Class 3)	LTE Band 41 (Power Class 2)		LTE Band 41 (Power Class 3)	LTE Band 41 (Power Class 2)
Maximum Tune up Power (dBm)	23.00	26.00	Maximum Tune up Power (dBm)	20.00	23.00
Reported 1g SAR (W/kg)	0.283	0.377	Reported 1g SAR (W/kg)	0.272	0.341
Duty Cycle	63.30%	43.30%	Duty Cycle	63.30%	43.30%
Frame Averaged (mW)	126.30	172.38	Frame Averaged (mW)	63.30	86.39
Linearity SAR (W/kg)	0.386		Linearity SAR (W/kg)	0.371	
% deviation from expected linearity		-2.40%	% deviation from expected linearity		-8.15%

FR1 n41(HPUE) Ant 9-Linearity Data for Body-worn			FR1 n41(HPUE) PA (Reference Designator) Ant 1-Linearity Data for Body-worn		
	FR1 n41 (Power Class 3)	FR1 n41 (Power Class 2)		FR1 n41 (Power Class 3)	FR1 n41 (Power Class 2)
Maximum Tune up Power (dBm)	25.00	28.00	Maximum Tune up Power (dBm)	24.00	27.00
Reported 1g SAR (W/kg)	0.606	0.581	Reported 1g SAR (W/kg)	0.524	0.521
Duty Cycle	100.00%	50.00%	Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	316.23	315.48	Frame Averaged (mW)	251.19	250.59
Linearity SAR (W/kg)	0.605		Linearity SAR (W/kg)	0.523	
% deviation from expected linearity		-3.90%	% deviation from expected linearity		-0.34%

FR1 n41(HPUE) Ant 9-Linearity Data for Extremity			FR1 n41(HPUE) PA (Reference Designator) Ant 1-Linearity Data for Extremity		
	FR1 n41 (Power Class 3)	FR1 n41 (Power Class 2)		FR1 n41 (Power Class 3)	FR1 n41 (Power Class 2)
Maximum Tune up Power (dBm)	25.00	26.00	Maximum Tune up Power (dBm)	24.00	27.00
Reported 10g SAR (W/kg)	1.613	1.092	Reported 10g SAR (W/kg)	1.378	1.352
Duty Cycle	100.00%	50.00%	Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	316.23	199.05	Frame Averaged (mW)	251.19	250.59
Linearity SAR (W/kg)	1.015		Linearity SAR (W/kg)	1.375	
% deviation from expected linearity		7.55%	% deviation from expected linearity		-1.65%

FR1 n41(HPUE) Ant 6-Linearity Data for Body-worn			FR1 n41(HPUE) PA (Reference Designator) Ant 3-Linearity Data for Body-worn		
	FR1 n41 (Power Class 3)	FR1 n41 (Power Class 2)		FR1 n41 (Power Class 3)	FR1 n41 (Power Class 2)
Maximum Tune up Power (dBm)	25.00	26.00	Maximum Tune up Power (dBm)	23.00	23.00
Reported 1g SAR (W/kg)	0.300	0.178	Reported 1g SAR (W/kg)	0.322	0.164
Duty Cycle	100.00%	50.00%	Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	316.23	199.05	Frame Averaged (mW)	199.53	99.76
Linearity SAR (W/kg)	0.189		Linearity SAR (W/kg)	0.161	
% deviation from expected linearity		-5.74%	% deviation from expected linearity		1.86%

FR1 n41(HPUE) Ant 3-Linearity Data for Extremity		
	FR1 n41 (Power Class 3)	FR1 n41 (Power Class 2)
Maximum Tune up Power (dBm)	22.00	22.00
Reported 1g SAR (W/kg)	0.417	0.209
Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	158.49	79.24
Linearity SAR (W/kg)	0.209	
% deviation from expected linearity		0.24%

FR1 n77 Part 27O(HPUE) Ant 7-Linearity Data for Body-worn			FR1 n77 Part 27O(HPUE) PA (Reference Designator) Ant 4-Linearity Data for Body-worn		
	FR1 n77 Part 27O (Power Class 3)	FR1 n77 Part 27O (Power Class 2)		FR1 n77 Part 27O (Power Class 3)	FR1 n77 Part 27O (Power Class 2)
Maximum Tune up Power (dBm)	24.00	27.00	Maximum Tune up Power (dBm)	24.00	27.00
Reported 1g SAR (W/kg)	0.712	0.694	Reported 1g SAR (W/kg)	0.435	0.433
Duty Cycle	100.00%	50.00%	Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	251.19	250.59	Frame Averaged (mW)	251.19	250.59
Linearity SAR (W/kg)	0.710		Linearity SAR (W/kg)	0.434	
% deviation from expected linearity		-2.30%	% deviation from expected linearity		-0.22%
FR1 n77 Part 27Q(HPUE) Ant 7-Linearity Data for Body-worn			FR1 n77 Part 27Q(HPUE) PA (Reference Designator) Ant 4-Linearity Data for Body-worn		
	FR1 n77 Part 27Q (Power Class 3)	FR1 n77 Part 27Q (Power Class 2)		FR1 n77 Part 27Q (Power Class 3)	FR1 n77 Part 27Q (Power Class 2)
Maximum Tune up Power (dBm)	24.00	27.00	Maximum Tune up Power (dBm)	24.00	27.00
Reported 1g SAR (W/kg)	0.402	0.425	Reported 1g SAR (W/kg)	0.260	0.243
Duty Cycle	100.00%	50.00%	Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	251.19	250.59	Frame Averaged (mW)	251.19	250.59
Linearity SAR (W/kg)	0.401		Linearity SAR (W/kg)	0.259	
% deviation from expected linearity		5.97%	% deviation from expected linearity		-6.32%
FR1 n77 Part 27O(HPUE) Ant 7-Linearity Data for Extremity			FR1 n77 Part 27O(HPUE) Ant 4-Linearity Data for Extremity		
	FR1 n77 Part 27O (Power Class 3)	FR1 n77 Part 27O (Power Class 2)		FR1 n77 Part 27O (Power Class 3)	FR1 n77 Part 27O (Power Class 2)
Maximum Tune up Power (dBm)	24.00	27.00	Maximum Tune up Power (dBm)	24.00	27.00
Reported 10g SAR (W/kg)	1.097	1.086	Reported 10g SAR (W/kg)	1.500	1.408
Duty Cycle	100.00%	50.00%	Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	251.19	250.59	Frame Averaged (mW)	251.19	250.59
Linearity SAR (W/kg)	1.094		Linearity SAR (W/kg)	1.496	
% deviation from expected linearity		-0.77%	% deviation from expected linearity		-5.91%
FR1 n77 Part 27Q(HPUE) Ant 7-Linearity Data for Extremity			FR1 n77 Part 27Q(HPUE) PA (Reference Designator) Ant 4-Linearity Data for Extremity		
	FR1 n77 Part 27Q (Power Class 3)	FR1 n77 Part 27Q (Power Class 2)		FR1 n77 Part 27Q (Power Class 3)	FR1 n77 Part 27Q (Power Class 2)
Maximum Tune up Power (dBm)	24.00	27.00	Maximum Tune up Power (dBm)	24.00	27.00
Reported 10g SAR (W/kg)	0.609	0.610	Reported 10g SAR (W/kg)	0.428	0.417
Duty Cycle	100.00%	50.00%	Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	251.19	250.59	Frame Averaged (mW)	251.19	250.59
Linearity SAR (W/kg)	0.608		Linearity SAR (W/kg)	0.427	
% deviation from expected linearity		0.40%	% deviation from expected linearity		-2.34%

FR1 n77 Part 27O(HPUE) Ant 8-Linearity Data for Body-worn			FR1 n77 Part 27O(HPUE) Ant 9-Linearity Data for Body-worn		
	FR1 n77 Part 27O (Power Class 3)	FR1 n77 Part 27O (Power Class 2)		FR1 n77 Part 27O (Power Class 3)	FR1 n77 Part 27O (Power Class 2)
Maximum Tune up Power (dBm)	24.00	26.00	Maximum Tune up Power (dBm)	22.00	22.00
Reported 1g SAR (W/kg)	0.685	0.533	Reported 1g SAR (W/kg)	0.334	0.169
Duty Cycle	100.00%	50.00%	Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	251.19	199.05	Frame Averaged (mW)	158.49	79.24
Linearity SAR (W/kg)	0.543		Linearity SAR (W/kg)	0.167	
% deviation from expected linearity		-1.81%	% deviation from expected linearity		1.20%
FR1 n77 Part 27Q(HPUE) Ant 8-Linearity Data for Body-worn			FR1 n77 Part 27Q(HPUE) PA (Reference Designator) Ant 9-Linearity Data for Body-worn		
	FR1 n77 Part 27Q (Power Class 3)	FR1 n77 Part 27Q (Power Class 2)		FR1 n77 Part 27Q (Power Class 3)	FR1 n77 Part 27Q (Power Class 2)
Maximum Tune up Power (dBm)	24.00	26.00	Maximum Tune up Power (dBm)	24.00	27.00



FCC SAR Test Report

Report No. : FA591602

Reported 1g SAR (W/kg)	0.457	0.366		Reported 1g SAR (W/kg)	0.577	0.566
Duty Cycle	100.00%	50.00%		Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	251.19	199.05		Frame Averaged (mW)	251.19	250.59
Linearity SAR (W/kg)	0.362			Linearity SAR (W/kg)	0.576	
% deviation from expected linearity		1.06%		% deviation from expected linearity		-1.67%

FR1 n77 Part 27O(HPUE) Ant 8-Linearity Data for Extremity		
	FR1 n77 Part 27O (Power Class 3)	FR1 n77 Part 27O (Power Class 2)
Maximum Tune up Power (dBm)	24.00	26.00
Reported 10g SAR (W/kg)	0.737	0.603
Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	251.19	199.05
Linearity SAR (W/kg)	0.584	
% deviation from expected linearity		3.25%
FR1 n77 Part 27Q(HPUE) Ant 8-Linearity Data for Extremity		
	FR1 n77 Part 27O (Power Class 3)	FR1 n77 Part 27O (Power Class 2)
Maximum Tune up Power (dBm)	24.00	26.00
Reported 10g SAR (W/kg)	0.555	0.465
Duty Cycle	100.00%	50.00%
Frame Averaged (mW)	251.19	199.05
Linearity SAR (W/kg)	0.440	
% deviation from expected linearity		5.73%

16. Simultaneous Transmission Analysis

No.	Simultaneous Transmission Configurations	Portable Handset			
		Head	Body-worn	Hotspot	Product specific 10g SAR
1.	WWAN + 2.4GHz WLAN	Yes	Yes	Yes	Yes
2.	WWAN + 5GHz WLAN	Yes	Yes	Yes	Yes
3.	WWAN + 6GHz WLAN	Yes	Yes		Yes
4.	WWAN + Bluetooth	Yes	Yes	Yes	Yes
5.	5GHz WLAN + Bluetooth	Yes	Yes	Yes	Yes
6.	6GHz WLAN + Bluetooth	Yes	Yes		Yes
7.	WWAN +5GHz WLAN + Bluetooth	Yes	Yes	Yes	Yes
8.	WWAN +6GHz WLAN + Bluetooth	Yes	Yes		Yes
9.	WWAN + 2.4GHz WLAN+ NFC				Yes
10.	WWAN + 5GHz/6GHz WLAN+ NFC				Yes
11.	WWAN + Bluetooth+ NFC				Yes
12.	5GHz/6GHz WLAN + Bluetooth+ NFC				Yes
13.	WWAN +5GHz/6GHz WLAN + Bluetooth+ NFC				Yes

General Note:

- Simultaneous transmission analysis for all bands and all position are based on max SAR results chosen between the original filing and Spot check Verification Data.
- This device supports VoIP in GPRS, EGPRS, WCDMA, LTE and 5GNR (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.
- Qualcomm Smart Transmit algorithm support to WWAN except WIFI/BT and NFC. And this device supports inter-band ULCA and EN-DC combination operations with component carriers from different antenna groups. Each antenna group has controlled the total RF exposure from all transmitter to not exceed FCC limit. Therefore, in this report, it is evaluated whether the sum of the groups of each antenna does not exceed FCC limit or spatial separation is applied. In addition, each antenna group need to satisfy simultaneous transmission analysis with External radios (WIFI/BT and NFC) in this report.
- 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). WLAN6GHz has no hotspot function.
- The worst case 5 GHz WLAN SAR for each configuration was used for SAR summation.
- According to the EUT characteristic, WLAN 5GHz/6GHz and Bluetooth can transmit simultaneously.
- According to the EUT characteristic, WLAN 5GHz/6GHz and WLAN 2.4GHz can't transmit simultaneously.
- According to the EUT characteristic, WLAN 2.4GHz/6GHz and Bluetooth can't transmit simultaneously.
- The Bluetooth can transmit in SISO mode only and they have no MIMO mode.
- NFC can transmit simultaneously with other Radios in extremity exposure condition.
- For Headset SAR and non-Headset SAR always chose higher SAR to do co-located analysis.
- For distance SAR and non-distance SAR at extremity exposure conditions always chose higher SAR to do co-located analysis.
- For simultaneously analysis, since the SAR summation of 3 transmitters can cover others combination of 2 transmitters, therefore in this section did not additional to evaluate 2TX combination of simultaneously transmission.
- For standalone WWAN, always choose the highest SAR among all WWAN bands within the selected antenna for each exposure position to perform simultaneous transmission analysis with WLAN/BT. This is the worst co-located analysis and can represent each band.
- 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.
 - $SPLSR = (SAR1 + SAR2)^{1.5} / (\min. \text{separation distance, mm})$, 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.

- iv) Simultaneously transmission SAR measurement, and the reported multi-band 1g SAR < 1.6W/kg and 10g SAR < 4.0W/kg.
- v) The SPLSR calculated results please refer to section 16.6.

16.1 Sub6 Antenna Groups

Qualcomm® Smart Transmit™ 3.0 of Smart Transmit (GEN2) Feature operates based on pre-defined sub6 antenna groups (AG). Sub6 Tx antennas in the device are grouped based on spatial variation of RF exposure distributions, where the RF exposure of one AG is mutually exclusive from other AG. This is accomplished by demonstrating below conditions for all exposure positions under each DSI for a given exposure category.

- 1) Case 1: Demonstrate that Sum of maximum reported SAR from each of the sub6 AGs and the reported normalized SAR values from radios outside Smart Transmit should be less than regulatory limits for each supported DSI. This condition must be demonstrated for all antenna combinations of sub6 AGs.
 - i. For a given DSI, obtain the highest *reported* SAR for each antenna out of all supported technologies and frequency bands. Obtain the maximum *reported* SAR for each AG by taking the maximum out of *reported* SAR for all antennas belonging to each AG.
 - ii. Demonstrate that the sum of maximum reported SAR (normalized to regulatory limit) from each of the sub6 AGs and the sum of reported SAR (normalized to regulatory limit) from all supported radios outside of Smart Transmit should be less than 1.0
- 2) Case 2: If the Case 1 is NOT met, then for a given antenna grouping scheme plus external radios/antennas (ERs) (referred to as 'configuration'), demonstrate all AG pairs, all ER pairs and all (AG, ER) pairs in the configuration meet SPLSR criteria (Section 4.3.2 (c) in FCC KDB 447498 D01 v06) for each exposure position under each supported DSI. For a given exposure position under a given DSI, prove all AG pairs, all ER pairs and all (AG, ER) pairs (if there are external radios outside Smart Transmit) in the configuration meet SPLSR.

This device supports two sub6 AG: AG0 and AG1, the detailed please refer to the below table:

Antenna Group 1 (AG0)	ANT1 & ANT3 & ANT4 & ANT6 & ANT7 & ANT8
Antenna Group 0 (AG1)	ANT0 & ANT9

- 3) This model's multi_Tx_factor is 1.0.

The conditions are verified through the following criterias:

- i) (SAR1 + SAR2 criteria): If SPLSR criteria is not used, then the highest reported SAR at *Plimit* for each antenna should be obtained out of all supported technologies and frequency bands for each DSI. Demonstrate that the sum of reported SAR of one antenna from each of the sub6 AGs and the sum of RF exposure from all supported radios outside of Smart Transmit should be less than the regulatory limit as given below for each DSI.

1. Obtain the worst-case reported SAR for each antenna group (i.e., maximum *reported* SAR at *Plimit* out of all supported technologies, frequency bands and antennas in AG0 and AG1), denoted as max.SAR.AG0 and max.SAR.AG1, and obtain the worst-case RF exposure for each external radio, and demonstrate that the sum of these RF exposures meets: { [max.SAR.AG0+ max.SAR.AG1] + WIFI/BT worst-case reported SAR } ≤ 1.6 (for 1g, or 4.0 for 10g). (WIFI/BT worst-case reported SAR is the worst SAR in all combinations of WIFI and BT simultaneous transmission)

- ii) (SPLSR criteria): For each antenna, obtain the highest reported SAR value at *Plimit* out of all supported technologies for each frequency band. Using these values, demonstrate for a given DSI that every antenna from one sub6 AG meets SPLSR criteria with every antenna in another sub6 AG for all frequency bands. This criteria must be demonstrated for all antenna pair combinations irrespective of supported simultaneous transmission scenarios as given below for each DSI:

- a. SPLSR criteria should be met for all antenna pair combinations of AG0 and AG1. As it can be seen, these include all combinations of antenna groups, antennas, and frequency bands.
- b. Obtain combined SAR per AG: Obtain the worst-case conservative combined SAR and its peak location for each AG.
- c. Use the 'closest' peak location out of all antennas of AGj to evaluate SPLSR with other AGs in the configuration. Note, by 'closest', select the peak location out of all antennas (ε AGj) that is closest to the peak location of other AG where SPLSR is evaluated.

- iii) (combination of SPLSR & SAR1+SAR2 criteria): If SPLSR criteria for all the combinations of sub6 antenna groups in (i) is demonstrated to show that each AG is mutually exclusive from other AGs, and if the WIFI/BT antennas supported outside of Smart Transmit do not meet SPLSR criteria, then the condition in (ii) reduces to: {max.SAR.AG0 + worst-case reported SAR} ≤ 1.6 and {max.SAR.AG1+ worst-case reported SAR } ≤ 1.6 for compliance demonstration (for 1g, or 4.0 for 10g).

For summed SAR results and SPLSR detailed analysis, please refer to section 16.2 / 16.3 / 16.4 / 16.5 / 16.6 of this report. All of the combinations of sub6 antenna groups are sufficient to show that AG0 is mutually exclusive from AG1

and that simultaneous transmission cases will not exceed the SAR limit and therefore no measured volumetric simultaneous SAR summation is required per FCC KDB Publication 447498 D01v06 and IEEE 1528- 2013 Section 6.3.4.1.

16.2 Head Exposure Conditions

General Note: The unit of SAR evaluation is W/kg.

Simultaneous Transmission Evaluation of WWAN+WLAN+BT:

<AG0 maximum reported SAR>:

Test Position	Ant1	Ant3	Ant4	Ant6	Ant7	Ant8	MAX
Right Cheek	0.900	0.362	0.895	0.881	0.519	0.210	0.900
Right Tilted	0.904	0.414	0.517	0.219	0.650	0.210	0.904
Left Cheek	0.759	0.895	0.774	0.861	0.787	0.890	0.895
Left Tilted	0.675	0.842	0.244	0.122	0.885	0.680	0.885

<AG1 maximum reported SAR>:

Test Position	Ant0	Ant9	MAX
Right Cheek	0.294	0.227	0.294
Right Tilted	0.320	0.275	0.320
Left Cheek	0.216	0.372	0.372
Left Tilted	0.221	0.200	0.221

<WLAN2.4GHz/5GHz/6GHz+BT Worse-case SAR>:

Test Position	WLAN2.4GHz Ant2+3	BT Ant2	BT Ant3	WLAN5GHz Ant5+8	WLAN6GHz Ant5+8	WLAN5GHz Ant5+8+BT Ant2	WLAN5GHz Ant5+8+BT Ant3	WLAN6GHz Ant5+8+BT Ant2	WLAN6GHz Ant5+8+BT Ant3	MAX
Right Cheek	0.187	0.111	0.110	0.162	0.106	0.273	0.272	0.217	0.216	0.273
Right Tilted	0.211	0.021	0.129	0.136	0.140	0.157	0.265	0.161	0.269	0.269
Left Cheek	0.370	0.162	0.284	0.387	0.413	0.549	0.671	0.575	0.697	0.697
Left Tilted	0.387	0.034	0.236	0.240	0.328	0.274	0.476	0.362	0.564	0.564

<Simultaneous Transmission analysis of AG0 + AG1 + WLAN+BT Worse-case>:

Test Position	AG0	AG1	WLAN/BT worst case	AG1+AG0+WLAN +BT worse case
Right Cheek	0.900	0.294	0.273	1.47
Right Tilted	0.904	0.320	0.269	1.49
Left Cheek	0.895	0.372	0.697	1.96
Left Tilted	0.885	0.221	0.564	1.67

Note: The results marked yellow in above table refers to the detailed analysis corresponding to each position below tables.

Left Cheek					
Ant combination	AG1	AG0	WLAN/BT worst case	AG1+AG0+WLAN +BT worse case	SPLSR
	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	
Ant0-Ant1	0.216	0.759	0.697	1.67	1
Ant0-Ant3	0.216	0.895	0.697	1.81	2
Ant0-Ant4	0.216	0.774	0.697	1.69	3
Ant0-Ant6	0.216	0.861	0.697	1.77	4
Ant0-Ant7	0.216	0.787	0.697	1.70	5
Ant0-Ant8	0.216	0.890	0.697	1.80	6
Ant9-Ant1	0.372	0.759	0.697	1.83	7
Ant9-Ant3	0.372	0.895	0.697	1.96	8
Ant9-Ant4	0.372	0.774	0.697	1.84	9
Ant9-Ant6	0.372	0.861	0.697	1.93	10
Ant9-Ant7	0.372	0.787	0.697	1.86	11
Ant9-Ant8	0.372	0.890	0.697	1.96	12

Left Tilted					
Ant combination	AG1	AG0	WLAN/BT worst case	AG1+AG0+WLAN +BT worse case	SPLSR
	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	
Ant0-Ant1	0.221	0.675	0.564	1.46	
Ant0-Ant3	0.221	0.842	0.564	1.63	13
Ant0-Ant4	0.221	0.244	0.564	1.03	
Ant0-Ant6	0.221	0.122	0.564	0.91	
Ant0-Ant7	0.221	0.885	0.564	1.67	14
Ant0-Ant8	0.221	0.680	0.564	1.47	
Ant9-Ant1	0.200	0.675	0.564	1.44	
Ant9-Ant3	0.200	0.842	0.564	1.61	15
Ant9-Ant4	0.200	0.244	0.564	1.01	
Ant9-Ant6	0.200	0.122	0.564	0.89	
Ant9-Ant7	0.200	0.885	0.564	1.65	16
Ant9-Ant8	0.200	0.680	0.564	1.44	

<Simultaneous Transmission analysis of WLAN/BT only without WWAN>:

Test Position	WLAN2.4GHz Ant2+3	BT Ant2	BT Ant3	WLAN5GHz Ant5+8	WLAN6GHz Ant5+8	WLAN5GHz Ant5+8+BT Ant2	WLAN5GHz Ant5+8+BT Ant3	WLAN6GHz Ant5+8+BT Ant2	WLAN6GHz Ant5+8+BT Ant3	MAX
Right Cheek	0.698	0.111	0.145	0.499	0.106	0.610	0.644	0.217	0.251	0.70
Right Tilted	0.785	0.021	0.170	0.490	0.140	0.511	0.660	0.161	0.310	0.79
Left Cheek	1.380	0.162	0.413	1.177	0.413	1.339	1.590	0.575	0.826	1.59
Left Tilted	1.413	0.034	0.183	0.783	0.328	0.817	0.966	0.362	0.511	1.41

16.3 Hotspot Exposure Conditions

General Note: The unit of SAR evaluation is W/kg.

Simultaneous Transmission Evaluation of WWAN+WLAN+BT:

<AG0 maximum reported SAR>:

Test Position	Ant1	Ant3	Ant4	Ant6	Ant7	Ant8	MAX
Front	0.442	0.347	0.201	0.373	0.210	0.277	0.442
Back	0.691	0.642	0.642	0.515	0.369	0.651	0.691
Left Side	0.270	0.026	0.448	0.612	0.014	0.011	0.612
Right Side	0.170	0.203	0.008		0.136	0.570	0.570
Top Side	0.656	0.584	0.037	0.053	0.635	0.252	0.656

<AG1 maximum reported SAR>:

Test Position	Ant0	Ant9	MAX
Front 5mm	1.069	1.296	1.296
Back 5mm	1.283	1.304	1.304
Left Side 5mm	0.238	0.685	0.685
Right Side 5mm	0.453	0.426	0.453
Bottom Side 5mm	1.292	1.134	1.292

<WLAN2.4GHz/5GHz/6GHz+BT Worse-case SAR>:

Test Position	WLAN2.4GHz Ant2+3	BT Ant2	BT Ant3	WLAN5GHz Ant5+8	WLAN5GHz Ant5+8+BT Ant2	WLAN5GHz Ant5+8+BT Ant3	MAX
Front	0.359	0.089	0.123	0.256	0.345	0.379	0.379
Back	0.562	0.211	0.181	0.542	0.753	0.723	0.753
Left Side	0.068	0.000	0.000	0.053	0.053	0.053	0.068
Right Side	0.273	0.207	0.035	0.272	0.479	0.307	0.479
Top Side	0.638	0.021	0.264	0.147	0.168	0.411	0.638

<Simultaneous Transmission analysis of AG0 + AG1 + WLAN+BT Worse-case>:

Test Position	AG1	AG0	WLAN/BT worst case	AG1+AG0+WLAN/BT worse case
Front 5mm	1.296	0.442	0.379	2.12
Back 5mm	1.304	0.691	0.753	2.75
Left Side 5mm	0.685	0.612	0.068	1.37
Right Side 5mm	0.453	0.570	0.479	1.50
Top Side 5mm		0.656	0.638	1.29
Bottom Side 5mm	1.292			1.29

Note: The results marked yellow in above table refers to the detailed analysis corresponding to each position below tables.

Front					
Ant combination	AG1	AG0	WLAN/BT worst case	AG1+AG0+WLAN +BT worse case	SPLSR
	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	
Ant0-Ant1	1.069	0.442	0.379	1.89	41
Ant0-Ant3	1.069	0.347	0.379	1.80	42
Ant0-Ant4	1.069	0.201	0.379	1.65	43
Ant0-Ant6	1.069	0.373	0.379	1.82	44
Ant0-Ant7	1.069	0.210	0.379	1.66	45
Ant0-Ant8	1.069	0.277	0.379	1.73	46
Ant9-Ant1	1.296	0.442	0.379	2.12	47
Ant9-Ant3	1.296	0.347	0.379	2.02	48
Ant9-Ant4	1.296	0.201	0.379	1.88	49
Ant9-Ant6	1.296	0.373	0.379	2.05	50
Ant9-Ant7	1.296	0.210	0.379	1.89	51
Ant9-Ant8	1.296	0.277	0.379	1.95	52

Back					
Ant combination	AG1	AG0	WLAN/BT worst case	AG1+AG0+WLAN +BT worse case	SPLSR
	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	
Ant0-Ant1	1.283	0.691	0.753	2.73	53
Ant0-Ant3	1.283	0.642	0.753	2.68	54
Ant0-Ant4	1.283	0.642	0.753	2.68	55
Ant0-Ant6	1.283	0.515	0.753	2.55	56
Ant0-Ant7	1.283	0.369	0.753	2.41	57
Ant0-Ant8	1.283	0.651	0.753	2.69	58
Ant9-Ant1	1.304	0.691	0.753	2.75	59
Ant9-Ant3	1.304	0.642	0.753	2.70	60
Ant9-Ant4	1.304	0.642	0.753	2.70	61
Ant9-Ant6	1.304	0.515	0.753	2.57	62
Ant9-Ant7	1.304	0.369	0.753	2.43	63
Ant9-Ant8	1.304	0.651	0.753	2.71	64

16.4 Body-Worn Accessory Exposure Conditions

General Note: The unit of SAR evaluation is W/kg.

Simultaneous Transmission Evaluation of WWAN+WLAN+BT:

<AG0 maximum reported SAR>:

Test Position	Ant1	Ant3	Ant4	Ant6	Ant7	Ant8	MAX
Front	0.788	0.641	0.305	0.641	0.505	0.393	0.505
Back	0.914	0.888	0.888	0.894	0.920	0.919	0.920

<AG1 maximum reported SAR>:

Test Position	Ant0	Ant9	MAX
Front	1.247	1.299	1.299
Back	1.295	1.304	1.304

<WLAN2.4GHz/5GHz/6GHz+BT Worse-case SAR

Test Position	WLAN2.4GHz Ant2+3	BT Ant2	BT Ant3	WLAN5GHz Ant5+8	WLAN6GHz Ant5+8	WLAN5GHz Ant5+8+BT Ant2	WLAN5GHz Ant5+8+BT Ant3	WLAN6GHz Ant5+8+BT Ant2	WLAN6GHz Ant5+8+BT Ant3	MAX
Front	0.209	0.089	0.123	0.115	0.113	0.204	0.238	0.202	0.236	0.238
Back	0.379	0.211	0.181	0.388	0.456	0.599	0.569	0.667	0.637	0.667

<Simultaneous Transmission analysis of AG0 + AG1 + WLAN+BT Worse-case>:

Test Position	AG0	AG1	WLAN/BT worst case	AG1+AG0+WLAN +BT worse case
Front	1.299	0.505	0.238	2.04
Back	1.304	0.920	0.667	2.89

Note: The results marked yellow in above table refers to the detailed analysis corresponding to each position below tables.

Front					
Ant combination	AG1	AG0	WLAN/BT worst case	AG1+AG0+WLAN +BT worse case	SPLSR
	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	
Ant0-Ant1	1.247	0.788	0.238	2.27	17
Ant0-Ant3	1.247	0.641	0.238	2.13	18
Ant0-Ant4	1.247	0.305	0.238	1.79	19
Ant0-Ant6	1.247	0.641	0.238	2.13	20
Ant0-Ant7	1.247	0.505	0.238	1.99	21
Ant0-Ant8	1.247	0.393	0.238	1.88	22
Ant9-Ant1	1.299	0.788	0.238	2.33	23
Ant9-Ant3	1.299	0.641	0.238	2.18	24
Ant9-Ant4	1.299	0.305	0.238	1.84	25
Ant9-Ant6	1.299	0.641	0.238	2.18	26
Ant9-Ant7	1.299	0.505	0.238	2.04	27
Ant9-Ant8	1.299	0.393	0.238	1.93	28

Back					
Ant combination	AG1	AG0	WLAN/BT worst case	AG1+AG0+WLAN +BT worse case	SPLSR
	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	
Ant0-Ant1	1.295	0.914	0.667	2.88	29
Ant0-Ant3	1.295	0.888	0.667	2.85	30
Ant0-Ant4	1.295	0.888	0.667	2.85	31
Ant0-Ant6	1.295	0.894	0.667	2.86	32
Ant0-Ant7	1.295	0.920	0.667	2.88	33
Ant0-Ant8	1.295	0.919	0.667	2.88	34
Ant9-Ant1	1.304	0.914	0.667	2.89	35
Ant9-Ant3	1.304	0.888	0.667	2.86	36
Ant9-Ant4	1.304	0.888	0.667	2.86	37
Ant9-Ant6	1.304	0.894	0.667	2.87	38
Ant9-Ant7	1.304	0.920	0.667	2.89	39
Ant9-Ant8	1.304	0.919	0.667	2.89	40

<Simultaneous Transmission analysis of WLAN/BT only without WWAN>:

Test Position	WLAN2.4GHz Ant2+3	BT Ant2	BT Ant3	WLAN5GHz Ant5+8	WLAN6GHz Ant5+8	WLAN5GHz Ant5+8+BT Ant2	WLAN5GHz Ant5+8+BT Ant3	WLAN6GHz Ant5+8+BT Ant2	WLAN6GHz Ant5+8+BT Ant3	MAX
Front	0.778	0.129	0.153	0.334	0.113	0.463	0.487	0.242	0.266	0.49
Back	1.377	0.390	0.209	1.154	0.456	1.544	1.363	0.846	0.665	1.54

<Sensor off>

General Note: The unit of SAR evaluation is W/kg.

Simultaneous Transmission Evaluation of WWAN+WLAN+BT:
<AG0 maximum reported SAR>:

Test Position	Ant1	Ant3	Ant4	Ant6	Ant7	Ant8	MAX
Front	0.695	0.341	0.270	0.377	0.391	0.371	0.695
Back	0.854	0.176	0.521	0.294	0.712	0.817	0.854

<AG1 maximum reported SAR>:

Test Position	Ant0	Ant9	MAX
Front	0.930	0.849	0.930
Back	1.062	0.438	1.062

<WLAN2.4GHz/5GHz/6GHz+BT Worse-case SAR

NO	1	2	4	5	5	5	WLAN/BT worse case
Test Position	WLAN2.4GHz Ant6+8	WLAN5GHz Ant5+8	BT Ant2	BT Ant3	WLAN5GHz Ant5+8+BT Ant2	WLAN5GHz Ant5+8+BT Ant3	Summed 1g SAR (W/kg)
Front	0.431	0.336	0.001	0.111	0.337	0.447	0.447
Back	0.289	0.621	0.082	0.112	0.703	0.733	0.733

<Simultaneous Transmission analysis of AG0 + AG1 + WLAN+BT Worse-case>:

Test Position	AG0	AG1	WLAN/BT worst case	AG1+AG0+WLAN /BT worse case
	1g SAR (W/kg)	1g SAR (W/kg)	Summed 1g SAR (W/kg)	Summed 1g SAR (W/kg)
Front	0.695	0.930	0.447	2.07
Back	0.854	1.062	0.733	2.65

Note: The results marked yellow in above table refers to the detailed analysis corresponding to each position below tables.

Front					
Ant combination	AG1	AG0	WLAN/BT worst case	AG1+AG0+WLAN +BT worse case	SPLSR
	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	
Ant0-Ant1	0.930	0.695	0.447	2.07	81
Ant0-Ant3	0.930	0.341	0.447	1.72	82
Ant0-Ant4	0.930	0.270	0.447	1.65	83
Ant0-Ant6	0.930	0.377	0.447	1.75	84
Ant0-Ant7	0.930	0.391	0.447	1.77	85
Ant0-Ant8	0.930	0.371	0.447	1.75	86
Ant9-Ant1	0.849	0.695	0.447	1.99	87
Ant9-Ant3	0.849	0.341	0.447	1.64	88
Ant9-Ant4	0.849	0.270	0.447	1.57	
Ant9-Ant6	0.849	0.377	0.447	1.67	89
Ant9-Ant7	0.849	0.391	0.447	1.69	90
Ant9-Ant8	0.849	0.371	0.447	1.67	91

Back					
Ant combination	AG1	AG0	WLAN/BT worst case	AG1+AG0+WLAN +BT worse case	SPLSR
	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	
Ant0-Ant1	1.062	0.854	0.733	2.65	92
Ant0-Ant3	1.062	0.176	0.733	1.97	93
Ant0-Ant4	1.062	0.521	0.733	2.32	94
Ant0-Ant6	1.062	0.294	0.733	2.09	95
Ant0-Ant7	1.062	0.712	0.733	2.51	96
Ant0-Ant8	1.062	0.817	0.733	2.61	97
Ant9-Ant1	0.438	0.854	0.733	2.03	98
Ant9-Ant3	0.438	0.176	0.733	1.35	
Ant9-Ant4	0.438	0.521	0.733	1.69	99
Ant9-Ant6	0.438	0.294	0.733	1.47	
Ant9-Ant7	0.438	0.712	0.733	1.88	100
Ant9-Ant8	0.438	0.817	0.733	1.99	101

16.5 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.

General Note: The unit of SAR evaluation is W/kg.

Simultaneous Transmission Evaluation of WWAN+WLAN+BT+NFC:

<AG0 maximum reported SAR>:

Test Position	Ant1	Ant3	Ant4	Ant6	Ant7	Ant8	MAX
Front							0.000
Back	2.032	1.242	2.490	1.515	0.821	1.684	2.490
Left Side			1.814	2.482			2.482
Right Side						2.512	2.512
Top Side	2.492	2.383			2.515	1.749	2.515

<AG1 maximum reported SAR>:

Test Position	Ant0	Ant9	MAX
Front	2.812	3.277	3.277
Back	2.153	2.931	2.931
Left Side		1.236	1.236
Right Side			0.000
Bottom Side	3.246	2.513	3.246

<WLAN2.4GHz/5GHz/6GHz+BT Worse-case SAR

Test Position	WLAN2.4GHz Ant2+3	BT Ant2	BT Ant3	WLAN5GHz Ant5+8	WLAN6GHz Ant5+8	WLAN5GHz Ant5+8+BT Ant2	WLAN5GHz Ant5+8+BT Ant3	WLAN6GHz Ant5+8+BT Ant2	WLAN6GHz Ant5+8+BT Ant3	MAX
Front	0.615			0.680	0.228	0.680	0.680	0.228	0.228	0.680
Back	0.717			0.914	0.113	0.914	0.914	0.113	0.113	0.914
Left Side				0.261	0.004	0.261	0.261	0.004	0.004	0.261
Right Side	0.347			0.806	0.403	0.806	0.806	0.403	0.403	0.806
Top Side	0.923			0.306	0.179	0.306	0.306	0.179	0.179	0.923

<Simultaneous Transmission analysis of AG0 + AG1 + WLAN+BT Worse-case+NFC>:

Test Position	AG1	AG0	WLAN/BT worst case	NFC	AG1+AG0+WLAN/BT worse case
Front	3.277		0.680	0.001	3.96
Back	2.931	2.490	0.914	0.024	6.36
Left Side	1.236	2.482	0.261	0.001	3.98
Right Side		2.512	0.806	0.001	3.32
Top Side		2.515	0.923	0.001	3.44
Bottom Side	3.246			0.001	3.25

Note: The results marked yellow in above table refers to the detailed analysis corresponding to each position below tables.

Back						
Ant combination	AG1	AG0	WLAN/BT worst case	NFC	AG1+AG0+WLAN +BT worse case+NFC	SPLSR
	10g SAR (W/kg)	10g SAR (W/kg)	10g SAR (W/kg)	10g SAR (W/kg)	10g SAR (W/kg)	
Ant0-Ant1	2.153	2.032	0.914	0.024	5.12	69
Ant0-Ant3	2.153	1.242	0.914	0.024	4.33	70
Ant0-Ant4	2.153	2.490	0.914	0.024	5.58	71
Ant0-Ant6	2.153	1.515	0.914	0.024	4.61	72
Ant0-Ant7	2.153	0.821	0.914	0.024	3.91	
Ant0-Ant8	2.153	1.684	0.914	0.024	4.78	74
Ant9-Ant1	2.931	2.032	0.914	0.024	5.90	75
Ant9-Ant3	2.931	1.242	0.914	0.024	5.11	76
Ant9-Ant4	2.931	2.490	0.914	0.024	6.36	77
Ant9-Ant6	2.931	1.515	0.914	0.024	5.38	78
Ant9-Ant7	2.931	0.821	0.914	0.024	4.69	79
Ant9-Ant8	2.931	1.684	0.914	0.024	5.55	80

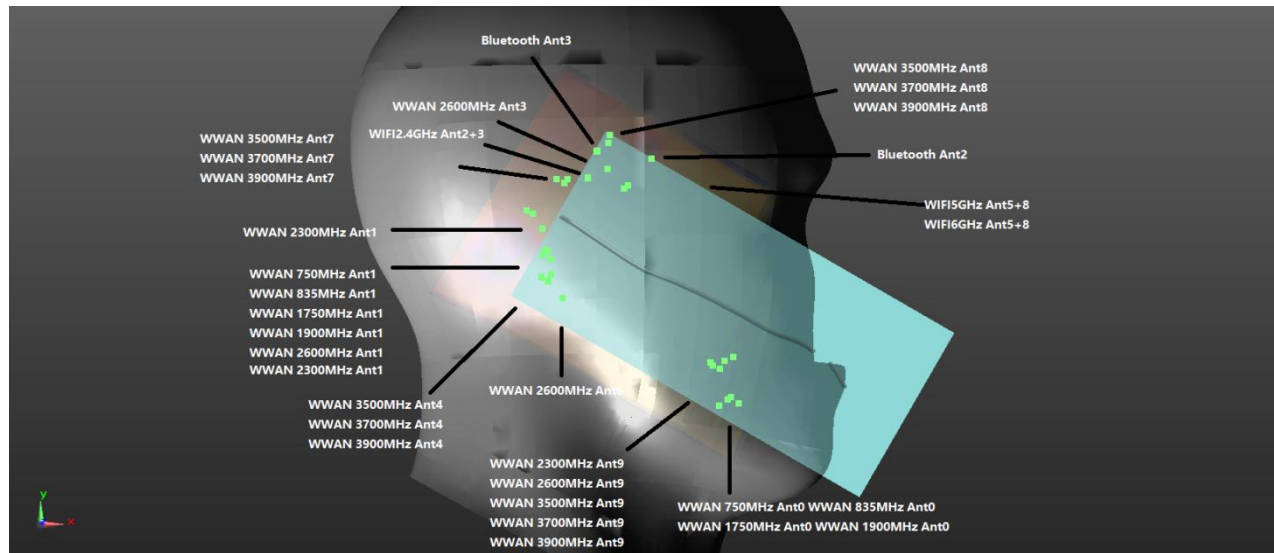
<Simultaneous Transmission analysis of WLAN/BT only without WWAN>:

Test Position	WLAN2.4GHz Ant2+3	BT Ant2	BT Ant3	WLAN5GHz Ant5+8	WLAN6GHz Ant5+8	WLAN5GHz Ant5+8+BT Ant2	WLAN5GHz Ant5+8+BT Ant3	WLAN6GHz Ant5+8+BT Ant2	WLAN6GHz Ant5+8+BT Ant3	MAX
Front	2.446			1.900	0.228	1.900	1.900	0.228	0.228	2.45
Back	1.434			2.994	0.113	2.994	2.994	0.113	0.113	2.99
Left Side				0.261	0.004	0.261	0.261	0.004	0.004	0.26
Right Side	1.133			2.403	0.403	2.403	2.403	0.403	0.403	2.40
Top Side	3.410			0.688	0.179	0.688	0.688	0.179	0.179	3.41

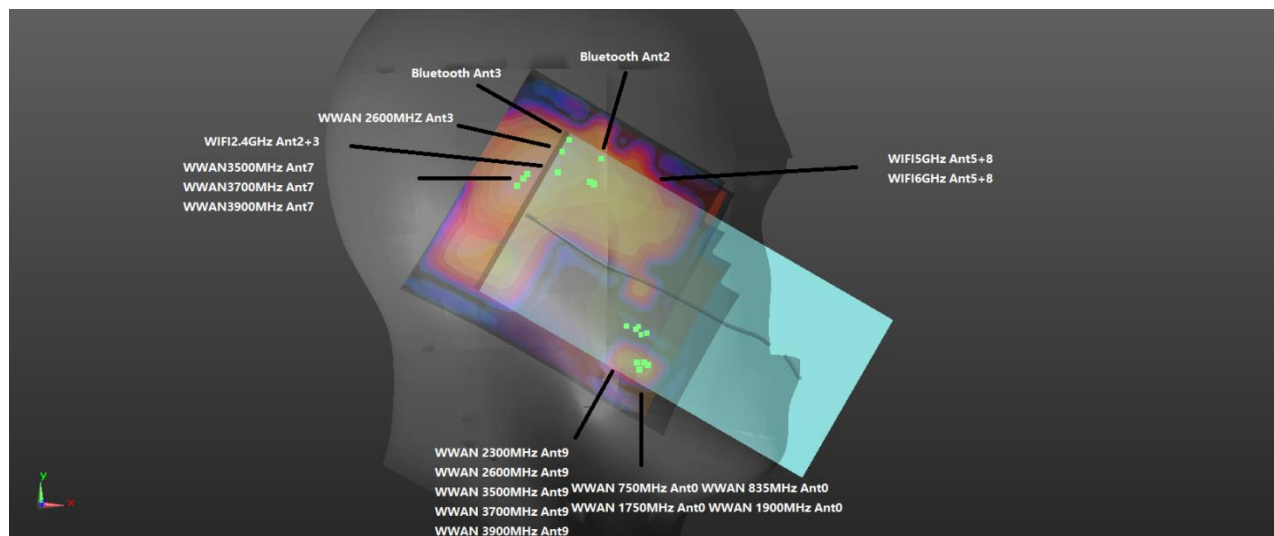
16.6 SPLSR Evaluation and Analysis

General Note:

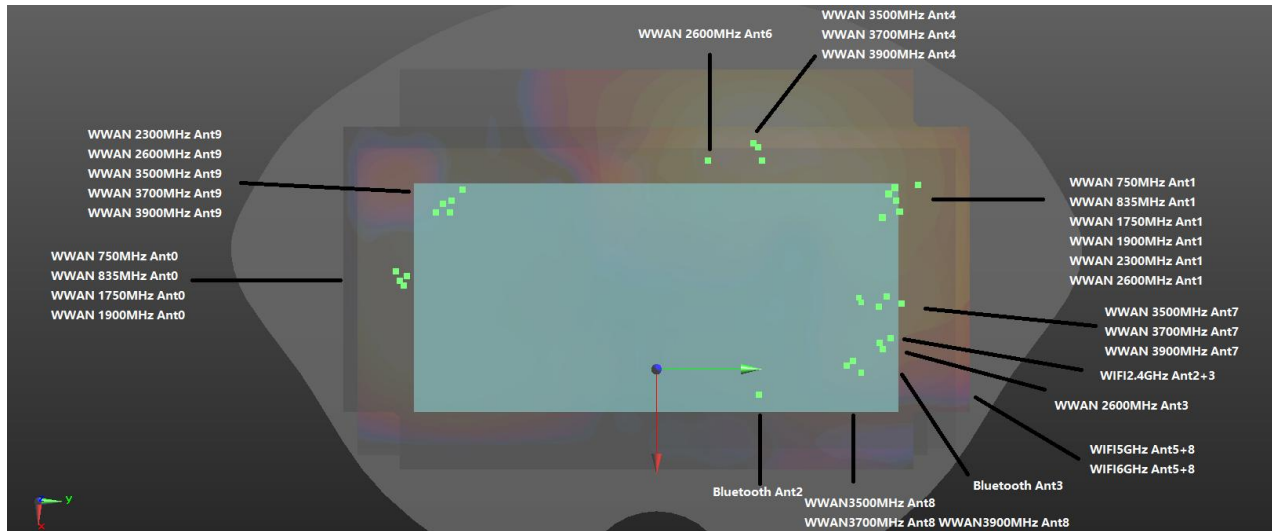
1. When standalone SAR is measured for both antennas in the pair, the peak location separation distance is computed by the square root of $[(x_1-x_2)^2 + (y_1-y_2)^2 + (z_1-z_2)^2]$, where (x_1, y_1, z_1) and (x_2, y_2, z_2) are the coordinates in the area scans or extrapolated peak SAR locations in the zoom scans, as appropriate.
2. $SPLSR = (SAR_1 + SAR_2) \cdot 1.5 / (\text{min. separation distance, mm})$. If $SPLSR \leq 0.04$ for 1g SAR, simultaneously transmission SAR measurement is not necessary.
3. Per April 2022 TCB Workshop Notes, WLAN Antenna 5/8 & BT Antenna 2/3 was summed algebraically with the AG0 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.
5. The detail hotspot point for each transmitter in each exposure condition are showing as below figure and the minimum 3D distance for each sum combination is used for SPLSR analysis.
6. The axis peak locations refer to Section 16.7.



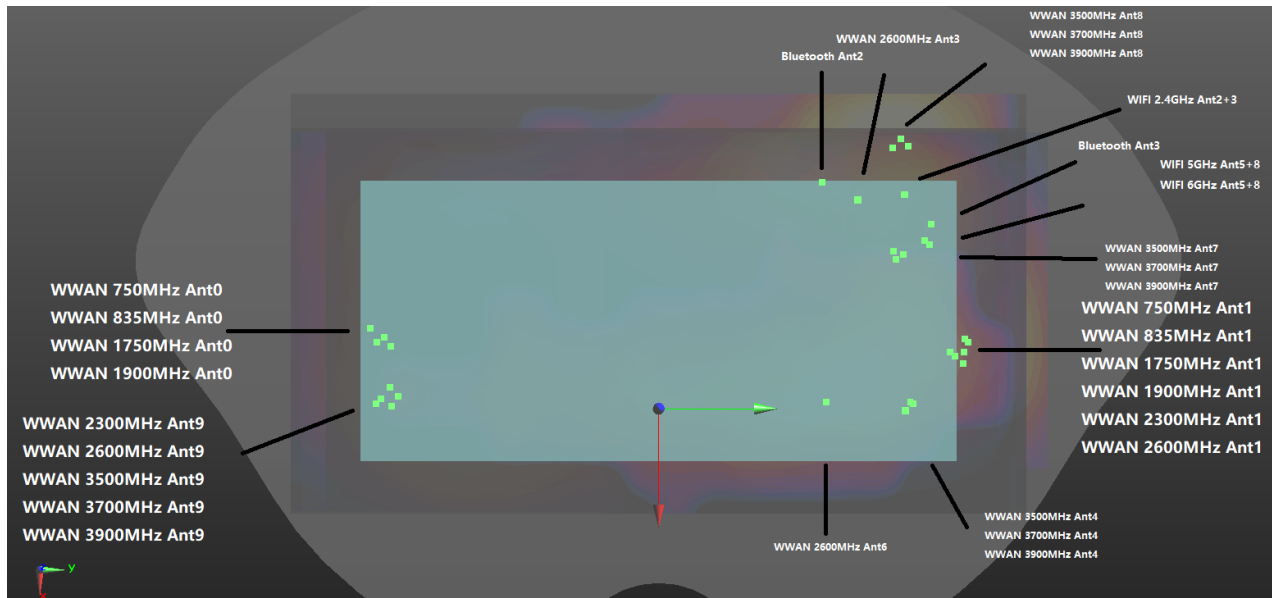
WWAN+WLAN+BT(0mm)_Left Cheek for Head



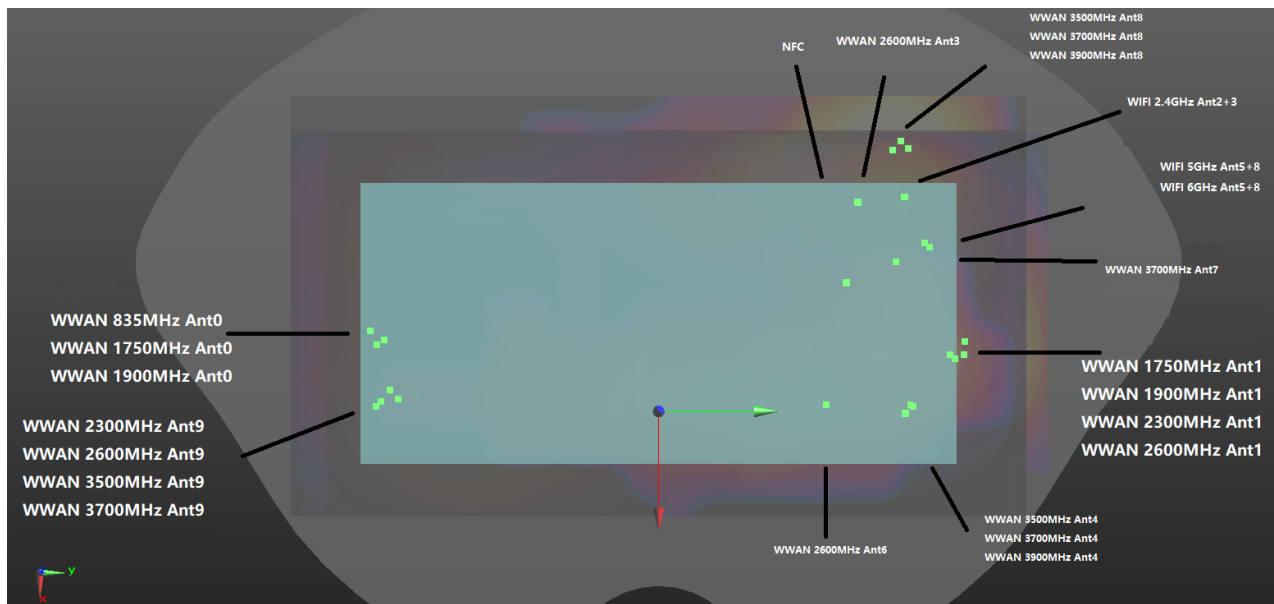
WWAN+WLAN+BT(0mm)_Left Tilted for Head



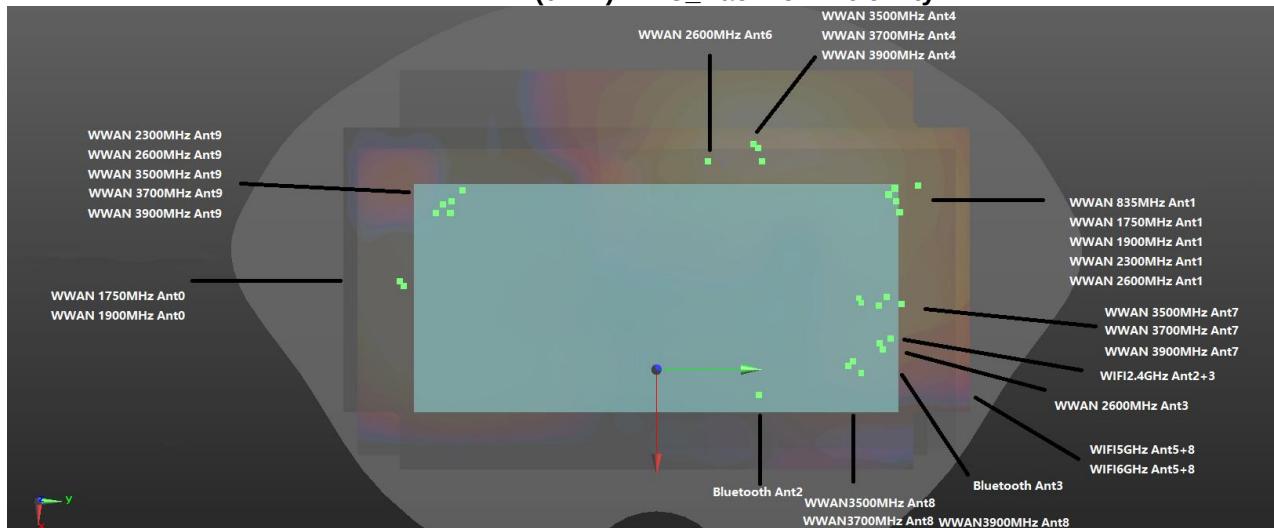
WWAN+WLAN+BT(5mm)_Front for Hotspot&Body-worn



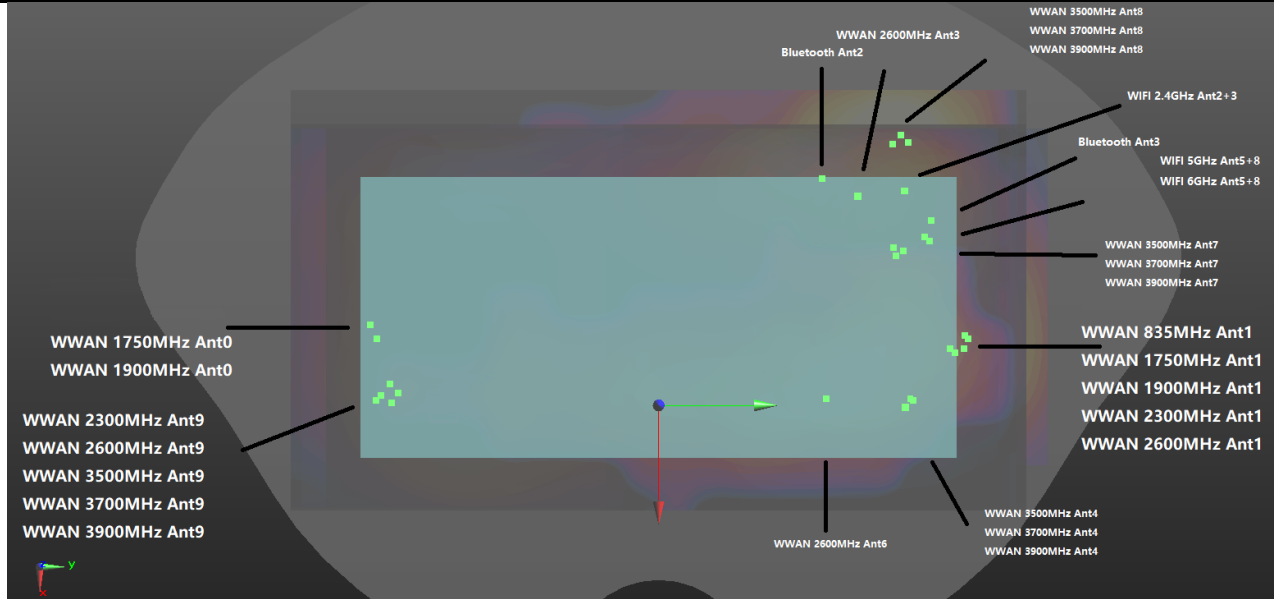
WWAN+WLAN+BT(5mm)_ Back for Hotspot&Body-worn



WWAN+WLAN (0mm)+NFC_Back for Extremity



WWAN+WLAN+BT_Front 15mm for Body-worn



WWAN+WLAN+BT_ Back 19mm for Body-worn

<Head>

No.1 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant0	Left Check	0.216	1.456	0mm	47.2	-76.88	-0.65	93.2	1.67	0.02	Not required
Ant1		0.759		0mm	-11.42	-4.42	1.08				
WLAN6GHz Ant5+8		0.413		0mm							
BT Ant3		0.284		0mm							
Ant0	Left Check	0.216	1.456	0mm	47.2	-76.88	-0.65	84.5	1.67	0.03	Not required
Ant1		0.759		0mm							
WLAN6GHz Ant5+8		0.413		0mm	23.59	4.21	-2.55				
BT Ant3		0.284		0mm							
Ant0	Left Check	0.216	1.456	0mm	47.2	-76.88	-0.65	108.2	1.67	0.02	Not required
Ant1		0.759		0mm							
WLAN6GHz Ant5+8		0.413		0mm							
BT Ant3		0.284		0mm	19.37	27.68	-1.49				
No.2 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant0	Left Check	0.216	1.592	0mm	47.2	-76.88	-0.65	103.0	1.81	0.02	Not required
Ant3		0.895		0mm	17.28	21.7	-1.97				
WLAN6GHz Ant5+8		0.413		0mm							
BT Ant3		0.284		0mm							
Ant0	Left Check	0.216	1.592	0mm	47.2	-76.88	-0.65	84.5	1.81	0.03	Not required
Ant3		0.895		0mm							
WLAN6GHz Ant5+8		0.413		0mm	23.59	4.21	-2.55				
BT Ant3		0.284		0mm							
Ant0	Left Check	0.216	1.592	0mm	47.2	-76.88	-0.65	108.2	1.81	0.02	Not required
Ant3		0.895		0mm							
WLAN6GHz Ant5+8		0.413		0mm							
BT Ant3		0.284		0mm	19.37	27.68	-1.49				
No.3 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant0	Left Check	0.216	0.216	0mm	47.2	-76.88	-0.65	92.0	1.69	0.02	Not required



FCC SAR Test Report

Report No. : FA591602

Ant4		0.774		0mm	-6.39	-2.15	0.28				
WLAN6GHz Ant5+8		0.413	1.471	0mm							
BT Ant3		0.284		0mm							
Ant0		0.216	0.216	0mm	47.2	-76.88	-0.65				
Ant4		0.774		0mm							
WLAN6GHz Ant5+8	Left Check	0.413	1.471	0mm	23.59	4.21	-2.55	84.5	1.69	0.03	Not required
BT Ant3		0.284		0mm							
Ant0		0.216	0.216	0mm	47.2	-76.88	-0.65				
Ant4		0.774		0mm							
WLAN6GHz Ant5+8	Left Check	0.413	1.471	0mm				108.2	1.69	0.02	Not required
BT Ant3		0.284		0mm	19.37	27.68	-1.49				
No.4 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant0		0.216	0.216	0mm	47.2	-76.88	-0.65				
Ant6		0.861		0mm	34.33	-4.43	-2.92				
WLAN6GHz Ant5+8	Left Check	0.413	1.558	0mm				73.6	1.77	0.03	Not required
BT Ant3		0.284		0mm							
Ant0		0.216	0.216	0mm	47.2	-76.88	-0.65				
Ant6		0.861		0mm							
WLAN6GHz Ant5+8	Left Check	0.413	1.558	0mm	23.59	4.21	-2.55	84.5	1.77	0.03	Not required
BT Ant3		0.284		0mm							
Ant0		0.216	0.216	0mm	47.2	-76.88	-0.65				
Ant6		0.861		0mm							
WLAN6GHz Ant5+8	Left Check	0.413	1.558	0mm				108.2	1.77	0.02	Not required
BT Ant3		0.284		0mm	19.37	27.68	-1.49				
No.5 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant0		0.216	0.216	0mm	47.2	-76.88	-0.65				
Ant7		0.787		0mm	0.43	24.4	-1.57				
WLAN6GHz Ant5+8	Left Check	0.413	1.484	0mm				111.6	1.70	0.02	Not required
BT Ant3		0.284		0mm							
Ant0		0.216	0.216	0mm	47.2	-76.88	-0.65				
Ant7		0.787		0mm							
WLAN6GHz Ant5+8	Left Check	0.413	1.484	0mm	23.59	4.21	-2.55	84.5	1.70	0.03	Not required
BT Ant3		0.284		0mm							
Ant0		0.216	0.216	0mm	47.2	-76.88	-0.65				
Ant7		0.787		0mm							
WLAN6GHz Ant5+8	Left Check	0.413	1.484	0mm				108.2	1.70	0.02	Not required
BT Ant3		0.284		0mm	19.37	27.68	-1.49				
No.6 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant0		0.216	0.216	0mm	47.2	-76.88	-0.65				
Ant8		0.890		0mm	23.14	29	-1.31				
WLAN6GHz Ant5+8	Left Check	0.413	1.587	0mm				108.6	1.80	0.02	Not required
BT Ant3		0.284		0mm							
Ant0		0.216	0.216	0mm	47.2	-76.88	-0.65				
Ant8		0.890		0mm							
WLAN6GHz Ant5+8	Left Check	0.413	1.587	0mm	23.59	4.21	-2.55	84.5	1.80	0.03	Not required
BT Ant3		0.284		0mm							
Ant0		0.216	0.216	0mm	47.2	-76.88	-0.65				
Ant8	Left Check	0.890	1.587	0mm				108.2	1.80	0.02	Not required



FCC SAR Test Report

Report No. : FA591602

WLAN6GHz Ant5+8		0.413		0mm							
BT Ant3		0.284		0mm	19.37	27.68	-1.49				
No.7 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant9	Left Check	0.372	0.372	0mm	33.04	-81.24	19.73	90.7	1.83	0.03	Not required
Ant1		0.759	1.456	0mm	-11.42	-4.42	1.08				
WLAN6GHz Ant5+8		0.413		0mm							
BT Ant3		0.284		0mm							
Ant9	Left Check	0.372	0.372	0mm	33.04	-81.24	19.73	88.8	1.83	0.03	Not required
Ant1		0.759	1.456	0mm							
WLAN6GHz Ant5+8		0.413		0mm	23.59	4.21	-2.55				
BT Ant3		0.284		0mm							
Ant9	Left Check	0.372	0.372	0mm	33.04	-81.24	19.73	111.8	1.83	0.02	Not required
Ant1		0.759	1.456	0mm							
WLAN6GHz Ant5+8		0.413		0mm							
BT Ant3		0.284		0mm	19.37	27.68	-1.49				
No.8 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant9	Left Check	0.372	0.372	0mm	33.04	-81.24	19.73	106.4	1.96	0.03	Not required
Ant3		0.895	1.592	0mm	17.28	21.7	-1.97				
WLAN6GHz Ant5+8		0.413		0mm							
BT Ant3		0.284		0mm							
Ant9	Left Check	0.372	0.372	0mm	33.04	-81.24	19.73	88.8	1.96	0.03	Not required
Ant3		0.895	1.592	0mm							
WLAN6GHz Ant5+8		0.413		0mm	23.59	4.21	-2.55				
BT Ant3		0.284		0mm							
Ant9	Left Check	0.372	0.372	0mm	33.04	-81.24	19.73	111.8	1.96	0.02	Not required
Ant3		0.895	1.592	0mm							
WLAN6GHz Ant5+8		0.413		0mm							
BT Ant3		0.284		0mm	19.37	27.68	-1.49				
No.9 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant9	Left Check	0.372	0.372	0mm	33.04	-81.24	19.73	91.4	1.84	0.03	Not required
Ant4		0.774	1.471	0mm	-6.48	-1.13	0.44				
WLAN6GHz Ant5+8		0.413		0mm							
BT Ant3		0.284		0mm							
Ant9	Left Check	0.372	0.372	0mm	33.04	-81.24	19.73	88.8	1.84	0.03	Not required
Ant4		0.774	1.471	0mm							
WLAN6GHz Ant5+8		0.413		0mm	23.59	4.21	-2.55				
BT Ant3		0.284		0mm							
Ant9	Left Check	0.372	0.372	0mm	33.04	-81.24	19.73	111.8	1.84	0.02	Not required
Ant4		0.774	1.471	0mm							
WLAN6GHz Ant5+8		0.413		0mm							
BT Ant3		0.284		0mm	19.37	27.68	-1.49				
No.10 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant9	Left Check	0.372	0.372	0mm	33.04	-81.24	19.73	80.1	1.93	0.03	Not required
Ant6		0.861	1.558	0mm	34.33	-4.43	-2.92				
WLAN6GHz Ant5+8		0.413		0mm							
BT Ant3		0.284		0mm							
Ant9	Left Check	0.372	0.372	0mm	33.04	-81.24	19.73	88.8	1.93	0.03	Not required



FCC SAR Test Report

Report No. : FA591602

Ant6		0.861		0mm							
WLAN6GHz Ant5+8		0.413	1.558	0mm	23.59	4.21	-2.55				
BT Ant3		0.284		0mm							
Ant9		0.372	0.372	0mm	33.04	-81.24	19.73				
Ant6		0.861		0mm							
WLAN6GHz Ant5+8		0.413	1.558	0mm							
BT Ant3		0.284		0mm	19.37	27.68	-1.49				
No.11 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant9		0.372	0.372	0mm	33.04	-81.24	19.73				
Ant7		0.787		0mm	0.43	24.4	-1.57				
WLAN6GHz Ant5+8		0.413	1.484	0mm							
BT Ant3		0.284		0mm							
Ant9		0.372	0.372	0mm	33.04	-81.24	19.73				
Ant7		0.787		0mm							
WLAN6GHz Ant5+8		0.413	1.484	0mm	23.59	4.21	-2.55				
BT Ant3		0.284		0mm							
Ant9		0.372	0.372	0mm	33.04	-81.24	19.73				
Ant7		0.787		0mm							
WLAN6GHz Ant5+8		0.413	1.484	0mm							
BT Ant3		0.284		0mm	19.37	27.68	-1.49				
No.12 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant9		0.372	0.372	0mm	33.04	-81.24	19.73				
Ant8		0.890		0mm	23.14	29	-1.31				
WLAN6GHz Ant5+8		0.413	1.587	0mm							
BT Ant3		0.284		0mm							
Ant9		0.372	0.372	0mm	33.04	-81.24	19.73				
Ant8		0.890		0mm							
WLAN6GHz Ant5+8		0.413	1.587	0mm	23.59	4.21	-2.55				
BT Ant3		0.284		0mm							
Ant9		0.372	0.372	0mm	33.04	-81.24	19.73				
Ant8		0.890		0mm							
WLAN6GHz Ant5+8		0.413	1.587	0mm							
BT Ant3		0.284		0mm	19.37	27.68	-1.49				

No.13 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant0		0.221	0.221	0mm	46.15	-74.19	-0.19				
Ant3		0.842		0mm	16.55	20.9	-1.88				
WLAN6GHz Ant5+8		0.328	1.406	0mm							
BT Ant3		0.236		0mm							
Ant0		0.221	0.221	0mm	46.15	-74.19	-0.19				
Ant3		0.842		0mm							
WLAN6GHz Ant5+8		0.328	1.406	0mm	22.95	2.28	-3.11				
BT Ant3		0.236		0mm							
Ant0		0.221	0.221	0mm	46.15	-74.19	-0.19				
Ant3		0.842		0mm							
WLAN6GHz Ant5+8		0.328	1.406	0mm							
BT Ant3		0.236		0mm	18.88	23.51	-1.74				
No.14	Position	SAR	Summed	Gap	SAR peak location (mm)			3D	Summed	SPLSR	Simultaneous

Band		1g SAR (W/kg)			X	Y	Z	distance (mm)	SAR (W/kg)		
Ant0	Left Tilted	0.221	0.221	0mm	46.15	-74.19	-0.19	108.2	1.67	0.02	Not required
Ant7		0.885	1.449	0mm	0.55	23.9	-1.69				
WLAN6GHz Ant5+8		0.328		0mm							
BT Ant3		0.236		0mm							
Ant0	Left Tilted	0.221	0.221	0mm	46.15	-74.19	-0.19	80.0	1.67	0.03	Not required
Ant7		0.885	1.449	0mm							
WLAN6GHz Ant5+8		0.328		0mm	22.95	2.28	-3.11				
BT Ant3		0.236		0mm							
Ant0	Left Tilted	0.221	0.221	0mm	46.15	-74.19	-0.19	101.4	1.67	0.02	Not required
Ant7		0.885	1.449	0mm							
WLAN6GHz Ant5+8		0.328		0mm							
BT Ant3		0.236		0mm	18.88	23.51	-1.74				
No.15 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant9	Left Tilted	0.200	0.200	0mm	33.04	-81.24	19.73	105.7	1.61	0.02	Not required
Ant3		0.842	1.406	0mm	16.55	20.9	-1.88				
WLAN6GHz Ant5+8		0.328		0mm							
BT Ant3		0.236		0mm							
Ant9	Left Tilted	0.200	0.200	0mm	33.04	-81.24	19.73	87.2	1.61	0.02	Not required
Ant3		0.842	1.406	0mm							
WLAN6GHz Ant5+8		0.328		0mm	22.95	2.28	-3.11				
BT Ant3		0.236		0mm							
Ant9	Left Tilted	0.200	0.200	0mm	33.04	-81.24	19.73	107.9	1.61	0.02	Not required
Ant3		0.842	1.406	0mm							
WLAN6GHz Ant5+8		0.328		0mm							
BT Ant3		0.236		0mm	18.88	23.51	-1.74				
No.16 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant9	Left Tilted	0.200	0.200	0mm	33.04	-81.24	19.73	112.1	1.65	0.02	Not required
Ant7		0.885	1.449	0mm	0.55	23.9	-1.69				
WLAN6GHz Ant5+8		0.328		0mm							
BT Ant3		0.236		0mm							
Ant9	Left Tilted	0.200	0.200	0mm	33.04	-81.24	19.73	87.2	1.65	0.02	Not required
Ant7		0.885	1.449	0mm							
WLAN6GHz Ant5+8		0.328		0mm	22.95	2.28	-3.11				
BT Ant3		0.236		0mm							
Ant9	Left Tilted	0.200	0.200	0mm	33.04	-81.24	19.73	107.9	1.65	0.02	Not required
Ant7		0.885	1.449	0mm							
WLAN6GHz Ant5+8		0.328		0mm							
BT Ant3		0.236		0mm	18.88	23.51	-1.74				

<Hotspot>

No.41 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant0	Front	1.069	1.069	5mm	-5.5	-79.4	-1	166.5	1.89	0.02	Not required
Ant1		0.442	0.821	5mm	-37.9	83.9	-1				
WLAN5GHz Ant5+8		0.256		5mm							
BT Ant3		0.123		5mm							
Ant0	Front	1.069	1.069	5mm	-5.5	-79.4	-1	150.4	1.89	0.02	Not required
Ant1		0.442	0.821	5mm							



WLAN5GHz Ant5+8		0.256		5mm	6.9	70.5	-0.38				
BT Ant3		0.123		5mm							
Ant0	Front	1.069	1.069	5mm	-5.5	-79.4	-1	158.8	1.89	0.02	Not required
Ant1		0.442		5mm							
WLAN5GHz Ant5+8		0.256	0.821	5mm							
BT Ant3		0.123		5mm	16.5	77.9	-1.2				
No.42 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant0	Front	1.069	1.069	5mm	-5.5	-79.4	-1	154.9	1.80	0.02	Not required
Ant3		0.347		5mm	16	74	-0.95				
WLAN5GHz Ant5+8		0.256	0.726	5mm							
BT Ant3		0.123		5mm							
Ant0	Front	1.069	1.069	5mm	-5.5	-79.4	-1	150.4	1.80	0.02	Not required
Ant3		0.347		5mm							
WLAN5GHz Ant5+8		0.256	0.726	5mm	6.9	70.5	-0.38				
BT Ant3		0.123		5mm							
Ant0	Front	1.069	1.069	5mm	-5.5	-79.4	-1	158.8	1.80	0.02	Not required
Ant3		0.347		5mm							
WLAN5GHz Ant5+8		0.256	0.726	5mm							
BT Ant3		0.123		5mm	16.5	77.9	-1.2				
No.43 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant0	Front	1.069	1.069	5mm	-5.5	-79.4	-1	122.6	1.65	0.02	Not required
Ant4		0.201		5mm	-55.9	32.4	-1.1				
WLAN5GHz Ant5+8		0.256	0.580	5mm							
BT Ant3		0.123		5mm							
Ant0	Front	1.069	1.069	5mm	-5.5	-79.4	-1	150.4	1.65	0.01	Not required
Ant4		0.201		5mm							
WLAN5GHz Ant5+8		0.256	0.580	5mm	6.9	70.5	-0.38				
BT Ant3		0.123		5mm							
Ant0	Front	1.069	1.069	5mm	-5.5	-79.4	-1	158.8	1.65	0.01	Not required
Ant4		0.201		5mm							
WLAN5GHz Ant5+8		0.256	0.580	5mm							
BT Ant3		0.123		5mm	16.5	77.9	-1.2				
No.44 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant0	Front	1.069	1.069	5mm	-5.5	-79.4	-1	107.6	1.82	0.02	Not required
Ant6		0.373		5mm	-51.2	18	-1.12				
WLAN5GHz Ant5+8		0.256	0.752	5mm							
BT Ant3		0.123		5mm							
Ant0	Front	1.069	1.069	5mm	-5.5	-79.4	-1	150.4	1.82	0.02	Not required
Ant6		0.373		5mm							
WLAN5GHz Ant5+8		0.256	0.752	5mm	6.9	70.5	-0.38				
BT Ant3		0.123		5mm							
Ant0	Front	1.069	1.069	5mm	-5.5	-79.4	-1	158.8	1.82	0.02	Not required
Ant6		0.373		5mm							
WLAN5GHz Ant5+8		0.256	0.752	5mm							
BT Ant3		0.123		5mm	16.5	77.9	-1.2				
No.45 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant0	Front	1.069	1.069	5mm	-5.5	-79.4	-1	162.2	1.66	0.01	Not required



FCC SAR Test Report

Report No. : FA591602

Ant7		0.210		5mm	3.8	82.5	-1.07				
WLAN5GHz Ant5+8		0.256	0.589	5mm							
BT Ant3		0.123		5mm							
Ant0		1.069	1.069	5mm	-5.5	-79.4	-1				
Ant7		0.210		5mm							
WLAN5GHz Ant5+8		0.256	0.589	5mm	6.9	70.5	-0.38				
BT Ant3		0.123		5mm							
Ant0		1.069	1.069	5mm	-5.5	-79.4	-1				
Ant7		0.210		5mm							
WLAN5GHz Ant5+8		0.256	0.589	5mm							
BT Ant3		0.123		5mm	16.5	77.9	-1.2				
No.46 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant0		1.069	1.069	5mm	-5.5	-79.4	-1				
Ant8		0.277		5mm	24.8	71.2	-0.92				
WLAN5GHz Ant5+8		0.256	0.656	5mm							
BT Ant3		0.123		5mm							
Ant0		1.069	1.069	5mm	-5.5	-79.4	-1				
Ant8		0.277		5mm							
WLAN5GHz Ant5+8		0.256	0.656	5mm	6.9	70.5	-0.38				
BT Ant3		0.123		5mm							
Ant0		1.069	1.069	5mm	-5.5	-79.4	-1				
Ant8		0.277		5mm							
WLAN5GHz Ant5+8		0.256	0.656	5mm							
BT Ant3		0.123		5mm	16.5	77.9	-1.2				
No.47 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant9		1.296	1.296	5mm	-32.8	-71	-1.02				
Ant1		0.442		5mm	-37.9	83.9	-1				
WLAN5GHz Ant5+8		0.256	0.821	5mm							
BT Ant3		0.123		5mm							
Ant9		1.296	1.296	5mm	-32.8	-71	-1.02				
Ant1		0.442		5mm							
WLAN5GHz Ant5+8		0.256	0.821	5mm	6.9	70.5	-0.38				
BT Ant3		0.123		5mm							
Ant9		1.296	1.296	5mm	-32.8	-71	-1.02				
Ant1		0.442		5mm							
WLAN5GHz Ant5+8		0.256	0.821	5mm							
BT Ant3		0.123		5mm	16.5	77.9	-1.2				
No.48 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant9		1.296	1.296	5mm	-32.8	-71	-1.02				
Ant3		0.347		5mm	16	74	-0.95				
WLAN5GHz Ant5+8		0.256	0.726	5mm							
BT Ant3		0.123		5mm							
Ant9		1.296	1.296	5mm	-32.8	-71	-1.02				
Ant3		0.347		5mm							
WLAN5GHz Ant5+8		0.256	0.726	5mm	6.9	70.5	-0.38				
BT Ant3		0.123		5mm							
Ant9		1.296	1.296	5mm	-32.8	-71	-1.02				
Ant3		0.347	0.726	5mm							



FCC SAR Test Report

Report No. : FA591602

WLAN5GHz Ant5+8		0.256		5mm							
BT Ant3		0.123		5mm	16.5	77.9	-1.2				
No.49 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant9	Front	1.296	1.296	5mm	-32.8	-71	-1.02	105.9	1.88	0.02	Not required
Ant4		0.201	0.580	5mm	-55.9	32.4	-1.1				
WLAN5GHz Ant5+8		0.256		5mm							
BT Ant3		0.123		5mm							
Ant9	Front	1.296	1.296	5mm	-32.8	-71	-1.02	147.0	1.88	0.02	Not required
Ant4		0.201	0.580	5mm							
WLAN5GHz Ant5+8		0.256		5mm	6.9	70.5	-0.38				
BT Ant3		0.123		5mm							
Ant9	Front	1.296	1.296	5mm	-32.8	-71	-1.02	156.8	1.88	0.02	Not required
Ant4		0.201	0.580	5mm							
WLAN5GHz Ant5+8		0.256		5mm							
BT Ant3		0.123		5mm	16.5	77.9	-1.2				
No.50 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant9	Front	1.296	1.296	5mm	-32.8	-71	-1.02	90.9	2.05	0.03	Not required
Ant6		0.373	0.752	5mm	-51.2	18	-1.12				
WLAN5GHz Ant5+8		0.256		5mm							
BT Ant3		0.123		5mm							
Ant9	Front	1.296	1.296	5mm	-32.8	-71	-1.02	147.0	2.05	0.02	Not required
Ant6		0.373	0.752	5mm							
WLAN5GHz Ant5+8		0.256		5mm	6.9	70.5	-0.38				
BT Ant3		0.123		5mm							
Ant9	Front	1.296	1.296	5mm	-32.8	-71	-1.02	156.8	2.05	0.02	Not required
Ant6		0.373	0.752	5mm							
WLAN5GHz Ant5+8		0.256		5mm							
BT Ant3		0.123		5mm	16.5	77.9	-1.2				
No.51 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant9	Front	1.296	1.296	5mm	-44.2	-76	-1.07	112.2	1.89	0.02	Not required
Ant7		0.210	0.589	5mm	-55.6	35.6	-1.1				
WLAN5GHz Ant5+8		0.256		5mm							
BT Ant3		0.123		5mm							
Ant9	Front	1.296	1.296	5mm	-32.8	-71	-1.02	147.0	1.89	0.02	Not required
Ant7		0.210	0.589	5mm							
WLAN5GHz Ant5+8		0.256		5mm	6.9	70.5	-0.38				
BT Ant3		0.123		5mm							
Ant9	Front	1.296	1.296	5mm	-32.8	-71	-1.02	156.8	1.89	0.02	Not required
Ant7		0.210	0.589	5mm							
WLAN5GHz Ant5+8		0.256		5mm							
BT Ant3		0.123		5mm	16.5	77.9	-1.2				
No.52 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant9	Front	1.296	1.296	5mm	-32.8	-71	-1.02	153.4	1.95	0.02	Not required
Ant8		0.277	0.656	5mm	24.8	71.2	-0.92				
WLAN5GHz Ant5+8		0.256		5mm							
BT Ant3		0.123		5mm							
Ant9	Front	1.296	1.296	5mm	-32.8	-71	-1.02	147.0	1.95	0.02	Not required



FCC SAR Test Report

Report No. : FA591602

Ant8		0.277	0.656	5mm							
WLAN5GHz Ant5+8		0.256		5mm	6.9	70.5	-0.38				
BT Ant3		0.123		5mm							
Ant9	Front	1.296	1.296	5mm	-32.8	-71	-1.02	156.8	1.95	0.02	Not required
Ant8		0.277	0.656	5mm							
WLAN5GHz Ant5+8		0.256		5mm							
BT Ant3		0.123		5mm	16.5	77.9	-1.2				

No.53 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant0	Back	1.283	1.283	5mm	12.4	-72	-0.95	140.7	2.73	0.03	Not required
Ant1		0.691	1.444	5mm	19.5	68.5	-0.94				
WLAN5GHz Ant5+8		0.542		5mm							
BT Ant2		0.211		5mm							
Ant0	Back	1.283	1.283	5mm	12.4	-72	-0.95	148.9	2.73	0.03	Not required
Ant1		0.691	1.444	5mm							
WLAN5GHz Ant5+8		0.542		5mm	-20.6	73.2	-1.9				
BT Ant2		0.211		5mm							
Ant0	Back	1.283	1.283	5mm	-5.9	-73.4	-1.01	140.4	2.73	0.03	Not required
Ant1		0.691	1.444	5mm							
WLAN5GHz Ant5+8		0.542		5mm							
BT Ant2		0.211		5mm	-40.6	62.6	-1.16				
No.54 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant0	Back	1.283	1.283	5mm	-5.9	-73.4	-1.01	140.4	2.68	0.03	Not required
Ant3		0.642	1.395	5mm	-30.6	64.8	-1.05				
WLAN5GHz Ant5+8		0.542		5mm							
BT Ant2		0.211		5mm							
Ant0	Back	1.283	1.283	5mm	12.4	-69	-0.95	146.0	2.68	0.03	Not required
Ant3		0.642	1.395	5mm							
WLAN5GHz Ant5+8		0.542		5mm	-20.6	73.2	-1.9				
BT Ant2		0.211		5mm							
Ant0	Back	1.283	1.283	5mm	-5.9	-73.4	-1.01	140.4	2.68	0.03	Not required
Ant3		0.642	1.395	5mm							
WLAN5GHz Ant5+8		0.542		5mm							
BT Ant2		0.211		5mm	-40.6	62.6	-1.16				
No.55 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant0	Back	1.283	1.283	5mm	12.4	-72	-0.95	140.7	2.68	0.03	Not required
Ant4		0.642	1.395	5mm	30	67.6	-0.78				
WLAN5GHz Ant5+8		0.542		5mm							
BT Ant2		0.211		5mm							
Ant0	Back	1.283	1.283	5mm	12.4	-72	-0.95	148.9	2.68	0.03	Not required
Ant4		0.642	1.395	5mm							
WLAN5GHz Ant5+8		0.542		5mm	-20.6	73.2	-1.9				
BT Ant2		0.211		5mm							
Ant0	Back	1.283	1.283	5mm	-5.9	-73.4	-1.01	140.4	2.68	0.03	Not required
Ant4		0.642	1.395	5mm							
WLAN5GHz Ant5+8		0.542		5mm							
BT Ant2		0.211		5mm	-40.6	62.6	-1.16				
No.56	Position	SAR	Summed	Gap	SAR peak location (mm)			3D	Summed	SPLSR	Simultaneous



FCC SAR Test Report

Report No. : FA591602

Band		1g SAR (W/kg)			X	Y	Z	distance (mm)	SAR (W/kg)		
Ant0	Back	1.283	1.283	5mm	12.4	-72	-0.95	139.1	2.55	0.03	Not required
Ant6		0.515	1.268	5mm	23.6	66.6	-1.03				
WLAN5GHz Ant5+8		0.542		5mm							
BT Ant2		0.211		5mm							
Ant0	Back	1.283	1.283	5mm	12.4	-72	-0.95	148.9	2.55	0.03	Not required
Ant6		0.515	1.268	5mm							
WLAN5GHz Ant5+8		0.542		5mm	-20.6	73.2	-1.9				
BT Ant2		0.211		5mm							
Ant0	Back	1.283	1.283	5mm	-5.9	-73.4	-1.01	140.4	2.55	0.03	Not required
Ant6		0.515	1.268	5mm							
WLAN5GHz Ant5+8		0.542		5mm							
BT Ant2		0.211		5mm	-40.6	62.6	-1.16				
No.57 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant0	Back	1.283	1.283	5mm	12.4	-72	-0.95	143.2	2.41	0.03	Not required
Ant7		0.369	1.122	5mm	-11.6	69.2	-1.14				
WLAN5GHz Ant5+8		0.542		5mm							
BT Ant2		0.211		5mm							
Ant0	Back	1.283	1.283	5mm	12.4	-72	-0.95	148.9	2.41	0.03	Not required
Ant7		0.369	1.122	5mm							
WLAN5GHz Ant5+8		0.542		5mm	-20.6	73.2	-1.9				
BT Ant2		0.211		5mm							
Ant0	Back	1.283	1.283	5mm	-5.9	-73.4	-1.01	140.4	2.41	0.03	Not required
Ant7		0.369	1.122	5mm							
WLAN5GHz Ant5+8		0.542		5mm							
BT Ant2		0.211		5mm	-40.6	62.6	-1.16				
No.58 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant0	Back	1.283	1.283	5mm	-5.9	-73.4	-1.01	149.1	2.69	0.03	Not required
Ant8		0.651	1.404	5mm	-43	71	-0.94				
WLAN5GHz Ant5+8		0.542		5mm							
BT Ant2		0.211		5mm							
Ant0	Back	1.283	1.283	5mm	12.4	-72	-0.95	149	2.69	0.03	Not required
Ant8		0.651	1.404	5mm							
WLAN5GHz Ant5+8		0.542		5mm	-20.6	73.2	-1.9				
BT Ant2		0.211		5mm							
Ant0	Back	1.283	1.283	5mm	-5.9	-73.4	-1.01	140.4	2.69	0.03	Not required
Ant8		0.651	1.404	5mm							
WLAN5GHz Ant5+8		0.542		5mm							
BT Ant2		0.211		5mm	-40.6	62.6	-1.16				
No.59 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant9	Back	1.304	1.304	5mm	21.2	-79	-0.9	147.5	2.75	0.03	Not required
Ant1		0.691	1.444	5mm	19.5	68.5	-0.94				
WLAN5GHz Ant5+8		0.542		5mm							
BT Ant2		0.211		5mm							
Ant9	Back	1.304	1.304	5mm	21.2	-79	-0.9	157.8	2.75	0.03	Not required
Ant1		0.691	1.444	5mm							
WLAN5GHz Ant5+8		0.542		5mm	-20.6	73.2	-1.9				
BT Ant2		0.211		5mm							



FCC SAR Test Report

Report No. : FA591602

Ant9	Back	1.304	1.304	5mm	13.7	-81.2	-1	153.7	2.75	0.03	Not required
Ant1		0.691	1.444	5mm							
WLAN5GHz Ant5+8		0.542		5mm							
BT Ant2		0.211		5mm	-40.6	62.6	-1.16				
No.60 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant9	Back	1.304	1.304	5mm	13.7	-81.2	-1	152.6	2.70	0.03	Not required
Ant3		0.642	1.395	5mm	-30.6	64.8	-1.05				
WLAN5GHz Ant5+8		0.542		5mm							
BT Ant2		0.211		5mm							
Ant9	Back	1.304	1.304	5mm	21.2	-79	-0.9	157.8	2.70	0.03	Not required
Ant3		0.642	1.395	5mm							
WLAN5GHz Ant5+8		0.542		5mm	-20.6	73.2	-1.9				
BT Ant2		0.211		5mm							
Ant9	Back	1.304	1.304	5mm	13.7	-81.2	-1	153.7	2.70	0.03	Not required
Ant3		0.642	1.395	5mm							
WLAN5GHz Ant5+8		0.542		5mm							
BT Ant2		0.211		5mm	-40.6	62.6	-1.16				
No.61 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant9	Back	1.304	1.304	5mm	21.2	-79	-0.9	146.9	2.70	0.03	Not required
Ant4		0.642	1.395	5mm	30	67.6	-0.78				
WLAN5GHz Ant5+8		0.542		5mm							
BT Ant2		0.211		5mm							
Ant9	Back	1.304	1.304	5mm	21.2	-79	-0.9	157.8	2.70	0.03	Not required
Ant4		0.642	1.395	5mm							
WLAN5GHz Ant5+8		0.542		5mm	-20.6	73.2	-1.9				
BT Ant2		0.211		5mm							
Ant9	Back	1.304	1.304	5mm	13.7	-81.2	-1	153.7	2.70	0.03	Not required
Ant4		0.642	1.395	5mm							
WLAN5GHz Ant5+8		0.542		5mm							
BT Ant2		0.211		5mm	-40.6	62.6	-1.16				
No.62 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant9	Back	1.304	1.304	5mm	21.2	-79	-0.9	145.6	2.57	0.03	Not required
Ant6		0.515	1.268	5mm	23.6	66.6	-1.03				
WLAN5GHz Ant5+8		0.542		5mm							
BT Ant2		0.211		5mm							
Ant9	Back	1.304	1.304	5mm	21.2	-79	-0.9	157.8	2.57	0.03	Not required
Ant6		0.515	1.268	5mm							
WLAN5GHz Ant5+8		0.542		5mm	-20.6	73.2	-1.9				
BT Ant2		0.211		5mm							
Ant9	Back	1.304	1.304	5mm	13.7	-81.2	-1	153.7	2.57	0.03	Not required
Ant6		0.515	1.268	5mm							
WLAN5GHz Ant5+8		0.542		5mm							
BT Ant2		0.211		5mm	-40.6	62.6	-1.16				
No.63 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant9	Back	1.304	1.304	5mm	21.2	-79	-0.9	151.8	2.43	0.02	Not required
Ant7		0.369	1.122	5mm	-11.6	69.2	-1.14				
WLAN5GHz Ant5+8		0.542		5mm							



BT Ant2		0.211		5mm							
Ant9	Back	1.304	1.304	5mm	21.2	-79	-0.9	157.8	2.43	0.02	Not required
Ant7		0.369	1.122	5mm							
WLAN5GHz Ant5+8		0.542		5mm	-20.6	73.2	-1.9				
BT Ant2		0.211		5mm							
Ant9	Back	1.304	1.304	5mm	13.7	-81.2	-1	153.7	2.43	0.02	Not required
Ant7		0.369	1.122	5mm							
WLAN5GHz Ant5+8		0.542		5mm							
BT Ant2		0.211		5mm	-40.6	62.6	-1.16				
No.64 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant9	Back	1.304	1.304	5mm	13.7	-81.2	-1	162.4	2.71	0.03	Not required
Ant8		0.651	1.404	5mm	-43	71	-0.94				
WLAN5GHz Ant5+8		0.542		5mm							
BT Ant2		0.211		5mm							
Ant9	Back	1.304	1.304	5mm	21.2	-79	-0.9	157.8	2.71	0.03	Not required
Ant8		0.651	1.404	5mm							
WLAN5GHz Ant5+8		0.542		5mm	-20.6	73.2	-1.9				
BT Ant2		0.211		5mm							
Ant9	Back	1.304	1.304	5mm	13.7	-81.2	-1	153.7	2.71	0.03	Not required
Ant8		0.651	1.404	5mm							
WLAN5GHz Ant5+8		0.542		5mm							
BT Ant2		0.211		5mm	-40.6	62.6	-1.16				

<Body-worn>

No.17 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant0	Front	1.247	1.247	5mm	-5.5	-79.4	-1	165.3	2.27	0.02	Not required
Ant1		0.788	1.026	5mm	-39.1	82.4	-1				
WLAN5GHz Ant5+8		0.115		5mm							
BT Ant3		0.123		5mm							
Ant0	Front	1.247	1.247	5mm	-5.5	-79.4	-1	150.4	2.27	0.02	Not required
Ant1		0.788	1.026	5mm							
WLAN5GHz Ant5+8		0.115		5mm	6.9	70.5	-0.38				
BT Ant3		0.123		5mm							
Ant0	Front	1.247	1.247	5mm	-5.5	-79.4	-1	158.8	2.27	0.02	Not required
Ant1		0.788	1.026	5mm							
WLAN5GHz Ant5+8		0.115		5mm							
BT Ant3		0.123		5mm	16.5	77.9	-1.2				
No.18 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant0	Front	1.247	1.247	5mm	-5.5	-79.4	-1	154.9	2.13	0.02	Not required
Ant3		0.641	0.879	5mm	16	74	-0.95				
WLAN5GHz Ant5+8		0.115		5mm							
BT Ant3		0.123		5mm							
Ant0	Front	1.247	1.247	5mm	-5.5	-79.4	-1	150.4	2.13	0.02	Not required
Ant3		0.641	0.879	5mm							
WLAN5GHz Ant5+8		0.115		5mm	6.9	70.5	-0.38				
BT Ant3		0.123		5mm							
Ant0	Front	1.247	1.247	5mm	-5.5	-79.4	-1	158.8	2.13	0.02	Not required
Ant3		0.641	0.879	5mm							
WLAN5GHz		0.115		5mm							



FCC SAR Test Report

Report No. : FA591602

Ant5+8											
BT Ant3		0.123		5mm	16.5	77.9	-1.2				
No.19 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant0	Front	1.247	1.247	5mm	-5.5	-79.4	-1	122.6	1.79	0.02	Not required
Ant4		0.305	0.543	5mm	-55.9	32.4	-1.1				
WLAN5GHz Ant5+8		0.115		5mm							
BT Ant3		0.123		5mm							
Ant0	Front	1.247	1.247	5mm	-5.5	-79.4	-1	150.4	1.79	0.02	Not required
Ant4		0.305	0.543	5mm							
WLAN5GHz Ant5+8		0.115		5mm	6.9	70.5	-0.38				
BT Ant3		0.123		5mm							
Ant0	Front	1.247	1.247	5mm	-5.5	-79.4	-1	158.8	1.79	0.02	Not required
Ant4		0.305	0.543	5mm							
WLAN5GHz Ant5+8		0.115		5mm							
BT Ant3		0.123		5mm	16.5	77.9	-1.2				
No.20 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant0	Front	1.247	1.247	5mm	-5.5	-79.4	-1	107.6	2.13	0.03	Not required
Ant6		0.641	0.879	5mm	-51.2	18	-1.12				
WLAN5GHz Ant5+8		0.115		5mm							
BT Ant3		0.123		5mm							
Ant0	Front	1.247	1.247	5mm	-5.5	-79.4	-1	150.4	2.13	0.02	Not required
Ant6		0.641	0.879	5mm							
WLAN5GHz Ant5+8		0.115		5mm	6.9	70.5	-0.38				
BT Ant3		0.123		5mm							
Ant0	Front	1.247	1.247	5mm	-5.5	-79.4	-1	158.8	2.13	0.02	Not required
Ant6		0.641	0.879	5mm							
WLAN5GHz Ant5+8		0.115		5mm							
BT Ant3		0.123		5mm	16.5	77.9	-1.2				
No.21 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant0	Front	1.247	1.247	5mm	-5.5	-79.4	-1	162.2	1.99	0.02	Not required
Ant7		0.505	0.743	5mm	3.8	82.5	-1.07				
WLAN5GHz Ant5+8		0.115		5mm							
BT Ant3		0.123		5mm							
Ant0	Front	1.247	1.247	5mm	-5.5	-79.4	-1	150.4	1.99	0.02	Not required
Ant7		0.505	0.743	5mm							
WLAN5GHz Ant5+8		0.115		5mm	6.9	70.5	-0.38				
BT Ant3		0.123		5mm							
Ant0	Front	1.247	1.247	5mm	-5.5	-79.4	-1	158.8	1.99	0.02	Not required
Ant7		0.505	0.743	5mm							
WLAN5GHz Ant5+8		0.115		5mm							
BT Ant3		0.123		5mm	16.5	77.9	-1.2				
No.22 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant0	Front	1.247	1.247	5mm	-5.5	-79.4	-1	153.6	1.88	0.02	Not required
Ant8		0.393	0.631	5mm	24.8	71.2	-0.92				
WLAN5GHz Ant5+8		0.115		5mm							
BT Ant3		0.123		5mm							
Ant0	Front	1.247	1.247	5mm	-5.5	-79.4	-1	150.4	1.88	0.02	Not required
Ant8		0.393	0.631	5mm							



FCC SAR Test Report

Report No. : FA591602

WLAN5GHz Ant5+8		0.115		5mm	6.9	70.5	-0.38				
BT Ant3		0.123		5mm							
Ant0	Front	1.247	1.247	5mm	-5.5	-79.4	-1	158.8	1.88	0.02	Not required
Ant8		0.393		5mm							
WLAN5GHz Ant5+8		0.115	0.631	5mm							
BT Ant3		0.123		5mm	16.5	77.9	-1.2				
No.23 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant9	Front	1.299	1.299	5mm	-32.8	-71	-1.02	153.5	2.33	0.02	Not required
Ant1		0.788		5mm	-39.1	82.4	-1				
WLAN5GHz Ant5+8		0.115	1.026	5mm							
BT Ant3		0.123		5mm							
Ant9	Front	1.299	1.299	5mm	-32.8	-71	-1.02	147.0	2.33	0.02	Not required
Ant1		0.788		5mm							
WLAN5GHz Ant5+8		0.115	1.026	5mm	6.9	70.5	-0.38				
BT Ant3		0.123		5mm							
Ant9	Front	1.299	1.299	5mm	-32.8	-71	-1.02	156.8	2.33	0.02	Not required
Ant1		0.788		5mm							
WLAN5GHz Ant5+8		0.115	1.026	5mm							
BT Ant3		0.123		5mm	16.5	77.9	-1.2				
No.24 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant9	Front	1.299	1.299	5mm	-32.8	-71	-1.02	153.0	2.18	0.02	Not required
Ant3		0.641		5mm	16	74	-0.95				
WLAN5GHz Ant5+8		0.115	0.879	5mm							
BT Ant3		0.123		5mm							
Ant9	Front	1.299	1.299	5mm	-32.8	-71	-1.02	147.0	2.18	0.02	Not required
Ant3		0.641		5mm							
WLAN5GHz Ant5+8		0.115	0.879	5mm	6.9	70.5	-0.38				
BT Ant3		0.123		5mm							
Ant9	Front	1.299	1.299	5mm	-32.8	-71	-1.02	156.8	2.18	0.02	Not required
Ant3		0.641		5mm							
WLAN5GHz Ant5+8		0.115	0.879	5mm							
BT Ant3		0.123		5mm	16.5	77.9	-1.2				
No.25 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant9	Front	1.299	1.299	5mm	-32.8	-71	-1.02	105.9	1.84	0.02	Not required
Ant4		0.305		5mm	-55.9	32.4	-1.1				
WLAN5GHz Ant5+8		0.115	0.543	5mm							
BT Ant3		0.123		5mm							
Ant9	Front	1.299	1.299	5mm	-32.8	-71	-1.02	147.0	1.84	0.02	Not required
Ant4		0.305		5mm							
WLAN5GHz Ant5+8		0.115	0.543	5mm	6.9	70.5	-0.38				
BT Ant3		0.123		5mm							
Ant9	Front	1.299	1.299	5mm	-32.8	-71	-1.02	156.8	1.84	0.02	Not required
Ant4		0.305		5mm							
WLAN5GHz Ant5+8		0.115	0.543	5mm							
BT Ant3		0.123		5mm	16.5	77.9	-1.2				
No.26 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant9	Front	1.299	1.299	5mm	-32.8	-71	-1.02	90.9	2.18	0.04	Not required



FCC SAR Test Report

Report No. : FA591602

Ant6		0.641	0.879	5mm	-51.2	18	-1.12				
WLAN5GHz Ant5+8		0.115		5mm							
BT Ant3		0.123		5mm							
Ant9	Front	1.299	1.299	5mm	-32.8	-71	-1.02	147.0	2.18	0.02	Not required
Ant6		0.641	0.879	5mm							
WLAN5GHz Ant5+8		0.115		5mm	6.9	70.5	-0.38				
BT Ant3		0.123		5mm							
Ant9	Front	1.299	1.299	5mm	-32.8	-71	-1.02	156.8	2.18	0.02	Not required
Ant6		0.641	0.879	5mm							
WLAN5GHz Ant5+8		0.115		5mm							
BT Ant3		0.123		5mm	16.5	77.9	-1.2				
No.27 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant9	Front	1.299	1.299	5mm	-44.2	-76	-1.07	112.2	2.04	0.03	Not required
Ant7		0.505	0.743	5mm	-55.6	35.6	-1.1				
WLAN5GHz Ant5+8		0.123		5mm							
BT Ant3		0.115		5mm							
Ant9	Front	1.299	1.299	5mm	-32.8	-71	-1.02	147.0	2.04	0.02	Not required
Ant7		0.505	0.743	5mm							
WLAN5GHz Ant5+8		0.123		5mm	6.9	70.5	-0.38				
BT Ant3		0.115		5mm							
Ant9	Front	1.299	1.299	5mm	-32.8	-71	-1.02	156.8	2.04	0.02	Not required
Ant7		0.505	0.743	5mm							
WLAN5GHz Ant5+8		0.123		5mm							
BT Ant3		0.115		5mm	16.5	77.9	-1.2				
No.28 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant9	Front	1.299	1.299	5mm	-32.8	-71	-1.02	153.4	1.93	0.02	Not required
Ant8		0.393	0.631	5mm	24.8	71.2	-0.92				
WLAN5GHz Ant5+8		0.123		5mm							
BT Ant3		0.115		5mm							
Ant9	Front	1.299	1.299	5mm	-32.8	-71	-1.02	147.0	1.93	0.02	Not required
Ant8		0.393	0.631	5mm							
WLAN5GHz Ant5+8		0.123		5mm	6.9	70.5	-0.38				
BT Ant3		0.115		5mm							
Ant9	Front	1.299	1.299	5mm	-32.8	-71	-1.02	156.8	1.93	0.02	Not required
Ant8		0.393	0.631	5mm							
WLAN5GHz Ant5+8		0.123		5mm							
BT Ant3		0.115		5mm	16.5	77.9	-1.2				

No.29 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant0	Back	1.295	1.295	5mm	12.4	-72	-0.95	140.7	2.88	0.03	Not required
Ant1		0.914	1.581	5mm	19.5	68.5	-0.94				
WLAN6GHz Ant5+8		0.456		5mm							
BT Ant2		0.211		5mm							
Ant0	Back	1.295	1.295	5mm	12.4	-72	-0.95	148.6	2.88	0.03	Not required
Ant1		0.914	1.581	5mm							
WLAN6GHz Ant5+8		0.456		5mm	-20.9	72.8	-1.8				
BT Ant2		0.211		5mm							
Ant0	Back	1.295	1.295	5mm	-5.9	-73.4	-1.01	140.4	2.88	0.03	Not required



FCC SAR Test Report

Report No. : FA591602

Ant1		0.914		5mm							
WLAN6GHz Ant5+8		0.456	1.581	5mm							
BT Ant2		0.211		5mm	-40.6	62.6	-1.16				
No.30 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant0	Back	1.295	1.295	5mm	-5.9	-73.4	-1.01	140.4	2.85	0.03	Not required
Ant3		0.888	1.555	5mm	-30.6	64.8	-1.05				
WLAN6GHz Ant5+8		0.456		5mm							
BT Ant2		0.211		5mm							
Ant0	Back	1.295	1.295	5mm	12.4	-69	-0.95	145.7	2.85	0.03	Not required
Ant3		0.888	1.555	5mm							
WLAN6GHz Ant5+8		0.456		5mm	-20.9	72.8	-1.8				
BT Ant2		0.211		5mm							
Ant0	Back	1.295	1.295	5mm	-5.9	-73.4	-1.01	140.4	2.85	0.03	Not required
Ant3		0.888	1.555	5mm							
WLAN6GHz Ant5+8		0.456		5mm							
BT Ant2		0.211		5mm	-40.6	62.6	-1.16				
No.31 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant0	Back	1.295	1.295	5mm	12.4	-72	-0.95	140.7	2.85	0.03	Not required
Ant4		0.888	1.555	5mm	30	67.6	-0.78				
WLAN6GHz Ant5+8		0.456		5mm							
BT Ant2		0.211		5mm							
Ant0	Back	1.295	1.295	5mm	12.4	-72	-0.95	148.6	2.85	0.03	Not required
Ant4		0.888	1.555	5mm							
WLAN6GHz Ant5+8		0.456		5mm	-20.9	72.8	-1.8				
BT Ant2		0.211		5mm							
Ant0	Back	1.295	1.295	5mm	-5.9	-73.4	-1.01	140.4	2.85	0.03	Not required
Ant4		0.888	1.555	5mm							
WLAN6GHz Ant5+8		0.456		5mm							
BT Ant2		0.211		5mm	-40.6	62.6	-1.16				
No.32 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant0	Back	1.295	1.295	5mm	12.4	-72	-0.95	139.1	2.86	0.03	Not required
Ant6		0.894	1.561	5mm	23.6	66.6	-1.03				
WLAN6GHz Ant5+8		0.456		5mm							
BT Ant2		0.211		5mm							
Ant0	Back	1.295	1.295	5mm	12.4	-72	-0.95	148.6	2.86	0.03	Not required
Ant6		0.894	1.561	5mm							
WLAN6GHz Ant5+8		0.456		5mm	-20.9	72.8	-1.8				
BT Ant2		0.211		5mm							
Ant0	Back	1.295	1.295	5mm	-5.9	-73.4	-1.01	140.4	2.86	0.03	Not required
Ant6		0.894	1.561	5mm							
WLAN6GHz Ant5+8		0.456		5mm							
BT Ant2		0.211		5mm	-40.6	62.6	-1.16				
No.33 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant0	Back	1.295	1.295	5mm	12.4	-72	-0.95	143.2	2.88	0.03	Not required
Ant7		0.920	1.587	5mm	-11.6	69.2	-1.14				
WLAN6GHz Ant5+8		0.456		5mm							
BT Ant2		0.211		5mm							



FCC SAR Test Report

Report No. : FA591602

Ant0	Back	1.295	1.295	5mm	12.4	-72	-0.95	148.6	2.88	0.03	Not required
Ant7		0.920	1.587	5mm							
WLAN6GHz Ant5+8		0.456		5mm	-20.9	72.8	-1.8				
BT Ant2		0.211		5mm							
Ant0	Back	1.295	1.295	5mm	-5.9	-73.4	-1.01	140.4	2.88	0.03	Not required
Ant7		0.920	1.587	5mm							
WLAN6GHz Ant5+8		0.456		5mm							
BT Ant2		0.211		5mm	-40.6	62.6	-1.16				
No.34 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant0	Back	1.295	1.295	5mm	-5.9	-73.4	-1.01	149.1	2.88	0.03	Not required
Ant8		0.919	1.586	5mm	-43	71	-0.94				
WLAN6GHz Ant5+8		0.456		5mm							
BT Ant2		0.211		5mm							
Ant0	Back	1.295	1.295	5mm	12.4	-72	-0.95	149	2.88	0.03	Not required
Ant8		0.919	1.586	5mm							
WLAN6GHz Ant5+8		0.456		5mm	-20.9	72.8	-1.8				
BT Ant2		0.211		5mm							
Ant0	Back	1.295	1.295	5mm	-5.9	-73.4	-1.01	140.4	2.88	0.03	Not required
Ant8		0.919	1.586	5mm							
WLAN6GHz Ant5+8		0.456		5mm							
BT Ant2		0.211		5mm	-40.6	62.6	-1.16				
No.35 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant9	Back	1.304	1.304	5mm	21.2	-79	-0.9	147.5	2.89	0.03	Not required
Ant1		0.914	1.581	5mm	19.5	68.5	-0.94				
WLAN6GHz Ant5+8		0.456		5mm							
BT Ant2		0.211		5mm							
Ant9	Back	1.304	1.304	5mm	21.2	-79	-0.9	157.5	2.89	0.03	Not required
Ant1		0.914	1.581	5mm							
WLAN6GHz Ant5+8		0.456		5mm	-20.9	72.8	-1.8				
BT Ant2		0.211		5mm							
Ant9	Back	1.304	1.304	5mm	13.7	-81.2	-1	153.7	2.89	0.03	Not required
Ant1		0.914	1.581	5mm							
WLAN6GHz Ant5+8		0.456		5mm							
BT Ant2		0.211		5mm	-40.6	62.6	-1.16				
No.36 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant9	Back	1.304	1.304	5mm	13.7	-81.2	-1	152.6	2.86	0.03	Not required
Ant3		0.888	1.555	5mm	-30.6	64.8	-1.05				
WLAN6GHz Ant5+8		0.456		5mm							
BT Ant2		0.211		5mm							
Ant9	Back	1.304	1.304	5mm	21.2	-79	-0.9	157.5	2.86	0.03	Not required
Ant3		0.888	1.555	5mm							
WLAN6GHz Ant5+8		0.456		5mm	-20.9	72.8	-1.8				
BT Ant2		0.211		5mm							
Ant9	Back	1.304	1.304	5mm	13.7	-81.2	-1	153.7	2.86	0.03	Not required
Ant3		0.888	1.555	5mm							
WLAN6GHz Ant5+8		0.456		5mm							
BT Ant2		0.211		5mm	-40.6	62.6	-1.16				
No.37	Position	SAR	Summed	Gap	SAR peak location (mm)			3D	Summed	SPLSR	Simultaneous



FCC SAR Test Report

Report No. : FA591602

Band		1g SAR (W/kg)			X	Y	Z	distance (mm)	SAR (W/kg)		
Ant9	Back	1.304	1.304	5mm	21.2	-79	-0.9	146.9	2.86	0.03	Not required
Ant4		0.888	1.555	5mm	30	67.6	-0.78				
WLAN6GHz Ant5+8		0.456		5mm							
BT Ant2		0.211		5mm							
Ant9	Back	1.304	1.304	5mm	21.2	-79	-0.9	157.5	2.86	0.03	Not required
Ant4		0.888	1.555	5mm							
WLAN6GHz Ant5+8		0.456		5mm	-20.9	72.8	-1.8				
BT Ant2		0.211		5mm							
Ant9	Back	1.304	1.304	5mm	13.7	-81.2	-1	153.7	2.86	0.03	Not required
Ant4		0.888	1.555	5mm							
WLAN6GHz Ant5+8		0.456		5mm							
BT Ant2		0.211		5mm	-40.6	62.6	-1.16				
No.38 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant9	Back	1.304	1.304	5mm	21.2	-79	-0.9	145.6	2.87	0.03	Not required
Ant6		0.894	1.561	5mm	23.6	66.6	-1.03				
WLAN6GHz Ant5+8		0.456		5mm							
BT Ant2		0.211		5mm							
Ant9	Back	1.304	1.304	5mm	21.2	-79	-0.9	157.5	2.87	0.03	Not required
Ant6		0.894	1.561	5mm							
WLAN6GHz Ant5+8		0.456		5mm	-20.9	72.8	-1.8				
BT Ant2		0.211		5mm							
Ant9	Back	1.304	1.304	5mm	13.7	-81.2	-1	153.7	2.87	0.03	Not required
Ant6		0.894	1.561	5mm							
WLAN6GHz Ant5+8		0.456		5mm							
BT Ant2		0.211		5mm	-40.6	62.6	-1.16				
No.39 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant9	Back	1.304	1.304	5mm	21.2	-79	-0.9	151.8	2.89	0.03	Not required
Ant7		0.920	1.587	5mm	-11.6	69.2	-1.14				
WLAN6GHz Ant5+8		0.456		5mm							
BT Ant2		0.211		5mm							
Ant9	Back	1.304	1.304	5mm	21.2	-79	-0.9	157.5	2.89	0.03	Not required
Ant7		0.920	1.587	5mm							
WLAN6GHz Ant5+8		0.456		5mm	-20.9	72.8	-1.8				
BT Ant2		0.211		5mm							
Ant9	Back	1.304	1.304	5mm	13.7	-81.2	-1	153.7	2.89	0.03	Not required
Ant7		0.920	1.587	5mm							
WLAN6GHz Ant5+8		0.456		5mm							
BT Ant2		0.211		5mm	-40.6	62.6	-1.16				
No.40 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant9	Back	1.304	1.304	5mm	13.7	-81.2	-1	162.4	2.89	0.03	Not required
Ant8		0.919	1.586	5mm	-43	71	-0.94				
WLAN6GHz Ant5+8		0.456		5mm							
BT Ant2		0.211		5mm							
Ant9	Back	1.304	1.304	5mm	21.2	-79	-0.9	157.5	2.89	0.03	Not required
Ant8		0.919	1.586	5mm							
WLAN6GHz Ant5+8		0.456		5mm	-20.9	72.8	-1.8				
BT Ant2		0.211		5mm							



Ant9	Back	1.304	1.304	5mm	13.7	-81.2	-1	153.7	2.89	0.03	Not required
Ant8		0.919	1.586	5mm							
WLAN6GHz Ant5+8		0.456		5mm							
BT Ant2		0.211		5mm	-40.6	62.6	-1.16				

Sensor Off

No.81 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant0	Front	0.930	1.142	15mm	-5.6	-80.4	-1	166.2	2.07	0.02	Not required
Ant1		0.695		15mm	-39.1	82.4	-1				
WLAN5GHz Ant5+8		0.336		15mm							
BT Ant3		0.111		15mm							
Ant0	Front	0.930	1.142	15mm	-5.6	-80.4	-1	151.4	2.07	0.02	Not required
Ant1		0.695		15mm							
WLAN5GHz Ant5+8		0.336		15mm	6.9	70.5	-0.38				
BT Ant3		0.111		15mm							
Ant0	Front	0.930	1.142	15mm	-5.6	-80.4	-1	159.8	2.07	0.02	Not required
Ant1		0.695		15mm							
WLAN5GHz Ant5+8		0.336		15mm							
BT Ant3		0.111		15mm	16.5	77.9	-1.2				
No.82 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant0	Front	0.930	0.788	15mm	-5.6	-80.4	-1	155.9	1.72	0.01	Not required
Ant3		0.341		15mm	16	74	-0.95				
WLAN5GHz Ant5+8		0.336		15mm							
BT Ant3		0.111		15mm							
Ant0	Front	0.930	0.788	15mm	-5.6	-80.4	-1	151.4	1.72	0.01	Not required
Ant3		0.341		15mm							
WLAN5GHz Ant5+8		0.336		15mm	6.9	70.5	-0.38				
BT Ant3		0.111		15mm							
Ant0	Front	0.930	0.788	15mm	-5.6	-80.4	-1	159.8	1.72	0.01	Not required
Ant3		0.341		15mm							
WLAN5GHz Ant5+8		0.336		15mm							
BT Ant3		0.111		15mm	16.5	77.9	-1.2				
No.83 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant0	Front	0.930	0.717	15mm	-5.6	-80.4	-1	123.5	1.65	0.02	Not required
Ant4		0.270		15mm	-55.9	32.4	-1.1				
WLAN5GHz Ant5+8		0.336		15mm							
BT Ant3		0.111		15mm							
Ant0	Front	0.930	0.717	15mm	-5.6	-80.4	-1	151.4	1.65	0.01	Not required
Ant4		0.270		15mm							
WLAN5GHz Ant5+8		0.336		15mm	6.9	70.5	-0.38				
BT Ant3		0.111		15mm							
Ant0	Front	0.930	0.717	15mm	-5.6	-80.4	-1	159.8	1.65	0.01	Not required
Ant4		0.270		15mm							
WLAN5GHz Ant5+8		0.336		15mm							
BT Ant3		0.111		15mm	16.5	77.9	-1.2				
No.84 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant0	Front	0.930	0.824	15mm	-5.6	-80.4	-1	108.5	1.75	0.02	Not required
Ant6		0.377		15mm	-51.2	18	-1.12				



FCC SAR Test Report

Report No. : FA591602

WLAN5GHz Ant5+8		0.336		15mm							
BT Ant3		0.111		15mm							
Ant0	Front	0.930	0.930	15mm	-5.6	-80.4	-1	151.4	1.75	0.02	Not required
Ant6		0.377	0.824	15mm							
WLAN5GHz Ant5+8		0.336		15mm	6.9	70.5	-0.38				
BT Ant3		0.111		15mm							
Ant0	Front	0.930	0.930	15mm	-5.6	-80.4	-1	159.8	1.75	0.01	Not required
Ant6		0.377	0.824	15mm							
WLAN5GHz Ant5+8		0.336		15mm							
BT Ant3		0.111		15mm	16.5	77.9	-1.2				
No.85 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant0	Front	0.930	0.930	15mm	-5.6	-80.4	-1	163.2	1.77	0.01	Not required
Ant7		0.391	0.838	15mm	3.8	82.5	-1.07				
WLAN5GHz Ant5+8		0.336		15mm							
BT Ant3		0.111		15mm							
Ant0	Front	0.930	0.930	15mm	-5.6	-80.4	-1	151.4	1.77	0.02	Not required
Ant7		0.391	0.838	15mm							
WLAN5GHz Ant5+8		0.336		15mm	6.9	70.5	-0.38				
BT Ant3		0.111		15mm							
Ant0	Front	0.930	0.930	15mm	-5.6	-80.4	-1	159.8	1.77	0.01	Not required
Ant7		0.391	0.838	15mm							
WLAN5GHz Ant5+8		0.336		15mm							
BT Ant3		0.111		15mm	16.5	77.9	-1.2				
No.86 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant0	Front	0.930	0.930	15mm	-5.6	-80.4	-1	154.6	1.75	0.01	Not required
Ant8		0.371	0.818	15mm	24.8	71.2	-0.92				
WLAN5GHz Ant5+8		0.336		15mm							
BT Ant3		0.111		15mm							
Ant0	Front	0.930	0.930	15mm	-5.6	-80.4	-1	151.4	1.75	0.02	Not required
Ant8		0.371	0.818	15mm							
WLAN5GHz Ant5+8		0.336		15mm	6.9	70.5	-0.38				
BT Ant3		0.111		15mm							
Ant0	Front	0.930	0.930	15mm	-5.6	-80.4	-1	159.8	1.75	0.01	Not required
Ant8		0.371	0.818	15mm							
WLAN5GHz Ant5+8		0.336		15mm							
BT Ant3		0.111		15mm	16.5	77.9	-1.2				
No.87 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant9	Front	0.849	0.849	15mm	-41.2	-74.4	-1.13	156.8	1.99	0.02	Not required
Ant1		0.695	1.142	15mm	-39.1	82.4	-1				
WLAN5GHz Ant5+8		0.336		15mm							
BT Ant3		0.111		15mm							
Ant9	Front	0.849	0.849	15mm	-41.2	-74.4	-1.13	152.7	1.99	0.02	Not required
Ant1		0.695	1.142	15mm							
WLAN5GHz Ant5+8		0.336		15mm	6.9	70.5	-0.38				
BT Ant3		0.111		15mm							
Ant9	Front	0.849	0.849	15mm	-41.2	-74.4	-1.13	162.9	1.99	0.02	Not required
Ant1		0.695	1.142	15mm							
WLAN5GHz Ant5+8		0.336		15mm							



FCC SAR Test Report

Report No. : FA591602

BT Ant3		0.111		15mm	16.5	77.9	-1.2				
No.88 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant9	Front	0.849	0.788	15mm	-41.2	-74.4	-1.13	159.0	1.64	0.01	Not required
Ant3		0.341		15mm	16	74	-0.95				
WLAN5GHz Ant5+8		0.336		15mm							
BT Ant3		0.111		15mm							
Ant9	Front	0.849	0.788	15mm	-41.2	-74.4	-1.13	152.7	1.64	0.01	Not required
Ant3		0.341		15mm							
WLAN5GHz Ant5+8		0.336		15mm	6.9	70.5	-0.38				
BT Ant3		0.111		15mm							
Ant9	Front	0.849	0.788	15mm	-41.2	-74.4	-1.13	162.9	1.64	0.01	Not required
Ant3		0.341		15mm							
WLAN5GHz Ant5+8		0.336		15mm							
BT Ant3		0.111		15mm	16.5	77.9	-1.2				
No.89 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant9	Front	0.849	0.824	15mm	-41.2	-74.4	-1.13	92.9	1.67	0.02	Not required
Ant6		0.377		15mm	-51.2	18	-1.12				
WLAN5GHz Ant5+8		0.336		15mm							
BT Ant3		0.111		15mm							
Ant9	Front	0.849	0.824	15mm	-41.2	-74.4	-1.13	152.7	1.67	0.01	Not required
Ant6		0.377		15mm							
WLAN5GHz Ant5+8		0.336		15mm	6.9	70.5	-0.38				
BT Ant3		0.111		15mm							
Ant9	Front	0.849	0.824	15mm	-41.2	-74.4	-1.13	162.9	1.67	0.01	Not required
Ant6		0.377		15mm							
WLAN5GHz Ant5+8		0.336		15mm							
BT Ant3		0.111		15mm	16.5	77.9	-1.2				
No.90 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant9	Front	0.849	0.838	15mm	-41.2	-74.4	-1.13	163.2	1.69	0.01	Not required
Ant7		0.391		15mm	3.8	82.5	-1.07				
WLAN5GHz Ant5+8		0.336		15mm							
BT Ant3		0.111		15mm							
Ant9	Front	0.849	0.838	15mm	-41.2	-74.4	-1.13	152.7	1.69	0.01	Not required
Ant7		0.391		15mm							
WLAN5GHz Ant5+8		0.336		15mm	6.9	70.5	-0.38				
BT Ant3		0.111		15mm							
Ant9	Front	0.849	0.838	15mm	-41.2	-74.4	-1.13	162.9	1.69	0.01	Not required
Ant7		0.391		15mm							
WLAN5GHz Ant5+8		0.336		15mm							
BT Ant3		0.111		15mm	16.5	77.9	-1.2				
No.91 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant9	Front	0.849	0.818	15mm	-41.2	-74.4	-1.13	159.9	1.67	0.01	Not required
Ant8		0.371		15mm	24.8	71.2	-0.92				
WLAN5GHz Ant5+8		0.336		15mm							
BT Ant3		0.111		15mm							
Ant9	Front	0.849	0.818	15mm	-41.2	-74.4	-1.13	152.7	1.67	0.01	Not required
Ant8		0.371		15mm							
WLAN5GHz		0.336		15mm	6.9	70.5	-0.38				



FCC SAR Test Report

Report No. : FA591602

Ant5+8											
BT Ant3		0.111		15mm							
Ant9	Front	0.849	0.849	15mm	-41.2	-74.4	-1.13	162.9	1.67	0.01	Not required
Ant8		0.371	0.818	15mm							
WLAN5GHz Ant5+8		0.336		15mm							
BT Ant3		0.111		15mm	16.5	77.9	-1.2				

No.92 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant0	Back	1.062	1.062	19mm	-5.9	-73.4	-1.01	152.7	2.65	0.03	Not required
Ant1		0.854	1.587	19mm	19.7	77.1	-0.78				
WLAN5GHz Ant5+8		0.621		19mm							
BT Ant3		0.112		19mm							
Ant0	Back	1.062	1.062	19mm	-5.9	-73.4	-1.01	147.3	2.65	0.03	Not required
Ant1		0.854	1.587	19mm							
WLAN5GHz Ant5+8		0.621		19mm	-20.6	73.2	-1.9				
BT Ant3		0.112		19mm							
Ant0	Back	1.062	1.062	19mm	-5.9	-73.4	-1.01	149.4	2.65	0.03	Not required
Ant1		0.854	1.587	19mm							
WLAN5GHz Ant5+8		0.621		19mm							
BT Ant3		0.112		19mm	-31.6	73.8	-1.16				
No.93 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant0	Back	1.062	1.062	19mm	-5.9	-73.4	-1.01	140.4	1.97	0.02	Not required
Ant3		0.176	0.909	19mm	-30.6	64.8	-1.05				
WLAN5GHz Ant5+8		0.621		19mm							
BT Ant3		0.112		19mm							
Ant0	Back	1.062	1.062	19mm	-5.9	-73.4	-1.01	147.3	1.97	0.02	Not required
Ant3		0.176	0.909	19mm							
WLAN5GHz Ant5+8		0.621		19mm	-20.6	73.2	-1.9				
BT Ant3		0.112		19mm							
Ant0	Back	1.062	1.062	19mm	-5.9	-73.4	-1.01	149.4	1.97	0.02	Not required
Ant3		0.176	0.909	19mm							
WLAN5GHz Ant5+8		0.621		19mm							
BT Ant3		0.112		19mm	-31.6	73.8	-1.16				
No.94 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant0	Back	1.062	1.062	19mm	-5.9	-73.4	-1.01	145.5	2.32	0.02	Not required
Ant4		0.521	1.254	19mm	30	67.6	-0.78				
WLAN5GHz Ant5+8		0.621		19mm							
BT Ant3		0.112		19mm							
Ant0	Back	1.062	1.062	19mm	-5.9	-73.4	-1.01	147.3	2.32	0.02	Not required
Ant4		0.521	1.254	19mm							
WLAN5GHz Ant5+8		0.621		19mm	-20.6	73.2	-1.9				
BT Ant3		0.112		19mm							
Ant0	Back	1.062	1.062	19mm	-5.9	-73.4	-1.01	149.4	2.32	0.02	Not required
Ant4		0.521	1.254	19mm							
WLAN5GHz Ant5+8		0.621		19mm							
BT Ant3		0.112		19mm	-31.6	73.8	-1.16				
No.95 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant0	Back	1.062	1.062	19mm	-5.9	-73.4	-1.01	143.1	2.09	0.02	Not required



FCC SAR Test Report

Report No. : FA591602

Ant6		0.294		19mm	23.6	66.6	-1.03				
WLAN5GHz Ant5+8		0.621	1.027	19mm							
BT Ant3		0.112		19mm							
Ant0		1.062	1.062	19mm	-5.9	-73.4	-1.01				
Ant6		0.294		19mm							
WLAN5GHz Ant5+8	Back	0.621	1.027	19mm	-20.6	73.2	-1.9	147.3	2.09	0.02	Not required
BT Ant3		0.112		19mm							
Ant0		1.062	1.062	19mm	-5.9	-73.4	-1.01				
Ant6		0.294		19mm							
WLAN5GHz Ant5+8	Back	0.621	1.027	19mm				149.4	2.09	0.02	Not required
BT Ant3		0.112		19mm	-31.6	73.8	-1.16				
No.96 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant0		1.062	1.062	19mm	-5.9	-73.4	-1.01				
Ant7		0.712		19mm	-11.6	69.2	-1.14				
WLAN5GHz Ant5+8	Back	0.621	1.445	19mm				142.7	2.51	0.03	Not required
BT Ant3		0.112		19mm							
Ant0		1.062	1.062	19mm	-5.9	-73.4	-1.01				
Ant7		0.712		19mm							
WLAN5GHz Ant5+8	Back	0.621	1.445	19mm	-20.6	73.2	-1.9	147.3	2.51	0.03	Not required
BT Ant3		0.112		19mm							
Ant0		1.062	1.062	19mm	-5.9	-73.4	-1.01				
Ant7		0.712		19mm							
WLAN5GHz Ant5+8	Back	0.621	1.445	19mm				149.4	2.51	0.03	Not required
BT Ant3		0.112		19mm	-31.6	73.8	-1.16				
No.97 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant0		1.062	1.062	19mm	-5.9	-73.4	-1.01				
Ant8		0.817		19mm	-51	69.6	-0.92				
WLAN5GHz Ant5+8	Back	0.621	1.550	19mm				149.9	2.61	0.03	Not required
BT Ant3		0.112		19mm							
Ant0		1.062	1.062	19mm	-5.9	-73.4	-1.01				
Ant8		0.817		19mm							
WLAN5GHz Ant5+8	Back	0.621	1.550	19mm	-20.6	73.2	-1.9	147	2.61	0.03	Not required
BT Ant3		0.112		19mm							
Ant0		1.062	1.062	19mm	-5.9	-73.4	-1.01				
Ant8		0.817		19mm							
WLAN5GHz Ant5+8	Back	0.621	1.550	19mm				149.4	2.61	0.03	Not required
BT Ant3		0.112		19mm	-31.6	73.8	-1.16				
No.98 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant9		0.438	0.438	19mm	21.2	-79	-0.9				
Ant1		0.854		19mm	19.7	77.1	-0.78				
WLAN5GHz Ant5+8	Back	0.621	1.587	19mm				156.1	2.03	0.02	Not required
BT Ant3		0.112		19mm							
Ant9		0.438	0.438	19mm	21.2	-79	-0.9				
Ant1		0.854		19mm							
WLAN5GHz Ant5+8	Back	0.621	1.587	19mm	-20.6	73.2	-1.9	157.8	2.03	0.02	Not required
BT Ant3		0.112		19mm							
Ant9		0.438	0.438	19mm	21.2	-79	-0.9				
Ant1	Back	0.854	1.587	19mm				161.7	2.03	0.02	Not required



FCC SAR Test Report

Report No. : FA591602

WLAN5GHz Ant5+8		0.621		19mm							
BT Ant3		0.112		19mm	-31.6	73.8	-1.16				
No.99 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant9	Back	0.438	0.438	19mm	21.2	-79	-0.9	146.9	1.69	0.02	Not required
Ant4		0.521	1.254	19mm	30	67.6	-0.78				
WLAN5GHz Ant5+8		0.621		19mm							
BT Ant3		0.112		19mm							
Ant9	Back	0.438	0.438	19mm	21.2	-79	-0.9	157.8	1.69	0.01	Not required
Ant4		0.521	1.254	19mm							
WLAN5GHz Ant5+8		0.621		19mm	-20.6	73.2	-1.9				
BT Ant3		0.112		19mm							
Ant9	Back	0.438	0.438	19mm	21.2	-79	-0.9	161.7	1.69	0.01	Not required
Ant4		0.521	1.254	19mm							
WLAN5GHz Ant5+8		0.621		19mm							
BT Ant3		0.112		19mm	-31.6	73.8	-1.16				
No.100 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant9	Back	0.438	0.438	19mm	21.2	-79	-0.9	151.8	1.88	0.02	Not required
Ant7		0.712	1.445	19mm	-11.6	69.2	-1.14				
WLAN5GHz Ant5+8		0.621		19mm							
BT Ant3		0.112		19mm							
Ant9	Back	0.438	0.438	19mm	21.2	-79	-0.9	157.8	1.88	0.02	Not required
Ant7		0.712	1.445	19mm							
WLAN5GHz Ant5+8		0.621		19mm	-20.6	73.2	-1.9				
BT Ant3		0.112		19mm							
Ant9	Back	0.438	0.438	19mm	21.2	-79	-0.9	161.7	1.88	0.02	Not required
Ant7		0.712	1.445	19mm							
WLAN5GHz Ant5+8		0.621		19mm							
BT Ant3		0.112		19mm	-31.6	73.8	-1.16				
No.101 Band	Position	SAR 1g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant9	Back	0.438	0.438	19mm	21.2	-79	-0.9	165.2	1.99	0.02	Not required
Ant8		0.817	1.550	19mm	-51	69.6	-0.92				
WLAN5GHz Ant5+8		0.621		19mm							
BT Ant3		0.112		19mm							
Ant9	Back	0.438	0.438	19mm	21.2	-79	-0.9	157.8	1.99	0.02	Not required
Ant8		0.817	1.550	19mm							
WLAN5GHz Ant5+8		0.621		19mm	-20.6	73.2	-1.9				
BT Ant3		0.112		19mm							
Ant9	Back	0.438	0.438	19mm	21.2	-79	-0.9	161.7	1.99	0.02	Not required
Ant8		0.817	1.550	19mm							
WLAN5GHz Ant5+8		0.621		19mm							
BT Ant3		0.112		19mm	-31.6	73.8	-1.16				



<Extremity>

No.69 Band	Position	10g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant0	Back	2.153	2.153	0mm	1.3	-83.5	-1.02	164.3	5.12	0.07	Not required
Ant1		2.032		0mm	8.4	80.6	-0.84				
WLAN5GHz Ant5+8		0.914		0mm							
NFC		0.024		0mm							
Ant0	Back	2.153	2.153	0mm	1.3	-83.5	-1.02	167.6	5.12	0.07	Not required
Ant1		2.032		0mm							
WLAN5GHz Ant5+8		0.914		0mm	-22	82.5	-2				
NFC		0.024		0mm							
Ant0	Back	2.153	2.153	0mm	1.3	-83.5	-1.02	151.8	5.12	0.08	Not required
Ant1		2.032		0mm							
WLAN5GHz Ant5+8		0.914		0mm							
NFC		0.024		0mm	-20.1	66.8	-1.02				
No.70 Band	Position	10g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant0	Back	2.153	2.153	0mm	1.3	-83.5	-1.02	152.0	4.33	0.06	Not required
Ant3		1.242		0mm	-30.8	65.1	-1.08				
WLAN5GHz Ant5+8		0.914		0mm							
NFC		0.024		0mm							
Ant0	Back	2.153	2.153	0mm	1.3	-83.5	-1.02	167.6	4.33	0.05	Not required
Ant3		1.242		0mm							
WLAN5GHz Ant5+8		0.914		0mm	-22	82.5	-2				
NFC		0.024		0mm							
Ant0	Back	2.153	2.153	0mm	1.3	-83.5	-1.02	167.6	4.33	0.05	Not required
Ant3		1.242		0mm							
WLAN5GHz Ant5+8		0.914		0mm							
NFC		0.024		0mm	-22	82.5	-2				
No.71 Band	Position	10g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant0	Back	2.153	2.153	0mm	1.3	-83.5	-1.02	169.4	5.58	0.08	Not required
Ant4		2.490		0mm	32	83.1	-0.99				
WLAN5GHz Ant5+8		0.914		0mm							
NFC		0.024		0mm							
Ant0	Back	2.153	2.153	0mm	1.3	-83.5	-1.02	167.6	5.58	0.08	Not required
Ant4		2.490		0mm							
WLAN5GHz Ant5+8		0.914		0mm	-22	82.5	-2				
NFC		0.024		0mm							
Ant0	Back	2.153	2.153	0mm	1.3	-83.5	-1.02	167.6	5.58	0.08	Not required
Ant4		2.490		0mm							
WLAN5GHz Ant5+8		0.914		0mm							
NFC		0.024		0mm	-22	82.5	-2				
No.72 Band	Position	10g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant0	Back	2.153	2.153	0mm	1.3	-83.5	-1.02	151.9	4.61	0.07	Not required
Ant6		1.515		0mm	23	66.8	-0.98				
WLAN5GHz Ant5+8		0.914		0mm							
NFC		0.024		0mm							
Ant0	Back	2.153	2.153	0mm	1.3	-83.5	-1.02	167.6	4.61	0.06	Not required
Ant6		1.515		0mm							



FCC SAR Test Report

Report No. : FA591602

WLAN5GHz Ant5+8		0.914		0mm	-22	82.5	-2				
NFC		0.024		0mm							
Ant0	Back	2.153	2.153	0mm	1.3	-83.5	-1.02	167.6	4.61	0.06	Not required
Ant6		1.515		0mm							
WLAN5GHz Ant5+8		0.914	2.453	0mm							
NFC		0.024		0mm	-22	82.5	-2				
No.74 Band	Position	10g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant0	Back	2.153	2.153	0mm	1.3	-83.5	-1.02	161.8	4.78	0.06	Not required
Ant8		1.684		0mm	-51	69.6	-0.92				
WLAN5GHz Ant5+8		0.914	2.622	0mm							
NFC		0.024		0mm							
Ant0	Back	2.153	2.153	0mm	1.3	-83.5	-1.02	167.6	4.78	0.06	Not required
Ant8		1.684		0mm							
WLAN5GHz Ant5+8		0.914	2.622	0mm	-22	82.5	-2				
NFC		0.024		0mm							
Ant0	Back	2.153	2.153	0mm	1.3	-83.5	-1.02	167.6	4.78	0.06	Not required
Ant8		1.684		0mm							
WLAN5GHz Ant5+8		0.914	2.622	0mm							
NFC		0.024		0mm	-22	82.5	-2				
No.75 Band	Position	10g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant9	Back	2.931	2.931	0mm	27.8	-86	-1	167.7	5.90	0.09	Not required
Ant1		2.032		0mm	8.4	80.6	-0.84				
WLAN5GHz Ant5+8		0.914	2.970	0mm							
NFC		0.024		0mm							
Ant9	Back	2.931	2.931	0mm	27.8	-86	-1	175.7	5.90	0.08	Not required
Ant1		2.032		0mm							
WLAN5GHz Ant5+8		0.914	2.970	0mm	-22	82.5	-2				
NFC		0.024		0mm							
Ant9	Back	2.931	2.931	0mm	27.8	-86	-1	175.7	5.90	0.08	Not required
Ant1		2.032		0mm							
WLAN5GHz Ant5+8		0.914	2.970	0mm							
NFC		0.024		0mm	-22	82.5	-2				
No.76 Band	Position	10g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant9	Back	2.931	2.931	0mm	27.8	-86	-1	162.1	5.11	0.07	Not required
Ant3		1.242		0mm	-30.8	65.1	-1.08				
WLAN5GHz Ant5+8		0.914	2.180	0mm							
NFC		0.024		0mm							
Ant9	Back	2.931	2.931	0mm	27.8	-86	-1	175.7	5.11	0.07	Not required
Ant3		1.242		0mm							
WLAN5GHz Ant5+8		0.914	2.180	0mm	-22	82.5	-2				
NFC		0.024		0mm							
Ant9	Back	2.931	2.931	0mm	27.8	-86	-1	175.7	5.11	0.07	Not required
Ant3		1.242		0mm							
WLAN5GHz Ant5+8		0.914	2.180	0mm							
NFC		0.024		0mm	-22	82.5	-2				
No.77 Band	Position	10g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant9	Back	2.931	2.931	0mm	27.8	-86	-1	169.2	6.36	0.09	Not required



FCC SAR Test Report

Report No. : FA591602

Ant4		2.490		0mm	32	83.1	-0.99				
WLAN5GHz Ant5+8		0.914	3.428	0mm							
NFC		0.024		0mm							
Ant9		2.931	2.931	0mm	27.8	-86	-1				
Ant4		2.490		0mm							
WLAN5GHz Ant5+8	Back	0.914	3.428	0mm	-22	82.5	-2	175.7	6.36	0.09	Not required
NFC		0.024		0mm							
Ant9		2.931	2.931	0mm	27.8	-86	-1				
Ant4		2.490		0mm							
WLAN5GHz Ant5+8	Back	0.914	3.428	0mm				175.7	6.36	0.09	Not required
NFC		0.024		0mm	-22	82.5	-2				
No.78 Band	Position	10g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant9		2.931	2.931	0mm	27.8	-86	-1				
Ant6		1.515		0mm	23	66.8	-0.98				
WLAN5GHz Ant5+8	Back	0.914	2.453	0mm				152.9	5.38	0.08	Not required
NFC		0.024		0mm							
Ant9		2.931	2.931	0mm	27.8	-86	-1				
Ant6		1.515		0mm							
WLAN5GHz Ant5+8	Back	0.914	2.453	0mm	-22	82.5	-2	175.7	5.38	0.07	Not required
NFC		0.024		0mm							
Ant9		2.931	2.931	0mm	27.8	-86	-1				
Ant6		1.515		0mm							
WLAN5GHz Ant5+8	Back	0.914	2.453	0mm				175.7	5.38	0.07	Not required
NFC		0.024		0mm	-22	82.5	-2				
No.79 Band	Position	10g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant9		2.931	2.931	0mm	27.8	-86	-1				
Ant7		0.821		0mm	-28.2	78.8	-1.11				
WLAN5GHz Ant5+8	Back	0.914	1.759	0mm				174.1	4.69	0.06	Not required
NFC		0.024		0mm							
Ant9		2.931	2.931	0mm	27.8	-86	-1				
Ant7		0.821		0mm							
WLAN5GHz Ant5+8	Back	0.914	1.759	0mm	-22	82.5	-2	175.7	4.69	0.06	Not required
NFC		0.024		0mm							
Ant9		2.931	2.931	0mm	27.8	-86	-1				
Ant7		0.821		0mm							
WLAN5GHz Ant5+8	Back	0.914	1.759	0mm				175.7	4.69	0.06	Not required
NFC		0.024		0mm	-22	82.5	-2				
No.80 Band	Position	10g SAR (W/kg)	Summed	Gap	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Ant9		2.931	2.931	0mm	27.8	-86	-1				
Ant8		1.684		0mm	-51	69.6	-0.92				
WLAN5GHz Ant5+8	Back	0.914	2.622	0mm				174.4	5.55	0.08	Not required
NFC		0.024		0mm							
Ant9		2.931	2.931	0mm	27.8	-86	-1				
Ant8		1.684		0mm							
WLAN5GHz Ant5+8	Back	0.914	2.622	0mm	-22	82.5	-2	175.7	5.55	0.07	Not required
NFC		0.024		0mm							
Ant9		2.931	2.931	0mm	27.8	-86	-1				
Ant8	Back	1.684	2.622	0mm				175.7	5.55	0.07	Not required



WLAN5GHz Ant5+8		0.914		0mm							
NFC		0.024		0mm	-22	82.5	-2				

16.7 Maximum Reported SAR and SAR Peak Locations

General Note:

1. The maximum reported SAR and SAR Peak Locations corresponding to each position of each frequency band of each antenna in the below tables are as follows.
2. The unit of SAR evaluation is W/kg. The unit of x, y, z with Axis (x, y, z) evaluation is mm.

<Head>

Left Cheek																									
Band		Ant0			Ant1			Ant3			Ant4			Ant6			Ant7			Ant8			Ant9		
GSM850	SAR	0.163																							
	Axis	48.1	-78.45	-0.88																					
GSM1900	SAR	0.071																							
	Axis	47.2	-76.88	-0.65																					
WCDMA II	SAR	0.075			0.477																				
	Axis	48.37	-78.33	-0.72	-13.24	-1.56	0.58																		
WCDMA IV	SAR	0.153			0.548																				
	Axis	48.31	-78.8	-0.79	-13.41	-1.57	0.59																		
WCDMA V	SAR	0.216			0.577																				
	Axis	47.76	-78.17	-0.9	-10.17	-3.14	0.88																		
LTE Band 7	SAR				0.382																		0.324		
	Axis				-15.16	1.41	0.79																31.04	-85.99	16.88
LTE Band 12	SAR	0.129			0.543																				
	Axis	48.04	-77	-0.88	-11.42	-4.42	1.08																		
LTE Band 13	SAR	0.176			0.549																				
	Axis	48.61	-77.64	-0.79	-12.9	-0.35	-0.08																		
LTE Band 14	SAR	0.196			0.608																				
	Axis	48.52	-78.35	-0.81	-12.29	-0.51	0.2																		
LTE Band 25	SAR	0.142			0.535																				
	Axis	47.71	-78.01	-0.88	-13.45	0.58	-0.43																		
LTE Band 26	SAR	0.181			0.539																				
	Axis	47.91	-77.9	-0.96	-12.9	1.14	-0.27																		
LTE Band 30	SAR				0.462																		0.322		
	Axis				-1.55	12.08	-1.24																31.7	-82.52	17.62
LTE Band 66	SAR	0.146			0.483																				
	Axis	47.83	-78.13	-1.01	-12.78	-0.2	-0.05																		
LTE Band 71	SAR	0.137			0.423																				
	Axis	47.98	-78.17	-0.89	-13.35	0.24	-0.29																		
LTE Band 41	SAR				0.252			0.895						0.424									0.293		
	Axis				-12.57	0.79	0.23	17.28	21.7	-1.97				33.79	-4.93	-2.59							31.49	-86.99	18.93
LTE Band 42	SAR										0.482						0.694			0.880			0.285		
	Axis										-5.9	-1.53	0.89				-0.95	26.9	-1.32	23.44	30.5	-1.45	31.96	-85.67	19.15
LTE Band 48	SAR										0.495						0.450			0.887			0.368		
	Axis										-6.69	-1.12	0.64				-1.2	26.8	-1.26	23.14	29	-1.31	30.34	-81.86	19.16
FR1 n7	SAR				0.409																		0.359		
	Axis				-12.67	-0.37	0.15																33.04	-81.24	19.73
FR1 n12	SAR	0.086			0.574																				
	Axis	48.56	-78.28	-0.99	-12.49	1.1	-0.15																		
FR1 n14	SAR	0.113			0.636																				
	Axis	48.55	-78.18	-1.05	-13.96	1.4	-0.26																		
FR1 n25	SAR	0.084			0.565																				
	Axis	48.52	-79.38	-0.78	-12.32	0.4	-0.27																		



FCC SAR Test Report

Report No. : FA591602

FR1 n26	SAR	0.086			0.607												
	Axis	47.88	-78.67	-0.99	-12.75	0.72	-0.24										
FR1 n30	SAR				0.487											0.227	
	Axis				-13.37	10.89	-0.41									31.05	-82.08 19.58
FR1 n66	SAR	0.098			0.566												
	Axis	48.68	-78.76	-0.77	-12.74	0.01	-0.51										
FR1 n70	SAR	0.097			0.531												
	Axis	47.76	-78.76	-0.98	-14.14	-0.45	-0.53										
FR1 n71	SAR	0.068			0.759												
	Axis	47.76	-79.63	-0.85	-14.03	1.13	-0.26										
FR1 n41	SAR				0.399			0.880			0.861					0.359	
	Axis				-13.84	1.07	0.01	18.11	21.8	-1.98				34.33	-4.43	-2.92	31.26 -81.72 19.68
FR1 n48	SAR							0.774			0.787			0.890		0.334	
	Axis							-6.39	-2.15	0.28				0.43	24.4	-1.57	21.21 31.29 -1.4 33.73 -83.62 20.76
FR1 n77	SAR							0.704			0.664			0.818		0.329	
	Axis							-6.57	-1.9	0.66				-2.59	26.37	-1.27	20.89 30.59 -1.59 38.5 -82.5 19.5

WLAN2.4GHz Ant2+3	SAR (W/kg)	0.370		
	Axis	10.69	17.15	-1.67

BT Ant2	SAR (W/kg)	0.162		
	Axis	53.15	20.62	1.75

BT Ant3	SAR (W/kg)	0.284		
	Axis	19.37	27.68	-1.49

WLAN5GHz Ant5+8	SAR (W/kg)	0.387		
	Axis	23.86	3.55	-2.95

WLAN6GHz Ant5+8	SAR (W/kg)	0.413		
	Axis	23.59	4.21	-2.55

Left Tilted																	
Band		Ant0			Ant1	Ant3			Ant4	Ant6	Ant7			Ant8	Ant9		
GSM850	SAR	0.095															
	Axis	46.93	-77.27	1.35													
GSM1900	SAR	0.001															
	Axis	46.15	-74.19	-0.19													
WCDMA II	SAR	0.001															
	Axis	47.78	-77.26	0.6													
WCDMA IV	SAR	0.093															
	Axis	48.05	-76.66	0.35													
WCDMA V	SAR	0.151															
	Axis	48.13	-76	2.24													
LTE Band 7	SAR														0.105		
	Axis														33.62	-83.01	19.12
LTE Band 12	SAR	0.081															
	Axis	48.89	-76.68	1.14													
LTE Band 13	SAR	0.221															
	Axis	48.68	-76.78	2.56													
LTE Band 14	SAR	0.154															
	Axis	48.96	-75.94	2.44													
LTE Band 25	SAR	0.073															
	Axis	48.93	-75.51	1.82													
LTE Band 26	SAR	0.133															
	Axis	47.34	-76.09	1.78													
LTE Band 30	SAR														0.121		
	Axis														33.75	-83.59	19.38
LTE Band 66	SAR	0.088															
	sp	47.64	-76.79	3.02													
LTE Band 71	SAR	0.076															
	Axis	48.96	-75.25	1.17													
LTE Band 41	SAR					0.838									0.074		
	Axis					16.55	20.9	-1.88							33.85	-83.48	19.23
LTE Band 42	SAR										0.862				0.120		
	Axis										1.59	25.2	-0.34		34.88	-83.64	19.32
LTE Band 48	SAR										0.670				0.198		
	Axis										2.18	25.01	0.56		34.87	-83.99	19.39



FCC SAR Test Report

Report No. : FA591602

FR1 n7	SAR										0.134		
	Axis										33.04	-81.24	19.73
FR1 n12	SAR	0.001											
	Axis	48.93	-75.39	2.58									
FR1 n14	SAR	0.080											
	Axis	47.92	-76.98	2.05									
FR1 n25	SAR	0.067											
	Axis	49.21	-77.79	0.86									
FR1 n26	SAR	0.001											
	Axis	49.57	-74.95	1.76									
FR1 n30	SAR										0.084		
	Axis										34.53	-83.09	19.26
FR1 n66	SAR	0.059											
	Axis	47.78	-74.95	2.35									
FR1 n70	SAR	0.052											
	Axis	49.59	-77.35	0.6									
FR1 n71	SAR	0.001											
	Axis	48.52	-76.17	1.66									
FR1 n41	SAR				0.842						0.129		
	Axis				17.05	22.41	-1.99				34.98	-83.65	19.22
FR1 n48	SAR							0.885			0.127		
	Axis							0.55	23.9	-1.69	33.8	-82.39	19.31
FR1 n77	SAR							0.870			0.200		
	Axis							2.75	25.84	-1.77	33.97	-83.4	18.95

WLAN2.4GHz	SAR	0.387		
Ant6	(W/kg)			
Axis		11.33	14.79	1.98

BT	SAR	0.034		
Ant2	(W/kg)			
Axis		52.22	18.62	1.49

BT	SAR	0.236		
Ant3	(W/kg)			
Axis		18.88	23.51	1.74

WLAN5GHz	SAR	0.240		
Ant5+8	(W/kg)			
Axis		22.41	11.19	3.26

WLAN6GHz	SAR	0.328		
Ant5+8	(W/kg)			
Axis		22.95	2.28	3.11

<Hotspot>

Front													
Band		Ant0			Ant1			Ant3			Ant4		
GSM850	SAR	0.857											
	Axis	-2.9	-87.9	-1									
GSM1900	SAR	0.516											
	Axis	-3	-88.1	-1									
WCDMA II	SAR	0.607			0.415								
	Axis	-3.2	-87.2	-1	-35	83.7	-1.07						
WCDMA IV	SAR	1.069			0.388								
	Axis	-2.8	-86.8	-1	-34	84	-1.07						
WCDMA V	SAR	1.017			0.423								
	Axis	-3.5	-87	-1	-32.5	84.5	-1.07						
LTE Band 7	SAR				0.152								
	Axis				-33	84.1	-1.07						
LTE Band 12	SAR	0.513			0.280								
	Axis	-3.4	-88	-1	-33.4	83.6	-1						
LTE Band 13	SAR	0.790			0.323								
	Axis	-3.2	-87.5	-1	-35.9	85.2	-1						
LTE Band 14	SAR	0.881			0.394								
	Axis	-4.7	-87.4	-1	-34	84.6	-1.07						
LTE Band 25	SAR	0.637			0.419								
	Axis	-3.2	-86.6	-1	-38	83.4	-1.07						
LTE Band 26	SAR	1.016			0.419								
	Axis	-3.2	-86.5	-1	-35.9	83.9	-1						
LTE Band 30	SAR				0.316								
	Axis				-37.2	83.4	-1.07						



LTE Band 66	SAR	0.798			0.389																	
	Axis	-3.2	-87.1	-1	-38.1	83.1	-1.07															
LTE Band 71	SAR	0.500			0.304																	
	Axis	-4.7	-88.2	-1	-37.5	83.7	-1															
LTE Band 41	SAR				0.106			0.315				0.325						0.943				
	Axis				-39.1	82.4	-1	16	74	-0.95		-51.2	18	-1.12				-41.2	-74.4	-1.13		
LTE Band 42	SAR									0.082				0.166			0.222			1.291		
	Axis									-55.6	35.6	-1.1			3.5	82.9	-1.07	24.3	73.4	-0.92	-38.9	-79.5
LTE Band 48	SAR									0.101				0.200			0.161			1.296		
	Axis									-57.8	36.4	-1.1			3.6	83.8	-1.07	24.8	71.2	-0.92	-33.6	-83.2
FR1 n7	SAR				0.191														1.202			
	Axis				-38.8	82.6	-1												-32.3	-80.6	-1.12	
FR1 n12	SAR	0.359			0.335																	
	Axis	-5.1	-81.5	-1	-38.2	83.3	-1.07															
FR1 n14	SAR	0.538			0.403																	
	Axis	-5.5	-79.4	-1	-35.9	84.5	-1.07															
FR1 n25	SAR	0.610			0.397																	
	Axis	-5.6	-80.4	-1	-38.5	84.7	-1.07															
FR1 n26	SAR	0.646			0.442																	
	Axis	-5.7	-80.6	-1	-37.9	83.9	-1															
FR1 n30	SAR				0.263														0.939			
	Axis				-38.5	84.7	-1.07												-30.7	-81.5	-1.07	
FR1 n66	SAR	0.675			0.372																	
	Axis	-3.1	-82.3	-1	-37.5	83.6	-1.07															
FR1 n70	SAR	0.868			0.365																	
	Axis	-3.2	-83.7	-1	-37.2	91.2	-1.07															
FR1 n71	SAR	0.334			0.269																	
	Axis	-2.9	-84.7	-1	-36.7	89.7	-1.07															
FR1 n41	SAR				0.116			0.347				0.373							1.163			
	Axis				-38.2	88.4	-1.07	16.5	77	-0.95		-52.6	19.2	-1.12					-34.1	-83.4	-1.11	
FR1 n48	SAR									0.103				0.210			0.277			1.183		
	Axis									-57.1	36	-1.1			4.1	84.1	-1.07	25.5	72.8	-0.92	-35.6	-75.2
FR1 n77	SAR									0.201				0.083			0.144			1.219		
	Axis									-56.5	32.5	-1.1			3.8	82.5	-1.07	25.3	71.9	-0.92	-36.2	-78.2

WLAN2.4GHz Ant2+3	SAR (W/kg)	0.359		
	Axis	16.7	78.5	-1.1

BT Ant2	SAR (W/kg)	0.089		
	Axis	23.3	37.9	-0.58

BT Ant3	SAR (W/kg)	0.123		
	Axis	16.5	77.9	-1.2

WLAN5GHz Ant5+8	SAR (W/kg)	0.256		
	Axis	6.9	70.5	-0.38

Back																								
Band		Ant0			Ant1			Ant3			Ant4			Ant6			Ant7			Ant8			Ant9	
GSM850	SAR	1.050																						
	Axis	9.2	-73.5	-0.95																				
GSM1900	SAR	0.753																						
	Axis	-12.1	-79.5	-1.03																				
WCDMA II	SAR	0.824			0.521																			
	Axis	-7.5	-78	-1.04	6.4	91.7	-0.83																	
WCDMA IV	SAR	1.283			0.448																			
	Axis	-6	-76.6	-1.05	6.1	96.2	-0.84																	
WCDMA V	SAR	1.256			0.619																			
	Axis	9.2	-79.8	-0.89	19.9	78	-0.85																	
LTE Band 7	SAR				0.248																		1.287	
	Axis				5.7	78.6	-1.03																21.3	-90
LTE Band 12	SAR	0.828			0.512																			
	Axis	12.5	-80.8	-0.83	19.6	77	-0.93																	
LTE Band 13	SAR	0.979			0.616																			
	Axis	7.6	-91.7	-0.8	19.5	68.5	-0.94																	



FCC SAR Test Report

Report No. : FA591602

LTE Band 14	SAR	1.125			0.618																
	Axis	6	-79.8	-0.92	16.5	75.3	-0.96														
LTE Band 25	SAR	0.870			0.524																
	Axis	-9.1	-94.5	-0.92	6.2	91.9	-0.82														
LTE Band 26	SAR	1.238			0.629																
	Axis	9.2	-80.1	-0.95	19.7	77.1	-0.78														
LTE Band 30	SAR				0.428												1.268				
	Axis				8.5	80.9	-0.88										21.5	-90	-0.78		
LTE Band 66	SAR	0.897			0.439																
	Axis	-10.6	-93	-0.91	5.9	95.5	-0.82														
LTE Band 71	SAR	0.755			0.603																
	Axis	9.3	-81.2	-0.95	19.2	79	-0.82														
LTE Band 41	SAR				0.238			0.625			0.457							1.231			
	Axis				11.5	85.5	-0.88	-30.6	64.8	-1.05		23.6	66.6	-1.03				13.7	-81.2	-1	
LTE Band 42	SAR							0.627						0.369			0.623			1.304	
	Axis							22.4	69.2	-0.99				-11.6	69.2	-1.14	-51	77	-0.95	29.9	-82.9
LTE Band 48	SAR							0.639						0.300			0.568			0.898	
	Axis							22.2	69	-1.1				-27	78.2	-1.09	-47.6	71.2	-1	27	-81.5
FR1 n7	SAR				0.316													1.239			
	Axis				7	87.2	-0.81											28.2	-82.2	-0.86	
FR1 n12	SAR	0.488			0.639																
	Axis	12.4	-72	-0.95	18	81.4	-0.75														
FR1 n14	SAR	0.671			0.624																
	Axis	12.4	-76	-0.83	17.2	72.4	-0.95														
FR1 n25	SAR	0.802			0.555																
	Axis	-5.9	-73.4	-1.01	6	91.6	-0.81														
FR1 n26	SAR	0.806			0.691																
	Axis	9.4	-80.8	-1.01	19.5	76.8	-0.76														
FR1 n30	SAR				0.366													1.280			
	Axis				8.4	80.6	-0.84											21.2	-79	-0.9	
FR1 n66	SAR	0.702			0.443																
	Axis	-10.6	-95	-0.95	6.1	94.7	-0.79														
FR1 n70	SAR	1.079			0.421																
	Axis	1.3	-83.5	-1.02	7.5	78.6	-1.03														
FR1 n71	SAR	0.494			0.625																
	Axis	9.3	-80.9	-0.99	18	78.3	-0.79														
FR1 n41	SAR				0.256			0.642			0.515							1.297			
	Axis				11	85.8	-0.77	-30.8	65.1	-1.08		23	66.8	-0.98				24	-80.2	-0.74	
FR1 n48	SAR							0.642						0.362			0.625			1.129	
	Axis							20.8	67.8	-1				-28.2	78.8	-1.11	-51	69.6	-0.92	27.8	-86
FR1 n77	SAR							0.520						0.162			0.651			0.781	
	Axis							30	67.6	-0.78				-28.4	84.2	-0.9	-43	71	-0.94	28.2	-82.5
FR1 n78	SAR							0.616						0.513			0.176			0.767	
	Axis							17.8	71.4	-0.84				-15.4	88.8	-1	-47.8	78.2	-0.9	29.1	-85.5

WLAN2.4GHz Ant2+3	SAR (W/kg)	0.379		
	Axis	-34.2	72.2	-1.77

BT Ant2	SAR (W/kg)	0.211		
	Axis	-40.6	62.6	-1.16

BT Ant3	SAR (W/kg)	0.181		
	Axis	-31.6	73.8	-1.16

WLAN5GHz Ant5+8	SAR (W/kg)	0.542		
	Axis	-20.6	73.2	-1.9



<Body-worn>

		Front																	
Band		Ant0			Ant1			Ant3			Ant4			Ant6			Ant7		
GSM850	SAR	0.857																	
	Axis	-2.9	-87.9	-1															
GSM1900	SAR	0.982																	
	Axis	-3	-88.1	-1															
WCDMA II	SAR	0.961			0.635														
	Axis	-3.2	-87.2	-1	-35	83.7	-1.07												
WCDMA IV	SAR	1.069			0.700														
	Axis	-2.8	-86.8	-1	-34	84	-1.07												
WCDMA V	SAR	1.017			0.613														
	Axis	-3.5	-87	-1	-32.5	84.5	-1.07												
LTE Band 7	SAR				0.560														
	Axis				-33	84.1	-1.07										-44.5	-78	-1.09
LTE Band 12	SAR	0.513			0.442														
	Axis	-3.4	-88	-1	-33.4	83.6	-1												
LTE Band 13	SAR	0.790			0.467														
	Axis	-3.2	-87.5	-1	-35.9	85.2	-1												
LTE Band 14	SAR	0.823			0.513														
	Axis	-4.7	-87.4	-1	-34	84.6	-1.07												
LTE Band 25	SAR	0.932			0.696														
	Axis	-3.2	-86.6	-1	-38	83.4	-1.07												
LTE Band 26	SAR	1.016			0.579														
	Axis	-3.2	-86.5	-1	-35.9	83.9	-1												
LTE Band 30	SAR				0.634														
	Axis				-37.2	83.4	-1.07										-44.2	-76	-1.07
LTE Band 66	SAR	1.147			0.659														
	Axis	-3.2	-87.1	-1	-38.1	83.1	-1.07												
LTE Band 71	SAR	0.500			0.422														
	Axis	-4.7	-88.2	-1	-37.5	83.7	-1												
LTE Band 41	SAR				0.530			0.451						0.641					
	Axis				-39.1	82.4	-1	16	74	-0.95				-51.2	18	-1.12			
LTE Band 42	SAR										0.114						0.359		
	Axis										-55.6	35.6	-1.1				3.5	82.9	-1.07
LTE Band 48	SAR										0.154						0.425		
	Axis										-57.8	36.4	-1.1				3.6	83.8	-1.07
FR1 n7	SAR				0.642														
	Axis				-38.8	82.6	-1												
FR1 n12	SAR	0.359			0.341														
	Axis	-5.1	-81.5	-1	-38.2	83.3	-1.07												
FR1 n14	SAR	0.538			0.546														
	Axis	-5.5	-79.4	-1	-35.9	84.5	-1.07												
FR1 n25	SAR	1.002			0.746														
	Axis	-5.6	-80.4	-1	-38.5	84.7	-1.07												
FR1 n26	SAR	0.646			0.467														
	Axis	-5.7	-80.6	-1	-37.9	83.9	-1												
FR1 n30	SAR				0.621														
	Axis				-38.5	84.7	-1.07										-30.7	-81.5	-1.07
FR1 n66	SAR	1.247			0.737														
	Axis	-3.1	-82.3	-1	-37.5	83.6	-1.07												
FR1 n70	SAR	1.037			0.788														
	Axis	-3.2	-83.7	-1	-37.2	91.2	-1.07												
FR1 n71	SAR	0.334			0.301														
	Axis	-2.9	-84.7	-1	-36.7	89.7	-1.07												



FCC SAR Test Report

Report No. : FA591602

FR1 n41	SAR		0.410			0.641					0.632									1.163			
	Axis		-38.2	88.4	-1.07	16.5	77	-0.95			-52.6	19.2	-1.12							-34.1	-83.4	-1.11	
FR1 n48	SAR								0.141						0.505			0.393			1.182		
	Axis								-57.1	36	-1.1				4.1	84.1	-1.07	25.5	72.8	-0.92	-35.6	-75.2	-0.91
FR1 n77	SAR								0.305						0.398			0.331			1.188		
	Axis								-56.5	32.5	-1.1				3.8	82.5	-1.07	25.3	71.9	-0.92	-36.2	-78.2	-0.94

WLAN2.4GHz Ant2+3	SAR (W/kg)	0.209			BT Ant2	SAR (W/kg)	0.089			BT Ant3	SAR (W/kg)	0.123			WLAN5GHz Ant5+8	SAR (W/kg)	0.115			WLAN6GHz Ant5+8	SAR (W/kg)	0.074		
	Axis	16.7	78.5	-1.1		Axis	23.3	37.9	-0.58		Axis	16.5	77.9	-1.2		Axis	6.9	70.5	-0.38		Axis	5.85	71.2	-0.55

Back																								
Band		Ant0			Ant1			Ant3			Ant4			Ant6			Ant7			Ant8			Ant9	
GSM850	SAR	1.050																						
	Axis	9.2	-73.5	-0.95																				
GSM1900	SAR	1.265																						
	Axis	-12.1	-79.5	-1.03																				
WCDMA II	SAR	1.254			0.838																			
	Axis	-7.5	-78	-1.04	6.4	91.7	-0.83																	
WCDMA IV	SAR	1.283			0.885																			
	Axis	-6	-76.6	-1.05	6.1	96.2	-0.84																	
WCDMA V	SAR	1.256			0.895																			
	Axis	9.2	-79.8	-0.89	19.9	78	-0.85																	
LTE Band 7	SAR				0.871																		1.287	
	Axis				5.7	78.6	-1.03																21.3	-90
LTE Band 12	SAR	0.828			0.809																			
	Axis	12.5	-80.8	-0.83	19.6	77	-0.93																	
LTE Band 13	SAR	0.979			0.889																			
	Axis	7.6	-91.7	-0.8	19.5	68.5	-0.94																	
LTE Band 14	SAR	1.050			0.805																			
	Axis	6	-79.8	-0.92	16.5	75.3	-0.96																	
LTE Band 25	SAR	1.275			0.901																			
	Axis	-9.1	-94.5	-0.92	6.2	91.9	-0.82																	
LTE Band 26	SAR	1.238			0.864																			
	Axis	9.2	-80.1	-0.95	19.7	77.1	-0.78																	
LTE Band 30	SAR				0.859																		1.268	
	Axis				8.5	80.9	-0.88																21.5	-90
LTE Band 66	SAR	1.273			0.862																			
	Axis	-10.6	-93	-0.91	5.9	95.5	-0.82																	
LTE Band 71	SAR	0.755			0.837																			
	Axis	9.3	-81.2	-0.95	19.2	79	-0.82																	
LTE Band 41	SAR				0.906			0.888						0.889									1.274	
	Axis				11.5	85.5	-0.88	-30.6	64.8	-1.05				23.6	66.6	-1.03							13.7	-81.2
LTE Band 42	SAR										0.871						0.884			0.885			0.898	
	Axis										22.4	69.2	-0.99				-11.6	69.2	-1.14	-51	77	-0.95	29.9	-82.9
LTE Band 48	SAR										0.993						0.920			0.945			1.017	
	Axis										22.2	69	-1.1				-27	78.2	-1.09	-47.6	71.2	-1	27	-81.5
FR1 n7	SAR				0.887																		1.304	
	Axis				7	87.2	-0.81																28.2	-82.2
FR1 n12	SAR	0.488			0.651																			
	Axis	12.4	-72	-0.95	18	81.4	-0.75																	
FR1 n14	SAR	0.671			0.852																			
	Axis	12.4	-76	-0.83	17.2	72.4	-0.95																	
FR1 n25	SAR	1.288			0.882																			
	Axis	-5.9	-73.4	-1.01	6	91.6	-0.81																	
FR1 n26	SAR	0.806			0.757																			
	Axis	9.4	-80.8	-1.01	19.5	76.8	-0.76																	



FCC SAR Test Report

Report No. : FA591602

FR1 n30	SAR				0.879										1.280						
	Axis				8.4	80.6	-0.84								21.2	-79	-0.9				
FR1 n66	SAR	1.295			0.882																
	Axis	-10.6	-95	-0.95	6.1	94.7	-0.79														
FR1 n70	SAR	1.289			0.914																
	Axis	1.3	-83.5	-1.02	7.5	78.6	-1.03														
FR1 n71	SAR	0.494			0.697																
	Axis	9.3	-80.9	-0.99	18	78.3	-0.79														
FR1 n41	SAR				0.905			0.877			0.894					1.297					
	Axis				11	85.8	-0.77	-30.8	65.1	-1.08		23	66.8	-0.98		24	-80.2	-0.74			
FR1 n48	SAR								0.888					0.881		0.888		0.706			
	Axis								20.8	67.8	-1			-28.2	78.8	-1.11	-51	69.6	-0.92	27.8	-86
FR1 n77	SAR								0.824					0.975		0.938		0.761			
	Axis								30	67.6	-0.78			-28.4	84.2	-0.9	-43	71	-0.94	28.2	-82.5

WLAN2.4GHz Ant2+3	SAR (W/kg)					0.379
	Axis	-34.2	72.2	-1.77		

BT Ant2	SAR (W/kg)					0.211
	Axis	-40.6	62.6	-1.16		

BT Ant3	SAR (W/kg)					0.181
	Axis	-31.6	73.8	-1.16		

WLAN5GHz Ant5+8	SAR (W/kg)					0.388
	Axis	-20.6	73.2	-1.9		

WLAN6GHz Ant5+8	SAR (W/kg)					0.456
	Axis	-20.9	72.8	-1.8		

Sensor Off

Front																									
Band		Ant0			Ant1			Ant3			Ant4			Ant6			Ant7			Ant8			Ant9		
GSM850	SAR																								
	Axis																								
GSM1900	SAR	0.294																							
	Axis	-3	-88.1	-1																					
WCDMA II	SAR	0.903			0.631																				
	Axis	-3.2	-87.2	-1	-35	83.7	-1.07																		
WCDMA IV	SAR	0.930			0.571																				
	Axis	-2.8	-86.8	-1	-34	84	-1.07																		
WCDMA V	SAR				0.259																				
	Axis				-32.5	84.5	-1.07																		
LTE Band 7	SAR				0.554																		0.716		
	Axis				-33	84.1	-1.07																-44.5	-78	-1.09
LTE Band 12	SAR																								
	Axis																								
LTE Band 13	SAR																								
	Axis																								
LTE Band 14	SAR																								
	Axis																								
LTE Band 25	SAR	0.928			0.695																				
	Axis	-3.2	-86.6	-1	-38	83.4	-1.07																		
LTE Band 26	SAR				0.241																				
	Axis				-35.9	83.9	-1																		
LTE Band 30	SAR				0.604																		0.545		
	Axis				-37.2	83.4	-1.07																-44.2	-76	-1.07
LTE Band 66	SAR	0.759			0.561																				
	Axis	-3.2	-87.1	-1	-38.1	83.1	-1.07																		
LTE Band 71	SAR																								
	Axis																								
LTE Band 41	SAR				0.469			0.341						0.377									0.692		
	Axis				-39.1	82.4	-1	16	74	-0.95				-51.2	18	-1.12							-41.2	-74.4	-1.13
LTE Band 42	SAR										0.109						0.180			0.282			0.658		
	Axis										-55.6			35.6	-1.1	3.5			82.9	-1.07	24.3	73.4	-0.92	-38.9	-79.5
LTE Band 48	SAR										0.113						0.391			0.267			0.759		
	Axis										-57.8			36.4	-1.1	3.6			83.8	-1.07	24.8	71.2	-0.92	-33.6	-83.2
FR1 n7	SAR				0.632																		0.481		

[illegible]

WLAN2.4GHz Ant2+3	SAR (W/kg)	0.431		
	Axis	16.7	78.5	-1.1

BT Ant2	SAR (W/kg)	0.001		
	Axis	23.3	37.9	-0.58

BT Ant3	SAR (W/kg)	0.111		
	Axis	16.5	77.9	-1.2

WLAN5GHz Ant5+8	SAR (W/kg)	0.336		
	Axis	6.9	70.5	-0.38

Back																								
Band		Ant0			Ant1			Ant3			Ant4			Ant6			Ant7			Ant8			Ant9	
GSM850	SAR																							
	Axis																							
GSM1900	SAR	0.315																						
	Axis	-12.1	-79.5	-1.03																				
WCDMA II	SAR	1.062			0.603																			
	Axis	-7.5	-78	-1.04	6.4	91.7	-0.83																	
WCDMA IV	SAR	0.965			0.502																			
	Axis	-6	-76.6	-1.05	6.1	96.2	-0.84																	
WCDMA V	SAR				0.237																			
	Axis				19.9	78	-0.85																	
LTE Band 7	SAR				0.764																		0.438	
	Axis				5.7	78.6	-1.03																21.3	-90
LTE Band 12	SAR																							
	Axis																							
LTE Band 13	SAR																							
	Axis																							
LTE Band 14	SAR																							
	Axis																							
LTE Band 25	SAR	1.048			0.648																			
	Axis	-9.1	-94.5	-0.92	6.2	91.9	-0.82																	
LTE Band 26	SAR				0.220																			
	Axis				19.7	77.1	-0.78																	
LTE Band 30	SAR				0.701																		0.354	
	Axis				8.5	80.9	-0.88																21.5	-90
LTE Band 66	SAR	0.694			0.457																			
	Axis	-10.6	-93	-0.91	5.9	95.5	-0.82																	



LTE Band 71	SAR																			
	Axis																			
LTE Band 41	SAR		0.763			0.136			0.294							0.380				
	Axis		11.5	85.5	-0.88	-30.6	64.8	-1.05		23.6	66.6	-1.03					13.7	-81.2	-1	
LTE Band 42	SAR								0.304					0.185			0.817		0.263	
	Axis								22.4	69.2	-0.99		-11.6	69.2	-1.14	-51	77	-0.95	29.9	-82.9
LTE Band 48	SAR								0.521					0.460			0.722		0.298	
	Axis								22.2	69	-1.1		-27	78.2	-1.09	-47.6	71.2	-1	27	-81.5
FR1 n7	SAR		0.854																0.343	
	Axis		7	87.2	-0.81														28.2	-82.2
FR1 n12	SAR																			
	Axis																			
FR1 n14	SAR																			
	Axis																			
FR1 n25	SAR		0.608		0.445															
	Axis	-5.9	-73.4	-1.01	6	91.6	-0.81													
FR1 n26	SAR																			
	Axis																			
FR1 n30	SAR		0.667																0.217	
	Axis			8.4	80.6	-0.84													21.2	-79
FR1 n66	SAR		0.487		0.279															
	Axis	-10.6	-95	-0.95	6.1	94.7	-0.79													
FR1 n70	SAR		0.365		0.285															
	Axis	1.3	-83.5	-1.02	7.5	78.6	-1.03													
FR1 n71	SAR																			
	Axis																			
FR1 n41	SAR		0.524			0.176			0.229								0.198			
	Axis		11	85.8	-0.77	-30.8	65.1	-1.08		23	66.8	-0.98						24	-80.2	-0.74
FR1 n48	SAR								0.484					0.331			0.741		0.303	
	Axis								20.8	67.8	-1		-28.2	78.8	-1.11	-51	69.6	-0.92	27.8	-86
FR1 n77	SAR								0.435					0.712			0.685		0.186	
	Axis								30	67.6	-0.78		-28.4	84.2	-0.9	-43	71	-0.94	28.2	-82.5

WLAN5GHz Ant5+8	SAR (W/kg)	0.621		
	Axis	-20.6	73.2	-1.9

Back																	
Band		Ant0			Ant1			Ant3			Ant4			Ant6	Ant7	Ant8	Ant9
GSM850	SAR	N/A															
	Axis																
GSM1900	SAR	1.388															
	Axis	-8.2	-79.5	-1.03													
WCDMA II	SAR	1.305			N/A												
	Axis	-7.5	-78	-1.04													
WCDMA IV	SAR	1.391			1.319												
	Axis	-6	-76.6	-1.05	6.1	96.2	-0.84										
WCDMA V	SAR	1.049			N/A												
	Axis	9.2	-79.8	-0.89													
LTE Band 7	SAR				N/A												1.407
	Axis																21.3 -90 -0.78
LTE Band 12	SAR	N/A			N/A												
	Axis																
LTE Band 13	SAR	N/A			N/A												
	Axis																
LTE Band 14	SAR	N/A			N/A												

[illegible]

NFC	SAR (W/kg)	0.024		
	Axis	-20.1	66.8	-1.02

Form version. : 200414

17. Uncertainty Assessment

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

Declaration of Conformity:

The test results with all measurement uncertainty excluded is 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.

The component of uncertainty may generally be categorized according to the methods used to evaluate them. The evaluation of uncertainty by the statistical analysis of a series of observations is termed a Type A evaluation of uncertainty. The evaluation of uncertainty by means other than the statistical analysis of a series of observation is termed a Type B evaluation of uncertainty. Each component of uncertainty, however evaluated, is represented by an estimated standard deviation, termed standard uncertainty, which is determined by the positive square root of the estimated variance.

A Type A evaluation of standard uncertainty may be based on any valid statistical method for treating data. This includes calculating the standard deviation of the mean of a series of independent observations; using the method of least squares to fit a curve to the data in order to estimate the parameter of the curve and their standard deviations; or carrying out an analysis of variance in order to identify and quantify random effects in certain kinds of measurement.

A type B evaluation of standard uncertainty is typically based on scientific judgment using all of the relevant information available. These may include previous measurement data, experience, and knowledge of the behavior and properties of relevant materials and instruments, manufacture's specification, data provided in calibration reports and uncertainties assigned to reference data taken from handbooks. Broadly speaking, the uncertainty is either obtained from an outdoor source or obtained from an assumed distribution, such as the normal distribution, rectangular or triangular distributions indicated in table below.

Uncertainty Distributions	Normal	Rectangular	Triangular	U-Shape
Multi-plying Factor ^(a)	$1/k^{(b)}$	$1/\sqrt{3}$	$1/\sqrt{6}$	$1/\sqrt{2}$

(a) standard uncertainty is determined as the product of the multiplying factor and the estimated range of variations in the measured quantity

(b) k is the coverage factor

Standard Uncertainty for Assumed Distribution

The combined standard uncertainty of the measurement result represents the estimated standard deviation of the result. It is obtained by combining the individual standard uncertainties of both Type A and Type B evaluation using the usual "root-sum-squares" (RSS) methods of combining standard deviations by taking the positive square root of the estimated variances.

Expanded uncertainty is a measure of uncertainty that defines an interval about the measurement result within which the measured value is confidently believed to lie. It is obtained by multiplying the combined standard uncertainty by a coverage factor. Typically, the coverage factor ranges from 2 to 3. Using a coverage factor allows the true value of a measured quantity to be specified with a defined probability within the specified uncertainty range. For purpose of this document, a coverage factor two is used, which corresponds to confidence interval of about 95 %. The DASY uncertainty Budget is shown in the following tables.

The judgment of conformity in the report is based on the measurement results excluding the measurement uncertainty.

Uncertainty Budget According to IEC/IEEE 62209-1528 (Frequency band: 4 MHz - 10 GHz range)							
Error Description	Uncert. Value (±%)	Prob. Dist.	Div.	(Ci) 1g	(Ci) 10g	Standard Uncertainty (1g) (±%)	Standard Uncertainty (10g) (±%)
Measurement System errors							
Probe calibration	18.6	N	2	1	1	9.3	9.3
Probe calibration drift	1.7	R	1.732	1	1	1.0	1.0
Probe linearity and detection Limit	4.7	R	1.732	1	1	2.7	2.7
Broadband signal	2.8	R	1.732	1	1	1.6	1.6
Probe isotropy	7.6	R	1.732	1	1	4.4	4.4
Other probe and data acquisition errors	2.4	N	1	1	1	2.4	2.4
RF ambient and noise	1.8	N	1	1	1	1.8	1.8
Probe positioning errors	0.006	N	1	0.5	0.5	0.0	0.0
Data processing errors	4.0	N	1	1	1	4.0	4.0
Phantom and Device Errors							
Measurement of phantom conductivity (σ)	2.5	N	1	0.78	0.71	2.0	1.8
Temperature effects (medium)	5.4	R	1.732	0.78	0.71	2.4	2.2
Shell permittivity	14.0	R	1.732	0.5	0.5	4.0	4.0
Distance between the radiating element of the DUT and the phantom medium	2.0	N	1	2	2	4.0	4.0
Repeatability of positioning the DUT or source against the phantom	1.0	N	1	1	1	1.0	1.0
Device holder effects	3.6	N	1	1	1	3.6	3.6
Effect of operating mode on probe sensitivity	2.4	R	1.732	1	1	1.4	1.4
Time-average SAR	1.7	R	1.732	1	1	1.0	1.0
Variation in SAR due to drift in output of DUT	2.5	N	1	1	1	2.5	2.5
Validation antenna uncertainty (validation measurement only)	0.0	N	1	1	1	0.0	0.0
Uncertainty in accepted power (validation measurement only)	0.0	N	1	1	1	0.0	0.0
Correction to the SAR results							
Phantom deviation from target (ϵ' , σ)	1.9	N	1	1	0.84	1.9	1.6
SAR scaling	0.0	R	1.732	1	1	0.0	0.0
Combined Std. Uncertainty						14.5%	14.4%
Coverage Factor for 95 %						K=2	K=2
Expanded STD Uncertainty						29.0%	28.8%

SAR Uncertainty Budget for frequency range 4MHz to 10GHz

cDASY6 Module mmWave Uncertainty Budget Evaluation Distances to the Antennas > $\lambda/2\pi$ In Compliance with IEC TR 63170					
Error Description	Uncertainty Value (±dB)	Probability	Divisor	(Ci)	Standard Uncertainty (±dB)
Uncertainty terms dependent on the measurement system					
Probe Calibration	0.49	N	1	1	0.49
Probe correction	0.00	R	1.732	1	0.00
Frequency response	0.20	R	1.732	1	0.12
Sensor cross coupling	0.00	R	1.732	1	0.00
Isotropy	0.50	R	1.732	1	0.29
Linearity	0.20	R	1.732	1	0.12
Probe scattering	0.00	R	1.732	1	0.00
Probe positioning offset	0.30	R	1.732	1	0.17
Probe positioning repeatability	0.04	R	1.732	1	0.02
Sensor mechanical offset	0.00	R	1.732	1	0.00
Probe spatial resolution	0.00	R	1.732	1	0.00
Field impedance dependence	0.00	R	1.732	1	0.00
Amplitude and phase drift	0.00	R	1.732	1	0.00
Amplitude and phase noise	0.04	R	1.732	1	0.02
Measurement area truncation	0.00	R	1.732	1	0.00
Data acquisition	0.03	N	1	1	0.03
Sampling	0.00	R	1.732	1	0.00
Field reconstruction	2.00	R	1.732	1	1.15
Forward transformation	0.00	R	1.732	1	0.00
Power density scaling	0.00	R	1.732	1	0.00
Spatial averaging	0.10	R	1.732	1	0.06
System detection limit	0.04	R	1.732	1	0.02
Uncertainty terms dependent on the DUT and environmental factors					
Probe coupling with DUT	0.00	R	1.732	1	0.0
Modulation response	0.40	R	1.732	1	0.2
Integration time	0.00	R	1.732	1	0.0
Response time	0.00	R	1.732	1	0.0
Device holder influence	0.10	R	1.732	1	0.1
DUT alignment	0.00	R	1.732	1	0.0
RF ambient conditions	0.04	R	1.732	1	0.0
Ambient reflections	0.04	R	1.732	1	0.0
Immunity / secondary reception	0.00	R	1.732	1	0.0
Drift of the DUT		R	1.732	1	
Combined Std. Uncertainty					1.34
Expanded STD Uncertainty (95%)					2.68

PD Uncertainty Budget

18. References

- [1] FCC 47 CFR Part 2 "Frequency Allocations and Radio Treaty Matters; General Rules and Regulations"
- [2] ANSI/IEEE Std. C95.1-1992, "IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz", September 1992
- [3] IEEE Std. 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", Sep 2013
- [4] SPEAG DASY System Handbook
- [5] FCC KDB 865664 D01 v01r04, "SAR Measurement Requirements for 100 MHz to 6 GHz", Aug 2015.
- [6] FCC KDB 865664 D02 v01r02, "RF Exposure Compliance Reporting and Documentation Considerations" Oct 2015.
- [7] FCC KDB 648474 D04 v01r03, "SAR Evaluation Considerations for Wireless Handsets", Oct 2015.
- [8] FCC KDB 248227 D01 v02r02, "SAR Guidance for IEEE 802.11 (WiFi) Transmitters", Oct 2015.
- [9] FCC KDB 616217 D04 v01r02, "SAR Evaluation Considerations for Laptop, Notebook, Netbook and Tablet Computers", Oct 2015
- [10] FCC KDB 941225 D01 v03r01, "3G SAR MEAUREMENT PROCEDURES", Oct 2015
- [11] FCC KDB 941225 D05 v02r05, "SAR Evaluation Considerations for LTE Devices", Dec 2015
- [12] FCC KDB 941225 D05A v01r02, "Rel. 10 LTE SAR Test Guidance and KDB Inquiries", Oct 2015
- [13] FCC KDB 941225 D06 v02r01, "SAR Evaluation Procedures for Portable Devices with Wireless Router Capabilities", Oct 2015.
- [14] FCC KDB 447498 D01 v06, "Mobile and Portable Device RF Exposure Procedures and Equipment Authorization Policies", Oct 2015
- [15] IEC/IEEE 62209-1528:2020, "Measurement procedure for the assessment of specific absorption rate of human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices – Part 1528: Human models, instrumentation, and procedures (Frequency range of 4 MHz to 10 GHz)", Oct. 2020
- [16] IEC 62479:2010 Assessment of the compliance of low power electronic and electrical equipment with the basic restrictions related to human exposure to electromagnetic fields (10 MHz to 300 GHz)
- [17] IEC TR 63170: 2018 Measurement procedure for the evaluation of power density related to human exposure to radio frequency fields from wireless communication devices operating between 6 GHz and 100 GHz
- [18] SPEAG DASY6 Application Note (Interim Procedures for Devices Operating at 6-10 GHz)



Appendixes

Please refer to separated files for the following appendixes

Appendix A. Plots of System Performance Check

Appendix B. Plots of High SAR Measurement

Appendix C. DASY Calibration Certificate

Appendix D. Test Setup Photos

Appendix E. Conducted RF Output Power Table

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