

# FCC SAR Test Report

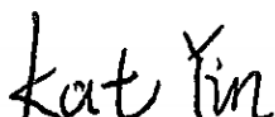
APPLICANT : LENOVO (BEIJING) LIMITED  
EQUIPMENT : Mobile Phone  
BRAND NAME : Lenovo  
MODEL NAME : LENOVO L70081  
FCC ID : A5MLM21C81  
STANDARD : FCC 47 CFR Part 2 (2.1093)

We, Sporton International (Kunshan) Inc, 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 (Kunshan) Inc., the test report shall not be reproduced except in full.



Reviewed by: Nick Hu / Supervisor



Approved by: Kat Yin / Manager



**Sporton International (Kunshan) Inc.**

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 ..... 6
4. Equipment Under Test (EUT) Information ..... 7
4.1 General Information ..... 7
4.2 General LTE SAR Test and Reporting Considerations ..... 10
4.3 General 5G NR SAR Test and Reporting Considerations ..... 13
5. Maximum Tune-up Limit ..... 15
6. RF Exposure Limits ..... 18
6.1 Uncontrolled Environment ..... 18
6.2 Controlled Environment ..... 18
7. Specific Absorption Rate (SAR) ..... 19
7.1 Introduction ..... 19
7.2 SAR Definition ..... 19
8. System Description and Setup ..... 20
8.1 E-Field Probe ..... 21
8.2 Data Acquisition Electronics (DAE) ..... 21
8.3 Phantom ..... 22
8.4 Device Holder ..... 23
9. Measurement Procedures ..... 24
9.1 Spatial Peak SAR Evaluation ..... 24
9.2 Power Reference Measurement ..... 25
9.3 Area Scan ..... 25
9.4 Zoom Scan ..... 26
9.5 Volume Scan Procedures ..... 26
9.6 Power Drift Monitoring ..... 26
10. Test Equipment List ..... 27
11. System Verification ..... 28
11.1 Tissue Simulating Liquids ..... 28
11.2 Tissue Verification ..... 29
11.3 System Performance Check Results ..... 30
12. RF Exposure Positions ..... 32
12.1 Ear and handset reference point ..... 32
12.2 Definition of the cheek position ..... 33
12.3 Definition of the tilt position ..... 34
12.4 Body Worn Accessory ..... 35
12.5 Product Specific 10g SAR Exposure ..... 36
12.6 Wireless Router ..... 36
13. Conducted RF Output Power (Unit: dBm) ..... 37
14. Antenna Location ..... 54
15. SAR Test Results ..... 55
15.1 Head SAR ..... 59
15.2 Hotspot SAR ..... 66
15.3 Body Worn Accessory SAR ..... 75
15.4 Product specific 10g SAR ..... 78
15.5 Repeated SAR Measurement ..... 80
15.6 TDD B41 Linearity Data Analysis ..... 81
16. Simultaneous Transmission Analysis ..... 82
16.1 Head Exposure Conditions ..... 83
16.2 Hotspot Exposure Conditions ..... 89
16.3 Body-Worn Accessory Exposure Conditions ..... 97
16.4 Product specific 10g SAR Exposure Conditions ..... 101
16.5 SPLSR Evaluation and Analysis ..... 105
17. Uncertainty Assessment ..... 113
18. References ..... 114
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





### 1. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for **LENOVO (BEIJING) LIMITED, Mobile Phone, Lenovo L70081**, are as follows.

Highest 1g SAR Summary						
Equipment Class	Frequency Band		Head (Separation 0mm)	Hotspot (Separation 10mm)	Body-worn (Separation 10mm)	Highest Simultaneous Transmission 1g SAR (W/kg)
			1g SAR (W/kg)			
Licensed	GSM	GSM850	0.22	0.59	0.59	1.58
		GSM1900	<0.10	<b>1.18</b>	0.52	
	WCDMA	Band II	<0.10	1.13	0.90	
		Band IV	0.13	1.10	<b>1.10</b>	
		Band V	0.23	0.52	0.52	
	CDMA	BC0	0.20	0.53	0.56	
	LTE	Band 7	0.10	1.14	0.54	
		Band 12/Band 17	0.19	0.43	0.43	
		Band 25/ Band 2	<0.10	0.91	0.83	
		Band 26/ Band 5	0.21	0.38	0.38	
		Band 30	<0.10	0.96	0.54	
		Band 38	<0.10	1.14	0.50	
		Band 41	<0.10	0.97	0.33	
		Band 66/ Band 4	<0.10	0.97	0.68	
		Band 71	0.13	0.22	0.19	
	5G NR	n5	0.19	0.40	0.40	
		n7	1.01	0.91	0.64	
		n25/n2	0.13	0.94	0.55	
		n41/n38	0.91	1.06	0.61	
		n66	0.11	0.55	0.20	
n71		0.16	0.27	0.27		
	n77(n78)	0.70	1.04	0.89		
DTS	WLAN	2.4GHz WLAN	0.94	0.31	0.16	1.46
NII		5GHz WLAN	<b>1.17</b>	0.38	0.28	1.58
DSS	Bluetooth	2.4GHz Bluetooth	0.28	<0.10	<0.10	1.58
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	2.74			3.54
	WCDMA	Band II	3.19			
		Band IV	1.32			
	LTE	Band 7	<b>3.54</b>			
		Band 25/ Band 2	3.10			
		Band 66/ Band 4	3.50			
	5G NR	n41/n38	2.88			
n77(n78)		2.67				
NII	WLAN	5GHz WLAN	0.99			3.54
Date of Testing:			2021/3/25 ~ 2021/5/10			



**Remark:**

1. This device supports LTE B2 / B4 / B5 / B17 and B25 / B66 / B26 / B12. Since the supported frequency span for LTE B2 / B4 / B5 / B17 falls completely within the supports frequency span for LTE B25 / B66 / B26 / B12, 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.
2. This device supports 5G NR n2 / n38 and 5G NR n25 / n41 / n77. Since the supported frequency span for 5G NR n2 / n38 / n78 falls completely within the supports frequency span for 5G NR n25 / n41 / n77, both 5G NR bands have the same target power, and both 5G NR bands share the same transmission path; therefore, SAR was only assessed for 5G NR n25 / n41 / n77.

**Declaration of Conformity:**

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

**Comments and Explanations:**

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

This device is in compliance with Specific Absorption Rate (SAR) for general population/uncontrolled exposure limits (1.6 W/kg for Partial-Body 1g SAR, 4.0 W/kg for Product Specific 10g SAR) specified in FCC 47 CFR part 2 (2.1093) and ANSI/IEEE C95.1-1992, and had been tested in accordance with the measurement methods and procedures specified in IEEE 1528-2013 and FCC KDB publications.



### 2. Administration Data

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

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

Applicant	
Company Name	LENOVO (BEIJING) LIMITED
Address	201-H2-6, Floor 2, Building 2, No.6 Shangdi West Road, Haidian District, Beijing, China 100085

Manufacturer	
Company Name	Lenovo PC HK Limited
Address	23/F, Lincoln House, Taikoo Place 979 King's Road, Quarry Bay, Hong Kong, P.R. China

### 3. Guidance Applied

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

- FCC 47 CFR Part 2 (2.1093)
- ANSI/IEEE C95.1-1992
- IEEE 1528-2013
- FCC KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz v01r04
- FCC KDB 865664 D02 SAR Reporting v01r02
- FCC KDB 447498 D01 General RF Exposure Guidance v06
- FCC KDB 648474 D04 SAR Evaluation Considerations for Wireless Handsets v01r03
- FCC KDB 248227 D01 802.11 Wi-Fi SAR v02r02
- FCC KDB 941225 D01 3G SAR Procedures v03r01
- FCC KDB 941225 D05 SAR for LTE Devices v02r05
- FCC KDB 941225 D05A Rel.10 LTE SAR Test Guidance v01r02
- FCC KDB 941225 D06 Hotspot Mode SAR v02r01



## 4. Equipment Under Test (EUT) Information

### 4.1 General Information

Product Feature & Specification	
Equipment Name	Mobile Phone
Brand Name	Lenovo
Model Name	Lenovo L70081
FCC ID	A5MLM21C81
IMEI Code	SIM1: 862355040003134 SIM2: 862355040003142
Wireless Technology and Frequency Range	GSM850: 824 MHz ~ 849 MHz GSM1900: 1850 MHz ~ 1910 MHz WCDMA Band II: 1850 MHz ~ 1910 MHz WCDMA Band IV: 1710 MHz ~ 1755 MHz WCDMA Band V: 824 MHz ~ 849 MHz CDMA2000 BC0: 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 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 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 n25 : 1850 MHz ~ 1915 MHz 5G NR n38 : 2570 MHz ~ 2620 MHz 5G NR n41: 2496 MHz ~ 2690 MHz 5G NR n66 : 1710 MHz ~ 1780 MHz 5G NR n71 : 663 MHz ~ 698 MHz 5G NR n77: 3700 MHz ~ 3980 MHz 5G NR n78: 3700 MHz ~ 3800 MHz WLAN 2.4GHz Band: 2412 MHz ~ 2462 MHz WLAN 5.2GHz Band: 5180 MHz ~ 5240 MHz WLAN 5.3GHz Band: 5260 MHz ~ 5320 MHz WLAN 5.5GHz Band: 5500 MHz ~ 5720 MHz WLAN 5.8GHz Band: 5745 MHz ~ 5825 MHz Bluetooth: 2402 MHz ~ 2480 MHz NFC: 13.56 MHz
Mode	GSM/GPRS/EGPRS RMC/AMR 12.2Kbps HSDPA HSUPA DC-HSDPA HSPA+(16QAM uplink is not supported) LTE: QPSK, 16QAM, 64QAM,256QAM 5G NR : CP-OFDM / DFT-s-OFDM, PI/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM WLAN 2.4GHz 802.11b/g/n HT20/HT40 WLAN 2.4GHz 802.11ac VHT20/VHT40 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



	Bluetooth BR/EDR/LE NFC:ASK
HW Version	DVT2
SW Version	L70081_CN_OPEN_UD_Q00017.0_R_ZUI_12.5.020_ST_210219_qpst
GSM / (E)GPRS Transfer mode	Class B – EUT cannot support Packet Switched and Circuit Switched Network simultaneously but can automatically switch between Packet and Circuit Switched Network.
EUT Stage	Identical Prototype

**Remark:**

1. This device supports VoIP in GPRS, EGPRS, WCDMA and LTE (e.g. for 3rd-party VoIP), LTE supports VoLTE operation.
2. This device 2.4GHz WLAN support hotspot operation and Bluetooth support tethering applications.
3. This device 2.4GHz WLAN/5.2GHz WLAN/5.8GHz WLAN support hotspot operation, and 5.2GHz WLAN/5.8GHz WLAN supports WiFi Direct (GC/GO), and 5.3GHz / 5.5GHz supports WiFi Direct (GC only).
4. This device does not support DTM operation and supports GPRS/EGPRS mode up to multi-slot class 33.
5. For dual SIM card mobile has two SIM slots and supports dual SIM dual standby. The WWAN radio transmission will be enabled by either one SIM at a time (single active). After pre-scan two SIM cards power, we found test result of the SIM1 was the worse, so we chose SIM1 slot to perform all tests.
6. The device implements receiver detect mechanism/hotspot trigger reduced power for the power management for SAR compliance at different exposure conditions (head, body-worn, hotspot, extremity). The device will invoke corresponding work scenarios power level base on frequency bands/antennas, which can refer to appendix E. power table.
7. For WLAN when transmit simultaneous with WWAN LAT or UAT, power reduction will be activated to head.
8. For Some WWAN bands, Receiver off reduced power level higher than hotspot reduced power level, so front/back Receiver off SAR can represent hotspot conservatively.
9. This device supports HPUE for LTE band 41 with class 2 level, HPUE power have been measured separately. 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.
10. For 5G NR test, using FTM (Factory Test Mode) to perform SAR with default 100% transmission.
11. 5G NR n41/n77/n78 supports HPUE limited to MIMO state, MIMO SAR using single each antenna SAR summed together as MIMO SAR is more conservatively.
12. 5G NR n41/n77/n78 MIMO power is summed per chain power together, per chain power is the same as standalone power, so measured power we only show one time.
13. 5G NR n41/n77/n78 supports MIMO mode limited to SA mode.
14. For 5G NR EN-DC mode, the simultaneous transmission analysis is summed 5G NR SAR and LTE SAR to show compliance.
15. NSA and SA mode should perform SAR separately. For the maximum power of NSA mode is the same as SA total power level, so SA SAR can represent NSA mode SAR.
16. 5G NR NSA mode, the power level is the same as 5G NR SA mode, so 5G NR NSA mode and SA mode power table only show one time.
17. 5G NR supports CP-OFDM and DFT-s-OFDM modulation, for DFT-s-OFDM power is higher than CP-OFDM, so only show DFT-s-OFDM power table and chose DFT-s-OFDM to perform SAR testing.
18. For DFT-s-OFDM and CP-OFDM output power measurement reduction, according to 38.101 maximum power reduction for the CP-OFDM mode will not higher than DFT-s-OFDM mode, therefore, CP-OFDM measurement is unnecessary.
19. This device supports 5G NR FR1 bands as following table, including NSA mode and SA mode. NSA and SA mode performed SAR separately.





<5G NR>

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



4.2 General LTE SAR Test and Reporting Considerations

Summarized necessary items addressed in KDB 941225 D05 v02r05																																																															
FCC ID	A5MLM21C81																																																														
Equipment Name	Mobile Phone																																																														
Operating Frequency Range of each LTE transmission band	LTE Band 2: 1850 MHz ~ 1910 MHz LTE Band 4: 1710 MHz ~ 1755 MHz LTE Band 5: 824 MHz ~ 849 MHz LTE Band 7: 2500 MHz ~ 2570 MHz LTE Band 12: 699 MHz ~ 716 MHz LTE Band 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 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 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 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	R15, Cat18																																																														
CA Support	Supported, Uplink and Downlink																																																														
LTE MPR permanently built-in by design	<p><b>Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 1, 2 and 3</b></p> <table border="1"> <thead> <tr> <th rowspan="2">Modulation</th> <th colspan="6">Channel bandwidth / Transmission bandwidth (N<sub>RB</sub>)</th> <th rowspan="2">MPR (dB)</th> </tr> <tr> <th>1.4 MHz</th> <th>3.0 MHz</th> <th>5 MHz</th> <th>10 MHz</th> <th>15 MHz</th> <th>20 MHz</th> </tr> </thead> <tbody> <tr> <td>QPSK</td> <td>&gt; 5</td> <td>&gt; 4</td> <td>&gt; 8</td> <td>&gt; 12</td> <td>&gt; 16</td> <td>&gt; 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>&gt; 5</td> <td>&gt; 4</td> <td>&gt; 8</td> <td>&gt; 12</td> <td>&gt; 16</td> <td>&gt; 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>&gt; 5</td> <td>&gt; 4</td> <td>&gt; 8</td> <td>&gt; 12</td> <td>&gt; 16</td> <td>&gt; 18</td> <td>≤ 3</td> </tr> <tr> <td>256 QAM</td> <td colspan="6">≥ 1</td> <td>≤ 5</td> </tr> </tbody> </table>	Modulation	Channel bandwidth / Transmission bandwidth (N <sub>RB</sub> )						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
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256 QAM	≥ 1						≤ 5																																																								
LTE A-MPR	In the base station simulator configuration, Network Setting value is set to NS_01 to disable A-MPR during SAR testing and the LTE SAR tests was transmitting on all TTI frames (Maximum TTI)																																																														
Spectrum plots for RB configuration	A properly configured base station simulator was used for the SAR and power measurement; therefore, spectrum plots for each RB allocation and offset configuration are not included in the SAR report.																																																														
Power reduction applied to satisfy SAR compliance	Yes, head/body-worn/ hotspot/extremity will trigger reduced power for some LTE bands, the detail please referred to section 13.																																																														
LTE Carrier Aggregation Combinations	Inter-Band and Intra-Band possible combinations and the detail power verification please referred to section 13.																																																														
LTE Carrier Aggregation Additional Information	1. This device supports LTE Carrier Aggregation (CA) in the uplink for 41C with two component carriers in the uplink. SAR Measurements and conducted powers were evaluated per FCC Guidance. 2. This device supports maximum of 4 carriers in the downlink and 2 carriers in the uplink.																																																														



Transmission (H, M, L) channel numbers and frequencies in each LTE band													
LTE Band 2													
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz		
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	
L	18607	1850.7	18615	1851.5	18625	1852.5	18650	1855	18675	1857.5	18700	1860	
M	18900	1880	18900	1880	18900	1880	18900	1880	18900	1880	18900	1880	
H	19193	1909.3	19185	1908.5	19175	1907.5	19150	1905	19125	1902.5	19100	1900	
LTE Band 4													
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz		
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	
L	19957	1710.7	19965	1711.5	19975	1712.5	20000	1715	20025	1717.5	20050	1720	
M	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5	
H	20393	1754.3	20385	1753.5	20375	1752.5	20350	1750	20325	1747.5	20300	1745	
LTE Band 5													
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz		
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	
L	20407	824.7	20415	825.5	20425	826.5	20450	829	20525	836.5	20525	836.5	
M	20525	836.5	20525	836.5	20525	836.5	20525	836.5	20525	836.5	20525	836.5	
H	20643	848.3	20635	847.5	20625	846.5	20600	844	20600	844	20600	844	
LTE Band 7													
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz		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		Bandwidth 15 MHz		Bandwidth 20 MHz		
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	
L	23017	699.7	23025	700.5	23035	701.5	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 17													
	Bandwidth 5 MHz				Bandwidth 10 MHz				Bandwidth 15 MHz				Bandwidth 20 MHz
	Channel #		Freq.(MHz)		Channel #		Freq. (MHz)		Channel #		Freq. (MHz)		Channel #
L	23755		706.5		23780		709		23780		709		23780
M	23790		710		23790		710		23790		710		23790
H	23825		713.5		23800		711		23800		711		23800
LTE Band 25													
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz		
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	
L	26047	1850.7	26055	1851.5	26065	1852.5	26090	1855	26115	1857.5	26140	1860	
M	26340	1880	26340	1880	26340	1880	26340	1880	26340	1880	26340	1880	
H	26683	1914.3	26675	1913.5	26665	1912.5	26640	1910	26615	1907.5	26590	1905	
LTE Band 26													
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz		
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	
L	26697	814.7	26705	815.5	26715	816.5	26740	819	26765	821.5	26765	821.5	
M	26865	831.5	26865	831.5	26865	831.5	26865	831.5	26865	831.5	26865	831.5	
H	27033	848.3	27025	847.5	27015	846.5	26990	844	26965	841.5	26965	841.5	
LTE Band 30													
	Bandwidth 5 MHz				Bandwidth 10 MHz				Bandwidth 15 MHz				Bandwidth 20 MHz
	Channel #		Freq.(MHz)		Channel #		Freq. (MHz)		Channel #		Freq. (MHz)		Channel #
L	27685		2307.5		27710		2310		27710		2310		27710
M	27710		2310		27710		2310		27710		2310		27710
H	27735		2312.5		27735		2312.5		27735		2312.5		27735



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)	Ch. #	Freq. (MHz)		
L	37775	2572.5	37800	2575	37825	2577.5	37850	2580				
M	38000	2595	38000	2595	38000	2595	38000	2595				
H	38225	2617.5	38200	2615	38175	2612.5	38150	2610				
LTE Band 41												
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz					
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)		
L	39675	2498.5	39700	2501	39725	2503.5	39750	2506				
LM	40148	2545.8	40160	2547	40173	2548.3	40185	2549.5				
M	40620	2593	40620	2593	40620	2593	40620	2593				
HM	41093	2640.3	41080	2639	41068	2637.8	41055	2636.5				
H	41565	2687.5	41540	2685	41515	2682.5	41490	2680				
LTE Band 66												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	131979	1710.7	131987	1711.5	131997	1712.5	132022	1715	132047	1717.5	132072	1720
M	132322	1745	132322	1745	132322	1745	132322	1745	132322	1745	132322	1745
H	132665	1779.3	132657	1778.5	132647	1777.5	132622	1775	132597	1772.5	132572	1770
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)	Ch. #	Freq. (MHz)		
L	133147	665.5	133172	668	133197	670.5	133222	673				
M	133247	675.5	133272	678	133297	680.5	133322	683				
H	133447	695.5	133422	693	133397	690.5	133372	688				



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 n25 : 1850 MHz ~ 1915 MHz 5G NR n38 : 2570 MHz ~ 2620 MHz 5G NR n41 : 2496 MHz ~ 2690 MHz 5G NR n66 : 1710 MHz ~ 1780 MHz 5G NR n71 : 663 MHz ~ 698 MHz 5G NR n77 : 3700 MHz ~ 3980 MHz 5G NR n78 : 3700 MHz ~ 3800 MHz							
Channel Bandwidth	5G NR n2: 5MHz, 10MHz, 15MHz, 20MHz 5G NR n5: 5MHz, 10MHz, 15MHz, 20MHz 5G NR n7: 5MHz, 10MHz, 15MHz, 20MHz 5G NR n25: 5MHz, 10MHz, 15MHz, 20MHz 5G NR n38: 20MHz 5G NR n41: 20MHz, 30MHz, 40MHz, 50MHz, 60MHz, 80MHz, 90MHz, 100MHz 5G NR n66: 5MHz, 10MHz, 15MHz, 20MHz 5G NR n71: 5MHz, 10MHz, 15MHz, 20MHz 5G NR n77: 20MHz, 30MHz, 40MHz, 50MHz, 60MHz, 70MHz, 80MHz, 90MHz, 100MHz 5G NR n78: 20MHz, 30MHz, 40MHz, 50MHz, 60MHz, 70MHz, 80MHz, 90MHz, 100MHz							
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 n5	LTE B2/30/66							
LTE Anchor Bands for n25	LTE B12/66							
L TE Anchor Bands for n2	LTE B5/12/30/66							
LTE Anchor Bands for n66	LTE B2/5/12							
LTE Anchor Bands for n71	LTE B2/66							
LTE Anchor Bands for n41	LTE B2/25/66							
LTE Anchor Bands for n78	LTE B2/4/5/7/38							
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 25								
	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	376500	1882.5	376500	1882.5	376500	1882.5	376500	1882.5
H	382500	1912.5	382000	1910	381500	1907.5	381000	1905

NR Band 66								
	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	342500	1712.5	343000	1715	343500	1717.5	344000	1720
M	349000	1745	349000	1745	349000	1745	349000	1745
H	355500	1777.5	355000	1775	354500	1772.5	354000	1770

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 38		
Bandwidth 20MHz		
	Ch. #	Freq. (MHz)
L	516000	2580
M	519000	2595
H	522000	2610

NR Band 41																
	Bandwidth 20MHz		Bandwidth 30MHz		Bandwidth 40MHz		Bandwidth 50MHz		Bandwidth 60MHz		Bandwidth 80MHz		Bandwidth 90MHz		Bandwidth 100MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	501204	2506.02	502200	2511	503202	2516.01	504204	2521.02	505200	2526	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
H	535998	2679.99	534996	2674.98	534000	2670	532998	2664.99	531996	2659.98	529998	2649.99	528996	2644.98	528000	2640

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

NR Band 78																		
	Bandwidth 20MHz		Bandwidth 30MHz		Bandwidth 40MHz		Bandwidth 50MHz		Bandwidth 60MHz		Bandwidth 70MHz		Bandwidth 80MHz		Bandwidth 90MHz		Bandwidth 100MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	647334	3710.01	647668	3715.02	648000	3720	648334	3725.01	648668	3730.02	649000	3735	649334	3740.01	649668	3745.02		
M	650000	3750	650000	3750	650000	3750	650000	3750	650000	3750	650000	3750	650000	3750	650000	3750	650000	3750
H	652666	3789.99	652332	3784.98	652000	3780	651666	3774.99	651332	3769.98	651000	3765	650666	3759.99	650332	3754.98		

## 5. Maximum Tune-up Limit

### <WWAN Tune-up Limit>

- For each cellular band, the device has several WWAN antennas, the antenna selection is based on the connection quality condition, and only one antenna will transmit at a time.
- The device implements receiver detect mechanism/hotspot trigger reduced power for the power management for SAR compliance at different exposure conditions (head, body-worn, hotspot, extremity). The device will invoke corresponding work scenarios power level base on frequency bands/antennas, which can refer to power table.
- For WLAN when transmit simultaneous with WWAN LAT or UAT, power reduction will be activated to head.
- For Some WWAN bands, Receiver off reduced power level higher than hotspot reduced power level, so front/back Receiver off SAR can represent hotspot conservatively.
- Below table shows maximum tune up output power configured for this EUT for various transmit conditions by manufacturer, and the detail power measurement and tune-up limit refer to appendix E.

TX. freq.	Antenna	Default	Head		Body worn		Hotspot		Extremity Handheld	
		max. tune up limit	max. tune up limit	power reduction (dB)	max. tune up limit	power reduction (dB)	max. tune up limit	power reduction (dB)	max. tune up limit	power reduction (dB)
GSM850 GSM 1 Tx slot	Ant 0	34.00	34.00		34.00		34.00		34.00	
GSM850 GPRS 1 Tx slot	Ant 0	34.00	34.00		34.00		34.00		34.00	
GSM850 GPRS 2 Tx slots	Ant 0	31.00	31.00		31.00		31.00		31.00	
GSM850 GPRS 3 Tx slots	Ant 0	29.50	29.50		29.50		29.50		29.50	
GSM850 GPRS 4 Tx slots	Ant 0	28.00	28.00		28.00		28.00		28.00	
GSM850 EDGE 1 Tx slot	Ant 0	27.50	27.50		27.50		27.50		27.50	
GSM850 EDGE 2 Tx slots	Ant 0	27.50	27.50		27.50		27.50		27.50	
GSM850 EDGE 3 Tx slots	Ant 0	27.00	27.00		27.00		27.00		27.00	
GSM850 EDGE 4 Tx slots	Ant 0	27.00	27.00		27.00		27.00		27.00	
GSM1900 GSM 1 Tx slot	Ant 0	31.50	31.50		31.50		30.50	1.00	31.50	
GSM1900 GPRS 1 Tx slot	Ant 0	31.50	31.50		31.50		30.50	1.00	31.50	
GSM1900 GPRS 2 Tx slots	Ant 0	28.50	28.50		28.50		27.50	1.00	28.50	
GSM1900 GPRS 3 Tx slots	Ant 0	26.50	26.50		26.50		25.50	1.00	26.50	
GSM1900 GPRS 4 Tx slots	Ant 0	25.00	25.00		25.00		24.00	1.00	25.00	
GSM1900 EDGE 1 Tx slot	Ant 0	26.50	26.50		26.50		25.50	1.00	26.50	
GSM1900 EDGE 2 Tx slots	Ant 0	25.50	25.50		25.50		24.50	1.00	25.50	
GSM1900 EDGE 3 Tx slots	Ant 0	25.00	25.00		25.00		24.00	1.00	25.00	
GSM1900 EDGE 4 Tx slots	Ant 0	24.00	24.00		24.00		23.00	1.00	24.00	
WCDMA II	Ant 0	24.50	24.50		24.50		21.50	3.00	24.50	
WCDMA IV	Ant 0	24.50	24.50		24.50		19.50	5.00	24.50	
WCDMA V	Ant 0	25.50	25.50		25.50		25.50		25.50	
CDMA BC0	Ant 0	25.00	25.00		25.00		25.00		25.00	
LTE Band 25 (Band 2)	Ant 0	25.00	25.00		25.00		21.50	3.50	25.00	
LTE Band 25 (Band 2) for ENDC	Ant 0	25.00	25.00		22.00	3.00	19.00	6.00	22.00	3.00
LTE Band 66 (Band4)	Ant 0	25.00	25.00		25.00		22.00	3.00	25.00	
LTE Band 66 (Band4) for ENDC	Ant 0	25.00	25.00		22.00	3.00	19.50	5.50	22.00	3.00
LTE Band 26 (Band5)	Ant 0	25.00	25.00		25.00		25.00		25.00	
LTE Band5 for ENDC	Ant 0	25.00	25.00		25.00		25.00		25.00	
LTE Band 7	Ant 1	25.50	25.50		24.50	1.00	22.50	3.00	24.50	1.00
LTE Band 7 for ENDC	Ant 1	25.50	25.50		21.00	4.50	19.50	6.00	21.00	4.50
LTE Band 12 (Band17)	Ant 0	25.00	25.00		25.00		25.00		25.00	
LTE Band 12 for ENDC	Ant 0	25.00	25.00		25.00		25.00		25.00	
LTE Band 30	Ant 1	24.00	24.00		24.00		24.00		24.00	
LTE Band 30 for ENDC	Ant 1	24.00	24.00		24.00		22.00	2.00	24.00	
LTE Band 38	Ant 1	25.50	25.50		25.50		25.50		25.50	
LTE Band38 for ENDC	Ant 1	25.50	25.50		25.50		22.50	3.00	25.50	
LTE Band 41 Power Class3	Ant 1	24.50	24.50		24.50		24.50		24.50	



LTE Band 41 Power Class 2	Ant 1	26.00	26.00		26.00		26.00		26.00	
LTE Band 71	Ant 0	25.00	25.00		25.00		25.00		25.00	
5G NR n25 (n2)	Ant 2	24.00	24.00		24.00		24.00		24.00	
5G NR n25 (n2) for NSA	Ant 2	24.00	24.00		24.00		22.00	2.00	24.00	
5G NR n5	Ant 0	24.00	24.00		24.00		24.00		24.00	
5G NR n5 for NSA	Ant 0	24.00	24.00		24.00		24.00		24.00	
5G NR n7	Ant 3	24.00	19.50	4.50	24.00		24.00		24.00	
5G NR n38	Ant 3	24.00	18.50	5.50	24.00		24.00		24.00	
5G NR n41	Ant 1	24.00	24.00		24.00		22.00	2.00	24.00	
5G NR n41	Ant 3	24.00	18.50	5.50	24.00		24.00		24.00	
5G NR n41 for NSA	Ant 1	24.00	24.00		21.00	3.00	19.50	4.50	21.00	3.00
5G NR n41 for NSA	Ant 3	24.00	16.00	8.00	24.00		21.00	3.00	24.00	
5G NR n41-UL MIMO Power Class 2	Ant 1	24.00	24.00		24.00		22.00	2.00	24.00	
5G NR n41-UL MIMO Power Class 2	Ant 3	24.00	18.50	5.50	24.00		24.00		24.00	
5G NR n41-UL MIMO Power Class 2	Ant 1+3	27.00	25.00	2.00	27.00		26.00	1.00	27.00	
5G NR n41-UL MIMO Power Class3	Ant 1	21.00	21.00		21.00		21.00		21.00	
5G NR n41-UL MIMO Power Class3	Ant 3	21.00	18.50	2.50	21.00		21.00		21.00	
5G NR n41-UL MIMO Power Class3	Ant 1+3	24.00	23.00	1.00	24.00		24.00		24.00	
5G NR n66	Ant 2	24.00	24.00		24.00		24.00		24.00	
5G NR n66 for NSA	Ant 2	24.00	24.00		24.00		24.00		24.00	
5G NR n71	Ant 0	24.00	24.00		24.00		24.00		24.00	
5G NR n71 for NSA	Ant 0	24.00	24.00		24.00		24.00		24.00	
5G NR n77	Ant 2	24.00	24.00		24.00		22.50	1.50	24.00	
5G NR n77	Ant 4	24.00	17.00	7.00	24.00		20.50	3.50	24.00	
5G NR n77-UL MIMO Power Class 2	Ant 2	24.00	24.00		24.00		22.50	1.50	24.00	
5G NR n77-UL MIMO Power Class 2	Ant 4	24.00	17.00	7.00	24.00		20.50	3.50	24.00	
5G NR n77-UL MIMO Power Class 2	Ant 2+4	27.00	24.50	2.50	27.00		24.50	2.50	27.00	
5G NR n77-UL MIMO Power Class3	Ant 2	21.00	21.00		21.00		21.00		21.00	
5G NR n77-UL MIMO Power Class3	Ant 4	21.00	17.00	4.00	21.00		20.50	0.50	21.00	
5G NR n77-UL MIMO Power Class3	Ant 2+4	24.00	22.50	1.50	24.00		23.50	0.50	24.00	
5G NR n78	Ant 2	24.00	24.00		24.00		22.50	1.50	24.00	
5G NR n78	Ant 4	24.00	17.00	7.00	24.00		20.50	3.50	24.00	
5G NR n78 for NSA	Ant 2	24.00	24.00		23.00	1.00	19.50	4.50	23.00	1.00
5G NR n78 for NSA	Ant 4	22.00	17.00	5.00	22.00		18.50	3.50	22.00	
5G NR n78-UL MIMO Power Class 2	Ant 2	24.00	24.00		24.00		22.50	1.50	24.00	
5G NR n78-UL MIMO Power Class 2	Ant 4	24.00	17.00	7.00	24.00		20.50	3.50	24.00	
5G NR n78-UL MIMO Power Class 2	Ant 2+4	27.00	24.50	2.50	27.00		24.50	2.50	27.00	
5G NR n78-UL MIMO Power Class3	Ant 2	21.00	21.00		21.00		21.00		21.00	
5G NR n78-UL MIMO Power Class3	Ant 4	21.00	17.00	4.00	21.00		20.50	0.50	21.00	
5G NR n78-UL MIMO Power Class3	Ant 2+4	24.00	22.50	1.50	24.00		23.50	0.50	24.00	





< Bluetooth and WLAN Tune-up Limit >

TX. freq.	Antenna	Default	Head		Body worn		Hotspot	Extremity Handheld	
		max. tune up limit	Standalone REC on	Simultaneous REC on+ WWAN	Standalone REC Off	Simultaneous REC off + WWAN	Simultaneous Hotspot On	Standalone REC Off	Simultaneous REC off + WWAN
WLAN 2.4GHz	Ant 6	19.00	19.00	15.50	19.00	19.00	19.00	19.00	19.00
WLAN 2.4GHz	Ant 7	19.00	19.00	15.50	19.00	19.00	19.00	19.00	19.00
WLAN 2.4GHz	Ant 6+7	22.00	22.00	18.50	22.00	22.00	22.00	22.00	22.00
WLAN 5.2Hz	Ant 6	19.00	17.00	10.00	19.00	19.00	19.00	19.00	19.00
WLAN 5.2Hz	Ant 7	17.00	16.00	10.50	17.00	17.00	17.00	17.00	17.00
WLAN 5.2Hz	Ant 6+7	21.00	19.50	13.50	21.00	21.00	21.00	21.00	21.00
WLAN 5.3Hz	Ant 6	18.50	17.00	10.00	18.50	18.50		18.50	18.50
WLAN 5.3Hz	Ant 7	17.50	16.00	10.50	17.50	17.50		17.50	17.50
WLAN 5.3Hz	Ant 6+7	21.00	19.50	13.50	21.00	21.00		21.00	21.00
WLAN 5.5Hz	Ant 6	18.00	18.00	14.50	18.00	18.00		18.00	18.00
WLAN 5.5Hz	Ant 7	18.00	18.00	14.50	18.00	18.00		18.00	18.00
WLAN 5.5Hz	Ant 6+7	21.00	21.00	17.50	21.00	21.00		21.00	21.00
WLAN 5.8Hz	Ant 6	18.00	18.00	14.50	18.00	18.00	18.00	18.00	18.00
WLAN 5.8Hz	Ant 7	18.00	18.00	14.50	18.00	18.00	18.00	18.00	18.00
WLAN 5.8Hz	Ant 6+7	21.00	21.00	17.50	21.00	21.00	21.00	21.00	21.00
BT	Ant 7	18.50	18.50	18.50	18.50	18.50	18.50	18.50	18.50

## 6. RF Exposure Limits

### 6.1 Uncontrolled Environment

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

### 6.2 Controlled Environment

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

**Limits for Occupational/Controlled Exposure (W/kg)**

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

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

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

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

## **7. Specific Absorption Rate (SAR)**

### **7.1 Introduction**

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

### **7.2 SAR Definition**

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

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

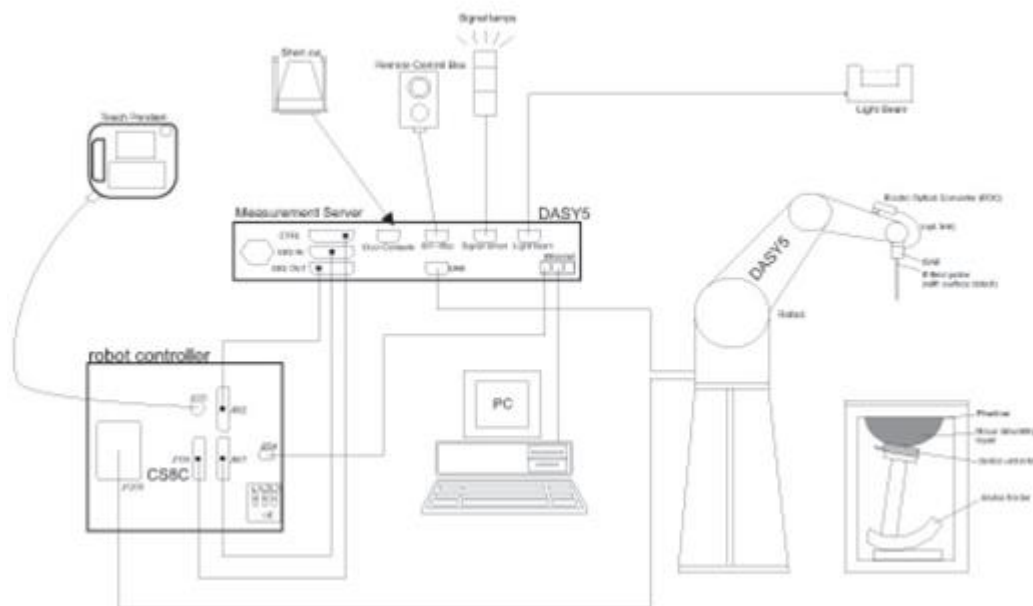
SAR is expressed in units of Watts per kilogram (W/kg)

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

Where:  $\sigma$  is the conductivity of the tissue,  $\rho$  is the mass density of the tissue and E is the RMS electrical field strength.

## 8. System Description and Setup

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




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

**8.1 E-Field Probe**

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

**<EX3DV4 Probe>**

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

**8.2 Data Acquisition Electronics (DAE)**

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


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



**Photo of DAE**

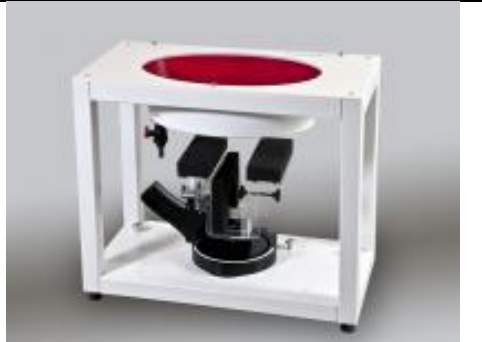
### 8.3 Phantom

#### <SAM Twin Phantom>

<b>Shell Thickness</b>	2 ± 0.2 mm; Center ear point: 6 ± 0.2 mm	
<b>Filling Volume</b>	Approx. 25 liters	
<b>Dimensions</b>	Length: 1000 mm; Width: 500 mm; Height: adjustable feet	
<b>Measurement Areas</b>	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>

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

The ELI phantom is intended for compliance testing of handheld and body-mounted wireless devices in the frequency range of 30 MHz to 6 GHz. ELI4 is fully compatible with standard and all known tissue simulating liquids.

### 8.4 Device Holder

#### <Mounting Device for Hand-Held Transmitter>

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



Mounting Device for Hand-Held Transmitters



Mounting Device Adaptor for Wide-Phones

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

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



Mounting Device for Laptops

## 9. Measurement Procedures

The measurement procedures are as follows:

### <Conducted power measurement>

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

### <SAR measurement>

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

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

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

### 9.1 Spatial Peak SAR Evaluation

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

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

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

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



**9.2 Power Reference Measurement**

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

**9.3 Area Scan**

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

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

	$\leq 3$ GHz	$> 3$ GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface	$5 \pm 1$ 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: $\Delta x_{Area}, \Delta y_{Area}$	$\leq 2$ GHz: $\leq 15$ mm $2 - 3$ GHz: $\leq 12$ mm	$3 - 4$ GHz: $\leq 12$ mm $4 - 6$ GHz: $\leq 10$ mm
	When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be $\leq$ the corresponding x or y dimension of the test device with at least one measurement point on the test device.	

### 9.4 Zoom Scan

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

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

		$\leq 3$ GHz	$> 3$ GHz	
Maximum zoom scan spatial resolution: $\Delta x_{Zoom}$ , $\Delta y_{Zoom}$		$\leq 2$ GHz: $\leq 8$ mm 2 – 3 GHz: $\leq 5$ mm*	3 – 4 GHz: $\leq 5$ mm* 4 – 6 GHz: $\leq 4$ mm*	
Maximum zoom scan spatial resolution, normal to phantom surface	uniform grid: $\Delta z_{Zoom}(n)$	$\leq 5$ mm	3 – 4 GHz: $\leq 4$ mm 4 – 5 GHz: $\leq 3$ mm 5 – 6 GHz: $\leq 2$ mm	
	graded grid	$\Delta z_{Zoom}(1)$ : between 1 <sup>st</sup> two points closest to phantom surface	$\leq 4$ mm	3 – 4 GHz: $\leq 3$ mm 4 – 5 GHz: $\leq 2.5$ mm 5 – 6 GHz: $\leq 2$ mm
		$\Delta z_{Zoom}(n>1)$ : between subsequent points	$\leq 1.5 \cdot \Delta z_{Zoom}(n-1)$	
Minimum zoom scan volume	x, y, z	$\geq 30$ mm	3 – 4 GHz: $\geq 28$ mm 4 – 5 GHz: $\geq 25$ mm 5 – 6 GHz: $\geq 22$ mm	
<p>Note: <math>\delta</math> is the penetration depth of a plane-wave at normal incidence to the tissue medium; see draft standard IEEE P1528-2011 for details.</p> <p>* 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 <math>\leq 1.4</math> W/kg, <math>\leq 8</math> mm, <math>\leq 7</math> mm and <math>\leq 5</math> 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.</p>				

### 9.5 Volume Scan Procedures

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

### 9.6 Power Drift Monitoring

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

**10. Test Equipment List**

Manufacturer	Name of Equipment	Type/Model	Serial Number	Calibration	
				Last Cal.	Due Date
SPEAG	750MHz System Validation Kit	D750V3	1087	2019/3/27	2022/3/24
SPEAG	835MHz System Validation Kit	D835V2	4d258	2020/5/7	2023/5/6
SPEAG	1750MHz System Validation Kit	D1750V2	1090	2019/3/27	2022/3/25
SPEAG	1900MHz System Validation Kit	D1900V2	5d170	2019/3/26	2022/3/24
SPEAG	2300MHz System Validation Kit	D2300V2	1055	2020/9/15	2021/9/14
SPEAG	2450MHz System Validation Kit	D2450V2	908	2019/3/25	2022/3/23
SPEAG	2600MHz System Validation Kit	D2600V2	1061	2020/11/26	2021/11/25
SPEAG	3700MHz System Validation Kit	D3700V2	1008	2020/11/25	2021/11/24
SPEAG	3900MHz System Validation Kit	D3900V2	1048	2020/5/14	2023/5/13
SPEAG	5000MHz System Validation Kit	D5GHzV2	1113	2019/9/24	2022/9/23
SPEAG	Data Acquisition Electronics	DAE4	690	2021/3/17	2022/3/16
SPEAG	Dosimetric E-Field Probe	EX3DV4	7592	2020/5/22	2021/5/21
SPEAG	SAM Twin Phantom	SAM Twin	TP-1697	NCR	NCR
SPEAG	Phone Positioner	N/A	N/A	NCR	NCR
Anritsu	Radio Communication Analyzer	MT8821C	6262149988	2020/6/30	2021/6/29
Agilent	ENA Series Network Analyzer	E5071C	MY46106933	2020/8/1	2021/7/31
SPEAG	Dielectric Probe Kit	DAK-3.5	1144	2020/12/2	2021/12/1
Anritsu	Vector Signal Generator	MG3710A	6201682672	2021/1/7	2022/1/6
Rohde & Schwarz	Power Meter	NRVD	102081	2020/8/13	2021/8/12
Rohde & Schwarz	Power Sensor	NRV-Z5	100538	2020/8/13	2021/8/12
Rohde & Schwarz	Power Sensor	NRV-Z5	100539	2020/8/13	2021/8/12
R&S	CBT BLUETOOTH TESTER	CBT	100641	2021/1/7	2022/1/6
EXA	Spectrum Analyzer	FSV7	101632	2021/1/7	2022/1/6
Testo	Hygrometer	608-H1	1241332088	2021/1/7	2022/1/6
FLUKE	DIGITAC THERMOMETER	51II	97240029	2020/8/14	2021/8/13
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	
Agilent	Dual Directional Coupler	778D	20500	Note 1	
Agilent	Dual Directional Coupler	11691D	MY48151020	Note 1	
BONN	POWER AMPLIFIER	BLMA 0830-3	087193A	Note 1	
BONN	POWER AMPLIFIER	BLMA 2060-2	087193B	Note 1	

**Note:**

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

## 11. System Verification

### 11.1 Tissue Simulating Liquids

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

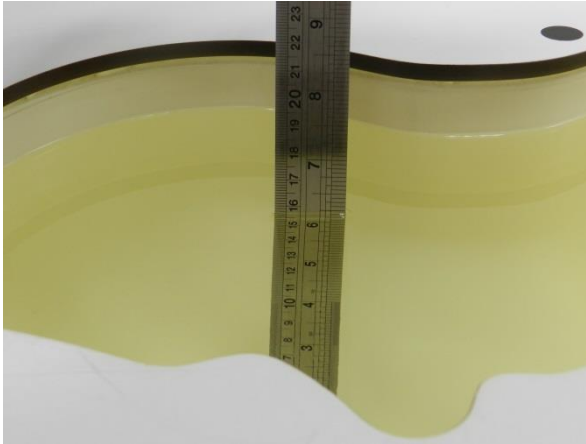


Fig 11.1 Photo of Liquid Height for Head SAR

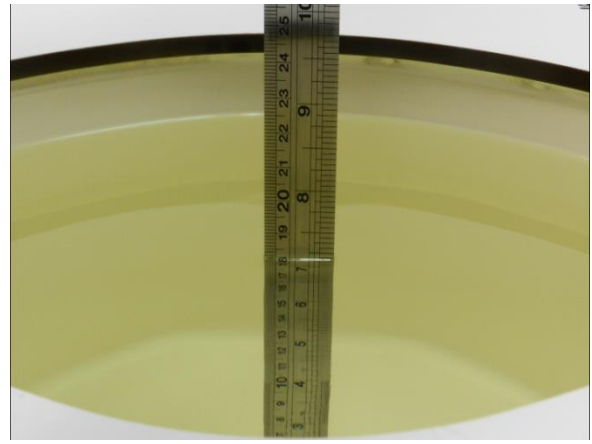


Fig 11.2 Photo of Liquid Height for Body SAR



### 11.2 Tissue Verification

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

Frequency (MHz)	Water (%)	Sugar (%)	Cellulose (%)	Salt (%)	Preventol (%)	DGBE (%)	Conductivity (σ)	Permittivity (ε <sub>r</sub> )
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 <sub>r</sub> )	Conductivity Target (σ)	Permittivity Target (ε <sub>r</sub> )	Delta (σ) (%)	Delta (ε <sub>r</sub> ) (%)	Limit (%)	Date
750	Head	22.6	0.922	43.754	0.89	41.90	3.60	4.42	±5	2021/3/25
835	Head	22.8	0.901	41.239	0.90	41.50	0.11	-0.63	±5	2021/3/28
1750	Head	22.9	1.374	41.864	1.37	40.10	0.29	4.40	±5	2021/3/31
1900	Head	22.7	1.461	41.817	1.40	40.00	4.36	4.54	±5	2021/4/3
2300	Head	22.6	1.686	39.138	1.67	39.50	0.96	-0.92	±5	2021/4/6
2450	Head	22.8	1.885	40.798	1.80	39.20	4.72	4.08	±5	2021/4/8
2600	Head	22.9	2.006	40.524	1.96	39.00	2.35	3.91	±5	2021/4/10
3700	Head	22.8	2.967	38.608	3.12	37.70	-4.90	2.41	±5	2021/4/13
3900	Head	22.6	3.165	38.335	3.32	37.50	-4.67	2.23	±5	2021/4/15
5250	Head	22.7	4.641	36.197	4.71	35.90	-1.46	0.83	±5	2021/4/18
5600	Head	22.8	4.985	35.584	5.07	35.50	-1.68	0.24	±5	2021/4/22
5750	Head	22.8	5.219	35.277	5.22	35.40	-0.02	-0.35	±5	2021/4/26
750	Head	22.9	0.887	41.628	0.89	41.90	-0.34	-0.65	±5	2021/3/26
835	Head	22.8	0.939	41.137	0.90	41.50	4.33	-0.87	±5	2021/3/29
1750	Head	22.7	1.407	39.319	1.37	40.10	2.70	-1.95	±5	2021/4/1
1900	Head	22.7	1.418	39.055	1.40	40.00	1.29	-2.36	±5	2021/4/4
2300	Head	22.7	1.653	40.479	1.67	39.50	-1.02	2.48	±5	2021/4/7
2450	Head	22.6	1.863	38.914	1.80	39.20	3.50	-0.73	±5	2021/4/9
2600	Head	22.9	1.996	39.301	1.96	39.00	1.84	0.77	±5	2021/4/11
5250	Head	22.7	4.637	36.402	4.71	35.90	-1.55	1.40	±5	2021/5/8
5600	Head	22.9	4.983	35.812	5.07	35.50	-1.72	0.88	±5	2021/5/9
5750	Head	22.9	5.216	35.493	5.22	35.40	-0.08	0.26	±5	2021/5/10
750	Head	22.8	0.893	41.112	0.89	41.90	0.34	-1.88	±5	2021/3/27
835	Head	22.7	0.922	40.88	0.90	41.50	2.44	-1.49	±5	2021/3/30
1750	Head	22.7	1.352	40.005	1.37	40.10	-1.31	-0.24	±5	2021/4/2
1900	Head	22.8	1.431	39.775	1.40	40.00	2.21	-0.56	±5	2021/4/5
2600	Head	22.9	1.938	40.108	1.96	39.00	-1.12	2.84	±5	2021/4/12
3700	Head	22.6	3.024	38.72	3.12	37.70	-3.08	2.71	±5	2021/4/14
3900	Head	22.6	3.227	38.419	3.32	37.50	-2.80	2.45	±5	2021/4/16



11.3 System Performance Check Results

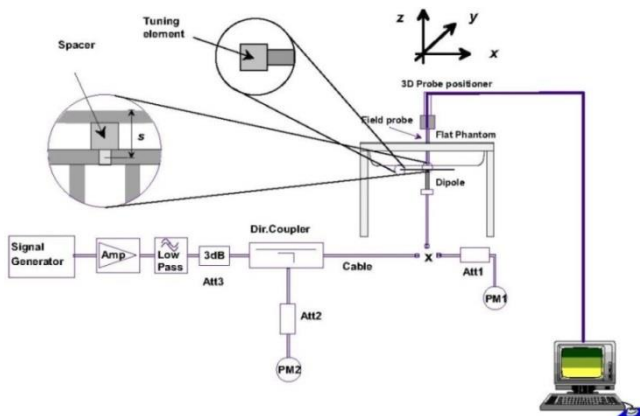
Comparing to the original SAR value provided by SPEAG, the verification data should be within its specification of 10 %. Below table shows the target SAR and measured SAR after normalized to 1W input power. The table below indicates the system performance check can meet the variation criterion and the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

<1g SAR>

Table with 11 columns: 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 (%). It contains 35 rows of test data.

**<10g SAR>**

Date	Frequency (MHz)	Tissue Type	Input Power (mW)	Dipole S/N	Probe S/N	DAE S/N	Measured 10g SAR (W/kg)	Targeted 10g SAR (W/kg)	Normalized 10g SAR (W/kg)	Deviation (%)
2021/3/25	750	Head	250	1087	7592	690	1.39	5.65	5.56	-1.59
2021/3/28	835	Head	250	4d258	7592	690	1.45	6.13	5.8	-5.38
2021/3/31	1750	Head	250	1090	7592	690	4.64	19.2	18.56	-3.33
2021/4/3	1900	Head	250	5d170	7592	690	5.57	20.3	22.28	9.75
2021/4/6	2300	Head	250	1055	7592	690	5.5	22.9	22	-3.93
2021/4/8	2450	Head	250	908	7592	690	6.21	24.2	24.84	2.64
2021/4/10	2600	Head	250	1061	7592	690	6.29	25.1	25.16	0.24
2021/4/13	3700	Head	100	1008	7592	690	2.38	24.4	23.8	-2.46
2021/4/15	3900	Head	100	1048	7592	690	2.29	24.4	22.9	-6.15
2021/4/18	5250	Head	100	1113	7592	690	2.3	23.1	23	-0.43
2021/4/22	5600	Head	100	1113	7592	690	2.25	23.8	22.5	-5.46
2021/4/26	5750	Head	100	1113	7592	690	2.1	22.8	21	-7.89
2021/3/26	750	Head	250	1087	7592	690	1.31	5.65	5.24	-7.26
2021/3/29	835	Head	250	4d258	7592	690	1.58	6.13	6.32	3.10
2021/4/1	1750	Head	250	1090	7592	690	4.82	19.2	19.28	0.42
2021/4/4	1900	Head	250	5d170	7592	690	5.4	20.3	21.6	6.40
2021/4/7	2300	Head	250	1055	7592	690	5.39	22.9	21.56	-5.85
2021/4/9	2450	Head	250	908	7592	690	6.14	24.2	24.56	1.49
2021/4/11	2600	Head	250	1061	7592	690	5.82	25.1	23.28	-7.25
2021/5/8	5250	Head	100	1113	7592	690	2.28	23.1	22.8	-1.30
2021/5/9	5600	Head	100	1113	7592	690	2.25	23.8	22.5	-5.46
2021/5/10	5750	Head	100	1113	7592	690	2.26	22.8	22.6	-0.88
2021/3/27	750	Head	250	1087	7592	690	1.44	5.65	5.76	1.95
2021/3/30	835	Head	250	4d258	7592	690	1.49	6.13	5.96	-2.77
2021/4/2	1750	Head	250	1090	7592	690	5.21	19.2	20.84	8.54
2021/4/5	1900	Head	250	5d170	7592	690	5.35	20.3	21.4	5.42
2021/4/12	2600	Head	250	1061	7592	690	6.66	25.1	26.64	6.14
2021/4/14	3700	Head	100	1008	7592	690	2.34	24.4	23.4	-4.10
2021/4/16	3900	Head	100	1048	7592	690	2.42	24.4	24.2	-0.82



**Fig 11.3.1 System Performance Check Setup**



**Fig 11.3.2 Setup Photo**

## 12. RF Exposure Positions

### 12.1 Ear and handset reference point

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

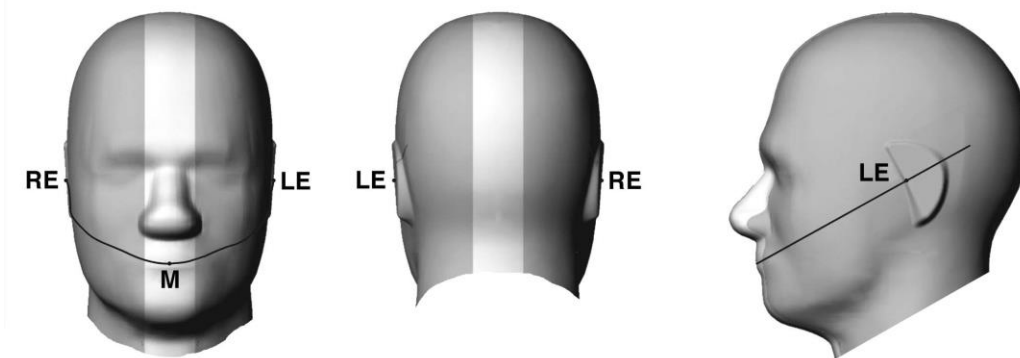


Fig 12.1.1 Front, back, and side views of SAM twin phantom

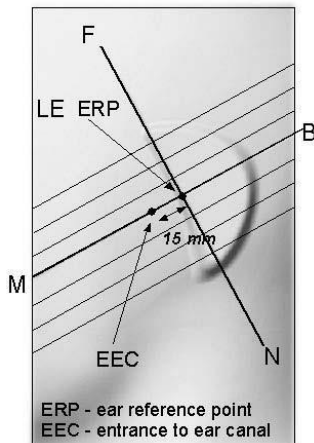


Fig 12.1.2 Close-up side view of phantom showing the ear region.

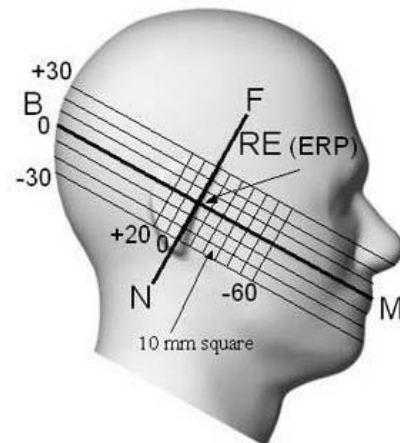
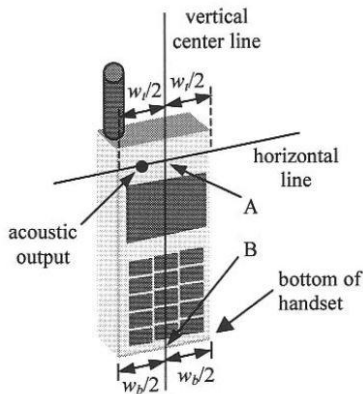


Fig 12.1.3 Side view of the phantom showing relevant markings and seven cross-sectional plane locations

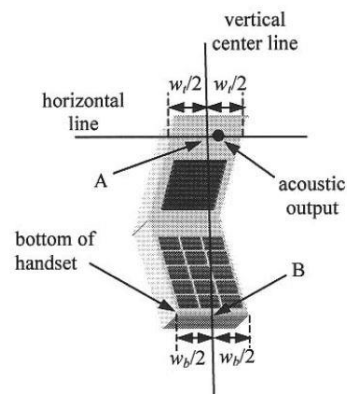


**12.2 Definition of the cheek position**

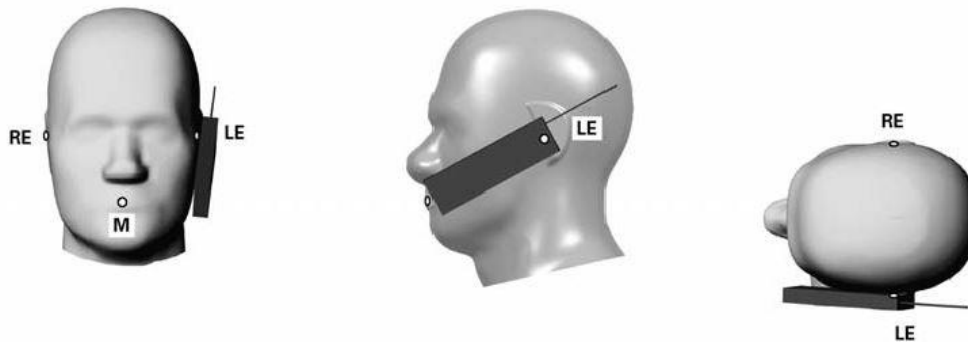
1. Ready the handset for talk operation, if necessary. For example, for handsets with a cover piece (flip cover), open the cover. If the handset can transmit with the cover closed, both configurations must be tested.
2. Define two imaginary lines on the handset—the vertical centerline and the horizontal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



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



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



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

### 12.3 Definition of the tilt position

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

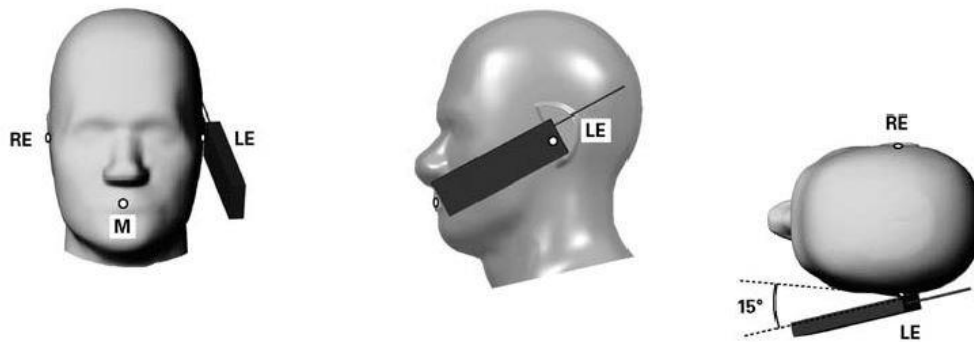


Fig 12.3.1 Tilt position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which define the Reference Plane for handset positioning, are indicated.

### 12.4 Body Worn Accessory

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

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

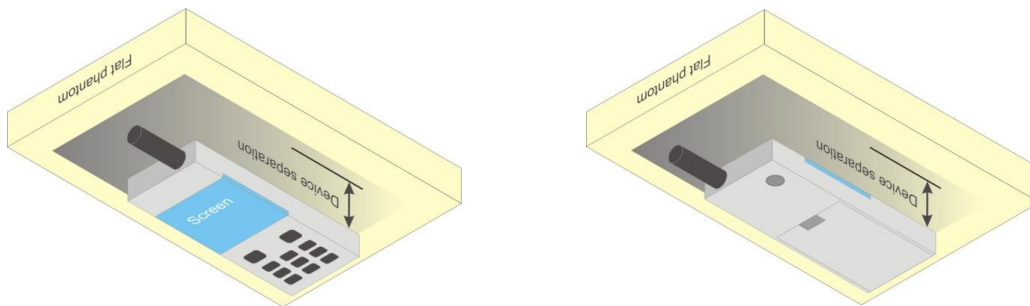


Fig 12.4 Body Worn Position

## 12.5 Product Specific 10g SAR Exposure

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

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

## 12.6 Wireless Router

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

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

### **13. Conducted RF Output Power (Unit: dBm)**

The detailed conducted power table can refer to Appendix E.

#### **<GSM Conducted Power>**

1. Per KDB 447498 D01v06, the maximum output power channel is used for SAR testing and for further SAR test reduction.
2. Per KDB 941225 D01v03r01, for SAR test reduction for GSM / GPRS / EDGE modes is determined by the source-based time-averaged output power including tune-up tolerance. The mode with highest specified time-averaged output power should be tested for SAR compliance in the applicable exposure conditions. For modes with the same specified maximum output power and tolerance, the higher number time-slot configuration should be tested. Therefore, the GPRS 3Tx slots for GSM850, and GPRS 2Tx slots for GSM1900 are considered as the primary mode.
3. Other configurations of GSM / GPRS / EDGE are considered as secondary modes. The 3G SAR test reduction procedure is applied, when the maximum output power and tune-up tolerance specified for production units in a secondary mode is  $\leq \frac{1}{4}$  dB higher than the primary mode, SAR measurement is not required for the secondary mode.

#### **<WCDMA Conducted Power>**

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

A summary of these settings are illustrated below:

#### **HSDPA Setup Configuration:**

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

**Table C.10.1.4:  $\beta$  values for transmitter characteristics tests with HS-DPCCH**

Sub-test	$\beta_c$	$\beta_d$	$\beta_d$ (SF)	$\beta_o/\beta_d$	$\beta_{HS}$ (Note 1, Note 2)	CM (dB) (Note 3)	MPR (dB) (Note 3)
1	2/15	15/15	64	2/15	4/15	0.0	0.0
2	12/15 (Note 4)	15/15 (Note 4)	64	12/15 (Note 4)	24/15	1.0	0.0
3	15/15	8/15	64	15/8	30/15	1.5	0.5
4	15/15	4/15	64	15/4	30/15	1.5	0.5

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

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

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

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

**Setup Configuration**

**HSUPA Setup Configuration:**

- a. The EUT was connected to Base Station Agilent E5515C referred to the Setup Configuration.
- b. The RF path losses were compensated into the measurements.
- c. A call was established between EUT and Base Station with following setting \* :
  - i. Call Configs = 5.2B, 5.9B, 5.10B, and 5.13.2B with QPSK
  - ii. Set the Gain Factors ( $\beta_c$  and  $\beta_d$ ) and parameters (AG Index) were set according to each specific sub-test in the following table, C11.1.3, quoted from the TS 34.121
  - iii. Set Cell Power = -86 dBm
  - iv. Set Channel Type = 12.2k + HSPA
  - v. Set UE Target Power
  - vi. Power Ctrl Mode= Alternating bits
  - vii. Set and observe the E-TFCI
  - viii. Confirm that E-TFCI is equal to the target E-TFCI of 75 for sub-test 1, and other subtest's E-TFCI
- d. The transmitted maximum output power was recorded.

**Table C.11.1.3:  $\beta$  values for transmitter characteristics tests with HS-DPCCH and E-DCH**

Sub-test	$\beta_c$	$\beta_d$	$\beta_d$ (SF)	$\beta_c/\beta_d$	$\beta_{HS}$ (Note1)	$\beta_{ec}$	$\beta_{ed}$ (Note 4) (Note 5)	$\beta_{ed}$ (SF)	$\beta_{ed}$ (Codes)	CM (dB) (Note 2)	MPR (dB) (Note 2) (Note 6)	AG Index (Note 5)	E-TFCI
1	11/15 (Note 3)	15/15 (Note 3)	64	11/15 (Note 3)	22/15	209/25	1309/225	4	1	1.0	0.0	20	75
2	6/15	15/15	64	6/15	12/15	12/15	94/75	4	1	3.0	2.0	12	67
3	15/15	9/15	64	15/9	30/15	30/15	$\beta_{ed1}$ : 47/15 $\beta_{ed2}$ : 47/15	4 4	2	2.0	1.0	15	92
4	2/15	15/15	64	2/15	4/15	2/15	56/75	4	1	3.0	2.0	17	71
5	15/15	0	-	-	5/15	5/15	47/15	4	1	1.0	0.0	12	67

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

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

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

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

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

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

**Setup Configuration**

**DC-HSDPA 3GPP release 8 Setup Configuration:**

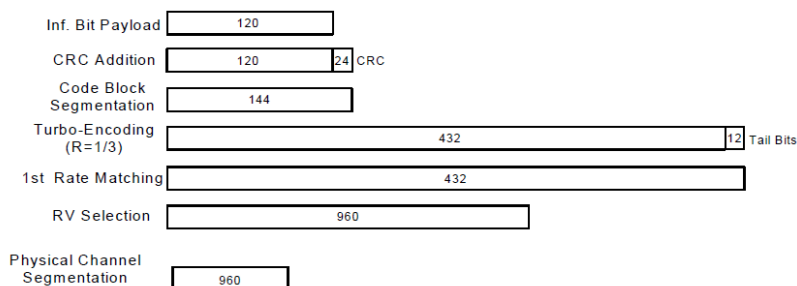
- a. The EUT was connected to Base Station referred to the Setup Configuration below
- b. The RF path losses were compensated into the measurements.
- c. A call was established between EUT and Base Station with following setting:
  - i. Set RMC 12.2Kbps + HSDPA mode.
  - ii. Set Cell Power = -25 dBm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

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

**C.8.1.12 Fixed Reference Channel Definition H-Set 12**

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

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



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

**Setup Configuration**





**<WCDMA Conducted Power>**

**General Note:**

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

**<CDMA2000 Conducted Power>**

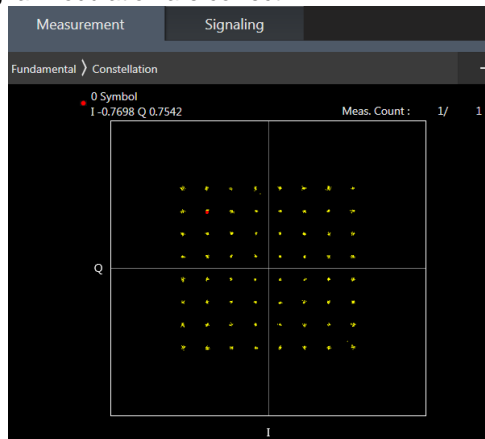
**General Note:**

1. Per KDB 941225 D01v03r01, SAR for head exposure is measured in RC3 with the handset configured to transmit at full rate in SO55.
2. Per KDB 941225 D01v03r01, in Hotspot mode EUT is treated as data device and SAR is tested with Ev-Do Rev 0 (RTAP 153.6kbps) as the primary mode.
3. Per KDB 941225 D01v03r01, for Body-worn accessory SAR is measured in RC3 with the handset configured in TDSO/SO32 to transmit at full rate on FCH only with all other code channels disabled. The body-worn accessory procedures in KDB Publication 447498 are applied. The 3G SAR test reduction procedure is applied to the multiple code channel configuration (FCH+SCH), with FCH only as the primary mode.

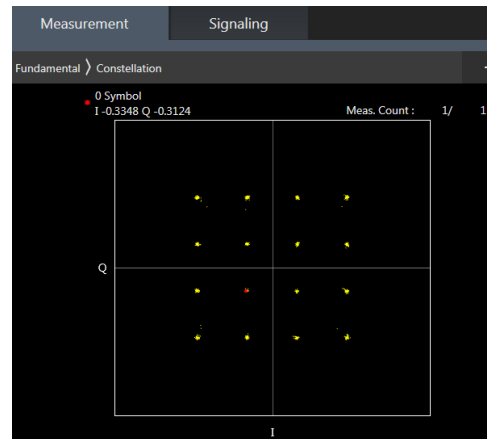
**<LTE Conducted Power>**

**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  $\leq 0.8$  W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is  $> 1.45$  W/kg, the remaining required test channels must also be tested.
6. Per KDB 941225 D05v02r05, 16QAM/64QAM output power for each RB allocation configuration is  $>$  not  $\frac{1}{2}$  dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is  $\leq 1.45$  W/kg; Per KDB 941225 D05v02r05, 16QAM/64QAM SAR testing is not required.
7. Per KDB 941225 D05v02r05, smaller bandwidth output power for each RB allocation configuration is  $>$  not  $\frac{1}{2}$  dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is  $\leq 1.45$  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 SAR test was covered by B25 / B66 / B26 / B12; 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 2017 TCB workshop, for 64 QAM and 16 QAM should be verified by checking the signal constellation with a call box to avoid incorrect maximum power levels due to MPR and other requirements associated with signal modulation, and the following figure is taken from the "Fundamental Measurement >> Modulation Analysis >> constellation" mode of the device connect to the MT8821C base station, therefore, the device 64QAM and 16QAM signal modulation are correct.



**64QAM**



**16QAM**

<TDD LTE SAR Measurement>

TDD LTE configuration setup for SAR measurement

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

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

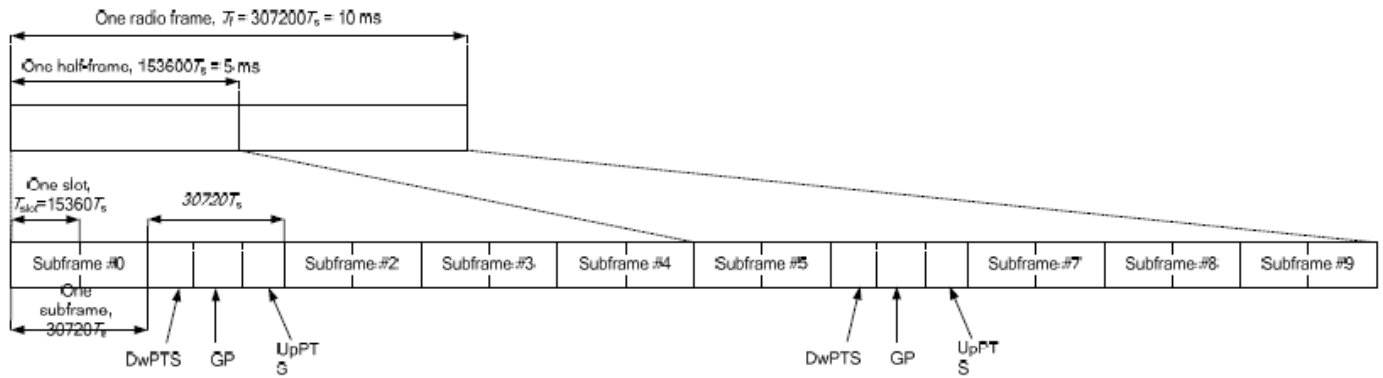


Figure 4.2-1: Frame structure type 2 (for 5 ms switch-point periodicity).

Table 4.2-2: Uplink-downlink configurations.

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

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

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

Special subframe (30720·T <sub>s</sub> ): 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 <sub>s</sub> ): 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 Band 41 Power class 2

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

For LTE Band 41 Power class 3

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

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

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



<LTE Carrier Aggregation>

General Note:

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

2CC Downlink Carrier Aggregation			3CC Downlink Carrier Aggregation			4CC Downlink Carrier Aggregation		
Number	Combination	Covered by Measurement Superset	Number	Combination	Covered by Measurement Superset	Number	Combination	Covered by Measurement Superset
2CC #1	CA_2A-12A,	4CC #3	3CC #1	CA_12A-66A-66A,	4CC #1	4CC #1	CA_2A-12A-66A-66A	
2CC #2	CA_2A-2A	4CC #3	3CC #2	CA_12A-66C	4CC #2	4CC #2	CA_2A-12A-66C	
2CC #3	CA_2A-30A	4CC #3	3CC #3	CA_25A-25A-26A		4CC #3	CA_2A-2A-12A-30A	
2CC #4	CA_2A-4A	4CC #5	3CC #4	CA_26A-41C		4CC #4	CA_2A-2A-12A-66A	
2CC #5	CA_2A-5A	4CC #9	3CC #5	CA_2A-12A-30A	4CC #3	4CC #5	CA_2A-2A-4A-12A	
2CC #6	CA_2A-66A	4CC #10	3CC #6	CA_2A-12A-66A	4CC #4	4CC #6	CA_2A-2A-4A-4A	
2CC #7	CA_2A-71A	4CC #13	3CC #7	CA_2A-2A-12A	4CC #3	4CC #7	CA_2A-2A-4A-5A	
2CC #8	CA_2A-7A	3CC #24	3CC #8	CA_2A-2A-30A	4CC #3	4CC #8	CA_2A-2A-4A-71A	
2CC #9	CA_2C	3CC #26	3CC #9	CA_2A-2A-4A	4CC #5	4CC #9	CA_2A-2A-5A-30A	
2CC #10	CA_4A-12A	4CC #28	3CC #10	CA_2A-2A-5A	4CC #9	4CC #10	CA_2A-2A-5A-66A	
2CC #11	CA_4A-17A		3CC #11	CA_2A-2A-66A	4CC #10	4CC #11	CA_2A-2A-5B	
2CC #12	CA_4A-30A	4CC #28	3CC #12	CA_2A-2A-71A	4CC #13	4CC #12	CA_2A-2A-66A-66A	
2CC #13	CA_4A-4A	4CC #28	3CC #13	CA_2A-4A-12A	4CC #5	4CC #13	CA_2A-2A-66A-71A	
2CC #14	CA_4A-5A	4CC #29	3CC #14	CA_2A-4A-4A	4CC #16	4CC #14	CA_2A-2A-66B	
2CC #15	CA_4A-71A	3CC #35	3CC #15	CA_2A-4A-5A	4CC #17	4CC #15	CA_2A-2A-66C	
2CC #16	CA_4A-7A		3CC #16	CA_2A-4A-71A	4CC #8	4CC #16	CA_2A-4A-4A-12A	
2CC #17	CA_5A-30A	4CC #29	3CC #17	CA_2A-5A-30A	4CC #9	4CC #17	CA_2A-4A-4A-5A,	
2CC #18	CA_5A-38A		3CC #18	CA_2A-5A-66A	4CC #19	4CC #18	CA_2A-4A-5B	
2CC #19	CA_5A-41A		3CC #19	CA_2A-5B	4CC #18	4CC #19	CA_2A-5A-66A-66A	
2CC #20	CA_5A-5A	4CC #31	3CC #20	CA_2A-66A-66A	4CC #24	4CC #20	CA_2A-5A-66B	
2CC #21	CA_5A-66A	4CC #31	3CC #21	CA_2A-66A-71A	4CC #25	4CC #21	CA_2A-5A-66C	
2CC #22	CA_5A-7A		3CC #22	CA_2A-66B	4CC #20	4CC #22	CA_2A-5B-30A	
2CC #23	CA_5B	4CC #22	3CC #23	CA_2A-66C	4CC #21	4CC #23	CA_2A-5B-66A	
2CC #24	CA_7A-7A	3CC #24	3CC #24	CA_2A-7A-7A		4CC #24	CA_2A-66A-66A-66A	
2CC #25	CA_7B		3CC #25	CA_2A-7C		4CC #25	CA_2A-66A-66A-71A	
2CC #26	CA_7C	3CC #25	3CC #26	CA_2C-12A		4CC #26	CA_2A-66C-71A	
2CC #27	CA_12A-30A	4CC #28	3CC #27	CA_2C-66A	4CC #27	4CC #27	CA_2C-66A-66A	
2CC #28	CA_12A-66A	4CC #1	3CC #28	CA_41A-41A-41A		4CC #28	CA_4A-4A-12A-30A	
2CC #29	CA_25A-25A	3CC #3	3CC #29	CA_41A-41C	4CC #38	4CC #29	CA_4A-4A-5A-30A	
2CC #30	CA_25A-26A	3CC #3	3CC #30	CA_41D	4CC #39	4CC #30	CA_4A-4A-5B	
2CC #31	CA_25A-41A		3CC #31	CA_4A-12A-30A	4CC #28	4CC #31	CA_5A-5A-66A-66A	
2CC #32	CA_38C		3CC #32	CA_4A-4A-12A	4CC #28	4CC #32	CA_5A-5A-66B	
2CC #33	CA_41A-41A	3CC #28	3CC #33	CA_4A-4A-30A	4CC #28	4CC #33	CA_5A-5A-66C	
2CC #34	CA_41C	4CC #38	3CC #34	CA_4A-4A-5A	4CC #29	4CC #34	CA_5B-66A-66A	
2CC #35	CA_66A-66A	4CC #24	3CC #35	CA_4A-4A-71A		4CC #35	CA_5B-66B	
2CC #36	CA_66A-71A	4CC #25	3CC #36	CA_4A-5A-30A	4CC #29	4CC #36	CA_5B-66C	
2CC #37	CA_66B	3CC #48	3CC #37	CA_4A-5B	4CC #30	4CC #37	CA_25A-41D	
2CC #38	CA_66C	3CC #49	3CC #38	CA_4A-7C		4CC #38	CA_41A-41A-41C	
			3CC #39	CA_5A-5A-66A	4CC #31	4CC #39	CA_41A-41D	
			3CC #40	CA_5A-66A-66A	4CC #31	4CC #40	CA_41C-41C	
			3CC #41	CA_5A-66B	4CC #32	4CC #41	CA_41E	
			3CC #42	CA_5A-66C	4CC #33			
			3CC #43	CA_5A-7C				
			3CC #44	CA_5B-30A	4CC #22			



			3CC #45	CA_5B-66A	4CC #23			
			3CC #46	CA_66A-66A-66A	4CC #24			
			3CC #47	CA_66A-66A-71A	4CC #25			
			3CC #48	CA_66A-66B				
			3CC #49	CA_66A-66C				
			3CC #50	CA_66C-71A	4CC #26			
			3CC #51	CA_66D				

**LTE 4x4 MIMO (Downlink)**

This device supports downlink 4x4 MIMO operations for LTE Bands 2/4/7/25/38/41/66 only. Uplink transmission is limited to a single output stream. Power measurements were performed with downlink 4x4 MIMO active for the configuration with highest measured maximum conducted power with 4x4 downlink MIMO inactive measured among the channel bandwidth, modulation, and RB combinations in each frequency band.

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

4X4 MIMO	WWAN Band
	LTE Band: B2 / B4 / B7 / B25 / B38 / B41 / B66

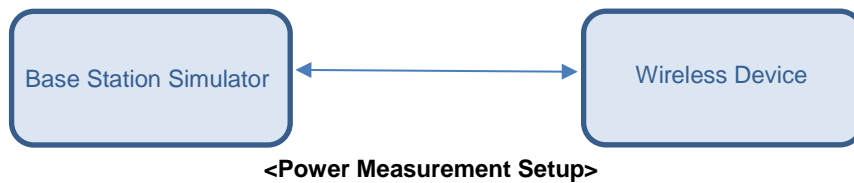
**LTE Carrier Aggregation Conducted Power (Downlink)**

- i. According to KDB941225 D05A v01r02, Uplink maximum output power measurement with downlink carrier aggregation active should be measured, using the highest output channel measured without downlink carrier aggregation, to confirm that uplink maximum output power with downlink carrier aggregation active remains within the specified tune-up tolerance limits and not more than ¼ dB higher than the maximum output measured without downlink carrier aggregation active.
- ii. Uplink maximum output power with downlink carrier aggregation active does not show more than ¼ dB higher than the maximum output power without downlink carrier aggregation active, therefore SAR evaluation with downlink carrier aggregation active can be excluded.
- iii. The device supports downlink two carrier aggregation. For power measurement were control and acknowledge data is sent on uplink channels that operate identical to specifications when downlink carrier aggregation is inactive.
- iv. Selected highest measured power when downlink carrier aggregation is inactive for conducted power comparison with downlink carrier aggregation is active, to confirm that when downlink carrier aggregation is active uplink maximum output power remains within the specified tune-up tolerance limits and not more than ¼ dB higher than the maximum output power measured when downlink carrier aggregation inactive.
- v. For inter-band CA, the SCC selected highest bandwidth and near the middle of its transmission band. For SCC DL RB size and offset will base on the PCC corresponding RB allocation.
- vi. For non-contiguous intra-band CA, the SCC selected to provide maximum separation from the PCC and must remain fully within the downlink transmission band.
- vii. For Intra-band, contiguous CA, the downlink channels selected to perform the uplink power measurement must satisfy 3GPP channel spacing (5.4.1A of 3GPP TS 36.521 or equivalent) and channel bandwidth (5.4.2A) requirements.

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

**LTE Carrier Aggregation Conducted Power (Uplink)**

1. This device supports uplink carrier aggregation for LTE CA\_41C with a maximum of two 20MHz component carriers. For intra band contiguous carrier aggregation scenarios, 3GPP 36.101 Table 6.2.2A-1 specifies that the aggregate maximum allowed output power is equivalent to the single carrier scenario. For the non-contiguously allocated resource blocks which the MPR level is determined by various RB separation and RB sizes requirement, and the allowed MPR levels, settings and the conducted powers are permanently implemented in this device per the 3GPP 36.36.101 section 6.2.3A.1.3 requirements.
2. According to FCC guidance, the output power with uplink CA active was measured for the high / middle / low channel configuration with the highest reported SAR for each exposure condition, the power was measured with wideband signal integration over both component carriers.
3. In applying the power measurement procedures of KDB 941225 D05A for DL CA to qualify for UL SAR test exclusion, power measurement is required only for the subset in each row with the largest combination of frequency bands and CCs
4. Maximum output power measurement is required for each UL CA configuration for the required test channels described in KDB 941225 D05. The required test channel should be associated with the UL PCC. For channels at the ends of a frequency band, the SCC and subsequent CCs are added to the side within the transmission band. Otherwise, the CCs should be added alternatively to either side of the PCC.





### **5G NR Output Power (Unit: dBm)**

#### **General Note:**

1. 5G NR n2, n5, n25, n41, n66, n71, n78 supports NSA operations, and n2, n5, n7, n25, n38, n41, n66, n71, n77, n78 supports SA operations.
2. For 5G NR test procedure was following step similar FCC KDB 941225 D05:
  - a. For DFT-OFDM and CP-OFDM output power measurement reduction, according to 38.101 maximum power reduction for power class2 and 3, the CP-OFDM mode will not higher than DFT-OFDM mode, therefore, similar FCC KDB 941225 D05 procedure for other modulation output power for each RB allocation configuration is > not ½ dB higher than the same configuration in DFT-QPSK and the reported SAR for the DFT-QPSK configuration is ≤ 1.45 W/kg; CP-OFDM testing is not required.
  - b. For DFT-OFDM output power measurement reduction, according to 38.101 maximum power reduction for power class2 and 3, for 16QAM/64QMA/256QAM and smaller bandwidth output power will spot check largest channel bandwidth worst RB configuration to ensure the 16QAM/64QMA/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
3. Due to test setup limitations, SAR testing for NR was performed using Factory Test Mode software to establish the connection and perform SAR with 100% transmission.
4. 5G NR n41/n77/n78 supports HPUE limited to MIMO state, MIMO SAR using single each antenna SAR summed together as MIMO SAR is more conservatively.
5. 5G NR n41/n77/n78 MIMO power is summed per chain power together, per chain power is the same as standalone power, so measured power we only show one time.
6. 5G NR n41/n77/n78 supports MIMO mode limited to SA mode.
7. NSA and SA mode should perform SAR separately. For the maximum power of NSA mode is the same as SA total power level, so SA SAR can represent NSA mode SAR.
8. 5G NR NSA mode, the power level is the same as 5G NR SA mode, so 5G NR NSA mode and SA mode power table only show one time.
9. 5G NR supports CP-OFDM and DFT-s-OFDM modulation, for DFT-s-OFDM power is higher than CP-OFDM, so only show DFT-s-OFDM power table and chose DFT-s-OFDM to perform SAR testing.
10. For DFT-s-OFDM and CP-OFDM output power measurement reduction, according to 38.101 maximum power reduction for the CP-OFDM mode will not higher than DFT-s-OFDM mode, therefore, CP-OFDM measurement is unnecessary.

<3GPP 38.101 MPR for EN-DC>

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

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

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

FR 1	EN-DC	4G UL	5G-NRUL
N2	DC_5A_n2A	ANT 0	ANT 2
	DC_12A_n2A	ANT 0	ANT 2
	DC_30A_n2A	ANT 1	ANT 2
	DC_66A_n2A	ANT 0	ANT 2
N5	DC_2A_n5A	ANT 0	ANT 0
	DC_30A_n5A	ANT 1	ANT 0
	DC_66A_n5A	ANT 0	ANT 0
N25	DC_12A_n25A	ANT 0	ANT 2
	DC_66A_n25A	ANT 0	ANT 2
N41	DC_2A_n41A	ANT 0	ANT1&ANT 3
	DC_25A_n41A	ANT 0	ANT1&ANT 3
	DC_66A_n41A	ANT 0	ANT1&ANT 3
N66	DC_2A_n66A	ANT 0	ANT 2
	DC_5A_n66A	ANT 0	ANT 2
	DC_12A_n66A	ANT 0	ANT 2
N71	DC_2A_n71A	ANT 0	ANT 0
	DC_66A_n71A	ANT 0	ANT 0
N78	DC_2A_n78A	ANT 0	ANT 2&ANT 4
	DC_4A_n78A	ANT 0	ANT 2&ANT 4
	DC_5A_n78A	ANT 0	ANT 2&ANT 4
	DC_7A_n78A	ANT 1	ANT 2&ANT 4
	DC_38A_n78A	ANT 1	ANT 2&ANT 4



FR 1	ENDC-3DL	ENDC-4DL	ENDC-5DL
n2	DC_12A-30A_n2A	DC_12A-66A-66A_n2A,	
	DC_12A-66A_n2A	DC_5A-66A-66A_n2A	
	DC_2A-5A_n2A		
	DC_2A-66A_n2A		
	DC_5A-30A_n2A		
	DC_5A-66A_n2A		
	DC_66A-66A_n2A		
n5	DC_2A-2A_n5A	DC_2A-2A-30A_n5A	DC_2A-2A-66A-66A_n5A
	DC_2A-30A_n5A	DC_2A-2A-66A_n5A	
	DC_2A-66A_n5A	DC_2A-66A-66A_n5A	
	DC_66A-66A_n5A	DC_66A-66A-66A_n5A	
n25	DC_12A-66A_n25A		
	DC_2A-66A_n25A		
n41	DC_2A-66A_n41A	DC_2A-2A-66A_n41A	
	DC_2C_n41A		
n66	DC_12A-66A_n66A	DC_2A-2A-12A_n66A	
	DC_2A-12A_n66A	DC_2A-2A-5A_n66A	
	DC_2A-2A_n66A	DC_2A-2A-66A_n66A	
	DC_2A-5A_n66A	DC_5A-66A-66A_n66A	
	DC_2A-66A_n66A		
	DC_5A-66A_n66A		
n71	DC_2A-2A_n71A	DC_2A-2A-66A_n71A	
	DC_2A-66A_n71A	DC_2A-66C_n71A	
	DC_2A-7A_n71A	DC_2C-66A_n71A	
	DC_2C_n71A		
	DC_66C_n71A		
n78	DC_7A-7A_n78A		
	DC_7C_n78A		

Note:

1. For DC\_2A-66A\_n25A only limited to 66A.
2. Above table component list limited to downlink only.

**<WLAN Conducted Power>**

**General Note:**

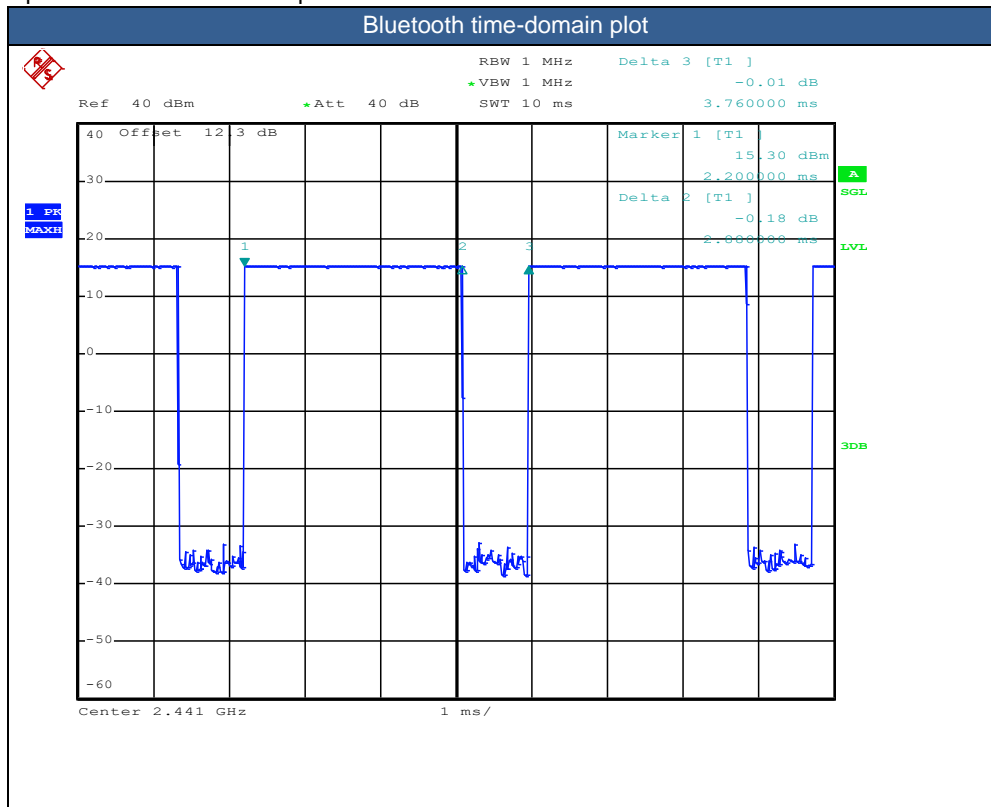
1. Per KDB 248227 D01v02r02, SAR test reduction is determined according to 802.11 transmission mode configurations and certain exposure conditions with multiple test positions. In the 2.4 GHz band, separate SAR procedures are applied to DSSS and OFDM configurations to simplify DSSS test requirements.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



<2.4GHz Bluetooth>

General Note:

- 1. For 2.4GHz Bluetooth SAR testing was selected 1Mbps, due to its highest average power.
- 2. The Bluetooth duty cycle is 76.6 % as following figure, according to 2016 Oct. TCB workshop for Bluetooth SAR scaling need further consideration and the maximum duty cycle is 100%, therefore the actual duty cycle will be scaled up to 100% for Bluetooth reported SAR calculation





## **14. Antenna Location**

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

## 15. SAR Test Results

### General Note:

1. Per KDB 447498 D01v06, the reported SAR is the measured SAR value adjusted for maximum tune-up tolerance.
  - a. Tune-up scaling Factor = tune-up limit power (mW) / EUT RF power (mW), where tune-up limit is the maximum rated power among all production units.
  - b. For SAR testing of WLAN signal with non-100% duty cycle, the measured SAR is scaled-up by the duty cycle scaling factor which is equal to "1/(duty cycle)"
  - c. For WWAN: Reported SAR(W/kg)= Measured SAR(W/kg)\*Tune-up Scaling Factor
  - d. For BT/WLAN: Reported SAR(W/kg)= Measured SAR(W/kg)\* Duty Cycle scaling factor \* Tune-up scaling factor
  - e. For TDD LTE SAR measurement, the duty cycle 1:1.59 (62.9 %) was used perform testing and considering the theoretical duty cycle of 63.3% for extended cyclic prefix in the uplink, and the theoretical duty cycle of 62.9% for normal cyclic prefix in uplink, a scaling factor of extended cyclic prefix  $63.3\%/62.9\% = 1.006$  is applied to scale-up the measured SAR result. The Reported TDD LTE SAR = measured SAR (W/kg)\* Tune-up Scaling Factor\* scaling factor for extended cyclic prefix.
2. Per KDB 447498 D01v06, for each exposure position, testing of other required channels within the operating mode of a frequency band is not required when the *reported* 1-g or 10-g SAR for the mid-band or highest output power channel is:
  - $\leq 0.8$  W/kg or  $2.0$  W/kg, for 1-g or 10-g respectively, when the transmission band is  $\leq 100$  MHz
  - $\leq 0.6$  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
  - $\leq 0.4$  W/kg or  $1.0$  W/kg, for 1-g or 10-g respectively, when the transmission band is  $\geq 200$  MHz
3. Per KDB 865664 D01v01r04, for each frequency band, repeated SAR measurement is required when the measured SAR is  $\geq 0.8$ W/kg. Per KDB 865664 D01v01r04, if the extremity repeated SAR is necessary, the same procedures should be adapted for measurements according to extremity and occupational exposure limits by applying a factor of 2.5 for extremity exposure and a factor of 5 for occupational exposure to the corresponding SAR thresholds.
4. For dual SIM card mobile has two SIM slots and supports dual SIM dual standby. The WWAN radio transmission will be enabled by either one SIM at a time (single active). After pre-scan two SIM cards power, we found test result of the SIM1 was the worse, so we chose SIM1 slot to perform all tests.
5. The device implements receiver detect mechanism/hotspot trigger reduced power for the power management for SAR compliance at different exposure conditions (head, body-worn, hotspot, extremity). The device will invoke corresponding work scenarios power level base on frequency bands/antennas, which can refer to appendix E. power table.
6. For WLAN when transmit simultaneous with WWAN LAT or UAT, power reduction will be activated to head.
7. For Some WWAN bands, Receiver off reduced power level higher than hotspot reduced power level, so front/back Receiver off SAR can represent hotspot conservatively.
8. This device supports HPUE for LTE band 41 with class 2 level, HPUE power have been measured separately. 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 test, using FTM (Factory Test Mode) to perform SAR with default 100% transmission.
10. 5G NR n41/n77/n78 supports HPUE limited to MIMO state, MIMO SAR using single each antenna SAR summed together as MIMO SAR is more conservatively.
11. 5G NR n41/n77/n78 MIMO power is summed per chain power together, per chain power is the same as standalone power, so measured power we only show one time.
12. 5G NR n41/n77/n78 supports MIMO mode limited to SA mode.
13. For 5G NR EN-DC mode, the simultaneous transmission analysis is summed 5G NR SAR and LTE SAR to show compliance.
14. 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.
15. 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.
16. 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.
17. 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.
18. 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  $1.2$ W/kg of GSM1900, WCDMA Band II/IV, LTE Band 2/4/7/25/66, 5G NR n38/n41/n77 therefore product



specific 10g SAR is necessary.

- b. WLAN 5.3/5.5GHz tested the product specific 10g SAR since it has no hotspot mode.
- c. When 10-g product specific 10g SAR is considered, SAR thresholds is specified in the procedures for SAR test reduction and exclusion should be multiplied by 2.5.

**GSM Note:**

1. Per KDB 941225 D01v03r01, for SAR test reduction for GSM / GPRS / EDGE modes is determined by the source-based time-averaged output power including tune-up tolerance. The mode with highest specified time-averaged output power should be tested for SAR compliance in the applicable exposure conditions. For modes with the same specified maximum output power and tolerance, the higher number time-slot configuration should be tested. Therefore, the GPRS 3Tx slots for GSM850, and GPRS 2Tx slots for GSM1900 are considered as the primary mode.
2. Other configurations of GSM / GPRS / EDGE are considered as secondary modes. The 3G SAR test reduction procedure is applied, when the maximum output power and tune-up tolerance specified for production units in a secondary mode is  $\leq \frac{1}{4}$  dB higher than the primary mode, SAR measurement is not required for the secondary mode.

**WCDMA Note:**

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

**CDMA Note:**

1. Per KDB 941225 D01v03r01, SAR for next to the ear head exposure is measured in RC3 with the handset configured to transmit at full rate in SO55.
2. Per KDB 941225 D01v03r01, in Hotspot mode EUT is treated as data device and SAR is tested with Ev-Do Rev 0 (RTAP 153.6kbps) as the primary mode.
3. Per KDB 941225 D01v03r01, for Body-worn accessory SAR is measured in RC3 with the handset configured in TDSO/SO32 to transmit at full rate on FCH only with all other code channels disabled. The body-worn accessory procedures in KDB Publication 447498 are applied. The 3G SAR test reduction procedure is applied to the multiple code channel configuration (FCH+SCH), with FCH only as the primary mode.



**LTE Note:**

1. Per KDB 941225 D05v02r05, start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.
2. Per KDB 941225 D05v02r05, 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure.
3. Per KDB 941225 D05v02r05, for QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are  $\leq 0.8$  W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is  $> 1.45$  W/kg, the remaining required test channels must also be tested.
4. Per KDB 941225 D05v02r05, 16QAM/64QAM 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  $\leq 1.45$  W/kg; Per KDB 941225 D05v02r05, 16QAM/64QAM SAR testing is not required.
5. Per KDB 941225 D05v02r05, smaller bandwidth output power for each RB allocation configuration is  $>$  not  $\frac{1}{2}$  dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is  $\leq 1.45$  W/kg; Per KDB 941225 D05v02r05, smaller bandwidth SAR testing is not required.
6. For LTE B4 / B5 / B12 / B17 / B26 / B38 / 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 2 / B4 / B5 / B17 SAR test was covered by LTE B25 / B66 / B26 / B12; 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  $\leq 0.8$  W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is  $> 1.45$  W/kg, the remaining required test channels must also be tested.
  - 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/2BPSK/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  $\leq 1.45$  W/kg, smaller bandwidth SAR testing is not required for this device
  - f. For 5G FR1 n41/n77 the maximum bandwidth does not support three non-overlapping channels, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.



**WLAN/Bluetooth Note:**

2. 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  $\leq 1.2$  W/kg.
3. 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  $\leq 1.2$  W/kg, SAR is not required for U-NII-1 band.
4. 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  $\leq 0.8$  W/kg or all required test position are tested.
5. 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  $\leq 1.2$  W/kg or all required channels are tested.
6. During SAR testing the WLAN transmission was verified using a spectrum analyzer.



15.1 Head SAR

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Antenna	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)	
<b>750MHz</b>																		
01	LTE Band 12	10M	QPSK	1	0	-	Right Cheek	Ant 0	Full	23095	707.5	23.98	25.00	1.265	-0.06	0.146	<b>0.185</b>	
	LTE Band 12	10M	QPSK	25	0	-	Right Cheek	Ant 0	Full	23095	707.5	23.11	24.00	1.227	0.05	0.115	0.141	
	LTE Band 12	10M	QPSK	1	0	-	Right Tilted	Ant 0	Full	23095	707.5	23.98	25.00	1.265	-0.03	0.065	0.082	
	LTE Band 12	10M	QPSK	25	0	-	Right Tilted	Ant 0	Full	23095	707.5	23.11	24.00	1.227	0.05	0.052	0.064	
	LTE Band 12	10M	QPSK	1	0	-	Left Cheek	Ant 0	Full	23095	707.5	23.98	25.00	1.265	0.04	0.121	0.153	
	LTE Band 12	10M	QPSK	25	0	-	Left Cheek	Ant 0	Full	23095	707.5	23.11	24.00	1.227	0.02	0.094	0.115	
	LTE Band 12	10M	QPSK	1	0	-	Left Tilted	Ant 0	Full	23095	707.5	23.98	25.00	1.265	0.07	0.094	0.119	
	LTE Band 12	10M	QPSK	25	0	-	Left Tilted	Ant 0	Full	23095	707.5	23.11	24.00	1.227	0.01	0.076	0.093	
02	LTE Band 71	20M	QPSK	1	0	-	Right Cheek	Ant 0	Full	133322	683	23.79	25.00	1.321	-0.06	0.095	<b>0.126</b>	
	LTE Band 71	20M	QPSK	50	0	-	Right Cheek	Ant 0	Full	133322	683	22.92	24.00	1.282	0.01	0.067	0.086	
	LTE Band 71	20M	QPSK	1	0	-	Right Tilted	Ant 0	Full	133322	683	23.79	25.00	1.321	0.05	0.049	0.065	
	LTE Band 71	20M	QPSK	50	0	-	Right Tilted	Ant 0	Full	133322	683	22.92	24.00	1.282	-0.03	0.035	0.045	
	LTE Band 71	20M	QPSK	1	0	-	Left Cheek	Ant 0	Full	133322	683	23.79	25.00	1.321	0.01	0.075	0.099	
	LTE Band 71	20M	QPSK	50	0	-	Left Cheek	Ant 0	Full	133322	683	22.92	24.00	1.282	0.02	0.056	0.072	
	LTE Band 71	20M	QPSK	1	0	-	Left Tilted	Ant 0	Full	133322	683	23.79	25.00	1.321	0.06	0.046	0.061	
	LTE Band 71	20M	QPSK	50	0	-	Left Tilted	Ant 0	Full	133322	683	22.92	24.00	1.282	-0.04	0.034	0.044	
03	FR1 N71	20M	QPSK	1	53	DFT-SCS 15KHz	Right Cheek	Ant 0	Full	136100	680.5	23.29	24.00	1.178	-0.07	0.139	<b>0.164</b>	
	FR1 N71	20M	QPSK	50	28	DFT-SCS 15KHz	Right Cheek	Ant 0	Full	136100	680.5	23.21	24.00	1.199	0.04	0.123	0.148	
	FR1 N71	20M	QPSK	1	53	DFT-SCS 15KHz	Right Tilted	Ant 0	Full	136100	680.5	23.29	24.00	1.178	-0.09	0.087	0.102	
	FR1 N71	20M	QPSK	50	28	DFT-SCS 15KHz	Right Tilted	Ant 0	Full	136100	680.5	23.21	24.00	1.199	0.11	0.078	0.094	
	FR1 N71	20M	QPSK	1	53	DFT-SCS 15KHz	Left Cheek	Ant 0	Full	136100	680.5	23.29	24.00	1.178	0.11	0.089	0.105	
	FR1 N71	20M	QPSK	50	28	DFT-SCS 15KHz	Left Cheek	Ant 0	Full	136100	680.5	23.21	24.00	1.199	0.07	0.084	0.101	
	FR1 N71	20M	QPSK	1	53	DFT-SCS 15KHz	Left Tilted	Ant 0	Full	136100	680.5	23.29	24.00	1.178	0.15	0.058	0.068	
	FR1 N71	20M	QPSK	50	28	DFT-SCS 15KHz	Left Tilted	Ant 0	Full	136100	680.5	23.21	24.00	1.199	0.06	0.053	0.064	



Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Antenna	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)	
<b>835MHz</b>																		
04	GSM850	-	-	-	-	GPRS (3 Tx slots)	Right Cheek	Ant 0	Full	189	836.4	28.15	29.50	1.365	0.02	0.162	<b>0.221</b>	
	GSM850	-	-	-	-	GPRS (3 Tx slots)	Right Tilted	Ant 0	Full	189	836.4	28.15	29.50	1.365	0.03	0.075	0.102	
	GSM850	-	-	-	-	GPRS (3 Tx slots)	Left Cheek	Ant 0	Full	189	836.4	28.15	29.50	1.365	0.05	0.109	0.149	
	GSM850	-	-	-	-	GPRS (3 Tx slots)	Left Tilted	Ant 0	Full	189	836.4	28.15	29.50	1.365	0.07	0.082	0.112	
05	WCDMA V	-	-	-	-	RMC 12.2Kbps	Right Cheek	Ant 0	Full	4182	836.4	24.22	25.50	1.343	-0.04	0.169	<b>0.227</b>	
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Right Tilted	Ant 0	Full	4182	836.4	24.22	25.50	1.343	0.06	0.087	0.117	
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Left Cheek	Ant 0	Full	4182	836.4	24.22	25.50	1.343	0.02	0.108	0.145	
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Left Tilted	Ant 0	Full	4182	836.4	24.22	25.50	1.343	0.01	0.079	0.106	
06	CDMA BC0	-	-	-	-	RC3 SO55	Right Cheek	Ant 0	Full	384	836.52	23.78	25.00	1.324	-0.19	0.153	<b>0.203</b>	
	CDMA BC0	-	-	-	-	RC3 SO55	Right Tilted	Ant 0	Full	384	836.52	23.78	25.00	1.324	0.02	0.080	0.106	
	CDMA BC0	-	-	-	-	RC3 SO55	Left Cheek	Ant 0	Full	384	836.52	23.78	25.00	1.324	-0.02	0.090	0.119	
	CDMA BC0	-	-	-	-	RC3 SO55	Left Tilted	Ant 0	Full	384	836.52	23.78	25.00	1.324	0.06	0.063	0.083	
07	LTE Band 26	15M	QPSK	1	0	-	Right Cheek	Ant 0	Full	26865	831.5	24.16	25.00	1.213	0.03	0.173	<b>0.210</b>	
	LTE Band 26	15M	QPSK	36	0	-	Right Cheek	Ant 0	Full	26865	831.5	23.17	24.00	1.211	0.06	0.135	0.163	
	LTE Band 26	15M	QPSK	1	0	-	Right Tilted	Ant 0	Full	26865	831.5	24.16	25.00	1.213	0.02	0.085	0.103	
	LTE Band 26	15M	QPSK	36	0	-	Right Tilted	Ant 0	Full	26865	831.5	23.17	24.00	1.211	0.07	0.066	0.080	
	LTE Band 26	15M	QPSK	1	0	-	Left Cheek	Ant 0	Full	26865	831.5	24.16	25.00	1.213	-0.03	0.124	0.150	
	LTE Band 26	15M	QPSK	36	0	-	Left Cheek	Ant 0	Full	26865	831.5	23.17	24.00	1.211	0.05	0.099	0.120	
	LTE Band 26	15M	QPSK	1	0	-	Left Tilted	Ant 0	Full	26865	831.5	24.16	25.00	1.213	0.04	0.111	0.135	
	LTE Band 26	15M	QPSK	36	0	-	Left Tilted	Ant 0	Full	26865	831.5	23.17	24.00	1.211	0.01	0.086	0.104	
08	FR1 N5	20M	QPSK	1	53	DFT-SCS 15KHz	Right Cheek	Ant 0	Full	167300	836.5	23.47	24.00	1.130	-0.05	0.164	<b>0.185</b>	
	FR1 N5	20M	QPSK	50	28	DFT-SCS 15KHz	Right Cheek	Ant 0	Full	167300	836.5	23.34	24.00	1.164	0.05	0.158	0.184	
	FR1 N5	20M	QPSK	1	53	DFT-SCS 15KHz	Right Tilted	Ant 0	Full	167300	836.5	23.47	24.00	1.130	0.12	0.105	0.119	
	FR1 N5	20M	QPSK	50	28	DFT-SCS 15KHz	Right Tilted	Ant 0	Full	167300	836.5	23.34	24.00	1.164	0.07	0.099	0.115	
	FR1 N5	20M	QPSK	1	53	DFT-SCS 15KHz	Left Cheek	Ant 0	Full	167300	836.5	23.47	24.00	1.130	-0.15	0.104	0.117	
	FR1 N5	20M	QPSK	50	28	DFT-SCS 15KHz	Left Cheek	Ant 0	Full	167300	836.5	23.34	24.00	1.164	0.02	0.103	0.120	
	FR1 N5	20M	QPSK	1	53	DFT-SCS 15KHz	Left Tilted	Ant 0	Full	167300	836.5	23.47	24.00	1.130	-0.14	0.081	0.092	
	FR1 N5	20M	QPSK	50	28	DFT-SCS 15KHz	Left Tilted	Ant 0	Full	167300	836.5	23.34	24.00	1.164	0.05	0.080	0.093	



Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Antenna	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
<b>1750MHz</b>																	
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Right Cheek	Ant 0	Full	1413	1732.6	23.37	24.50	1.297	0.06	0.046	0.060
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Right Tilted	Ant 0	Full	1413	1732.6	23.37	24.50	1.297	-0.03	0.037	0.048
09	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Left Cheek	Ant 0	Full	1413	1732.6	23.37	24.50	1.297	-0.09	0.096	0.125
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Left Tilted	Ant 0	Full	1413	1732.6	23.37	24.50	1.297	0.05	0.037	0.048
	LTE Band 66	20M	QPSK	1	0	-	Right Cheek	Ant 0	Full	132322	1745	23.94	25.00	1.276	0.03	0.039	0.050
	LTE Band 66	20M	QPSK	50	0	-	Right Cheek	Ant 0	Full	132322	1745	22.89	24.00	1.291	0.02	0.030	0.039
	LTE Band 66	20M	QPSK	1	0	-	Right Tilted	Ant 0	Full	132322	1745	23.94	25.00	1.276	0.05	0.028	0.036
	LTE Band 66	20M	QPSK	50	0	-	Right Tilted	Ant 0	Full	132322	1745	22.89	24.00	1.291	-0.03	0.023	0.030
10	LTE Band 66	20M	QPSK	1	0	-	Left Cheek	Ant 0	Full	132322	1745	23.94	25.00	1.276	0.03	0.052	0.066
	LTE Band 66	20M	QPSK	50	0	-	Left Cheek	Ant 0	Full	132322	1745	22.89	24.00	1.291	0.01	0.044	0.057
	LTE Band 66	20M	QPSK	1	0	-	Left Tilted	Ant 0	Full	132322	1745	23.94	25.00	1.276	0.05	0.024	0.031
	LTE Band 66	20M	QPSK	50	0	-	Left Tilted	Ant 0	Full	132322	1745	22.89	24.00	1.291	0.04	0.022	0.028
	FR1 N66	20M	QPSK	1	53	DFT-SCS 15KHz	Right Cheek	Ant 2	Full	349000	1745	23.32	24.00	1.169	0.17	0.045	0.053
	FR1 N66	20M	QPSK	50	28	DFT-SCS 15KHz	Right Cheek	Ant 2	Full	349000	1745	23.11	24.00	1.227	0.04	0.048	0.059
	FR1 N66	20M	QPSK	1	53	DFT-SCS 15KHz	Right Tilted	Ant 2	Full	349000	1745	23.32	24.00	1.169	0.04	0.023	0.027
	FR1 N66	20M	QPSK	50	28	DFT-SCS 15KHz	Right Tilted	Ant 2	Full	349000	1745	23.11	24.00	1.227	0.06	0.019	0.023
	FR1 N66	20M	QPSK	1	53	DFT-SCS 15KHz	Left Cheek	Ant 2	Full	349000	1745	23.32	24.00	1.169	0.17	0.080	0.094
11	FR1 N66	20M	QPSK	50	28	DFT-SCS 15KHz	Left Cheek	Ant 2	Full	349000	1745	23.11	24.00	1.227	-0.03	0.089	0.109
	FR1 N66	20M	QPSK	1	53	DFT-SCS 15KHz	Left Tilted	Ant 2	Full	349000	1745	23.32	24.00	1.169	0.05	0.055	0.064
	FR1 N66	20M	QPSK	50	28	DFT-SCS 15KHz	Left Tilted	Ant 2	Full	349000	1745	23.11	24.00	1.227	0.02	0.042	0.052

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Antenna	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
<b>1900MHz</b>																	
	GSM1900	-	-	-	-	GPRS (2 Tx slots)	Right Cheek	Ant 0	Full	661	1880	27.21	28.50	1.346	0.03	0.008	0.011
	GSM1900	-	-	-	-	GPRS (2 Tx slots)	Right Tilted	Ant 0	Full	661	1880	27.21	28.50	1.346	0.02	0.004	0.005
12	GSM1900	-	-	-	-	GPRS (2 Tx slots)	Left Cheek	Ant 0	Full	661	1880	27.21	28.50	1.346	-0.01	0.016	0.022
	GSM1900	-	-	-	-	GPRS (2 Tx slots)	Left Tilted	Ant 0	Full	661	1880	27.21	28.50	1.346	-0.06	0.010	0.013
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Right Cheek	Ant 0	Full	9400	1880	23.44	24.50	1.276	0.03	0.046	0.059
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Right Tilted	Ant 0	Full	9400	1880	23.44	24.50	1.276	0.02	0.033	0.042
13	WCDMA II	-	-	-	-	RMC 12.2Kbps	Left Cheek	Ant 0	Full	9400	1880	23.44	24.50	1.276	-0.08	0.056	0.071
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Left Tilted	Ant 0	Full	9400	1880	23.44	24.50	1.276	-0.01	0.026	0.033
	LTE Band 25	20M	QPSK	1	0	-	Right Cheek	Ant 0	Full	26340	1880	23.76	25.00	1.330	0.03	0.045	0.060
	LTE Band 25	20M	QPSK	50	0	-	Right Cheek	Ant 0	Full	26340	1880	22.78	24.00	1.324	0.05	0.036	0.048
	LTE Band 25	20M	QPSK	1	0	-	Right Tilted	Ant 0	Full	26340	1880	23.76	25.00	1.330	0.04	0.038	0.051
	LTE Band 25	20M	QPSK	50	0	-	Right Tilted	Ant 0	Full	26340	1880	22.78	24.00	1.324	0.01	0.032	0.042
14	LTE Band 25	20M	QPSK	1	0	-	Left Cheek	Ant 0	Full	26340	1880	23.76	25.00	1.330	-0.02	0.055	0.073
	LTE Band 25	20M	QPSK	50	0	-	Left Cheek	Ant 0	Full	26340	1880	22.78	24.00	1.324	-0.01	0.043	0.057
	LTE Band 25	20M	QPSK	1	0	-	Left Tilted	Ant 0	Full	26340	1880	23.76	25.00	1.330	0.08	0.028	0.037
	LTE Band 25	20M	QPSK	50	0	-	Left Tilted	Ant 0	Full	26340	1880	22.78	24.00	1.324	0.03	0.021	0.028
	FR1 N25	20M	QPSK	1	53	DFT-SCS 15KHz	Right Cheek	Ant 2	Full	376500	1882.5	22.95	24.00	1.274	0.02	0.060	0.076
	FR1 N25	20M	QPSK	50	28	DFT-SCS 15KHz	Right Cheek	Ant 2	Full	376500	1882.5	22.91	24.00	1.285	-0.07	0.063	0.081
	FR1 N25	20M	QPSK	1	53	DFT-SCS 15KHz	Right Tilted	Ant 2	Full	376500	1882.5	22.95	24.00	1.274	0.03	0.055	0.070
	FR1 N25	20M	QPSK	50	28	DFT-SCS 15KHz	Right Tilted	Ant 2	Full	376500	1882.5	22.91	24.00	1.285	-0.02	0.060	0.077
	FR1 N25	20M	QPSK	1	53	DFT-SCS 15KHz	Left Cheek	Ant 2	Full	376500	1882.5	22.95	24.00	1.274	-0.04	0.091	0.116
15	FR1 N25	20M	QPSK	50	28	DFT-SCS 15KHz	Left Cheek	Ant 2	Full	376500	1882.5	22.91	24.00	1.285	0.06	0.102	0.131
	FR1 N25	20M	QPSK	1	53	DFT-SCS 15KHz	Left Tilted	Ant 2	Full	376500	1882.5	22.95	24.00	1.274	0.04	0.012	0.015
	FR1 N25	20M	QPSK	50	28	DFT-SCS 15KHz	Left Tilted	Ant 2	Full	376500	1882.5	22.91	24.00	1.285	0.07	0.009	0.012



Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Antenna	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
<b>2300MHz</b>																			
16	LTE Band 30	10M	QPSK	1	0	-	Right Cheek	Ant 1	Full	27710	2310	22.93	24.00	1.279	-	1.000	-0.09	0.057	<b>0.073</b>
	LTE Band 30	10M	QPSK	25	0	-	Right Cheek	Ant 1	Full	27710	2310	21.99	23.00	1.262	-	1.000	0.03	0.043	0.054
	LTE Band 30	10M	QPSK	1	0	-	Right Tilted	Ant 1	Full	27710	2310	22.93	24.00	1.279	-	1.000	0.01	0.039	0.050
	LTE Band 30	10M	QPSK	25	0	-	Right Tilted	Ant 1	Full	27710	2310	21.99	23.00	1.262	-	1.000	0.05	0.032	0.040
	LTE Band 30	10M	QPSK	1	0	-	Left Cheek	Ant 1	Full	27710	2310	22.93	24.00	1.279	-	1.000	0.06	0.033	0.042
	LTE Band 30	10M	QPSK	25	0	-	Left Cheek	Ant 1	Full	27710	2310	21.99	23.00	1.262	-	1.000	0.07	0.027	0.034
	LTE Band 30	10M	QPSK	1	0	-	Left Tilted	Ant 1	Full	27710	2310	22.93	24.00	1.279	-	1.000	0.02	0.028	0.036
	LTE Band 30	10M	QPSK	25	0	-	Left Tilted	Ant 1	Full	27710	2310	21.99	23.00	1.262	-	1.000	0.03	0.021	0.026
<b>2600MHz</b>																			
17	LTE Band 7	20M	QPSK	1	0	-	Right Cheek	Ant 1	Full	21100	2535	25.19	25.50	1.074	-	1.000	-0.01	0.097	<b>0.104</b>
	LTE Band 7	20M	QPSK	50	0	-	Right Cheek	Ant 1	Full	21100	2535	24.35	24.50	1.035	-	1.000	0.03	0.077	0.080
	LTE Band 7	20M	QPSK	1	0	-	Right Tilted	Ant 1	Full	21100	2535	25.19	25.50	1.074	-	1.000	0.02	0.072	0.077
	LTE Band 7	20M	QPSK	50	0	-	Right Tilted	Ant 1	Full	21100	2535	24.35	24.50	1.035	-	1.000	0.09	0.061	0.063
	LTE Band 7	20M	QPSK	1	0	-	Left Cheek	Ant 1	Full	21100	2535	25.19	25.50	1.074	-	1.000	0.05	0.091	0.098
	LTE Band 7	20M	QPSK	50	0	-	Left Cheek	Ant 1	Full	21100	2535	24.35	24.50	1.035	-	1.000	0.13	0.077	0.080
	LTE Band 7	20M	QPSK	1	0	-	Left Tilted	Ant 1	Full	21100	2535	25.19	25.50	1.074	-	1.000	0.08	0.050	0.054
	LTE Band 7	20M	QPSK	50	0	-	Left Tilted	Ant 1	Full	21100	2535	24.35	24.50	1.035	-	1.000	0.02	0.041	0.042
	LTE Band 38	20M	QPSK	1	0	-	Right Cheek	Ant 1	Full	38000	2595	24.49	25.50	1.262	62.9	1.006	0.02	0.038	0.048
	LTE Band 38	20M	QPSK	50	0	-	Right Cheek	Ant 1	Full	38000	2595	23.51	24.50	1.256	62.9	1.006	0.05	0.030	0.038
	LTE Band 38	20M	QPSK	1	0	-	Right Tilted	Ant 1	Full	38000	2595	24.49	25.50	1.262	62.9	1.006	0.1	0.037	0.047
	LTE Band 38	20M	QPSK	50	0	-	Right Tilted	Ant 1	Full	38000	2595	23.51	24.50	1.256	62.9	1.006	0.06	0.029	0.037
18	LTE Band 38	20M	QPSK	1	0	-	Left Cheek	Ant 1	Full	38000	2595	24.49	25.50	1.262	62.9	1.006	-0.02	0.047	<b>0.059</b>
	LTE Band 38	20M	QPSK	50	0	-	Left Cheek	Ant 1	Full	38000	2595	23.51	24.50	1.256	62.9	1.006	-0.04	0.040	0.051
	LTE Band 38	20M	QPSK	1	0	-	Left Tilted	Ant 1	Full	38000	2595	24.49	25.50	1.262	62.9	1.006	0.08	0.032	0.041
	LTE Band 38	20M	QPSK	50	0	-	Left Tilted	Ant 1	Full	38000	2595	23.51	24.50	1.256	62.9	1.006	0.06	0.027	0.034
	LTE Band 41	20M	QPSK	1	0	-	Right Cheek	Ant 1	Full	40620	2593	23.65	24.50	1.216	62.9	1.006	0.06	0.015	0.018
	LTE Band 41	20M	QPSK	50	0	-	Right Cheek	Ant 1	Full	40620	2593	22.80	23.50	1.175	62.9	1.006	0.03	0.012	0.014
	LTE Band 41	20M	QPSK	1	0	-	Right Tilted	Ant 1	Full	40620	2593	23.65	24.50	1.216	62.9	1.006	0.05	0.010	0.012
	LTE Band 41	20M	QPSK	50	0	-	Right Tilted	Ant 1	Full	40620	2593	22.80	23.50	1.175	62.9	1.006	-0.04	0.009	0.011
19	LTE Band 41	20M	QPSK	1	0	-	Left Cheek	Ant 1	Full	40620	2593	23.65	24.50	1.216	62.9	1.006	0.08	0.056	<b>0.069</b>
	LTE Band 41	20M	QPSK	50	0	-	Left Cheek	Ant 1	Full	40620	2593	22.80	23.50	1.175	62.9	1.006	0.02	0.042	0.050
	LTE Band 41	20M	QPSK	1	0	-	Left Tilted	Ant 1	Full	40620	2593	23.65	24.50	1.216	62.9	1.006	0.07	0.035	0.043
	LTE Band 41	20M	QPSK	50	0	-	Left Tilted	Ant 1	Full	40620	2593	22.80	23.50	1.175	62.9	1.006	0.03	0.025	0.030
	LTE Band 41-HPUE	20M	QPSK	1	0	-	Left Cheek	Ant 1	Full	40620	2593	24.89	26.00	1.291	42.9	1.009	0.08	0.049	0.064
	LTE Band 41C	20M	QPSK	1	0	-	Left Cheek	Ant 1	Full	40620+40422	2593+2573.2	23.60	24.50	1.230	62.9	1.006	0.03	0.047	0.058
	FR1 N7	20M	QPSK	1	53	DFT-SCS 15KHz	Right Cheek	Ant 3	Reduced	507000	2535	18.63	19.50	1.222	-	1.000	0.01	0.723	0.883
20	FR1 N7	20M	QPSK	1	53	DFT-SCS 15KHz	Right Cheek	Ant 3	Reduced	502000	2510	18.46	19.50	1.271	-	1.000	-0.09	0.791	<b>1.005</b>
	FR1 N7	20M	QPSK	1	53	DFT-SCS 15KHz	Right Cheek	Ant 3	Reduced	512000	2560	18.52	19.50	1.253	-	1.000	0.04	0.775	0.971
	FR1 N7	20M	QPSK	50	28	DFT-SCS 15KHz	Right Cheek	Ant 3	Reduced	507000	2535	18.47	19.50	1.268	-	1.000	0.01	0.702	0.890
	FR1 N7	20M	QPSK	50	28	DFT-SCS 15KHz	Right Cheek	Ant 3	Reduced	502000	2510	18.39	19.50	1.291	-	1.000	0.12	0.688	0.888
	FR1 N7	20M	QPSK	50	28	DFT-SCS 15KHz	Right Cheek	Ant 3	Reduced	512000	2560	18.46	19.50	1.271	-	1.000	0.05	0.719	0.914
	FR1 N7	20M	QPSK	100	0	DFT-SCS 15KHz	Right Cheek	Ant 3	Reduced	507000	2535	18.39	19.50	1.291	-	1.000	-0.12	0.775	1.001
	FR1 N7	20M	QPSK	1	53	DFT-SCS 15KHz	Right Tilted	Ant 3	Reduced	507000	2535	18.63	19.50	1.222	-	1.000	0.05	0.264	0.323
	FR1 N7	20M	QPSK	50	28	DFT-SCS 15KHz	Right Tilted	Ant 3	Reduced	507000	2535	18.47	19.50	1.268	-	1.000	-0.01	0.247	0.313
	FR1 N7	20M	QPSK	1	53	DFT-SCS 15KHz	Left Cheek	Ant 3	Reduced	507000	2535	18.63	19.50	1.222	-	1.000	-0.04	0.262	0.320
	FR1 N7	20M	QPSK	50	28	DFT-SCS 15KHz	Left Cheek	Ant 3	Reduced	507000	2535	18.47	19.50	1.268	-	1.000	0.03	0.246	0.312
	FR1 N7	20M	QPSK	1	53	DFT-SCS 15KHz	Left Tilted	Ant 3	Reduced	507000	2535	18.63	19.50	1.222	-	1.000	0.02	0.174	0.213
	FR1 N7	20M	QPSK	50	28	DFT-SCS 15KHz	Left Tilted	Ant 3	Reduced	507000	2535	18.47	19.50	1.268	-	1.000	0.05	0.153	0.194
<b>SA&amp;NSA&amp;UL MIMO</b>																			
	FR1 N41	100M	QPSK	1	137	DFT-SCS 30KHz	Right Cheek	Ant 1	Full	518598	2592.99	23.59	24.00	1.099	-	1.000	0.11	0.063	0.069
	FR1 N41	100M	QPSK	135	69	DFT-SCS 30KHz	Right Cheek	Ant 1	Full	518598	2592.99	23.38	24.00	1.153	-	1.000	0.14	0.060	0.069
	FR1 N41	100M	QPSK	1	137	DFT-SCS 30KHz	Right Tilted	Ant 1	Full	518598	2592.99	23.59	24.00	1.099	-	1.000	0.14	0.057	0.063



	FR1 N41	100M	QPSK	135	69	DFT-SCS 30KHz	Right Tilted	Ant 1	Full	518598	2592.99	23.38	24.00	1.153	-	1.000	0.08	0.055	0.063
	FR1 N41	100M	QPSK	1	137	DFT-SCS 30KHz	Left Cheek	Ant 1	Full	518598	2592.99	23.59	24.00	1.099	-	1.000	-0.04	0.071	0.078
	FR1 N41	100M	QPSK	135	69	DFT-SCS 30KHz	Left Cheek	Ant 1	Full	518598	2592.99	23.38	24.00	1.153	-	1.000	0.05	0.065	0.075
	FR1 N41	100M	QPSK	1	137	DFT-SCS 30KHz	Left Tilted	Ant 1	Full	518598	2592.99	23.59	24.00	1.099	-	1.000	0.02	0.033	0.036
	FR1 N41	100M	QPSK	135	69	DFT-SCS 30KHz	Left Tilted	Ant 1	Full	518598	2592.99	23.38	24.00	1.153	-	1.000	0.17	0.033	0.038
n41 SA & n38 SA & UL MIMO																			
	FR1 N41	100M	QPSK	1	137	DFT-SCS 30KHz	Right Cheek	Ant 3	Reduced	518598	2592.99	17.58	18.50	1.236	-	1.000	0.02	0.703	0.869
21	FR1 N41	100M	QPSK	135	69	DFT-SCS 30KHz	Right Cheek	Ant 3	Reduced	518598	2592.99	17.36	18.50	1.300	-	1.000	-0.08	0.698	<b>0.908</b>
	FR1 N41	100M	QPSK	270	0	DFT-SCS 30KHz	Right Cheek	Ant 3	Reduced	518598	2592.99	17.18	18.50	1.355	-	1.000	0.03	0.645	0.874
	FR1 N41	100M	QPSK	1	137	DFT-SCS 30KHz	Right Tilted	Ant 3	Reduced	518598	2592.99	17.58	18.50	1.236	-	1.000	0.07	0.238	0.294
	FR1 N41	100M	QPSK	135	69	DFT-SCS 30KHz	Right Tilted	Ant 3	Reduced	518598	2592.99	17.36	18.50	1.300	-	1.000	0.03	0.211	0.274
	FR1 N41	100M	QPSK	1	137	DFT-SCS 30KHz	Left Cheek	Ant 3	Reduced	518598	2592.99	17.58	18.50	1.236	-	1.000	0.09	0.441	0.545
	FR1 N41	100M	QPSK	135	69	DFT-SCS 30KHz	Left Cheek	Ant 3	Reduced	518598	2592.99	17.36	18.50	1.300	-	1.000	-0.05	0.422	0.549
	FR1 N41	100M	QPSK	1	137	DFT-SCS 30KHz	Left Tilted	Ant 3	Reduced	518598	2592.99	17.58	18.50	1.236	-	1.000	0.04	0.093	0.115
	FR1 N41	100M	QPSK	135	69	DFT-SCS 30KHz	Left Tilted	Ant 3	Reduced	518598	2592.99	17.36	18.50	1.300	-	1.000	0.11	0.088	0.114
NSA																			
	FR1 N41	100M	QPSK	1	137	DFT-SCS 30KHz	Right Cheek	Ant 3	Reduced	518598	2592.99	14.31	16.00	1.476	-	1.000	-0.07	0.333	0.491
	FR1 N41	100M	QPSK	135	69	DFT-SCS 30KHz	Right Cheek	Ant 3	Reduced	518598	2592.99	14.24	16.00	1.500	-	1.000	0.05	0.322	0.483
	FR1 N41	100M	QPSK	1	137	DFT-SCS 30KHz	Right Tilted	Ant 3	Reduced	518598	2592.99	14.31	16.00	1.476	-	1.000	0.01	0.099	0.146
	FR1 N41	100M	QPSK	135	69	DFT-SCS 30KHz	Right Tilted	Ant 3	Reduced	518598	2592.99	14.24	16.00	1.500	-	1.000	0.06	0.094	0.141
	FR1 N41	100M	QPSK	1	137	DFT-SCS 30KHz	Left Cheek	Ant 3	Reduced	518598	2592.99	14.31	16.00	1.476	-	1.000	0.06	0.162	0.239
	FR1 N41	100M	QPSK	135	69	DFT-SCS 30KHz	Left Cheek	Ant 3	Reduced	518598	2592.99	14.24	16.00	1.500	-	1.000	0.01	0.158	0.237
	FR1 N41	100M	QPSK	1	137	DFT-SCS 30KHz	Left Tilted	Ant 3	Reduced	518598	2592.99	14.31	16.00	1.476	-	1.000	0.07	0.050	0.074
	FR1 N41	100M	QPSK	135	69	DFT-SCS 30KHz	Left Tilted	Ant 3	Reduced	518598	2592.99	14.24	16.00	1.500	-	1.000	0.09	0.049	0.073
3500MHz																			
	FR1 N77	100M	QPSK	1	137	DFT-SCS 30KHz	Right Cheek	Ant 2	Full	656000	3840	22.49	24.00	1.416	-	1.000	0.03	0.222	0.314
	FR1 N77	100M	QPSK	135	69	DFT-SCS 30KHz	Right Cheek	Ant 2	Full	656000	3840	22.39	24.00	1.449	-	1.000	0.05	0.205	0.297
	FR1 N77	100M	QPSK	1	137	DFT-SCS 30KHz	Right Tilted	Ant 2	Full	656000	3840	22.49	24.00	1.416	-	1.000	0.07	0.141	0.200
	FR1 N77	100M	QPSK	135	69	DFT-SCS 30KHz	Right Tilted	Ant 2	Full	656000	3840	22.39	24.00	1.449	-	1.000	0.11	0.147	0.213
	FR1 N77	100M	QPSK	1	137	DFT-SCS 30KHz	Left Cheek	Ant 2	Full	656000	3840	22.49	24.00	1.416	-	1.000	-0.03	0.263	0.372
	FR1 N77	100M	QPSK	135	69	DFT-SCS 30KHz	Left Cheek	Ant 2	Full	656000	3840	22.39	24.00	1.449	-	1.000	0.03	0.243	0.352
	FR1 N77	100M	QPSK	1	137	DFT-SCS 30KHz	Left Tilted	Ant 2	Full	656000	3840	22.49	24.00	1.416	-	1.000	0.05	0.080	0.113
	FR1 N77	100M	QPSK	135	69	DFT-SCS 30KHz	Left Tilted	Ant 2	Full	656000	3840	22.39	24.00	1.449	-	1.000	-0.15	0.076	0.110
22	FR1 N77	100M	QPSK	1	137	DFT-SCS 30KHz	Right Cheek	Ant 4	Reduced	656000	3840	15.61	17.00	1.377	-	1.000	0.02	0.506	<b>0.697</b>
	FR1 N77	100M	QPSK	135	69	DFT-SCS 30KHz	Right Cheek	Ant 4	Reduced	656000	3840	15.56	17.00	1.393	-	1.000	0.1	0.499	0.695
	FR1 N77	100M	QPSK	1	137	DFT-SCS 30KHz	Right Tilted	Ant 4	Reduced	656000	3840	15.61	17.00	1.377	-	1.000	0.09	0.315	0.434
	FR1 N77	100M	QPSK	135	69	DFT-SCS 30KHz	Right Tilted	Ant 4	Reduced	656000	3840	15.56	17.00	1.393	-	1.000	-0.03	0.294	0.410
	FR1 N77	100M	QPSK	1	137	DFT-SCS 30KHz	Left Cheek	Ant 4	Reduced	656000	3840	15.61	17.00	1.377	-	1.000	-0.05	0.141	0.194
	FR1 N77	100M	QPSK	135	69	DFT-SCS 30KHz	Left Cheek	Ant 4	Reduced	656000	3840	15.56	17.00	1.393	-	1.000	0.01	0.135	0.188
	FR1 N77	100M	QPSK	1	137	DFT-SCS 30KHz	Left Tilted	Ant 4	Reduced	656000	3840	15.61	17.00	1.377	-	1.000	0.09	0.155	0.213
	FR1 N77	100M	QPSK	135	69	DFT-SCS 30KHz	Left Tilted	Ant 4	Reduced	656000	3840	15.56	17.00	1.393	-	1.000	0.03	0.153	0.213



Plot No.	Band	Mode	Test Position	Antenna	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
<b>2450MHz</b>															
	WLAN2.4GHz	802.11b 1Mbps	Right Cheek	Ant 6	Reduced	1	2412	17.90	19.00	1.288	98.18	1.019	0.02	0.188	0.247
	WLAN2.4GHz	802.11b 1Mbps	Right Tilted	Ant 6	Reduced	1	2412	17.90	19.00	1.288	98.18	1.019	-0.06	0.159	0.209
23	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	Ant 6	Reduced	1	2412	17.90	19.00	1.288	98.18	1.019	0.13	0.713	<b>0.936</b>
	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	Ant 6	Reduced	6	2437	17.90	19.00	1.288	98.18	1.019	-0.05	0.611	0.802
	WLAN2.4GHz	802.11b 1Mbps	Left Tilted	Ant 6	Reduced	1	2412	17.90	19.00	1.288	98.18	1.019	-0.16	0.500	0.656
	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	Ant 6	Reduced-Simultaneous	1	2412	14.50	15.50	1.259	98.18	1.019	0.03	0.288	0.369
	WLAN2.4GHz	802.11b 1Mbps	Right Cheek	Ant 7	Reduced	1	2412	17.50	19.00	1.413	98.18	1.019	0.04	0.062	0.089
	WLAN2.4GHz	802.11b 1Mbps	Right Tilted	Ant 7	Reduced	1	2412	17.50	19.00	1.413	98.18	1.019	0.08	0.030	0.043
	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	Ant 7	Reduced	1	2412	17.50	19.00	1.413	98.18	1.019	0.09	0.187	0.269
	WLAN2.4GHz	802.11b 1Mbps	Left Tilted	Ant 7	Reduced	1	2412	17.50	19.00	1.413	98.18	1.019	0.06	0.011	0.016
	WLAN2.4GHz	802.11b 1Mbps	Right Cheek	Ant 6+7	Reduced	1	2412	20.71	22.00	1.344	98.18	1.019	0.05	0.148	0.203
	WLAN2.4GHz	802.11b 1Mbps	Right Tilted	Ant 6+7	Reduced	1	2412	20.71	22.00	1.344	98.18	1.019	0.04	0.117	0.160
	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	Ant 6+7	Reduced	1	2412	20.71	22.00	1.344	98.18	1.019	-0.02	0.551	0.755
	WLAN2.4GHz	802.11b 1Mbps	Left Tilted	Ant 6+7	Reduced	1	2412	20.71	22.00	1.344	98.18	1.019	0.02	0.353	0.484
	WLAN2.4GHz	802.11b 1Mbps	Left Cheek	Ant 6+7	Reduced-Simultaneous	1	2412	17.36	18.50	1.300	98.18	1.019	0.08	0.301	0.399
	Bluetooth	1Mbps	Right Cheek	Ant 7	Full	39	2441	17.78	18.50	1.180	76.6	1.305	0.05	0.064	0.099
	Bluetooth	1Mbps	Right Tilted	Ant 7	Full	39	2441	17.78	18.50	1.180	76.6	1.305	0.09	0.049	0.075
24	Bluetooth	1Mbps	Left Cheek	Ant 7	Full	39	2441	17.78	18.50	1.180	76.6	1.305	0.02	0.184	<b>0.283</b>
	Bluetooth	1Mbps	Left Tilted	Ant 7	Full	39	2441	17.78	18.50	1.180	76.6	1.305	-0.01	0.094	0.145
<b>5000MHz</b>															
	WLAN5.3GHz	802.11n-HT40 MCS0	Right Cheek	Ant 6	Reduced	54	5270	15.82	17.00	1.312	98.54	1.015	0.03	0.212	0.282
	WLAN5.3GHz	802.11n-HT40 MCS0	Right Tilted	Ant 6	Reduced	54	5270	15.82	17.00	1.312	98.54	1.015	0.11	0.222	0.296
25	WLAN5.3GHz	802.11n-HT40 MCS0	Left Cheek	Ant 6	Reduced	54	5270	15.82	17.00	1.312	98.54	1.015	0.08	0.871	<b>1.160</b>
	WLAN5.3GHz	802.11n-HT40 MCS0	Left Cheek	Ant 6	Reduced	62	5310	15.77	17.00	1.327	98.54	1.015	0.16	0.735	0.990
	WLAN5.3GHz	802.11n-HT40 MCS0	Left Tilted	Ant 6	Reduced	54	5270	15.82	17.00	1.312	98.54	1.015	0.07	0.586	0.780
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Right Cheek	Ant 6	Reduced-Simultaneous	58	5290	8.80	10.00	1.318	98.72	1.013	0.11	0.073	0.097
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Left Cheek	Ant 6	Reduced-Simultaneous	58	5290	8.80	10.00	1.318	98.72	1.013	0.07	0.274	0.366
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Right Cheek	Ant 7	Reduced	58	5290	14.80	16.00	1.318	98.72	1.013	-0.15	0.125	0.167
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Right Tilted	Ant 7	Reduced	58	5290	14.80	16.00	1.318	98.72	1.013	0.06	0.061	0.081
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Left Cheek	Ant 7	Reduced	58	5290	14.80	16.00	1.318	98.72	1.013	-0.04	0.166	0.222
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Left Tilted	Ant 7	Reduced	58	5290	14.80	16.00	1.318	98.72	1.013	0.15	0.091	0.122
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Right Cheek	Ant 6+7	Reduced	58	5290	18.68	19.50	1.207	98.72	1.013	-0.18	0.270	0.330
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Right Tilted	Ant 6+7	Reduced	58	5290	18.68	19.50	1.207	98.72	1.013	0.12	0.280	0.342
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Left Cheek	Ant 6+7	Reduced	58	5290	18.68	19.50	1.207	98.72	1.013	-0.08	0.857	1.048
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Left Tilted	Ant 6+7	Reduced	58	5290	18.68	19.50	1.207	98.72	1.013	0.08	0.696	0.851
	WLAN5.3GHz	802.11ac-VHT80 MCS0	Left Cheek	Ant 6+7	Reduced-Simultaneous	58	5290	12.01	13.50	1.409	98.72	1.013	-0.16	0.282	0.403
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Right Cheek	Ant 6	Reduced	122	5610	16.90	18.00	1.288	98.72	1.013	0.19	0.228	0.298
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Right Tilted	Ant 6	Reduced	122	5610	16.90	18.00	1.288	98.72	1.013	0.18	0.220	0.287
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Left Cheek	Ant 6	Reduced	122	5610	16.90	18.00	1.288	98.72	1.013	0.01	0.767	1.001
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Left Cheek	Ant 6	Reduced	138	5690	16.70	18.00	1.349	98.72	1.013	-0.02	0.656	0.896
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Left Tilted	Ant 6	Reduced	122	5610	16.90	18.00	1.288	98.72	1.013	-0.18	0.556	0.726
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Right Cheek	Ant 6	Reduced-Simultaneous	122	5610	13.80	14.50	1.175	98.72	1.013	-0.05	0.149	0.177
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Left Cheek	Ant 6	Reduced-Simultaneous	122	5610	13.80	14.50	1.175	98.72	1.013	0.01	0.340	0.405
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Right Cheek	Ant 7	Reduced	138	5690	17.00	18.00	1.259	98.72	1.013	0.16	0.217	0.277
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Right Tilted	Ant 7	Reduced	138	5690	17.00	18.00	1.259	98.72	1.013	0.02	0.110	0.140
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Left Cheek	Ant 7	Reduced	138	5690	17.00	18.00	1.259	98.72	1.013	-0.01	0.315	0.402
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Left Tilted	Ant 7	Reduced	138	5690	17.00	18.00	1.259	98.72	1.013	0.04	0.137	0.175
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Right Cheek	Ant 6+7	Reduced	138	5690	19.86	21.00	1.299	98.72	1.013	0.18	0.215	0.283
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Right Tilted	Ant 6+7	Reduced	138	5690	19.86	21.00	1.299	98.72	1.013	-0.13	0.230	0.303
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Left Cheek	Ant 6+7	Reduced	138	5690	19.86	21.00	1.299	98.72	1.013	0.03	0.718	0.945
26	WLAN5.5GHz	802.11ac-VHT80 MCS0	Left Cheek	Ant 6+7	Reduced	122	5610	19.81	21.00	1.315	98.72	1.013	0.07	0.876	<b>1.167</b>
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Left Tilted	Ant 6+7	Reduced	138	5690	19.86	21.00	1.299	98.72	1.013	0.04	0.480	0.632





**FCC SAR Test Report**

**Report No. : FA111226-01**

	WLAN5.5GHz	802.11ac-VHT80 MCS0	Left Cheek	Ant 6+7	Reduced-Simultaneous	122	5610	16.86	17.50	1.159	98.72	1.013	-0.04	0.332	0.39
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Right Cheek	Ant 6	Reduced	155	5775	16.30	18.00	1.479	98.72	1.013	-0.03	0.199	0.298
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Right Tilted	Ant 6	Reduced	155	5775	16.30	18.00	1.479	98.72	1.013	0.15	0.195	0.292
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Left Cheek	Ant 6	Reduced	155	5775	16.30	18.00	1.479	98.72	1.013	0.09	0.666	0.998
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Left Tilted	Ant 6	Reduced	155	5775	16.30	18.00	1.479	98.72	1.013	0.17	0.484	0.725
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Right Cheek	Ant 6	Reduced-Simultaneous	155	5775	13.45	14.50	1.274	98.72	1.013	0.03	0.080	0.103
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Left Cheek	Ant 6	Reduced-Simultaneous	155	5775	13.45	14.50	1.274	98.72	1.013	0.04	0.311	0.401
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Right Cheek	Ant 7	Reduced	155	5775	16.80	18.00	1.318	98.72	1.013	0.04	0.129	0.172
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Right Tilted	Ant 7	Reduced	155	5775	16.80	18.00	1.318	98.72	1.013	0.05	0.029	0.039
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Left Cheek	Ant 7	Reduced	155	5775	16.80	18.00	1.318	98.72	1.013	-0.06	0.209	0.279
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Left Tilted	Ant 7	Reduced	155	5775	16.80	18.00	1.318	98.72	1.013	0.07	0.062	0.083
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Right Cheek	Ant 6+7	Reduced	155	5775	19.57	21.00	1.391	98.72	1.013	-0.1	0.334	0.471
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Right Tilted	Ant 6+7	Reduced	155	5775	19.57	21.00	1.391	98.72	1.013	-0.04	0.272	0.383
27	WLAN5.8GHz	802.11ac-VHT80 MCS0	Left Cheek	Ant 6+7	Reduced	155	5775	19.57	21.00	1.391	98.72	1.013	-0.03	0.773	<b>1.089</b>
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Left Tilted	Ant 6+7	Reduced	155	5775	19.57	21.00	1.391	98.72	1.013	-0.14	0.667	0.940
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Left Cheek	Ant 6+7	Reduced-Simultaneous	155	5775	16.44	17.50	1.276	98.72	1.013	-0.04	0.200	0.259



15.2 Hotspot SAR

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Cap (mm)	Antenna	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)	
<b>750MHz</b>																			
28	LTE Band 12	10M	QPSK	1	0	-	Front	10mm	Ant 0	Full	23095	707.5	23.98	25.00	1.265	-0.01	0.339	<b>0.429</b>	
	LTE Band 12	10M	QPSK	25	0	-	Front	10mm	Ant 0	Full	23095	707.5	23.11	24.00	1.227	0.03	0.228	0.280	
	LTE Band 12	10M	QPSK	1	0	-	Back	10mm	Ant 0	Full	23095	707.5	23.98	25.00	1.265	0.04	0.260	0.329	
	LTE Band 12	10M	QPSK	25	0	-	Back	10mm	Ant 0	Full	23095	707.5	23.11	24.00	1.227	0.02	0.208	0.255	
	LTE Band 12	10M	QPSK	1	0	-	Left Side	10mm	Ant 0	Full	23095	707.5	23.98	25.00	1.265	-0.01	0.115	0.145	
	LTE Band 12	10M	QPSK	25	0	-	Left Side	10mm	Ant 0	Full	23095	707.5	23.11	24.00	1.227	0.05	0.092	0.113	
	LTE Band 12	10M	QPSK	1	0	-	Right Side	10mm	Ant 0	Full	23095	707.5	23.98	25.00	1.265	-0.03	0.279	0.353	
	LTE Band 12	10M	QPSK	25	0	-	Right Side	10mm	Ant 0	Full	23095	707.5	23.11	24.00	1.227	-0.02	0.224	0.275	
	LTE Band 12	10M	QPSK	1	0	-	Bottom Side	10mm	Ant 0	Full	23095	707.5	23.98	25.00	1.265	0.03	0.236	0.298	
	LTE Band 12	10M	QPSK	25	0	-	Bottom Side	10mm	Ant 0	Full	23095	707.5	23.11	24.00	1.227	0.01	0.234	0.287	
	LTE Band 71	20M	QPSK	1	0	-	Front	10mm	Ant 0	Full	133322	683	23.79	25.00	1.321	0.03	0.142	0.188	
	LTE Band 71	20M	QPSK	50	0	-	Front	10mm	Ant 0	Full	133322	683	22.92	24.00	1.282	0.01	0.106	0.136	
	LTE Band 71	20M	QPSK	1	0	-	Back	10mm	Ant 0	Full	133322	683	23.79	25.00	1.321	0.03	0.146	0.193	
	LTE Band 71	20M	QPSK	50	0	-	Back	10mm	Ant 0	Full	133322	683	22.92	24.00	1.282	0.07	0.109	0.140	
	LTE Band 71	20M	QPSK	1	0	-	Left Side	10mm	Ant 0	Full	133322	683	23.79	25.00	1.321	0.05	0.064	0.085	
	LTE Band 71	20M	QPSK	50	0	-	Left Side	10mm	Ant 0	Full	133322	683	22.92	24.00	1.282	0.01	0.046	0.059	
29	LTE Band 71	20M	QPSK	1	0	-	Right Side	10mm	Ant 0	Full	133322	683	23.79	25.00	1.321	-0.08	0.169	<b>0.223</b>	
	LTE Band 71	20M	QPSK	50	0	-	Right Side	10mm	Ant 0	Full	133322	683	22.92	24.00	1.282	-0.02	0.123	0.158	
	LTE Band 71	20M	QPSK	1	0	-	Bottom Side	10mm	Ant 0	Full	133322	683	23.79	25.00	1.321	0.11	0.140	0.185	
	LTE Band 71	20M	QPSK	50	0	-	Bottom Side	10mm	Ant 0	Full	133322	683	22.92	24.00	1.282	0.06	0.105	0.135	
30	FR1 N71	20M	QPSK	1	53	DFT_SCS 15KHz	Front	10mm	Ant 0	Full	136100	680.5	23.29	24.00	1.178	-0.11	0.228	<b>0.268</b>	
	FR1 N71	20M	QPSK	50	28	DFT_SCS 15KHz	Front	10mm	Ant 0	Full	136100	680.5	23.21	24.00	1.199	0.08	0.217	0.260	
	FR1 N71	20M	QPSK	1	53	DFT_SCS 15KHz	Back	10mm	Ant 0	Full	136100	680.5	23.29	24.00	1.178	-0.07	0.205	0.241	
	FR1 N71	20M	QPSK	50	28	DFT_SCS 15KHz	Back	10mm	Ant 0	Full	136100	680.5	23.21	24.00	1.199	-0.12	0.187	0.224	
	FR1 N71	20M	QPSK	1	53	DFT_SCS 15KHz	Left Side	10mm	Ant 0	Full	136100	680.5	23.29	24.00	1.178	0.06	0.093	0.110	
	FR1 N71	20M	QPSK	50	28	DFT_SCS 15KHz	Left Side	10mm	Ant 0	Full	136100	680.5	23.21	24.00	1.199	-0.18	0.088	0.106	
	FR1 N71	20M	QPSK	1	53	DFT_SCS 15KHz	Right Side	10mm	Ant 0	Full	136100	680.5	23.29	24.00	1.178	0.01	0.209	0.246	
	FR1 N71	20M	QPSK	50	28	DFT_SCS 15KHz	Right Side	10mm	Ant 0	Full	136100	680.5	23.21	24.00	1.199	0.05	0.196	0.235	
	FR1 N71	20M	QPSK	1	53	DFT_SCS 15KHz	Bottom Side	10mm	Ant 0	Full	136100	680.5	23.29	24.00	1.178	0.07	0.187	0.220	
	FR1 N71	20M	QPSK	50	28	DFT_SCS 15KHz	Bottom Side	10mm	Ant 0	Full	136100	680.5	23.21	24.00	1.199	0.06	0.164	0.197	



Table with columns: Plot No., Band, BW (MHz), Modulation, RB Size, RB offset, Mode, Test Position, Gap (mm), Antenna, Power Reduction, Ch., Freq. (MHz), Average Power (dBm), Tune-Up Limit (dBm), Tune-up Scaling Factor, Power Drift (dB), 1g SAR (W/kg), Reported 1g SAR (W/kg). Rows include various test configurations for GSM850, WCDMA V, CDMA BC0, LTE Band 26, FR1 N5, and WCDMA IV.

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**FCC SAR Test Report**

**Report No. : FA11226-01**

	LTE Band 66	20M	QPSK	50	0	-	Right Side	10mm	Ant 0	Reduced	132322	1745	20.39	21.00	1.151	0.05	0.095	0.109	
	LTE Band 66	20M	QPSK	1	0	-	Bottom Side	10mm	Ant 0	Reduced	132322	1745	21.32	22.00	1.169	-0.06	0.822	0.961	
	LTE Band 66	20M	QPSK	1	0	-	Bottom Side	10mm	Ant 0	Reduced	132072	1720	21.24	22.00	1.191	0.17	0.813	0.968	
37	LTE Band 66	20M	QPSK	1	0	-	Bottom Side	10mm	Ant 0	Reduced	132572	1770	21.30	22.00	1.175	-0.02	0.827	0.972	
	LTE Band 66	20M	QPSK	50	0	-	Bottom Side	10mm	Ant 0	Reduced	132322	1745	20.39	21.00	1.151	0.06	0.685	0.788	
	LTE Band 66	20M	QPSK	100	0	-	Bottom Side	10mm	Ant 0	Reduced	132322	1745	20.42	21.00	1.143	-0.13	0.698	0.798	
ENDC																			
	LTE Band 66	20M	QPSK	1	0	-	Front	10mm	Ant 0	Reduced	132322	1745	21.26	22.00	1.186	-0.02	0.281	0.333	
	LTE Band 66	20M	QPSK	50	0	-	Front	10mm	Ant 0	Reduced	132322	1745	20.35	21.00	1.161	0.03	0.232	0.269	
	LTE Band 66	20M	QPSK	1	0	-	Back	10mm	Ant 0	Reduced	132322	1745	21.26	22.00	1.186	0.08	0.230	0.273	
	LTE Band 66	20M	QPSK	50	0	-	Back	10mm	Ant 0	Reduced	132322	1745	20.35	21.00	1.161	0.04	0.187	0.217	
	LTE Band 66	20M	QPSK	1	0	-	Left Side	10mm	Ant 0	Reduced	132322	1745	18.43	19.50	1.279	-0.06	0.031	0.040	
	LTE Band 66	20M	QPSK	50	0	-	Left Side	10mm	Ant 0	Reduced	132322	1745	17.37	18.50	1.297	0.03	0.029	0.038	
	LTE Band 66	20M	QPSK	1	0	-	Right Side	10mm	Ant 0	Reduced	132322	1745	18.43	19.50	1.279	-0.07	0.051	0.065	
	LTE Band 66	20M	QPSK	50	0	-	Right Side	10mm	Ant 0	Reduced	132322	1745	17.37	18.50	1.297	0.02	0.042	0.054	
	LTE Band 66	20M	QPSK	1	0	-	Bottom Side	10mm	Ant 0	Reduced	132322	1745	18.43	19.50	1.279	0.09	0.394	0.504	
	LTE Band 66	20M	QPSK	50	0	-	Bottom Side	10mm	Ant 0	Reduced	132322	1745	17.37	18.50	1.297	0.06	0.283	0.367	
	FR1 N66	20M	QPSK	1	53	DFT_SCS 15KHz	Front	10mm	Ant 2	Full	349000	1745	23.32	24.00	1.169	0.12	0.164	0.192	
	FR1 N66	20M	QPSK	50	28	DFT_SCS 15KHz	Front	10mm	Ant 2	Full	349000	1745	23.11	24.00	1.227	0.01	0.166	0.204	
	FR1 N66	20M	QPSK	1	53	DFT_SCS 15KHz	Back	10mm	Ant 2	Full	349000	1745	23.32	24.00	1.169	0.02	0.165	0.193	
	FR1 N66	20M	QPSK	50	28	DFT_SCS 15KHz	Back	10mm	Ant 2	Full	349000	1745	23.11	24.00	1.227	-0.06	0.165	0.203	
	FR1 N66	20M	QPSK	1	53	DFT_SCS 15KHz	Left Side	10mm	Ant 2	Full	349000	1745	23.32	24.00	1.169	-0.04	0.398	0.465	
38	FR1 N66	20M	QPSK	50	28	DFT_SCS 15KHz	Left Side	10mm	Ant 2	Full	349000	1745	23.11	24.00	1.227	-0.08	0.446	0.547	



# FCC SAR Test Report

Report No. : FA11226-01

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Gap (mm)	Antenna	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)	
<b>1900MHz</b>																			
	GSM1900	-	-	-	-	GPRS (2 Tx slots)	Front	10mm	Ant 0	Full	661	1880	27.21	28.50	1.346	-0.06	0.387	0.521	
	GSM1900	-	-	-	-	GPRS (2 Tx slots)	Back	10mm	Ant 0	Full	661	1880	27.21	28.50	1.346	0.03	0.330	0.444	
	GSM1900	-	-	-	-	GPRS (2 Tx slots)	Left Side	10mm	Ant 0	Reduced	661	1880	26.35	27.50	1.303	-0.1	0.042	0.055	
	GSM1900	-	-	-	-	GPRS (2 Tx slots)	Right Side	10mm	Ant 0	Reduced	661	1880	26.35	27.50	1.303	-0.1	0.151	0.197	
	GSM1900	-	-	-	-	GPRS (2 Tx slots)	Bottom Side	10mm	Ant 0	Reduced	661	1880	26.35	27.50	1.303	0.17	0.861	1.122	
	GSM1900	-	-	-	-	GPRS (2 Tx slots)	Bottom Side	10mm	Ant 0	Reduced	512	1850.2	26.20	27.50	1.349	0.03	0.782	1.055	
39	GSM1900	-	-	-	-	GPRS (2 Tx slots)	Bottom Side	10mm	Ant 0	Reduced	810	1909.8	26.25	27.50	1.334	-0.09	0.886	<b>1.181</b>	
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Front	10mm	Ant 0	Full	9400	1880	23.44	24.50	1.276	0.03	0.684	0.873	
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Front	10mm	Ant 0	Full	9262	1852.4	23.40	24.50	1.288	-0.16	0.701	0.903	
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Front	10mm	Ant 0	Full	9538	1907.6	22.98	24.50	1.419	0.09	0.635	0.901	
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	10mm	Ant 0	Full	9400	1880	23.44	24.50	1.276	0.07	0.566	0.722	
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Left Side	10mm	Ant 0	Reduced	9400	1880	20.67	21.50	1.211	0.06	0.054	0.065	
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Right Side	10mm	Ant 0	Reduced	9400	1880	20.67	21.50	1.211	0.02	0.134	0.162	
40	WCDMA II	-	-	-	-	RMC 12.2Kbps	Bottom Side	10mm	Ant 0	Reduced	9400	1880	20.67	21.50	1.211	0.03	0.930	<b>1.126</b>	
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Bottom Side	10mm	Ant 0	Reduced	9262	1852.4	20.48	21.50	1.265	0.06	0.876	1.108	
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Bottom Side	10mm	Ant 0	Reduced	9538	1907.6	20.52	21.50	1.253	-0.07	0.892	1.118	
	LTE Band 25	20M	QPSK	1	0	-	Front	10mm	Ant 0	Full	26340	1880	23.76	25.00	1.330	0.01	0.622	0.828	
	LTE Band 25	20M	QPSK	1	0	-	Front	10mm	Ant 0	Full	26140	1860	23.58	25.00	1.387	0.07	0.590	0.818	
	LTE Band 25	20M	QPSK	1	0	-	Front	10mm	Ant 0	Full	26590	1905	23.55	25.00	1.396	0.03	0.588	0.821	
	LTE Band 25	20M	QPSK	50	0	-	Front	10mm	Ant 0	Full	26340	1880	22.78	24.00	1.324	0.04	0.547	0.724	
	LTE Band 25	20M	QPSK	100	0	-	Front	10mm	Ant 0	Full	26340	1880	22.72	24.00	1.343	0.01	0.534	0.717	
	LTE Band 25	20M	QPSK	1	0	-	Back	10mm	Ant 0	Full	26340	1880	23.76	25.00	1.330	0.05	0.575	0.765	
	LTE Band 25	20M	QPSK	50	0	-	Back	10mm	Ant 0	Full	26340	1880	22.78	24.00	1.324	0.08	0.503	0.666	
	LTE Band 25	20M	QPSK	1	0	-	Left Side	10mm	Ant 0	Reduced	26340	1880	20.71	21.50	1.199	0.06	0.012	0.014	
	LTE Band 25	20M	QPSK	50	0	-	Left Side	10mm	Ant 0	Reduced	26340	1880	19.74	20.50	1.191	0.04	0.009	0.011	
	LTE Band 25	20M	QPSK	1	0	-	Right Side	10mm	Ant 0	Reduced	26340	1880	20.71	21.50	1.199	-0.03	0.113	0.136	
	LTE Band 25	20M	QPSK	50	0	-	Right Side	10mm	Ant 0	Reduced	26340	1880	19.74	20.50	1.191	0.08	0.090	0.107	
41	LTE Band 25	20M	QPSK	1	0	-	Bottom Side	10mm	Ant 0	Reduced	26340	1880	20.71	21.50	1.199	0.01	0.760	<b>0.912</b>	
	LTE Band 25	20M	QPSK	1	0	-	Bottom Side	10mm	Ant 0	Reduced	26140	1860	20.62	21.50	1.225	-0.07	0.662	0.811	
	LTE Band 25	20M	QPSK	1	0	-	Bottom Side	10mm	Ant 0	Reduced	26590	1905	20.54	21.50	1.247	0.06	0.652	0.813	
	LTE Band 25	20M	QPSK	50	0	-	Bottom Side	10mm	Ant 0	Reduced	26340	1880	19.74	20.50	1.191	-0.01	0.632	0.753	
	LTE Band 25	20M	QPSK	100	0	-	Bottom Side	10mm	Ant 0	Reduced	26340	1880	19.70	20.50	1.202	0.01	0.550	0.661	
<b>ENDC</b>																			
	LTE Band 25	20M	QPSK	1	0	-	Front	10mm	Ant 0	Reduced	26340	1880	20.59	22.00	1.384	0.11	0.353	0.488	
	LTE Band 25	20M	QPSK	50	0	-	Front	10mm	Ant 0	Reduced	26340	1880	19.67	21.00	1.358	0.08	0.292	0.397	
	LTE Band 25	20M	QPSK	1	0	-	Back	10mm	Ant 0	Reduced	26340	1880	20.59	22.00	1.384	0.06	0.311	0.430	
	LTE Band 25	20M	QPSK	50	0	-	Back	10mm	Ant 0	Reduced	26340	1880	19.67	21.00	1.358	0.01	0.252	0.342	
	LTE Band 25	20M	QPSK	1	0	-	Left Side	10mm	Ant 0	Reduced	26340	1880	17.66	19.00	1.361	-0.03	0.013	0.018	
	LTE Band 25	20M	QPSK	50	0	-	Left Side	10mm	Ant 0	Reduced	26340	1880	16.78	18.00	1.324	0.05	0.007	0.009	
	LTE Band 25	20M	QPSK	1	0	-	Right Side	10mm	Ant 0	Reduced	26340	1880	17.66	19.00	1.361	-0.11	0.052	0.071	
	LTE Band 25	20M	QPSK	50	0	-	Right Side	10mm	Ant 0	Reduced	26340	1880	16.78	18.00	1.324	0.06	0.043	0.057	
	LTE Band 25	20M	QPSK	1	0	-	Bottom Side	10mm	Ant 0	Reduced	26340	1880	17.66	19.00	1.361	0.05	0.378	0.515	
	LTE Band 25	20M	QPSK	50	0	-	Bottom Side	10mm	Ant 0	Reduced	26340	1880	16.78	18.00	1.324	-0.15	0.314	0.416	
<b>SA</b>																			
	FR1 N25	20M	QPSK	1	53	DFT_SCS 15KHz	Front	10mm	Ant 2	Full	376500	1882.5	22.95	24.00	1.274	0.04	0.373	0.475	
	FR1 N25	20M	QPSK	50	28	DFT_SCS 15KHz	Front	10mm	Ant 2	Full	376500	1882.5	22.91	24.00	1.285	-0.11	0.376	0.483	
	FR1 N25	20M	QPSK	1	53	DFT_SCS 15KHz	Back	10mm	Ant 2	Full	376500	1882.5	22.95	24.00	1.274	0.14	0.420	0.535	
	FR1 N25	20M	QPSK	50	28	DFT_SCS 15KHz	Back	10mm	Ant 2	Full	376500	1882.5	22.91	24.00	1.285	-0.07	0.431	0.554	
42	FR1 N25	20M	QPSK	1	53	DFT_SCS 15KHz	Left Side	10mm	Ant 2	Full	376500	1882.5	22.95	24.00	1.274	-0.09	0.734	<b>0.935</b>	
	FR1 N25	20M	QPSK	1	53	DFT_SCS 15KHz	Left Side	10mm	Ant 2	Full	372000	1860	22.45	24.00	1.429	0.01	0.649	0.927	
	FR1 N25	20M	QPSK	1	53	DFT_SCS 15KHz	Left Side	10mm	Ant 2	Full	381000	1905	22.63	24.00	1.371	0.09	0.680	0.932	
	FR1 N25	20M	QPSK	50	28	DFT_SCS 15KHz	Left Side	10mm	Ant 2	Full	376500	1882.5	22.91	24.00	1.285	0.03	0.726	0.933	
	FR1 N25	20M	QPSK	50	28	DFT_SCS 15KHz	Left Side	10mm	Ant 2	Full	372000	1860	22.80	24.00	1.318	0.07	0.691	0.911	

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FCC ID : A5MLM21C81

Page 69 of 114

Issued Date : Jun. 21, 2021

Form version. : 200414



**FCC SAR Test Report**

**Report No. : FA11226-01**

	FR1 N25	20M	QPSK	50	28	DFT_SCS 15KHz	Left Side	10mm	Ant 2	Full	381000	1905	22.90	24.00	1.288	-0.1	0.705	0.908	
	FR1 N25	20M	QPSK	100	0	DFT_SCS 15KHz	Left Side	10mm	Ant 2	Full	376500	1882.5	21.99	23.00	1.262	0.08	0.722	0.911	
NSA																			
	FR1 N25	20M	QPSK	1	53	DFT_SCS 15KHz	Front	10mm	Ant 2	Full	376500	1882.5	22.95	24.00	1.274	0.04	0.373	0.475	
	FR1 N25	20M	QPSK	50	28	DFT_SCS 15KHz	Front	10mm	Ant 2	Full	376500	1882.5	22.91	24.00	1.285	-0.11	0.376	0.483	
	FR1 N25	20M	QPSK	1	53	DFT_SCS 15KHz	Back	10mm	Ant 2	Full	376500	1882.5	22.95	24.00	1.274	0.14	0.420	0.535	
	FR1 N25	20M	QPSK	50	28	DFT_SCS 15KHz	Back	10mm	Ant 2	Full	376500	1882.5	22.91	24.00	1.285	-0.07	0.431	0.554	
	FR1 N25	20M	QPSK	1	53	DFT_SCS 15KHz	Left Side	10mm	Ant 2	Reduced	376500	1882.5	20.85	22.00	1.303	0.07	0.441	0.575	
	FR1 N25	20M	QPSK	50	28	DFT_SCS 15KHz	Left Side	10mm	Ant 2	Reduced	376500	1882.5	20.84	22.00	1.306	0.05	0.454	0.593	

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Antenna	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)	
<b>2300MHz</b>																		
	LTE Band 30	10M	QPSK	1	0	Front	10mm	Ant 1	Full	27710	2310	22.93	24.00	1.279	-0.08	0.419	0.536	
	LTE Band 30	10M	QPSK	25	0	Front	10mm	Ant 1	Full	27710	2310	21.99	23.00	1.262	0.14	0.341	0.430	
	LTE Band 30	10M	QPSK	1	0	Back	10mm	Ant 1	Full	27710	2310	22.93	24.00	1.279	0.13	0.351	0.449	
	LTE Band 30	10M	QPSK	25	0	Back	10mm	Ant 1	Full	27710	2310	21.99	23.00	1.262	0.04	0.273	0.344	
	LTE Band 30	10M	QPSK	1	0	Left Side	10mm	Ant 1	Full	27710	2310	22.93	24.00	1.279	-0.01	0.453	0.580	
	LTE Band 30	10M	QPSK	25	0	Left Side	10mm	Ant 1	Full	27710	2310	21.99	23.00	1.262	-0.02	0.357	0.450	
43	LTE Band 30	10M	QPSK	1	0	Bottom Side	10mm	Ant 1	Full	27710	2310	22.93	24.00	1.279	-0.06	0.751	<b>0.961</b>	
	LTE Band 30	10M	QPSK	25	0	Bottom Side	10mm	Ant 1	Full	27710	2310	21.99	23.00	1.262	-0.06	0.603	0.761	
	LTE Band 30	10M	QPSK	50	0	Bottom Side	10mm	Ant 1	Full	27710	2310	22.03	23.00	1.250	0.03	0.594	0.743	
<b>ENDC</b>																		
	LTE Band 30	10M	QPSK	1	0	Front	10mm	Ant 1	Full	27710	2310	22.93	24.00	1.279	-0.08	0.419	0.536	
	LTE Band 30	10M	QPSK	25	0	Front	10mm	Ant 1	Full	27710	2310	21.99	23.00	1.262	0.14	0.341	0.430	
	LTE Band 30	10M	QPSK	1	0	Back	10mm	Ant 1	Full	27710	2310	22.93	24.00	1.279	0.13	0.351	0.449	
	LTE Band 30	10M	QPSK	25	0	Back	10mm	Ant 1	Full	27710	2310	21.99	23.00	1.262	0.04	0.273	0.344	
	LTE Band 30	10M	QPSK	1	0	Left Side	10mm	Ant 1	Reduced	27710	2310	20.73	22.00	1.340	0.01	0.253	0.339	
	LTE Band 30	10M	QPSK	25	0	Left Side	10mm	Ant 1	Reduced	27710	2310	19.75	21.00	1.334	0.06	0.200	0.267	
	LTE Band 30	10M	QPSK	1	0	Bottom Side	10mm	Ant 1	Reduced	27710	2310	20.73	22.00	1.340	0.06	0.429	0.575	
	LTE Band 30	10M	QPSK	25	0	Bottom Side	10mm	Ant 1	Reduced	27710	2310	19.75	21.00	1.334	0.02	0.344	0.459	



Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Gap (mm)	Antenna	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-Up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
2600MHz																				
	LTE Band 7	20M	QPSK	1	0	-	Front	10mm	Ant 1	Reduced	21100	2535	23.93	24.50	1.140		1.000	0.02	0.476	0.543
	LTE Band 7	20M	QPSK	50	0	-	Front	10mm	Ant 1	Reduced	21100	2535	22.91	23.50	1.146		1.000	0.04	0.392	0.449
	LTE Band 7	20M	QPSK	1	0	-	Back	10mm	Ant 1	Reduced	21100	2535	23.93	24.50	1.140		1.000	-0.11	0.359	0.409
	LTE Band 7	20M	QPSK	50	0	-	Back	10mm	Ant 1	Reduced	21100	2535	22.91	23.50	1.146		1.000	0.09	0.271	0.310
	LTE Band 7	20M	QPSK	1	0	-	Left Side	10mm	Ant 1	Reduced	21100	2535	20.90	22.50	1.445		1.000	0.03	0.376	0.543
	LTE Band 7	20M	QPSK	50	0	-	Left Side	10mm	Ant 1	Reduced	21100	2535	20.01	21.50	1.409		1.000	0.02	0.301	0.424
44	LTE Band 7	20M	QPSK	1	0	-	Bottom Side	10mm	Ant 1	Reduced	21100	2535	20.90	22.50	1.445		1.000	0.04	0.787	1.138
	LTE Band 7	20M	QPSK	1	0	-	Bottom Side	10mm	Ant 1	Reduced	20850	2510	20.77	22.50	1.489		1.000	-0.02	0.661	0.984
	LTE Band 7	20M	QPSK	1	0	-	Bottom Side	10mm	Ant 1	Reduced	21350	2560	20.77	22.50	1.489		1.000	-0.02	0.663	0.987
	LTE Band 7	20M	QPSK	50	0	-	Bottom Side	10mm	Ant 1	Reduced	21100	2535	20.01	21.50	1.409		1.000	-0.1	0.583	0.822
	LTE Band 7	20M	QPSK	50	0	-	Bottom Side	10mm	Ant 1	Reduced	20850	2510	19.87	21.50	1.455		1.000	-0.1	0.540	0.786
	LTE Band 7	20M	QPSK	50	0	-	Bottom Side	10mm	Ant 1	Reduced	21350	2560	19.68	21.50	1.521		1.000	-0.1	0.656	0.997
	LTE Band 7	20M	QPSK	100	0	-	Bottom Side	10mm	Ant 1	Reduced	21100	2535	19.87	21.50	1.455		1.000	-0.1	0.579	0.843
ENDC																				
	LTE Band 7	20M	QPSK	1	0	-	Front	10mm	Ant 1	Reduced	21100	2535	23.93	24.50	1.140		1.000	0.02	0.476	0.543
	LTE Band 7	20M	QPSK	50	0	-	Front	10mm	Ant 1	Reduced	21100	2535	22.91	23.50	1.146		1.000	0.04	0.392	0.449
	LTE Band 7	20M	QPSK	1	0	-	Back	10mm	Ant 1	Reduced	21100	2535	23.93	24.50	1.140		1.000	-0.11	0.359	0.409
	LTE Band 7	20M	QPSK	50	0	-	Back	10mm	Ant 1	Reduced	21100	2535	22.91	23.50	1.146		1.000	0.09	0.271	0.310
	LTE Band 7	20M	QPSK	1	0	-	Left Side	10mm	Ant 1	Reduced	21100	2535	18.44	19.50	1.276		1.000	0.01	0.206	0.263
	LTE Band 7	20M	QPSK	50	0	-	Left Side	10mm	Ant 1	Reduced	21100	2535	17.43	18.50	1.279		1.000	-0.02	0.172	0.220
	LTE Band 7	20M	QPSK	1	0	-	Bottom Side	10mm	Ant 1	Reduced	21100	2535	18.44	19.50	1.276		1.000	0.1	0.402	0.513
	LTE Band 7	20M	QPSK	50	0	-	Bottom Side	10mm	Ant 1	Reduced	21100	2535	17.43	18.50	1.279		1.000	-0.06	0.330	0.422
	LTE Band 38	20M	QPSK	1	0	-	Front	10mm	Ant 1	Full	38000	2595	24.49	25.50	1.262	62.9	1.006	0.06	0.390	0.495
	LTE Band 38	20M	QPSK	50	0	-	Front	10mm	Ant 1	Full	38000	2595	23.51	24.50	1.256	62.9	1.006	0.04	0.325	0.411
	LTE Band 38	20M	QPSK	1	0	-	Back	10mm	Ant 1	Full	38000	2595	24.49	25.50	1.262	62.9	1.006	-0.07	0.305	0.387
	LTE Band 38	20M	QPSK	50	0	-	Back	10mm	Ant 1	Full	38000	2595	23.51	24.50	1.256	62.9	1.006	0.05	0.255	0.322
	LTE Band 38	20M	QPSK	1	0	-	Left Side	10mm	Ant 1	Full	38000	2595	24.49	25.50	1.262	62.9	1.006	0.02	0.405	0.514
	LTE Band 38	20M	QPSK	50	0	-	Left Side	10mm	Ant 1	Full	38000	2595	23.51	24.50	1.256	62.9	1.006	0.09	0.352	0.445
45	LTE Band 38	20M	QPSK	1	0	-	Bottom Side	10mm	Ant 1	Full	38000	2595	24.49	25.50	1.262	62.9	1.006	-0.03	0.901	1.144
	LTE Band 38	20M	QPSK	50	0	-	Bottom Side	10mm	Ant 1	Full	38000	2595	23.51	24.50	1.256	62.9	1.006	-0.06	0.744	0.940
	LTE Band 38	20M	QPSK	100	0	-	Bottom Side	10mm	Ant 1	Full	38000	2595	23.56	24.50	1.242	62.9	1.006	0.07	0.715	0.893
ENDC																				
	LTE Band 38	20M	QPSK	1	0	-	Front	10mm	Ant 1	Full	38000	2595	24.49	25.50	1.262	62.9	1.006	0.06	0.390	0.495
	LTE Band 38	20M	QPSK	50	0	-	Front	10mm	Ant 1	Full	38000	2595	23.51	24.50	1.256	62.9	1.006	0.04	0.325	0.411
	LTE Band 38	20M	QPSK	1	0	-	Back	10mm	Ant 1	Full	38000	2595	24.49	25.50	1.262	62.9	1.006	-0.07	0.305	0.387
	LTE Band 38	20M	QPSK	50	0	-	Back	10mm	Ant 1	Full	38000	2595	23.51	24.50	1.256	62.9	1.006	0.05	0.255	0.322
	LTE Band 38	20M	QPSK	1	0	-	Left Side	10mm	Ant 1	Reduced	38000	2595	21.79	22.50	1.178	62.9	1.006	0.02	0.211	0.250
	LTE Band 38	20M	QPSK	50	0	-	Left Side	10mm	Ant 1	Reduced	38000	2595	20.86	21.50	1.159	62.9	1.006	-0.05	0.186	0.217
	LTE Band 38	20M	QPSK	1	0	-	Bottom Side	10mm	Ant 1	Reduced	38000	2595	21.79	22.50	1.178	62.9	1.006	0.05	0.424	0.502
	LTE Band 38	20M	QPSK	50	0	-	Bottom Side	10mm	Ant 1	Reduced	38000	2595	20.86	21.50	1.159	62.9	1.006	0.01	0.385	0.449
	LTE Band 41	20M	QPSK	1	0	-	Front	10mm	Ant 1	Full	40620	2593	23.65	24.50	1.216	62.9	1.006	0.07	0.266	0.325
	LTE Band 41	20M	QPSK	50	0	-	Front	10mm	Ant 1	Full	40620	2593	22.80	23.50	1.175	62.9	1.006	-0.07	0.218	0.258
	LTE Band 41	20M	QPSK	1	0	-	Back	10mm	Ant 1	Full	40620	2593	23.65	24.50	1.216	62.9	1.006	0.04	0.202	0.247
	LTE Band 41	20M	QPSK	50	0	-	Back	10mm	Ant 1	Full	40620	2593	22.80	23.50	1.175	62.9	1.006	-0.09	0.168	0.199
	LTE Band 41	20M	QPSK	1	0	-	Left Side	10mm	Ant 1	Full	40620	2593	23.65	24.50	1.216	62.9	1.006	0.03	0.409	0.500
	LTE Band 41	20M	QPSK	50	0	-	Left Side	10mm	Ant 1	Full	40620	2593	22.80	23.50	1.175	62.9	1.006	0.08	0.340	0.402
46	LTE Band 41	20M	QPSK	1	0	-	Bottom Side	10mm	Ant 1	Full	40620	2593	23.65	24.50	1.216	62.9	1.006	-0.02	0.792	0.969
	LTE Band 41	20M	QPSK	1	0	-	Bottom Side	10mm	Ant 1	Full	39750	2506	23.47	24.50	1.268	62.9	1.006	0.15	0.512	0.653
	LTE Band 41	20M	QPSK	1	0	-	Bottom Side	10mm	Ant 1	Full	40185	2549.5	23.52	24.50	1.253	62.9	1.006	0.02	0.613	0.773
	LTE Band 41	20M	QPSK	1	0	-	Bottom Side	10mm	Ant 1	Full	41055	2636.5	23.61	24.50	1.227	62.9	1.006	0.03	0.637	0.787
	LTE Band 41	20M	QPSK	1	0	-	Bottom Side	10mm	Ant 1	Full	41490	2680	23.53	24.50	1.250	62.9	1.006	-0.09	0.769	0.967



# FCC SAR Test Report

Report No. : FA11226-01

	LTE Band 41	20M	QPSK	50	0	-	Bottom Side	10mm	Ant 1	Full	40620	2593	22.80	23.50	1.175	62.9	1.006	0.05	0.593	0.701
	LTE Band 41	20M	QPSK	50	0	-	Bottom Side	10mm	Ant 1	Full	39750	2506	22.75	23.50	1.189	62.9	1.006	0.06	0.413	0.494
	LTE Band 41	20M	QPSK	50	0	-	Bottom Side	10mm	Ant 1	Full	40185	2549.5	22.63	23.50	1.222	62.9	1.006	-0.08	0.493	0.606
	LTE Band 41	20M	QPSK	50	0	-	Bottom Side	10mm	Ant 1	Full	41055	2636.5	22.61	23.50	1.227	62.9	1.006	0.04	0.514	0.635
	LTE Band 41	20M	QPSK	50	0	-	Bottom Side	10mm	Ant 1	Full	41490	2680	22.61	23.50	1.227	62.9	1.006	0.15	0.591	0.730
	LTE Band 41	20M	QPSK	100	0	-	Bottom Side	10mm	Ant 1	Full	40620	2593	22.62	23.50	1.225	62.9	1.006	0.06	0.623	0.768
	LTE Band 41-HPUE	20M	QPSK	1	0	-	Bottom Side	10mm	Ant 1	Full	40620	2593	24.89	26.00	1.291	42.9	1.009	-0.01	0.650	0.847
	LTE Band 41C	20M	QPSK	1	0	-	Bottom Side	10mm	Ant 1	Full	40620+ 40422	2593+ 2573.2	23.60	24.50	1.230	62.9	1.006	0.09	0.698	0.864
SA& UL MIMO																				
	FR1 N7	20M	QPSK	1	53	DFT-SCS 15KHz	Front	10mm	Ant 3	Full	507000	2535	23.02	24.00	1.253	-	1.000	0.03	0.509	0.638
	FR1 N7	20M	QPSK	50	28	DFT-SCS 15KHz	Front	10mm	Ant 3	Full	507000	2535	22.97	24.00	1.268	-	1.000	-0.1	0.502	0.636
	FR1 N7	20M	QPSK	1	53	DFT-SCS 15KHz	Back	10mm	Ant 3	Full	507000	2535	23.02	24.00	1.253	-	1.000	-0.12	0.326	0.409
	FR1 N7	20M	QPSK	50	28	DFT-SCS 15KHz	Back	10mm	Ant 3	Full	507000	2535	22.97	24.00	1.268	-	1.000	0.15	0.335	0.425
	FR1 N7	20M	QPSK	1	53	DFT-SCS 15KHz	Left Side	10mm	Ant 3	Full	507000	2535	23.02	24.00	1.253	-	1.000	0.04	0.642	0.805
	FR1 N7	20M	QPSK	1	53	DFT-SCS 15KHz	Left Side	10mm	Ant 3	Full	502000	2510	22.67	24.00	1.358	-	1.000	0.07	0.666	0.905
	FR1 N7	20M	QPSK	1	53	DFT-SCS 15KHz	Left Side	10mm	Ant 3	Full	512000	2560	22.94	24.00	1.276	-	1.000	0.06	0.635	0.811
	FR1 N7	20M	QPSK	50	28	DFT-SCS 15KHz	Left Side	10mm	Ant 3	Full	507000	2535	22.97	24.00	1.268	-	1.000	0.12	0.688	0.872
	FR1 N7	20M	QPSK	50	28	DFT-SCS 15KHz	Left Side	10mm	Ant 3	Full	502000	2510	22.92	24.00	1.282	-	1.000	0.05	0.664	0.851
47	FR1 N7	20M	QPSK	50	28	DFT-SCS 15KHz	Left Side	10mm	Ant 3	Full	512000	2560	22.79	24.00	1.321	-	1.000	0.02	0.689	<b>0.910</b>
	FR1 N7	20M	QPSK	100	0	DFT-SCS 15KHz	Left Side	10mm	Ant 3	Full	507000	2535	22.51	23.00	1.119	-	1.000	0.08	0.488	0.546
SA& UL MIMO																				
	FR1 N41	100M	QPSK	1	137	DFT-SCS 30KHz	Front	10mm	Ant 1	Full	518598	2592.99	23.59	24.00	1.099	-	1.000	-0.04	0.355	0.390
	FR1 N41	100M	QPSK	135	69	DFT-SCS 30KHz	Front	10mm	Ant 1	Full	518598	2592.99	23.38	24.00	1.153	-	1.000	0.05	0.324	0.374
	FR1 N41	100M	QPSK	1	137	DFT-SCS 30KHz	Back	10mm	Ant 1	Full	518598	2592.99	23.59	24.00	1.099	-	1.000	0.08	0.268	0.295
	FR1 N41	100M	QPSK	135	69	DFT-SCS 30KHz	Back	10mm	Ant 1	Full	518598	2592.99	23.38	24.00	1.153	-	1.000	-0.17	0.271	0.313
	FR1 N41	100M	QPSK	1	137	DFT-SCS 30KHz	Left Side	10mm	Ant 1	Reduced	518598	2592.99	21.73	22.00	1.064	-	1.000	0.03	0.505	0.537
	FR1 N41	100M	QPSK	135	69	DFT-SCS 30KHz	Left Side	10mm	Ant 1	Reduced	518598	2592.99	21.68	22.00	1.076	-	1.000	0.05	0.441	0.475
	FR1 N41	100M	QPSK	1	137	DFT-SCS 30KHz	Bottom Side	10mm	Ant 1	Reduced	518598	2592.99	21.73	22.00	1.064	-	1.000	-0.03	0.913	0.972
48	FR1 N41	100M	QPSK	135	69	DFT-SCS 30KHz	Bottom Side	10mm	Ant 1	Reduced	518598	2592.99	21.68	22.00	1.076	-	1.000	-0.12	0.987	<b>1.062</b>
	FR1 N41	100M	QPSK	270	0	DFT-SCS 30KHz	Bottom Side	10mm	Ant 1	Reduced	518598	2592.99	21.48	22.00	1.127	-	1.000	0.01	0.922	1.039
NSA																				
	FR1 N41	100M	QPSK	1	137	DFT-SCS 30KHz	Front	10mm	Ant 1	Full	518598	2592.99	23.59	24.00	1.099	-	1.000	-0.04	0.355	0.390
	FR1 N41	100M	QPSK	135	69	DFT-SCS 30KHz	Front	10mm	Ant 1	Full	518598	2592.99	23.38	24.00	1.153	-	1.000	0.05	0.324	0.374
	FR1 N41	100M	QPSK	1	137	DFT-SCS 30KHz	Back	10mm	Ant 1	Full	518598	2592.99	23.59	24.00	1.099	-	1.000	0.08	0.268	0.295
	FR1 N41	100M	QPSK	135	69	DFT-SCS 30KHz	Back	10mm	Ant 1	Full	518598	2592.99	23.38	24.00	1.153	-	1.000	-0.17	0.271	0.313
	FR1 N41	100M	QPSK	1	137	DFT-SCS 30KHz	Left Side	10mm	Ant 1	Reduced	518598	2592.99	18.68	19.50	1.208	-	1.000	-0.02	0.243	0.293
	FR1 N41	100M	QPSK	135	69	DFT-SCS 30KHz	Left Side	10mm	Ant 1	Reduced	518598	2592.99	18.43	19.50	1.279	-	1.000	0.04	0.223	0.285
	FR1 N41	100M	QPSK	1	137	DFT-SCS 30KHz	Bottom Side	10mm	Ant 1	Reduced	518598	2592.99	18.68	19.50	1.208	-	1.000	-0.04	0.473	0.571
	FR1 N41	100M	QPSK	135	69	DFT-SCS 30KHz	Bottom Side	10mm	Ant 1	Reduced	518598	2592.99	18.43	19.50	1.279	-	1.000	-0.03	0.421	0.539
SA& UL MIMO																				
	FR1 N41	100M	QPSK	1	137	DFT-SCS 30KHz	Front	10mm	Ant 3	Full	518598	2592.99	22.47	24.00	1.422	-	1.000	-0.03	0.432	0.614
	FR1 N41	100M	QPSK	135	69	DFT-SCS 30KHz	Front	10mm	Ant 3	Full	518598	2592.99	22.36	24.00	1.459	-	1.000	0.02	0.416	0.607
	FR1 N41	100M	QPSK	1	137	DFT-SCS 30KHz	Back	10mm	Ant 3	Full	518598	2592.99	22.47	24.00	1.422	-	1.000	-0.04	0.322	0.458
	FR1 N41	100M	QPSK	135	69	DFT-SCS 30KHz	Back	10mm	Ant 3	Full	518598	2592.99	22.36	24.00	1.459	-	1.000	0.08	0.279	0.407
	FR1 N41	100M	QPSK	1	137	DFT-SCS 30KHz	Left Side	10mm	Ant 3	Full	518598	2592.99	22.47	24.00	1.422	-	1.000	0.06	0.645	0.917
	FR1 N41	100M	QPSK	135	69	DFT-SCS 30KHz	Left Side	10mm	Ant 3	Full	518598	2592.99	22.36	24.00	1.459	-	1.000	0.03	0.633	0.923
	FR1 N41	100M	QPSK	270	0	DFT-SCS 30KHz	Left Side	10mm	Ant 3	Full	518598	2592.99	21.62	23.00	1.374	-	1.000	-0.05	0.468	0.643
NSA																				
	FR1 N41	100M	QPSK	1	137	DFT-SCS 30KHz	Front	10mm	Ant 3	Full	518598	2592.99	22.47	24.00	1.422	-	1.000	-0.03	0.432	0.614
	FR1 N41	100M	QPSK	135	69	DFT-SCS 30KHz	Front	10mm	Ant 3	Full	518598	2592.99	22.36	24.00	1.459	-	1.000	0.02	0.416	0.607
	FR1 N41	100M	QPSK	1	137	DFT-SCS 30KHz	Back	10mm	Ant 3	Full	518598	2592.99	22.47	24.00	1.422	-	1.000	-0.04	0.322	0.458
	FR1 N41	100M	QPSK	135	69	DFT-SCS 30KHz	Back	10mm	Ant 3	Full	518598	2592.99	22.36	24.00	1.459	-	1.000	0.08	0.279	0.407
	FR1 N41	100M	QPSK	1	137	DFT-SCS 30KHz	Left Side	10mm	Ant 3	Reduced	518598	2592.99	20.13	21.00	1.222	-	1.000	0.04	0.432	0.528
	FR1 N41	100M	QPSK	135	69	DFT-SCS 30KHz	Left Side	10mm	Ant 3	Reduced	518598	2592.99	20.11	21.00	1.227	-	1.000	-0.03	0.481	0.590





Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Gap (mm)	Antenna	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)	
<b>3500MHz</b>																			
SA and Reuse for n78 SA & UL MIMO n77/n78																			
	FR1 N77	100M	QPSK	1	137	DFT-SCS 30KHz	Front	10mm	Ant 2	Full	656000	3840	22.49	24.00	1.416	-0.02	0.625	0.885	
	FR1 N77	100M	QPSK	135	69	DFT-SCS 30KHz	Front	10mm	Ant 2	Full	656000	3840	22.39	24.00	1.449	0.13	0.603	0.874	
	FR1 N77	100M	QPSK	270	0	DFT-SCS 30KHz	Front	10mm	Ant 2	Full	656000	3840	21.13	23.00	1.538	0.05	0.565	0.869	
	FR1 N77	100M	QPSK	1	137	DFT-SCS 30KHz	Back	10mm	Ant 2	Full	656000	3840	22.49	24.00	1.416	0.02	0.534	0.756	
	FR1 N77	100M	QPSK	135	69	DFT-SCS 30KHz	Back	10mm	Ant 2	Full	656000	3840	22.39	24.00	1.449	-0.13	0.528	0.765	
	FR1 N77	100M	QPSK	1	137	DFT-SCS 30KHz	Left Side	10mm	Ant 2	Reduced	656000	3840	21.86	22.50	1.159	0.08	0.821	0.951	
	FR1 N77	100M	QPSK	135	69	DFT-SCS 30KHz	Left Side	10mm	Ant 2	Reduced	656000	3840	21.69	22.50	1.205	-0.11	0.764	0.921	
	FR1 N77	100M	QPSK	270	0	DFT-SCS 30KHz	Left Side	10mm	Ant 2	Reduced	656000	3840	21.86	22.50	1.159	0.03	0.767	0.889	
	FR1 N77	100M	QPSK	1	137	DFT-SCS 30KHz	Front	10mm	Ant 4	Full	656000	3840	22.53	24.00	1.403	0.07	0.511	0.717	
	FR1 N77	100M	QPSK	135	69	DFT-SCS 30KHz	Front	10mm	Ant 4	Full	656000	3840	22.34	24.00	1.466	0.05	0.407	0.596	
	FR1 N77	100M	QPSK	1	137	DFT-SCS 30KHz	Back	10mm	Ant 4	Full	656000	3840	22.53	24.00	1.403	-0.04	0.635	0.891	
	FR1 N77	100M	QPSK	135	69	DFT-SCS 30KHz	Back	10mm	Ant 4	Full	656000	3840	22.34	24.00	1.466	0.02	0.516	0.756	
	FR1 N77	100M	QPSK	270	0	DFT-SCS 30KHz	Back	10mm	Ant 4	Full	656000	3840	22.08	23.00	1.236	0.1	0.610	0.754	
	FR1 N77	100M	QPSK	1	137	DFT-SCS 30KHz	Left Side	10mm	Ant 4	Reduced	656000	3840	19.51	20.50	1.256	0.04	0.721	0.906	
49	FR1 N77	100M	QPSK	135	69	DFT-SCS 30KHz	Left Side	10mm	Ant 4	Reduced	656000	3840	19.46	20.50	1.271	0.01	0.821	<b>1.043</b>	
	FR1 N77	100M	QPSK	270	0	DFT-SCS 30KHz	Left Side	10mm	Ant 4	Reduced	656000	3840	19.26	20.50	1.330	0.02	0.765	1.018	
	FR1 N77	100M	QPSK	1	137	DFT-SCS 30KHz	Top Side	10mm	Ant 4	Reduced	656000	3840	19.51	20.50	1.256	0.06	0.185	0.232	
	FR1 N77	100M	QPSK	135	69	DFT-SCS 30KHz	Top Side	10mm	Ant 4	Reduced	656000	3840	19.46	20.50	1.271	0.07	0.182	0.231	
<b>NSA</b>																			
	FR1 N78	100M	QPSK	1	137	DFT-SCS 30KHz	Front	10mm	Ant 2	Reduced	650000	3750	21.25	23.00	1.496	-0.05	0.361	0.540	
	FR1 N78	100M	QPSK	135	69	DFT-SCS 30KHz	Front	10mm	Ant 2	Reduced	650000	3750	21.19	23.00	1.517	0.03	0.349	0.529	
	FR1 N78	100M	QPSK	1	137	DFT-SCS 30KHz	Back	10mm	Ant 2	Reduced	650000	3750	21.25	23.00	1.496	0.01	0.216	0.323	
	FR1 N78	100M	QPSK	135	69	DFT-SCS 30KHz	Back	10mm	Ant 2	Reduced	650000	3750	21.19	23.00	1.517	-0.02	0.223	0.338	
	FR1 N78	100M	QPSK	1	137	DFT-SCS 30KHz	Left Side	10mm	Ant 2	Reduced	650000	3750	18.67	19.50	1.211	0.03	0.490	0.593	
	FR1 N78	100M	QPSK	135	69	DFT-SCS 30KHz	Left Side	10mm	Ant 2	Reduced	650000	3750	18.58	19.50	1.236	0.06	0.465	0.575	
	FR1 N78	100M	QPSK	1	137	DFT-SCS 30KHz	Front	10mm	Ant 4	Reduced	650000	3750	21.10	22.00	1.230	0.03	0.315	0.388	
	FR1 N78	100M	QPSK	135	69	DFT-SCS 30KHz	Front	10mm	Ant 4	Reduced	650000	3750	21.03	22.00	1.250	0.02	0.298	0.373	
	FR1 N78	100M	QPSK	1	137	DFT-SCS 30KHz	Back	10mm	Ant 4	Reduced	650000	3750	21.10	22.00	1.230	0.04	0.448	0.551	
	FR1 N78	100M	QPSK	135	69	DFT-SCS 30KHz	Back	10mm	Ant 4	Reduced	650000	3750	21.03	22.00	1.250	0.04	0.423	0.529	
	FR1 N78	100M	QPSK	1	137	DFT-SCS 30KHz	Left Side	10mm	Ant 4	Reduced	650000	3750	17.58	18.50	1.236	0.02	0.452	0.559	
50	FR1 N78	100M	QPSK	135	69	DFT-SCS 30KHz	Left Side	10mm	Ant 4	Reduced	650000	3750	17.52	18.50	1.253	0.02	0.476	<b>0.596</b>	
	FR1 N78	100M	QPSK	1	137	DFT-SCS 30KHz	Top Side	10mm	Ant 4	Reduced	650000	3750	17.58	18.50	1.236	-0.1	0.121	0.150	
	FR1 N78	100M	QPSK	135	69	DFT-SCS 30KHz	Top Side	10mm	Ant 4	Reduced	650000	3750	17.52	18.50	1.253	0.04	0.125	0.157	



Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
<b>2450MHz</b>																
	WLAN2.4GHz	802.11b 1Mbps	Front	10mm	Ant 6	Full	1	2412	17.90	19.00	1.288	98.18	1.019	0.04	0.073	0.096
	WLAN2.4GHz	802.11b 1Mbps	Back	10mm	Ant 6	Full	1	2412	17.90	19.00	1.288	98.18	1.019	0.14	0.075	0.098
51	WLAN2.4GHz	802.11b 1Mbps	Right Side	10mm	Ant 6	Full	1	2412	17.90	19.00	1.288	98.18	1.019	0.03	0.233	<b>0.306</b>
	WLAN2.4GHz	802.11b 1Mbps	Top Side	10mm	Ant 6	Full	1	2412	17.90	19.00	1.288	98.18	1.019	0.06	0.069	0.091
	WLAN2.4GHz	802.11b 1Mbps	Front	10mm	Ant 7	Full	1	2412	17.50	19.00	1.413	98.18	1.019	-0.08	0.070	0.101
	WLAN2.4GHz	802.11b 1Mbps	Back	10mm	Ant 7	Full	1	2412	17.50	19.00	1.413	98.18	1.019	-0.11	0.069	0.099
	WLAN2.4GHz	802.11b 1Mbps	Right Side	10mm	Ant 7	Full	1	2412	17.50	19.00	1.413	98.18	1.019	0.16	0.160	0.230
	WLAN2.4GHz	802.11b 1Mbps	Front	10mm	Ant 6+7	Full	1	2412	20.71	22.00	1.344	98.18	1.019	0.01	0.120	0.164
	WLAN2.4GHz	802.11b 1Mbps	Back	10mm	Ant 6+7	Full	1	2412	20.71	22.00	1.344	98.18	1.019	-0.1	0.072	0.099
	WLAN2.4GHz	802.11b 1Mbps	Right Side	10mm	Ant 6+7	Full	1	2412	20.71	22.00	1.344	98.18	1.019	0.11	0.112	0.153
	WLAN2.4GHz	802.11b 1Mbps	Top Side	10mm	Ant 6+7	Full	1	2412	20.71	22.00	1.344	98.18	1.019	-0.1	0.081	0.111
	Bluetooth	1Mbps	Front	10mm	Ant 7	Full	39	2441	17.78	18.50	1.180	76.6	1.305	0.01	0.045	0.069
52	Bluetooth	1Mbps	Back	10mm	Ant 7	Full	39	2441	17.78	18.50	1.180	76.6	1.305	0.02	0.054	<b>0.083</b>
	Bluetooth	1Mbps	Right Side	10mm	Ant 7	Full	39	2441	17.78	18.50	1.180	76.6	1.305	0.01	0.019	0.029
<b>5000MHz</b>																
	WLAN5.2GHz	802.11a 6Mbps	Front	10mm	Ant 6	Full	36	5180	17.80	19.00	1.318	98.83	1.012	0.01	0.064	0.085
	WLAN5.2GHz	802.11a 6Mbps	Back	10mm	Ant 6	Full	36	5180	17.80	19.00	1.318	98.83	1.012	-0.06	0.035	0.047
	WLAN5.2GHz	802.11a 6Mbps	Right Side	10mm	Ant 6	Full	36	5180	17.80	19.00	1.318	98.83	1.012	0.03	0.063	0.084
	WLAN5.2GHz	802.11a 6Mbps	Top Side	10mm	Ant 6	Full	36	5180	17.80	19.00	1.318	98.83	1.012	0.04	0.048	0.064
	WLAN5.2GHz	802.11n-HT40 MCS0	Front	10mm	Ant 7	Full	46	5230	15.70	17.00	1.349	98.54	1.015	0.08	0.024	0.033
	WLAN5.2GHz	802.11n-HT40 MCS0	Back	10mm	Ant 7	Full	46	5230	15.70	17.00	1.349	98.54	1.015	0.01	0.033	0.045
	WLAN5.2GHz	802.11n-HT40 MCS0	Right Side	10mm	Ant 7	Full	46	5230	15.70	17.00	1.349	98.54	1.015	-0.02	0.007	0.010
	WLAN5.2GHz	802.11n-HT40 MCS0	Front	10mm	Ant 6+7	Full	46	5230	19.64	21.00	1.367	98.54	1.015	0.12	0.197	0.273
	WLAN5.2GHz	802.11n-HT40 MCS0	Back	10mm	Ant 6+7	Full	46	5230	19.64	21.00	1.367	98.54	1.015	0.06	0.138	0.191
53	WLAN5.2GHz	802.11n-HT40 MCS0	Right Side	10mm	Ant 6+7	Full	46	5230	19.64	21.00	1.367	98.54	1.015	0.03	0.271	<b>0.376</b>
	WLAN5.2GHz	802.11n-HT40 MCS0	Top Side	10mm	Ant 6+7	Full	46	5230	19.64	21.00	1.367	98.54	1.015	-0.11	0.136	0.189
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Front	10mm	Ant 6	Full	155	5775	16.30	18.00	1.479	98.72	1.013	0.18	0.165	0.247
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Back	10mm	Ant 6	Full	155	5775	16.30	18.00	1.479	98.72	1.013	0.07	0.160	0.240
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Right Side	10mm	Ant 6	Full	155	5775	16.30	18.00	1.479	98.72	1.013	-0.07	0.226	0.339
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Top Side	10mm	Ant 6	Full	155	5775	16.30	18.00	1.479	98.72	1.013	0.04	0.132	0.198
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Front	10mm	Ant 7	Full	155	5775	16.80	18.00	1.318	98.72	1.013	0.02	0.061	0.081
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Back	10mm	Ant 7	Full	155	5775	16.80	18.00	1.318	98.72	1.013	0.07	0.056	0.075
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Right Side	10mm	Ant 7	Full	155	5775	16.80	18.00	1.318	98.72	1.013	-0.06	0.119	0.159
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Front	10mm	Ant 6+7	Full	155	5775	19.57	21.00	1.391	98.72	1.013	0.09	0.109	0.154
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Back	10mm	Ant 6+7	Full	155	5775	19.57	21.00	1.391	98.72	1.013	0.04	0.147	0.207
54	WLAN5.8GHz	802.11ac-VHT80 MCS0	Right Side	10mm	Ant 6+7	Full	155	5775	19.57	21.00	1.391	98.72	1.013	-0.09	0.270	<b>0.380</b>
	WLAN5.8GHz	802.11ac-VHT80 MCS0	Top Side	10mm	Ant 6+7	Full	155	5775	19.57	21.00	1.391	98.72	1.013	0.04	0.104	0.147



15.3 Body Worn Accessory SAR

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Gap (mm)	Antenna	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)	
<b>750MHz</b>																			
55	LTE Band 12	10M	QPSK	1	0	-	Front	10mm	Ant 0	Full	23095	707.5	23.98	25.00	1.265	-0.01	0.339	<b>0.429</b>	
	LTE Band 12	10M	QPSK	25	0	-	Front	10mm	Ant 0	Full	23095	707.5	23.11	24.00	1.227	0.03	0.228	0.280	
	LTE Band 12	10M	QPSK	1	0	-	Back	10mm	Ant 0	Full	23095	707.5	23.98	25.00	1.265	0.04	0.260	0.329	
	LTE Band 12	10M	QPSK	25	0	-	Back	10mm	Ant 0	Full	23095	707.5	23.11	24.00	1.227	0.02	0.208	0.255	
	LTE Band 71	20M	QPSK	1	0	-	Front	10mm	Ant 0	Full	133322	683	23.79	25.00	1.321	0.03	0.142	0.188	
	LTE Band 71	20M	QPSK	50	0	-	Front	10mm	Ant 0	Full	133322	683	22.92	24.00	1.282	0.01	0.106	0.136	
56	LTE Band 71	20M	QPSK	1	0	-	Back	10mm	Ant 0	Full	133322	683	23.79	25.00	1.321	0.03	0.146	<b>0.193</b>	
	LTE Band 71	20M	QPSK	50	0	-	Back	10mm	Ant 0	Full	133322	683	22.92	24.00	1.282	0.07	0.109	0.140	
57	FR1 N71	20M	QPSK	1	53	DFT_SCS 15KHz	Front	10mm	Ant 0	Full	136100	680.5	23.29	24.00	1.178	-0.11	0.228	<b>0.268</b>	
	FR1 N71	20M	QPSK	50	28	DFT_SCS 15KHz	Front	10mm	Ant 0	Full	136100	680.5	23.21	24.00	1.199	0.08	0.217	0.260	
	FR1 N71	20M	QPSK	1	53	DFT_SCS 15KHz	Back	10mm	Ant 0	Full	136100	680.5	23.29	24.00	1.178	-0.07	0.205	0.241	
	FR1 N71	20M	QPSK	50	28	DFT_SCS 15KHz	Back	10mm	Ant 0	Full	136100	680.5	23.21	24.00	1.199	-0.12	0.187	0.224	
<b>835MHz</b>																			
58	GSM850	-	-	-	-	GPRS (3 Tx slots)	Front	10mm	Ant 0	Full	189	836.4	28.15	29.50	1.365	-0.04	0.433	<b>0.591</b>	
	GSM850	-	-	-	-	GPRS (3 Tx slots)	Back	10mm	Ant 0	Full	189	836.4	28.15	29.50	1.365	0.03	0.310	0.423	
59	WCDMA V	-	-	-	-	RMC 12.2Kbps	Front	10mm	Ant 0	Full	4182	836.4	24.22	25.50	1.343	-0.03	0.385	<b>0.517</b>	
	WCDMA V	-	-	-	-	RMC 12.2Kbps	Back	10mm	Ant 0	Full	4182	836.4	24.22	25.50	1.343	0.03	0.298	0.400	
60	CDMA BC0	-	-	-	-	RC3 SO32 (F+SCH)	Front	10mm	Ant 0	Full	384	836.52	23.74	25.00	1.337	0.05	0.421	<b>0.563</b>	
	CDMA BC0	-	-	-	-	RC3 SO32 (F+SCH)	Back	10mm	Ant 0	Full	384	836.52	23.74	25.00	1.337	0.04	0.300	0.401	
61	LTE Band 26	15M	QPSK	1	0	-	Front	10mm	Ant 0	Full	26865	831.5	24.16	25.00	1.213	-0.06	0.315	<b>0.382</b>	
	LTE Band 26	15M	QPSK	36	0	-	Front	10mm	Ant 0	Full	26865	831.5	23.17	24.00	1.211	0.03	0.253	0.306	
	LTE Band 26	15M	QPSK	1	0	-	Back	10mm	Ant 0	Full	26865	831.5	24.16	25.00	1.213	0.05	0.225	0.273	
	LTE Band 26	15M	QPSK	36	0	-	Back	10mm	Ant 0	Full	26865	831.5	23.17	24.00	1.211	0.04	0.181	0.219	
	FR1 N5	20M	QPSK	1	53	DFT_SCS 15KHz	Front	10mm	Ant 0	Full	167300	836.5	23.47	24.00	1.130	0.06	0.320	0.362	
	FR1 N5	20M	QPSK	50	28	DFT_SCS 15KHz	Front	10mm	Ant 0	Full	167300	836.5	23.34	24.00	1.164	0.07	0.322	0.375	
	FR1 N5	20M	QPSK	1	53	DFT_SCS 15KHz	Back	10mm	Ant 0	Full	167300	836.5	23.47	24.00	1.130	-0.11	0.294	0.332	
62	FR1 N5	20M	QPSK	50	28	DFT_SCS 15KHz	Back	10mm	Ant 0	Full	167300	836.5	23.34	24.00	1.164	-0.01	0.345	<b>0.402</b>	
<b>1750MHz</b>																			
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Front	10mm	Ant 0	Full	1413	1732.6	23.37	24.50	1.297	0.05	0.602	0.781	
63	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	10mm	Ant 0	Full	1413	1732.6	23.37	24.50	1.297	-0.03	0.849	<b>1.101</b>	
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	10mm	Ant 0	Full	1312	1712.4	23.33	24.50	1.309	0.09	0.831	1.088	
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	10mm	Ant 0	Full	1513	1752.6	23.36	24.50	1.300	0.01	0.845	1.099	
64	LTE Band 66	20M	QPSK	1	0	-	Front	10mm	Ant 0	Full	132322	1745	23.94	25.00	1.276	-0.19	0.530	<b>0.677</b>	
	LTE Band 66	20M	QPSK	50	0	-	Front	10mm	Ant 0	Full	132322	1745	22.89	24.00	1.291	0.13	0.432	0.558	
	LTE Band 66	20M	QPSK	1	0	-	Back	10mm	Ant 0	Full	132322	1745	23.94	25.00	1.276	0.05	0.465	0.594	
	LTE Band 66	20M	QPSK	50	0	-	Back	10mm	Ant 0	Full	132322	1745	22.89	24.00	1.291	0.05	0.364	0.470	
<b>ENDC</b>																			
	LTE Band 66	20M	QPSK	1	0	-	Front	10mm	Ant 0	Reduced	132322	1745	21.26	22.00	1.186	-0.02	0.281	0.333	
	LTE Band 66	20M	QPSK	50	0	-	Front	10mm	Ant 0	Reduced	132322	1745	20.35	21.00	1.161	0.03	0.232	0.269	
	LTE Band 66	20M	QPSK	1	0	-	Back	10mm	Ant 0	Reduced	132322	1745	21.26	22.00	1.186	0.08	0.230	0.273	
	LTE Band 66	20M	QPSK	50	0	-	Back	10mm	Ant 0	Reduced	132322	1745	20.35	21.00	1.161	0.04	0.187	0.217	
	FR1 N66	20M	QPSK	1	53	DFT_SCS 15KHz	Front	10mm	Ant 2	Full	349000	1745	23.32	24.00	1.169	0.12	0.164	0.192	
65	FR1 N66	20M	QPSK	50	28	DFT_SCS 15KHz	Front	10mm	Ant 2	Full	349000	1745	23.11	24.00	1.227	0.01	0.166	<b>0.204</b>	
	FR1 N66	20M	QPSK	1	53	DFT_SCS 15KHz	Back	10mm	Ant 2	Full	349000	1745	23.32	24.00	1.169	0.02	0.165	0.193	
	FR1 N66	20M	QPSK	50	28	DFT_SCS 15KHz	Back	10mm	Ant 2	Full	349000	1745	23.11	24.00	1.227	-0.06	0.165	0.203	



# FCC SAR Test Report

Report No. : FA11226-01

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB Offset	Mode	Test Position	Gap (mm)	Antenna	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-Up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
<b>1900MHz</b>																				
66	GSM1900	-	-	-	-	GPRS (2 Tx slots)	Front	10mm	Ant 0	Full	661	1880	27.21	28.50	1.346	-	1.000	-0.06	0.387	<b>0.521</b>
	GSM1900	-	-	-	-	GPRS (2 Tx slots)	Back	10mm	Ant 0	Full	661	1880	27.21	28.50	1.346	-	1.000	0.03	0.330	0.444
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Front	10mm	Ant 0	Full	9400	1880	23.44	24.50	1.276	-	1.000	0.03	0.684	0.873
67	WCDMA II	-	-	-	-	RMC 12.2Kbps	Front	10mm	Ant 0	Full	9262	1852.4	23.40	24.50	1.288	-	1.000	-0.16	0.701	<b>0.903</b>
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Front	10mm	Ant 0	Full	9538	1907.6	22.98	24.50	1.419	-	1.000	0.09	0.635	0.901
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Back	10mm	Ant 0	Full	9400	1880	23.44	24.50	1.276	-	1.000	0.07	0.566	0.722
68	LTE Band 25	20M	QPSK	1	0	-	Front	10mm	Ant 0	Full	26340	1880	23.76	25.00	1.330	-	1.000	0.01	0.622	<b>0.828</b>
	LTE Band 25	20M	QPSK	1	0	-	Front	10mm	Ant 0	Full	26140	1860	23.58	25.00	1.387	-	1.000	0.07	0.590	0.818
	LTE Band 25	20M	QPSK	1	0	-	Front	10mm	Ant 0	Full	26590	1905	23.55	25.00	1.396	-	1.000	0.03	0.588	0.821
	LTE Band 25	20M	QPSK	50	0	-	Front	10mm	Ant 0	Full	26340	1880	22.78	24.00	1.324	-	1.000	0.04	0.547	0.724
	LTE Band 25	20M	QPSK	100	0	-	Front	10mm	Ant 0	Full	26340	1880	22.72	24.00	1.343	-	1.000	0.01	0.534	0.717
	LTE Band 25	20M	QPSK	1	0	-	Back	10mm	Ant 0	Full	26340	1880	23.76	25.00	1.330	-	1.000	0.05	0.575	0.765
	LTE Band 25	20M	QPSK	50	0	-	Back	10mm	Ant 0	Full	26340	1880	22.78	24.00	1.324	-	1.000	0.08	0.503	0.666
<b>ENDC</b>																				
	LTE Band 25	20M	QPSK	1	0	-	Front	10mm	Ant 0	Reduced	26340	1880	20.59	22.00	1.384	-	1.000	0.11	0.353	0.488
	LTE Band 25	20M	QPSK	50	0	-	Front	10mm	Ant 0	Reduced	26340	1880	19.67	21.00	1.358	-	1.000	0.08	0.292	0.397
	LTE Band 25	20M	QPSK	1	0	-	Back	10mm	Ant 0	Reduced	26340	1880	20.59	22.00	1.384	-	1.000	0.06	0.311	0.430
	LTE Band 25	20M	QPSK	50	0	-	Back	10mm	Ant 0	Reduced	26340	1880	19.67	21.00	1.358	-	1.000	0.01	0.252	0.342
	FR1 N25	20M	QPSK	1	53	DFT_SCS 15KHz	Front	10mm	Ant 2	Full	376500	1882.5	22.95	24.00	1.274	-	1.000	0.04	0.373	0.475
	FR1 N25	20M	QPSK	50	28	DFT_SCS 15KHz	Front	10mm	Ant 2	Full	376500	1882.5	22.91	24.00	1.285	-	1.000	-0.11	0.376	0.483
	FR1 N25	20M	QPSK	1	53	DFT_SCS 15KHz	Back	10mm	Ant 2	Full	376500	1882.5	22.95	24.00	1.274	-	1.000	0.14	0.420	0.535
69	FR1 N25	20M	QPSK	50	28	DFT_SCS 15KHz	Back	10mm	Ant 2	Full	376500	1882.5	22.91	24.00	1.285	-	1.000	-0.07	0.431	<b>0.554</b>
<b>2300MHz</b>																				
70	LTE Band 30	10M	QPSK	1	0	-	Front	10mm	Ant 1	Full	27710	2310	22.93	24.00	1.279	-	1.000	-0.08	0.419	<b>0.536</b>
	LTE Band 30	10M	QPSK	25	0	-	Front	10mm	Ant 1	Full	27710	2310	21.99	23.00	1.262	-	1.000	0.14	0.341	0.430
	LTE Band 30	10M	QPSK	1	0	-	Back	10mm	Ant 1	Full	27710	2310	22.93	24.00	1.279	-	1.000	0.13	0.351	0.449
	LTE Band 30	10M	QPSK	25	0	-	Back	10mm	Ant 1	Full	27710	2310	21.99	23.00	1.262	-	1.000	0.04	0.273	0.344
<b>2600MHz</b>																				
71	LTE Band 7	20M	QPSK	1	0	-	Front	10mm	Ant 1	Reduced	21100	2535	23.93	24.50	1.140	-	1.000	0.02	0.476	<b>0.543</b>
	LTE Band 7	20M	QPSK	50	0	-	Front	10mm	Ant 1	Reduced	21100	2535	22.91	23.50	1.146	-	1.000	0.04	0.392	0.449
	LTE Band 7	20M	QPSK	1	0	-	Back	10mm	Ant 1	Reduced	21100	2535	23.93	24.50	1.140	-	1.000	-0.11	0.359	0.409
	LTE Band 7	20M	QPSK	50	0	-	Back	10mm	Ant 1	Reduced	21100	2535	22.91	23.50	1.146	-	1.000	0.09	0.271	0.310
72	LTE Band 38	20M	QPSK	1	0	-	Front	10mm	Ant 1	Full	38000	2595	24.49	25.50	1.262	62.9	1.006	0.06	0.390	<b>0.495</b>
	LTE Band 38	20M	QPSK	50	0	-	Front	10mm	Ant 1	Full	38000	2595	23.51	24.50	1.256	62.9	1.006	0.04	0.325	0.411
	LTE Band 38	20M	QPSK	1	0	-	Back	10mm	Ant 1	Full	38000	2595	24.49	25.50	1.262	62.9	1.006	-0.07	0.305	0.387
	LTE Band 38	20M	QPSK	50	0	-	Back	10mm	Ant 1	Full	38000	2595	23.51	24.50	1.256	62.9	1.006	0.05	0.255	0.322
	LTE Band 41	20M	QPSK	1	0	-	Front	10mm	Ant 1	Full	40620	2593	23.65	24.50	1.216	62.9	1.006	0.07	0.266	0.325
	LTE Band 41	20M	QPSK	50	0	-	Front	10mm	Ant 1	Full	40620	2593	22.80	23.50	1.175	62.9	1.006	-0.07	0.218	0.258
	LTE Band 41	20M	QPSK	1	0	-	Back	10mm	Ant 1	Full	40620	2593	23.65	24.50	1.216	62.9	1.006	0.04	0.202	0.247
	LTE Band 41	20M	QPSK	50	0	-	Back	10mm	Ant 1	Full	40620	2593	22.80	23.50	1.175	62.9	1.006	-0.09	0.168	0.199
73	LTE Band 41-HPUE	20M	QPSK	1	0	-	Front	10mm	Ant 1	Full	40620	2593	24.89	26.00	1.291	42.9	1.009	0.09	0.253	<b>0.330</b>
	LTE Band 41C	20M	QPSK	1	0	-	Front	10mm	Ant 1	Full	40620+40422	2593+2573.2	23.60	24.50	1.230	62.9	1.006	-0.11	0.249	0.308
74	FR1 N7	20M	QPSK	1	53	DFT_SCS 15KHz	Front	10mm	Ant 3	Full	507000	2535	23.02	24.00	1.253	-	1.000	0.03	0.509	<b>0.638</b>
	FR1 N7	20M	QPSK	50	28	DFT_SCS 15KHz	Front	10mm	Ant 3	Full	507000	2535	22.97	24.00	1.268	-	1.000	-0.1	0.502	0.636
	FR1 N7	20M	QPSK	1	53	DFT_SCS 15KHz	Back	10mm	Ant 3	Full	507000	2535	23.02	24.00	1.253	-	1.000	-0.12	0.326	0.409
	FR1 N7	20M	QPSK	50	28	DFT_SCS 15KHz	Back	10mm	Ant 3	Full	507000	2535	22.97	24.00	1.268	-	1.000	0.15	0.335	0.425
	FR1 N41	100M	QPSK	1	137	DFT_SCS 30KHz	Front	10mm	Ant 1	Full	518598	2592.99	23.59	24.00	1.099	-	1.000	-0.04	0.355	0.390
	FR1 N41	100M	QPSK	135	69	DFT_SCS 30KHz	Front	10mm	Ant 1	Full	518598	2592.99	23.38	24.00	1.153	-	1.000	0.05	0.324	0.374
	FR1 N41	100M	QPSK	1	137	DFT_SCS 30KHz	Back	10mm	Ant 1	Full	518598	2592.99	23.59	24.00	1.099	-	1.000	0.08	0.268	0.295
	FR1 N41	100M	QPSK	135	69	DFT_SCS 30KHz	Back	10mm	Ant 1	Full	518598	2592.99	23.38	24.00	1.153	-	1.000	-0.17	0.271	0.313
75	FR1 N41	100M	QPSK	1	137	DFT_SCS 30KHz	Front	10mm	Ant 3	Full	518598	2592.99	22.47	24.00	1.422	-	1.000	-0.03	0.432	<b>0.614</b>

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**FCC SAR Test Report**

Report No. : FA11226-01

	FR1 N41	100M	QPSK	135	69	DFT_SCS 30KHz	Front	10mm	Ant 3	Full	518598	2592.99	22.36	24.00	1.459	-	1.000	0.02	0.416	0.607
	FR1 N41	100M	QPSK	1	137	DFT_SCS 30KHz	Back	10mm	Ant 3	Full	518598	2592.99	22.47	24.00	1.422	-	1.000	-0.04	0.322	0.458
	FR1 N41	100M	QPSK	135	69	DFT_SCS 30KHz	Back	10mm	Ant 3	Full	518598	2592.99	22.36	24.00	1.459	-	1.000	0.08	0.279	0.407

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Gap (mm)	Antenna	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
<b>3500MHz</b>																				
SA and Reuse for n78 SA &UL MIMO																				
	FR1 N77	100M	QPSK	1	137	DFT-SCS 30KHz	Front	10mm	Ant 2	Full	656000	3840	22.49	24.00	1.416	-	1.000	-0.02	0.625	0.885
	FR1 N77	100M	QPSK	135	69	DFT-SCS 30KHz	Front	10mm	Ant 2	Full	656000	3840	22.39	24.00	1.449	-	1.000	0.13	0.603	0.874
	FR1 N77	100M	QPSK	270	0	DFT-SCS 30KHz	Front	10mm	Ant 2	Full	656000	3840	21.13	23.00	1.538	-	1.000	0.05	0.565	0.869
	FR1 N77	100M	QPSK	1	137	DFT-SCS 30KHz	Back	10mm	Ant 2	Full	656000	3840	22.49	24.00	1.416	-	1.000	0.02	0.534	0.756
	FR1 N77	100M	QPSK	135	69	DFT-SCS 30KHz	Back	10mm	Ant 2	Full	656000	3840	22.39	24.00	1.449	-	1.000	-0.13	0.528	0.765
	FR1 N77	100M	QPSK	1	137	DFT_SCS 30KHz	Front	10mm	Ant 4	Full	656000	3840	22.53	24.00	1.403	-	1.000	0.07	0.511	0.717
	FR1 N77	100M	QPSK	135	69	DFT_SCS 30KHz	Front	10mm	Ant 4	Full	656000	3840	22.34	24.00	1.466	-	1.000	0.05	0.407	0.596
76	FR1 N77	100M	QPSK	1	137	DFT_SCS 30KHz	Back	10mm	Ant 4	Full	656000	3840	22.53	24.00	1.403	-	1.000	-0.04	0.635	<b>0.891</b>
	FR1 N77	100M	QPSK	135	69	DFT_SCS 30KHz	Back	10mm	Ant 4	Full	656000	3840	22.34	24.00	1.466	-	1.000	0.02	0.516	0.756
	FR1 N77	100M	QPSK	270	0	DFT_SCS 30KHz	Back	10mm	Ant 4	Full	656000	3840	22.08	23.00	1.236	-	1.000	0.1	0.610	0.754
<b>NSA</b>																				
	FR1 N78	100M	QPSK	1	137	-	Front	10mm	Ant 2	Reduced	650000	3750	21.25	23.00	1.496	-	1.000	-0.05	0.361	0.540
	FR1 N78	100M	QPSK	135	69	-	Front	10mm	Ant 2	Reduced	650000	3750	21.19	23.00	1.517	-	1.000	0.03	0.349	0.529
	FR1 N78	100M	QPSK	1	137	-	Back	10mm	Ant 2	Reduced	650000	3750	21.25	23.00	1.496	-	1.000	0.01	0.216	0.323
	FR1 N78	100M	QPSK	135	69	-	Back	10mm	Ant 2	Reduced	650000	3750	21.19	23.00	1.517	-	1.000	-0.02	0.223	0.338
	FR1 N78	100M	QPSK	1	137	-	Front	10mm	Ant 4	Reduced	650000	3750	21.10	22.00	1.230	-	1.000	0.03	0.315	0.388
	FR1 N78	100M	QPSK	135	69	-	Front	10mm	Ant 4	Reduced	650000	3750	21.03	22.00	1.250	-	1.000	0.02	0.298	0.373
77	FR1 N78	100M	QPSK	1	137	-	Back	10mm	Ant 4	Reduced	650000	3750	21.10	22.00	1.230	-	1.000	0.04	0.448	<b>0.551</b>
	FR1 N78	100M	QPSK	135	69	-	Back	10mm	Ant 4	Reduced	650000	3750	21.03	22.00	1.250	-	1.000	0.04	0.423	0.529
<b>2450MHz</b>																				
	WLAN2.4GHz	-	-	-	-	802.11b 1Mbps	Front	10mm	Ant 6	Full	1	2412	17.90	19.00	1.288	98.18	1.019	0.04	0.073	0.096
	WLAN2.4GHz	-	-	-	-	802.11b 1Mbps	Back	10mm	Ant 6	Full	1	2412	17.90	19.00	1.288	98.18	1.019	0.14	0.075	0.098
	WLAN2.4GHz	-	-	-	-	802.11b 1Mbps	Front	10mm	Ant 7	Full	1	2412	17.50	19.00	1.413	98.18	1.019	-0.08	0.070	0.101
	WLAN2.4GHz	-	-	-	-	802.11b 1Mbps	Back	10mm	Ant 7	Full	1	2412	17.50	19.00	1.413	98.18	1.019	-0.11	0.069	0.099
78	WLAN2.4GHz	-	-	-	-	802.11b 1Mbps	Front	10mm	Ant 6+7	Full	1	2412	20.71	22.00	1.344	98.18	1.019	0.01	0.120	<b>0.164</b>
	WLAN2.4GHz	-	-	-	-	802.11b 1Mbps	Back	10mm	Ant 6+7	Full	1	2412	20.71	22.00	1.344	98.18	1.019	-0.1	0.072	0.099
	Bluetooth	-	-	-	-	1Mbps	Front	10mm	Ant 7	Full	39	2441	17.78	18.50	1.180	76.60	1.305	0.01	0.045	0.069
79	Bluetooth	-	-	-	-	1Mbps	Back	10mm	Ant 7	Full	39	2441	17.78	18.50	1.180	76.60	1.305	0.02	0.054	<b>0.083</b>
<b>5000MHz</b>																				
	WLAN5.3GHz	-	-	-	-	802.11n-HT40 MCS0	Front	10mm	Ant 6	Full	54	5270	17.40	18.50	1.288	98.54	1.015	0.01	0.101	0.132
	WLAN5.3GHz	-	-	-	-	802.11n-HT40 MCS0	Back	10mm	Ant 6	Full	54	5270	17.40	18.50	1.288	98.54	1.015	0.14	0.079	0.103
	WLAN5.3GHz	-	-	-	-	802.11a 6Mbps	Front	10mm	Ant 7	Full	64	5320	16.50	17.50	1.259	98.83	1.012	0.05	0.037	0.047
	WLAN5.3GHz	-	-	-	-	802.11a 6Mbps	Back	10mm	Ant 7	Full	64	5320	16.50	17.50	1.259	98.83	1.012	0.01	0.043	0.055
80	WLAN5.3GHz	-	-	-	-	802.11n-HT40 MCS0	Front	10mm	Ant 6+7	Full	54	5270	19.77	21.00	1.328	98.54	1.015	-0.09	0.206	<b>0.278</b>
	WLAN5.3GHz	-	-	-	-	802.11n-HT40 MCS0	Back	10mm	Ant 6+7	Full	54	5270	19.77	21.00	1.328	98.54	1.015	-0.15	0.120	0.162
	WLAN5.5GHz	-	-	-	-	802.11ac-VHT80 MCS0	Front	10mm	Ant 6	Full	122	5610	16.90	18.00	1.288	98.72	1.013	-0.01	0.096	0.125
	WLAN5.5GHz	-	-	-	-	802.11ac-VHT80 MCS0	Back	10mm	Ant 6	Full	122	5610	16.90	18.00	1.288	98.72	1.013	-0.09	0.079	0.103
	WLAN5.5GHz	-	-	-	-	802.11ac-VHT80 MCS0	Front	10mm	Ant 7	Full	138	5690	17.00	18.00	1.259	98.72	1.013	0.04	0.104	0.133
	WLAN5.5GHz	-	-	-	-	802.11ac-VHT80 MCS0	Back	10mm	Ant 7	Full	138	5690	17.00	18.00	1.259	98.72	1.013	-0.02	0.125	0.159
	WLAN5.5GHz	-	-	-	-	802.11ac-VHT80 MCS0	Front	10mm	Ant 6+7	Full	138	5690	19.86	21.00	1.299	98.72	1.013	0.14	0.105	0.138
81	WLAN5.5GHz	-	-	-	-	802.11ac-VHT80 MCS0	Back	10mm	Ant 6+7	Full	138	5690	19.86	21.00	1.299	98.72	1.013	0.01	0.127	<b>0.167</b>
82	WLAN5.8GHz	-	-	-	-	802.11ac-VHT80 MCS0	Front	10mm	Ant 6	Full	155	5775	16.30	18.00	1.479	98.72	1.013	0.18	0.165	<b>0.247</b>
	WLAN5.8GHz	-	-	-	-	802.11ac-VHT80 MCS0	Back	10mm	Ant 6	Full	155	5775	16.30	18.00	1.479	98.72	1.013	0.07	0.160	0.240
	WLAN5.8GHz	-	-	-	-	802.11ac-VHT80 MCS0	Front	10mm	Ant 7	Full	155	5775	16.80	18.00	1.318	98.72	1.013	0.02	0.061	0.081
	WLAN5.8GHz	-	-	-	-	802.11ac-VHT80 MCS0	Back	10mm	Ant 7	Full	155	5775	16.80	18.00	1.318	98.72	1.013	0.07	0.056	0.075
	WLAN5.8GHz	-	-	-	-	802.11ac-VHT80 MCS0	Front	10mm	Ant 6+7	Full	155	5775	19.57	21.00	1.391	98.72	1.013	0.09	0.109	0.154
	WLAN5.8GHz	-	-	-	-	802.11ac-VHT80 MCS0	Back	10mm	Ant 6+7	Full	155	5775	19.57	21.00	1.391	98.72	1.013	0.04	0.147	0.207

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15.4 Product specific 10g SAR

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Gap (mm)	Antenna	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 10g SAR (W/kg)	Reported 10g SAR (W/kg)	
<b>1750MHz</b>																			
83	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Bottom Side	0mm	Ant 0	Full	1413	1732.6	23.37	24.50	1.297	0.01	1.020	<b>1.323</b>	
84	LTE Band 66	20M	QPSK	1	0	-	Bottom Side	0mm	Ant 0	Full	132322	1745	23.94	25.00	1.276	0.03	2.740	<b>3.497</b>	
	LTE Band 66	20M	QPSK	1	0	-	Bottom Side	0mm	Ant 0	Full	132072	1720	23.82	25.00	1.312	-0.09	2.490	3.267	
	LTE Band 66	20M	QPSK	1	0	-	Bottom Side	0mm	Ant 0	Full	132572	1770	23.80	25.00	1.318	0.08	2.630	3.467	
	LTE Band 66	20M	QPSK	50	0	-	Bottom Side	0mm	Ant 0	Full	132322	1745	22.89	24.00	1.291	0.07	2.210	2.854	
	LTE Band 66	20M	QPSK	50	0	-	Bottom Side	0mm	Ant 0	Full	132072	1720	22.88	24.00	1.294	0.04	2.320	3.003	
	LTE Band 66	20M	QPSK	50	0	-	Bottom Side	0mm	Ant 0	Full	132572	1770	22.80	24.00	1.318	0.06	2.290	3.019	
	LTE Band 66	20M	QPSK	100	0	-	Bottom Side	0mm	Ant 0	Full	132322	1745	22.91	24.00	1.285	0.07	2.310	2.969	
<b>ENDC</b>																			
	LTE Band 66	20M	QPSK	1	0	-	Bottom Side	0mm	Ant 0	Reduced	132322	1745	21.26	22.00	1.186	0.1	1.220	1.447	
	LTE Band 66	20M	QPSK	50	0	-	Bottom Side	0mm	Ant 0	Reduced	132322	1745	20.35	21.00	1.161	-0.03	1.030	1.196	
<b>1900MHz</b>																			
	GSM1900	-	-	-	-	GPRS (2 Tx slots)	Bottom Side	0mm	Ant 0	Full	661	1880	27.21	28.50	1.346	0.12	1.980	2.665	
	GSM1900	-	-	-	-	GPRS (2 Tx slots)	Bottom Side	0mm	Ant 0	Full	512	1850.2	27.17	28.50	1.358	-0.03	1.950	2.649	
85	GSM1900	-	-	-	-	GPRS (2 Tx slots)	Bottom Side	0mm	Ant 0	Full	810	1909.8	27.20	28.50	1.349	0.17	2.030	<b>2.738</b>	
86	WCDMA II	-	-	-	-	RMC 12.2Kbps	Bottom Side	0mm	Ant 0	Full	9400	1880	23.44	24.50	1.276	0.13	2.500	<b>3.191</b>	
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Bottom Side	0mm	Ant 0	Full	9262	1852.4	23.40	24.50	1.288	0.03	2.430	3.130	
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Bottom Side	0mm	Ant 0	Full	9538	1907.6	22.98	24.50	1.419	-0.02	2.210	3.136	
87	LTE Band 25	20M	QPSK	1	0	-	Bottom Side	0mm	Ant 0	Full	26340	1880	23.76	25.00	1.330	0.04	2.330	<b>3.100</b>	
	LTE Band 25	20M	QPSK	1	0	-	Bottom Side	0mm	Ant 0	Full	26140	1860	23.58	25.00	1.387	0.04	2.220	3.079	
	LTE Band 25	20M	QPSK	1	0	-	Bottom Side	0mm	Ant 0	Full	26590	1905	23.55	25.00	1.396	0.04	2.160	3.016	
	LTE Band 25	20M	QPSK	50	0	-	Bottom Side	0mm	Ant 0	Full	26340	1880	22.78	24.00	1.324	0.06	2.140	2.834	
	LTE Band 25	20M	QPSK	50	0	-	Bottom Side	0mm	Ant 0	Full	26140	1860	22.72	24.00	1.343	0.06	2.080	2.793	
	LTE Band 25	20M	QPSK	50	0	-	Bottom Side	0mm	Ant 0	Full	26590	1905	22.62	24.00	1.374	0.06	2.110	2.899	
	LTE Band 25	20M	QPSK	100	0	-	Bottom Side	0mm	Ant 0	Full	26340	1880	22.72	24.00	1.343	0.04	1.980	2.659	
<b>ENDC</b>																			
	LTE Band 25	20M	QPSK	1	0	-	Bottom Side	0mm	Ant 0	Reduced	26340	1880	20.59	22.00	1.384	0.04	1.070	1.480	
	LTE Band 25	20M	QPSK	50	0	-	Bottom Side	0mm	Ant 0	Reduced	26340	1880	19.67	21.00	1.358	0.09	0.851	1.156	
<b>2600MHz</b>																			
88	LTE Band 7	20M	QPSK	1	0	-	Bottom Side	0mm	Ant 1	Reduced	21100	2535	23.93	24.50	1.140	0.07	3.100	<b>3.535</b>	
	LTE Band 7	20M	QPSK	1	0	-	Bottom Side	0mm	Ant 1	Reduced	20850	2510	23.78	24.50	1.180	0.01	2.890	3.411	
	LTE Band 7	20M	QPSK	1	0	-	Bottom Side	0mm	Ant 1	Reduced	21350	2560	23.87	24.50	1.156	0.09	2.980	3.445	
	LTE Band 7	20M	QPSK	50	0	-	Bottom Side	0mm	Ant 1	Reduced	21100	2535	22.91	23.50	1.146	0.06	2.590	2.967	
	LTE Band 7	20M	QPSK	50	0	-	Bottom Side	0mm	Ant 1	Reduced	20850	2510	22.81	23.50	1.172	-0.05	2.570	3.013	
	LTE Band 7	20M	QPSK	50	0	-	Bottom Side	0mm	Ant 1	Reduced	21350	2560	22.81	23.50	1.172	0.01	2.480	2.907	
	LTE Band 7	20M	QPSK	100	0	-	Bottom Side	0mm	Ant 1	Reduced	21100	2535	22.93	23.50	1.140	0.1	2.510	2.862	
<b>ENDC</b>																			
	LTE Band 7	20M	QPSK	1	0	-	Bottom Side	0mm	Ant 1	Reduced	21100	2535	20.35	21.00	1.161	0.03	1.110	1.289	
	LTE Band 7	20M	QPSK	50	0	-	Bottom Side	0mm	Ant 1	Reduced	21100	2535	19.47	20.00	1.130	0.07	0.904	1.021	
<b>SA&amp; UL MIMO</b>																			
	FR1 N41	100M	QPSK	1	137	DFT-SCS 30KHz	Bottom Side	0mm	Ant 1	Full	518598	2592.99	23.59	24.00	1.099	0.02	2.450	2.693	
89	FR1 N41	100M	QPSK	135	69	DFT-SCS 30KHz	Bottom Side	0mm	Ant 1	Full	518598	2592.99	23.38	24.00	1.153	0.02	2.500	<b>2.884</b>	
	FR1 N41	100M	QPSK	270	0	DFT-SCS 30KHz	Bottom Side	0mm	Ant 1	Full	518598	2592.99	22.04	23.00	1.247	0.03	2.020	2.520	
<b>NSA</b>																			
	FR1 N41	100M	QPSK	1	137	DFT-SCS 30KHz	Front	0mm	Ant 1	Reduced	518598	2592.99	20.80	21.00	1.047	0.03	1.380	1.445	
	FR1 N41	100M	QPSK	135	69	DFT-SCS 30KHz	Front	0mm	Ant 1	Reduced	518598	2592.99	20.78	21.00	1.052	0.01	1.420	1.494	
	FR1 N41	100M	QPSK	1	137	DFT-SCS 30KHz	Bottom Side	0mm	Ant 1	Reduced	518598	2592.99	20.80	21.00	1.047	0.04	1.320	1.382	
	FR1 N41	100M	QPSK	135	69	DFT-SCS 30KHz	Bottom Side	0mm	Ant 1	Reduced	518598	2592.99	20.78	21.00	1.052	0.08	1.360	1.431	
<b>3500MHz</b>																			
	FR1 N77	100M	QPSK	1	137	DFT-SCS 30KHz	Left Side	0mm	Ant 2	Full	656000	3840	22.49	24.00	1.416	0.09	1.670	2.364	

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**FCC SAR Test Report**

**Report No. : FA11226-01**

	FR1 N77	100M	QPSK	135	69	DFT-SCS 30KHz	Left Side	0mm	Ant 2	Full	656000	3840	22.39	24.00	1.449	0.09	1.540	2.231
	FR1 N77	100M	QPSK	270	0	DFT-SCS 30KHz	Left Side	0mm	Ant 2	Full	656000	3840	21.13	23.00	1.538	0.03	1.110	1.707
90	FR1 N77	100M	QPSK	1	137	DFT-SCS 30KHz	Left Side	0mm	Ant 4	Full	656000	3840	22.53	24.00	1.403	0.18	1.900	<b>2.665</b>
	FR1 N77	100M	QPSK	135	69	DFT-SCS 30KHz	Left Side	0mm	Ant 4	Full	656000	3840	22.34	24.00	1.466	0.06	1.666	2.441
	FR1 N77	100M	QPSK	270	0	DFT-SCS 30KHz	Left Side	0mm	Ant 4	Full	656000	3840	22.08	23.00	1.236	0.08	1.800	2.224

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 10g SAR (W/kg)	Reported 10g SAR (W/kg)
<b>5000MHz</b>																
	WLAN5.3GHz	802.11n-HT40 MCS0	Front	0mm	Ant 6	Full	54	5270	17.40	18.50	1.288	98.54	1.015	0.01	0.611	0.799
	WLAN5.3GHz	802.11n-HT40 MCS0	Back	0mm	Ant 6	Full	54	5270	17.40	18.50	1.288	98.54	1.015	-0.08	0.227	0.297
	WLAN5.3GHz	802.11n-HT40 MCS0	Right Side	0mm	Ant 6	Full	54	5270	17.40	18.50	1.288	98.54	1.015	0.1	0.442	0.578
	WLAN5.3GHz	802.11n-HT40 MCS0	Top Side	0mm	Ant 6	Full	54	5270	17.40	18.50	1.288	98.54	1.015	0.14	0.245	0.320
	WLAN5.3GHz	802.11a 6Mbps	Front	0mm	Ant 7	Full	64	5320	16.50	17.50	1.259	98.83	1.012	-0.16	0.249	0.317
	WLAN5.3GHz	802.11a 6Mbps	Back	0mm	Ant 7	Full	64	5320	16.50	17.50	1.259	98.83	1.012	0.01	0.146	0.186
	WLAN5.3GHz	802.11a 6Mbps	Right Side	0mm	Ant 7	Full	64	5320	16.50	17.50	1.259	98.83	1.012	-0.14	0.420	0.535
	WLAN5.3GHz	802.11n-HT40 MCS0	Front	0mm	Ant 6+7	Full	54	5270	19.77	21.00	1.328	98.54	1.015	0.02	0.545	0.735
	WLAN5.3GHz	802.11n-HT40 MCS0	Back	0mm	Ant 6+7	Full	54	5270	19.77	21.00	1.328	98.54	1.015	0.12	0.200	0.270
91	WLAN5.3GHz	802.11n-HT40 MCS0	Right Side	0mm	Ant 6+7	Full	54	5270	19.77	21.00	1.328	98.54	1.015	0.07	0.680	<b>0.917</b>
	WLAN5.3GHz	802.11n-HT40 MCS0	Top Side	0mm	Ant 6+7	Full	54	5270	19.77	21.00	1.328	98.54	1.015	0.04	0.273	0.368
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Front	0mm	Ant 6	Full	122	5610	16.90	18.00	1.288	98.72	1.013	0.05	0.287	0.375
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Back	0mm	Ant 6	Full	122	5610	16.90	18.00	1.288	98.72	1.013	-0.1	0.102	0.133
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Right Side	0mm	Ant 6	Full	122	5610	16.90	18.00	1.288	98.72	1.013	0.02	0.365	0.476
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Top Side	0mm	Ant 6	Full	122	5610	16.90	18.00	1.288	98.72	1.013	-0.03	0.123	0.161
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Front	0mm	Ant 7	Full	138	5690	17.00	18.00	1.259	98.72	1.013	0.05	0.236	0.301
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Back	0mm	Ant 7	Full	138	5690	17.00	18.00	1.259	98.72	1.013	0.04	0.137	0.175
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Right Side	0mm	Ant 7	Full	138	5690	17.00	18.00	1.259	98.72	1.013	0.01	0.406	0.518
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Front	0mm	Ant 6+7	Full	138	5690	19.86	21.00	1.299	98.72	1.013	-0.02	0.548	0.721
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Back	0mm	Ant 6+7	Full	138	5690	19.86	21.00	1.299	98.72	1.013	0.14	0.304	0.400
92	WLAN5.5GHz	802.11ac-VHT80 MCS0	Right Side	0mm	Ant 6+7	Full	138	5690	19.86	21.00	1.299	98.72	1.013	-0.09	0.748	<b>0.985</b>
	WLAN5.5GHz	802.11ac-VHT80 MCS0	Top Side	0mm	Ant 6+7	Full	138	5690	19.86	21.00	1.299	98.72	1.013	0.05	0.225	0.296

15.5 Repeated SAR Measurement

<1g>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Gap (mm)	Antenna	Power Reduction	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)
	WLAN5.3GHz	-	-	-	-	802.11n-HT40 MCS0	Left Cheek	0mm	Ant 6	Reduced	54	5270	15.82	17.00	1.312	98.54	1.015	0.08	0.871	1	1.160
	WLAN5.3GHz	-	-	-	-	802.11n-HT40 MCS0	Left Cheek	0mm	Ant 6	Reduced	54	5270	15.82	17.00	1.312	98.54	1.015	0.03	0.825	1.056	1.099
	WLAN5.5GHz	-	-	-	-	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 6+7	Reduced	122	5610	19.81	21.00	1.315	98.72	1.013	0.07	0.876	1	1.167
	WLAN5.5GHz	-	-	-	-	802.11ac-VHT80 MCS0	Left Cheek	0mm	Ant 6+7	Reduced	122	5610	19.81	21.00	1.315	98.72	1.013	0.01	0.849	1.032	1.131
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	10mm	Ant 0	Full	1413	1732.6	23.37	24.50	1.297	-	1.000	-0.03	0.849	1	1.101
	WCDMA IV	-	-	-	-	RMC 12.2Kbps	Back	10mm	Ant 0	Full	1413	1732.6	23.37	24.50	1.297	-	1.000	0.04	0.827	1.026	1.073
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Bottom Side	10mm	Ant 0	Reduced	9400	1880	20.67	21.50	1.211	-	1.000	0.03	0.930	1	1.126
	WCDMA II	-	-	-	-	RMC 12.2Kbps	Bottom Side	10mm	Ant 0	Reduced	9400	1880	20.67	21.50	1.211	-	1.000	-0.02	0.921	1.010	1.115
	FR1 N41	100M	QPSK	135	69	DFT-SCS 30KHz	Bottom Side	10mm	Ant 1	Reduced	518598	2592.99	21.68	22.00	1.076	-	1.000	-0.12	0.987	1	1.062
	FR1 N41	100M	QPSK	135	69	DFT-SCS 30KHz	Bottom Side	10mm	Ant 1	Reduced	518598	2592.99	21.68	22.00	1.076	-	1.000	-0.12	0.948	1.041	1.020
	FR1 N77	100M	QPSK	1	137	DFT-SCS 30KHz	Left Side	10mm	Ant 2	Reduced	656000	3840	21.86	22.50	1.159	-	1.000	0.08	0.821	1	0.951
	FR1 N77	100M	QPSK	1	137	DFT-SCS 30KHz	Left Side	10mm	Ant 2	Reduced	656000	3840	21.86	22.50	1.159	-	1.000	-0.07	0.813	1.010	0.942

<10g>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Mode	Test Position	Gap (mm)	Antenna	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 10g SAR (W/kg)	Ratio	Reported 10g SAR (W/kg)
	LTE Band 66	20M	QPSK	1	0		Bottom Side	0mm	Ant 0	Full	132322	1745	23.94	25.00	1.276	0.03	2.740	1	3.497
	LTE Band 66	20M	QPSK	1	0		Bottom Side	0mm	Ant 0	Full	132322	1745	23.94	25.00	1.276	-0.11	2.670	1.026	3.408
	WCDMA II					RMC 12.2Kbps	Bottom Side	0mm	Ant 0	Full	9400	1880	23.44	24.50	1.276	0.13	2.500	1	3.191
	WCDMA II					RMC 12.2Kbps	Bottom Side	0mm	Ant 0	Full	9400	1880	23.44	24.50	1.276	0.07	2.390	1.046	3.051
	LTE Band 7	20M	QPSK	1	0		Bottom Side	0mm	Ant 1	Reduced	21100	2535	23.93	24.50	1.140	0.07	3.100	1	3.535
	LTE Band 7	20M	QPSK	1	0		Bottom Side	0mm	Ant 1	Reduced	21100	2535	23.93	24.50	1.140	-0.12	2.990	1.037	3.409
	FR1 N77	100M	QPSK	1	137	DFT-SCS 30KHz	Left Side	0mm	Ant 4	Full	656000	3840	22.53	24.00	1.403	0.18	1.900	1	2.665
	FR1 N77	100M	QPSK	1	137	DFT-SCS 30KHz	Left Side	0mm	Ant 4	Full	656000	3840	22.53	24.00	1.403	-0.09	1.833	1.037	2.571

General Note:

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



**15.6 TDD B41 Linearity Data Analysis**

**General Note:**

This device support Power Class 2 and Power Class 3 operations for LTE Band 41. The highest available duty cycle for Power Class 2 operation is 43.3% 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 LTE 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, Separate SAR testing for Power Class 2 is not required

<b>LTE Band 41(HPUE)-Linearity Data for Head</b>		
	<b>LTE Band 41 (Power Class 3)</b>	<b>LTE Band 41 (Power Class 2)</b>
Maximum Tune up Power (dBm)	24.50	26.00
Reported 1g SAR (W/kg)	0.069	0.064
Duty Cycle	63.30%	43.30%
Frame Averaged (mW)	178.40	172.38
Linearity SAR (W/kg)	0.067	
% deviation from expected linearity		-4.01%
<b>LTE Band 41(HPUE)-Linearity Data for Hotspot</b>		
	<b>LTE Band 41 (Power Class 3)</b>	<b>LTE Band 41 (Power Class 2)</b>
Maximum Tune up Power (dBm)	24.50	26.00
Reported 1g SAR (W/kg)	0.969	0.847
Duty Cycle	63.30%	43.30%
Frame Averaged (mW)	178.40	172.38
Linearity SAR (W/kg)	0.936	
% deviation from expected linearity		-9.54%
<b>LTE Band 41(HPUE)-Linearity Data for Body-worn</b>		
	<b>LTE Band 41 (Power Class 3)</b>	<b>LTE Band 41 (Power Class 2)</b>
Maximum Tune up Power (dBm)	24.50	26.00
Reported 1g SAR (W/kg)	0.325	0.330
Duty Cycle	63.30%	43.30%
Frame Averaged (mW)	178.40	172.38
Linearity SAR (W/kg)	0.314	
% deviation from expected linearity		5.09%

## 16. Simultaneous Transmission Analysis

No.	Simultaneous Transmission Configurations	Portable Handset			
		Head	Body-worn	Hotspot	Product specific 10g SAR
1.	WWAN + WLAN 2.4GHz Chain 0	Yes	Yes	Yes	Yes
2.	WWAN + WLAN 2.4GHz Chain 1	Yes	Yes	Yes	Yes
3.	WWAN + WLAN 2.4GHz Chain 0+1	Yes	Yes	Yes	Yes
4.	WWAN + WLAN 5GHz Chain 0	Yes	Yes	Yes	Yes
5.	WWAN + WLAN 5GHz Chain 1	Yes	Yes	Yes	Yes
6.	WWAN + WLAN 5GHz Chain 0+1	Yes	Yes	Yes	Yes
7.	WWAN + WLAN 2.4GHz Chain 1+BT	Yes	Yes	Yes	Yes
8.	WWAN + WLAN 5GHz Chain 0+BT	Yes	Yes	Yes	Yes
9.	WWAN + WLAN 5GHz Chain 1+BT	Yes	Yes	Yes	Yes
10.	WWAN + WLAN 5GHz Chain 0+1+BT	Yes	Yes	Yes	Yes

**General Note:**

- This device supports VoIP in GPRS, EGPRS, WCDMA and LTE (e.g. for 3rd-party VoIP), LTE supports VoLTE operation.
- The above WWAN including 5G NR bands.
- EUT will choose each GSM, WCDMA, LTE and 5GNR according to the network signal condition; therefore, they will not operate simultaneously at any moment.
- EUT will choose either WLAN 2.4GHz or WLAN 5GHz according to the network signal condition; therefore, 2.4GHz WLAN and 5GHz WLAN will not operate simultaneously at any moment.
- This device 2.4GHz WLAN support hotspot operation and Bluetooth support tethering applications.
- This device 2.4GHz WLAN/ 5.2GHz WLAN/5.8GHz WLAN support hotspot operation, and 5.2GHz WLAN/5.8GHz WLAN supports WLAN Direct (GC/GO), and 5.3GHz / 5.5GHz supports WLAN Direct (GC only).
- Chain 0 means Antenna 7; Chain 1 means Antenna 6.
- WLAN2.4GHz Chain 0 and Bluetooth share the same antenna, so can't transmit simultaneously.
- According to the character of EUT, WLAN5GHz and Bluetooth can transmit simultaneously.
- 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.
- The worst case 5 GHz WLAN SAR for each configuration was used for SAR summation.
- Chose the worst zoom scan SAR of WLAN correspondingly for co-located with WWAN analysis.
- The reported SAR summation is calculated based on the same configuration and test position.
- Per KDB 447498 D01v06, simultaneous transmission SAR is compliant if,
  - 1g Scalar SAR summation < 1.6W/kg and 10g Scalar SAR summation < 4.0W/kg.
  - $SPLSR = (SAR1 + SAR2)^{1.5} / (\text{min. separation distance, mm})$ , and the peak separation distance is determined from the square root of  $[(x1-x2)^2 + (y1-y2)^2 + (z1-z2)^2]$ , where (x1, y1, z1) and (x2, y2, z2) are the coordinates of the extrapolated peak SAR locations in the zoom scan.
  - If  $SPLSR \leq 0.04$  for 1g SAR and  $SPLSR \leq 0.10$  for 10g SAR, simultaneously transmission SAR measurement is not necessary.
  - Simultaneously transmission SAR measurement, and the reported multi-band 1g SAR < 1.6W/kg and 10g SAR < 4.0W/kg.
  - The SPLSR calculated results please refer to section 17.5.
- 5G NR NSA EN-DC mode, standalone SAR performed for 5GNR band with the maximum power, EN-DC SAR summed 5GNR standalone SAR and LTE standalone SAR, the result of EN-DC SAR is more conservatively.



16.1 Head Exposure Conditions

WWAN Band	Exposure Position	1	2	3	5	6	8	1+2+3	1+5+6+8	1+3+8	Case No	
		WWAN	2.4GHz WLAN Ant 7	2.4GHz WLAN Ant 6	5GHz WLAN Ant 7	5GHz WLAN Ant 6	Bluetooth Ant 7	Summed	Summed	Summed		
		1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)		
GSM	GSM850 Ant 0	Right Cheek	0.221	0.089	0.247	0.277	0.177	0.099	0.56	0.77	0.57	
		Right Tilted	0.102	0.043	0.209	0.140	0.296	0.075	0.35	0.61	0.39	
		Left Cheek	0.149	0.269	0.369	0.402	0.405	0.283	0.79	1.24	0.80	
		Left Tilted	0.112	0.016	0.369	0.175	0.405	0.145	0.50	0.84	0.63	
	GSM1900 Ant 0	Right Cheek	0.011	0.089	0.247	0.277	0.177	0.099	0.35	0.56	0.36	
		Right Tilted	0.005	0.043	0.209	0.140	0.296	0.075	0.26	0.52	0.29	
		Left Cheek	0.022	0.269	0.369	0.402	0.405	0.283	0.66	1.11	0.67	
		Left Tilted	0.013	0.016	0.369	0.175	0.405	0.145	0.40	0.74	0.53	
WCDMA	WCDMA II Ant 0	Right Cheek	0.059	0.089	0.247	0.277	0.177	0.099	0.40	0.61	0.41	
		Right Tilted	0.042	0.043	0.209	0.140	0.296	0.075	0.29	0.55	0.33	
		Left Cheek	0.071	0.269	0.369	0.402	0.405	0.283	0.71	1.16	0.72	
		Left Tilted	0.033	0.016	0.369	0.175	0.405	0.145	0.42	0.76	0.55	
	WCDMA IV Ant 0	Right Cheek	0.060	0.089	0.247	0.277	0.177	0.099	0.40	0.61	0.41	
		Right Tilted	0.048	0.043	0.209	0.140	0.296	0.075	0.30	0.56	0.33	
		Left Cheek	0.125	0.269	0.369	0.402	0.405	0.283	0.76	1.22	0.78	
		Left Tilted	0.048	0.016	0.369	0.175	0.405	0.145	0.43	0.77	0.56	
	WCDMA V Ant 0	Right Cheek	0.227	0.089	0.247	0.277	0.177	0.099	0.56	0.78	0.57	
		Right Tilted	0.117	0.043	0.209	0.140	0.296	0.075	0.37	0.63	0.40	
		Left Cheek	0.145	0.269	0.369	0.402	0.405	0.283	0.78	1.24	0.80	
		Left Tilted	0.106	0.016	0.369	0.175	0.405	0.145	0.49	0.83	0.62	
CDMA	CDMA BC0 Ant 0	Right Cheek	0.203	0.089	0.247	0.277	0.177	0.099	0.54	0.76	0.55	
		Right Tilted	0.106	0.043	0.209	0.140	0.296	0.075	0.36	0.62	0.39	
		Left Cheek	0.119	0.269	0.369	0.402	0.405	0.283	0.76	1.21	0.77	
		Left Tilted	0.083	0.016	0.369	0.175	0.405	0.145	0.47	0.81	0.60	
LTE	LTE Band 7 Ant 1	Right Cheek	0.104	0.089	0.247	0.277	0.177	0.099	0.44	0.66	0.45	
		Right Tilted	0.077	0.043	0.209	0.140	0.296	0.075	0.33	0.59	0.36	
		Left Cheek	0.098	0.269	0.369	0.402	0.405	0.283	0.74	1.19	0.75	
		Left Tilted	0.054	0.016	0.369	0.175	0.405	0.145	0.44	0.78	0.57	
	LTE Band 12 Ant 0	Right Cheek	0.185	0.089	0.247	0.277	0.177	0.099	0.52	0.74	0.53	
		Right Tilted	0.082	0.043	0.209	0.140	0.296	0.075	0.33	0.59	0.37	
		Left Cheek	0.153	0.269	0.369	0.402	0.405	0.283	0.79	1.24	0.81	
		Left Tilted	0.119	0.016	0.369	0.175	0.405	0.145	0.50	0.84	0.63	
	LTE Band 25 Ant 0	Right Cheek	0.060	0.089	0.247	0.277	0.177	0.099	0.40	0.61	0.41	
		Right Tilted	0.051	0.043	0.209	0.140	0.296	0.075	0.30	0.56	0.34	
		Left Cheek	0.073	0.269	0.369	0.402	0.405	0.283	0.71	1.16	0.73	
		Left Tilted	0.037	0.016	0.369	0.175	0.405	0.145	0.42	0.76	0.55	
	LTE Band 26 Ant 0	Right Cheek	0.210	0.089	0.247	0.277	0.177	0.099	0.55	0.76	0.56	
		Right Tilted	0.103	0.043	0.209	0.140	0.296	0.075	0.36	0.61	0.39	
		Left Cheek	0.150	0.269	0.369	0.402	0.405	0.283	0.79	1.24	0.80	
		Left Tilted	0.135	0.016	0.369	0.175	0.405	0.145	0.52	0.86	0.65	
	LTE Band 30 Ant 1	Right Cheek	0.073	0.089	0.247	0.277	0.177	0.099	0.41	0.63	0.42	
		Right Tilted	0.050	0.043	0.209	0.140	0.296	0.075	0.30	0.56	0.33	
		Left Cheek	0.042	0.269	0.369	0.402	0.405	0.283	0.68	1.13	0.69	
		Left Tilted	0.036	0.016	0.369	0.175	0.405	0.145	0.42	0.76	0.55	
	LTE Band 38 Ant 1	Right Cheek	0.048	0.089	0.247	0.277	0.177	0.099	0.38	0.60	0.39	
		Right Tilted	0.047	0.043	0.209	0.140	0.296	0.075	0.30	0.56	0.33	
		Left Cheek	0.059	0.269	0.369	0.402	0.405	0.283	0.70	1.15	0.71	
		Left Tilted	0.041	0.016	0.369	0.175	0.405	0.145	0.43	0.77	0.56	
LTE Band	Right Cheek	0.018	0.089	0.247	0.277	0.177	0.099	0.35	0.57	0.36		



**FCC SAR Test Report**

**Report No. : FA111226-01**

41 Ant 1	Right Tilted	0.012	0.043	0.209	0.140	0.296	0.075	0.26	0.52	0.30			
	Left Cheek	0.069	0.269	0.369	0.402	0.405	0.283	0.71	1.16	0.72			
	Left Tilted	0.043	0.016	0.369	0.175	0.405	0.145	0.43	0.77	0.56			
	LTE Band 66 Ant 0	Right Cheek	0.050	0.089	0.247	0.277	0.177	0.099	0.39	0.60	0.40		
		Right Tilted	0.036	0.043	0.209	0.140	0.296	0.075	0.29	0.55	0.32		
		Left Cheek	0.066	0.269	0.369	0.402	0.405	0.283	0.70	1.16	0.72		
	LTE Band 71 Ant 0	Left Tilted	0.031	0.016	0.369	0.175	0.405	0.145	0.42	0.76	0.55		
		Right Cheek	0.126	0.089	0.247	0.277	0.177	0.099	0.46	0.68	0.47		
		Right Tilted	0.065	0.043	0.209	0.140	0.296	0.075	0.32	0.58	0.35		
	5G NR	n5 Ant 0	Left Cheek	0.099	0.269	0.369	0.402	0.405	0.283	0.74	1.19	0.75	
			Left Tilted	0.061	0.016	0.369	0.175	0.405	0.145	0.45	0.79	0.58	
			Right Cheek	0.185	0.089	0.247	0.277	0.177	0.099	0.52	0.74	0.53	
Right Tilted			0.119	0.043	0.209	0.140	0.296	0.075	0.37	0.63	0.40		
n7 Ant 3		Left Cheek	0.120	0.269	0.369	0.402	0.405	0.283	0.76	1.21	0.77		
		Left Tilted	0.093	0.016	0.369	0.175	0.405	0.145	0.48	0.82	0.61		
		Right Cheek	1.005	0.089	0.247	0.277	0.177	0.099	1.34	1.56	1.35		
		Right Tilted	0.323	0.043	0.209	0.140	0.296	0.075	0.58	0.83	0.61		
n25 Ant 2		Left Cheek	0.320	0.269	0.369	0.402	0.405	0.283	0.96	1.41	0.97		
		Left Tilted	0.213	0.016	0.369	0.175	0.405	0.145	0.60	0.94	0.73		
		Right Cheek	0.081	0.089	0.247	0.277	0.177	0.099	0.42	0.63	0.43		
		Right Tilted	0.077	0.043	0.209	0.140	0.296	0.075	0.33	0.59	0.36		
n66 Ant 2	Left Cheek	0.131	0.269	0.369	0.402	0.405	0.283	0.77	1.22	0.78			
	Left Tilted	0.015	0.016	0.369	0.175	0.405	0.145	0.40	0.74	0.53			
	Right Cheek	0.059	0.089	0.247	0.277	0.177	0.099	0.40	0.61	0.41			
	Right Tilted	0.027	0.043	0.209	0.140	0.296	0.075	0.28	0.54	0.31			
n71 Ant 0	Left Cheek	0.109	0.269	0.369	0.402	0.405	0.283	0.75	1.20	0.76			
	Left Tilted	0.064	0.016	0.369	0.175	0.405	0.145	0.45	0.79	0.58			
	Right Cheek	0.164	0.089	0.247	0.277	0.177	0.099	0.50	0.72	0.51			
	Right Tilted	0.102	0.043	0.209	0.140	0.296	0.075	0.35	0.61	0.39			
n41 Ant 1	Left Cheek	0.105	0.269	0.369	0.402	0.405	0.283	0.74	1.20	0.76			
	Left Tilted	0.068	0.016	0.369	0.175	0.405	0.145	0.45	0.79	0.58			
	Right Cheek	0.069	0.089	0.247	0.277	0.177	0.099	0.41	0.62	0.42			
	Right Tilted	0.063	0.043	0.209	0.140	0.296	0.075	0.32	0.57	0.35			
n41 Ant 3	Left Cheek	0.078	0.269	0.369	0.402	0.405	0.283	0.72	1.17	0.73			
	Left Tilted	0.038	0.016	0.369	0.175	0.405	0.145	0.42	0.76	0.55			
	Right Cheek	0.908	0.089	0.247	0.277	0.177	0.099	1.24	1.46	1.25			
	Right Tilted	0.294	0.043	0.209	0.140	0.296	0.075	0.55	0.81	0.58			
n77 Ant 2	Left Cheek	0.549	0.269	0.369	0.402	0.405	0.283	1.19	1.64	1.20	1		
	Left Tilted	0.115	0.016	0.369	0.175	0.405	0.145	0.50	0.84	0.63			
	Right Cheek	0.314	0.089	0.247	0.277	0.177	0.099	0.65	0.87	0.66			
	Right Tilted	0.213	0.043	0.209	0.140	0.296	0.075	0.47	0.72	0.50			
n77 Ant 4	Left Cheek	0.372	0.269	0.369	0.402	0.405	0.283	1.01	1.46	1.02			
	Left Tilted	0.113	0.016	0.369	0.175	0.405	0.145	0.50	0.84	0.63			
	Right Cheek	0.697	0.089	0.247	0.277	0.177	0.099	1.03	1.25	1.04			
	Right Tilted	0.434	0.043	0.209	0.140	0.296	0.075	0.69	0.95	0.72			
n77 Ant 4	Left Cheek	0.194	0.269	0.369	0.402	0.405	0.283	0.83	1.28	0.85			
	Left Tilted	0.213	0.016	0.369	0.175	0.405	0.145	0.60	0.94	0.73			



EN-DC

WWAN Band	Exposure Position	1	2	3	5	6	8	9	1+2+3+9	1+5+6+8+9	1+3+8+9	Case No	
		WWAN	2.4GHz WLAN Ant 7	2.4GHz WLAN Ant 6	5GHz WLAN Ant 7	5GHz WLAN Ant 6	Bluetooth Ant 7	FR1 n2 Ant 2	Summed	Summed	Summed		
		1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)		
NSA	LTE Band 5 Ant 0	Right Cheek	0.210	0.089	0.247	0.277	0.177	0.099	0.081	0.63	0.84	0.64	
		Right Tilted	0.103	0.043	0.209	0.140	0.296	0.075	0.077	0.43	0.69	0.46	
		Left Cheek	0.150	0.269	0.369	0.402	0.405	0.283	0.131	0.92	1.37	0.93	
		Left Tilted	0.135	0.016	0.369	0.175	0.405	0.145	0.015	0.54	0.88	0.66	
	LTE Band 12 Ant 0	Right Cheek	0.185	0.089	0.247	0.277	0.177	0.099	0.081	0.60	0.82	0.61	
		Right Tilted	0.082	0.043	0.209	0.140	0.296	0.075	0.077	0.41	0.67	0.44	
		Left Cheek	0.153	0.269	0.369	0.402	0.405	0.283	0.131	0.92	1.37	0.94	
		Left Tilted	0.119	0.016	0.369	0.175	0.405	0.145	0.015	0.52	0.86	0.65	
	LTE Band 30 Ant 1	Right Cheek	0.073	0.089	0.247	0.277	0.177	0.099	0.081	0.49	0.71	0.50	
		Right Tilted	0.050	0.043	0.209	0.140	0.296	0.075	0.077	0.38	0.64	0.41	
		Left Cheek	0.042	0.269	0.369	0.402	0.405	0.283	0.131	0.81	1.26	0.83	
		Left Tilted	0.036	0.016	0.369	0.175	0.405	0.145	0.015	0.44	0.78	0.57	
	LTE Band 66 Ant 0	Right Cheek	0.050	0.089	0.247	0.277	0.177	0.099	0.081	0.47	0.68	0.48	
		Right Tilted	0.036	0.043	0.209	0.140	0.296	0.075	0.077	0.37	0.62	0.40	
		Left Cheek	0.066	0.269	0.369	0.402	0.405	0.283	0.131	0.84	1.29	0.85	
		Left Tilted	0.031	0.016	0.369	0.175	0.405	0.145	0.015	0.43	0.77	0.56	
WWAN Band	Exposure Position	1	2	3	5	6	8	9	1+2+3+9	1+5+6+8+9	1+3+8+9	Case No	
		WWAN	2.4GHz WLAN Ant 7	2.4GHz WLAN Ant 6	5GHz WLAN Ant 7	5GHz WLAN Ant 6	Bluetooth Ant 7	FR1 n5 Ant 0	Summed	Summed	Summed		
		1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)		
NSA	LTE Band 2 Ant 0	Right Cheek	0.060	0.089	0.247	0.277	0.177	0.099	0.185	0.58	0.80	0.59	
		Right Tilted	0.051	0.043	0.209	0.140	0.296	0.075	0.119	0.42	0.68	0.45	
		Left Cheek	0.073	0.269	0.369	0.402	0.405	0.283	0.120	0.83	1.28	0.85	
		Left Tilted	0.037	0.016	0.369	0.175	0.405	0.145	0.093	0.52	0.86	0.64	
	LTE Band 30 Ant 1	Right Cheek	0.073	0.089	0.247	0.277	0.177	0.099	0.185	0.59	0.81	0.60	
		Right Tilted	0.050	0.043	0.209	0.140	0.296	0.075	0.119	0.42	0.68	0.45	
		Left Cheek	0.042	0.269	0.369	0.402	0.405	0.283	0.120	0.80	1.25	0.81	
		Left Tilted	0.036	0.016	0.369	0.175	0.405	0.145	0.093	0.51	0.85	0.64	
	LTE Band 66 Ant 0	Right Cheek	0.050	0.089	0.247	0.277	0.177	0.099	0.185	0.57	0.79	0.58	
		Right Tilted	0.036	0.043	0.209	0.140	0.296	0.075	0.119	0.41	0.67	0.44	
		Left Cheek	0.066	0.269	0.369	0.402	0.405	0.283	0.120	0.82	1.28	0.84	
		Left Tilted	0.031	0.016	0.369	0.175	0.405	0.145	0.093	0.51	0.85	0.64	
	WWAN Band	Exposure Position	1	2	3	5	6	8	9	1+2+3+9	1+5+6+8+9	1+3+8+9	Case No
			WWAN	2.4GHz WLAN Ant 7	2.4GHz WLAN Ant 6	5GHz WLAN Ant 7	5GHz WLAN Ant 6	Bluetooth Ant 7	FR1 n25 Ant 2	Summed	Summed	Summed	
			1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	
	NSA	LTE Band 12 Ant 0	Right Cheek	0.185	0.089	0.247	0.277	0.177	0.099	0.081	0.60	0.82	0.61
Right Tilted			0.082	0.043	0.209	0.140	0.296	0.075	0.077	0.41	0.67	0.44	
Left Cheek			0.153	0.269	0.369	0.402	0.405	0.283	0.131	0.92	1.37	0.94	
Left Tilted			0.119	0.016	0.369	0.175	0.405	0.145	0.015	0.52	0.86	0.65	
LTE Band 66 Ant 0		Right Cheek	0.050	0.089	0.247	0.277	0.177	0.099	0.081	0.47	0.68	0.48	
		Right Tilted	0.036	0.043	0.209	0.140	0.296	0.075	0.077	0.37	0.62	0.40	
		Left Cheek	0.066	0.269	0.369	0.402	0.405	0.283	0.131	0.84	1.29	0.85	
		Left Tilted	0.031	0.016	0.369	0.175	0.405	0.145	0.015	0.43	0.77	0.56	
WWAN Band	Exposure Position	1	2	3	5	6	8	9	1+2+3+9	1+5+6+8+9	1+3+8+9	Case No	
		WWAN	2.4GHz WLAN Ant 7	2.4GHz WLAN Ant 6	5GHz WLAN Ant 7	5GHz WLAN Ant 6	Bluetooth Ant 7	FR1 n66 Ant 2	Summed	Summed	Summed		
		1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)		
NSA LTE Band 2	Right Cheek	0.060	0.089	0.247	0.277	0.177	0.099	0.059	0.46	0.67	0.47		



Band	Ant	Position	1	2	3	5	6	8	9	1+2+3+9	1+5+6+8+9	1+3+8+9	Case No	
			WWAN	2.4GHz WLAN Ant 7	2.4GHz WLAN Ant 6	5GHz WLAN Ant 7	5GHz WLAN Ant 6	Bluetooth Ant 7	FR1 n71 Ant 0	Summed	Summed	Summed		
			1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)		
LTE	Ant 0	Right Tilted	0.051	0.043	0.209	0.140	0.296	0.075	0.027	0.33	0.59	0.36		
		Left Cheek	0.073	0.269	0.369	0.402	0.405	0.283	0.109	0.82	1.27	0.83		
		Left Tilted	0.037	0.016	0.369	0.175	0.405	0.145	0.064	0.49	0.83	0.62		
	LTE Band 5	Ant 0	Right Cheek	0.210	0.089	0.247	0.277	0.177	0.099	0.059	0.61	0.82	0.62	
			Right Tilted	0.103	0.043	0.209	0.140	0.296	0.075	0.027	0.38	0.64	0.41	
			Left Cheek	0.150	0.269	0.369	0.402	0.405	0.283	0.109	0.90	1.35	0.91	
	LTE Band 12	Ant 0	Left Tilted	0.135	0.016	0.369	0.175	0.405	0.145	0.064	0.58	0.92	0.71	
			Right Cheek	0.185	0.089	0.247	0.277	0.177	0.099	0.059	0.58	0.80	0.59	
			Right Tilted	0.082	0.043	0.209	0.140	0.296	0.075	0.027	0.36	0.62	0.39	
		Left Cheek	0.153	0.269	0.369	0.402	0.405	0.283	0.109	0.90	1.35	0.91		
		Left Tilted	0.119	0.016	0.369	0.175	0.405	0.145	0.064	0.57	0.91	0.70		
NSA	LTE Band 2	Ant 0	Right Cheek	0.060	0.089	0.247	0.277	0.177	0.099	0.164	0.56	0.78	0.57	
			Right Tilted	0.051	0.043	0.209	0.140	0.296	0.075	0.102	0.41	0.66	0.44	
			Left Cheek	0.073	0.269	0.369	0.402	0.405	0.283	0.105	0.82	1.27	0.83	
			Left Tilted	0.037	0.016	0.369	0.175	0.405	0.145	0.068	0.49	0.83	0.62	
	LTE Band 66	Ant 0	Right Cheek	0.050	0.089	0.247	0.277	0.177	0.099	0.164	0.55	0.77	0.56	
			Right Tilted	0.036	0.043	0.209	0.140	0.296	0.075	0.102	0.39	0.65	0.42	
			Left Cheek	0.066	0.269	0.369	0.402	0.405	0.283	0.105	0.81	1.26	0.82	
			Left Tilted	0.031	0.016	0.369	0.175	0.405	0.145	0.068	0.48	0.82	0.61	
	WWAN Band	Exposure Position	1	2	3	5	6	8	9	1+2+3+9	1+5+6+8+9	1+3+8+9	Case No	
WWAN			2.4GHz WLAN Ant 7	2.4GHz WLAN Ant 6	5GHz WLAN Ant 7	5GHz WLAN Ant 6	Bluetooth Ant 7	FR1 n41 Ant 1	Summed	Summed	Summed			
1g SAR (W/kg)			1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)			
LTE Band 2		Ant 0	Right Cheek	0.060	0.089	0.247	0.277	0.177	0.099	0.069	0.47	0.68	0.48	
			Right Tilted	0.051	0.043	0.209	0.140	0.296	0.075	0.063	0.37	0.63	0.40	
			Left Cheek	0.073	0.269	0.369	0.402	0.405	0.283	0.078	0.79	1.24	0.80	
			Left Tilted	0.037	0.016	0.369	0.175	0.405	0.145	0.038	0.46	0.80	0.59	
LTE Band 25		Ant 0	Right Cheek	0.060	0.089	0.247	0.277	0.177	0.099	0.069	0.47	0.68	0.48	
			Right Tilted	0.051	0.043	0.209	0.140	0.296	0.075	0.063	0.37	0.63	0.40	
	Left Cheek		0.073	0.269	0.369	0.402	0.405	0.283	0.078	0.79	1.24	0.80		
	Left Tilted		0.037	0.016	0.369	0.175	0.405	0.145	0.038	0.46	0.80	0.59		
LTE Band 66	Ant 0	Right Cheek	0.050	0.089	0.247	0.277	0.177	0.099	0.069	0.46	0.67	0.47		
		Right Tilted	0.036	0.043	0.209	0.140	0.296	0.075	0.063	0.35	0.61	0.38		
		Left Cheek	0.066	0.269	0.369	0.402	0.405	0.283	0.078	0.78	1.23	0.80		
		Left Tilted	0.031	0.016	0.369	0.175	0.405	0.145	0.038	0.45	0.79	0.58		
NSA	LTE Band 2	Ant 0	Right Cheek	0.060	0.089	0.247	0.277	0.177	0.099	0.491	0.89	1.10	0.90	
			Right Tilted	0.051	0.043	0.209	0.140	0.296	0.075	0.146	0.45	0.71	0.48	
			Left Cheek	0.073	0.269	0.369	0.402	0.405	0.283	0.239	0.95	1.40	0.96	
	LTE Band 25	Ant 0	Left Tilted	0.037	0.016	0.369	0.175	0.405	0.145	0.074	0.50	0.84	0.63	
			Right Cheek	0.060	0.089	0.247	0.277	0.177	0.099	0.491	0.89	1.10	0.90	
			Right Tilted	0.051	0.043	0.209	0.140	0.296	0.075	0.146	0.45	0.71	0.48	
	LTE Band 66	Ant 0	Left Cheek	0.073	0.269	0.369	0.402	0.405	0.283	0.239	0.95	1.40	0.96	
			Left Tilted	0.037	0.016	0.369	0.175	0.405	0.145	0.074	0.50	0.84	0.63	
			Right Cheek	0.050	0.089	0.247	0.277	0.177	0.099	0.491	0.88	1.09	0.89	
		Right Tilted	0.036	0.043	0.209	0.140	0.296	0.075	0.146	0.43	0.69	0.47		
		Left Cheek	0.066	0.269	0.369	0.402	0.405	0.283	0.239	0.94	1.40	0.96		
		Left Tilted	0.031	0.016	0.369	0.175	0.405	0.145	0.074	0.49	0.83	0.62		



WWAN Band	Exposure Position	1	2	3	5	6	8	9	1+2+3+9	1+5+6+8+9	1+3+8+9	Case No	
		WWAN	2.4GHz WLAN Ant 7	2.4GHz WLAN Ant 6	5GHz WLAN Ant 7	5GHz WLAN Ant 6	Bluetooth Ant 7	FR1 n78 Ant 2	Summed	Summed	Summed		
		1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)		
NSA	LTE Band 2 Ant 0	Right Cheek	0.060	0.089	0.247	0.277	0.177	0.099	0.314	0.71	0.93	0.72	
		Right Tilted	0.051	0.043	0.209	0.140	0.296	0.075	0.213	0.52	0.78	0.55	
		Left Cheek	0.073	0.269	0.369	0.402	0.405	0.283	0.372	1.08	1.54	1.10	
		Left Tilted	0.037	0.016	0.369	0.175	0.405	0.145	0.113	0.54	0.88	0.66	
	LTE Band 4 Ant 0	Right Cheek	0.050	0.089	0.247	0.277	0.177	0.099	0.314	0.70	0.92	0.71	
		Right Tilted	0.036	0.043	0.209	0.140	0.296	0.075	0.213	0.50	0.76	0.53	
		Left Cheek	0.066	0.269	0.369	0.402	0.405	0.283	0.372	1.08	1.53	1.09	
		Left Tilted	0.031	0.016	0.369	0.175	0.405	0.145	0.113	0.53	0.87	0.66	
	LTE Band 5 Ant 0	Right Cheek	0.210	0.089	0.247	0.277	0.177	0.099	0.314	0.86	1.08	0.87	
		Right Tilted	0.103	0.043	0.209	0.140	0.296	0.075	0.213	0.57	0.83	0.60	
		Left Cheek	0.150	0.269	0.369	0.402	0.405	0.283	0.372	1.16	1.61	1.17	2
		Left Tilted	0.135	0.016	0.369	0.175	0.405	0.145	0.113	0.63	0.97	0.76	
	LTE Band 7 Ant 1	Right Cheek	0.104	0.089	0.247	0.277	0.177	0.099	0.314	0.75	0.97	0.76	
		Right Tilted	0.077	0.043	0.209	0.140	0.296	0.075	0.213	0.54	0.80	0.57	
		Left Cheek	0.098	0.269	0.369	0.402	0.405	0.283	0.372	1.11	1.56	1.12	
		Left Tilted	0.054	0.016	0.369	0.175	0.405	0.145	0.113	0.55	0.89	0.68	
	LTE Band 38 Ant 1	Right Cheek	0.048	0.089	0.247	0.277	0.177	0.099	0.314	0.70	0.92	0.71	
		Right Tilted	0.047	0.043	0.209	0.140	0.296	0.075	0.213	0.51	0.77	0.54	
		Left Cheek	0.059	0.269	0.369	0.402	0.405	0.283	0.372	1.07	1.52	1.08	
		Left Tilted	0.041	0.016	0.369	0.175	0.405	0.145	0.113	0.54	0.88	0.67	
WWAN Band	Exposure Position	1	2	3	5	6	8	9	1+2+3+9	1+5+6+8+9	1+3+8+9	Case No	
		WWAN	2.4GHz WLAN Ant 7	2.4GHz WLAN Ant 6	5GHz WLAN Ant 7	5GHz WLAN Ant 6	Bluetooth Ant 7	FR1 n78 Ant 4	Summed	Summed	Summed		
		1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)		
NSA	LTE Band 2 Ant 0	Right Cheek	0.060	0.089	0.247	0.277	0.177	0.099	0.697	1.09	1.31	1.10	
		Right Tilted	0.051	0.043	0.209	0.140	0.296	0.075	0.434	0.74	1.00	0.77	
		Left Cheek	0.073	0.269	0.369	0.402	0.405	0.283	0.194	0.91	1.36	0.92	
		Left Tilted	0.037	0.016	0.369	0.175	0.405	0.145	0.213	0.64	0.98	0.76	
	LTE Band 4 Ant 0	Right Cheek	0.050	0.089	0.247	0.277	0.177	0.099	0.697	1.08	1.30	1.09	
		Right Tilted	0.036	0.043	0.209	0.140	0.296	0.075	0.434	0.72	0.98	0.75	
		Left Cheek	0.066	0.269	0.369	0.402	0.405	0.283	0.194	0.90	1.35	0.91	
		Left Tilted	0.031	0.016	0.369	0.175	0.405	0.145	0.213	0.63	0.97	0.76	
	LTE Band 5 Ant 0	Right Cheek	0.210	0.089	0.247	0.277	0.177	0.099	0.697	1.24	1.46	1.25	
		Right Tilted	0.103	0.043	0.209	0.140	0.296	0.075	0.434	0.79	1.05	0.82	
		Left Cheek	0.150	0.269	0.369	0.402	0.405	0.283	0.194	0.98	1.43	1.00	
		Left Tilted	0.135	0.016	0.369	0.175	0.405	0.145	0.213	0.73	1.07	0.86	
	LTE Band 7 Ant 1	Right Cheek	0.104	0.089	0.247	0.277	0.177	0.099	0.697	1.14	1.35	1.15	
		Right Tilted	0.077	0.043	0.209	0.140	0.296	0.075	0.434	0.76	1.02	0.80	
		Left Cheek	0.098	0.269	0.369	0.402	0.405	0.283	0.194	0.93	1.38	0.94	
		Left Tilted	0.054	0.016	0.369	0.175	0.405	0.145	0.213	0.65	0.99	0.78	
	LTE Band 38 Ant 1	Right Cheek	0.048	0.089	0.247	0.277	0.177	0.099	0.697	1.08	1.30	1.09	
		Right Tilted	0.047	0.043	0.209	0.140	0.296	0.075	0.434	0.73	0.99	0.77	
		Left Cheek	0.059	0.269	0.369	0.402	0.405	0.283	0.194	0.89	1.34	0.91	
		Left Tilted	0.041	0.016	0.369	0.175	0.405	0.145	0.213	0.64	0.98	0.77	



5G NR UL MIMO

WWAN Band		Exposure Position	1	2	3	5	6	8	9	1+2+3+9	1+5+6+8+9	1+3+8+9	Case No
			WWAN	2.4GHz WLAN Ant 7	2.4GHz WLAN Ant 6	5GHz WLAN Ant 7	5GHz WLAN Ant 6	Bluetooth Ant 7	FR1 n41 Ant 3	Summed	Summed	Summed	
			1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	
5G NR UL MIMO	n41 Ant 1	Right Cheek	0.069	0.089	0.247	0.277	0.177	0.099	0.908	1.31	1.53	1.32	
		Right Tilted	0.063	0.043	0.209	0.140	0.296	0.075	0.294	0.61	0.87	0.64	
		Left Cheek	0.078	0.269	0.369	0.402	0.405	0.283	0.549	1.27	<b>1.72</b>	1.28	<b>3</b>
		Left Tilted	0.038	0.016	0.369	0.175	0.405	0.145	0.115	0.54	0.88	0.67	
WWAN Band		Exposure Position	1	2	3	5	6	8	9	1+2+3+9	1+5+6+8+9	1+3+8+9	Case No
			WWAN	2.4GHz WLAN Ant 7	2.4GHz WLAN Ant 6	5GHz WLAN Ant 7	5GHz WLAN Ant 6	Bluetooth Ant 7	FR1 n77(n78) Ant 4	Summed	Summed	Summed	
			1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	
5G NR UL MIMO	n77(n78) Ant 2	Right Cheek	0.314	0.089	0.247	0.277	0.177	0.099	0.697	1.35	1.56	1.36	
		Right Tilted	0.213	0.043	0.209	0.140	0.296	0.075	0.434	0.90	1.16	0.93	
		Left Cheek	0.372	0.269	0.369	0.402	0.405	0.283	0.194	1.20	<b>1.66</b>	1.22	<b>4</b>
		Left Tilted	0.113	0.016	0.369	0.175	0.405	0.145	0.213	0.71	1.05	0.84	





16.2 Hotspot Exposure Conditions

WWAN Band	Exposure Position	1	2	3	5	6	8	1+2+3	1+5+6+8	1+3+8	
		WWAN	2.4GHz WLAN Ant 7	2.4GHz WLAN Ant 6	5GHz WLAN Ant 7	5GHz WLAN Ant 6	Bluetooth Ant 7	Summed	Summed	Summed	
		1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	
GSM	GSM850 Ant 0	Front	0.591	0.101	0.096	0.081	0.247	0.069	0.79	0.99	0.76
		Back	0.423	0.099	0.098	0.075	0.240	0.083	0.62	0.82	0.60
		Left side	0.090						0.09	0.09	0.09
		Right side	0.325	0.230	0.306	0.159	0.339	0.029	0.86	0.85	0.66
		Top side			0.091		0.198		0.09	0.20	0.09
	Bottom side	0.557						0.56	0.56	0.56	
	GSM1900 Ant 0	Front	0.521	0.101	0.096	0.081	0.247	0.069	0.72	0.92	0.69
		Back	0.444	0.099	0.098	0.075	0.240	0.083	0.64	0.84	0.63
		Left side	0.055						0.06	0.06	0.06
		Right side	0.197	0.230	0.306	0.159	0.339	0.029	0.73	0.72	0.53
Top side				0.091		0.198		0.09	0.20	0.09	
Bottom side	1.181						1.18	1.18	1.18		
WCDMA	WCDMA II Ant 0	Front	0.903	0.101	0.096	0.081	0.247	0.069	1.10	1.30	1.07
		Back	0.722	0.099	0.098	0.075	0.240	0.083	0.92	1.12	0.90
		Left side	0.065						0.07	0.07	0.07
		Right side	0.162	0.230	0.306	0.159	0.339	0.029	0.70	0.69	0.50
		Top side			0.091		0.198		0.09	0.20	0.09
	Bottom side	1.126						1.13	1.13	1.13	
	WCDMA IV Ant 0	Front	0.781	0.101	0.096	0.081	0.247	0.069	0.98	1.18	0.95
		Back	1.101	0.099	0.098	0.075	0.240	0.083	1.30	1.50	1.28
		Left side	0.061						0.06	0.06	0.06
		Right side	0.142	0.230	0.306	0.159	0.339	0.029	0.68	0.67	0.48
		Top side			0.091		0.198		0.09	0.20	0.09
	Bottom side	0.957						0.96	0.96	0.96	
	WCDMA V Ant 0	Front	0.517	0.101	0.096	0.081	0.247	0.069	0.71	0.91	0.68
		Back	0.400	0.099	0.098	0.075	0.240	0.083	0.60	0.80	0.58
		Left side	0.078						0.08	0.08	0.08
		Right side	0.263	0.230	0.306	0.159	0.339	0.029	0.80	0.79	0.60
		Top side			0.091		0.198		0.09	0.20	0.09
	Bottom side	0.520						0.52	0.52	0.52	
	CDMA BC0 Ant 0	Front	0.527	0.101	0.096	0.081	0.247	0.069	0.72	0.92	0.69
		Back	0.383	0.099	0.098	0.075	0.240	0.083	0.58	0.78	0.56
Left side		0.083						0.08	0.08	0.08	
Right side		0.268	0.230	0.306	0.159	0.339	0.029	0.80	0.80	0.60	
Top side				0.091		0.198		0.09	0.20	0.09	
Bottom side	0.520						0.52	0.52	0.52		
LTE	LTE Band 7 Ant 1	Front	0.543	0.101	0.096	0.081	0.247	0.069	0.74	0.94	0.71
		Back	0.409	0.099	0.098	0.075	0.240	0.083	0.61	0.81	0.59
		Left side	0.543						0.54	0.54	0.54
		Right side		0.230	0.306	0.159	0.339	0.029	0.54	0.53	0.34
		Top side			0.091		0.198		0.09	0.20	0.09
	Bottom side	1.138						1.14	1.14	1.14	
	LTE Band 12 Ant 0	Front	0.429	0.101	0.096	0.081	0.247	0.069	0.63	0.83	0.59
		Back	0.329	0.099	0.098	0.075	0.240	0.083	0.53	0.73	0.51
		Left side	0.145						0.15	0.15	0.15
		Right side	0.353	0.230	0.306	0.159	0.339	0.029	0.89	0.88	0.69
		Top side			0.091		0.198		0.09	0.20	0.09
	Bottom side	0.298						0.30	0.30	0.30	
	LTE Band 25 Ant 0	Front	0.828	0.101	0.096	0.081	0.247	0.069	1.03	1.23	0.99
Back		0.765	0.099	0.098	0.075	0.240	0.083	0.96	1.16	0.95	



		Left side	0.014						0.01	0.01	0.01
		Right side	0.136	0.230	0.306	0.159	0.339	0.029	0.67	0.66	0.47
		Top side			0.091		0.198		0.09	0.20	0.09
		Bottom side	0.912						0.91	0.91	0.91
	LTE Band 26 Ant 0	Front	0.382	0.101	0.096	0.081	0.247	0.069	0.58	0.78	0.55
		Back	0.273	0.099	0.098	0.075	0.240	0.083	0.47	0.67	0.45
		Left side	0.066						0.07	0.07	0.07
		Right side	0.256	0.230	0.306	0.159	0.339	0.029	0.79	0.78	0.59
		Top side			0.091		0.198		0.09	0.20	0.09
	LTE Band 30 Ant 1	Bottom side	0.298						0.30	0.30	0.30
		Front	0.536	0.101	0.096	0.081	0.247	0.069	0.73	0.93	0.70
		Back	0.449	0.099	0.098	0.075	0.240	0.083	0.65	0.85	0.63
		Left side	0.580						0.58	0.58	0.58
		Right side		0.230	0.306	0.159	0.339	0.029	0.54	0.53	0.34
	LTE Band 38 Ant 1	Top side			0.091		0.198		0.09	0.20	0.09
		Bottom side	0.961						0.96	0.96	0.96
		Front	0.495	0.101	0.096	0.081	0.247	0.069	0.69	0.89	0.66
		Back	0.387	0.099	0.098	0.075	0.240	0.083	0.58	0.79	0.57
		Left side	0.514						0.51	0.51	0.51
	LTE Band 41 Ant 1	Right side		0.230	0.306	0.159	0.339	0.029	0.54	0.53	0.34
		Top side			0.091		0.198		0.09	0.20	0.09
		Bottom side	0.969						0.97	0.97	0.97
		Front	0.325	0.101	0.096	0.081	0.247	0.069	0.52	0.72	0.49
		Back	0.247	0.099	0.098	0.075	0.240	0.083	0.44	0.65	0.43
	LTE Band 66 Ant 0	Left side	0.500						0.50	0.50	0.50
		Right side		0.230	0.306	0.159	0.339	0.029	0.54	0.53	0.34
		Top side			0.091		0.198		0.09	0.20	0.09
		Bottom side	0.972						0.97	0.97	0.97
Front		0.677	0.101	0.096	0.081	0.247	0.069	0.87	1.07	0.84	
LTE Band 71 Ant 0	Back	0.594	0.099	0.098	0.075	0.240	0.083	0.79	0.99	0.78	
	Left side	0.078						0.08	0.08	0.08	
	Right side	0.140	0.230	0.306	0.159	0.339	0.029	0.68	0.67	0.48	
	Top side			0.091		0.198		0.09	0.20	0.09	
	Bottom side	0.185						0.19	0.19	0.19	
5G NR	n5 Ant 0	Front	0.188	0.101	0.096	0.081	0.247	0.069	0.39	0.59	0.35
		Back	0.193	0.099	0.098	0.075	0.240	0.083	0.39	0.59	0.37
		Left side	0.085						0.09	0.09	0.09
		Right side	0.223	0.230	0.306	0.159	0.339	0.029	0.76	0.75	0.56
		Top side			0.091		0.198		0.09	0.20	0.09
		Bottom side	0.185						0.19	0.19	0.19
	n7 Ant 3	Front	0.375	0.101	0.096	0.081	0.247	0.069	0.57	0.77	0.54
		Back	0.402	0.099	0.098	0.075	0.240	0.083	0.60	0.80	0.58
		Left side	0.070						0.07	0.07	0.07
		Right side	0.192	0.230	0.306	0.159	0.339	0.029	0.73	0.72	0.53
		Top side			0.091		0.198		0.09	0.20	0.09
		Bottom side	0.302						0.30	0.30	0.30
	n25 Ant 2	Front	0.638	0.101	0.096	0.081	0.247	0.069	0.84	1.04	0.80
		Back	0.425	0.099	0.098	0.075	0.240	0.083	0.62	0.82	0.61
		Left side	0.910						0.91	0.91	0.91
		Right side		0.230	0.306	0.159	0.339	0.029	0.54	0.53	0.34
		Top side			0.091		0.198		0.09	0.20	0.09
		Bottom side							0.00	0.00	0.00
	n25 Ant 2	Front	0.483	0.101	0.096	0.081	0.247	0.069	0.68	0.88	0.65
		Back	0.554	0.099	0.098	0.075	0.240	0.083	0.75	0.95	0.74
		Left side	0.935						0.94	0.94	0.94
		Right side		0.230	0.306	0.159	0.339	0.029	0.54	0.53	0.34



**FCC SAR Test Report**

**Report No. : FA111226-01**

		Top side			0.091		0.198		0.09	0.20	0.09
		Bottom side							0.00	0.00	0.00
n66 Ant 2		Front	0.204	0.101	0.096	0.081	0.247	0.069	0.40	0.60	0.37
		Back	0.203	0.099	0.098	0.075	0.240	0.083	0.40	0.60	0.38
		Left side	0.547						0.55	0.55	0.55
		Right side		0.230	0.306	0.159	0.339	0.029	0.54	0.53	0.34
		Top side			0.091		0.198		0.09	0.20	0.09
		Bottom side							0.00	0.00	0.00
n71 Ant 0		Front	0.268	0.101	0.096	0.081	0.247	0.069	0.47	0.67	0.43
		Back	0.241	0.099	0.098	0.075	0.240	0.083	0.44	0.64	0.42
		Left side	0.110						0.11	0.11	0.11
		Right side	0.246	0.230	0.306	0.159	0.339	0.029	0.78	0.77	0.58
		Top side			0.091		0.198		0.09	0.20	0.09
	Bottom side	0.220						0.22	0.22	0.22	
n41 Ant 1		Front	0.390	0.101	0.096	0.081	0.247	0.069	0.59	0.79	0.56
		Back	0.313	0.099	0.098	0.075	0.240	0.083	0.51	0.71	0.49
		Left side	0.537						0.54	0.54	0.54
		Right side		0.230	0.306	0.159	0.339	0.029	0.54	0.53	0.34
		Top side			0.091		0.198		0.09	0.20	0.09
	Bottom side	1.062						1.06	1.06	1.06	
n41 Ant 3		Front	0.614	0.101	0.096	0.081	0.247	0.069	0.81	1.01	0.78
		Back	0.458	0.099	0.098	0.075	0.240	0.083	0.66	0.86	0.64
		Left side	0.923						0.92	0.92	0.92
		Right side		0.230	0.306	0.159	0.339	0.029	0.54	0.53	0.34
		Top side			0.091		0.198		0.09	0.20	0.09
	Bottom side							0.00	0.00	0.00	
n77 Ant 2		Front	0.885	0.101	0.096	0.081	0.247	0.069	1.08	1.28	1.05
		Back	0.765	0.099	0.098	0.075	0.240	0.083	0.96	1.16	0.95
		Left side	0.951						0.95	0.95	0.95
		Right side		0.230	0.306	0.159	0.339	0.029	0.54	0.53	0.34
		Top side			0.091		0.198		0.09	0.20	0.09
	Bottom side							0.00	0.00	0.00	
n77 Ant 4		Front	0.717	0.101	0.096	0.081	0.247	0.069	0.91	1.11	0.88
		Back	0.891	0.099	0.098	0.075	0.240	0.083	1.09	1.29	1.07
		Left side	1.043						1.04	1.04	1.04
		Right side		0.230	0.306	0.159	0.339	0.029	0.54	0.53	0.34
		Top side	0.232		0.091		0.198		0.32	0.43	0.32
	Bottom side							0.00	0.00	0.00	



EN-DC

WWAN Band	Exposure Position	1	2	3	5	6	8	9	1+2+3+9	1+5+6+8+9	1+3+8+9	
		WWAN	2.4GHz WLAN Ant 7	2.4GHz WLAN Ant 6	5GHz WLAN Ant 7	5GHz WLAN Ant 6	Bluetooth Ant 7	FR1 n2 Ant 2	Summed	Summed	Summed	
		1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	
NSA	LTE Band 5 Ant 0	Front	0.382	0.101	0.096	0.081	0.247	0.069	0.483	1.06	1.26	1.03
		Back	0.273	0.099	0.098	0.075	0.240	0.083	0.554	1.02	1.23	1.01
		Left side	0.066						0.593	0.66	0.66	0.66
		Right side	0.256	0.230	0.306	0.159	0.339	0.029		0.79	0.78	0.59
		Top side			0.091		0.198			0.09	0.20	0.09
		Bottom side	0.298							0.30	0.30	0.30
	LTE Band 12 Ant 0	Front	0.429	0.101	0.096	0.081	0.247	0.069	0.483	1.11	1.31	1.08
		Back	0.329	0.099	0.098	0.075	0.240	0.083	0.554	1.08	1.28	1.06
		Left side	0.145						0.593	0.74	0.74	0.74
		Right side	0.353	0.230	0.306	0.159	0.339	0.029		0.89	0.88	0.69
		Top side			0.091		0.198			0.09	0.20	0.09
		Bottom side	0.298							0.30	0.30	0.30
	LTE Band 30 Ant 1	Front	0.536	0.101	0.096	0.081	0.247	0.069	0.483	1.22	1.42	1.18
		Back	0.449	0.099	0.098	0.075	0.240	0.083	0.554	1.20	1.40	1.18
		Left side	0.339						0.593	0.93	0.93	0.93
		Right side		0.230	0.306	0.159	0.339	0.029		0.54	0.53	0.34
		Top side			0.091		0.198			0.09	0.20	0.09
		Bottom side	0.575							0.58	0.58	0.58
	LTE Band 66 Ant 0	Front	0.333	0.101	0.096	0.081	0.247	0.069	0.483	1.01	1.21	0.98
		Back	0.273	0.099	0.098	0.075	0.240	0.083	0.554	1.02	1.23	1.01
		Left side	0.040						0.593	0.63	0.63	0.63
		Right side	0.065	0.230	0.306	0.159	0.339	0.029		0.60	0.59	0.40
		Top side			0.091		0.198			0.09	0.20	0.09
		Bottom side	0.504							0.50	0.50	0.50
NSA	LTE Band 2 Ant 0	Front	0.488	0.101	0.096	0.081	0.247	0.069	0.375	1.06	1.26	1.03
		Back	0.430	0.099	0.098	0.075	0.240	0.083	0.402	1.03	1.23	1.01
		Left side	0.018						0.070	0.09	0.09	0.09
		Right side	0.071	0.230	0.306	0.159	0.339	0.029	0.192	0.80	0.79	0.60
		Top side			0.091		0.198			0.09	0.20	0.09
		Bottom side	0.515						0.302	0.82	0.82	0.82
	LTE Band 30 Ant 1	Front	0.536	0.101	0.096	0.081	0.247	0.069	0.375	1.11	1.31	1.08
		Back	0.449	0.099	0.098	0.075	0.240	0.083	0.402	1.05	1.25	1.03
		Left side	0.339						0.070	0.41	0.41	0.41
		Right side		0.230	0.306	0.159	0.339	0.029	0.192	0.73	0.72	0.53
		Top side			0.091		0.198			0.09	0.20	0.09
		Bottom side	0.575						0.302	0.88	0.88	0.88
	LTE Band 66 Ant 0	Front	0.333	0.101	0.096	0.081	0.247	0.069	0.375	0.91	1.11	0.87
		Back	0.273	0.099	0.098	0.075	0.240	0.083	0.402	0.87	1.07	0.86
		Left side	0.040						0.070	0.11	0.11	0.11
		Right side	0.065	0.230	0.306	0.159	0.339	0.029	0.192	0.79	0.78	0.59
		Top side			0.091		0.198			0.09	0.20	0.09
		Bottom side	0.504						0.302	0.81	0.81	0.81
	WWAN Band	Exposure Position	1	2	3	5	6	8	9	1+2+3+9	1+5+6+8+9	1+3+8+9
			WWAN	2.4GHz WLAN Ant 7	2.4GHz WLAN Ant 6	5GHz WLAN Ant 7	5GHz WLAN Ant 6	Bluetooth Ant 7	FR1 n25 Ant 2	Summed	Summed	Summed
			1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)



NSA	LTE Band 12 Ant 0	Front	0.429	0.101	0.096	0.081	0.247	0.069	0.483	1.11	1.31	1.08
		Back	0.329	0.099	0.098	0.075	0.240	0.083	0.554	1.08	1.28	1.06
		Left side	0.145						0.593	0.74	0.74	0.74
		Right side	0.353	0.230	0.306	0.159	0.339	0.029		0.89	0.88	0.69
		Top side			0.091		0.198			0.09	0.20	0.09
		Bottom side	0.298							0.30	0.30	0.30
	LTE Band 66 Ant 0	Front	0.333	0.101	0.096	0.081	0.247	0.069	0.483	1.01	1.21	0.98
		Back	0.273	0.099	0.098	0.075	0.240	0.083	0.554	1.02	1.23	1.01
		Left side	0.040						0.593	0.63	0.63	0.63
		Right side	0.065	0.230	0.306	0.159	0.339	0.029		0.60	0.59	0.40
		Top side			0.091		0.198			0.09	0.20	0.09
		Bottom side	0.504							0.50	0.50	0.50
WWAN Band	Exposure Position	1	2	3	5	6	8	9	1+2+3+9	1+5+6+8+9	1+3+8+9	
		WWAN	2.4GHz WLAN Ant 7	2.4GHz WLAN Ant 6	5GHz WLAN Ant 7	5GHz WLAN Ant 6	Bluetooth Ant 7	FR1 n41 Ant 1	Summed	Summed	Summed	
		1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	
NSA	LTE Band 2 Ant 0	Front	0.488	0.101	0.096	0.081	0.247	0.069	0.390	1.08	1.28	1.04
		Back	0.430	0.099	0.098	0.075	0.240	0.083	0.313	0.94	1.14	0.92
		Left side	0.018						0.293	0.31	0.31	0.31
		Right side	0.071	0.230	0.306	0.159	0.339	0.029		0.61	0.60	0.41
		Top side			0.091		0.198			0.09	0.20	0.09
		Bottom side	0.515						0.571	1.09	1.09	1.09
	LTE Band 25 Ant 0	Front	0.488	0.101	0.096	0.081	0.247	0.069	0.390	1.08	1.28	1.04
		Back	0.430	0.099	0.098	0.075	0.240	0.083	0.313	0.94	1.14	0.92
		Left side	0.018						0.293	0.31	0.31	0.31
		Right side	0.071	0.230	0.306	0.159	0.339	0.029		0.61	0.60	0.41
		Top side			0.091		0.198			0.09	0.20	0.09
		Bottom side	0.515						0.571	1.09	1.09	1.09
	LTE Band 66 Ant 0	Front	0.333	0.101	0.096	0.081	0.247	0.069	0.390	0.92	1.12	0.89
		Back	0.273	0.099	0.098	0.075	0.240	0.083	0.313	0.78	0.98	0.77
		Left side	0.040						0.293	0.33	0.33	0.33
		Right side	0.065	0.230	0.306	0.159	0.339	0.029		0.60	0.59	0.40
		Top side			0.091		0.198			0.09	0.20	0.09
		Bottom side	0.504						0.571	1.08	1.08	1.08
WWAN Band	Exposure Position	1	2	3	5	6	8	9	1+2+3+9	1+5+6+8+9	1+3+8+9	
		WWAN	2.4GHz WLAN Ant 7	2.4GHz WLAN Ant 6	5GHz WLAN Ant 7	5GHz WLAN Ant 6	Bluetooth Ant 7	FR1 n41 Ant 3	Summed	Summed	Summed	
		1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	
NSA	LTE Band 2 Ant 0	Front	0.488	0.101	0.096	0.081	0.247	0.069	0.614	1.30	1.50	1.27
		Back	0.430	0.099	0.098	0.075	0.240	0.083	0.458	1.09	1.29	1.07
		Left side	0.018						0.590	0.61	0.61	0.61
		Right side	0.071	0.230	0.306	0.159	0.339	0.029		0.61	0.60	0.41
		Top side			0.091		0.198			0.09	0.20	0.09
		Bottom side	0.515							0.52	0.52	0.52
	LTE Band 25 Ant 0	Front	0.488	0.101	0.096	0.081	0.247	0.069	0.614	1.30	1.50	1.27
		Back	0.430	0.099	0.098	0.075	0.240	0.083	0.458	1.09	1.29	1.07
		Left side	0.018						0.590	0.61	0.61	0.61
		Right side	0.071	0.230	0.306	0.159	0.339	0.029		0.61	0.60	0.41
		Top side			0.091		0.198			0.09	0.20	0.09
		Bottom side	0.515							0.52	0.52	0.52
	LTE Band 66 Ant 0	Front	0.333	0.101	0.096	0.081	0.247	0.069	0.614	1.14	1.34	1.11
		Back	0.273	0.099	0.098	0.075	0.240	0.083	0.458	0.93	1.13	0.91
		Left side	0.040						0.590	0.63	0.63	0.63
		Right side	0.065	0.230	0.306	0.159	0.339	0.029		0.60	0.59	0.40
		Top side			0.091		0.198			0.09	0.20	0.09



		Bottom side	0.504							0.50	0.50	0.50
WWAN Band	Exposure Position	1	2	3	5	6	8	9	1+2+3+9	1+5+6+8+9	1+3+8+9	
		WWAN	2.4GHz WLAN Ant 7	2.4GHz WLAN Ant 6	5GHz WLAN Ant 7	5GHz WLAN Ant 6	Bluetooth Ant 7	FR1 n66 Ant 2	Summed	Summed	Summed	
		1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	
NSA	LTE Band 2 Ant 0	Front	0.488	0.101	0.096	0.081	0.247	0.069	0.204	0.89	1.09	0.86
		Back	0.430	0.099	0.098	0.075	0.240	0.083	0.203	0.83	1.03	0.81
		Left side	0.018						0.547	0.57	0.57	0.57
		Right side	0.071	0.230	0.306	0.159	0.339	0.029		0.61	0.60	0.41
		Top side			0.091		0.198			0.09	0.20	0.09
		Bottom side	0.515							0.52	0.52	0.52
	LTE Band 5 Ant 0	Front	0.382	0.101	0.096	0.081	0.247	0.069	0.204	0.78	0.98	0.75
		Back	0.273	0.099	0.098	0.075	0.240	0.083	0.203	0.67	0.87	0.66
		Left side	0.066						0.547	0.61	0.61	0.61
		Right side	0.256	0.230	0.306	0.159	0.339	0.029		0.79	0.78	0.59
		Top side			0.091		0.198			0.09	0.20	0.09
		Bottom side	0.298							0.30	0.30	0.30
	LTE Band 12 Ant 0	Front	0.429	0.101	0.096	0.081	0.247	0.069	0.204	0.83	1.03	0.80
		Back	0.329	0.099	0.098	0.075	0.240	0.083	0.203	0.73	0.93	0.71
		Left side	0.145						0.547	0.69	0.69	0.69
		Right side	0.353	0.230	0.306	0.159	0.339	0.029		0.89	0.88	0.69
		Top side			0.091		0.198			0.09	0.20	0.09
		Bottom side	0.298							0.30	0.30	0.30
WWAN Band	Exposure Position	1	2	3	5	6	8	9	1+2+3+9	1+5+6+8+9	1+3+8+9	
		WWAN	2.4GHz WLAN Ant 7	2.4GHz WLAN Ant 6	5GHz WLAN Ant 7	5GHz WLAN Ant 6	Bluetooth Ant 7	FR1 n71 Ant 0	Summed	Summed	Summed	
		1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	
NSA	LTE Band 2 Ant 0	Front	0.488	0.101	0.096	0.081	0.247	0.069	0.268	0.95	1.15	0.92
		Back	0.430	0.099	0.098	0.075	0.240	0.083	0.241	0.87	1.07	0.85
		Left side	0.018						0.110	0.13	0.13	0.13
		Right side	0.071	0.230	0.306	0.159	0.339	0.029	0.246	0.85	0.84	0.65
		Top side			0.091		0.198			0.09	0.20	0.09
		Bottom side	0.515						0.220	0.74	0.74	0.74
	LTE Band 66 Ant 0	Front	0.333	0.101	0.096	0.081	0.247	0.069	0.268	0.80	1.00	0.77
		Back	0.273	0.099	0.098	0.075	0.240	0.083	0.241	0.71	0.91	0.70
		Left side	0.040						0.110	0.15	0.15	0.15
		Right side	0.065	0.230	0.306	0.159	0.339	0.029	0.246	0.85	0.84	0.65
		Top side			0.091		0.198			0.09	0.20	0.09
		Bottom side	0.504						0.220	0.72	0.72	0.72
WWAN Band	Exposure Position	1	2	3	5	6	8	9	1+2+3+9	1+5+6+8+9	1+3+8+9	
		WWAN	2.4GHz WLAN Ant 7	2.4GHz WLAN Ant 6	5GHz WLAN Ant 7	5GHz WLAN Ant 6	Bluetooth Ant 7	FR1 n78 Ant 2	Summed	Summed	Summed	
		1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	
NSA	LTE Band 2 Ant 0	Front	0.488	0.101	0.096	0.081	0.247	0.069	0.540	1.23	1.43	1.19
		Back	0.430	0.099	0.098	0.075	0.240	0.083	0.338	0.97	1.17	0.95
		Left side	0.018						0.593	0.61	0.61	0.61
		Right side	0.071	0.230	0.306	0.159	0.339	0.029		0.61	0.60	0.41
		Top side			0.091		0.198			0.09	0.20	0.09
		Bottom side	0.515							0.52	0.52	0.52
	LTE Band 4 Ant 0	Front	0.333	0.101	0.096	0.081	0.247	0.069	0.540	1.07	1.27	1.04
		Back	0.273	0.099	0.098	0.075	0.240	0.083	0.338	0.81	1.01	0.79
		Left side	0.040						0.593	0.63	0.63	0.63
		Right side	0.065	0.230	0.306	0.159	0.339	0.029		0.60	0.59	0.40
		Top side			0.091		0.198			0.09	0.20	0.09
		Bottom side	0.504							0.50	0.50	0.50



**FCC SAR Test Report**

**Report No. : FA111226-01**

WWAN Band	Exposure Position	1	2	3	5	6	8	9	1+2+3+9	1+5+6+8+9	1+3+8+9	
		WWAN	2.4GHz WLAN Ant 7	2.4GHz WLAN Ant 6	5GHz WLAN Ant 7	5GHz WLAN Ant 6	Bluetooth Ant 7	FR1 n78 Ant 4	Summed	Summed	Summed	
		1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	
LTE Band 5 Ant 0	Front	0.382	0.101	0.096	0.081	0.247	0.069	0.540	1.12	1.32	1.09	
	Back	0.273	0.099	0.098	0.075	0.240	0.083	0.338	0.81	1.01	0.79	
	Left side	0.066						0.593	0.66	0.66	0.66	
	Right side	0.256	0.230	0.306	0.159	0.339	0.029		0.79	0.78	0.59	
	Top side			0.091		0.198			0.09	0.20	0.09	
	Bottom side	0.298							0.30	0.30	0.30	
	LTE Band 7 Ant 1	Front	0.543	0.101	0.096	0.081	0.247	0.069	0.540	1.28	1.48	1.25
		Back	0.409	0.099	0.098	0.075	0.240	0.083	0.338	0.94	1.15	0.93
		Left side	0.263						0.593	0.86	0.86	0.86
		Right side		0.230	0.306	0.159	0.339	0.029		0.54	0.53	0.34
		Top side			0.091		0.198			0.09	0.20	0.09
		Bottom side	0.513							0.51	0.51	0.51
	LTE Band 38 Ant 1	Front	0.495	0.101	0.096	0.081	0.247	0.069	0.540	1.23	1.43	1.20
		Back	0.387	0.099	0.098	0.075	0.240	0.083	0.338	0.92	1.12	0.91
		Left side	0.250						0.593	0.84	0.84	0.84
		Right side		0.230	0.306	0.159	0.339	0.029		0.54	0.53	0.34
		Top side			0.091		0.198			0.09	0.20	0.09
		Bottom side	0.502							0.50	0.50	0.50
NSA	LTE Band 2 Ant 0	Front	0.488	0.101	0.096	0.081	0.247	0.069	0.388	1.07	1.27	1.04
		Back	0.430	0.099	0.098	0.075	0.240	0.083	0.551	1.18	1.38	1.16
		Left side	0.018						0.596	0.61	0.61	0.61
		Right side	0.071	0.230	0.306	0.159	0.339	0.029		0.61	0.60	0.41
		Top side			0.091		0.198		0.157	0.25	0.36	0.25
		Bottom side	0.515							0.52	0.52	0.52
	LTE Band 4 Ant 0	Front	0.333	0.101	0.096	0.081	0.247	0.069	0.388	0.92	1.12	0.89
		Back	0.273	0.099	0.098	0.075	0.240	0.083	0.551	1.02	1.22	1.01
		Left side	0.040						0.596	0.64	0.64	0.64
		Right side	0.065	0.230	0.306	0.159	0.339	0.029		0.60	0.59	0.40
		Top side			0.091		0.198		0.157	0.25	0.36	0.25
		Bottom side	0.504							0.50	0.50	0.50
	LTE Band 5 Ant 0	Front	0.382	0.101	0.096	0.081	0.247	0.069	0.388	0.97	1.17	0.94
		Back	0.273	0.099	0.098	0.075	0.240	0.083	0.551	1.02	1.22	1.01
		Left side	0.066						0.596	0.66	0.66	0.66
		Right side	0.256	0.230	0.306	0.159	0.339	0.029		0.79	0.78	0.59
		Top side			0.091		0.198		0.157	0.25	0.36	0.25
		Bottom side	0.298							0.30	0.30	0.30
LTE Band 7 Ant 1	Front	0.543	0.101	0.096	0.081	0.247	0.069	0.388	1.13	1.33	1.10	
	Back	0.409	0.099	0.098	0.075	0.240	0.083	0.551	1.16	1.36	1.14	
	Left side	0.263						0.596	0.86	0.86	0.86	
	Right side		0.230	0.306	0.159	0.339	0.029		0.54	0.53	0.34	
	Top side			0.091		0.198		0.157	0.25	0.36	0.25	
	Bottom side	0.513							0.51	0.51	0.51	
LTE Band 38 Ant 1	Front	0.495	0.101	0.096	0.081	0.247	0.069	0.388	1.08	1.28	1.05	
	Back	0.387	0.099	0.098	0.075	0.240	0.083	0.551	1.14	1.34	1.12	
	Left side	0.250						0.596	0.85	0.85	0.85	
	Right side		0.230	0.306	0.159	0.339	0.029		0.54	0.53	0.34	
	Top side			0.091		0.198		0.157	0.25	0.36	0.25	
	Bottom side	0.502							0.50	0.50	0.50	



5G NR UL MIMO

WWAN Band		Exposure Position	1	2	3	5	6	8	9	1+2+3+9	1+5+6+8+9	1+3+8+9	Case No
			WWAN	2.4GHz WLAN Ant 7	2.4GHz WLAN Ant 6	5GHz WLAN Ant 7	5GHz WLAN Ant 6	Bluetooth Ant 7	FR1 n41 Ant 3	Summed	Summed	Summed	
			1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	
5G NR UL MIMO	n41 Ant 1	Front	0.390	0.101	0.096	0.081	0.247	0.069	0.614	1.20	1.40	1.17	
		Back	0.313	0.099	0.098	0.075	0.240	0.083	0.458	0.97	1.17	0.95	
		Left side	0.537						0.923	1.46	1.46	1.46	
		Right side		0.230	0.306	0.159	0.339	0.029		0.54	0.53	0.34	
		Top side			0.091		0.198			0.09	0.20	0.09	
		Bottom side	1.062							1.06	1.06	1.06	
WWAN Band		Exposure Position	1	2	3	5	6	8	9	1+2+3+9	1+5+6+8+9	1+3+8+9	Case No
			WWAN	2.4GHz WLAN Ant 7	2.4GHz WLAN Ant 6	5GHz WLAN Ant 7	5GHz WLAN Ant 6	Bluetooth Ant 7	FR1 n77(n78) Ant 4	Summed	Summed	Summed	
			1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	
5G NR UL MIMO	n77(n78) Ant 2	Front	0.885	0.101	0.096	0.081	0.247	0.069	0.717	1.80	2.00	1.77	5,6,7
		Back	0.765	0.099	0.098	0.075	0.240	0.083	0.891	1.85	2.05	1.84	8,9,10
		Left side	0.951						1.043	1.99	1.99	1.99	11
		Right side		0.230	0.306	0.159	0.339	0.029	0.232	0.77	0.76	0.57	
		Top side			0.091		0.198			0.09	0.20	0.09	
		Bottom side								0.00	0.00	0.00	





16.3 Body-Worn Accessory Exposure Conditions

WWAN Band	Exposure Position	1	2	3	5	6	8	1+2+3	1+5+6+8	1+3+8	
		WWAN	2.4GHz WLAN Ant 7	2.4GHz WLAN Ant 6	5GHz WLAN Ant 7	5GHz WLAN Ant 6	Bluetooth Ant 7	Summed	Summed	Summed	
		1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	
GSM	GSM850 Ant 0	Front	0.591	0.101	0.096	0.133	0.247	0.069	0.79	1.04	0.76
		Back	0.423	0.099	0.098	0.159	0.240	0.083	0.62	0.91	0.60
	GSM1900 Ant 0	Front	0.521	0.101	0.096	0.133	0.247	0.069	0.72	0.97	0.69
		Back	0.444	0.099	0.098	0.159	0.240	0.083	0.64	0.93	0.63
WCDMA	WCDMA II Ant 0	Front	0.903	0.101	0.096	0.133	0.247	0.069	1.10	1.35	1.07
		Back	0.722	0.099	0.098	0.159	0.240	0.083	0.92	1.20	0.90
	WCDMA IV Ant 0	Front	0.781	0.101	0.096	0.133	0.247	0.069	0.98	1.23	0.95
		Back	1.101	0.099	0.098	0.159	0.240	0.083	1.30	1.58	1.28
	WCDMA V Ant 0	Front	0.517	0.101	0.096	0.133	0.247	0.069	0.71	0.97	0.68
		Back	0.400	0.099	0.098	0.159	0.240	0.083	0.60	0.88	0.58
CDMA BC0 Ant 0	Front	0.563	0.101	0.096	0.133	0.247	0.069	0.76	1.01	0.73	
	Back	0.401	0.099	0.098	0.159	0.240	0.083	0.60	0.88	0.58	
LTE	LTE Band 7 Ant 1	Front	0.543	0.101	0.096	0.133	0.247	0.069	0.74	0.99	0.71
		Back	0.409	0.099	0.098	0.159	0.240	0.083	0.61	0.89	0.59
	LTE Band 12 Ant 0	Front	0.429	0.101	0.096	0.133	0.247	0.069	0.63	0.88	0.59
		Back	0.329	0.099	0.098	0.159	0.240	0.083	0.53	0.81	0.51
	LTE Band 25 Ant 0	Front	0.828	0.101	0.096	0.133	0.247	0.069	1.03	1.28	0.99
		Back	0.765	0.099	0.098	0.159	0.240	0.083	0.96	1.25	0.95
	LTE Band 26 Ant 0	Front	0.382	0.101	0.096	0.133	0.247	0.069	0.58	0.83	0.55
		Back	0.273	0.099	0.098	0.159	0.240	0.083	0.47	0.76	0.45
	LTE Band 30 Ant 1	Front	0.536	0.101	0.096	0.133	0.247	0.069	0.73	0.99	0.70
		Back	0.449	0.099	0.098	0.159	0.240	0.083	0.65	0.93	0.63
	LTE Band 38 Ant 1	Front	0.495	0.101	0.096	0.133	0.247	0.069	0.69	0.94	0.66
		Back	0.387	0.099	0.098	0.159	0.240	0.083	0.58	0.87	0.57
	LTE Band 41 Ant 1	Front	0.330	0.101	0.096	0.133	0.247	0.069	0.53	0.78	0.50
		Back	0.247	0.099	0.098	0.159	0.240	0.083	0.44	0.73	0.43
	LTE Band 66 Ant 0	Front	0.677	0.101	0.096	0.133	0.247	0.069	0.87	1.13	0.84
		Back	0.594	0.099	0.098	0.159	0.240	0.083	0.79	1.08	0.78
	LTE Band 71 Ant 0	Front	0.188	0.101	0.096	0.133	0.247	0.069	0.39	0.64	0.35
		Back	0.193	0.099	0.098	0.159	0.240	0.083	0.39	0.68	0.37
5G NR	n5 Ant 0	Front	0.375	0.101	0.096	0.133	0.247	0.069	0.57	0.82	0.54
		Back	0.402	0.099	0.098	0.159	0.240	0.083	0.60	0.88	0.58
	n7 Ant 3	Front	0.638	0.101	0.096	0.133	0.247	0.069	0.84	1.09	0.80
		Back	0.425	0.099	0.098	0.159	0.240	0.083	0.62	0.91	0.61
	n25 Ant 2	Front	0.483	0.101	0.096	0.133	0.247	0.069	0.68	0.93	0.65
		Back	0.554	0.099	0.098	0.159	0.240	0.083	0.75	1.04	0.74
	n66 Ant 2	Front	0.204	0.101	0.096	0.133	0.247	0.069	0.40	0.65	0.37
		Back	0.203	0.099	0.098	0.159	0.240	0.083	0.40	0.69	0.38
	n71 Ant 0	Front	0.268	0.101	0.096	0.133	0.247	0.069	0.47	0.72	0.43
		Back	0.241	0.099	0.098	0.159	0.240	0.083	0.44	0.72	0.42
	n41 Ant 1	Front	0.390	0.101	0.096	0.133	0.247	0.069	0.59	0.84	0.56
		Back	0.313	0.099	0.098	0.159	0.240	0.083	0.51	0.80	0.49
	n41 Ant 3	Front	0.614	0.101	0.096	0.133	0.247	0.069	0.81	1.06	0.78
		Back	0.458	0.099	0.098	0.159	0.240	0.083	0.66	0.94	0.64
	n77 Ant 2	Front	0.885	0.101	0.096	0.133	0.247	0.069	1.08	1.33	1.05
		Back	0.765	0.099	0.098	0.159	0.240	0.083	0.96	1.25	0.95
n77 Ant 4	Front	0.717	0.101	0.096	0.133	0.247	0.069	0.91	1.17	0.88	
	Back	0.891	0.099	0.098	0.159	0.240	0.083	1.09	1.37	1.07	



EN-DC

WWAN Band		Exposure Position	1	2	3	5	6	8	9	1+2+3+9	1+5+6+8+9	1+3+8+9
			WWAN 1g SAR (W/kg)	2.4GHz WLAN Ant 7 1g SAR (W/kg)	2.4GHz WLAN Ant 6 1g SAR (W/kg)	5GHz WLAN Ant 7 1g SAR (W/kg)	5GHz WLAN Ant 6 1g SAR (W/kg)	Bluetooth Ant 7 1g SAR (W/kg)	FR1 n2 Ant 2 1g SAR (W/kg)	Summed 1g SAR (W/kg)	Summed 1g SAR (W/kg)	Summed 1g SAR (W/kg)
NSA	LTE Band 5 Ant 0	Front	0.382	0.101	0.096	0.133	0.247	0.069	0.483	1.06	1.31	1.03
		Back	0.273	0.099	0.098	0.159	0.240	0.083	0.554	1.02	1.31	1.01
	LTE Band 12 Ant 0	Front	0.429	0.101	0.096	0.133	0.247	0.069	0.483	1.11	1.36	1.08
		Back	0.329	0.099	0.098	0.159	0.240	0.083	0.554	1.08	1.37	1.06
	LTE Band 30 Ant 1	Front	0.536	0.101	0.096	0.133	0.247	0.069	0.483	1.22	1.47	1.18
		Back	0.449	0.099	0.098	0.159	0.240	0.083	0.554	1.20	1.49	1.18
LTE Band 66 Ant 0	Front	0.333	0.101	0.096	0.133	0.247	0.069	0.483	1.01	1.27	0.98	
	Back	0.273	0.099	0.098	0.159	0.240	0.083	0.554	1.02	1.31	1.01	
WWAN Band		Exposure Position	1	2	3	5	6	8	9	1+2+3+9	1+5+6+8+9	1+3+8+9
			WWAN 1g SAR (W/kg)	2.4GHz WLAN Ant 7 1g SAR (W/kg)	2.4GHz WLAN Ant 6 1g SAR (W/kg)	5GHz WLAN Ant 7 1g SAR (W/kg)	5GHz WLAN Ant 6 1g SAR (W/kg)	Bluetooth Ant 7 1g SAR (W/kg)	FR1 n5 Ant 0 1g SAR (W/kg)	Summed 1g SAR (W/kg)	Summed 1g SAR (W/kg)	Summed 1g SAR (W/kg)
NSA	LTE Band 2 Ant 0	Front	0.488	0.101	0.096	0.133	0.247	0.069	0.375	1.06	1.31	1.03
		Back	0.430	0.099	0.098	0.159	0.240	0.083	0.402	1.03	1.31	1.01
	LTE Band 30 Ant 1	Front	0.536	0.101	0.096	0.133	0.247	0.069	0.375	1.11	1.36	1.08
		Back	0.449	0.099	0.098	0.159	0.240	0.083	0.402	1.05	1.33	1.03
	LTE Band 66 Ant 0	Front	0.333	0.101	0.096	0.133	0.247	0.069	0.375	0.91	1.16	0.87
		Back	0.273	0.099	0.098	0.159	0.240	0.083	0.402	0.87	1.16	0.86
WWAN Band		Exposure Position	1	2	3	5	6	8	9	1+2+3+9	1+5+6+8+9	1+3+8+9
			WWAN 1g SAR (W/kg)	2.4GHz WLAN Ant 7 1g SAR (W/kg)	2.4GHz WLAN Ant 6 1g SAR (W/kg)	5GHz WLAN Ant 7 1g SAR (W/kg)	5GHz WLAN Ant 6 1g SAR (W/kg)	Bluetooth Ant 7 1g SAR (W/kg)	FR1 n25 Ant 2 1g SAR (W/kg)	Summed 1g SAR (W/kg)	Summed 1g SAR (W/kg)	Summed 1g SAR (W/kg)
NSA	LTE Band 12 Ant 0	Front	0.429	0.101	0.096	0.133	0.247	0.069	0.483	1.11	1.36	1.08
		Back	0.329	0.099	0.098	0.159	0.240	0.083	0.554	1.08	1.37	1.06
	LTE Band 66 Ant 0	Front	0.333	0.101	0.096	0.133	0.247	0.069	0.483	1.01	1.27	0.98
		Back	0.273	0.099	0.098	0.159	0.240	0.083	0.554	1.02	1.31	1.01
WWAN Band		Exposure Position	1	2	3	5	6	8	9	1+2+3+9	1+5+6+8+9	1+3+8+9
			WWAN 1g SAR (W/kg)	2.4GHz WLAN Ant 7 1g SAR (W/kg)	2.4GHz WLAN Ant 6 1g SAR (W/kg)	5GHz WLAN Ant 7 1g SAR (W/kg)	5GHz WLAN Ant 6 1g SAR (W/kg)	Bluetooth Ant 7 1g SAR (W/kg)	FR1 n41 Ant 1 1g SAR (W/kg)	Summed 1g SAR (W/kg)	Summed 1g SAR (W/kg)	Summed 1g SAR (W/kg)
NSA	LTE Band 2 Ant 0	Front	0.488	0.101	0.096	0.133	0.247	0.069	0.390	1.08	1.33	1.04
		Back	0.430	0.099	0.098	0.159	0.240	0.083	0.313	0.94	1.23	0.92
	LTE Band 25 Ant 0	Front	0.488	0.101	0.096	0.133	0.247	0.069	0.390	1.08	1.33	1.04
		Back	0.430	0.099	0.098	0.159	0.240	0.083	0.313	0.94	1.23	0.92
	LTE Band 66 Ant 0	Front	0.333	0.101	0.096	0.133	0.247	0.069	0.390	0.92	1.17	0.89
		Back	0.273	0.099	0.098	0.159	0.240	0.083	0.313	0.78	1.07	0.77
WWAN Band		Exposure Position	1	2	3	5	6	8	9	1+2+3+9	1+5+6+8+9	1+3+8+9
			WWAN 1g SAR (W/kg)	2.4GHz WLAN Ant 7 1g SAR (W/kg)	2.4GHz WLAN Ant 6 1g SAR (W/kg)	5GHz WLAN Ant 7 1g SAR (W/kg)	5GHz WLAN Ant 6 1g SAR (W/kg)	Bluetooth Ant 7 1g SAR (W/kg)	FR1 n41 Ant 3 1g SAR (W/kg)	Summed 1g SAR (W/kg)	Summed 1g SAR (W/kg)	Summed 1g SAR (W/kg)
NSA	LTE Band 2 Ant 0	Front	0.488	0.101	0.096	0.133	0.247	0.069	0.614	1.30	1.55	1.27
		Back	0.430	0.099	0.098	0.159	0.240	0.083	0.458	1.09	1.37	1.07
	LTE Band 25 Ant 0	Front	0.488	0.101	0.096	0.133	0.247	0.069	0.614	1.30	1.55	1.27
		Back	0.430	0.099	0.098	0.159	0.240	0.083	0.458	1.09	1.37	1.07
	LTE Band 66 Ant 0	Front	0.333	0.101	0.096	0.133	0.247	0.069	0.614	1.14	1.40	1.11
		Back	0.273	0.099	0.098	0.159	0.240	0.083	0.458	0.93	1.21	0.91
WWAN Band		Exposure Position	1	2	3	5	6	8	9	1+2+3+9	1+5+6+8+9	1+3+8+9
			WWAN 1g SAR (W/kg)	2.4GHz WLAN Ant 7 1g SAR (W/kg)	2.4GHz WLAN Ant 6 1g SAR (W/kg)	5GHz WLAN Ant 7 1g SAR (W/kg)	5GHz WLAN Ant 6 1g SAR (W/kg)	Bluetooth Ant 7 1g SAR (W/kg)	FR1 n66 Ant 2 1g SAR (W/kg)	Summed 1g SAR (W/kg)	Summed 1g SAR (W/kg)	Summed 1g SAR (W/kg)
NSA	LTE Band 2 Ant 0	Front	0.488	0.101	0.096	0.133	0.247	0.069	0.204	0.89	1.14	0.86
		Back	0.430	0.099	0.098	0.159	0.240	0.083	0.203	0.83	1.12	0.81



	LTE Band 5 Ant 0	Front	0.382	0.101	0.096	0.133	0.247	0.069	0.204	0.78	1.04	0.75	
		Back	0.273	0.099	0.098	0.159	0.240	0.083	0.203	0.67	0.96	0.66	
	LTE Band 12 Ant 0	Front	0.429	0.101	0.096	0.133	0.247	0.069	0.204	0.83	1.08	0.80	
		Back	0.329	0.099	0.098	0.159	0.240	0.083	0.203	0.73	1.01	0.71	
WWAN Band	Exposure Position		1	2	3	5	6	8	9	1+2+3+9	1+5+6+8+9	1+3+8+9	
		WWAN	2.4GHz WLAN Ant 7	2.4GHz WLAN Ant 6	5GHz WLAN Ant 7	5GHz WLAN Ant 6	Bluetooth Ant 7	FR1 n71 Ant 0	Summed	Summed	Summed		
		1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	
NSA	LTE Band 2 Ant 0	Front	0.488	0.101	0.096	0.133	0.247	0.069	0.268	0.95	1.21	0.92	
		Back	0.430	0.099	0.098	0.159	0.240	0.083	0.241	0.87	1.15	0.85	
	LTE Band 66 Ant 0	Front	0.333	0.101	0.096	0.133	0.247	0.069	0.268	0.80	1.05	0.77	
		Back	0.273	0.099	0.098	0.159	0.240	0.083	0.241	0.71	1.00	0.70	
WWAN Band	Exposure Position		1	2	3	5	6	8	9	1+2+3+9	1+5+6+8+9	1+3+8+9	
		WWAN	2.4GHz WLAN Ant 7	2.4GHz WLAN Ant 6	5GHz WLAN Ant 7	5GHz WLAN Ant 6	Bluetooth Ant 7	FR1 n78 Ant 2	Summed	Summed	Summed		
		1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)		
NSA	LTE Band 2 Ant 0	Front	0.488	0.101	0.096	0.133	0.247	0.069	0.540	1.23	1.48	1.19	
		Back	0.430	0.099	0.098	0.159	0.240	0.083	0.338	0.97	1.25	0.95	
	LTE Band 4 Ant 0	Front	0.333	0.101	0.096	0.133	0.247	0.069	0.540	1.07	1.32	1.04	
		Back	0.273	0.099	0.098	0.159	0.240	0.083	0.338	0.81	1.09	0.79	
	LTE Band 5 Ant 0	Front	0.382	0.101	0.096	0.133	0.247	0.069	0.540	1.12	1.37	1.09	
		Back	0.273	0.099	0.098	0.159	0.240	0.083	0.338	0.81	1.09	0.79	
	LTE Band 7 Ant 1	Front	0.543	0.101	0.096	0.133	0.247	0.069	0.540	1.28	1.53	1.25	
		Back	0.409	0.099	0.098	0.159	0.240	0.083	0.338	0.94	1.23	0.93	
	LTE Band 38 Ant 1	Front	0.495	0.101	0.096	0.133	0.247	0.069	0.540	1.23	1.48	1.20	
		Back	0.387	0.099	0.098	0.159	0.240	0.083	0.338	0.92	1.21	0.91	
	WWAN Band	Exposure Position		1	2	3	5	6	8	9	1+2+3+9	1+5+6+8+9	1+3+8+9
			WWAN	2.4GHz WLAN Ant 7	2.4GHz WLAN Ant 6	5GHz WLAN Ant 7	5GHz WLAN Ant 6	Bluetooth Ant 7	FR1 n78 Ant 4	Summed	Summed	Summed	
1g SAR (W/kg)			1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)		
NSA	LTE Band 2 Ant 0	Front	0.488	0.101	0.096	0.133	0.247	0.069	0.388	1.07	1.33	1.04	
		Back	0.430	0.099	0.098	0.159	0.240	0.083	0.551	1.18	1.46	1.16	
	LTE Band 4 Ant 0	Front	0.333	0.101	0.096	0.133	0.247	0.069	0.388	0.92	1.17	0.89	
		Back	0.273	0.099	0.098	0.159	0.240	0.083	0.551	1.02	1.31	1.01	
	LTE Band 5 Ant 0	Front	0.382	0.101	0.096	0.133	0.247	0.069	0.388	0.97	1.22	0.94	
		Back	0.273	0.099	0.098	0.159	0.240	0.083	0.551	1.02	1.31	1.01	
	LTE Band 7 Ant 1	Front	0.543	0.101	0.096	0.133	0.247	0.069	0.388	1.13	1.38	1.10	
		Back	0.409	0.099	0.098	0.159	0.240	0.083	0.551	1.16	1.44	1.14	
	LTE Band 38 Ant 1	Front	0.495	0.101	0.096	0.133	0.247	0.069	0.388	1.08	1.33	1.05	
		Back	0.387	0.099	0.098	0.159	0.240	0.083	0.551	1.14	1.42	1.12	



5G NR UL MIMO

WWAN Band		Exposure Position	1	2	3	5	6	8	9	1+2+3+9	1+5+6+8+9	1+3+8+9	Case No
WWAN			2.4GHz WLAN Ant 7	2.4GHz WLAN Ant 6	5GHz WLAN Ant 7	5GHz WLAN Ant 6	Bluetooth Ant 7	FR1 n41 Ant 3	Summed	Summed	Summed		
			1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	
5G NR UL MIMO	n41 Ant 1	Front	0.390	0.101	0.096	0.133	0.247	0.069	0.614	1.20	1.45	1.17	
		Back	0.313	0.099	0.098	0.159	0.240	0.083	0.458	0.97	1.25	0.95	
WWAN Band		Exposure Position	1	2	3	5	6	8	9	1+2+3+9	1+5+6+8+9	1+3+8+9	Case No
WWAN			2.4GHz WLAN Ant 7	2.4GHz WLAN Ant 6	5GHz WLAN Ant 7	5GHz WLAN Ant 6	Bluetooth Ant 7	FR1 n77(n78) Ant 4	Summed	Summed	Summed		
			1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	
5G NR UL MIMO	n77(n78) Ant 2	Front	0.885	0.101	0.096	0.133	0.247	0.069	0.717	1.80	2.05	1.77	5,12,7
		Back	0.765	0.099	0.098	0.159	0.240	0.083	0.891	1.85	2.14	1.84	8,13,10



16.4 Product specific 10g SAR Exposure Conditions

WWAN Band		Exposure Position	1	2	3	1+2+3
			WWAN	5GHz WLAN Ant 7	5GHz WLAN Ant 6	Summed
			10g SAR (W/kg)	10g SAR (W/kg)	10g SAR (W/kg)	10g SAR (W/kg)
GSM	GSM1900 Ant 0	Front		0.317	0.799	1.12
		Back		0.186	0.297	0.48
		Left side				0.00
		Right side		0.535	0.578	1.11
		Top side			0.320	0.32
		Bottom side	2.738			2.74
WCDMA	WCDMA II Ant 0	Front		0.317	0.799	1.12
		Back		0.186	0.297	0.48
		Left side				0.00
		Right side		0.535	0.578	1.11
		Top side			0.320	0.32
		Bottom side	3.191			3.19
	WCDMA IV Ant 0	Front		0.317	0.799	1.12
		Back		0.186	0.297	0.48
		Left side				0.00
		Right side		0.535	0.578	1.11
		Top side			0.320	0.32
		Bottom side	1.323			1.32
LTE	LTE Band 25 Ant 0	Front		0.317	0.799	1.12
		Back		0.186	0.297	0.48
		Left side				0.00
		Right side		0.535	0.578	1.11
		Top side			0.320	0.32
		Bottom side	3.100			3.10
	LTE Band 66 Ant 0	Front		0.317	0.799	1.12
		Back		0.186	0.297	0.48
		Left side				0.00
		Right side		0.535	0.578	1.11
		Top side			0.320	0.32
		Bottom side	3.497			3.50
5G NR	n41 Ant 1	Front		0.317	0.799	1.12
		Back		0.186	0.297	0.48
		Left side				0.00
		Right side		0.535	0.578	1.11
		Top side			0.320	0.32
		Bottom side	2.884			2.88
	n77 Ant 2	Front		0.317	0.799	1.12
		Back		0.186	0.297	0.48
		Left side				0.00
		Right side		0.535	0.578	1.11
		Top side			0.320	0.32
		Bottom side	2.364			2.36
	n77 Ant 4	Front		0.317	0.799	1.12
		Back		0.186	0.297	0.48
		Left side				0.00
		Right side		0.535	0.578	1.11
		Top side			0.320	0.32
		Bottom side	3.184			3.18



EN-DC

WWAN Band		Exposure Position	1	2	3	4	1+2+3+4
			WWAN	5GHz WLAN Ant 7	5GHz WLAN Ant 6	FR1 n2 Ant 2	Summed
			10g SAR (W/kg)	10g SAR (W/kg)	10g SAR (W/kg)	10g SAR (W/kg)	10g SAR (W/kg)
NSA	LTE Band 66 Ant 0	Front		0.317	0.799		1.12
		Back		0.186	0.297		0.48
		Left side					0.00
		Right side		0.535	0.578		1.11
		Top side			0.320		0.32
		Bottom side	1.447				1.45
WWAN Band		Exposure Position	1	2	3	4	1+2+3+4
			WWAN	5GHz WLAN Ant 7	5GHz WLAN Ant 6	FR1 n5 Ant 0	Summed
			10g SAR (W/kg)	10g SAR (W/kg)	10g SAR (W/kg)	10g SAR (W/kg)	10g SAR (W/kg)
NSA	LTE Band 2 Ant 0	Front		0.317	0.799		1.12
		Back		0.186	0.297		0.48
		Left side					0.00
		Right side		0.535	0.578		1.11
		Top side			0.320		0.32
		Bottom side	1.480				1.48
	LTE Band 66 Ant 0	Front		0.317	0.799		1.12
		Back		0.186	0.297		0.48
		Left side					0.00
		Right side		0.535	0.578		1.11
		Top side			0.320		0.32
		Bottom side	1.447				1.45
WWAN Band		Exposure Position	1	2	3	4	1+2+3+4
			WWAN	5GHz WLAN Ant 7	5GHz WLAN Ant 6	FR1 n25 Ant 2	Summed
			10g SAR (W/kg)	10g SAR (W/kg)	10g SAR (W/kg)	10g SAR (W/kg)	10g SAR (W/kg)
NSA	LTE Band 66 Ant 0	Front		0.317	0.799		1.12
		Back		0.186	0.297		0.48
		Left side					0.00
		Right side		0.535	0.578		1.11
		Top side			0.320		0.32
		Bottom side	1.447				1.45
WWAN Band		Exposure Position	1	2	3	4	1+2+3+4
			WWAN	5GHz WLAN Ant 7	5GHz WLAN Ant 6	FR1 n41 Ant 1	Summed
			10g SAR (W/kg)	10g SAR (W/kg)	10g SAR (W/kg)	10g SAR (W/kg)	10g SAR (W/kg)
NSA	LTE Band 2 Ant 0	Front		0.317	0.799	1.494	2.61
		Back		0.186	0.297		0.48
		Left side					0.00
		Right side		0.535	0.578		1.11
		Top side			0.320		0.32
		Bottom side	1.480			1.431	2.91
	LTE Band 25 Ant 0	Front		0.317	0.799	1.494	2.61
		Back		0.186	0.297		0.48
		Left side					0.00
		Right side		0.535	0.578		1.11
		Top side			0.320		0.32
		Bottom side	1.480			1.431	2.91
	LTE Band 66 Ant 0	Front		0.317	0.799	1.494	2.61
		Back		0.186	0.297		0.48
		Left side					0.00
		Right side		0.535	0.578		1.11
		Top side			0.320		0.32
		Bottom side	1.447			1.431	2.88



WWAN Band		Exposure Position	1	2	3	4	1+2+3+4
			WWAN	5GHz WLAN Ant 7	5GHz WLAN Ant 6	FR1 n41 Ant 3	Summed
			10g SAR (W/kg)	10g SAR (W/kg)	10g SAR (W/kg)	10g SAR (W/kg)	10g SAR (W/kg)
NSA	LTE Band 2 Ant 0	Front		0.317	0.799		1.12
		Back		0.186	0.297		0.48
		Left side					0.00
		Right side		0.535	0.578		1.11
		Top side			0.320		0.32
		Bottom side	1.480				1.48
	LTE Band 25 Ant 0	Front		0.317	0.799		1.12
		Back		0.186	0.297		0.48
		Left side					0.00
		Right side		0.535	0.578		1.11
		Top side			0.320		0.32
		Bottom side	1.480				1.48
	LTE Band 66 Ant 0	Front		0.317	0.799		1.12
		Back		0.186	0.297		0.48
		Left side					0.00
		Right side		0.535	0.578		1.11
		Top side			0.320		0.32
		Bottom side	1.447				1.45
WWAN Band		Exposure Position	1	2	3	4	1+2+3+4
			WWAN	5GHz WLAN Ant 7	5GHz WLAN Ant 6	FR1 n66 Ant 2	Summed
			10g SAR (W/kg)	10g SAR (W/kg)	10g SAR (W/kg)	10g SAR (W/kg)	10g SAR (W/kg)
NSA	LTE Band 2 Ant 0	Front		0.317	0.799		1.12
		Back		0.186	0.297		0.48
		Left side					0.00
		Right side		0.535	0.578		1.11
		Top side			0.320		0.32
		Bottom side	1.480				1.48
WWAN Band		Exposure Position	1	2	3	4	1+2+3+4
			WWAN	5GHz WLAN Ant 7	5GHz WLAN Ant 6	FR1 n71 Ant 0	Summed
			10g SAR (W/kg)	10g SAR (W/kg)	10g SAR (W/kg)	10g SAR (W/kg)	10g SAR (W/kg)
NSA	LTE Band 2 Ant 0	Front		0.317	0.799		1.12
		Back		0.186	0.297		0.48
		Left side					0.00
		Right side		0.535	0.578		1.11
		Top side			0.320		0.32
		Bottom side	1.480				1.48
	LTE Band 66 Ant 0	Front		0.317	0.799		1.12
		Back		0.186	0.297		0.48
		Left side					0.00
		Right side		0.535	0.578		1.11
		Top side			0.320		0.32
		Bottom side	1.447				1.45
WWAN Band		Exposure Position	1	2	3	4	1+2+3+4
			WWAN	5GHz WLAN Ant 7	5GHz WLAN Ant 6	FR1 n78 Ant 2	Summed
			10g SAR (W/kg)	10g SAR (W/kg)	10g SAR (W/kg)	10g SAR (W/kg)	10g SAR (W/kg)
NSA	LTE Band 2 Ant 0	Front		0.081	0.247		0.33
		Back		0.075	0.240		0.32
		Left side					0.00
		Right side		0.159	0.339		0.50
		Top side			0.198		0.20
		Bottom side	1.480				1.48
	LTE Band 4	Front		0.081	0.247		0.33



Band	Ant	Exposure Position	1	2	3	4	1+2+3+4
			WWAN 10g SAR (W/kg)	5GHz WLAN Ant 7 10g SAR (W/kg)	5GHz WLAN Ant 6 10g SAR (W/kg)	FR1 n78 Ant 4 10g SAR (W/kg)	Summed 10g SAR (W/kg)
	Ant 0	Back		0.075	0.240		0.32
		Left side					0.00
		Right side		0.159	0.339		0.50
		Top side			0.198		0.20
		Bottom side	1.447				1.45
	LTE Band 7 Ant 1	Front		0.081	0.247		0.33
		Back		0.075	0.240		0.32
		Left side					0.00
		Right side		0.159	0.339		0.50
		Top side			0.198		0.20
	Bottom side	1.289				1.29	
WWAN Band		Exposure Position	1	2	3	4	1+2+3+4
			WWAN 10g SAR (W/kg)	5GHz WLAN Ant 7 10g SAR (W/kg)	5GHz WLAN Ant 6 10g SAR (W/kg)	FR1 n78 Ant 4 10g SAR (W/kg)	Summed 10g SAR (W/kg)
NSA	LTE Band 2 Ant 0	Front		0.081	0.247		0.33
		Back		0.075	0.240		0.32
		Left side					0.00
		Right side		0.159	0.339		0.50
		Top side			0.198		0.20
		Bottom side	1.480				1.48
	LTE Band 4 Ant 0	Front		0.081	0.247		0.33
		Back		0.075	0.240		0.32
		Left side					0.00
		Right side		0.159	0.339		0.50
		Top side			0.198		0.20
		Bottom side	1.447				1.45
	LTE Band 7 Ant 1	Front		0.081	0.247		0.33
		Back		0.075	0.240		0.32
		Left side					0.00
		Right side		0.159	0.339		0.50
		Top side			0.198		0.20
		Bottom side	1.289				1.29

5G NR UL MIMO

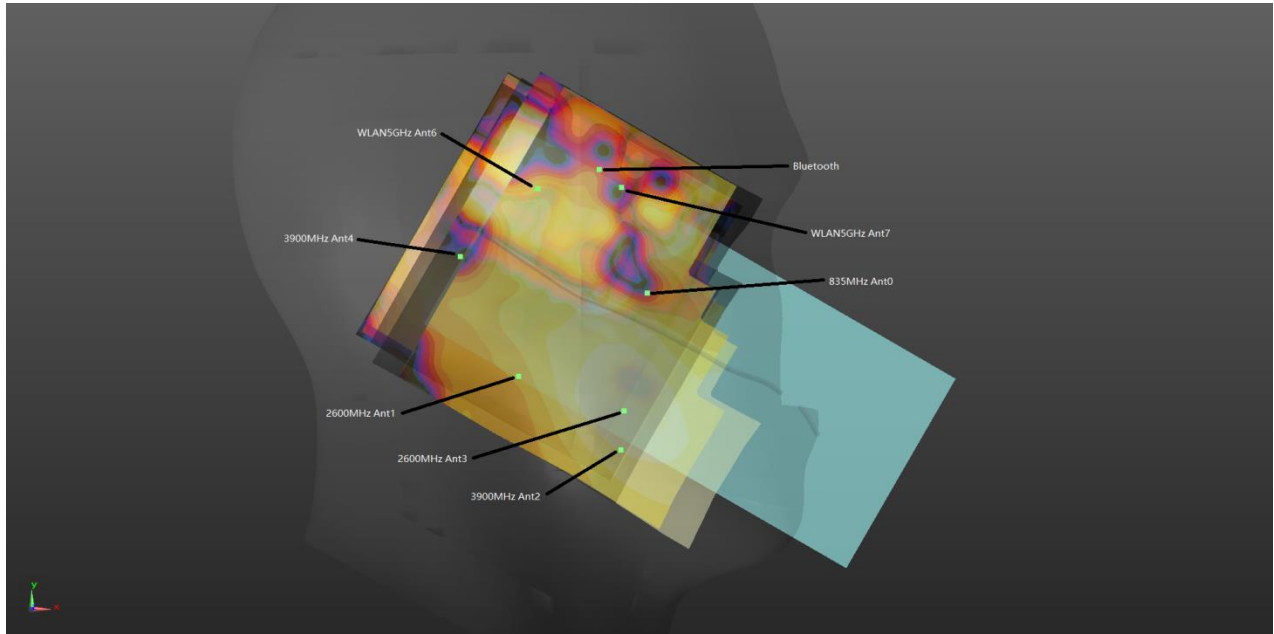
Band	Ant	Exposure Position	1	2	3	4	1+2+3+4	Case No	
			WWAN 1g SAR (W/kg)	5GHz WLAN Ant 7 1g SAR (W/kg)	5GHz WLAN Ant 6 1g SAR (W/kg)	FR1 n41 Ant 3 1g SAR (W/kg)	Summed 1g SAR (W/kg)		
5G NR UL MIMO	n41 Ant 1	Front		0.317	0.799		1.12		
		Back		0.186	0.297		0.48		
		Left side					0.00		
		Right side		0.535	0.578		1.11		
		Top side			0.320		0.32		
		Bottom side	2.884					2.88	
WWAN Band		Exposure Position	1	5	6	9	1+2+3+9	Case No	
			WWAN 1g SAR (W/kg)	5GHz WLAN Ant 7 1g SAR (W/kg)	5GHz WLAN Ant 6 1g SAR (W/kg)	FR1 n77(n78) Ant 4 1g SAR (W/kg)	Summed 1g SAR (W/kg)		
5G NR UL MIMO	n77(n78) Ant 2	Front		0.317	0.799		1.12		
		Back		0.186	0.297		0.48		
		Left side	2.364				2.665	5.03	14
		Right side		0.535	0.578		1.11		
		Top side			0.320		0.32		
		Bottom side						0.00	



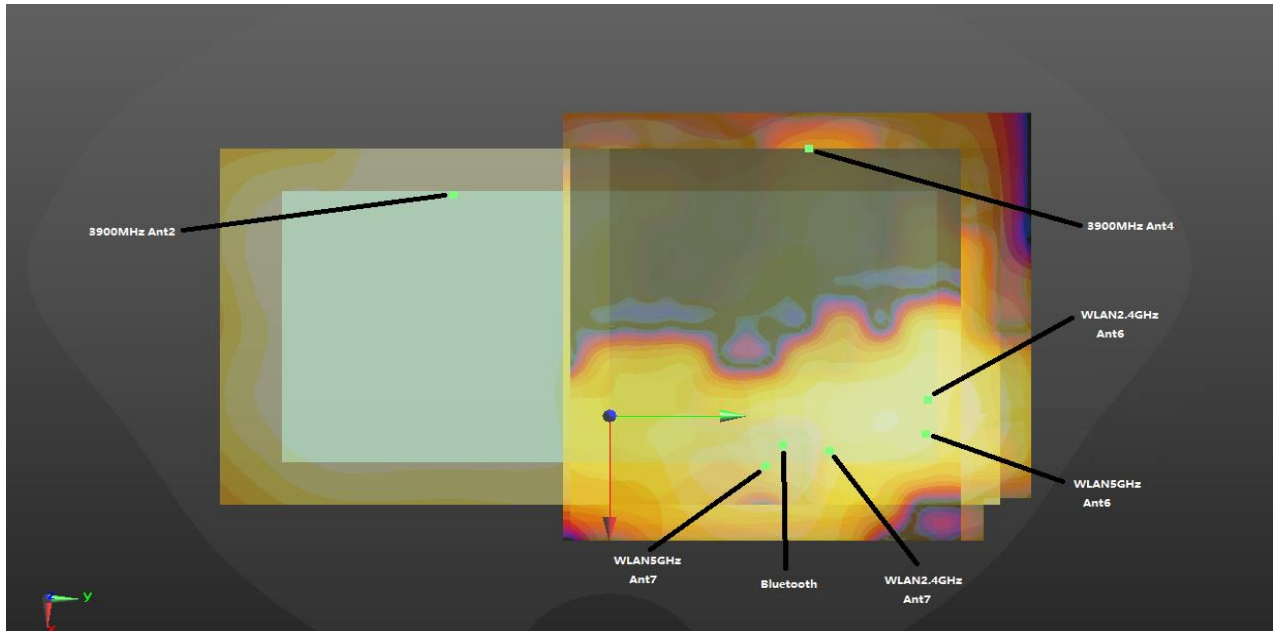
### 16.5 SPLSR Evaluation and Analysis

**General Note:**

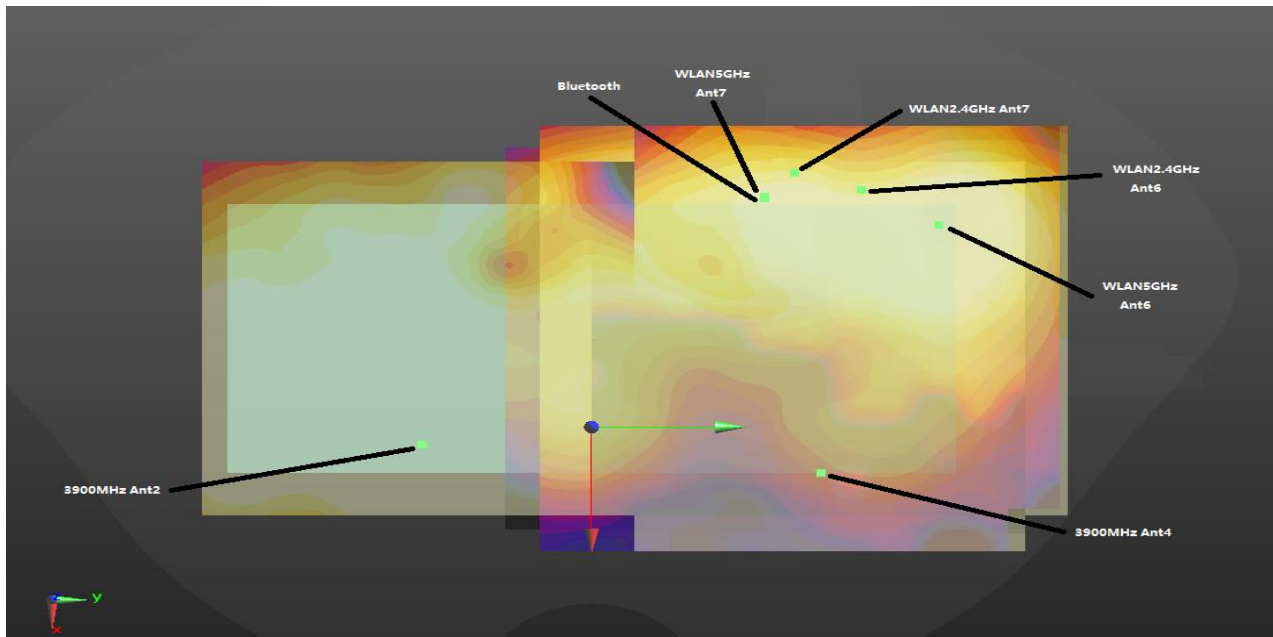
1. When standalone SAR is measured for both antennas in the pair, the peak location separation distance is computed by the square root of  $[(x1-x2)^2 + (y1-y2)^2 + (z1-z2)^2]$ , where  $(x1, y1, z1)$  and  $(x2, y2, z2)$  are the coordinates in the area scans or extrapolated peak SAR locations in the zoom scans, as appropriate.
2.  $SPLSR = (SAR1 + SAR2)1.5 / (\text{min. separation distance, mm})$ . If  $SPLSR \leq 0.04$  for 1g SAR and  $SPLSR \leq 0.10$  for 10g SAR, simultaneously transmission SAR measurement is not necessary.



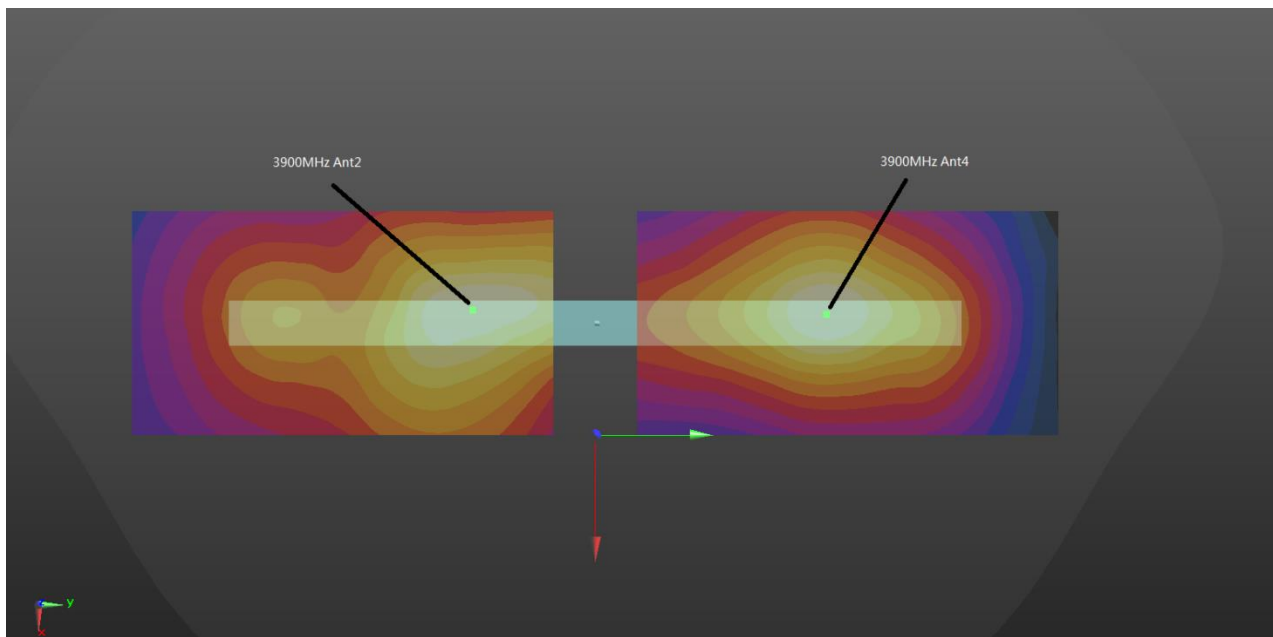
**WWAN+WLAN+BT Left Cheek 0mm**



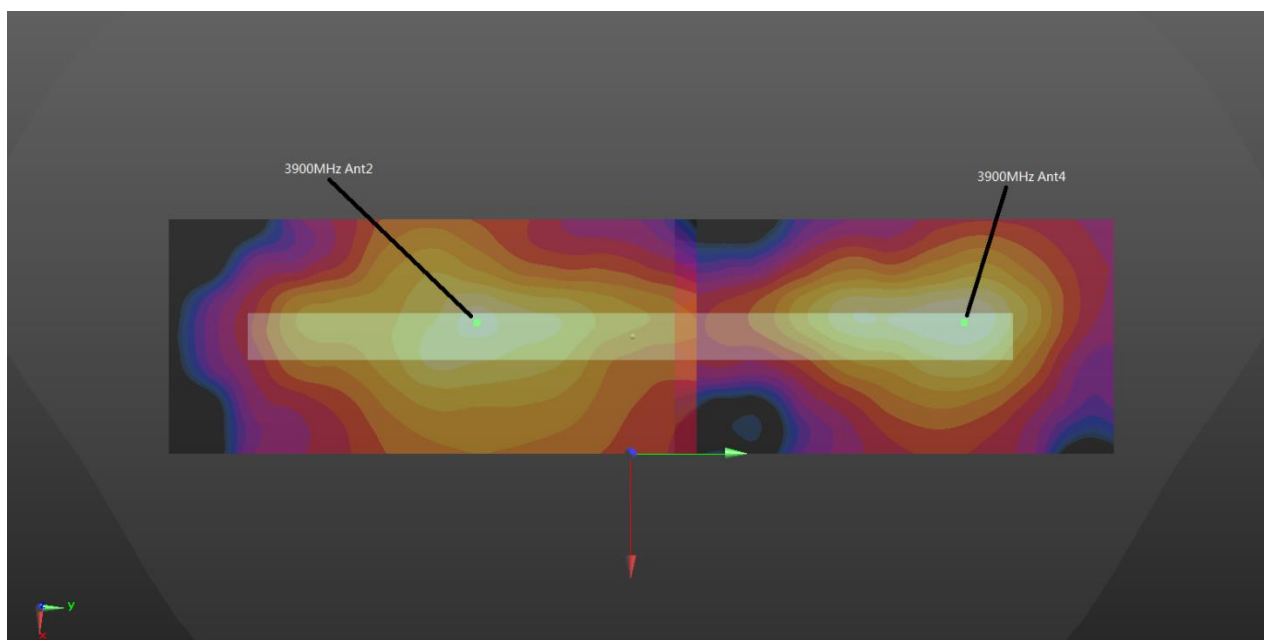
**5G NR +WLAN+BT Front 10mm**



5G NR+WLAN+BT Back 10mm



5G NR UL MIMO left Side 10mm



5G NR MIMO left Side 0mm



Left Cheek at 0mm											
	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Case 1	n41 Ant3	Left Cheek	0.549	0	51.41	-64.31	1.54	89.2	0.95	0.01	Not required
	5GHz WLAN Ant 6		0.405	0	18.59	18.6	-1.1				
	n41 Ant3	Left Cheek	0.549	0	51.41	-64.31	1.54	93.1	1.23	0.01	Not required
	5GHz WLAN Ant 7		0.402	0	44.04	28.47	2.09				
	Bluetooth Ant 7	Left Cheek	0.283	0	49.9	21.42	1.87	85.7	1.23	0.02	Not required
	n41 Ant3		0.549	0	51.41	-64.31	1.54				
	Bluetooth Ant 7	Left Cheek	0.283	0	49.9	21.42	1.87	31.6	0.69	0.02	Not required
	5GHz WLAN Ant 7		0.402	0	44.04	28.47	2.09				
	5GHz WLAN Ant 6	Left Cheek	0.405	0	18.59	18.6	-1.1	27.5	0.81	0.03	Not required
	Bluetooth Ant 7		0.283	0	49.9	21.42	1.87				
	5GHz WLAN Ant 6	Left Cheek	0.405	0	18.59	18.6	-1.1				
	5GHz WLAN Ant 7		0.402	0	44.04	28.47	2.09				
Case 2	LTE Band 5 Ant0	Left Cheek	0.150	0	59.69	-22.16	-1.32	55.4	0.52	0.01	Not required
	n78 Ant2		0.372	0	49.15	-76.34	3.03				
	LTE Band 5 Ant0	Left Cheek	0.150	0	59.69	-22.16	-1.32	57.9	0.56	0.01	Not required
	5GHz WLAN Ant 6		0.405	0	18.59	18.6	-1.1				
	LTE Band 5 Ant0	Left Cheek	0.150	0	59.69	-22.16	-1.32	44.8	0.84	0.02	Not required
	Bluetooth Ant 7		0.283	0	49.9	21.42	1.87				
	5GHz WLAN Ant 7	Left Cheek	0.402	0	44.04	28.47	2.09	53.1	0.84	0.01	Not required
	LTE Band 5 Ant0		0.150	0	59.69	-22.16	-1.32				
	5GHz WLAN Ant 7	Left Cheek	0.402	0	44.04	28.47	2.09	99.8	0.78	0.01	Not required
	Bluetooth Ant 7		0.283	0	49.9	21.42	1.87				
	n78 Ant2	Left Cheek	0.372	0	49.15	-76.34	3.03	97.8	1.06	0.01	Not required
	5GHz WLAN Ant 6		0.405	0	18.59	18.6	-1.1				
	n78 Ant2	Left Cheek	0.372	0	49.15	-76.34	3.03	104.9	1.06	0.01	Not required
	Bluetooth Ant 7		0.283	0	49.9	21.42	1.87				
	5GHz WLAN Ant 7	Left Cheek	0.402	0	44.04	28.47	2.09	31.6	0.69	0.02	Not required
	Bluetooth Ant 7		0.283	0	49.9	21.42	1.87				
	5GHz WLAN Ant 6	Left Cheek	0.405	0	18.59	18.6	-1.1	27.5	0.81	0.03	Not required
	Bluetooth Ant 7		0.283	0	49.9	21.42	1.87				
	5GHz WLAN Ant 6	Left Cheek	0.405	0	18.59	18.6	-1.1				
	5GHz WLAN Ant 7		0.402	0	44.04	28.47	2.09				
Case 3	n41 Ant1	Left Cheek	0.078	0	9.64	-52.35	4.45	43.5	0.63	0.01	Not required
	n41 Ant3		0.549	0	51.41	-64.31	1.54				
	n41 Ant1	Left Cheek	0.078	0	9.64	-52.35	4.45	71.7	0.48	0.00	Not required
	5GHz WLAN Ant 6		0.405	0	18.59	18.6	-1.1				
	n41 Ant1	Left Cheek	0.078	0	9.64	-52.35	4.45	84.1	0.76	0.01	Not required
	Bluetooth Ant 7		0.283	0	49.9	21.42	1.87				
	5GHz WLAN Ant 7	Left Cheek	0.402	0	44.04	28.47	2.09	87.9	0.76	0.01	Not required
	n41 Ant1		0.078	0	9.64	-52.35	4.45				
	5GHz WLAN Ant 7	Left Cheek	0.402	0	44.04	28.47	2.09	89.2	0.95	0.01	Not required
	Bluetooth Ant 7		0.283	0	49.9	21.42	1.87				
	n41 Ant3	Left Cheek	0.549	0	51.41	-64.31	1.54	85.7	1.23	0.02	Not required
	5GHz WLAN Ant 6		0.405	0	18.59	18.6	-1.1				
n41 Ant3	Left Cheek	0.549	0	51.41	-64.31	1.54					
Bluetooth Ant 7		0.283	0	49.9	21.42	1.87					



Case 4	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR	
					X	Y	Z					
	5GHz WLAN Ant 7	Left Cheek	0.402	0	44.04	28.47	2.09	93.1	1.23	0.01	Not required	
	n41 Ant3		0.549	0	51.41	-64.31	1.54					
	5GHz WLAN Ant 7		0.402	0	44.04	28.47	2.09					
	Bluetooth Ant 7		0.283	0	49.9	21.42	1.87					
		5GHz WLAN Ant 6	Left Cheek	0.405	0	18.59	18.6	-1.1	31.6	0.69	0.02	Not required
		Bluetooth Ant 7		0.283	0	49.9	21.42	1.87				
		5GHz WLAN Ant 6	Left Cheek	0.405	0	18.59	18.6	-1.1	27.5	0.81	0.03	Not required
		5GHz WLAN Ant 7		0.402	0	44.04	28.47	2.09				

Front at 10mm													
Case 5	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR		
					X	Y	Z						
	n77 Ant 2	Front	0.885	10	-35.4	-42.4	1.81	137.4	0.98	0.01	Not required		
	2.4GHz WLAN Ant 6		0.096	10	19.4	83.6	1.8						
		n77 Ant 2	Front	0.885	10	-35.4	-42.4	1.81	119.8	0.99	0.01	Not required	
		2.4GHz WLAN Ant 7		0.101	10	37.8	52.4	1.9					
		n77 Ant 2	Front	0.885	10	-35.4	-42.4	1.81	95.0	1.60	0.02	Not required	
		n77 Ant 4		0.717	10	-47.6	51.8	1.78					
			n77 Ant 4	Front	0.717	10	-47.6	51.8	1.78	74.2	0.81	0.01	Not required
			2.4GHz WLAN Ant 6		0.096	10	19.4	83.6	1.8				
		n77 Ant 4	Front	0.717	10	-47.6	51.8	1.78	85.4	0.82	0.01	Not required	
		2.4GHz WLAN Ant 7		0.101	10	37.8	52.4	1.9					
			2.4GHz WLAN Ant 6	Front	0.096	10	19.4	83.6	1.8	36.2	0.20	0.00	Not required
			2.4GHz WLAN Ant 7		0.101	10	37.8	52.4	1.9				

Case 6	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR	
					X	Y	Z					
	n77 Ant 2	Front	0.885	10	-35.4	-42.4	1.81	130.1	1.13	0.01	Not required	
	5GHz WLAN Ant 6		0.247	10	38	65	1.87					
		n77 Ant 2	Front	0.885	10	-35.4	-42.4	1.81	114.4	1.04	0.01	Not required
		Bluetooth Ant 7		0.069	10	35.8	47.2	1.83				
		5GHz WLAN Ant 7		0.081	10	38.2	43.2	1.84				
	n77 Ant 2	Front	0.885	10	-35.4	-42.4	1.81	112.9	1.04	0.01	Not required	



	5GHz WLAN Ant 7	Front	0.081	10	38.2	43.2	1.84	95.0	1.60	0.02	Not required
	Bluetooth Ant 7		0.069	10	35.8	47.2	1.83				
	n77 Ant 2		0.885	10	-35.4	-42.4	1.81				
	FR1 n77 Ant 4		0.717	10	-47.6	51.8	1.78				
	FR1 n77 Ant 4	Front	0.717	10	-47.6	51.8	1.78	83.5	0.87	0.01	Not required
	Bluetooth Ant 7		0.069	10	35.8	47.2	1.83				
	5GHz WLAN Ant 7		0.081	10	38.2	43.2	1.84				
	FR1 n77 Ant 4	Front	0.717	10	-47.6	51.8	1.78	86.2	0.87	0.01	Not required
	5GHz WLAN Ant 7		0.081	10	38.2	43.2	1.84				
	Bluetooth Ant 7		0.069	10	35.8	47.2	1.83				
	FR1 n77 Ant 4	Front	0.717	10	-47.6	51.8	1.78	86.6	0.96	0.01	Not required
	5GHz WLAN Ant 6		0.247	10	38	65	1.87				
	Bluetooth Ant 7		0.069	10	35.8	47.2	1.83				
	5GHz WLAN Ant 6	Front	0.247	10	38	65	1.87	17.9	0.32	0.01	Not required
	5GHz WLAN Ant 6		0.247	10	38	65	1.87				
5GHz WLAN Ant 6	0.247		10	38	65	1.87					
5GHz WLAN Ant 6	Front	0.247	10	38	65	1.87	21.8	0.33	0.01	Not required	
5GHz WLAN Ant 7		0.081	10	38.2	43.2	1.84					
Case 7	<b>Band</b>	<b>Position</b>	<b>SAR (W/kg)</b>	<b>Gap (mm)</b>	<b>SAR peak location (mm)</b>			<b>3D distance (mm)</b>	<b>Summed SAR (W/kg)</b>	<b>SPLSR Results</b>	<b>Simultaneous SAR</b>
					<b>X</b>	<b>Y</b>	<b>Z</b>				
	n77 Ant 2	Front	0.885	10	-35.4	-42.4	1.81	137.4	0.98	0.01	Not required
	2.4GHz WLAN Ant 6		0.096	10	19.4	83.6	1.8				
	n77 Ant 2	Front	0.885	10	-35.4	-42.4	1.81	112.9	0.95	0.01	Not required
	Bluetooth Ant 7		0.069	10	38.2	43.2	1.84				
	n77 Ant 2	Front	0.885	10	-35.4	-42.4	1.81	95.0	1.60	0.02	Not required
	FR1 n77 Ant 4		0.717	10	-47.6	51.8	1.78				
	FR1 n77 Ant 4	Front	0.717	10	-47.6	51.8	1.78	83.5	0.79	0.01	Not required
	Bluetooth Ant 7		0.069	10	35.8	47.2	1.83				
	FR1 n77 Ant 4	Front	0.717	10	-47.6	51.8	1.78	74.2	0.81	0.01	Not required
	2.4GHz WLAN Ant 6		0.096	10	19.4	83.6	1.8				
Bluetooth Ant 7	Front	0.069	10	35.8	47.2	1.83	39.9	0.17	0.00	Not required	
2.4GHz WLAN Ant 6		0.096	10	19.4	83.6	1.8					
Case 12	<b>Band</b>	<b>Position</b>	<b>SAR (W/kg)</b>	<b>Gap (mm)</b>	<b>SAR peak location (mm)</b>			<b>3D distance (mm)</b>	<b>Summed SAR (W/kg)</b>	<b>SPLSR Results</b>	<b>Simultaneous SAR</b>
					<b>X</b>	<b>Y</b>	<b>Z</b>				
	n77 Ant 2	Front	0.885	10	-35.4	-42.4	1.81	130.1	1.13	0.01	Not required
	5GHz WLAN Ant 6		0.247	10	38	65	1.87				
	n77 Ant 2	Front	0.885	10	-35.4	-42.4	1.81	114.4	1.09	0.01	Not required
	Bluetooth Ant 7		0.069	10	35.8	47.2	1.83				
	5GHz WLAN Ant 7	Front	0.133	10	38	41	1.41	111.1	1.09	0.01	Not required
	n77 Ant 2		0.885	10	-35.4	-42.4	1.81				
	5GHz WLAN Ant 7		0.133	10	38	41	1.41				
	Bluetooth Ant 7	Front	0.069	10	35.8	47.2	1.83	95.0	1.60	0.02	Not required
	n77 Ant 2		0.885	10	-35.4	-42.4	1.81				
	FR1 n77 Ant 4	Front	0.717	10	-47.6	51.8	1.78	83.5	0.92	0.01	Not required
	FR1 n77 Ant 4		0.717	10	-47.6	51.8	1.78				
	Bluetooth Ant 7		0.069	10	35.8	47.2	1.83				
	5GHz WLAN Ant 7	Front	0.133	10	38	41	1.41	86.3	0.92	0.01	Not required
	FR1 n77 Ant 4		0.717	10	-47.6	51.8	1.78				
	5GHz WLAN Ant 7		0.133	10	38	41	1.41				
	Bluetooth Ant 7	Front	0.069	10	35.8	47.2	1.83	86.6	0.96	0.01	Not required
	FR1 n77 Ant 4		0.717	10	-47.6	51.8	1.78				
	5GHz WLAN Ant 6	Front	0.247	10	38	65	1.87	17.9	0.32	0.01	Not required
	Bluetooth Ant 7		0.069	10	35.8	47.2	1.83				
5GHz WLAN Ant 6	0.247		10	38	65	1.87					
5GHz WLAN Ant 6	Front	0.247	10	38	65	1.87	24.0	0.38	0.01	Not required	
5GHz WLAN Ant 7		0.133	10	38	41	1.41					



Back at 10mm											
	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
Case 8	n77 Ant 2	Back	0.765	10	30.8	-41.4	1.9	125.4	0.86	0.01	Not required
	2.4GHz WLAN Ant 6		0.098	10	-41	61.4	1.78				
	n77 Ant 2	Back	0.765	10	30.8	-41.4	1.9	116.7	0.86	0.01	Not required
	2.4GHz WLAN Ant 7		0.099	10	-46.8	45.8	1.84				
	n77 Ant 2	Back	0.765	10	30.8	-41.4	1.9	94.7	1.66	0.02	Not required
	FR1 n77 Ant 4		0.891	10	38	53	1.79				
	FR1 n77 Ant 4	Back	0.891	10	38	53	1.79	79.4	0.99	0.01	Not required
	2.4GHz WLAN Ant 6		0.098	10	-41	61.4	1.78				
	FR1 n77 Ant 4	Back	0.891	10	38	53	1.79	85.1	0.99	0.01	Not required
	2.4GHz WLAN Ant 7		0.099	10	-46.8	45.8	1.84				
2.4GHz WLAN Ant 6	Back	0.098	10	-41	61.4	1.78	16.6	0.20	0.01	Not required	
2.4GHz WLAN Ant 7		0.099	10	-46.8	45.8	1.84					
Case 9	n77 Ant 2	Back	0.765	10	30.8	-41.4	1.9	137.9	1.01	0.01	Not required
	5GHz WLAN Ant 6		0.240	10	-36	79.2	1.73				
	n77 Ant 2	Back	0.765	10	30.8	-41.4	1.9	109.9	0.92	0.01	Not required
	Bluetooth Ant 7		0.083	10	-39.6	43	1.13				
	5GHz WLAN Ant 7	Back	0.075	10	-40	38.4	1.85	106.7	0.92	0.01	Not required
	n77 Ant 2		0.765	10	30.8	-41.4	1.9				
	5GHz WLAN Ant 7	Back	0.075	10	-40	38.4	1.85	94.7	1.66	0.02	Not required
	Bluetooth Ant 7		0.083	10	-39.6	43	1.13				
	n77 Ant 2	Back	0.765	10	30.8	-41.4	1.9	78.2	1.05	0.01	Not required
	FR1 n77 Ant 4		0.891	10	38	53	1.79				
	FR1 n77 Ant 4	Back	0.891	10	38	53	1.79	79.4	1.05	0.01	Not required
	Bluetooth Ant 7		0.083	10	-39.6	43	1.13				
	5GHz WLAN Ant 7	Back	0.075	10	-40	38.4	1.85	78.5	1.13	0.02	Not required
	FR1 n77 Ant 4		0.891	10	38	53	1.79				
	5GHz WLAN Ant 6	Back	0.240	10	-36	79.2	1.73	36.4	0.3	0.0	Not required
	Bluetooth Ant 7		0.083	10	-39.6	43	1.13				
	5GHz WLAN Ant 6	Back	0.240	10	-36	79.2	1.73	41.0	0.3	0.0	Not required
	5GHz WLAN Ant 6		0.240	10	-36	79.2	1.73				
5GHz WLAN Ant 7	Back	0.075	10	-40	38.4	1.85					
Case 10	n77 Ant 2	Back	0.765	10	30.8	-41.4	1.9	125.4	0.86	0.01	Not required
	2.4GHz WLAN Ant 6		0.098	10	-41	61.4	1.78				
	n77 Ant 2	Back	0.765	10	30.8	-41.4	1.9	109.9	0.85	0.01	Not required
	Bluetooth Ant 7		0.083	10	-39.6	43	1.13				
	n77 Ant 2	Back	0.765	10	30.8	-41.4	1.9	94.7	1.66	0.02	Not required
	FR1 n77 Ant 4		0.891	10	38	53	1.79				
	FR1 n77 Ant 4	Back	0.891	10	38	53	1.79	78.2	0.97	0.01	Not required
	Bluetooth Ant 7		0.083	10	-39.6	43	1.13				
	FR1 n77 Ant 4	Back	0.891	10	38	53	1.79	79.4	0.99	0.01	Not required
	2.4GHz WLAN Ant 6		0.098	10	-41	61.4	1.78				
	Bluetooth Ant 7	Back	0.083	10	-39.6	43	1.13	18.5	0.18	0.00	Not required
	2.4GHz WLAN Ant 6		0.098	10	-41	61.4	1.78				
Case 13	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR



	n77 Ant 2	Back	0.765	10	30.8	-41.4	1.9	137.9	1.01	0.01	Not required
	5GHz WLAN Ant 6		0.240	10	-36	79.2	1.73				
	n77 Ant 2	Back	0.765	10	30.8	-41.4	1.9	109.9	1.01	0.01	Not required
	Bluetooth Ant 7		0.083	10	-39.6	43	1.13				
	5GHz WLAN Ant 7	Back	0.159	10	-44.6	44.8	1.2	114.5	1.01	0.01	Not required
	n77 Ant 2		0.765	10	30.8	-41.4	1.9				
	5GHz WLAN Ant 7	Back	0.159	10	-44.6	44.8	1.2	94.7	1.66	0.02	Not required
	Bluetooth Ant 7		0.083	10	-39.6	43	1.13				
	n77 Ant 2	Back	0.765	10	30.8	-41.4	1.9	78.2	1.13	0.02	Not required
	FR1 n77 Ant 4		0.891	10	38	53	1.79				
	FR1 n77 Ant 4	Back	0.891	10	38	53	1.79	83.0	1.13	0.01	Not required
	Bluetooth Ant 7		0.083	10	-39.6	43	1.13				
	5GHz WLAN Ant 7	Back	0.159	10	-44.6	44.8	1.2	78.5	1.13	0.02	Not required
	FR1 n77 Ant 4		0.891	10	38	53	1.79				
	5GHz WLAN Ant 7	Back	0.159	10	-44.6	44.8	1.2	36.4	0.32	0.01	Not required
	Bluetooth Ant 7		0.083	10	-39.6	43	1.13				
	FR1 n77 Ant 4	Back	0.891	10	38	53	1.79	35.5	0.40	0.01	Not required
	5GHz WLAN Ant 6		0.240	10	-36	79.2	1.73				
	Bluetooth Ant 7	Back	0.083	10	-39.6	43	1.13	114.5	1.01	0.01	Not required
	5GHz WLAN Ant 6		0.240	10	-36	79.2	1.73				
5GHz WLAN Ant 6	Back	0.240	10	-36	79.2	1.73	109.9	1.01	0.01	Not required	
5GHz WLAN Ant 7		0.159	10	-44.6	44.8	1.2					

Left Side at 10 mm											
Case 11	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
	n77 Ant 2	Left Side	0.951	10	-2.2	-32.2	1.83	88.0	1.99	0.03	Not required
	FR1 n77 Ant 4		1.043	10	-2	55.8	1.72				

Left Side at 0 mm											
Case 14	Band	Position	SAR (W/kg)	Gap (mm)	SAR peak location (mm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
					X	Y	Z				
	n77(78) Ant 2	Left Side	2.364	10	-7.8	-35.4	1.79	109.1	5.03	0.10	Not required
	FR1 n77(78) Ant 4		2.665	10	-3	73.6	1.47				

Test Engineer : Nick Hu, Seven Xu, Hank Chang, Yuankai Kong





## **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.

## **18. References**

- [1] FCC 47 CFR Part 2 "Frequency Allocations and Radio Treaty Matters; General Rules and Regulations"
- [2] ANSI/IEEE Std. C95.1-1992, "IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz", September 1992
- [3] IEEE Std. 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", Sep 2013
- [4] SPEAG DASY System Handbook
- [5] FCC KDB 865664 D01 v01r04, "SAR Measurement Requirements for 100 MHz to 6 GHz", Aug 2015.
- [6] FCC KDB 865664 D02 v01r02, "RF Exposure Compliance Reporting and Documentation Considerations" Oct 2015.
- [7] FCC KDB 447498 D01 v06, "Mobile and Portable Device RF Exposure Procedures and Equipment Authorization Policies", Oct 2015
- [8] FCC KDB 648474 D04 v01r03, "SAR Evaluation Considerations for Wireless Handsets", Oct 2015.
- [9] FCC KDB 248227 D01 v02r02, "SAR Guidance for IEEE 802.11 (WiFi) Transmitters", Oct 2015.
- [10] FCC KDB 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.

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



## **Appendix A. Plots of System Performance Check**

The plots are shown as follows.

### System Check\_Head\_750MHz

**DUT: D750V3 - SN:1087**

Communication System: UID 0, CW (0) Frequency: 750 MHz;Duty Cycle: 1:1  
Medium: HSL\_750 Medium parameters used:  $f = 750 \text{ MHz}$ ;  $\sigma = 0.922 \text{ S/m}$ ;  $\epsilon_r = 43.754$ ;  $\rho = 1000 \text{ kg/m}^3$   
Ambient Temperature : 23.1 °C; Liquid Temperature : 22.6 °C

#### DASY5 Configuration:

- Probe: EX3DV4 - SN7592; ConvF(10.31, 10.31, 10.31); Calibrated: 2020.5.22
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn690; Calibrated: 2021.03.17
- Phantom: SAM Twin Phantom; Type: SAM Twin; Serial: TP-1697
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**Pin=250mW/Area Scan (61x61x1):** Interpolated grid:  $dx=1.500 \text{ mm}$ ,  $dy=1.500 \text{ mm}$   
Maximum value of SAR (interpolated) = 2.59 W/kg

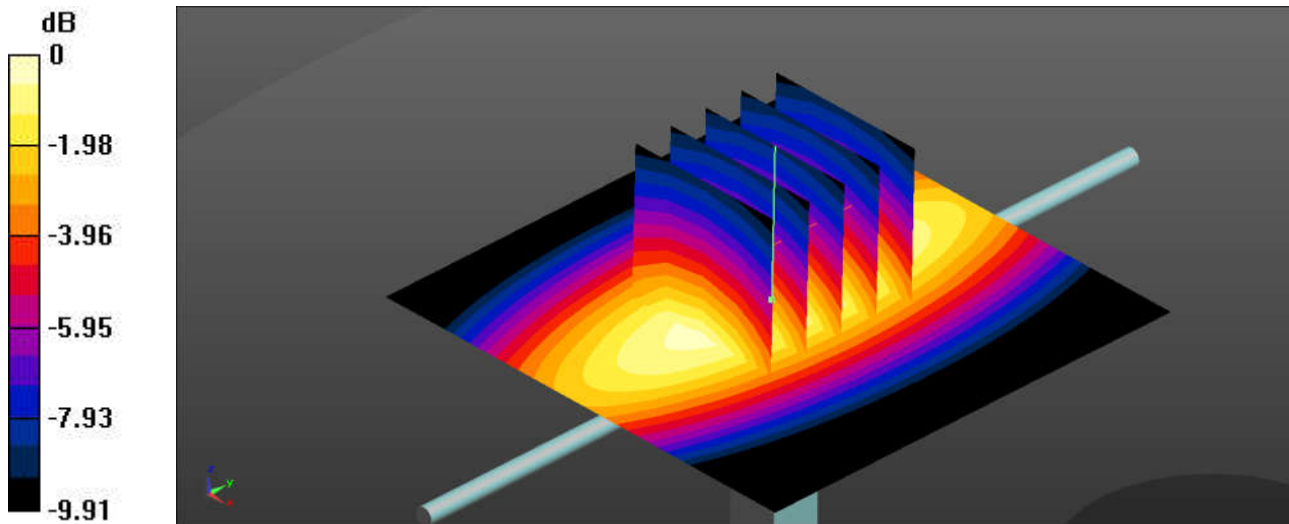
**Pin=250mW/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 49.47 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 3.00 W/kg

**SAR(1 g) = 2.08 W/kg; SAR(10 g) = 1.39 W/kg**

Maximum value of SAR (measured) = 2.59 W/kg



0 dB = 2.59 W/kg = 4.13 dBW/kg

### System Check\_Head\_835MHz

**DUT: D835V2 - SN:4d258**

Communication System: UID 0, CW (0); Frequency: 835 MHz; Duty Cycle: 1:1

Medium: HSL\_835 Medium parameters used:  $f = 835 \text{ MHz}$ ;  $\sigma = 0.901 \text{ S/m}$ ;  $\epsilon_r = 41.239$ ;  $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature : 23.2 °C; Liquid Temperature : 22.8 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN7592; ConvF(10.05, 10.05, 10.05); Calibrated: 2020.5.22
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn690; Calibrated: 2021.03.17
- Phantom: SAM Twin Phantom; Type: SAM Twin; Serial: TP-1697
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**Pin=250mW/Area Scan (61x61x1):** Interpolated grid:  $dx=1.500 \text{ mm}$ ,  $dy=1.500 \text{ mm}$   
Maximum value of SAR (interpolated) = 2.85 W/kg

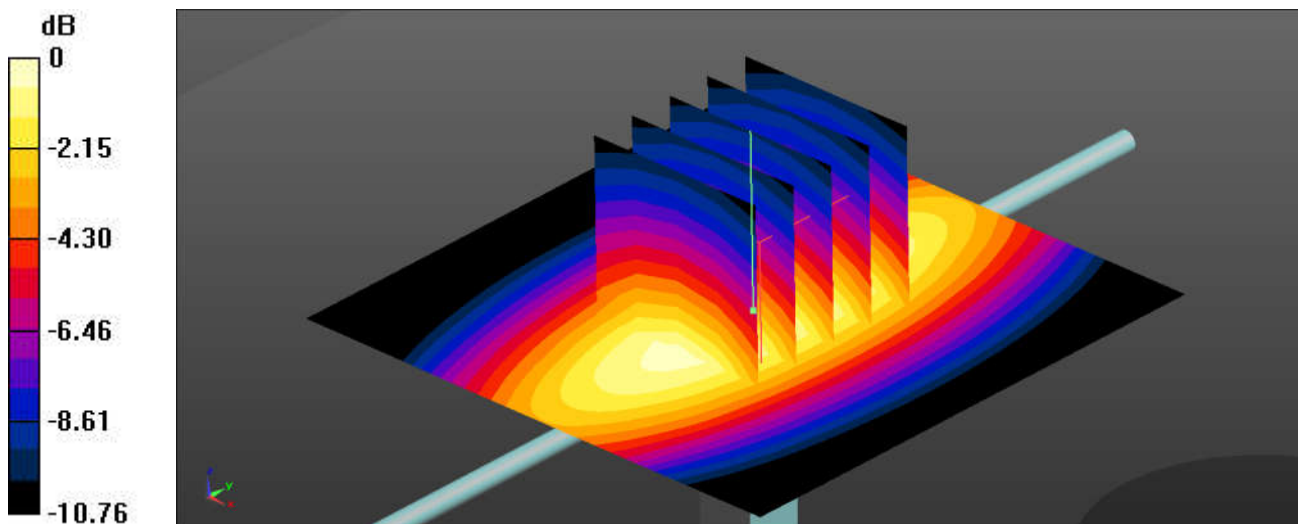
**Pin=250mW/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 51.23 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 3.37 W/kg

**SAR(1 g) = 2.23 W/kg; SAR(10 g) = 1.45 W/kg**

Maximum value of SAR (measured) = 2.85 W/kg



0 dB = 2.85 W/kg = 4.55 dBW/kg

### System Check\_Head\_1750MHz

**DUT: D1750V2 - SN:1090**

Communication System: UID 0, CW (0); Frequency: 1750 MHz; Duty Cycle: 1:1

Medium: HSL\_1750 Medium parameters used:  $f = 1750$  MHz;  $\sigma = 1.374$  S/m;  $\epsilon_r = 41.864$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 23.1 °C; Liquid Temperature : 22.9 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN7592; ConvF(8.41, 8.41, 8.41); Calibrated: 2020.5.22
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn690; Calibrated: 2021.03.17
- Phantom: SAM Twin Phantom; Type: SAM Twin; Serial: TP-1697
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**Pin=250mW/Area Scan (61x61x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm  
Maximum value of SAR (interpolated) = 12.3 W/kg

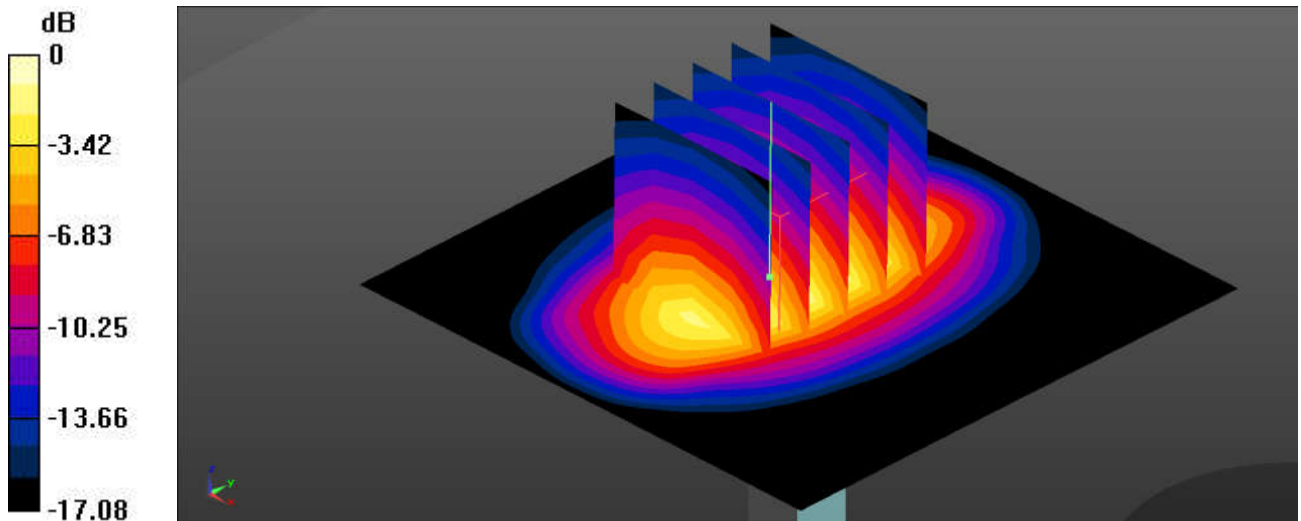
**Pin=250mW/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 80.86 V/m; Power Drift = 0.14 dB

Peak SAR (extrapolated) = 15.8 W/kg

**SAR(1 g) = 8.74 W/kg; SAR(10 g) = 4.64 W/kg**

Maximum value of SAR (measured) = 12.5 W/kg



0 dB = 12.5 W/kg = 10.97 dBW/kg

### System Check\_Head\_1900MHz

**DUT: D1900V2 - SN:5d170**

Communication System: UID 0, CW (0); Frequency: 1900 MHz; Duty Cycle: 1:1  
Medium: HSL\_1900 Medium parameters used:  $f = 1900$  MHz;  $\sigma = 1.461$  S/m;  $\epsilon_r = 41.817$ ;  $\rho = 1000$  kg/m<sup>3</sup>  
Ambient Temperature : 23.3 °C; Liquid Temperature : 22.7 °C

#### DASY5 Configuration:

- Probe: EX3DV4 - SN7592; ConvF(8.22, 8.22, 8.22); Calibrated: 2020.5.22
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn690; Calibrated: 2021.03.17
- Phantom: SAM Twin Phantom; Type: SAM Twin; Serial: TP-1697
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**Pin=250mW/Area Scan (61x61x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm  
Maximum value of SAR (interpolated) = 15.0 W/kg

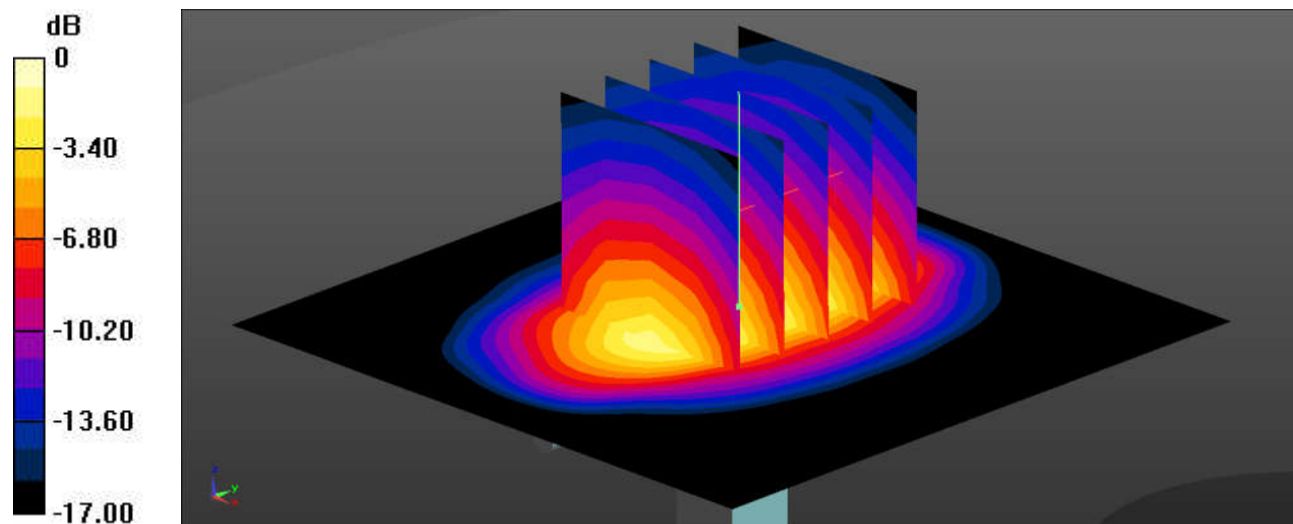
**Pin=250mW/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 86.22 V/m; Power Drift = 0.14 dB

Peak SAR (extrapolated) = 18.8 W/kg

**SAR(1 g) = 10.5 W/kg; SAR(10 g) = 5.57 W/kg**

Maximum value of SAR (measured) = 14.9 W/kg



0 dB = 14.9 W/kg = 11.73 dBW/kg

### System Check\_Head\_2300MHz

#### DUT: D2300V2 - SN:1055

Communication System: UID 0, CW (0); Frequency: 2300 MHz; Duty Cycle: 1:1  
Medium: HSL\_2300 Medium parameters used:  $f = 2300$  MHz;  $\sigma = 1.686$  S/m;  $\epsilon_r = 39.138$ ;  $\rho = 1000$  kg/m<sup>3</sup>  
Ambient Temperature : 23.4 °C; Liquid Temperature : 22.6 °C

#### DASY5 Configuration:

- Probe: EX3DV4 - SN7592; ConvF(7.81, 7.81, 7.81); Calibrated: 2020.5.22
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn690; Calibrated: 2021.03.17
- Phantom: SAM Twin Phantom; Type: SAM Twin; Serial: TP-1697
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**Pin=250mW/Area Scan (71x71x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm  
Maximum value of SAR (interpolated) = 19.0 W/kg

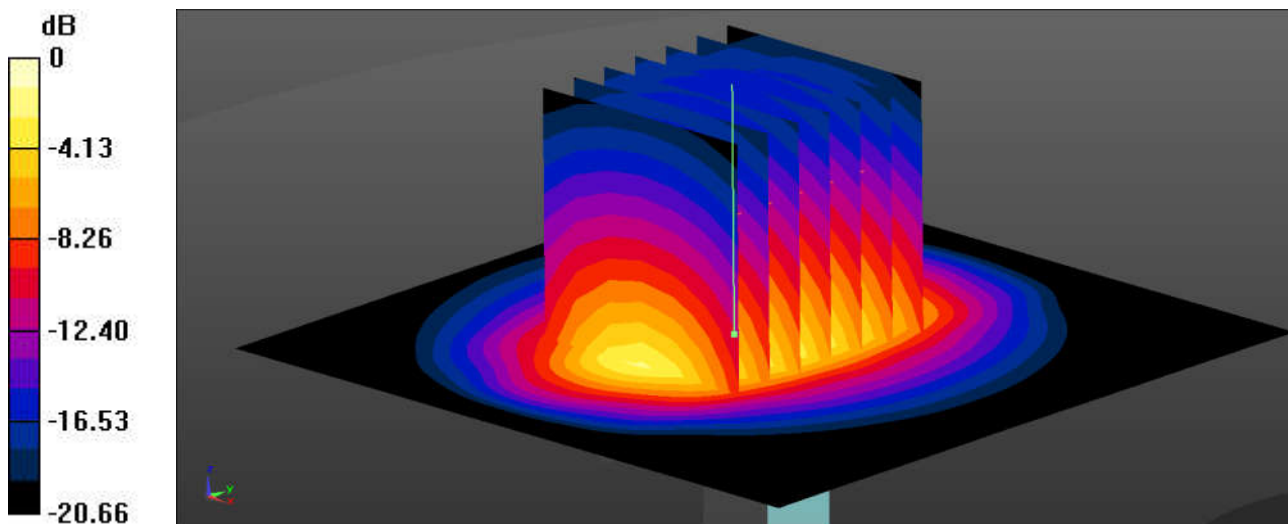
**Pin=250mW/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 88.39 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 22.8 W/kg

**SAR(1 g) = 11.5 W/kg; SAR(10 g) = 5.5 W/kg**

Maximum value of SAR (measured) = 14.8 W/kg



0 dB = 14.8 W/kg = 11.70 dBW/kg



### System Check\_Head\_2450MHz

**DUT: D2450V2 - SN:908**

Communication System: UID 0, CW (0); Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: HSL\_2450 Medium parameters used:  $f = 2450$  MHz;  $\sigma = 1.885$  S/m;  $\epsilon_r = 40.798$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 23.2 °C; Liquid Temperature : 22.8 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN7592; ConvF(7.57, 7.57, 7.57); Calibrated: 2020.5.22
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn690; Calibrated: 2021.03.17
- Phantom: SAM Twin Phantom; Type: SAM Twin; Serial: TP-1697
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**Pin=250mW/Area Scan (71x71x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm  
Maximum value of SAR (interpolated) = 19.8 W/kg

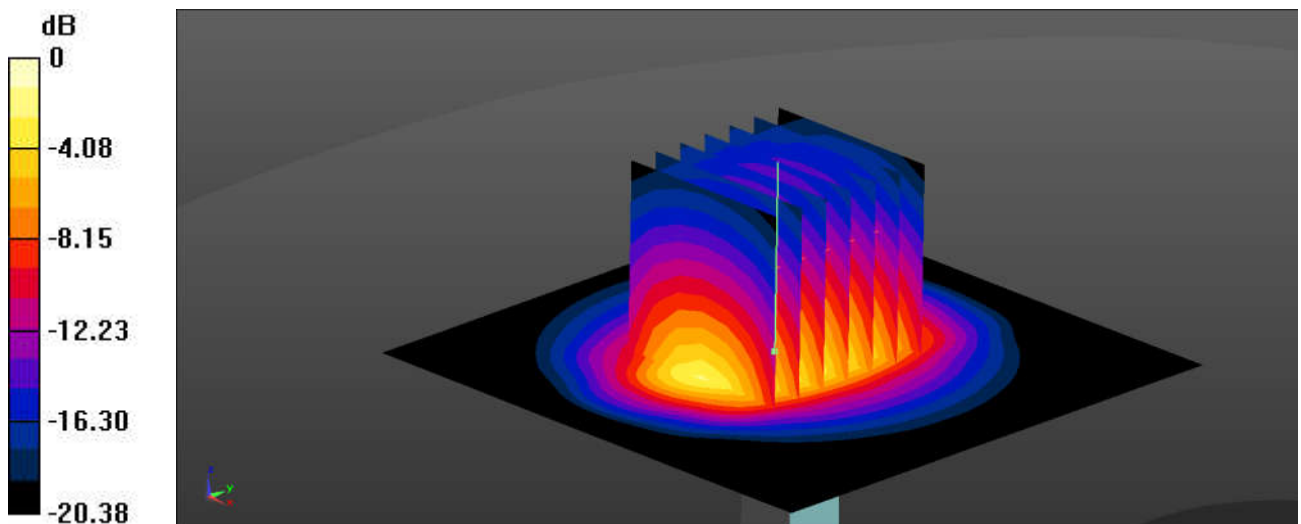
**Pin=250mW/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 84.99 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 25.3 W/kg

**SAR(1 g) = 13 W/kg; SAR(10 g) = 6.21 W/kg**

Maximum value of SAR (measured) = 19.4 W/kg



0 dB = 19.4 W/kg = 12.88 dBW/kg

### System Check\_Head\_2600MHz

**DUT: D2600V2 - SN:1061**

Communication System: UID 0, CW (0); Frequency: 2600 MHz; Duty Cycle: 1:1  
Medium: HSL\_2600 Medium parameters used:  $f = 2600$  MHz;  $\sigma = 2.006$  S/m;  $\epsilon_r = 40.524$ ;  $\rho = 1000$  kg/m<sup>3</sup>  
Ambient Temperature : 23.3 °C; Liquid Temperature : 22.9 °C

#### DASY5 Configuration:

- Probe: EX3DV4 - SN7592; ConvF(7.31, 7.31, 7.31); Calibrated: 2020.5.22
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn690; Calibrated: 2021.03.17
- Phantom: SAM Twin Phantom; Type: SAM Twin; Serial: TP-1697
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**Pin=250mW/Area Scan (71x71x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm  
Maximum value of SAR (interpolated) = 22.4 W/kg

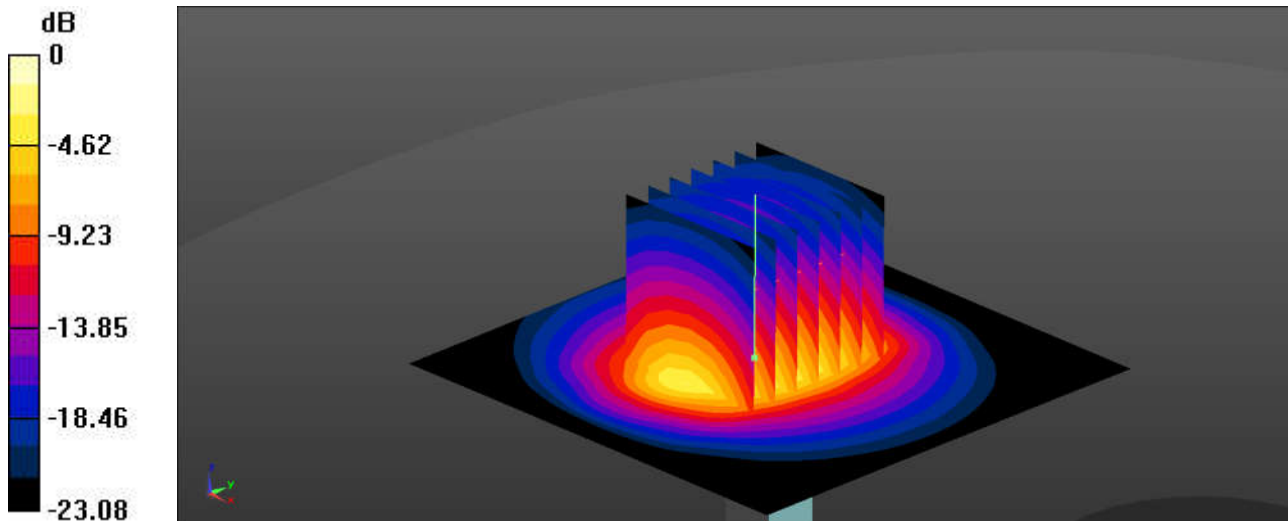
**Pin=250mW/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 84.82 V/m; Power Drift = 0.18 dB

Peak SAR (extrapolated) = 29.8 W/kg

**SAR(1 g) = 14 W/kg; SAR(10 g) = 6.29 W/kg**

Maximum value of SAR (measured) = 21.8 W/kg



0 dB = 21.8 W/kg = 13.38 dBW/kg

### System Check\_Head\_3700MHz

**DUT: D3700V2 - SN:1008**

Communication System: UID 0, CW (0); Frequency: 3700 MHz; Duty Cycle: 1:1

Medium: HSL\_3700 Medium parameters used:  $f = 3700$  MHz;  $\sigma = 2.967$  S/m;  $\epsilon_r = 38.608$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 23.1 °C; Liquid Temperature : 22.8 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN7592; ConvF(6.58, 6.58, 6.58); Calibrated: 2020.5.22
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn690; Calibrated: 2021.03.17
- Phantom: SAM Twin Phantom; Type: SAM Twin; Serial: TP-1697
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**Pin=100mW/Area Scan (91x91x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm  
Maximum value of SAR (interpolated) = 11.2 W/kg

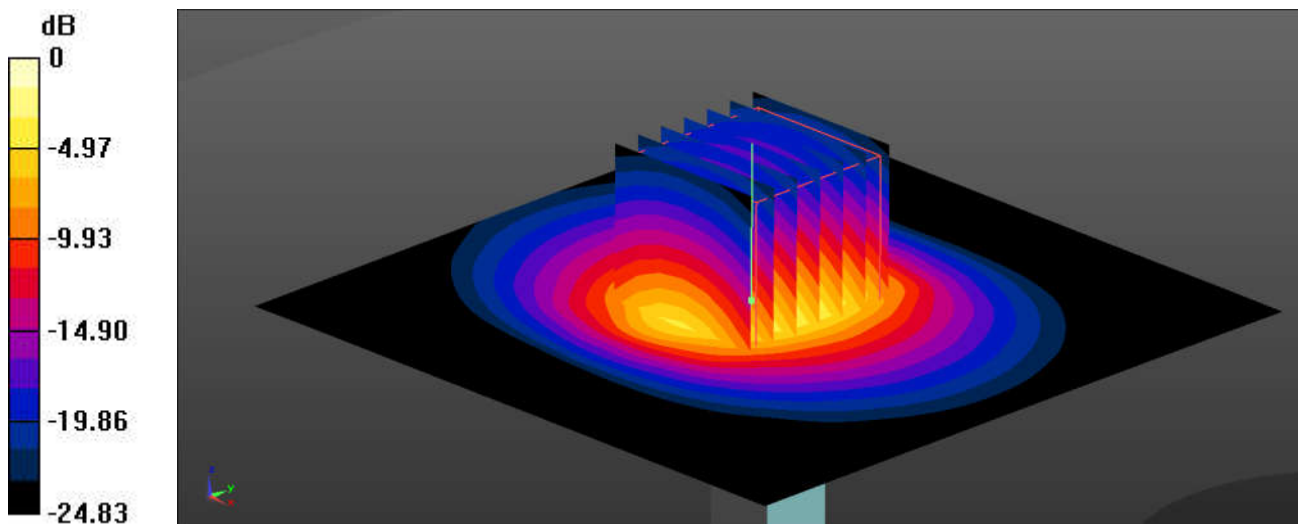
**Pin=100mW/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 47.37 V/m; Power Drift = 0.07 dB

Peak SAR (extrapolated) = 17.6 W/kg

**SAR(1 g) = 6.4 W/kg; SAR(10 g) = 2.38 W/kg**

Maximum value of SAR (measured) = 12.7 W/kg



0 dB = 12.7 W/kg = 11.04 dBW/kg

### System Check\_Head\_3900MHz

**DUT: D3900V2 - SN:1048**

Communication System: UID 0, CW (0); Frequency: 3900 MHz; Duty Cycle: 1:1

Medium: HSL\_3900 Medium parameters used:  $f = 3900$  MHz;  $\sigma = 3.165$  S/m;  $\epsilon_r = 38.335$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 23.3 °C; Liquid Temperature : 22.6 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN7592; ConvF(6.43, 6.43, 6.43); Calibrated: 2020.5.22
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn690; Calibrated: 2021.03.17
- Phantom: SAM Twin Phantom; Type: SAM Twin; Serial: TP-1697
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**Pin=100mW/Area Scan (81x81x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm  
Maximum value of SAR (interpolated) = 10.6 W/kg

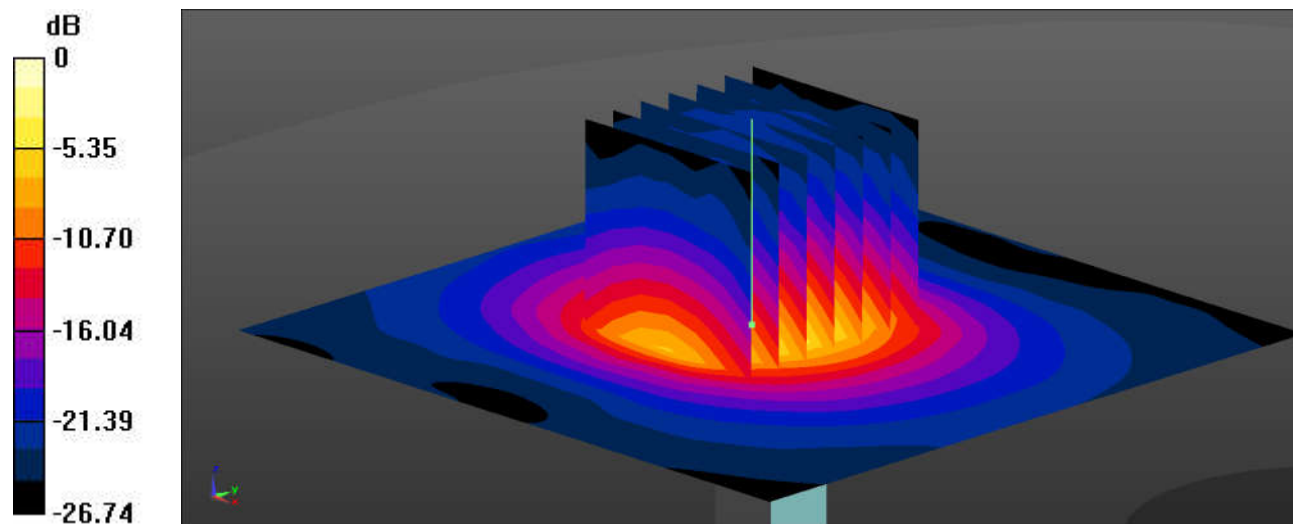
**Pin=100mW/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=1.4mm

Reference Value = 45.34 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 17.3 W/kg

**SAR(1 g) = 6.45 W/kg; SAR(10 g) = 2.29 W/kg**

Maximum value of SAR (measured) = 11.5 W/kg



0 dB = 11.5 W/kg = 10.61 dBW/kg

### System Check\_Head\_5250MHz

**DUT: D5GHzV2 - SN:1113**

Communication System: UID 0, CW (0); Frequency: 5250 MHz; Duty Cycle: 1:1  
Medium: HSL\_5000 Medium parameters used:  $f = 5250$  MHz;  $\sigma = 4.641$  S/m;  $\epsilon_r = 36.197$ ;  $\rho = 1000$  kg/m<sup>3</sup>  
Ambient Temperature : 23.3 °C; Liquid Temperature : 22.7 °C

#### DASY5 Configuration:

- Probe: EX3DV4 - SN7592; ConvF(5.24, 5.24, 5.24); Calibrated: 2020.5.22
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn690; Calibrated: 2021.03.17
- Phantom: SAM Twin Phantom; Type: SAM Twin; Serial: TP-1697
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**Pin=100mW/Area Scan (71x71x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm  
Maximum value of SAR (interpolated) = 18.8 W/kg

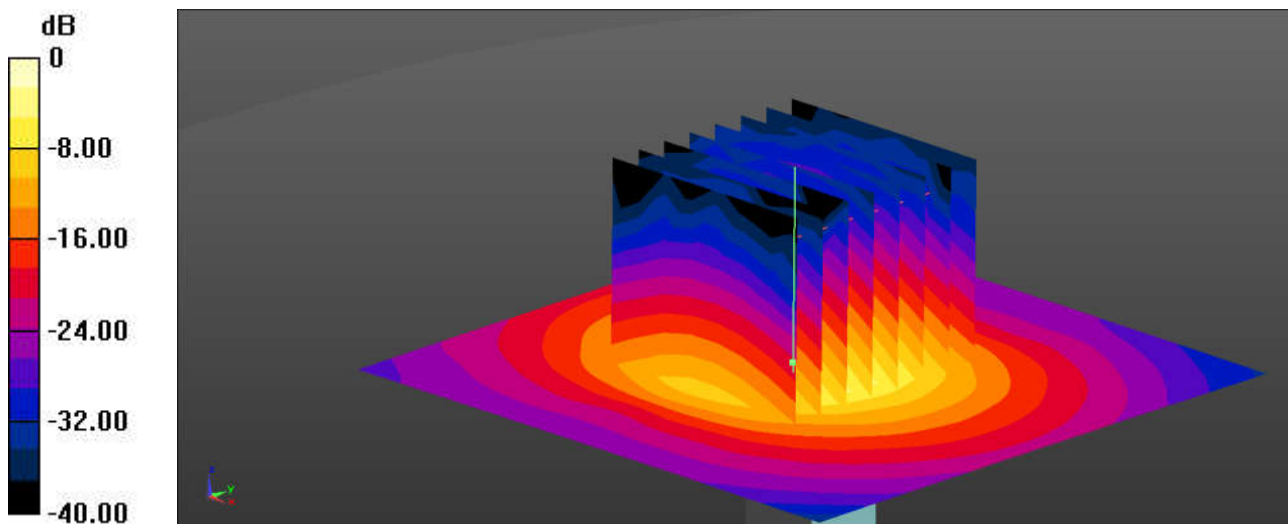
**Pin=100mW/Zoom Scan (8x8x7)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 43.37 V/m; Power Drift = 0.07 dB

Peak SAR (extrapolated) = 30.2 W/kg

**SAR(1 g) = 8 W/kg; SAR(10 g) = 2.3 W/kg**

Maximum value of SAR (measured) = 18.0 W/kg



0 dB = 18.0 W/kg = 12.55 dBW/kg

### System Check\_Head\_5600MHz

**DUT: D5GHzV2 - SN:1113**

Communication System: UID 0, CW (0); Frequency: 5600 MHz; Duty Cycle: 1:1

Medium: HSL\_5000 Medium parameters used:  $f = 5600$  MHz;  $\sigma = 4.985$  S/m;  $\epsilon_r = 35.584$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 23.4 °C; Liquid Temperature : 22.8 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN7592; ConvF(4.65, 4.65, 4.65); Calibrated: 2020.5.22
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn690; Calibrated: 2021.03.17
- Phantom: SAM Twin Phantom; Type: SAM Twin; Serial: TP-1697
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**Pin=100mW/Area Scan (71x71x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm  
Maximum value of SAR (interpolated) = 19.3 W/kg

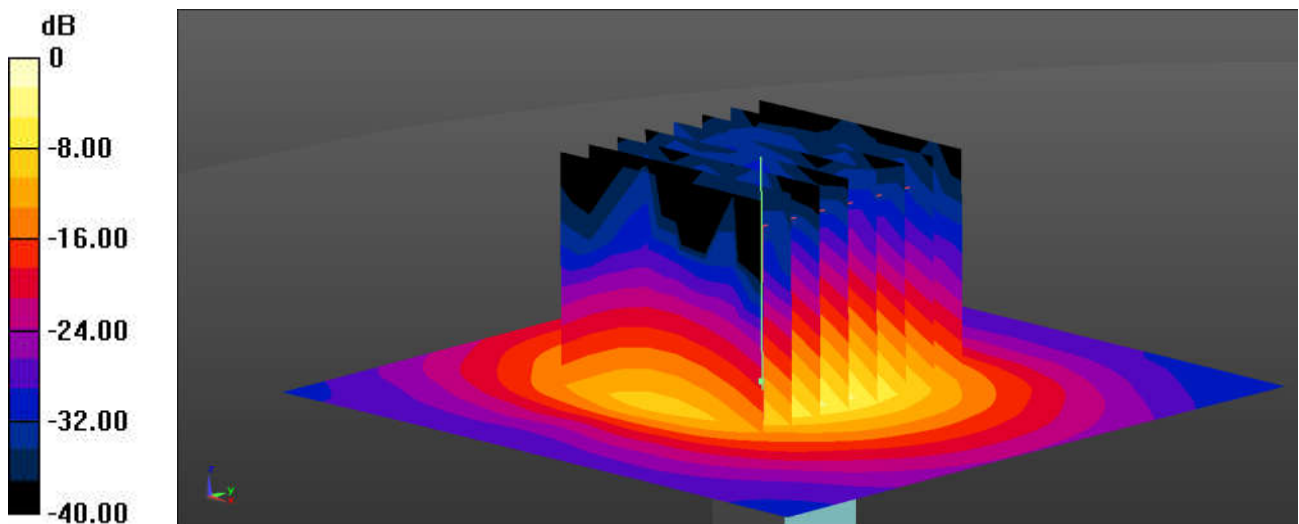
**Pin=100mW/Zoom Scan (8x8x7)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 41.03 V/m; Power Drift = 0.07 dB

Peak SAR (extrapolated) = 32.0 W/kg

**SAR(1 g) = 7.85 W/kg; SAR(10 g) = 2.25 W/kg**

Maximum value of SAR (measured) = 18.3 W/kg



0 dB = 18.3 W/kg = 12.62 dBW/kg

### System Check\_Head\_5750MHz

**DUT: D5GHzV2 - SN:1113**

Communication System: UID 0, CW (0); Frequency: 5750 MHz; Duty Cycle: 1:1

Medium: HSL\_5000 Medium parameters used:  $f = 5750$  MHz;  $\sigma = 5.219$  S/m;  $\epsilon_r = 35.277$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 23.1 °C; Liquid Temperature : 22.8 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN7592; ConvF(4.69, 4.69, 4.69); Calibrated: 2020.5.22
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn690; Calibrated: 2021.03.17
- Phantom: SAM Twin Phantom; Type: SAM Twin; Serial: TP-1697
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**Pin=100mW/Area Scan (71x71x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm  
Maximum value of SAR (interpolated) = 18.0 W/kg

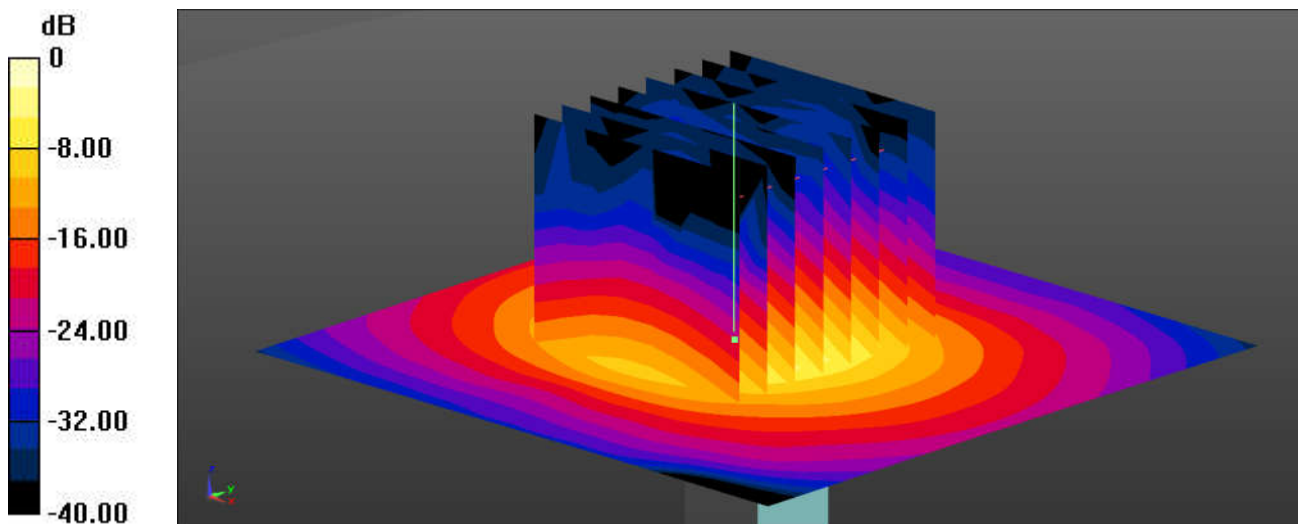
**Pin=100mW/Zoom Scan (8x8x7)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 38.00 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 31.2 W/kg

**SAR(1 g) = 7.36 W/kg; SAR(10 g) = 2.1 W/kg**

Maximum value of SAR (measured) = 17.3 W/kg



0 dB = 17.3 W/kg = 12.38 dBW/kg

### System Check\_Head\_750MHz

**DUT: D750V3 - SN:1087**

Communication System: UID 0, CW (0); Frequency: 750 MHz; Duty Cycle: 1:1

Medium: HSL\_750 Medium parameters used:  $f = 750$  MHz;  $\sigma = 0.887$  S/m;  $\epsilon_r = 41.628$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 23.3 °C; Liquid Temperature : 22.9 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN7592; ConvF(10.31, 10.31, 10.31); Calibrated: 2020.5.22
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn690; Calibrated: 2021.03.17
- Phantom: SAM Twin Phantom; Type: SAM Twin; Serial: TP-1697
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**Pin=250mW/Area Scan (61x61x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm  
Maximum value of SAR (interpolated) = 2.50 W/kg

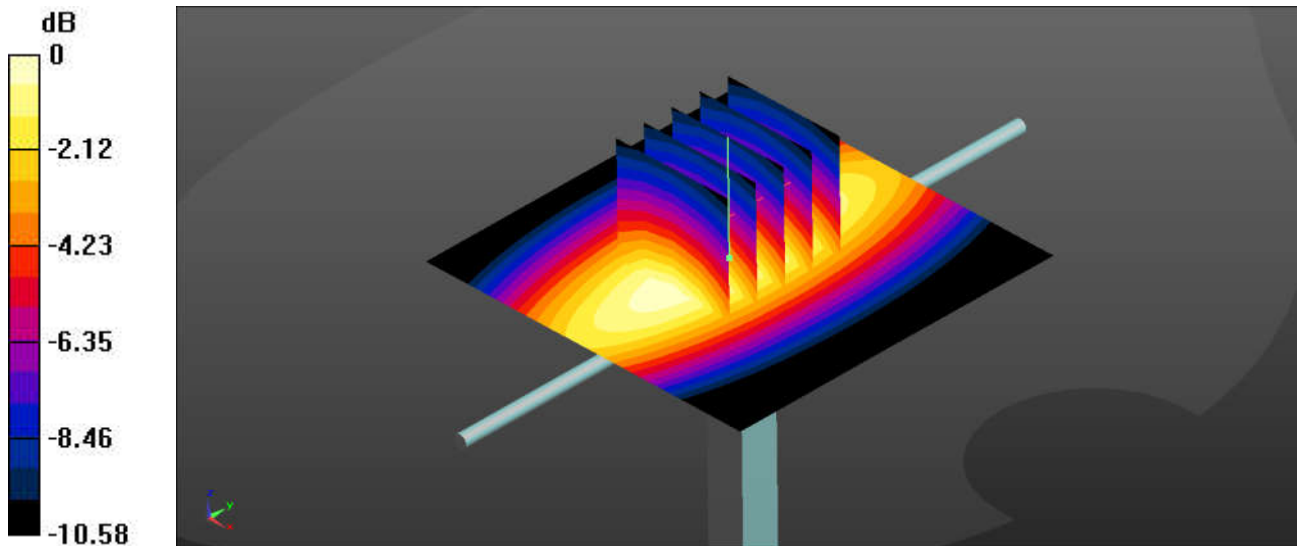
**Pin=250mW/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 49.02 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 2.92 W/kg

**SAR(1 g) = 1.98 W/kg; SAR(10 g) = 1.31 W/kg**

Maximum value of SAR (measured) = 2.50 W/kg



0 dB = 2.50 W/kg = 3.98 dBW/kg