




# FCC SAR TEST REPORT

FCC ID : ZMOL850GLD-D1  
Equipment : LTE module  
Brand Name : Fibocom  
Model Name : L850-GL  
Applicant : Fibocom Wireless Inc.  
5/F, Tower A, Technology Building II, 1057  
Nanhai Blvd, Nanshan, Shenzhen, China  
Manufacturer : Fibocom Wireless Inc.  
5/F, Tower A, Technology Building II, 1057  
Nanhai Blvd, Nanshan, Shenzhen, China  
Standard : FCC 47 CFR Part 2 (2.1093)  
ANSI/IEEE C95.1-1992  
IEEE 1528-2013

The product was installed into Portable Computer (Brand Name DELL, Model Name: P96G) during test.

The report must not be used by the client to claim product certification, approval, or endorsement by TAF or any agency of government.

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Approved by: Cona Huang / Deputy Manager

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## **Table of Contents**

<b>1. Statement of Compliance .....</b>	<b>4</b>
<b>2. Guidance Applied.....</b>	<b>4</b>
<b>3. Equipment Under Test (EUT) Information .....</b>	<b>5</b>
3.1 General Information .....	5
<b>4. RF Exposure Limits.....</b>	<b>6</b>
4.1 Uncontrolled Environment.....	6
4.2 Controlled Environment.....	6
<b>5. Antenna Location .....</b>	<b>7</b>
<b>6. Simultaneous Transmission Analysis .....</b>	<b>9</b>
6.1 Body Exposure Conditions.....	10
6.2 SPLSR Evaluation and Analysis .....	11
<b>7. References.....</b>	<b>20</b>



## History of this test report

Report No.	Version	Description	Issued Date
FA961110	01	Initial issue of report	Jun. 14, 2019

## 1. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for Fibocom Wireless Inc., LTE module, L850-GL, are as follows.

Equipment Class	Frequency Band	Highest SAR Summary	Highest Simultaneous Transmission 1g SAR (W/kg)
		Body	
		1g SAR (W/kg)	
Licensed	WCDMA II	1.17	1.59
	WCDMA IV	1.20	
	WCDMA V	1.20	
	LTE Band 2	1.15	
	LTE Band 7	1.10	
	LTE Band 12 / 17	1.00	
	LTE Band 13	1.11	
	LTE Band 5 / 26	1.13	
	LTE Band 30	1.17	
	LTE Band 38 / 41	1.19	
	LTE Band 4 / 66	1.19	

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code: 1190) and the FCC designation No. TW1190 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC test This device is in compliance with Specific Absorption Rate (SAR) for general population/uncontrolled exposure limits (1.6 W/kg) 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

**Reviewed by: Jason Wang**  
**Report Producer: Wan Liu**

## 2. 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
- 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

### 3. Equipment Under Test (EUT) Information

#### 3.1 General Information

Product Feature & Specification	
Equipment Name	LTE module
Brand Name	Fibocom
Model Name	L850-GL
FCC ID	ZMOL850GLD-D1
Integrated WWAN Module	Brand Name: Fibocom Model Name: L850-GL
Wireless Technology and Frequency Range	WCDMA Band II: 1852.4 MHz ~ 1907.6 MHz WCDMA Band IV: 1712.4 MHz ~ 1752.6 MHz WCDMA Band V: 826.4 MHz ~ 846.6 MHz LTE Band 2: 1850.7 MHz ~ 1909.3 MHz LTE Band 4: 1710.7 MHz ~ 1754.3 MHz LTE Band 5: 824.7 MHz ~ 848.3 MHz LTE Band 7: 2502.5 MHz ~ 2567.5 MHz LTE Band 12: 699.7 MHz ~ 715.3 MHz LTE Band 13: 779.5 MHz ~ 784.5 MHz LTE Band 17: 706.5 MHz ~ 713.5 MHz LTE Band 26: 814.7 MHz ~ 848.3 MHz LTE Band 30: 2307.5 MHz ~ 2312.5 MHz LTE Band 38: 2572.5 MHz ~ 2617.5 MHz LTE Band 41: 2498.5 MHz ~ 2687.5 MHz LTE Band 66: 1710.7 MHz ~ 1779.3 MHz
Mode	RMC 12.2Kbps HSDPA HSUPA DC-HSDPA LTE: QPSK, 16QAM
EUT Stage	Identical Prototype
<b>Remark:</b> <ol style="list-style-type: none"> <li>In this report is based on original report FCC ID: ZMOL850GLD-D1, Sporton Report No.: FA8D0543 to additional simultaneous transmission analysis with Intel AX200NGW. No additional WWAN SAR is necessary.</li> <li>The Intel AX200NGW WLAN / Bluetooth module is also integrated into this host, WLAN/Bluetooth SAR testing results which can be referred to RF Exposure Lab SAR Evaluation Report, Report No.: SAR.20190503 (FCC ID: PD9AX200NG) and also used for simultaneous transmission analysis.</li> </ol>	

Host Information	
Equipment Name	Portable Computer
Brand Name	DELL
Model Name	P96G
Integrated WLAN Module	Brand Name: Intel Model Name: AX200NGW
Wireless Technology and Frequency Range	WLAN 2.4GHz Band: 2412 MHz ~ 2462 MHz WLAN 5.2GHz Band: 5180 MHz ~ 5240 MHz WLAN 5.3GHz Band: 5260 MHz ~ 5320 MHz WLAN 5.5GHz Band: 5500 MHz ~ 5700 MHz WLAN 5.8GHz Band: 5745 MHz ~ 5825 MHz Bluetooth: 2402 MHz ~ 2480 MHz
Mode	WLAN: 802.11a/b/g/n/ac HT20 / HT40 / VHT20 / VHT40 / VHT80 / VHT160 Bluetooth BR/EDR/LE

## **4. RF Exposure Limits**

### **4.1 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.

### **4.2 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

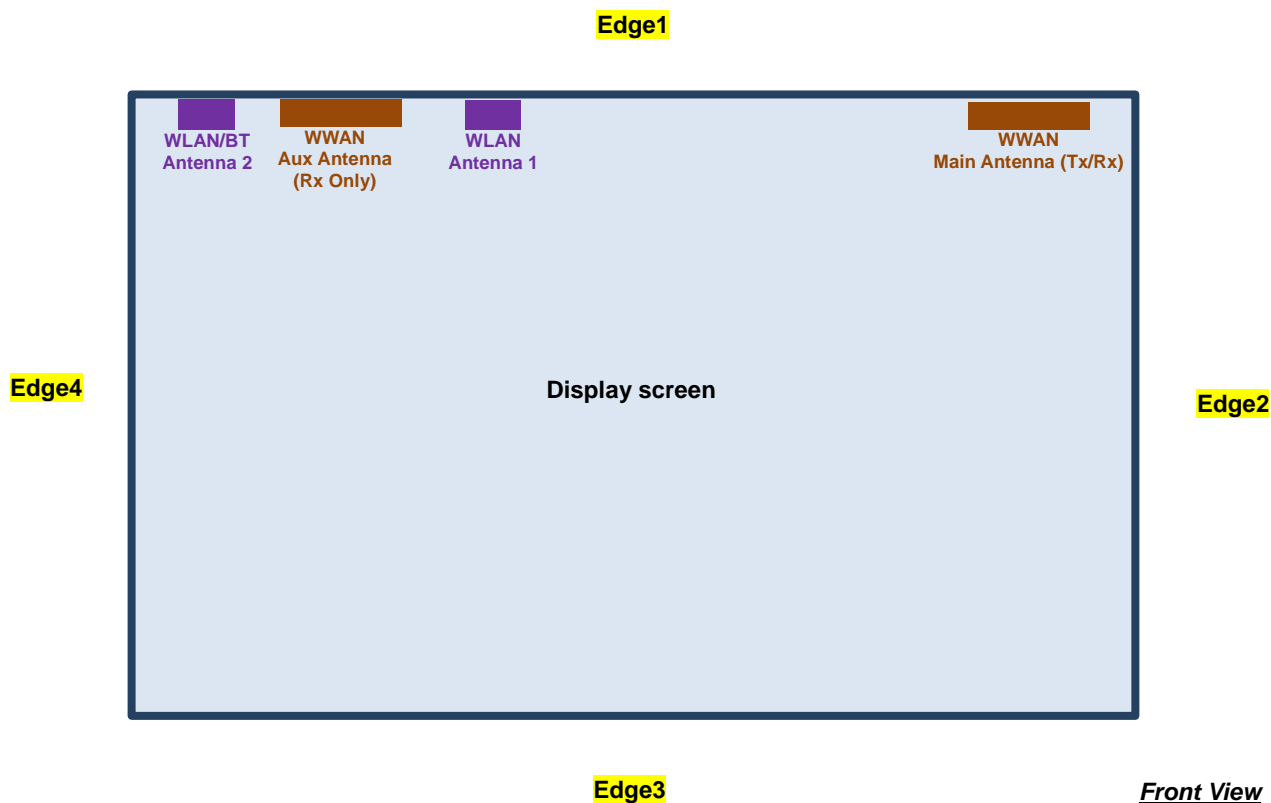
**Limits for General Population/Uncontrolled Exposure (W/kg)**

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

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

## 5. Antenna Location

<For Tablet Mode>



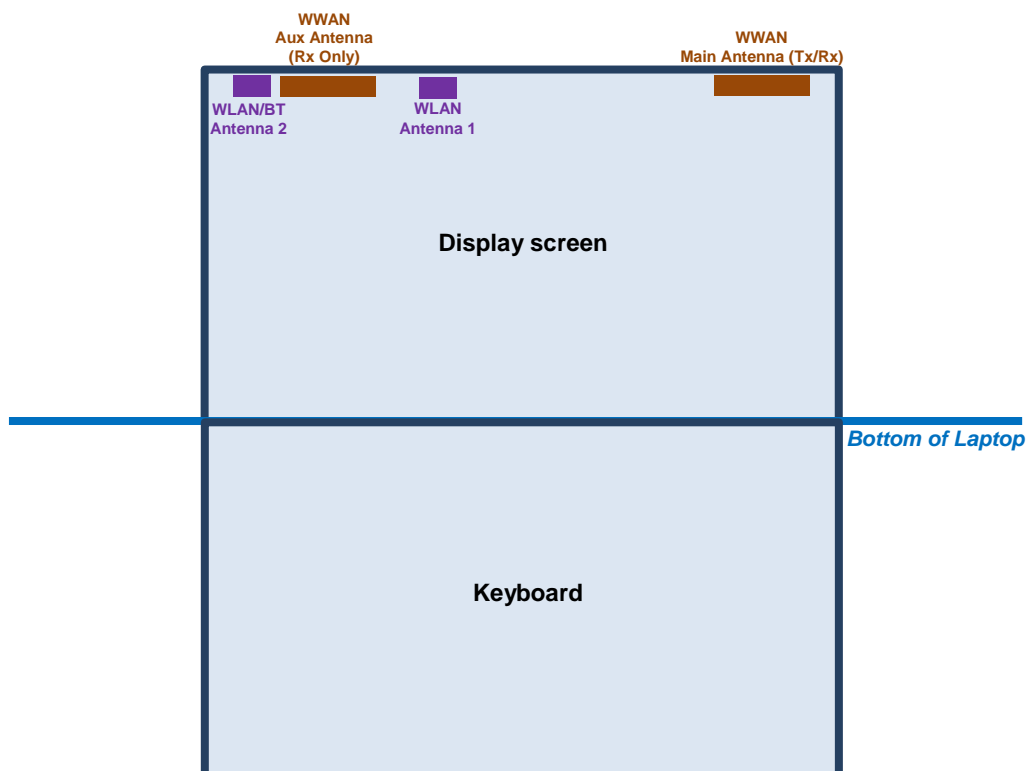
**Front View**

The separation distance for antenna to edge :

Antenna	To Edge1 (mm)	To Edge2 (mm)	To Edge3 (mm)	To Edge4 (mm)
WWAN Main Antenna	<5	9.35	195.65	237.55
WWAN Aux Antenna	<5	237.55	195.65	29.35
WLAN Antenna 1+2	<5	181.15	195.65	9.35

Antenna	WWAN to WLAN Ant 1 (mm)	WWAN to WLAN Ant 2 (mm)	WLAN Ant 1 to WLAN Ant 2 (mm)
Minimum Distance	110	206	75

<For Laptop Mode>



The separation distance for antenna to edge :

Antenna	To Bottom of Laptop (mm)
WWAN Main Antenna	215
WWAN Aux Antenna	215
WLAN Antenna 1+2	215



## **6. Simultaneous Transmission Analysis**

NO.	Simultaneous Transmission Configurations	Body
1.	WWAN + WLAN Ant 1 + WLAN Ant 2	Yes
2.	WWAN + WLAN Ant 1 + Bluetooth Ant 2	Yes

**General Note:**

1. WLAN and Bluetooth share the same antenna 2, and cannot transmit simultaneously.
2. 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.
3. The Scaled SAR summation is calculated based on the same configuration and test position.
4. Per KDB 447498 D01v06, simultaneous transmission SAR is compliant if,
  - i) Scalar SAR summation  $< 1.6\text{W/kg}$ .
  - ii)  $\text{SPLSR} = (\text{SAR1} + \text{SAR2})^{1.5} / (\text{min. separation distance, mm})$ , 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.
  - iii) If  $\text{SPLSR} \leq 0.04$ , simultaneously transmission SAR measurement is not necessary.
  - iv) Simultaneously transmission SAR measurement, and the reported multi-band SAR  $< 1.6\text{W/kg}$ .
  - v) The SPLSR calculated results please refer to section 6.2.

### 6.1 Body Exposure Conditions

WWAN Band		Exposure Position	1	2	3	4	5	6	1+2+3 Summed 1g SAR (W/kg)	1+4+5 Summed 1g SAR (W/kg)	1+2+6 Summed 1g SAR (W/kg)	1+4+6 Summed 1g SAR (W/kg)	SPLSR	Case No
			WWAN	2.4GHz WLAN Ant 1	2.4GHz WLAN Ant 2	5GHz WLAN Ant 1	5GHz WLAN Ant 2	Bluetooth Ant 2						
			1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)						
WCDMA	WCDMA II	Edge 1 at 16mm	1.133	0.31	0.29	0.65	0.87	0.07	1.733	2.653	1.513	2.723	Case 1	0.02
		Bottom Face at 0mm	1.157	0.25	0.54	0.16	0.45	0.07	1.947	1.767	1.477	1.387	Case 2	0.02
		Edge 1 at 0mm	1.167	0.31	0.29	0.65	0.87	0.07	1.767	2.687	1.547	1.887	Case 3	0.02
		Edge 2 at 0mm	0.457						0.457	0.457	0.457	0.457		
	WCDMA IV	Edge 1 at 16mm	0.856	0.31	0.29	0.65	0.87	0.04	1.456	2.376	1.206	1.546	Case 4	0.02
		Bottom Face at 0mm	1.034	0.25	0.54	0.16	0.45	0.07	1.824	1.644	1.354	1.264	Case 5	0.01
		Edge 1 at 0mm	1.197	0.31	0.29	0.65	0.87	0.04	1.797	2.717	1.547	1.887	Case 6	0.02
		Edge 2 at 0mm	0.155						0.155	0.155	0.155	0.155		
	WCDMA V	Edge 1 at 16mm	0.388	0.31	0.29	0.65	0.87	0.04	0.988	1.908	0.738	1.078	Case 7	0.02
		Bottom Face at 0mm	0.619	0.25	0.54	0.16	0.45	0.07	1.409	1.229	0.939	0.849		
		Edge 1 at 0mm	1.198	0.31	0.29	0.65	0.87	0.04	1.798	2.718	1.548	1.888	Case 8	0.02
		Edge 2 at 0mm	0.206						0.206	0.206	0.206	0.206		
LTE	LTE Band 2	Edge 1 at 16mm	0.743	0.31	0.29	0.65	0.87	0.04	1.343	2.263	1.093	1.433	Case 9	0.02
		Bottom Face at 0mm	0.979	0.25	0.54	0.16	0.45	0.07	1.769	1.589	1.299	1.209	Case 10	0.01
		Edge 1 at 0mm	1.151	0.31	0.29	0.65	0.87	0.04	1.751	2.671	1.501	1.841	Case 11	0.02
		Edge 2 at 0mm	0.384						0.384	0.384	0.384	0.384		
	LTE Band 7	Edge 1 at 16mm	0.572	0.31	0.29	0.65	0.87	0.04	1.172	2.092	0.922	1.262	Case 12	0.02
		Bottom Face at 0mm	0.869	0.25	0.54	0.16	0.45	0.07	1.659	1.479	1.189	1.099	Case 13	0.01
		Edge 1 at 0mm	1.096	0.31	0.29	0.65	0.87	0.04	1.696	2.616	1.446	1.786	Case 14	0.02
		Edge 2 at 0mm	0.386						0.386	0.386	0.386	0.386		
	LTE Band 12	Edge 1 at 16mm	0.161	0.31	0.29	0.65	0.87	0.04	0.761	1.681	0.511	0.851	Case 15	0.02
		Bottom Face at 0mm	0.452	0.25	0.54	0.16	0.45	0.07	1.242	1.062	0.772	0.682		
		Edge 1 at 0mm	1.002	0.31	0.29	0.65	0.87	0.04	1.602	2.522	1.352	1.692	Case 16	0.02
		Edge 2 at 0mm	0.142						0.142	0.142	0.142	0.142		
	LTE Band 13	Edge 1 at 16mm	0.341	0.31	0.29	0.65	0.87	0.04	0.941	1.861	0.691	1.031	Case 17	0.02
		Bottom Face at 0mm	0.578	0.25	0.54	0.16	0.45	0.07	1.368	1.188	0.898	0.808		
		Edge 1 at 0mm	1.110	0.31	0.29	0.65	0.87	0.04	1.710	2.630	1.460	1.800	Case 18	0.02
		Edge 2 at 0mm	0.249						0.249	0.249	0.249	0.249		
	LTE Band 26	Edge 1 at 16mm	0.345	0.31	0.29	0.65	0.87	0.04	0.945	1.865	0.695	1.035	Case 19	0.02
		Bottom Face at 0mm	0.496	0.25	0.54	0.16	0.45	0.07	1.286	1.106	0.816	0.726		
		Edge 1 at 0mm	1.130	0.31	0.29	0.65	0.87	0.04	1.730	2.650	1.480	1.820	Case 20	0.02
		Edge 2 at 0mm	0.192						0.192	0.192	0.192	0.192		
	LTE Band 30	Edge 1 at 16mm	0.222	0.31	0.29	0.65	0.87	0.04	0.822	1.742	0.572	0.912	Case 21	0.02
		Bottom Face at 0mm	0.448	0.25	0.54	0.16	0.45	0.07	1.238	1.058	0.768	0.678		
		Edge 1 at 0mm	1.168	0.31	0.29	0.65	0.87	0.04	1.768	2.688	1.518	1.858	Case 22	0.02
		Edge 2 at 0mm	0.297						0.297	0.297	0.297	0.297		
	LTE Band 41	Edge 1 at 16mm	0.497	0.31	0.29	0.65	0.87	0.04	1.097	2.017	0.847	1.187	Case 23	0.02
		Bottom Face at 0mm	0.400	0.25	0.54	0.16	0.45	0.07	1.190	1.010	0.720	0.630		
		Edge 1 at 0mm	1.189	0.31	0.29	0.65	0.87	0.04	1.789	2.709	1.539	1.879	Case 24	0.02
		Edge 2 at 0mm	0.125						0.125	0.125	0.125	0.125		
	LTE Band 66	Edge 1 at 16mm	0.569	0.31	0.29	0.65	0.87	0.04	1.169	2.089	0.919	1.259	Case 25	0.02
		Bottom Face at 0mm	0.993	0.25	0.54	0.16	0.45	0.07	1.783	1.603	1.313	1.223	Case 26	0.01
		Edge 1 at 0mm	1.188	0.31	0.29	0.65	0.87	0.04	1.788	2.708	1.538	1.878	Case 27	0.02
		Edge 2 at 0mm	0.066						0.066	0.066	0.066	0.066		

## 6.2 SPLSR Evaluation and Analysis

### General Note:

1. According to section5 antenna location, the minimum distance between each transmit antenna is used for SPLSR analysis,  $SPLSR = (SAR1 + SAR2)1.5 / (\text{min. separation distance, mm})$ . If  $SPLSR \leq 0.04$ , simultaneously transmission SAR measurement is not necessary
2. Simultaneous transmission SAR test exclusion is determined for each operating configuration and exposure condition according to the reported standalone SAR of each applicable simultaneously transmitting antenna. When the sum of 1-g or 10-g SAR of all simultaneously transmitting antennas in an operating mode and exposure condition combination is within the SAR limit, SAR test exclusion applies to that simultaneous transmission configuration. Therefore, the adjacent transmit antennas will be summed first, and then the SPLSR calculation will be evaluated with the farther transmitted antennas.
3. For each band and each position configuration, the worst summed SAR results and the minimum distance is using for SPLSR calculated, due to it is the worst case.

	Band	Position	SAR (W/kg)	Gap	Minimum distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)				
Case 1	WCDMA II	Edge 1	1.133	16mm	110.0	1.44	0.02	Not required
	WLAN2.4G_Ant 1		0.310	0mm				
	WCDMA II	Edge 1	1.133	16mm	206.0	1.42	0.01	Not required
	WLAN2.4G_Ant 2		0.290	0mm				
	WLAN2.4G_Ant 1	Edge 1	0.310	0mm	75.0	0.60	0.01	Not required
	WLAN2.4G_Ant 2		0.290	0mm				
	WCDMA II	Edge 1	1.133	16mm	110.0	1.78	0.02	Not required
	WLAN5G_Ant 1		0.650	0mm				
	WCDMA II	Edge 1	1.133	16mm	206.0	2.00	0.01	Not required
	WLAN5G_Ant 2		0.870	0mm				
	WLAN5G_Ant 1	Edge 1	0.650	0mm	75.0	1.52	0.02	Not required
	WLAN5G_Ant 2		0.870	0mm				
	WCDMA II	Edge 1	1.133	16mm	206.0	1.20	0.01	Not required
	BT_Ant 2		0.070	0mm				
	WLAN5G_Ant 1	Edge 1	0.650	0mm	75.0	0.72	0.01	Not required
	BT_Ant 2		0.070	0mm				

	Band	Position	SAR (W/kg)	Gap	Minimum distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)				
Case 2	WCDMA II	Bottom Face	1.157	0mm	110.0	1.41	0.02	Not required
	WLAN2.4G_Ant 1		0.250	0mm				
	WCDMA II	Bottom Face	1.157	0mm	206.0	1.70	0.01	Not required
	WLAN2.4G_Ant 2		0.540	0mm				
	WLAN2.4G_Ant 1	Bottom Face	0.250	0mm	75.0	0.79	0.01	Not required
	WLAN2.4G_Ant 2		0.540	0mm				
	WCDMA II	Bottom Face	1.157	0mm	110.0	1.32	0.01	Not required
	WLAN5G_Ant 1		0.160	0mm				
	WCDMA II	Bottom Face	1.157	0mm	206.0	1.61	0.01	Not required
	WLAN5G_Ant 2		0.450	0mm				
	WLAN5G_Ant 1	Bottom Face	0.160	0mm	75.0	0.61	0.01	Not required
	WLAN5G_Ant 2		0.450	0mm				

Case 3	Band	Position	SAR (W/kg)	Gap (mm)	Minimum distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	WCDMA II	Edge 1	1.167	0mm	110.0	1.48	0.02	Not required
	WLAN2.4G_Ant 1		0.310	0mm				
	WCDMA II	Edge 1	1.167	0mm	206.0	1.46	0.01	Not required
	WLAN2.4G_Ant 2		0.290	0mm				
	WLAN2.4G_Ant 1	Edge 1	0.310	0mm	75.0	0.60	0.01	Not required
	WLAN2.4G_Ant 2		0.290	0mm				
	WCDMA II	Edge 1	1.167	0mm	110.0	1.82	0.02	Not required
	WLAN5G_Ant 1		0.650	0mm				
	WCDMA II	Edge 1	1.167	0mm	206.0	2.04	0.01	Not required
	WLAN5G_Ant 2		0.870	0mm				
	WLAN5G_Ant 1	Edge 1	0.650	0mm	75.0	1.52	0.02	Not required
	WLAN5G_Ant 2		0.870	0mm				
	WCDMA II	Edge 1	1.167	0mm	206.0	1.24	0.01	Not required
	BT_Ant 2		0.070	0mm				
	WLAN5G_Ant 1	Edge 1	0.650	0mm	75.0	0.72	0.01	Not required
	BT_Ant 2		0.070	0mm				

Case 4	Band	Position	SAR (W/kg)	Gap (mm)	Minimum distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	WCDMA IV	Edge 1	0.856	16mm	110.0	1.51	0.02	Not required
	WLAN5G_Ant 1		0.650	0mm				
	WCDMA IV	Edge 1	0.856	16mm	206.0	1.73	0.01	Not required
	WLAN5G_Ant 2		0.870	0mm				
	WLAN5G_Ant 1	Edge 1	0.650	0mm	75.0	1.52	0.02	Not required
	WLAN5G_Ant 2		0.870	0mm				

Case 5	Band	Position	SAR (W/kg)	Gap (mm)	Minimum distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	WCDMA IV	Bottom Face	1.034	0mm	110.0	1.28	0.01	Not required
	WLAN2.4G_Ant 1		0.250	0mm				
	WCDMA IV	Bottom Face	1.034	0mm	206.0	1.57	0.01	Not required
	WLAN2.4G_Ant 2		0.540	0mm				
	WLAN2.4G_Ant 1	Bottom Face	0.250	0mm	75.0	0.79	0.01	Not required
	WLAN2.4G_Ant 2		0.540	0mm				
	WCDMA IV	Bottom Face	1.034	0mm	110.0	1.19	0.01	Not required
	WLAN5G_Ant 1		0.160	0mm				
	WCDMA IV	Bottom Face	1.034	0mm	206.0	1.48	0.01	Not required
	WLAN5G_Ant 2		0.450	0mm				
	WLAN5G_Ant 1	Bottom Face	0.160	0mm	75.0	0.61	0.01	Not required
	WLAN5G_Ant 2		0.450	0mm				

	Band	Position	SAR (W/kg)	Gap	Minimum distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)				
Case 6	WCDMA IV	Edge 1	1.197	0mm	110.0	1.51	0.02	Not required
	WLAN2.4G_Ant 1		0.310	0mm				
	WCDMA IV	Edge 1	1.197	0mm	206.0	1.49	0.01	Not required
	WLAN2.4G_Ant 2		0.290	0mm				
	WLAN2.4G_Ant 1	Edge 1	0.310	0mm	75.0	0.60	0.01	Not required
	WLAN2.4G_Ant 2		0.290	0mm				
	WCDMA IV	Edge 1	1.197	0mm	110.0	1.85	0.02	Not required
	WLAN5G_Ant 1		0.650	0mm				
	WCDMA IV	Edge 1	1.197	0mm	206.0	2.07	0.01	Not required
	WLAN5G_Ant 2		0.870	0mm				
	WLAN5G_Ant 1	Edge 1	0.650	0mm	75.0	1.52	0.02	Not required
	WLAN5G_Ant 2		0.870	0mm				
	WCDMA IV	Edge 1	1.197	0mm	206.0	1.27	0.01	Not required
	BT_Ant 2		0.070	0mm				
	WLAN5G_Ant 1	Edge 1	0.650	0mm	75.0	0.72	0.01	Not required
	BT_Ant 2		0.070	0mm				

	Band	Position	SAR (W/kg)	Gap	Minimum distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)				
Case 7	WCDMA V	Edge 1	0.388	16mm	110.0	1.04	0.01	Not required
	WLAN5G_Ant 1		0.650	0mm				
	WCDMA V	Edge 1	0.388	16mm	206.0	1.26	0.01	Not required
	WLAN5G_Ant 2		0.870	0mm				
	WLAN5G_Ant 1	Edge 1	0.650	0mm	75.0	1.52	0.02	Not required
	WLAN5G_Ant 2		0.870	0mm				

	Band	Position	SAR (W/kg)	Gap	Minimum distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)				
Case 8	WCDMA V	Edge 1	1.198	0mm	110.0	1.51	0.02	Not required
	WLAN2.4G_Ant 1		0.310	0mm				
	WCDMA V	Edge 1	1.198	0mm	206.0	1.49	0.01	Not required
	WLAN2.4G_Ant 2		0.290	0mm				
	WLAN2.4G_Ant 1	Edge 1	0.310	0mm	75.0	0.60	0.01	Not required
	WLAN2.4G_Ant 2		0.290	0mm				
	WCDMA V	Edge 1	1.198	0mm	110.0	1.85	0.02	Not required
	WLAN5G_Ant 1		0.650	0mm				
	WCDMA V	Edge 1	1.198	0mm	206.0	2.07	0.01	Not required
	WLAN5G_Ant 2		0.870	0mm				
	WLAN5G_Ant 1	Edge 1	0.650	0mm	75.0	1.52	0.02	Not required
	WLAN5G_Ant 2		0.870	0mm				
	WCDMA V	Edge 1	1.198	0mm	206.0	1.27	0.01	Not required
	BT_Ant 2		0.070	0mm				
	WLAN5G_Ant 1	Edge 1	0.650	0mm	75.0	0.72	0.01	Not required
	BT_Ant 2		0.070	0mm				

Case 9	Band	Position	SAR (W/kg)	Gap (mm)	Minimum distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE B2	Edge 1	0.743	16mm	110.0	1.39	0.01	Not required
	WLAN5G_Ant 1		0.650	0mm				
	LTE B2	Edge 1	0.743	16mm	206.0	1.61	0.01	Not required
	WLAN5G_Ant 2		0.870	0mm				
	WLAN5G_Ant 1	Edge 1	0.650	0mm	75.0	1.52	0.02	Not required
	WLAN5G_Ant 2		0.870	0mm				

Case 10	Band	Position	SAR (W/kg)	Gap (mm)	Minimum distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE B2	Bottom Face	0.979	0mm	110.0	1.23	0.01	Not required
	WLAN2.4G_Ant 1		0.250	0mm				
	LTE B2	Bottom Face	0.979	0mm	206.0	1.52	0.01	Not required
	WLAN2.4G_Ant 2		0.540	0mm				
	WLAN2.4G_Ant 1	Bottom Face	0.250	0mm	75.0	0.79	0.01	Not required
	WLAN2.4G_Ant 2		0.540	0mm				

Case 11	Band	Position	SAR (W/kg)	Gap (mm)	Minimum distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE B2	Edge 1	1.151	0mm	110.0	1.46	0.02	Not required
	WLAN2.4G_Ant 1		0.310	0mm				
	LTE B2	Edge 1	1.151	0mm	206.0	1.44	0.01	Not required
	WLAN2.4G_Ant 2		0.290	0mm				
	WLAN2.4G_Ant 1	Edge 1	0.310	0mm	75.0	0.60	0.01	Not required
	WLAN2.4G_Ant 2		0.290	0mm				
	LTE B2	Edge 1	1.151	0mm	110.0	1.80	0.02	Not required
	WLAN5G_Ant 1		0.650	0mm				
	LTE B2	Edge 1	1.151	0mm	206.0	2.02	0.01	Not required
	WLAN5G_Ant 2		0.870	0mm				
	WLAN5G_Ant 1	Edge 1	0.650	0mm	75.0	1.52	0.02	Not required
	WLAN5G_Ant 2		0.870	0mm				
	LTE B2	Edge 1	1.151	0mm	206.0	1.22	0.01	Not required
	BT_Ant 2		0.070	0mm				
	WLAN5G_Ant 1	Edge 1	0.650	0mm	75.0	0.72	0.01	Not required
	BT_Ant 2		0.070	0mm				

Case 12	Band	Position	SAR (W/kg)	Gap (mm)	Minimum distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE B7	Edge 1	0.572	16mm	110.0	1.22	0.01	Not required
	WLAN5G_Ant 1		0.650	0mm				
	LTE B7	Edge 1	0.572	16mm	206.0	1.44	0.01	Not required
	WLAN5G_Ant 2		0.870	0mm				
	WLAN5G_Ant 1	Edge 1	0.650	0mm	75.0	1.52	0.02	Not required
	WLAN5G_Ant 2		0.870	0mm				

	Band	Position	SAR (W/kg)	Gap	Minimum distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)				
Case 13	LTE B7	Bottom Face	0.869	0mm	110.0	1.12	0.01	Not required
	WLAN2.4G_Ant 1		0.250	0mm				
	LTE B7	Bottom Face	0.869	0mm	206.0	1.41	0.01	Not required
	WLAN2.4G_Ant 2		0.540	0mm				
	WLAN2.4G_Ant 1	Bottom Face	0.250	0mm	75.0	0.79	0.01	Not required
	WLAN2.4G_Ant 2		0.540	0mm				

	Band	Position	SAR (W/kg)	Gap	Minimum distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)				
Case 14	LTE B7	Edge 1	1.096	0mm	110.0	1.41	0.02	Not required
	WLAN2.4G_Ant 1		0.310	0mm				
	LTE B7	Edge 1	1.096	0mm	206.0	1.39	0.01	Not required
	WLAN2.4G_Ant 2		0.290	0mm				
	WLAN2.4G_Ant 1	Edge 1	0.310	0mm	75.0	0.60	0.01	Not required
	WLAN2.4G_Ant 2		0.290	0mm				
	LTE B7	Edge 1	1.096	0mm	110.0	1.75	0.02	Not required
	WLAN5G_Ant 1		0.650	0mm				
	LTE B7	Edge 1	1.096	0mm	206.0	1.97	0.01	Not required
	WLAN5G_Ant 2		0.870	0mm				
	WLAN5G_Ant 1	Edge 1	0.650	0mm	75.0	1.52	0.02	Not required
	WLAN5G_Ant 2		0.870	0mm				
	LTE B7	Edge 1	1.096	0mm	206.0	1.17	0.01	Not required
	BT_Ant 2		0.070	0mm				
	WLAN5G_Ant 1	Edge 1	0.650	0mm	75.0	0.72	0.01	Not required
	BT_Ant 2		0.070	0mm				

	Band	Position	SAR (W/kg)	Gap	Minimum distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)				
Case 15	LTE B12	Edge 1	0.161	16mm	110.0	0.81	0.01	Not required
	WLAN5G_Ant 1		0.650	0mm				
	LTE B12	Edge 1	0.161	16mm	206.0	1.03	0.01	Not required
	WLAN5G_Ant 2		0.870	0mm				
	WLAN5G_Ant 1	Edge 1	0.650	0mm	75.0	1.52	0.02	Not required
	WLAN5G_Ant 2		0.870	0mm				

	Band	Position	SAR (W/kg)	Gap	Minimum distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)				
Case 16	LTE B12	Edge 1	1.002	0mm	110.0	1.31	0.01	Not required
	WLAN2.4G_Ant 1		0.310	0mm				
	LTE B12	Edge 1	1.002	0mm	206.0	1.29	0.01	Not required
	WLAN2.4G_Ant 2		0.290	0mm				
	WLAN2.4G_Ant 1	Edge 1	0.310	0mm	75.0	0.60	0.01	Not required
	WLAN2.4G_Ant 2		0.290	0mm				
	LTE B12	Edge 1	1.002	0mm	110.0	1.65	0.02	Not required
	WLAN5G_Ant 1		0.650	0mm				
	LTE B12	Edge 1	1.002	0mm	206.0	1.87	0.01	Not required
	WLAN5G_Ant 2		0.870	0mm				
	WLAN5G_Ant 1	Edge 1	0.650	0mm	75.0	1.52	0.02	Not required
	WLAN5G_Ant 2		0.870	0mm				
	LTE B12	Edge 1	1.002	0mm	206.0	1.07	0.01	Not required
	BT_Ant 2		0.070	0mm				
	WLAN5G_Ant 1	Edge 1	0.650	0mm	75.0	0.72	0.01	Not required
	BT_Ant 2		0.070	0mm				

	Band	Position	SAR (W/kg)	Gap	Minimum distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)				
Case 17	LTE B13	Edge 1	0.341	16mm	110.0	0.99	0.01	Not required
	WLAN5G_Ant 1		0.650	0mm				
	LTE B13	Edge 1	0.341	16mm	206.0	1.21	0.01	Not required
	WLAN5G_Ant 2		0.870	0mm				
	WLAN5G_Ant 1	Edge 1	0.650	0mm	75.0	1.52	0.02	Not required
	WLAN5G_Ant 2		0.870	0mm				

	Band	Position	SAR (W/kg)	Gap	Minimum distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)				
Case 18	LTE B13	Edge 1	1.11	0mm	110.0	1.42	0.02	Not required
	WLAN2.4G_Ant 1		0.310	0mm				
	LTE B13	Edge 1	1.110	0mm	206.0	1.40	0.01	Not required
	WLAN2.4G_Ant 2		0.290	0mm				
	WLAN2.4G_Ant 1	Edge 1	0.310	0mm	75.0	0.60	0.01	Not required
	WLAN2.4G_Ant 2		0.290	0mm				
	LTE B13	Edge 1	1.110	0mm	110.0	1.76	0.02	Not required
	WLAN5G_Ant 1		0.650	0mm				
	LTE B13	Edge 1	1.110	0mm	206.0	1.98	0.01	Not required
	WLAN5G_Ant 2		0.870	0mm				
	WLAN5G_Ant 1	Edge 1	0.650	0mm	75.0	1.52	0.02	Not required
	WLAN5G_Ant 2		0.870	0mm				
	LTE B13	Edge 1	1.110	0mm	206.0	1.18	0.01	Not required
	BT_Ant 2		0.070	0mm				
	WLAN5G_Ant 1	Edge 1	0.650	0mm	75.0	0.72	0.01	Not required
	BT_Ant 2		0.070	0mm				



Case 19	Band	Position	SAR (W/kg)	Gap (mm)	Minimum distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE B26	Edge 1	0.345	16mm	110.0	1.00	0.01	Not required
	WLAN5G_Ant 1		0.650	0mm				
	LTE B26	Edge 1	0.345	16mm	206.0	1.22	0.01	Not required
	WLAN5G_Ant 2		0.870	0mm				
	WLAN5G_Ant 1	Edge 1	0.650	0mm	75.0	1.52	0.02	Not required
	WLAN5G_Ant 2		0.870	0mm				

Case 20	Band	Position	SAR (W/kg)	Gap (mm)	Minimum distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE B26	Edge 1	1.13	0mm	110.0	1.44	0.02	Not required
	WLAN2.4G_Ant 1		0.310	0mm				
	LTE B26	Edge 1	1.130	0mm	206.0	1.42	0.01	Not required
	WLAN2.4G_Ant 2		0.290	0mm				
	WLAN2.4G_Ant 1	Edge 1	0.310	0mm	75.0	0.60	0.01	Not required
	WLAN2.4G_Ant 2		0.290	0mm				
	LTE B26	Edge 1	1.130	0mm	110.0	1.78	0.02	Not required
	WLAN5G_Ant 1		0.650	0mm				
	LTE B26	Edge 1	1.130	0mm	206.0	2.00	0.01	Not required
	WLAN5G_Ant 2		0.870	0mm				
	WLAN5G_Ant 1	Edge 1	0.650	0mm	75.0	1.52	0.02	Not required
	WLAN5G_Ant 2		0.870	0mm				
	LTE B26	Edge 1	1.130	0mm	206.0	1.20	0.01	Not required
	BT_Ant 2		0.070	0mm				
	WLAN5G_Ant 1	Edge 1	0.650	0mm	75.0	0.72	0.01	Not required
	BT_Ant 2		0.070	0mm				

Case 21	Band	Position	SAR (W/kg)	Gap (mm)	Minimum distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE B30	Edge 1	0.222	16mm	110.0	0.87	0.01	Not required
	WLAN5G_Ant 1		0.650	0mm				
	LTE B30	Edge 1	0.222	16mm	206.0	1.09	0.01	Not required
	WLAN5G_Ant 2		0.870	0mm				
	WLAN5G_Ant 1	Edge 1	0.650	0mm	75.0	1.52	0.02	Not required
	WLAN5G_Ant 2		0.870	0mm				

	Band	Position	SAR (W/kg)	Gap	Minimum distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)				
Case 22	LTE B30	Edge 1	1.168	0mm	110.0	1.48	0.02	Not required
	WLAN2.4G_Ant 1		0.310	0mm				
	LTE B30	Edge 1	1.168	0mm	206.0	1.46	0.01	Not required
	WLAN2.4G_Ant 2		0.290	0mm				
	WLAN2.4G_Ant 1	Edge 1	0.310	0mm	75.0	0.60	0.01	Not required
	WLAN2.4G_Ant 2		0.290	0mm				
	LTE B30	Edge 1	1.168	0mm	110.0	1.82	0.02	Not required
	WLAN5G_Ant 1		0.650	0mm				
	LTE B30	Edge 1	1.168	0mm	206.0	2.04	0.01	Not required
	WLAN5G_Ant 2		0.870	0mm				
	WLAN5G_Ant 1	Edge 1	0.650	0mm	75.0	1.52	0.02	Not required
	WLAN5G_Ant 2		0.870	0mm				
	LTE B30	Edge 1	1.168	0mm	206.0	1.24	0.01	Not required
	BT_Ant 2		0.070	0mm				
	WLAN5G_Ant 1	Edge 1	0.650	0mm	75.0	0.72	0.01	Not required
	BT_Ant 2		0.070	0mm				

	Band	Position	SAR (W/kg)	Gap	Minimum distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)				
Case 23	LTE B41	Edge 1	0.497	16mm	110.0	1.15	0.01	Not required
	WLAN5G_Ant 1		0.650	0mm				
	LTE B41	Edge 1	0.497	16mm	206.0	1.37	0.01	Not required
	WLAN5G_Ant 2		0.870	0mm				
	WLAN5G_Ant 1	Edge 1	0.650	0mm	75.0	1.52	0.02	Not required
	WLAN5G_Ant 2		0.870	0mm				

	Band	Position	SAR (W/kg)	Gap	Minimum distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)				
Case 24	LTE B41	Edge 1	1.189	0mm	110.0	1.50	0.02	Not required
	WLAN2.4G_Ant 1		0.310	0mm				
	LTE B41	Edge 1	1.189	0mm	206.0	1.48	0.01	Not required
	WLAN2.4G_Ant 2		0.290	0mm				
	WLAN2.4G_Ant 1	Edge 1	0.310	0mm	75.0	0.60	0.01	Not required
	WLAN2.4G_Ant 2		0.290	0mm				
	LTE B41	Edge 1	1.189	0mm	110.0	1.84	0.02	Not required
	WLAN5G_Ant 1		0.650	0mm				
	LTE B41	Edge 1	1.189	0mm	206.0	2.06	0.01	Not required
	WLAN5G_Ant 2		0.870	0mm				
	WLAN5G_Ant 1	Edge 1	0.650	0mm	75.0	1.52	0.02	Not required
	WLAN5G_Ant 2		0.870	0mm				
	LTE B41	Edge 1	1.189	0mm	206.0	1.26	0.01	Not required
	BT_Ant 2		0.070	0mm				
	WLAN5G_Ant 1	Edge 1	0.650	0mm	75.0	0.72	0.01	Not required
	BT_Ant 2		0.070	0mm				

	Band	Position	SAR (W/kg)	Gap	Minimum distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)				
Case 25	LTE B66	Edge 1	0.569	16mm	110.0	1.22	0.01	Not required
	WLAN5G_Ant 1		0.650	0mm				
	LTE B66	Edge 1	0.569	16mm	206.0	1.44	0.01	Not required
	WLAN5G_Ant 2		0.870	0mm				
	WLAN5G_Ant 1	Edge 1	0.650	0mm	75.0	1.52	0.02	Not required
	WLAN5G_Ant 2		0.870	0mm				

	Band	Position	SAR (W/kg)	Gap	Minimum distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)				
Case 26	LTE B66	Bottom Face	0.993	0mm	110.0	1.24	0.01	Not required
	WLAN2.4G_Ant 1		0.250	0mm				
	LTE B66	Bottom Face	0.993	0mm	206.0	1.53	0.01	Not required
	WLAN2.4G_Ant 2		0.540	0mm				
	WLAN2.4G_Ant 1	Bottom Face	0.250	0mm	75.0	0.79	0.01	Not required
	WLAN2.4G_Ant 2		0.540	0mm				
	LTE B66	Bottom Face	0.993	0mm	110.0	1.15	0.01	Not required
	WLAN5G_Ant 1		0.160	0mm				
	LTE B66	Bottom Face	0.993	0mm	206.0	1.44	0.01	Not required
	WLAN5G_Ant 2		0.450	0mm				
	WLAN5G_Ant 1	Bottom Face	0.160	0mm	75.0	0.61	0.01	Not required
	WLAN5G_Ant 2		0.450	0mm				

	Band	Position	SAR (W/kg)	Gap	Minimum distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)				
Case 27	LTE B66	Edge 1	1.188	0mm	110.0	1.50	0.02	Not required
	WLAN2.4G_Ant 1		0.310	0mm				
	LTE B66	Edge 1	1.188	0mm	206.0	1.48	0.01	Not required
	WLAN2.4G_Ant 2		0.290	0mm				
	WLAN2.4G_Ant 1	Edge 1	0.310	0mm	75.0	0.60	0.01	Not required
	WLAN2.4G_Ant 2		0.290	0mm				
	LTE B66	Edge 1	1.188	0mm	110.0	1.84	0.02	Not required
	WLAN5G_Ant 1		0.650	0mm				
	LTE B66	Edge 1	1.188	0mm	206.0	2.06	0.01	Not required
	WLAN5G_Ant 2		0.870	0mm				
	WLAN5G_Ant 1	Edge 1	0.650	0mm	75.0	1.52	0.02	Not required
	WLAN5G_Ant 2		0.870	0mm				
	LTE B66	Edge 1	1.188	0mm	206.0	1.26	0.01	Not required
	BT_Ant 2		0.070	0mm				
	WLAN5G_Ant 1	Edge 1	0.650	0mm	75.0	0.72	0.01	Not required
	BT_Ant 2		0.070	0mm				



## **7. 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] FCC KDB 447498 D01 v06, "Mobile and Portable Device RF Exposure Procedures and Equipment Authorization Policies", Oct 2015
- [4] FCC KDB 865664 D01 v01r04, "SAR Measurement Requirements for 100 MHz to 6 GHz", Aug 2015.
- [5] FCC KDB 865664 D02 v01r02, "RF Exposure Compliance Reporting and Documentation Considerations" Oct 2015.