FCC SAR Test Report

APPLICANT	**:**	**Motorola Mobility LLC**
EQUIPMENT	**:**	**Mobile Cellular Phone**
BRAND NAME	**:**	**Motorola**
MODEL NAME	**:**	**XT1925-3**
FCC ID	**:**	**IHDT56XD6**
STANDARD	**:**	**FCC 47 CFR Part 2 (2.1093)** **ANSI/IEEE C95.1-1992** **IEEE 1528-2013**

We, Sporton International (Kunshan) Inc., would like to declare that the tested sample has been evaluated in accordance with the procedures and had 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.

NVLAP® TESTING NVLAP LAB CODE 600155-0

Approved by: Mark Qu / Manager

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Revision History

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FA7D2507-02	Rev. 01	Initial issue of report	Feb. 09, 2018

1. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for **Motorola Mobility LLC, Mobile Cellular Phone, XT1925-3**, are as follows.

Highest 1g SAR Summary						
Equipment Class	Frequency Band		Head (Separation 0mm)	Hotspot (Separation 5mm)	Body-worn (Separation 5mm)	Highest Simultaneous Transmission 1g SAR (W/kg)
			1g SAR (W/kg)			
Licensed	GSM	GSM850	0.42	**1.14**	**1.14**	1.56
		GSM1900	0.15	1.07	0.79	
	WCDMA	Band V	0.44	0.94	0.94	
		Band II	0.32	1.06	0.68	
	LTE	Band 5	0.36	1.05	1.05	
		Band 7	0.86	0.96	0.96	
DTS	WLAN	2.4GHz WLAN	0.74	0.43	0.43	1.47
NII		5GHz WLAN	**0.99**	0.82	0.85	1.56
DSS	Bluetooth	2.4GHz Bluetooth		0.11	0.11	1.22

Highest 10g SAR Summary				
Equipment Class	Frequency Band		Product Specific 10g SAR (W/kg) (Separation 0mm)	Highest Simultaneous Transmission 10g SAR (W/kg)
Licensed	GSM	GSM1900	**3.40**	3.67
	WCDMA	Band II	2.86	
	LTE	Band 7	1.11	
NII	WLAN	5GHz WLAN	0.54	3.67
Date of Testing:			2018/1/7~2018/1/20	

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

Testing Laboratory	
Test Site	Sporton International (Kunshan) Inc.
Test Site Location	No.3-2 Ping-Xiang Rd, Kunshan Development Zone Kunshan City Jiangsu Province 215335 China TEL : +86-512-57900158 FAX : +86-512-57900958

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

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

3. Guidance Applied

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

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

4. Equipment Under Test (EUT) Information

4.1 General Information

Product Feature & Specification	
Equipment Name	Mobile Cellular Phone
Brand Name	Motorola
Model Name	XT1925-3
FCC ID	IHDT56XD6
Wireless Technology and Frequency Range	GSM850: 824.2 MHz ~ 848.8 MHz GSM1900: 1850.2 MHz ~ 1909.8 MHz WCDMA Band II: 1852.4 MHz ~ 1907.6 MHz WCDMA Band V: 826.4 MHz ~ 846.6 MHz LTE Band 5: 824.7 MHz ~ 848.3 MHz LTE Band 7: 2502.5 MHz ~ 2567.5 MHz WLAN 2.4GHz Band: 2412 MHz ~ 2462 MHz WLAN 5.2GHz Band: 5180 MHz ~ 5240 MHz WLAN 5.3GHz Band: 5260 MHz ~ 5320 MHz WLAN 5.5GHz Band: 5500 MHz ~ 5700 MHz WLAN 5.8GHz Band: 5745 MHz ~ 5825 MHz Bluetooth: 2402 MHz ~ 2480 MHz
Mode	GSM/GPRS/EGPRS RMC/AMR 12.2Kbps HSDPA HSUPA DC-HSDPA HSPA+ (16QAM uplink is not supported) LTE: QPSK, 16QAM, 64QAM WLAN 2.4GHz 802.11b/g/n HT20 WLAN 5GHz 802.11a/n HT20/HT40 Bluetooth v3.0+EDR, Bluetooth v4.0 LE, Bluetooth v4.1 LE, Bluetooth v4.2 LE
HW Version	DVT1-B
SW Version	ali_n-userdebug 8.0.0 OPS27.55 1276 intcfg,test-keys
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 GRPS/EGRPS mode up to multi-slot class 12.
5. When operating in any other radiated condition, the device uses the default power which is the same as full power level.
6. The device employs proximity sensors that detect the presence of the user's body at the front or back faces of the device. When front or back body worn condition is detected, GSM1900, WCDMA band II and LTE band 7 reduced power will be active. (P-sensor can't work at detecting presence of the user's body at the four edges of the device.)
7. When hotspot mode is enabled, power reduction will be activated to limit the maximum power of GSM1900, WCDMA band II, LTE band 7.
8. This device hotspot reduced power and P-sensor reduced power level are the same. So only show one reduced power level for hotspot reduced power and P-sensor reduced power for this application.
9. P-sensor can detect handheld state, for product specific 10g SAR condition, GSM1900, WCDMA band II reduced powers will be active. For LTE band 7, the power level is the same as the full power.
10. When the phone is in talking mode and receiver worked, then power reduction will be implemented immediately at WLAN5.2/5.3GHz.
11. This device has three WWAN transmitter antennas. WWAN antenna 1 is located at the middle of bottom edge of the device, WWAN antenna 2 is located at the right side of bottom edge of the device, and WWAN antenna 3 is located at the left side of bottom edge of the device which can refer to antenna location chapter. WWAN antenna 1 frequency bands include GSM850/1900, WCDMA Band II /V, LTE band 5, WWAN antenna 2 frequency band only includes LTE band 7and WWAN antenna 3 frequency band also only includes LTE band 7.

12. The device is capable of switching between the WWAN antenna 2 and WWAN antenna 3 based on signal strength. When WWAN antenna 2 acted as a transmitter, then WWAN antenna 3 acted as a receiver. The same as the reversed.
13. This device implements antenna tuning techniques for several WWAN (cellular) operating modes and frequencies for the purpose of improving antenna efficiency over a broad range of frequencies. Specifically, these techniques are employed in the GSM, WCDMA and LTE modes of WWAN antenna 1.
14. This is a variant report for XT1925-3.Based on the similarity between two models, WWAN bands and WLAN 2.4GHz /BT were leveraged from reference test report (Sporton Report Number FA7D2507 as Appendix A) and WLAN 5GHz were leveraged from reference test report (Sporton Report Number FA7D2507-03 as Appendix A)

4.2 General LTE SAR Test and Reporting Considerations

Summarized necessary items addressed in KDB 941225 D05 v02r05	
FCC ID	IHDT56XD6
Equipment Name	Mobile Cellular Phone
Operating Frequency Range of each LTE transmission band	LTE Band 5: 824.7 MHz ~ 848.3 MHz LTE Band 7: 2502.5 MHz ~ 2567.5 MHz
Channel Bandwidth	LTE Band 5:1.4MHz, 3MHz, 5MHz, 10MHz LTE Band 7: 5MHz, 10MHz, 15MHz, 20MHz
Uplink Modulations Used	QPSK and 16QAM and 64QAM
LTE Voice / Data requirements	Voice and Data
LTE Release Version	R8, Cat4
CA Support	Not Supported
LTE MPR permanently built-in by design	Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 1, 2 and 3

Modulation	Channel bandwidth / Transmission bandwidth (N_{RB})						MPR (dB)
	1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz	20 MHz	
QPSK	> 5	> 4	> 8	> 12	> 16	> 18	≤ 1
16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 1
16 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2
64 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 2
64 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 3
256 QAM	≥ 1						≤ 5

LTE A-MPR	In the base station simulator configuration, Network Setting value is set to NS_01 to disable A-MPR during SAR testing and the LTE SAR tests was transmitting on all TTI frames (Maximum TTI)
Spectrum plots for RB configuration	A properly configured base station simulator was used for the SAR and power measurement; therefore, spectrum plots for each RB allocation and offset configuration are not included in the SAR report.
Power reduction applied to satisfy SAR compliance	Yes 1. When hotspot mode is enabled, power reduction will be activated to limit the maximum power of LTE band /7. 2. The device employs proximity sensors that detect the presence of the user's body at the front or back faces of the device. When front or back body worn condition is detected LTE band /7 reduced power will be active. (P-sensor can't work at detecting presence of the user's body at the four edges of the device.) 3. P-sensor can detect handheld state, for product specific 10g SAR condition LTE band 7 reduced powers will be active, the power levels are the same as the full power.

Transmission (H, M, L) channel numbers and frequencies in each LTE band								
LTE Band 5								
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	20407	824.7	20415	825.5	20425	826.5	20450	829
M	20525	836.5	20525	836.5	20525	836.5	20525	836.5
H	20643	848.3	20635	847.5	20625	846.5	20600	844
LTE Band 7								
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	20775	2502.5	20800	2505	20825	2507.5	20850	2510
M	21100	2535	21100	2535	21100	2535	21100	2535
H	21425	2567.5	21400	2565	21375	2562.5	21350	2560

5. Re-use of Measured Data

5.1 Introduction Section

This application re-uses data collected on a similar device. The subject device of this application (Model: XT1925-3, FCC ID: IHDT56XD6) is electrically identical to the reference device (Model: XT1925-6, XT1925-12, XT1925DL, FCC ID: IHDT56XD1 for WWAN Bands, WLAN 2.4GHz, Bluetooth and Model: XT1925-2, XT1925-1, FCC ID: IHDT56XD5 for WLAN 5GHz) for the portions of the circuitry corresponding to the data being re-used, as treated by KDB Publication 178919 D01.

5.2 Difference Section

The re-used RF data includes the following bands provided in Appendix A

a. Sporton SAR Report No. FA7D2507 for the reference device Model: XT1925-6, XT1925-12, XT1925DL, FCC ID: IHDT56XD1 for WWAN Bands, WLAN 2.4GHz, Bluetooth.
   - GSM850/1900
   - WCDMA Band V/II
   - LTE Band 5/7
   - WLAN/Bluetooth

b. Sporton SAR Report No. FA7D2507-03 for the reference device XT1925-2, XT1925-1, FCC ID: IHDT56XD5 for WLAN 5GHz.
   - WLAN 5GHz

   Spot check for WWAN and BT/WLAN are performed for ensure that SAR measurement for both device are the same. So, the original SAR value can represent this application.

5.3 Spot Check Verification Data Section

Band	BW (MHz)	Modulation	RB Size	RB Offset	Mode	Test Position	Gap (mm)	Power Mode	Ch.	Freq. (MHz)	Original model (FCC ID: IHDT56XD1)				Spot check model (FCC ID: IHDT56XD6)				Deviation
											Average Power (dBm)	Tune-Up Limit (dBm)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)	Average Power (dBm)	Tune-Up Limit (dBm)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)	
GSM850	-	-	-	-	GPRS 2 Tx slots	Front	5	Full	251	848.8	30.85	31.5	0.983	1.142	30.85	31.5	0.965	1.121	-1.84%
GSM1900	-	-	-	-	GPRS 2 Tx slots	Bottom Side	5	Hotspot On	810	1909.8	24.13	24.50	0.985	1.073	24.13	24.50	0.885	0.964	-10.16%
WCDMA Band V	-	-	-	-	RMC 12.2Kbps	Front	5	Full	4233	846.6	22.43	24.00	0.655	0.940	22.43	24.00	0.630	0.904	-3.83%
WCDMA Band II	-	-	-	-	RMC 12.2Kbps	Bottom Side	5	Hotspot On	9538	1907.6	16.10	16.50	0.967	1.060	16.10	16.50	0.830	0.910	-14.15%
LTE Band 26	15M	QPSK	1	74		Front	5	Full	26865	831.5	23.82	24	1.010	1.053					
LTE Band 5	10M	QPSK	1	49		Front	5	Full	20600	836.5					23.42	24.00	0.850	0.971	-7.79%
LTE Band 7	20M	QPSK	1	0		Front	5	Hotspot On	20850	2510	18.25	18.50	0.907	0.961	18.25	18.50	0.758	0.803	-16.44%
WLAN2.4GHz	-	-	-	-	802.11b 1Mbps	Left Tilted	0	Full	6	2437	17.44	18.00	0.637	0.740	17.44	18.00	0.518	0.602	-18.65%
Bluetooth					1Mbps	Back	5	Full	39	2441	11.63	12.00	0.093	0.110	11.63	12.00	0.085	0.1	-9.09%

Note: In the table above, all the deviation of SAR test results are compliant with uncertainty budget.

Band	BW (MHz)	Modulation	RB Size	RB Offset	Mode	Test Position	Gap (mm)	Power Mode	Ch.	Freq. (MHz)	Original model (FCC ID: IHDT56XD5)				Spot check model (FCC ID: IHDT56XD6)				Deviation
											Average Power (dBm)	Tune-Up Limit (dBm)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)	Average Power (dBm)	Tune-Up Limit (dBm)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)	
WLAN5.3GHz	-	-	-	-	802.11a 6Mbps	Left Cheek	0	Receiver On	52	5260	12.54	13.00	0.781	0.993	12.54	13.00	0.68	0.865	-12.89%
WLAN5.5GHz	-	-	-	-	802.11a 6Mbps	Left Cheek	0	Full	124	5620	14.94	15.5	0.686	0.893	14.94	15.5	0.65	0.846	-5.26%
WLAN 5.8GHz	-	-	-	-	802.11a 6Mbps	Back	5	Full	157	5785	15.31	15.5	0.517	0.618	15.31	15.5	0.489	0.584	-5.50%

5.4 Reference detail Section

Reference FCC ID	Folder Test/RF Exposure	Report Title/Section
IHDT56XD1	RF Exposure(FA7D2507)	All sections applicable (WWAN Bands, WLAN 2.4GHz, Bluetooth)
IHDT56XD5	RF Exposure(FA7D2507-03)	All sections applicable WLAN 5GHz

6. Simultaneous Transmission Analysis

No.	Simultaneous Transmission Configurations	Portable Handset				Note
		Head	Body-worn	Hotspot	Product specific 10g SAR	
1.	GSM Voice + WLAN2.4GHz	Yes	Yes			
2.	GPRS/EDGE + WLAN2.4GHz	Yes	Yes	Yes	Yes	WLAN Hotspot
3.	WCDMA + WLAN2.4GHz	Yes	Yes	Yes	Yes	WLAN Hotspot
4.	LTE + WLAN2.4GHz	Yes	Yes	Yes	Yes	WLAN Hotspot
5.	GSM Voice + WLAN5.3/5.5GHz	Yes	Yes			
6.	GPRS/EDGE + WLAN5.3/5.5GHz	Yes	Yes		Yes	WLAN Direct (GC only)
7.	WCDMA + WLAN5.3/5.5GHz	Yes	Yes		Yes	WLAN Direct (GC only)
8.	LTE + WLAN5.3/5.5GHz	Yes	Yes		Yes	WLAN Direct (GC only)
9.	GSM Voice + WLAN5.2/5.8GHz	Yes	Yes			
10.	GPRS/EDGE + WLAN5.2/5.8GHz	Yes	Yes	Yes	Yes	WLAN Hotspot/Direct(GC/GO)
11.	WCDMA + WLAN5.2/5.8GHz	Yes	Yes	Yes	Yes	WLAN Hotspot/Direct(GC/GO)
12.	LTE + WLAN5.2/5.8GHz	Yes	Yes	Yes	Yes	WLAN Hotspot/Direct(GC/GO)
13.	GSM Voice + Bluetooth		Yes			
14.	GPRS/EDGE + Bluetooth		Yes	Yes	Yes	BT Tethering
15.	WCDMA + Bluetooth		Yes	Yes	Yes	BT Tethering
16.	LTE + Bluetooth		Yes	Yes	Yes	BT Tethering

General Note:

1. This device supports VoIP in GPRS, EGPRS, WCDMA and LTE (e.g. for 3rd-party VoIP), LTE supports VoLTE operation.
2. EUT will choose each GSM, WCDMA, and LTE according to the network signal condition; therefore, they will not operate simultaneously at any moment.
3. This device WLAN 2.4GHz supports hotspot operation and Bluetooth support tethering applications.
4. 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).
5. 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 though they have independent antenna.
6. WLAN 2.4GHz and Bluetooth share the same antenna so can't transmit simultaneously.
7. According to the EUT character, WLAN 5GHz and Bluetooth can't transmit simultaneously.
8. Chose the worst zoom scan SAR of WLAN correspondingly for co-located with WWAN analysis.
9. The reported SAR summation is calculated based on the same configuration and test position.
10. Per KDB 447498 D01v06, simultaneous transmission SAR is compliant if,
    i) Scalar 1g SAR summation < 1.6W/kg and 10g Scalar SAR summation < 4.0W/kg.
    ii) SPLSR = (SAR1 + SAR2)^1.5 / (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 SPLSR ≤ 0.04 for 1g SAR, SPLSR ≤ 0.10 for 10g SAR simultaneously transmission SAR measurement is not necessary.
    iv) Simultaneously transmission SAR measurement, and the reported multi-band 1g SAR < 1.6W/kg and 10g SAR < 4.0W/kg.
    v) The SPLSR calculated results please refer to section 6.5.

6.1 Head Exposure Conditions

WWAN Band		Exposure Position	1		2	3	1+2 Summed 1g SAR (W/kg)	1+3 Summed 1g SAR (W/kg)
			WWAN		2.4GHz WLAN	5GHz WLAN		
			Ant.	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)		
GSM	GSM850	Right Cheek	1	0.418	0.740	0.721	1.16	1.14
		Right Tilted	1	0.263	0.740	0.758	1.00	1.02
		Left Cheek	1	0.327	0.472	0.993	0.80	1.32
		Left Tilted	1	0.223	0.740	0.830	0.96	1.05
	GSM1900	Right Cheek	1	0.151	0.740	0.721	0.89	0.87
		Right Tilted	1	0.068	0.740	0.758	0.81	0.83
		Left Cheek	1	0.134	0.472	0.993	0.61	1.13
		Left Tilted	1	0.063	0.740	0.830	0.80	0.89
WCDMA	Band V	Right Cheek	1	0.440	0.740	0.721	1.18	1.16
		Right Tilted	1	0.309	0.740	0.758	1.05	1.07
		Left Cheek	1	0.344	0.472	0.993	0.82	1.34
		Left Tilted	1	0.266	0.740	0.830	1.01	1.10
	Band II	Right Cheek	1	0.308	0.740	0.721	1.05	1.03
		Right Tilted	1	0.156	0.740	0.758	0.90	0.91
		Left Cheek	1	0.319	0.472	0.993	0.79	1.31
		Left Tilted	1	0.139	0.740	0.830	0.88	0.97

WWAN Band		Exposure Position	1		2	3	1+2			1+3		
			WWAN		2.4GHz WLAN	5GHz WLAN	Summed 1g SAR (W/kg)	SPLSR	Case No	Summed 1g SAR (W/kg)	SPLSR	Case No
			Ant.	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)						
LTE	Band 5	Right Cheek	1	0.360	0.740	0.721	1.10			1.08		
		Right Tilted	1	0.198	0.740	0.758	0.94			0.96		
		Left Cheek	1	0.275	0.472	0.993	0.75			1.27		
		Left Tilted	1	0.189	0.740	0.830	0.93			1.02		
	Band 7	Right Cheek	2	0.427	0.740	0.721	1.17			1.15		
		Right Tilted	2	0.311	0.740	0.758	1.05			1.07		
		Left Cheek	2	0.864	0.472	0.993	1.34			**1.86**	**0.03**	**#1**
		Left Tilted	2	0.195	0.740	0.830	0.94			1.03		
		Right Cheek	3	0.724	0.740	0.721	1.46			1.45		
		Right Tilted	3	0.187	0.740	0.758	0.93			0.95		
		Left Cheek	3	0.340	0.472	0.993	0.81			1.33		
		Left Tilted	3	0.241	0.740	0.830	0.98			1.07		

6.2 Hotspot Exposure Conditions

WWAN Band		Exposure Position	1		2	3	4	1+2			1+3			1+4		
			WWAN		2.4GHz WLAN	5GHz WLAN	Bluetooth	Summed 1g SAR (W/kg)	SPLSR	Case No	Summed 1g SAR (W/kg)	SPLSR	Case No	Summed 1g SAR (W/kg)	SPLSR	Case No
			Ant.	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)									
GSM	GSM850	Front	1	1.142	0.171	0.493	0.078	1.31			**1.64**	**0.01**	**#2**	1.22		
		Back	1	0.929	0.427	0.817	0.110	1.36			**1.75**	**0.01**	**#3**	1.04		
		Left Side	1	0.400				0.40			0.40			0.40		
		Right Side	1	0.646	0.427	0.161	0.018	1.07			0.81			0.66		
		Top Side	1		0.427	0.304	0.072	0.43			0.30			0.07		
		Bottom Side	1	0.553				0.55			0.55			0.55		
	GSM1900	Front	1	0.785	0.171	0.493	0.078	0.96			1.28			0.86		
		Back	1	0.645	0.427	0.817	0.110	1.07			1.46			0.76		
		Left Side	1	0.110				0.11			0.11			0.11		
		Right Side	1	0.032	0.427	0.161	0.018	0.46			0.19			0.05		
		Top Side	1		0.427	0.304	0.072	0.43			0.30			0.07		
		Bottom Side	1	1.073				1.07			1.07			1.07		
WCDMA	Band V	Front	1	0.940	0.171	0.493	0.078	1.11			1.43			1.02		
		Back	1	0.553	0.427	0.817	0.110	0.98			1.37			0.66		
		Left Side	1	0.262				0.26			0.26			0.26		
		Right Side	1	0.539	0.427	0.161	0.018	0.97			0.70			0.56		
		Top Side	1		0.427	0.304	0.072	0.43			0.30			0.07		
		Bottom Side	1	0.464				0.46			0.46			0.46		
	Band II	Front	1	0.675	0.171	0.493	0.078	0.85			1.17			0.75		
		Back	1	0.549	0.427	0.817	0.110	0.98			1.37			0.66		
		Left Side	1	0.100				0.10			0.10			0.10		
		Right Side	1	0.029	0.427	0.161	0.018	0.46			0.19			0.05		
		Top Side	1		0.427	0.304	0.072	0.43			0.30			0.07		
		Bottom Side	1	1.060				1.06			1.06			1.06		

WWAN Band		Exposure Position	1		2	3	4	1+2			1+3			1+4		
			WWAN		2.4GHz WLAN	5GHz WLAN	Bluetooth	Summed 1g SAR (W/kg)	SPLSR	Case No	Summed 1g SAR (W/kg)	SPLSR	Case No	Summed 1g SAR (W/kg)	SPLSR	Case No
			Ant.	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)									
LTE	Band 5	Front	1	1.053	0.171	0.493	0.078	1.22			1.55			1.13		
		Back	1	1.042	0.427	0.817	0.110	1.47			**1.86**	**0.02**	**#4**	1.15		
		Left Side	1	0.260				0.26			0.26			0.26		
		Right Side	1	0.651	0.427	0.161	0.018	1.08			0.81			0.67		
		Top Side	1		0.427	0.304	0.072	0.43			0.30			0.07		
		Bottom Side	1	0.697				0.70			0.70			0.70		
	Band 7	Front	2	0.833	0.171	0.493	0.078	1.00			1.33			0.91		
		Back	2	0.621	0.427	0.817	0.110	1.05			1.44			0.73		
		Left Side	2	0.526				0.53			0.53			0.53		
		Right Side	2		0.427	0.161	0.018	0.43			0.16			0.02		
		Top Side	2		0.427	0.304	0.072	0.43			0.30			0.07		
		Bottom Side	2	0.100				0.10			0.10			0.10		
		Front	3	0.961	0.171	0.493	0.078	1.13			1.45			1.04		
		Back	3	0.664	0.427	0.817	0.110	1.09			1.48			0.77		
		Right Side	3	0.562	0.427	0.161	0.018	0.99			0.72			0.58		
		Top Side	3		0.427	0.304	0.072	0.43			0.30			0.07		
		Bottom Side	3	0.069				0.07			0.07			0.07		

6.3 Body-Worn Accessory Exposure Conditions

WWAN Band		Exposure Position	1		2	3	4	1+2			1+3			1+4		
			WWAN		2.4GHz WLAN	5GHz WLAN	Bluetooth	Summed 1g SAR (W/kg)	SPLSR	Case No	Summed 1g SAR (W/kg)	SPLSR	Case No	Summed 1g SAR (W/kg)	SPLSR	Case No
			Ant.	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)									
GSM	GSM850	Front	1	1.142	0.171	0.511	0.078	1.31			**1.65**	**0.01**	**#5**	**1.22**		
		Back	1	0.929	0.427	0.849	0.110	1.36			**1.78**	**0.02**	**#6**	1.04		
	GSM1900	Front	1	0.785	0.171	0.511	0.078	0.96			1.30			0.86		
		Back	1	0.645	0.427	0.849	0.110	1.07			1.49			0.76		
WCDMA	Band V	Front	1	0.940	0.171	0.511	0.078	1.11			1.45			1.02		
		Back	1	0.553	0.427	0.849	0.110	0.98			1.40			0.66		
	Band II	Front	1	0.675	0.171	0.511	0.078	0.85			1.19			0.75		
		Back	1	0.549	0.427	0.849	0.110	0.98			1.40			0.66		
LTE	Band 5	Front	1	1.053	0.171	0.511	0.078	1.22			**1.56**			1.13		
		Back	1	1.042	0.427	0.849	0.110	**1.47**			**1.89**	**0.02**	**#7**	1.15		
	Band 7	Front	2	0.833	0.171	0.511	0.078	1.00			1.34			0.91		
		Back	2	0.621	0.427	0.849	0.110	1.05			1.47			0.73		
		Front	3	0.961	0.171	0.511	0.078	1.13			1.47			1.04		
		Back	3	0.664	0.427	0.849	0.110	1.09			1.51			0.77		

6.4 Product specific 10g SAR Exposure Conditions

WWAN Band		Exposure Position	1		2	1+2		
			WWAN Bottom		5GHz WLAN	Summed 10g SAR (W/kg)	SPLSR	Case No
			Ant.	10g SAR (W/kg)	10g SAR (W/kg)			
GSM	GSM1900	Front	1	3.131	0.536	**3.67**		
		Back	1	2.582	0.536	3.12		
		Bottom Side	1	3.403		3.40		
	Band II	Front	1	2.446	0.536	2.98		
		Back	1	1.886	0.536	2.42		
		Bottom Side	1	2.861		2.86		
LTE	Band 7	Front	2	1.092	0.536	1.63		
		Back	2	1.033	0.536	1.57		
		Left Side	2	0.975		0.98		
		Front	3	1.004	0.536	1.54		
		Back	3	1.108	0.536	1.64		
		Right Side	3	0.824	0.536	1.36		

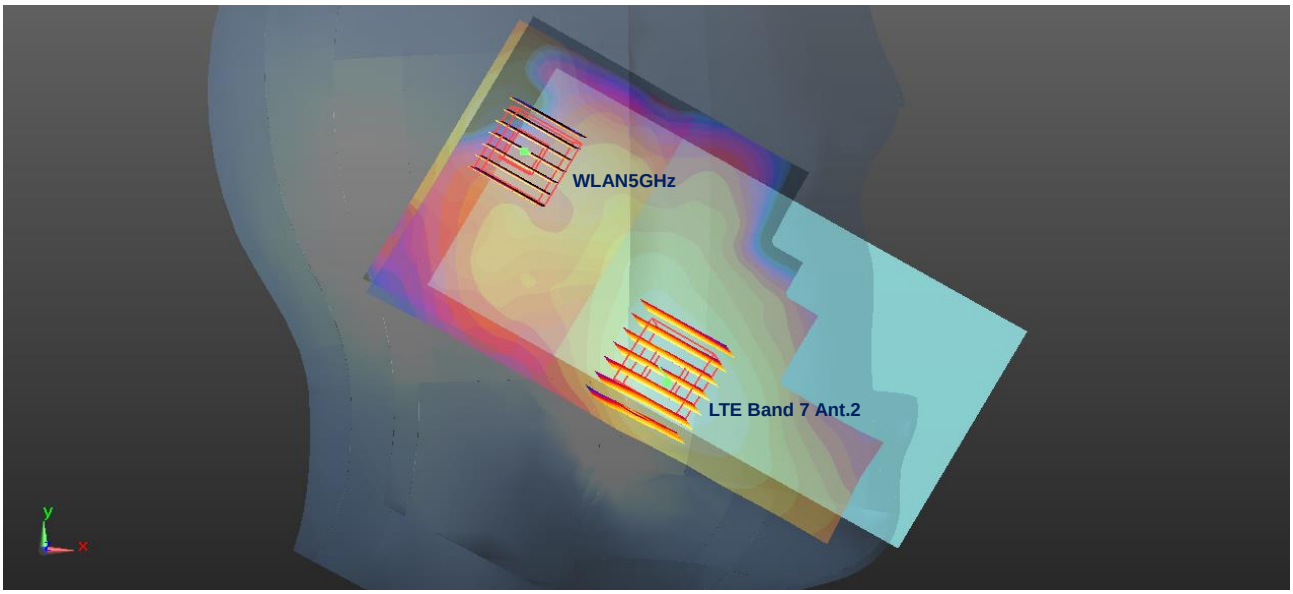
Remark: For Bluetooth Product specific 10g stand-alone SAR is not required for a transmitter or antenna, due to 1g hotspot SAR is <1.2W/kg.

6.5 SPLSR Evaluation and Analysis

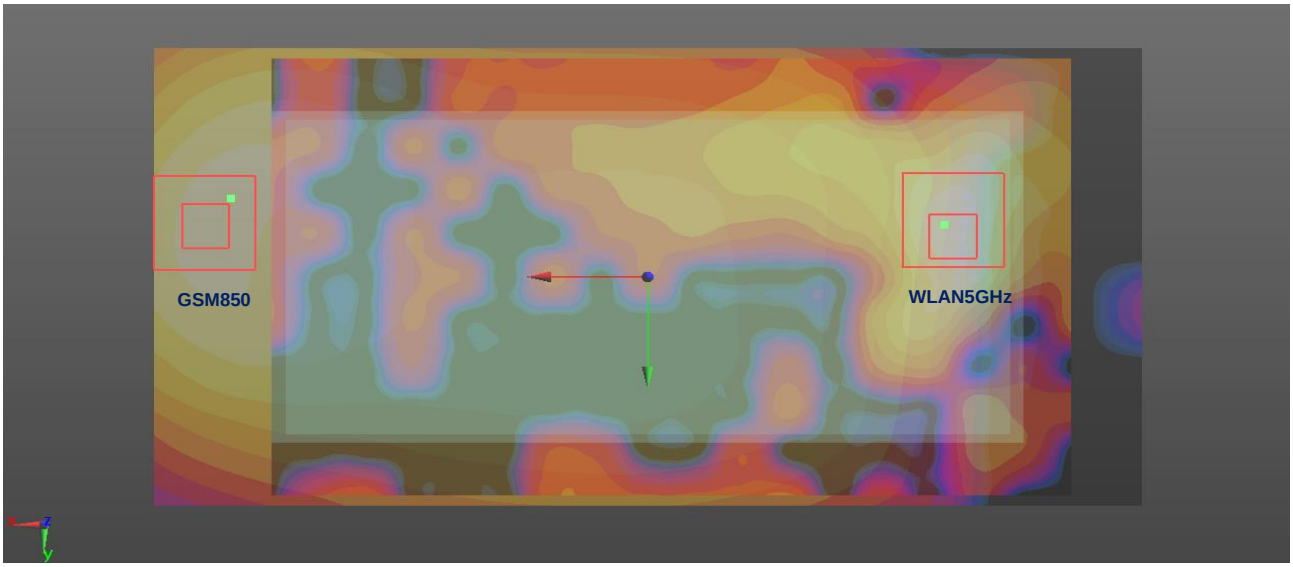
General Note:

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 = $(SAR_1 + SAR_2)^{1.5}$ / (*min. separation distance, mm*). If SPLSR ≤ 0.04 for 1g SAR and SPLSR ≤ 0.10 for 10g SAR, simultaneously transmission SAR measurement is not necessary.

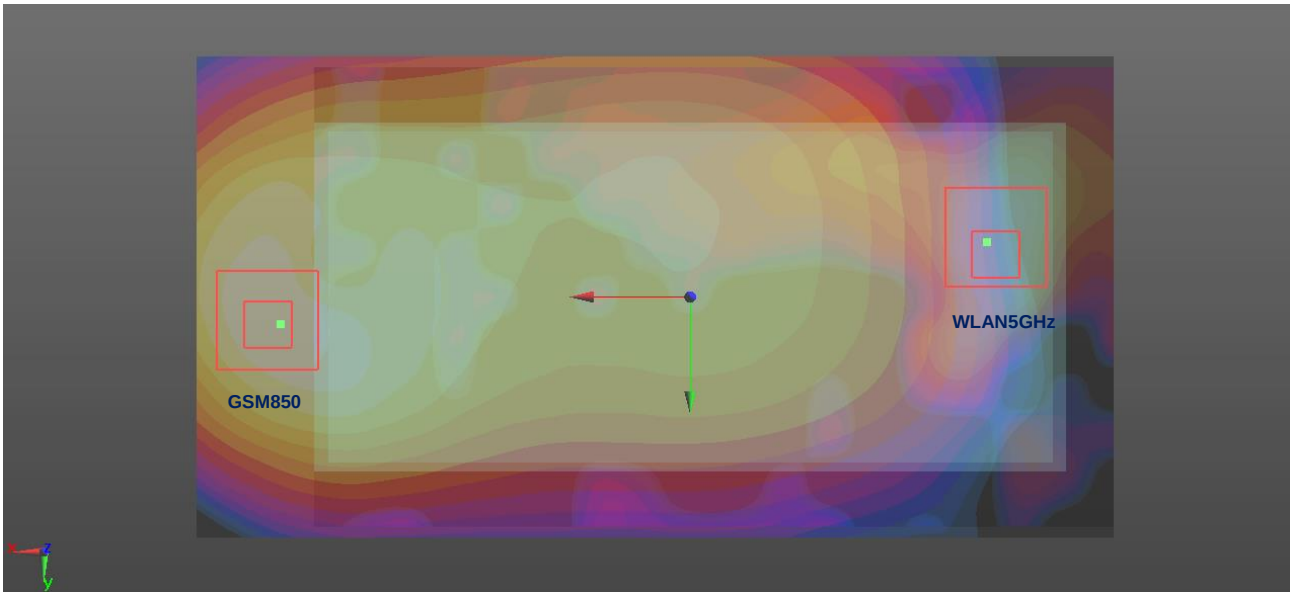
Case #1	Band	Position	1g SAR (W/kg)	Gap (mm)	SAR peak location (cm) X	Y	Z	3D distance (mm)	Summed 1g SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE Band 7 Ant.2	Left Cheek	0.864	0	4.51	-5.92	-0.19	83.03	1.86	0.03	Not required
	WLAN5GHz		0.993	0	0.41	1.3	-0.17				



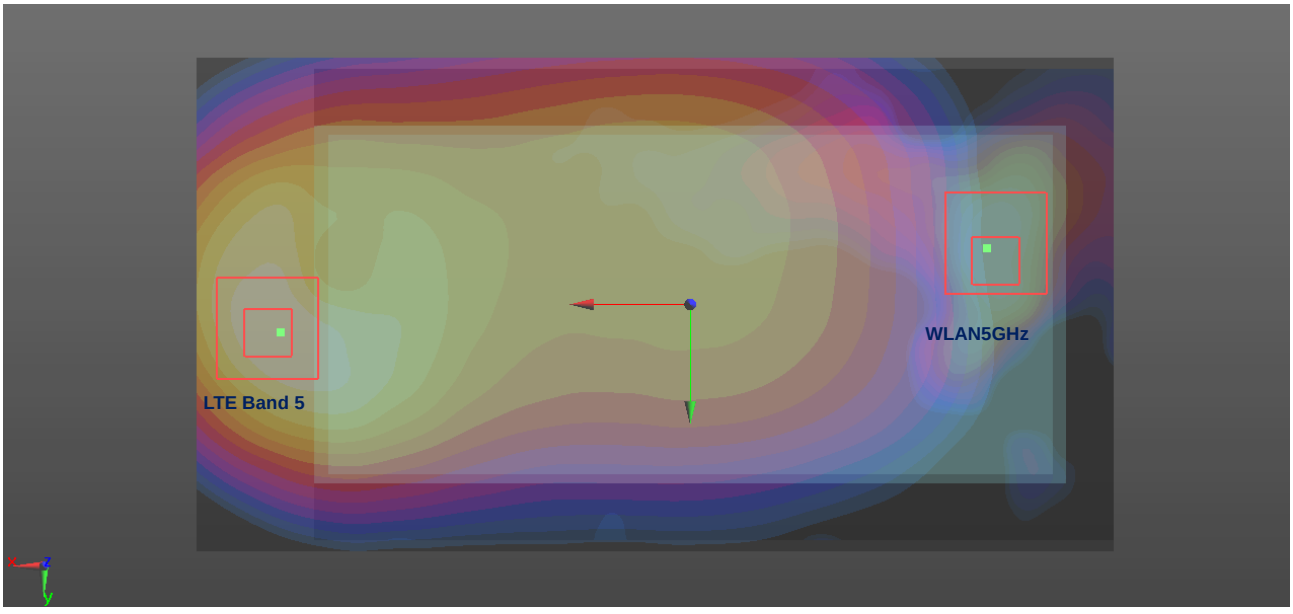
Case #2	Band	Position	1g SAR (W/kg)	Gap (mm)	SAR peak location (cm) X	Y	Z	3D distance (mm)	Summed 1g SAR (W/kg)	SPLSR Results	Simultaneous SAR
	GSM850	Front	1.142	5	9.33	-1.16	0.4	158.36	1.64	0.01	Not required
	WLAN5GHz		0.493	5	-6.41	0.58	0.35				



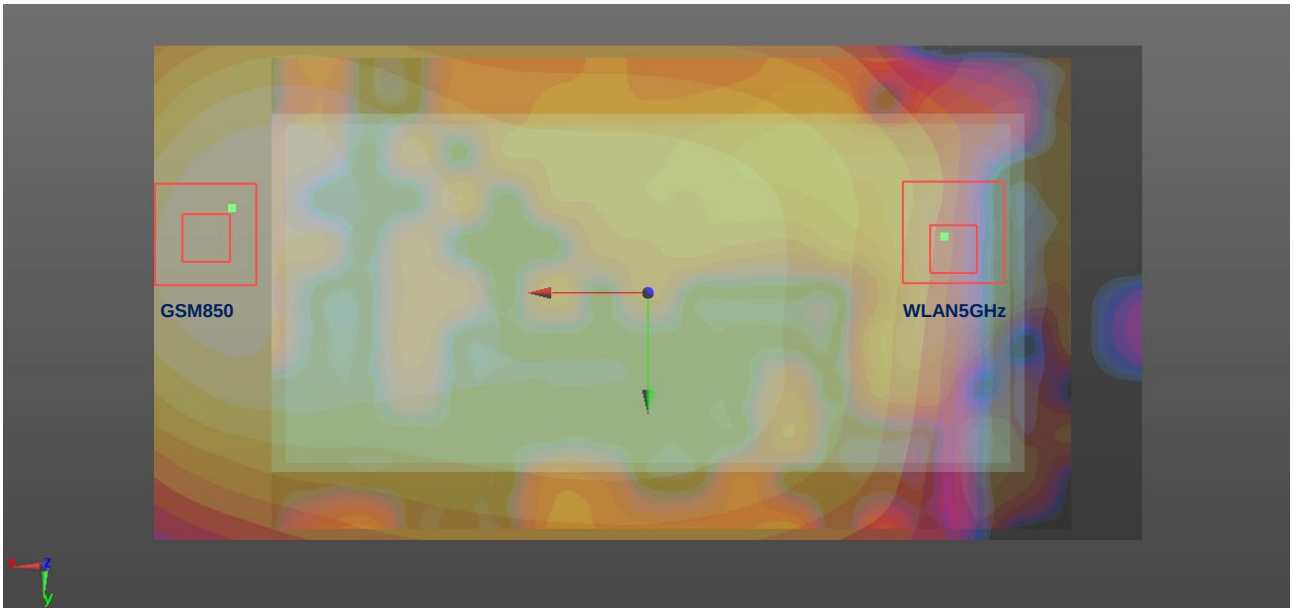
	Band	Position	1g SAR (W/kg)	Gap	SAR peak location (cm)			3D distance (mm)	Summed 1g SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
Case #3	GSM850	Back	0.929	5	9.02	0.6	0.39	155.63	1.75	0.01	Not required
	WLAN5GHz		0.817	5	-6.48	-0.8	0.4				



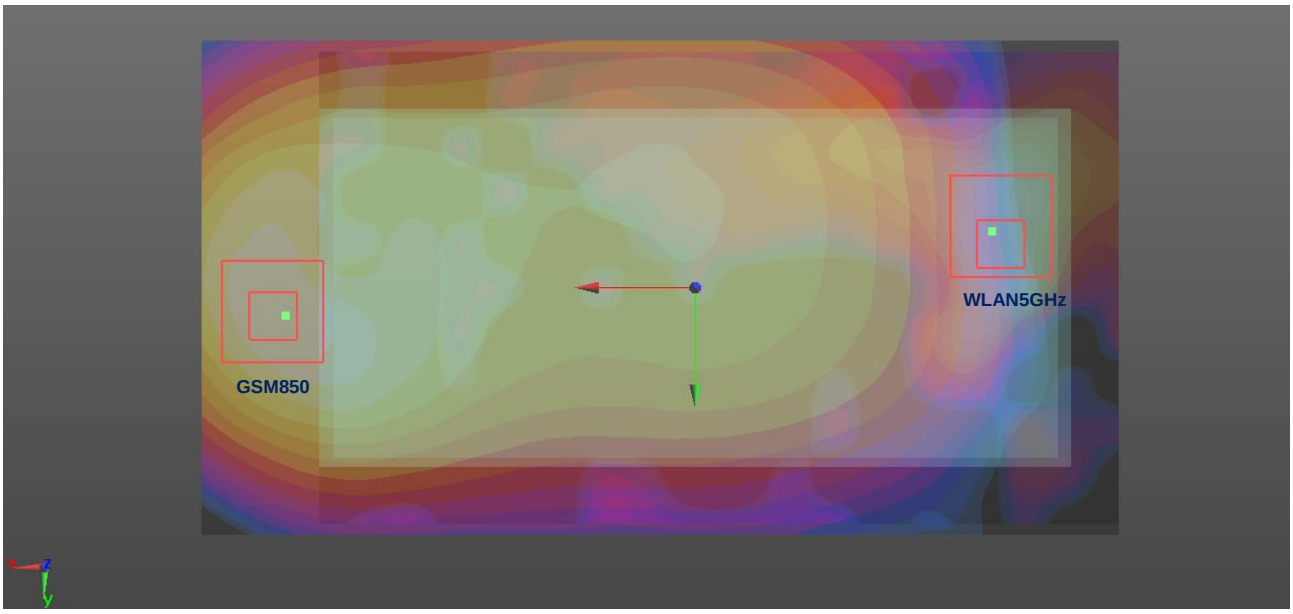
	Band	Position	1g SAR (W/kg)	Gap	SAR peak location (cm)			3D distance (mm)	Summed 1g SAR (W/kg)	SPLSR Results	Simultaneous SAR
				(mm)	X	Y	Z				
Case #4	LTE Band 5	Back	1.042	5	7.35	1.95	0.55	141.02	1.86	0.02	Not required
	WLAN5GHz		0.817	5	-6.48	-0.8	0.4				



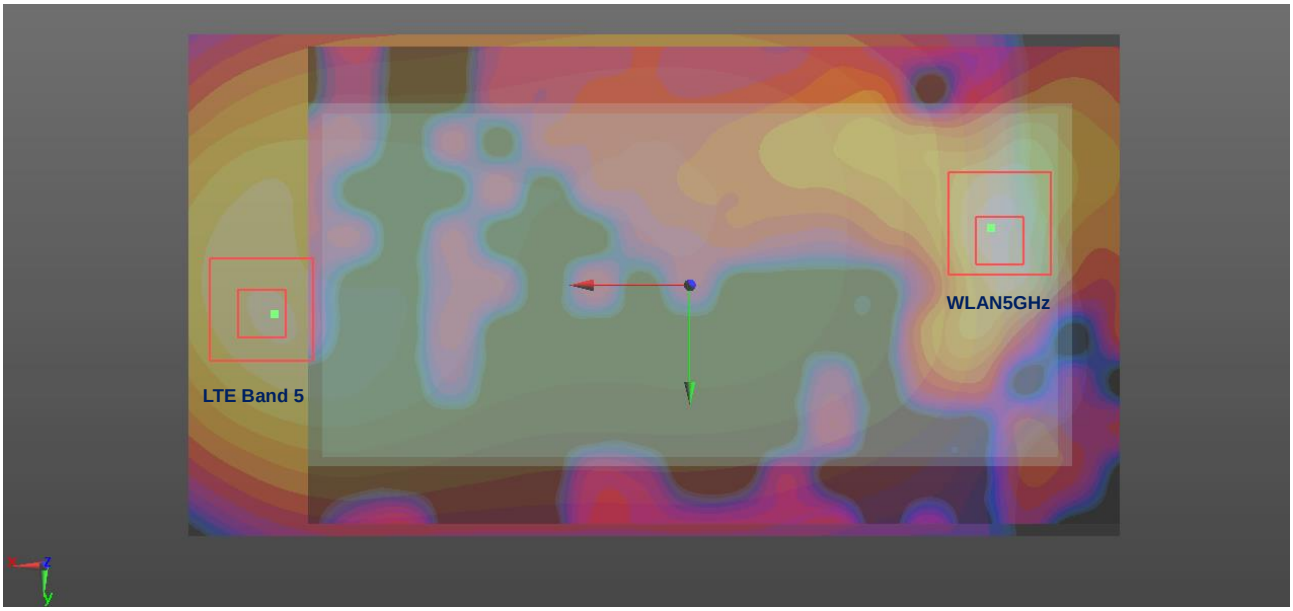
Case #5	Band	Position	1g SAR (W/kg)	Gap (mm)	SAR peak location (cm) X	Y	Z	3D distance (mm)	Summed 1g SAR (W/kg)	SPLSR Results	Simultaneous SAR
	GSM850	Front	1.142	5	9.33	-1.16	0.4	158.28	1.65	0.01	Not required
	WLAN5GHz		0.511	5	-6.32	1.20	0.25				



Case #6	Band	Position	1g SAR (W/kg)	Gap (mm)	SAR peak location (cm) X	Y	Z	3D distance (mm)	Summed 1g SAR (W/kg)	SPLSR Results	Simultaneous SAR
	GSM850	Back	0.929	5	9.02	0.6	0.39	155.81	1.78	0.02	Not required
	WLAN5GHz		0.849	5	-6.56	0.78	0.4				



Case #7	Band	Position	1g SAR (W/kg)	Gap (mm)	SAR peak location (cm) X	Y	Z	3D distance (mm)	Summed 1g SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE Band 5	Back	1.042	5	7.35	1.95	0.55	139.60	1.89	0.02	Not required
	WLAN5GHz		0.849	5	-6.56	0.78	0.4				



Test Engineer: Nick Hu

7. Uncertainty Assessment

Pre KDB 865664 D01 SAR measurement 100MHz to 6GHz, when the highest measured 1-g SAR within a frequency band is < 1.5 W/kg. The expanded SAR measurement uncertainty must be ≤ 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. Therefore, the measurement uncertainty table is not required in this report.

8. 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 D06 v02r01, "SAR Evaluation Procedures for Portable Devices with Wireless Router Capabilities", Oct 2015.

Appendix A. Reference Report

Please refer to Sporton report number FA7D2507 and FA7D2507-03 which are issued separately.