FCC SAR Test Report

APPLICANT : Motorola Mobility, LLC

EQUIPMENT : Mobile Cellular Phone

BRAND NAME : Motorola

MODEL NAME : 7048

FCC ID : IHDT56VA3

STANDARD : FCC 47 CFR Part 2 (2.1093)

ANSI/IEEE C95.1-1992

IEEE 1528-2013

We, SPORTON INTERNATIONAL 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 INC., the test report shall not be reproduced except in full.

Reviewed by: Eric Huang / Deputy Manager

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Approved by: Jones Tsai / Manager



Report No.: FA620325-05

SPORTON INTERNATIONAL INC.

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FCC ID: IHDT56VA3

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Appendix A. GSM850/1900, UMTS B5, LTE B5 and WLAN/BT Reference Report Appendix B. UMTS B2 and LTE B7 Reference Report

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Revision History

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FA620325-05	Rev. 01	Initial issue of report	May. 09, 2016

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1. Statement of Compliance

Mobile Cellular Phone, 7048 are as follows.

The maximum results of Specific Absorption Rate (SAR) found during testing for Motorola Mobility, LLC,

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			Highest				
Equipment Class			Body-worn (Separation 10mm)	Hotspot (Separation 10mm)	Product specific (Separation 0mm)	Simultaneous Transmission	
			1g SAR (W/kg)		10g SAR (W/kg)	1g SAR (W/kg)	
	GSM850	0.45	0.89	0.75			
	GSM1900	0.38	0.68	0.68			
Licensed	WCDMA II	0.96	0.93	0.93		1.59	
Licerised	WCDMA V	0.40	0.80	0.89			
	LTE Band 5	0.39	0.72	0.74			
	LTE Band 7	0.51	0.91	0.91			
DTS	2.4GHz WLAN	1.12	0.18	0.18		1.51	
NII	5GHz WLAN	0.63	0.37	0.37	0.67	1.59	
DSS	Bluetooth		0.05			0.97	

This device is in compliance with Specific Absorption Rate (SAR) for general population/uncontrolled exposure limits (1.6 W/kg for Partial-Body, 4.0 W/kg for Product specific) 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 INC.				
Test Site Location	No.52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan District, Taoyuan City, Taiwan (R.O.C.) TEL: +886-3-327-3456 FAX: +886-3-328-4978				

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

Manufacturer Manufacturer				
Company Name Motorola Mobility, LLC				
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3. Guidance Standard

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	7048
FCC ID	IHDT56VA3
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 MHz ~ 849 MHz LTE Band 7: 2500 MHz ~ 2570 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 5.6GHz Band: 5745 MHz ~ 5825 MHz Bluetooth: 2402 MHz ~ 2480 MHz
Mode GSM / (E)GPRS Transfer	GSM/GPRS/EGPRS RMC/AMR 12.2Kbps HSDPA HSUPA DC-HSDPA LTE: QPSK, 16QAM 802.11a/b/g/n HT20/HT40 Bluetooth v3.0+EDR, Bluetooth v4.0-LE Class B – EUT cannot support Packet Switched and Circuit Switched Network simultaneously but
mode	can automatically switch between Packet and Circuit Switched Network.
EUT Stage	Identical Prototype

Remark:

- While operating in "Front" and "Back" configuration by end user, the device will limit different maximum output powers on the WCDMA B2 and LTE B7 transmitter and detail descriptions of the power reduction mechanism are included in the operational description.
- While operating in body-adjacent exposure configuration during a mobile hotspot session, the device will reduced output powers on the WCDMA B2 and LTE B7 transmitter and detail descriptions of the power reduction mechanism are included in the operational description.
- This device 2.4GHz / 5.2GHz / 5.8GHz WLAN supports Hotspot operation and WiFi Direct (Group Client / Group Owner), and 5.3GHz / 5.5GHz WLAN supports WiFi Direct (Group Client).

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4.2 Re-use of Measured Data

This application re-uses data collected on a similar device. The subject device of this application (Model 7048, FCC ID IHDT56VA3) is electrically identical to the reference device (Model 8028, FCC ID IHDT56VA2 and Model 7882, FCC ID: IHDT56VA4) for the portions of the circuitry corresponding to the data being re-used, as treated by KDB Publication 178919 D01.

- For details concerning the similarity with respect to component placement, mechanical/electrical design etc., please refer to the Operational Description.
- 3. The re-used SAR data includes the following bands provided in Appendix A (Sporton SAR Report No. FA620325 for the reference device Model 8028, FCC ID IHDT56VA2): GSM850/1900, WCDMA B5, LTE B5, 2.4GHz/5GHz WLAN and Bluetooth.
- The following bands from the reference device report in Appendix A are not applicable to the Model 7048 (FCC ID IHDT56VA3) subject device of this application: WCDMA B2 and LTE B7.
- The re-used SAR data includes the following bands provided in Appendix B (Sporton SAR Report No. FA620325-03 for the reference device Model 7882, FCC ID IHDT56VA4): WCDMA B2 and LTE B7.
- The following bands from the reference device report in Appendix B are not applicable to the Model 7048 (FCC ID IHDT56VA3) subject device of this application: WCDMA B4 and LTE B2 / B4 / B12 / B17.
- 7. In order to confirm hardware similarity of the subject device with the reference device, spot check measurements were performed on the subject device for the individual cases within each frequency band and test condition (head, body-worn, hotspot and extremity) having maximum reported SAR, for those frequency bands and test conditions where such maximum SAR exceeded half of the FCC allowed value. The spot check test cases and qualifying criteria to confirm equivalence was as follows table.
- Assertions concerning the similarity of these devices are based on representations by the applicant. The applicant accepts full responsibility for the validity of the similarity claim, and for the determination that verification test data are sufficient to support it.
- Spot Check Results within one expanded STD uncertainty of reference device.

<Spot Check Exposure Condition>

< Head Exposure Condition>

Band	Mode	Test Position	Gap (mm)	Ch.	Freq. (MHz)
WLAN2.4GHz	802.11b 1Mbps	Right Cheek	0mm	1	2412

<Hotspot Exposure Condition>

Band	Mode	Test Position	Gap (mm)	Ch.	Freq. (MHz)
WCMDA II	RMC12.2Kbps	Back	10mm	9400	1880

<Body-Worn Exposure Condition>

Band	Mode	Test Position	Gap (mm)	Ch.	Freq. (MHz)
WCMDA II	RMC12.2Kbps	Back	10mm	9400	1880

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4.3 General LTE SAR Test and Reporting Considerations

Summarized necessary items addressed in KDB 941225 D05 v02r05											
FCC ID	IHDT56	VA3									
Equipment Name	Mobile C	Cellular Pho	ne								
-		nd 05: 824 N nd 07: 2500									
				Hz, 5MHz, 10 Hz, 15MHz, 2							
uplink modulations used	QPSK, a	and 16QAM									
LTE Voice / Data requirements	Data onl	ly									
		Table 6.	2.3-1: M	laximum Pov	wer Re	eduction (MF	R) for Po	wer Class	3		
	Мо	dulation	Ch	nannel bandwi	idth / T	ransmission	bandwidth	(RB)	MPR (dB)		
LTE MPR permanently built-in by design			1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz	20 MHz			
		QPSK	> 5	>4	>8	> 12	> 16	> 18	≤ 1]	
		6 QAM	≤ 5	≤ 4	≤8	≤ 12	≤ 16	≤ 18	≤1	-	
		6 QAM	> 5					≤2	1		
LTE A-MPR	A-MPR during SAR test (Maximum TTI) A properly configured			(Maximum TTI) A properly configured base station simulator was used for the SA				all TTI fran	mes		
		ided in the			15 101	each RD air	ocalion ai	iu oliset c	oninguration	are	
Transmission (H	H, M, L)	channel nι	ımbers	and freque	encies	in each LT	E band				
		Lī	ΓΕ Band	d 5							
Bandwidth 1.4 MHz	Bandwid	th 3 MHz		Bandwidth 5 MHz				Bandwidth		h 10 MHz	
Ch. # Freq. (MHz) Ch	ո. #	Freq. (M	Hz)	Ch. #		Freq. (MHz)	С	h. #	Freq. (MH	z)	
L 20407 824.7 204	415	825.5	5	20425		826.5	20)450	829		
M 20525 836.5 205	525	836.5	5	20525		836.5	20)525	836.5		
H 20643 848.3 206	635	847.5	5	20625		846.5	20	0600	844		
		Lī	TE Band	d 7							
Bandwidth 5 MHz	Bandwidt	h 10 MHz		Bandv	vidth 1	15 MHz		Bandwidtl	n 20 MHz		
Ch. # Freq. (MHz) Ch	ո. #	Freq. (M	Hz)	Ch. #		Freq. (MHz)	С	h. #	Freq. (MH:	z) _	
L 20775 2502.5 208	800	2505		20825		2507.5	20	0850	2510		
M 21100 2535 21°	100	2535		21100		2535	21	1100	2535		
				21100		2000			2000		

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5. RF Exposure Limits

5.1 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.

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5.2 Controlled Environment

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

Limits for Occupational/Controlled Exposure (W/kg)

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

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

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

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

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6. Simultaneous Transmission Analysis

	Simultaneous Transmission					
NO.	Configurations	Head	Body-worn	Hotspot	Product specific	Note
1.	GSM Voice + WLAN2.4GHz	Yes	Yes		Yes	
2.	GPRS/EDGE + WLAN2.4GHz	Yes	Yes	Yes	Yes	Hotspot
3.	WCDMA + WLAN2.4GHz	Yes	Yes	Yes	Yes	Hotspot
4.	LTE + WLAN2.4GHz	Yes	Yes	Yes	Yes	Hotspot
5.	GSM Voice + Bluetooth		Yes		Yes	
6.	GPRS/EDGE + Bluetooth		Yes		Yes	WWAN VoIP
7.	WCDMA+ Bluetooth		Yes		Yes	WWAN VoIP
8.	LTE + Bluetooth		Yes		Yes	WWAN VoIP
9.	GSM Voice + WLAN5GHz	Yes	Yes		Yes	
10.	GPRS/EDGE + WLAN5GHz	Yes	Yes	Yes	Yes	WWAN VoIP
11.	WCDMA + WLAN5GHz	Yes	Yes	Yes	Yes	WWAN VoIP
12.	LTE + WLAN5GHz	Yes	Yes	Yes	Yes	WWAN VoIP

General Note:

- 1. This device supported VoIP in EGPRS, WCDMA, LTE (e.g. 3rd party VoIP).
- 2. WLAN and Bluetooth share the same antenna, and cannot transmit simultaneously.
- 3. This device 2.4GHz / 5.2GHz / 5.8GHz WLAN supports Hotspot operation and WiFi Direct (Group Client / Group Owner), and 5.3GHz / 5.5GHz WLAN supports WiFi Direct (Group Client).
- EUT will choose either WLAN 2.4GHz or WLAN 5GHz according to the network signal condition; therefore, 2.4GHz 4. WLAN and 5GHz WLAN will not operate simultaneously at any moment.
- 5. The Scaled SAR summation is calculated based on the same configuration and test position.
- The worst WWAN and WLAN reported SAR for each configuration was used for SAR summation, Therefore, the 6. following summations represent the absolute worst cases for simultaneous transmission with WWAN and WLAN.
- Per KDB 447498 D01v06, simultaneous transmission SAR is compliant if,
 - i) Scalar SAR summation < 1.6W/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, simultaneously transmission SAR measurement is not necessary.
 - iv) Simultaneously transmission SAR measurement, and the reported multi-band SAR < 1.6W/kg.
 - v) The SPLSR calculated results please refer to section 6.5.
- For simultaneous transmission analysis, Bluetooth SAR is estimated per KDB 447498 D01v06 based on the formula below.
 - i) (max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)]·[√f(GHz)/x] W/kg for test separation distances \leq 50 mm; where x = 7.5 for 1-g SAR, and x = 18.75 for 10-g SAR.
 - ii) When the minimum separation distance is < 5mm, the distance is used 5mm to determine SAR test exclusion.
 - iii) 0.4 W/kg for 1-g SAR and 1.0 W/kg for 10-g SAR, when the test separation distances is > 50 mm.

Bluetooth Max Power	Exposure Position	Product specific
12.5 dBm	Estimated SAR (W/kg)	0.302 W/kg

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6.1 Head Exposure Conditions

			1	2	3	1+2	1+3		
WWAN Band		Exposure Position	WWAN	2.4GHz WLAN	5GHz WLAN		Summed 1g SAR	SPLSR	Case No
		1 03/1/011	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	(W/kg)	(W/kg)		
GSM		Right Cheek	0.332	1.118	0.633	1.45	0.97		
	GSM850	Right Tilted	0.244	0.560	0.443	0.80	0.69		
	GSIVIOSU	Left Cheek	0.454	0.531	0.482	0.99	0.94		
		Left Tilted	0.240	0.526	0.537	0.77	0.78		
GSIVI		Right Cheek	0.375	1.118	0.633	1.49	1.01		
GSM	CCM1000	Right Tilted	0.245	0.560	0.443	0.81	0.69		
	GSW1900	Left Cheek	0.336	0.531	0.482	0.87	0.82		
		Left Tilted	0.252	0.526	0.537	0.78	0.79		
	WCDMA II	Right Cheek	0.957	1.118	0.633	2.08	1.59	0.03	Case 1
		Right Tilted	0.594	0.560	0.443	1.15	1.04		
		Left Cheek	0.714	0.531	0.482	1.25	1.20		
WCDMA		Left Tilted	0.546	0.526	0.537	1.07	1.08		
WCDIVIA	WCDMA V	Right Cheek	0.396	1.118	0.633	1.51	1.03		
		Right Tilted	0.262	0.560	0.443	0.82	0.71		
		Left Cheek	0.352	0.531	0.482	0.88	0.83		
		Left Tilted	0.218	0.526	0.537	0.74	0.76		
		Right Cheek	0.370	1.118	0.633	1.49	1.00		
	LTE Band 5	Right Tilted	0.272	0.560	0.443	0.83	0.72		
	LIE Dand 5	Left Cheek	0.393	0.531	0.482	0.92	0.88		
LTE		Left Tilted	0.272	0.526	0.537	0.80	0.81		
LIE		Right Cheek	0.321	1.118	0.633	1.44	0.95		
	LTE Band 7	Right Tilted	0.413	0.560	0.443	0.97	0.86		
	LIE Dand /	Left Cheek	0.513	0.531	0.482	1.04	1.00		
		Left Tilted	0.237	0.526	0.537	0.76	0.77		

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6.2 Hotspot Exposure Conditions

			1	2	3			
10/\/\/	WWAN Band		WWAN	2.4GHz WLAN	5GHz WLAN	1+2 Summed	1+3 Summed	
VVVV	V Dana	Position	1g SAR	1g SAR	1g SAR	1g SAR (W/kg)		
		Front	(W/kg) 0.525	(W/kg) 0.145	(W/kg) 0.067	0.67	0.59	
		Back	0.724	0.143	0.366	0.91	1.09	
		Left side	0.746	0.093	0.260	0.84	1.01	
	GSM850	Right side	0.596	0.093	0.200	0.60	0.60	
		Top side	0.590	0.125	0.128	0.13	0.13	
		Bottom side	0.056	0.120	0.120	0.06	0.06	
GSM		Front	0.558	0.145	0.067	0.70	0.63	
		Back	0.680	0.184	0.366	0.86	1.05	
		Left side	0.237	0.093	0.260	0.33	0.50	
	GSM1900	Right side	0.198	0.000	0.200	0.20	0.20	
		Top side	000	0.125	0.128	0.13	0.13	
		Bottom side	0.336	57.125	31125	0.34	0.34	
		Front	0.690	0.145	0.067	0.84	0.76	
	WCDMA II	Back	0.926	0.184	0.366	1.11	1.29	
		Left side	0.293	0.093	0.260	0.39	0.55	
		Right side	0.285			0.29	0.29	
		Top side		0.125	0.128	0.13	0.13	
		Bottom side	0.400			0.40	0.40	
WCDMA	WCDMA V	Front	0.537	0.145	0.067	0.68	0.60	
		Back	0.626	0.184	0.366	0.81	0.99	
		Left side	0.889	0.093	0.260	0.98	1.15	
		Right side	0.520			0.52	0.52	
		Top side		0.125	0.128	0.13	0.13	
		Bottom side	0.087			0.09	0.09	
		Front	0.631	0.145	0.067	0.78	0.70	
		Back	0.718	0.184	0.366	0.90	1.08	
	LTE Dand E	Left side	0.736	0.093	0.260	0.83	1.00	
	LTE Band 5	Right side	0.554			0.55	0.55	
		Top side		0.125	0.128	0.13	0.13	
LTE		Bottom side	0.101			0.10	0.10	
LTE		Front	0.828	0.145	0.067	0.97	0.90	
		Back	0.913	0.184	0.366	1.10	1.28	
	LTE Band 7	Left side	0.337	0.093	0.260	0.43	0.60	
	LIL Ballu /	Right side	0.277			0.28	0.28	
		Top side		0.125	0.128	0.13	0.13	
		Bottom side	0.462			0.46	0.46	

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6.3 Product specific Exposure Conditions

1	2	3	4			
WWAN	2.4GHz WLAN	5GHz WLAN	2.4GHz Bluetooth		1+3	1+4
10g SAR (W/kg)	10g SAR (W/kg)	10g SAR (W/kg)	Estimated 10g SAR (W/kg)	Summed 10g SAR (W/kg)	Summed 10g SAR (W/kg)	Summed 10g SAR (W/kg)
-	-	0.670	0.302	•	0.67	0.30

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Remark:

6.4 Body-Worn Accessory Exposure Conditions

			1	2	3	4	1+2	1+3	1+4
WWAN Band		Exposure Position	WWAN	2.4GHz WLAN	5GHz WLAN	Bluetooth	Summed 1g SAR	Summed 1g SAR (W/kg)	Summed 1g SAR (W/kg)
		. 66611	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	(W/kg)		
	CCMOEO		0.525	0.145	0.067	0.048	0.67	0.59	0.57
CSM	GSM850	Back	0.885	0.184	0.366	0.046	1.07	1.25	0.93
GSIVI	GSM GSM1900	Front	0.558	0.145	0.067	0.048	0.70	0.63	0.61
		Back	0.680	0.184	0.366	0.046	0.86	1.05	0.73
	WCDMA II	Front	0.690	0.145	0.067	0.048	0.84	0.76	0.74
WCDMA		Back	0.926	0.184	0.366	0.046	1.11	1.29	0.97
WCDIVIA	WCDMA V	Front	0.537	0.145	0.067	0.048	0.68	0.60	0.59
	WCDMA V	Back	0.802	0.184	0.366	0.046	0.99	1.17	0.85
	LTE Band 5	Front	0.631	0.145	0.067	0.048	0.78	0.70	0.68
LTE	LIE Band 5	Back	0.718	0.184	0.366	0.046	0.90	1.08	0.76
LIE	LTE Band 7	Front	0.828	0.145	0.067	0.048	0.97	0.90	0.88
	LIE Ballu /	Back	0.913	0.184	0.366	0.046	1.10	1.28	0.96

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According to KDB 648474 D04v01r03, for WWAN / 2.4GHz WLAN hand SAR ("-") was excluded, due to SAR was < 1.2W/kg.

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6.5 SPLSR Evaluation and Analysis

General Note:

SPLSR = (SAR₁ + SAR₂)^{1.5} / (min. separation distance, mm). If SPLSR ≤ 0.04, simultaneously transmission SAR measurement is not necessary

Case 1	Band	Docition	SAR	Gap SAR peak location (m)			3D Summed distance SAR	SPLSR	Simultaneous		
		Position	(W/kg)	(cm)	Х	Υ	Z	distance (mm)	(W/kg)	Results	SAR
	WCDMA II	Right Cheek	0.957	0mm	0.0491	0.0589	-0.0006	88.6	2.08	0.03	Not as suited d
	WLAN2.4GHz	Right Cheek	1.118	0mm	0.0172	-0.0238	-0.0013	00.0	2.00	0.03	Not required
					WLAN	WAN					

Test Engineer: Poa Pan

7. References

[1] FCC 47 CFR Part 2 "Frequency Allocations and Radio Treaty Matters; General Rules and Regulations"

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- [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 248227 D01 v02r02, "SAR Guidance for IEEE 802.11 (WiFi) Transmitters", Oct 2015.
- [6] FCC KDB 447498 D01 v06, "Mobile and Portable Device RF Exposure Procedures and Equipment Authorization Policies", Oct 2015
- [7] FCC KDB 648474 D04 v01r03, "SAR Evaluation Considerations for Wireless Handsets", Oct 2015.
- [8] FCC KDB 941225 D01 v03r01, "3G SAR MEAUREMENT PROCEDURES", Oct 2015
- [9] FCC KDB 941225 D05 v02r05, "SAR Evaluation Considerations for LTE Devices", Dec 2015
- [10] FCC KDB 941225 D06 v02r01, "SAR Evaluation Procedures for Portable Devices with Wireless Router Capabilities", Oct 2015.
- [11] FCC KDB 865664 D01 v01r04, "SAR Measurement Requirements for 100 MHz to 6 GHz", Aug 2015.
- [12] FCC KDB 865664 D02 v01r02, "RF Exposure Compliance Reporting and Documentation Considerations" Oct 2015.