# **FCC Test Report**

**APPLICANT**: **ZTE** Corporation

EQUIPMENT : Tablet
BRAND NAME : ZTE
MODEL NAME : K81
MARKETING NAME : K81

FCC ID : SRQ-K81

STANDARD : FCC 47 CFR FCC Part 15 Subpart B

**CLASSIFICATION**: Certification

The product was received on Mar. 24, 2017 and testing was completed on Mar. 29, 2017. We, SPORTON International (ShenZhen) INC., would like to declare that the tested sample has been evaluated in accordance with the test procedures given in ANSI C63.4-2014 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 (ShenZhen) INC., the test report shall not be reproduced except in full.

Prepared by: Eric Shih / Manager

Frie Shih

Approved by: Jones Tsai / Manager

SPORTON International (ShenZhen) INC.

1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan District, Shenzhen City, Guangdong Province, China

SPORTON International (ShenZhen) INC.

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Testing Laboratory 2353

Report No.: FC732417

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## **REVISION HISTORY**

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FC732417	Rev. 01	Initial issue of report	May 22, 2017

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## **SUMMARY OF TEST RESULT**

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	15.107	ICES003 Section 6.1	AC Conducted Emission	< 15.107 limits < ICES003 6.1 limits	PASS	Under limit 13.38 dB at 6.150 MHz
3.2	15.109	ICES003 Section 6.2	Radiated Emission	< 15.109 limits < ICES003 6.2 limits	PASS	Under limit 3.45 dB at 30.540 MHz for Quasi-Peak

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## 1. General Description

### 1.1. Applicant

#### **ZTE Corporation**

ZTE Plaza, Keji Road South, Hi-Tech, Industrial Park, Nanshan District, Shenzhen, Guangdong, P. R. China

#### 1.2. Manufacturer

#### **ZTE Corporation**

ZTE Plaza, Keji Road South, Hi-Tech, Industrial Park, Nanshan District, Shenzhen, Guangdong, P. R. China

### 1.3. Product Feature of Equipment Under Test

	Product Feature
Equipment	Tablet
Brand Name	ZTE
Model Name	K81
Marketing Name	K81
FCC ID	SRQ-K81
	WCDMA/HSPA/HSPA+(16QAM uplink is not supported)/
ELIT aumnauta Badica application	LTE/WLAN 2.4GHz 802.11b/g/n HT20/HT40
EUT supports Radios application	Bluetooth v3.0 + EDR/Bluetooth v4.0 LE/
	Bluetooth v4.1 LE/Bluetooth v4.2 LE
IMEL Code	Conduction: 864855030001574
IMEI Code	Radiation: 864855030001988
HW Version	K81MB_A
SW Version	PV_ZTE_P890R81_ROGERSV1.0.0B01
EUT Stage	Identical Prototype

Remark:

The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

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## 1.4. Product Specification of Equipment Under Test

Standards-	Standards-related Product Specification							
Tx Frequency	WCDMA Band V: 826.4 MHz ~ 846.6 MHz WCDMA Band IV: 1712.4 MHz ~ 1752.6 MHz WCDMA Band II: 1852.4 MHz ~ 1907.6 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 25: 1850.7MHz ~ 1914.3 MHz Bluetooth: 2402 MHz ~ 2462 MHz Bluetooth: 2402 MHz ~ 2480 MHz							
Rx Frequency	WCDMA Band V: 871.4 MHz ~ 891.6 MHz WCDMA Band IV: 2112.4 MHz ~ 2152.6 MHz WCDMA Band II: 1932.4 MHz ~ 1987.6 MHz LTE Band 2: 1930.7 MHz ~ 1989.3 MHz LTE Band 4: 2110.7 MHz ~ 2154.3 MHz LTE Band 5: 869.7 MHz ~ 893.3 MHz LTE Band 7: 2622.5 MHz ~ 2687.5 MHz LTE Band 12: 729.7 MHz ~ 745.3 MHz LTE Band 25: 1930.7MHz ~ 1994.3 MHz LTE Band 25: 1930.7MHz ~ 1994.3 MHz Bluetooth: 2412 MHz ~ 2462 MHz Bluetooth: 2402 MHz ~ 2480 MHz GPS: 1.57542 GHz FM: 87.5 MHz ~ 108 MHz							
Antenna Type	WWAN: PIFA Antenna WLAN: PIFA Antenna Bluetooth: PIFA Antenna GPS: PIFA Antenna FM: External headset Antenna							
Type of Modulation	WCDMA: BPSK (Uplink) HSDPA: QPSK (Uplink) HSUPA: QPSK (Uplink) HSPA+: 16QAM (16QAM uplink is not supported) LTE: QPSK / 16QAM 802.11b: DSSS (DBPSK / DQPSK / CCK) 802.11g/n: OFDM (BPSK / QPSK / 16QAM / 64QAM) Bluetooth LE: GFSK Bluetooth (1Mbps): GFSK Bluetooth (2Mbps): $\pi$ /4-DQPSK Bluetooth (3Mbps): 8-DPSK GPS: BPSK							

### 1.5. Modification of EUT

No modifications are made to the EUT during all test items.

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#### 1.6. Test Location

Test Site	SPORTON International (ShenZhen) INC.
	1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan District,
	Shenzhen City, Guangdong Province, China
Test Site Location	TEL: +86-755-8637-9589
	FAX: +86-755-8637-9595
Toot Site No	Sporton Site No.
Test Site No.	CO01-SZ

Test Site	SPORTON International (ShenZhen) INC.				
Test Site Location	No. 3 Building, the third floor of south, Shahe River west, Fengzeyuan warehouse, Nanshan District, Shenzhen, Guangdong, P. R. China TEL: +86-755- 3320-2398				
Test Site No.	Sporton Site No.	FCC/IC Registration No.			
Test Site NO.	03CH03-SZ	565805/4086F			

Note: The test site complies with ANSI C63.4 2014 requirement.

## 1.7. Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- FCC 47 CFR FCC Part 15 Subpart B
- ANSI C63.4-2014
- IC ICES-003 Issue 6
- IC RSS-Gen Issue 4

**Remark:** All test items were verified and recorded according to the standards and without any deviation during the test.

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## 2. Test Configuration of Equipment Under Test

#### 2.1. Test Mode

The EUT has been associated with peripherals pursuant to ANSI C63.4-2014 and configuration operated in a manner tended to maximize its emission characteristics in a typical application.

Frequency range investigated: conduction (150 kHz to 30 MHz), radiation (30MHz to the 5th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower).

Test Items	Function Type
	Mode 1: WCDMA Band V Idle + Bluetooth Idle + WLAN Idle + USB Cable (Charging from Adapter 1) + Earphone + Camera(Rear) <fig.1></fig.1>
	Mode 2: WCDMA Band II Idle + Bluetooth Idle + WLAN Idle + USB Cable (Charging from Adapter 2) + Earphone + Camera(Front) <fig.1></fig.1>
AC Conducted Emission	Mode 3: LTE Band 2 Idle + Bluetooth Idle + WLAN Idle + USB Cable (Charging from Adapter 3) + Earphone + MPEG4 <fig.1></fig.1>
	Mode 4: LTE Band 4 Idle + Bluetooth Idle + WLAN Idle + USB Cable (Charging from Adapter 2) + Earphone + FM Rx (88MHz) <fig.1></fig.1>
	Mode 5: LTE Band 7 Idle + Bluetooth Idle + WLAN Idle + USB Cable (Data Link with Notebook) + Earphone + GPS Rx <fig.2></fig.2>
	Mode 1: WCDMA Band V Idle + Bluetooth Idle + WLAN Idle + USB Cable (Charging from Adapter 1) + Earphone + Camera(Rear) <fig.1></fig.1>
	Mode 2: WCDMA Band II Idle + Bluetooth Idle + WLAN Idle + USB Cable (Charging from Adapter 2) + Earphone + Camera(Front) <fig.1></fig.1>
Radiated Emissions < 1GHz	Mode 3: LTE Band 2 Idle + Bluetooth Idle + WLAN Idle + USB Cable (Charging from Adapter 3) + Earphone + MPEG4 <fig.1></fig.1>
	Mode 4: LTE Band 4 Idle + Bluetooth Idle + WLAN Idle + USB Cable (Charging from Adapter 2) + Earphone + FM Rx (88MHz) <fig.1></fig.1>
	Mode 5: LTE Band 7 Idle + Bluetooth Idle + WLAN Idle + USB Cable (Data Link with Notebook) + Earphone + GPS Rx <fig.2></fig.2>
Radiated	Mode 1: LTE Band 4 Idle + Bluetooth Idle + WLAN Idle + USB Cable (Charging from Adapter 2) + Earphone + FM Rx (88MHz) <fig.1></fig.1>
Emissions ≥ 1GHz	Mode 2: LTE Band 7 Idle + Bluetooth Idle + WLAN Idle + USB Cable (Data Link with Notebook) + Earphone + GPS Rx <fig.2></fig.2>

#### Remark:

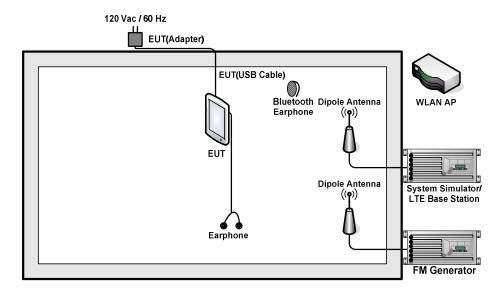
- **1.** The worst case of AC is mode 5; only the test data of this mode was reported.
- 2. The worst case of RE < 1G is mode 4; and the USB Link mode of RE is mode 5, the test data of this mode was reported.
- Data Link with Notebook means data application transferred mode between EUT and Notebook.

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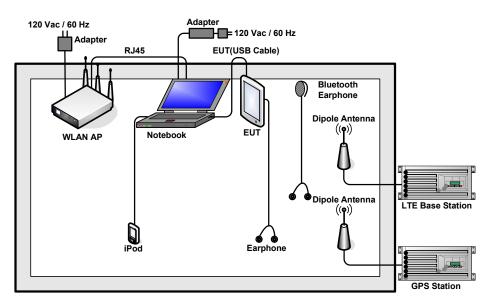
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## 2.2. Connection Diagram of Test System



<Fig.1>



<Fig.2>

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### 2.3. Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	System Simulator	R&S	CMU 200	N/A	N/A	Unshielded, 1.8 m
2.	LTE Base Station	Anritus	MT8820C	N/A	N/A	Unshielded, 1.8 m
3.	Signal Generator (FM)	R&S	SMB100A	FCC DoC	N/A	Unshielded, 1.5 m
4.	GPS Station	ADIVIC	MP9000	N/A	N/A	Unshielded, 1.8 m
5.	WLAN AP	ASUSTek	RT-AC66U	MSQ-RTAC66U	N/A	Unshielded, 1.8 m
6.	WLAN AP	D-link	DIR-820L	KA2IR820LA1	N/A	Unshielded,1.8m
7.	Notebook	Lenovo	E540	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
8.	Bluetooth Earphone	Samsung	HS3000	A3LHS3000	N/A	N/A
9.	Bluetooth Earphone	Nokia	BH-108	PYAHS-107W	N/A	N/A
10.	Earphone	Apple	MC690ZP/A	N/A	Shielded, 1.0m	N/A
11.	iPod	Apple	MC525 ZP/A	FCC DoC	Shielded, 1.0m	N/A
12.	iPod nano 8GB	Apple	MC690ZP/A	FCC DoC	Shielded, 1.2m	N/A
13.	iPod Earphone	Apple	MC690ZP/A	FCC DoC	Unshielded, 1.6 m	N/A
14.	SD Card	Kingston	SDC10/8GB	FCC DoC	N/A	N/A

### 2.4. EUT Operation Test Setup

The EUT was in WCDMA or LTE idle mode during the testing. The EUT was synchronized to the BCCH, and is in continuous receiving mode by setting system simulator's paging reorganization.

At the same time, the EUT was attached to the Bluetooth earphone or WLAN AP, and the following programs installed in the EUT were programmed during the test.

- 1. Data application is transferred between Notebook and EUT via USB cable.
- 2. Turn on GPS function to make the EUT receive continuous signals from GPS station.
- 3. Execute "Video Player" to play MPEG4 files.
- 4. Turn on camera to capture images.

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#### 3. Test Result

#### 3.1. Test of AC Conducted Emission Measurement

#### 3.1.1 Limits of AC Conducted Emission

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table.

Frequency of emission	Conducted limit (dBuV)				
(MHz)	Quasi-peak	Average			
0.15-0.5	66 to 56*	56 to 46*			
0.5-5	56	46			
5-30	60	50			

<sup>\*</sup>Decreases with the logarithm of the frequency.

#### 3.1.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

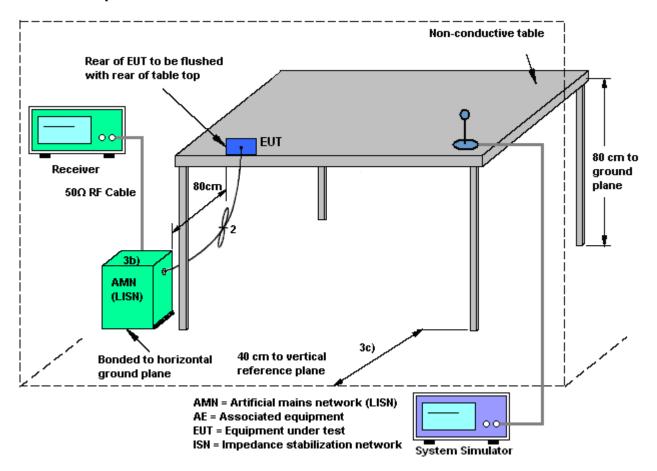
#### 3.1.3 Test Procedure

- 1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
- 2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
- 3. All the support units are connecting to the other LISN.
- 4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
- 5. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
- 6. Both sides of AC line were checked for maximum conducted interference.
- 7. The frequency range from 150 kHz to 30 MHz was searched.
- 8. Set the test-receiver system to Peak Detect Function and specified bandwidth (IF Bandwidth = 9kHz) with Maximum Hold Mode. Then measurement is also conducted by Average Detector and Quasi-Peak Detector Function respectively.

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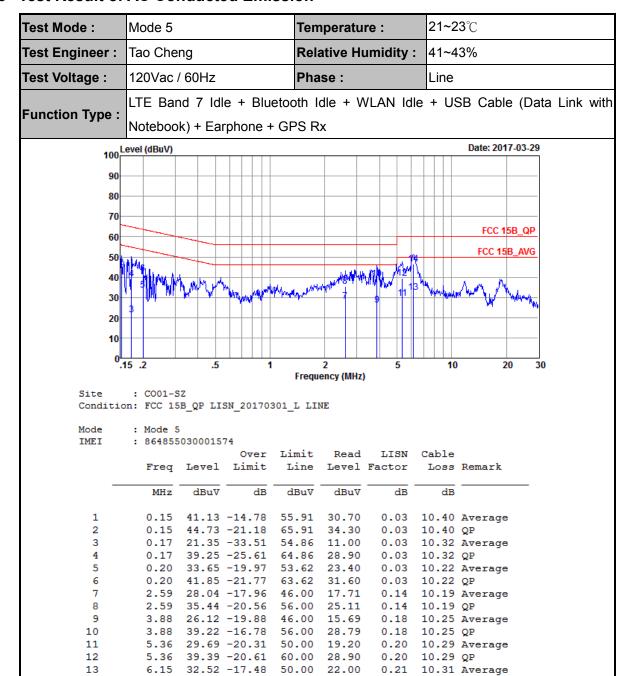
#### 3.1.4 Test Setup



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#### 3.1.5 Test Result of AC Conducted Emission



60.00 36.10

0.21

10.31 QP

14 \*

6.15 46.62 -13.38

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Test Mode :	Mode 5		Ten	peratu	re :	21~2	21~23℃		
Test Engineer :	Tao Cheng			Relative Humidity :			41~43%		
Test Voltage :	120Vac / 60Hz			Phase :		Neut	ral		
Function Type :	LTE Band	7 Idle + Blu	etooth I	dle + V	VLAN Idle	+ US	SB Cable (I	Data Link with	
runction type.	Notebook) +	- Earphone +	- GPS R	X					
100 <sup>L</sup>	evel (dBuV)						Date: 2017-03	-29	
90									
80									
70									
60	-						FCC 15B_0	QP	
50							FCC 15B_A\	/G	
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30-		Ly the house	NAME OF THE PERSON OF THE PERS	11	15 17	MATERIAL PROPERTY.			
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0 <sup>1</sup> -1	15 .2	.5 1		2	5	10	20	30	
Site	: CO01-SZ		Frequ	ency (MHz)	•				
		P LISN_20170:	301_N NE	JTRAL					
Mode	: Mode 5								
IMEI	: 864855030								
	Frea Le	Over vel Limit	Limit	Read	LISN Factor	Cable	Remark		
							NCMULK	_	
	MHz d	lBuV dB	dBu₹	dBu∇	dB	dB			
1	0.17 21	.68 -33.53		11.30	0.03	10.35	Average		
2			65.21	29.10		10.35			
3 4		.76 -18.04		25.50		10.23	Average		
5			52.13				Average		
6		.45 -25.68		26.20		10.22	_		
7		.42 -22.10	48.52	16.20			Average		
8	0.37 33	.92 -24.60	58.52	23.70			_		
9		.40 -17.60					Average		
10		.30 -20.70							
11		.43 -16.57					Average		
12		.53 -18.47							
13		.89 -22.11					Average		
14 15		.09 -17.91 .06 -20.94					QP Average		
16		.96 -24.04							
17		.28 -17.72					Average		
18 *		.28 -14.72				10.31	_		

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#### 3.2. Test of Radiated Emission Measurement

#### 3.2.1. Limit of Radiated Emission

The emissions from an unintentional radiator shall not exceed the field strength levels specified in the following table:

Frequency	Field Strength	Measurement Distance		
(MHz)	(microvolts/meter)	(meters)		
30 – 88	100	3		
88 – 216	150	3		
216 - 960	200	3		
Above 960	500	3		

#### 3.2.2. Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

#### 3.2.3. Test Procedures

- 1. The EUT was placed on a turntable with 0.8 meter above ground.
- 2. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
- 3. The table was rotated 360 degrees to determine the position of the highest radiation.
- 4. The antenna is a Bi-Log antenna and its height is adjusted between one to four meters above ground to find the maximum value of the field strength for both horizontal polarization and vertical polarization of the antenna.
- For each suspected emission, the EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.
- 6. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode (RBW=120kHz/VBW=300kHz for frequency below 1GHz; RBW=1MHz VBW=3MHz (Peak), RBW=1MHz/VBW=10Hz (Average) for frequency above 1GHz).
- 7. If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, peak values of EUT will be reported. Otherwise, the emission will be repeated by using the quasi-peak method and reported.
- 8. Emission level (dB $\mu$ V/m) = 20 log Emission level ( $\mu$ V/m)
- 9. Corrected Reading: Antenna Factor + Cable Loss + Read Level Preamp Factor = Level

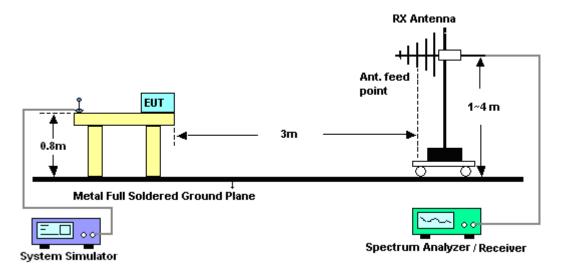
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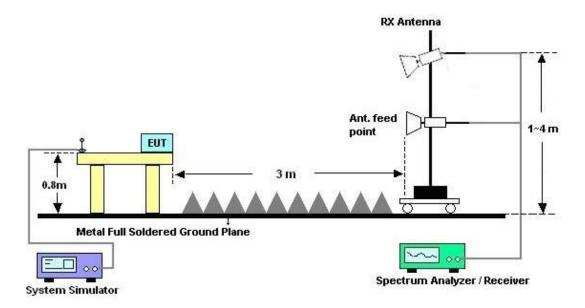
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### 3.2.4. Test Setup of Radiated Emission

#### For radiated emissions from 30MHz to 1GHz



#### For radiated emissions above 1GHz



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#### 3.2.5. Test Result of Radiated Emission

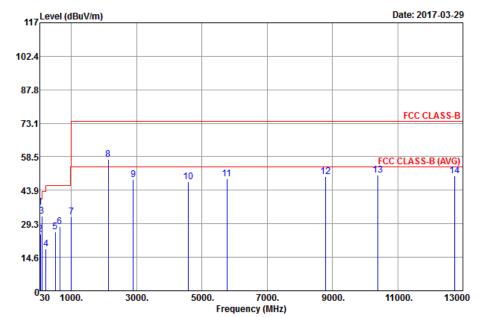
Test Mode :	Mode	e 4			-	Гетре	rature	<b>:</b>	23~	-25°C		
Test Engineer :	Jaso	n Zen	g		ı	Relative Humidity :			48~	48~52%		
Test Distance :	3m				ı	Polarization : Horizoni			izonta	ıl		
Function Type :	LTE	Band	4 Idle	e + Bl	uetoo	h Idle	+ WI	LAN Id	e + l	JSB (	Cable	(Charging
Function Type :	Adap	dapter 2) + Earphone + FM Rx (88MHz)										
Remark :	#2 is	Base	statio	n (FM	option	) signa	l whic	h can b	e ign	ored.		
Komark .	#8 is	syste	m sim	ulator	signal	which	can b	e ignor	ed.			
117	Level (c	dBuV/m)							1		ate: 2017	<b>7-03-29</b>
102.4	1											
87.8	) <del></del>											
73.1											FCC CL/	ASS-B
73.1												
58.5	i		8		10		11	12	1	FCC 3	CLASS-B	
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	P _ 6 <sup>7</sup>	7										
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(	200 40									771	000.	13000
(	30 10	000.	300	u.	5000	Frequenc	7000. cy (MHz)		000.	•		
Site Condition Project Mode IMEI	: :	03CH03-	-SZ ASS-B 3 32417	m LF_AN			cy (MHz)		J00.	•••		
Site Condition Project Mode	:   :   :	03CH03- FCC CL/ (FC)73 Mode 4	SZ ASS-B 3 32417 3000198 Over	m LF_AN	NT(2318 Read	Frequence 8)_6 HOR	c <b>y (MHz)</b> RIZONTA Cable				Remark	
Site Condition Project Mode IMEI	Freq	03CH03- FCC CL (FC)73 Mode 4 8648550 Level	SZ ASS-B 3 32417 3000198 Over Limit dB	Bm LF_AN B8 Limit Line dBuV/m	Read, Level dBuV	Antenna Factor dB/m	Cable Loss	Preamp Factor	A/Pos	T/Pos deg	Remark	
Site Condition Project Mode IMEI	Freq MHz 30.00 88.05	03CH03- FCC CL (FC)73 Mode 4 8648550 Level dBuV/m 29.93 30.55	SZ ASS-B 3 32417 3000198 Over Limit dB -10.07	Sm LF_AN S8 Limit Line dBuV/m 40.00	Read/ Level dBuV 35.80 44.88	Antenna Factor dB/m 25.60 16.52	Cable Loss  0.23 0.75	Preamp Factor dB 31.70 31.60	A/Pos	T/Pos deg	Remark  Peak Peak	
Site Condition Project Mode IMEI  1 2 3 1	Freq MHz 30.00 88.05	03CH03- FCC CL/ (FC)73 Mode 4 8648550 Level dBuV/m 29.93 30.55 17.80	SZ ASS-B 3 32417 3000198 Over Limit dB -10.07	Em LF_AN B8 Limit Line dBuV/m 40.00 43.50	Read/ Level dBuV 35.80 44.88 31.10	Antenna Factor dB/m 25.60 16.52 17.33	Cable Loss  dB  0.23 0.75 0.93	Preamp Factor  dB  31.70 31.60 31.56	A/Pos cm 200	T/Pos deg 150	Remark Peak Peak Peak	
Site Condition Project Mode IMEI  1 2 3 1 4 2 5 5	Freq MHz 30.00 88.05 108.84 190.01	03CH03- FCC CL ( FC)73 Mode 4 8648550 Level 	SZ ASS-B 3 12417 3000198 Over Limit dB -10.07 -25.70 -25.89 -19.57	88 Limit Line dBuV/m 40.00 43.50 46.00 46.00	Read, Level dBuV 35.80 44.88 31.10 31.33 31.37	Antenna Factor	Cable Loss  0.23 0.75 0.93 2.00 2.77	Preamp Factor dB 31.70 31.60 31.56 31.26 31.40	A/Pos cm 200	T/Pos  deg 150	Remark Peak Peak Peak Peak Peak	
Site Condition Project Mode IMEI  1 2 3 1 4 2 5 5 5 6 7	Freq MHz 30.00 88.05 08.84 90.01 124.70	03CH03- FCC CL (FC)73 Mode 4 8648550 Level 	SZ ASS-B 3 22417 3000198 Over Limit dB -10.07 -25.70 -25.89 -19.57 -16.27	Limit Line dBuV/m 40.00 43.50 46.00 46.00 46.00	Read/, Level dBuV 35.80 44.88 31.10 31.33 31.37 31.37	Antenna Factor 25.60 16.52 17.33 18.04 23.69 26.72	Cable Loss  0.23 0.75 0.93 2.00 2.77 3.47	Preamp Factor dB 31.70 31.60 31.56 31.26 31.40 31.50	A/Pos	T/Pos  deg 150	Remark Peak Peak Peak Peak Peak Peak	
Site Condition Project Mode IMEI   1 2 3 1 4 2 5 5 6 7 7 9 8 21	Freq  MHz  30.00 88.05 108.84 190.01 124.70 1752.20 142.60 132.00	03CH03- FCC CL (FC)73 Mode 4 8648550 Level dBuV/m 29.93 30.55 17.80 20.11 26.43 29.73 32.15 56.70	SZ ASS-B 3 12417 3000198 Over Limit dB -10.07 -25.70 -25.89 -19.57 -16.27 -13.85	Em LF_AN Limit Line dBuV/m 40.00 43.50 46.00 46.00 46.00 46.00	Read/ Level dBuV 35.80 44.88 31.10 31.33 31.37 31.04 31.18 77.94	Antenna Factor dB/m 25.60 16.52 17.33 18.04 23.69 26.72 28.55 29.57	Cable Loss  0.23 0.75 0.93 2.00 2.77 3.47 3.92 6.29	Preamp Factor  dB  31.70 31.60 31.56 31.26 31.40 31.50 31.50 57.10	A/Pos cm 200	T/Pos  deg 150	Remark Peak Peak Peak Peak Peak Peak Peak Peak	
Site Condition Project Mode IMEI   1 2 3 1 4 2 5 5 6 7 7 9 8 21 9 24	Freq MHz 30.00 88.05 108.84 190.01 522.20 042.60 132.00 184.00	03CH03- FCC CL (FC)73 Mode 4 8648550 Level dBuV/m 29.93 30.55 17.80 20.11 26.43 29.73 32.15 56.70 47.55	SZ ASS-B 3 12417 3000198 Over Limit ———————————————————————————————————	88 Limit Line 40.00 46.00 46.00 46.00 74.00	Read/ Level 35.80 44.88 31.10 31.33 31.37 31.04 31.18 77.94 65.35	Antenna Factor dB/m 25.60 16.52 17.33 18.04 23.69 26.72 28.55 31.98	Cable Loss  0.23 0.75 0.93 2.00 2.77 3.47 3.92 6.91	Preamp Factor  dB  31.70 31.60 31.56 31.26 31.40 31.50 57.10 56.69	200	deg 150 	Remark Peak Peak Peak Peak Peak Peak Peak Peak	
Site Condition Project Mode IMEI   1 2 3 1 4 2 5 5 6 7 7 9 8 21 9 24 10 46	Freq MHz 30.00 88.05 08.84 1924.70 752.20 442.60 1344.00 1344.00 1366.00	03CH03- FCC CL (FC)73 Mode 4 8648550 Level 	SZ ASS-B 3 32417 3000198 Over Limit dB -10.07 -25.70 -25.89 -19.57 -16.27 -13.85 -26.45 -24.29	Em LF_AN B8 Limit Line 	Read, Level dBuV 35.80 44.88 31.10 31.33 31.37 31.04 31.18 77.94 65.35 62.96	Antenna Factor dB/m 25.60 16.52 17.33 18.04 23.69 26.72 28.55 29.57	Cable Loss  0.23 0.75 0.93 2.00 2.77 3.47 3.92 6.29 6.29 10.68	Preamp Factor  dB  31.70 31.60 31.56 31.26 31.40 31.50 31.50 57.10 56.69 57.10	A/Pos	T/Pos  deg 150	Remark Peak Peak Peak Peak Peak Peak Peak Peak	
Site Condition Project Mode IMEI   1 2 3 1 4 2 5 5 6 7 7 9 8 21 9 24 10 46 11 66 12 79	Freq  MHz  30.00 88.05 108.84 190.01 124.70 152.00 142.60 132.00 184.00 165.00 167.600 160.00	03CH03- FCC CL (FC)73 Mode 4 8648550 Level 	SZ ASS-B 3 32417 3000198 Over Limit ———————————————————————————————————	Em LF_AN Limit Line 	Read/ Level dBuV 35.80 44.88 31.10 31.33 31.37 31.04 31.18 77.94 65.35 62.96 55.25 57.69	Antenna Factor 25.60 16.52 17.33 18.04 23.69 26.72 28.55 29.57 31.98 33.17	Cable Loss	Preamp Factor  dB  31.70 31.60 31.56 31.26 31.40 31.50 57.10 56.69 57.10 56.69 57.10 56.69 57.53	A/Pos	T/Pos  deg 150	Remark Peak Peak Peak Peak Peak Peak Peak Peak	

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Report No.: FC732417

Test Mode :	Mode 4	Temperature :	23~25°C					
Test Engineer :	Jason Zeng	Relative Humidity :	48~52%					
Test Distance :	3m Polarization : Vertical							
Function Type :	LTE Band 4 Idle + Bluetooth Idle + WLAN Idle + USB Cable (Ch							
Function Type :	Adapter 2) + Earphone + FM Rx (88MHz)							
Domark :	#3 is Base station (FM option) signal which can be ignored.							
Remark :	#8 is system simulator signal which can be ignored.							



Site : 03CH03-SZ

Condition : FCC CLASS-B 3m LF\_ANT(23188)\_6 VERTICAL

Project Mode (FC)732417 : Mode 4 : 864855030001988 IMEI

		Level		Limit Line ——— dBuV/m		Antenna Factor ——— dB/m		Preamp Factor ———— dB	A/Pos	T/Pos deg	Remark
1	30.54	36.55	-3.45	40.00	42.56	25.44	0.25	31.70	100	355	QP
2	43.50	24.65	-15.35	40.00	35.31	20.22	0.42	31.30			Peak
3	88.05	32.58			46.91	16.52	0.75	31.60			Peak
4	215.76	18.32	-25.18	43.50	31.26	16.52	1.70	31.16			Peak
5	503.70	25.86	-20.14	46.00	31.19	23.35	2.72	31.40			Peak
6	644.40	28.12	-17.88	46.00	31.18	25.31	3.13	31.50			Peak
7	997.90	32.12	-21.88	54.00	30.44	28.98	4.20	31.50			Peak
8	2132.00	57.40			78.64	29.57	6.29	57.10			Peak
9	2894.00	48.59	-25.41	74.00	64.18	32.87	8.34	56.80			Peak
10	4578.00	47.74	-26.26	74.00	61.18	33.14	10.64	57.22			Peak
11	5764.00	48.96	-25.04	74.00	56.71	35.33	12.65	55.73			Peak
12	8800.00	49.80	-24.20	74.00	55.58	36.42	12.75	54.95			Peak
13	10382.00	50.49	-23.51	74.00	54.52	37.81	14.62	56.46	100	150	Peak
14	12752.00	50.10	-23.90	74.00	53.36	39.00	15.10	57.36			Peak

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23~25°C Test Mode: Mode 5 Temperature: Test Engineer: **Relative Humidity:** 48~52% Jason Zeng Test Distance: 3m Polarization: Horizontal LTE Band 7 Idle + Bluetooth Idle + WLAN Idle + USB Cable (Data Link with **Function Type:** Notebook) + Earphone + GPS Rx Remark: #8 is system simulator signal which can be ignored. 117 Level (dBuV/m) Date: 2017-03-29 102.4 87.8 FCC CLASS-B 73.1 58.5 9 43.9 29.3 14.6 030 1000. 3000. 5000. 7000. 9000. 11000. 14000 Frequency (MHz) Site : 03CH03-SZ Condition : FCC CLASS-B 3m LF\_ANT(23188)\_6 HORIZONTAL Project (FC)732417 Mode : Mode 5 : 864855030001988 IMFI Over Limit ReadAntenna Freq Level Limit Line Level Factor ReadAntenna Cable Preamp A/Pos T/Pos Remark Loss Factor MHz dBuV/m dB dBuV/m dBuV dB/m deg cm

SPORTON International (ShenZhen) INC.				
	SPORTON	International	(Shon7hon)	INC

166.62

256.53

298.65

386.10

738.90

950.30

2024.00

2654.00

4510.00

6930.00

8824.00

10966.00

12140.00

10

11

12

36.21 -7.29 43.50

46.00

46.00

46.00

46.00

46.00

74.00

74.00

74.00

74.00

74.00

74.00

34.75 -11.25

34.67 -11.33

34.71 -11.29

33.11 -12.89

35.11 -10.89

46.97 -27.03

48.19 -25.81

49.10 -24.90 49.57 -24.43

49.81 -24.19

50.19 -23.81

58.51

49.56

46.48

45.74

42.71

34.05

69.37

75.68

61.91

56.05

55.32

52.73

53.26

16.57

17.51

18.18

20.96

26.57

28.61

28.72

32.40

33.10

35.91

36.43

37.99

38.80

1.41

1.88

2.04

2.34

3.42

3.95

6.12

7.15

10.57

15.08

12.77

14.76

15.02

31.33

31.12

31.29

31.30

31.50

31.50

57.24

56.72

57.94

54.95

55.67

150

---

---

0 Peak

--- Peak

0 Peak

Peak

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FCC Test Report No.: FC732417

Test Mode:	Mode 5			Гетре	rature	) :	23~25°C						
Test Engineer :	Jason Ze	Relativ	e Hur	umidity: 48~52%									
Test Distance :	3m				Polariz	ation	:	Vertical					
Function Type :	LTE Ban Notebook					+ WI	_AN Idle	e + L	JSB (	Cable	(Data	Link	with
Remark :	#7 is syst	7 is system simulator signal which can be ignored.											
117	Level (dBuV/r	1)							Е	)ate: 201	7-03-29		
102.4													
87.8													
73.1										FCC CI	ASS-B		
58.5		7		9	10	11		12	FCC	CLASS-I 13	B (AVG)		
43.9	2 6			-									
29.3 14.6													
				5000			0000		14000				
Site Condition Project Mode IMEI	Condition : FCC CLASS-B 3m LF_ANT(23188)_6 VERTICAL Project : (FC)732417 Mode : Mode 5						,						
	Freq Leve		Limit Line		Antenna Factor		Preamp Factor	A/Pos	T/Pos	Remark			
	MHz dBuV/		dBuV/m	dBuV		dB	dB	cm	deg				
2 1 3 2 4 3 5 4	30.27 26.4 67.16 36.1 98.65 30.6 87.50 30.3 98.10 28.4 15.10 34.6	9 -7.31 0 -15.40 9 -15.61 4 -17.56	43.50 46.00 46.00 46.00	49.54 41.67 38.32 33.87	16.57 18.18 21.02 23.27	1.41 2.04 2.35 2.70	31.70 31.33 31.29 31.30 31.40 31.50	100	100 	Peak Peak Peak Peak Peak Peak			
7 26 8 29 9 48 10 67	54.00 58.8 78.00 49.1 50.00 48.6 42.00 50.0 90.00 49.7	7 8 -24.82 0 -25.40 1 -23.99	74.00 74.00 74.00	76.04 64.07 60.95 55.96	32.40 33.03 33.31 35.95	7.15 8.91 10.92 15.74	56.72 56.83 56.58 57.64			Peak Peak Peak Peak Peak			
12 99	94.00 50.0 52.00 49.6	9 -23.91	74.00	54.20	37.50	14.53	56.14	200	0	Peak Peak			

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## 4. List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
EMI Receiver	R&S	ESR7	101630	9kHz~7GHz;	Jan. 06, 2017	Mar. 29, 2017	Jan. 05, 2018	Conduction (CO01-SZ)
AC LISN	EMCO	3816/2SH	00103892	9kHz~30MHz	Jan. 05, 2017	Mar. 29, 2017	Jan. 04, 2018	Conduction (CO01-SZ)
AC LISN (for auxiliary equipment)	MessTec	3816/2SH	00103912	9kHz~30MHz	Jan. 05, 2017	Mar. 29, 2017	Jan. 04, 2018	Conduction (CO01-SZ)
AC Power Source	Chroma	61602	61602000089 1	100Vac~250Vac	Jul. 16, 2016	Mar. 29, 2017	Jul. 15, 2017	Conduction (CO01-SZ)
EMI Test Receiver&SA	KEYSIGHT	N9038A	MY54450083	20Hz~8.4GHz	May 07, 2016	Mar. 29, 2017	May 06, 2017	Radiation (03CH03-SZ)
EXA Spectrum Anaiyzer	KEYSIGHT	N9010A	MY55150246	10Hz~44GHz	May 07, 2016	Mar. 29, 2017	May 06, 2017	Radiation (03CH03-SZ)
Bilog Antenna	TeseQ	CBL6112D	35408	30MHz~2GHz	May 21, 2016	Mar. 29, 2017	May 20, 2017	Radiation (03CH03-SZ)
Double Ridge Horn Antenna	SCHWARZBE CK	BBHA9120D	9120D-1355	1GHz~18GHz	May 07, 2016	Mar. 29, 2017	May 06, 2017	Radiation (03CH03-SZ)
Amplifier	Burgeon	BPA-530	102210	0.01Hz ~3000MHz	Oct. 11, 2016	Mar. 29, 2017	Oct. 10, 2017	Radiation (03CH03-SZ)
HF Amplifier	MITEQ	AMF-7D-0010 1800-30-10P- R	1943528	1GHz~18GHz	Oct. 11, 2016	Mar. 29, 2017	Oct. 10, 2017	Radiation (03CH03-SZ)
AC Power Source	Chroma	61601	61601000198 5	N/A	NCR	Mar. 29, 2017	NCR	Radiation (03CH03-SZ)
Turn Table	EM	EM1000	N/A	0~360 degree	NCR	Mar. 29, 2017	NCR	Radiation (03CH03-SZ)
Antenna Mast	EM	EM1000	N/A	1 m~4 m	NCR	Mar. 29, 2017	NCR	Radiation (03CH03-SZ)

NCR: No Calibration Required

SPORTON International (ShenZhen) INC.

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## 5. Uncertainty of Evaluation

#### **Uncertainty of Conducted Emission Measurement (150 kHz ~ 30 MHz)**

Measuring Uncertainty for a Level of	2.5dB
Confidence of 95% (U = 2Uc(y))	2.9ub

#### Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Management Importations for a Lovel of	
Measuring Uncertainty for a Level of	5.1dB
Confidence of 95% (U = 2Uc(y))	3.1db

#### <u>Uncertainty of Radiated Emission Measurement (1GHz ~ 18GHz)</u>

Measuring Uncertainty for a Level of	5.0dB
Confidence of 95% (U = $2Uc(y)$ )	5.0UB

SPORTON International (ShenZhen) INC.

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