



# FCC Test Report

**APPLICANT** : Doppio Mobile International Limited  
**EQUIPMENT** : mobile phone  
**BRAND NAME** : doppio  
**MODEL NAME** : Doppio SL548  
**FCC ID** : N2GSL548  
**STANDARD** : FCC 47 CFR FCC Part 15 Subpart B  
**CLASSIFICATION** : Certification

The product testing was completed on Dec. 30, 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.

Approved by: Eric Shih / Manager



**Sportun International (Shenzhen) Inc.**  
1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan Shenzhen City  
Guangdong Province 518055 China



## TABLE OF CONTENTS

REVISION HISTORY.....	3
SUMMARY OF TEST RESULT .....	4
1. GENERAL DESCRIPTION .....	5
1.1. Applicant.....	5
1.2. Manufacturer .....	5
1.3. Product Feature of Equipment Under Test .....	5
1.4. Product Specification of Equipment Under Test .....	6
1.5. Modification of EUT .....	6
1.6. Test Location .....	7
1.7. Applicable Standards .....	7
2. TEST CONFIGURATION OF EQUIPMENT UNDER TEST.....	8
2.1. Test Mode .....	8
2.2. Connection Diagram of Test System .....	9
2.3. Support Unit used in test configuration and system.....	10
2.4. EUT Operation Test Setup .....	10
3. TEST RESULT.....	11
3.1. Test of AC Conducted Emission Measurement .....	11
3.2. Test of Radiated Emission Measurement .....	17
4. LIST OF MEASURING EQUIPMENT .....	21
5. UNCERTAINTY OF EVALUATION .....	22

### APPENDIX A. SETUP PHOTOGRAPHS



## REVISION HISTORY



## SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.1	15.107	AC Conducted Emission	< 15.107 limits	PASS	Under limit 11.49 dB at 3.17 MHz
3.2	15.109	Radiated Emission	< 15.109 limits	PASS	Under limit 3.10 dB at 256.01 MHz for Peak



## 1. General Description

### 1.1. Applicant

**Doppio Mobile International Limited**

ROOM 1011 A 10/F HARBOUR CENTRE TOWER 11 HOK CHEUNG ST HUNG HOM KL

### 1.2. Manufacturer

**ShenZhen Chenyee Technology Co., Ltd.**

32F, Tower A, East Pacific International Center, No.7888, Shennan Avenue, Futian District, Shenzhen-518040, China

### 1.3. Product Feature of Equipment Under Test

Product Feature	
<b>Equipment</b>	mobile phone
<b>Brand Name</b>	doppio
<b>Model Name</b>	Doppio SL548
<b>FCC ID</b>	N2GSL548
<b>EUT supports Radios application</b>	GSM/GPRS/EGPRS/WCDMA/HSPA/ DC-HSDPA/HSPA+/LTE WLAN 2.4GHz 802.11b/g/n HT20/HT40 Bluetooth v3.0+EDR/ Bluetooth v4.0 LE
<b>IMEI Code</b>	Conduction: 354147042101106/354147042101105 for Sample 1 354147042072331/354147042087339 for Sample 2 Radiation: 354147042101072/354147043101071 for Sample 1 354147042072331/354147042087339 for Sample 2
<b>HW Version</b>	SL548_Mainboard_P2
<b>SW Version</b>	SL548_2202_V5384
<b>EUT Stage</b>	Pre-Production

**Remark:**

1. The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.
2. There are two types of EUT. The difference of two samples is the suppliers of PCB Board. According to the difference, the sample 1 to perform full test and the sample 2 to verify worse mode for EMC test.
3. This project is Class II permission change application which is updated HW/SW Version and accessories and opened LTE Band 2 and Band 7 via software. Based on the similarity between two products, only the worst cases were verified from original test report (Sportun Report Number FC7O1303).



## 1.4. Product Specification of Equipment Under Test

Standards-related Product Specification	
<b>Tx Frequency</b>	GSM850: 824.2 MHz ~ 848.8 MHz GSM1900: 1850.2 MHz ~ 1909.8MHz WCDMA Band V: 826.4 MHz ~ 846.6 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 7 : 2502.5 MHz ~ 2567.5 MHz 802.11b/g/n: 2412 MHz ~ 2462 MHz Bluetooth: 2402 MHz ~ 2480 MHz
<b>Rx Frequency</b>	GSM850: 869.2 MHz ~ 893.8 MHz GSM1900: 1930.2 MHz ~ 1989.8 MHz WCDMA Band V: 871.4 MHz ~ 891.6 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 7 : 2622.5MHz ~ 2687.5 MHz 802.11b/g/n: 2412 MHz ~ 2462 MHz Bluetooth: 2402 MHz ~ 2480 MHz GPS: 1.57542 GHz
<b>Antenna Type</b>	WWAN : PIFA Antenna WLAN : PIFA Antenna Bluetooth : PIFA Antenna GPS : PIFA Antenna
<b>Type of Modulation</b>	GSM: GMSK GPRS: GMSK EDGE(MCS 0-4): GMSK / (MCS 5-9): 8PSK WCDMA : BPSK (Uplink) HSDPA/DC-HSDPA : QPSK (Uplink) HSUPA : QPSK (Uplink) HSPA+ : 16QAM DC-HSDPA : 64QAM 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.



## 1.6. Test Location

Sportun International (Shenzhen) Inc. is accredited to ISO 17025 by National Voluntary Laboratory Accreditation Program (NVLAP code: 600156-0) and the FCC designation No. are CN5018 and CN5019

<b>Test Site</b>	Sportun International (Shenzhen) Inc.	
<b>Test Site Location</b>	1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan Shenzhen City Guangdong Province 518055 China TEL: +86-755-8637-9589 FAX: +86-755-8637-9595	
<b>Test Site No.</b>	<b>Sportun Site No.</b>	<b>FCC Test Firm Registration No.</b>
	CO01-SZ	251365
<b>Test Site</b>	Sportun International (Shenzhen) Inc.	
<b>Test Site Location</b>	No. 3 Bldg the third floor of south, Shahe River west, Fengzeyuan Warehouse, Nanshan District Shenzhen City Guangdong Province 518055 China TEL: +86-755-3320-2398	
<b>Test Site No.</b>	<b>Sportun Site No.</b>	<b>FCC Test Firm Registration No.</b>
	03CH04-SZ	577730

**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

### Remark:

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



## 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.

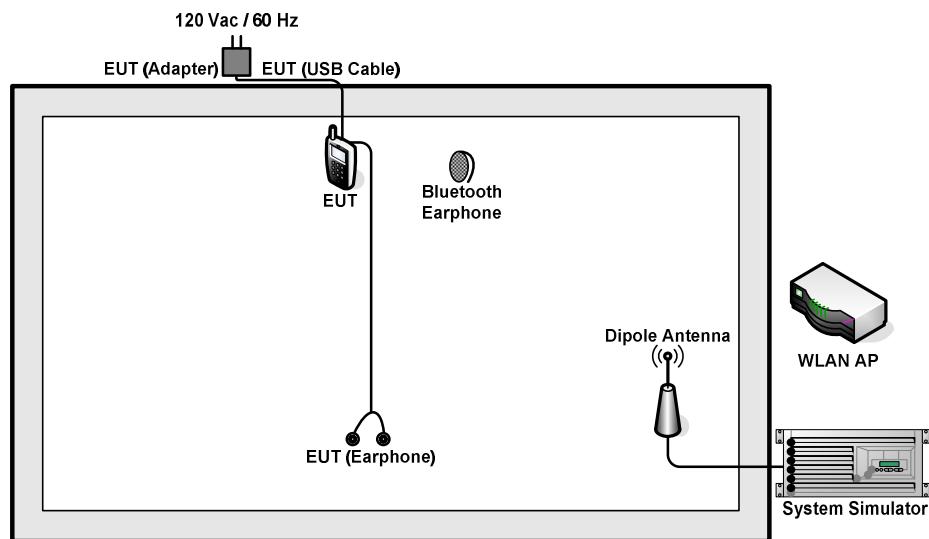
Frequency range investigated: conduction (150 kHz to 30 MHz), radiation (30MHz to the 5th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower).

Test Items	Function Type
AC Conducted Emission	Mode 1: WCDMA Band V Idle + USB Cable(Charging from Adapter) + Earphone + Battery + Bluetooth Idle + WLAN Idle(2.4G) + MPEG4 + SIM1 for Sample 1<Fig.1> Mode 2: LTE Band 7 Idle + USB Cable(Data Link with Notebook) + Earphone + Battery + Bluetooth Idle + WLAN Idle(2.4G) + GPS Rx + SIM2 for Sample 1<Fig.2> Mode 3: WCDMA Band V Idle + USB Cable(Charging from Adapter) + Earphone + Battery + Bluetooth Idle + WLAN Idle(2.4G) + MPEG4 + SIM1 for Sample 2<Fig.1>
Radiated Emissions < 1GHz	Mode 1: WCDMA Band V Idle + USB Cable(Charging from Adapter) + Earphone + Battery + Bluetooth Idle + WLAN Idle(2.4G) + MPEG4 + SIM1 for Sample 1<Fig.1> Mode 2: LTE Band 7 Idle + USB Cable(Data Link with Notebook) + Earphone + Battery + Bluetooth Idle + WLAN Idle(2.4G) + GPS Rx + SIM2 for Sample 1<Fig.2> Mode 3: LTE Band 7 Idle + USB Cable(Data Link with Notebook) + Earphone + Battery + Bluetooth Idle + WLAN Idle(2.4G) + GPS Rx + SIM2 for Sample 2<Fig.2>
Radiated Emissions $\geq$ 1GHz	Mode 1: LTE Band 7 Idle + USB Cable(Data Link with Notebook) + Earphone + Battery + Bluetooth Idle + WLAN Idle(2.4G) + GPS Rx + SIM2 for Sample 1<Fig.2>

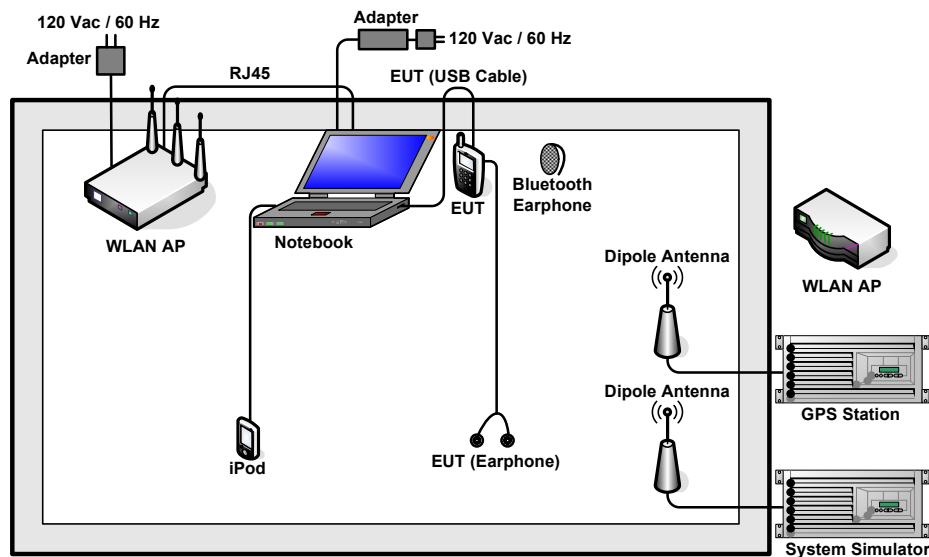
#### Remark:

1. The worst case of AC is mode 1; and the data link mode is mode 2, the test data of these modes were reported.
2. The worst case of RE is mode 2; only the test data of this mode was reported.
3. Data Link with Notebook means data application transferred mode between EUT and Notebook.

## 2.2. Connection Diagram of Test System



<Fig. 1>



<Fig. 2>



## 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	Anritsu	MT8820C	N/A	N/A	Unshielded, 1.8 m
2.	GPS Station	ADIVIE	MP9000	N/A	N/A	Unshielded, 1.8 m
3.	WLAN AP	D-Link	DIR-820L	KA2IR820LA1	N/A	Unshielded, 1.8 m
4.	WLAN AP	ASUS	RT-AC66U	MSQ-RTAC66U	N/A	Unshielded, 1.8 m
5.	Bluetooth Earphone	Samsung	EO-MG900	PYAHS-107W	N/A	N/A
6.	Bluetooth Earphone	Samsung	HS3000	A3LHS3000	N/A	N/A
7.	Notebook	Lenovo	E540	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
8.	SD Card	Kingston	MicroSD HC	FCC DoC	N/A	N/A
9.	iPod nano 8GB	Apple	MC690ZP/A	FCC DoC	Shielded, 1.2m	N/A
10.	iPod	Apple	MC525 ZP/A	DoC	Unshielded, 1.2 m	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. Execute "GPS Test" to make the EUT receive continuous signals from GPS station.
3. Execute "Video player" to play MPEG4 files.



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

\*Decreases with the logarithm of the frequency.

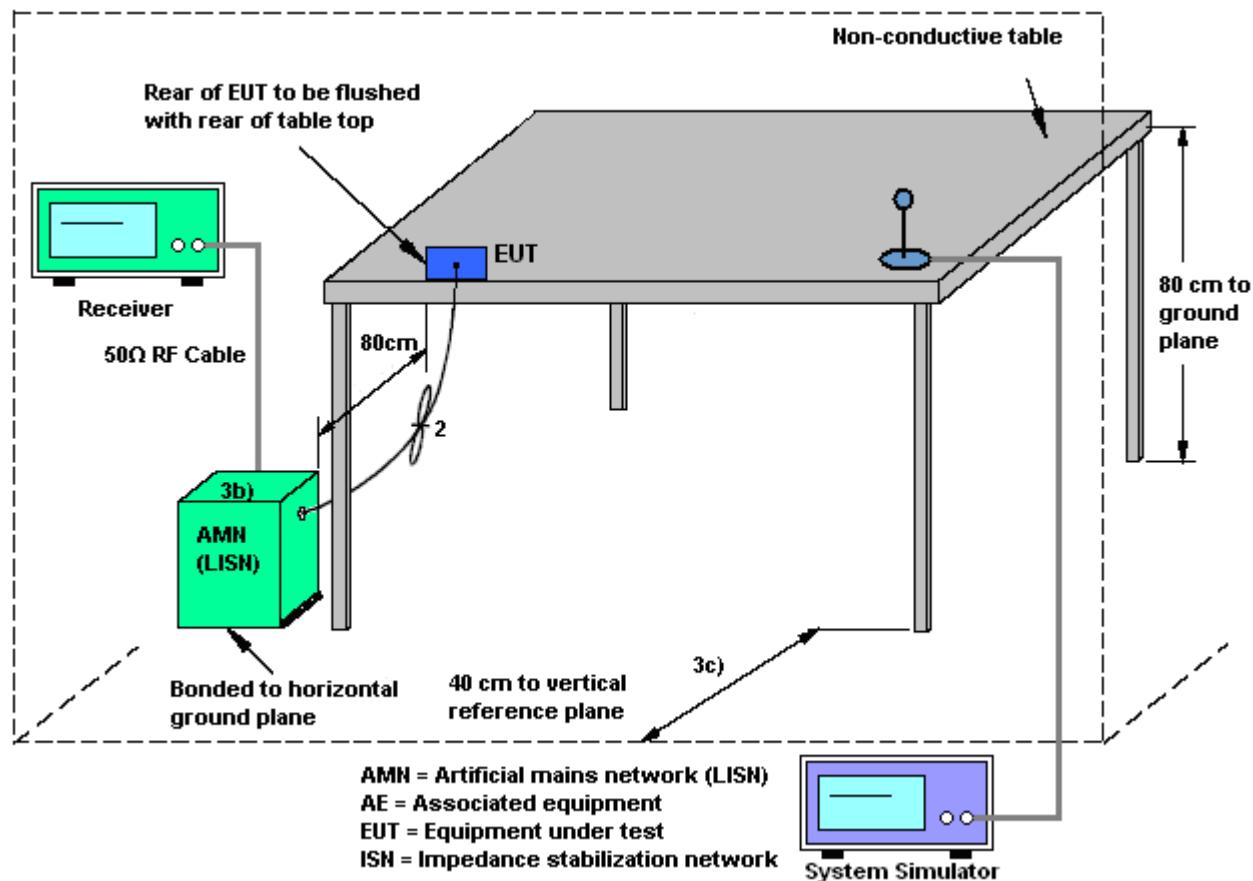
##### 3.1.2 Measuring Instruments

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.

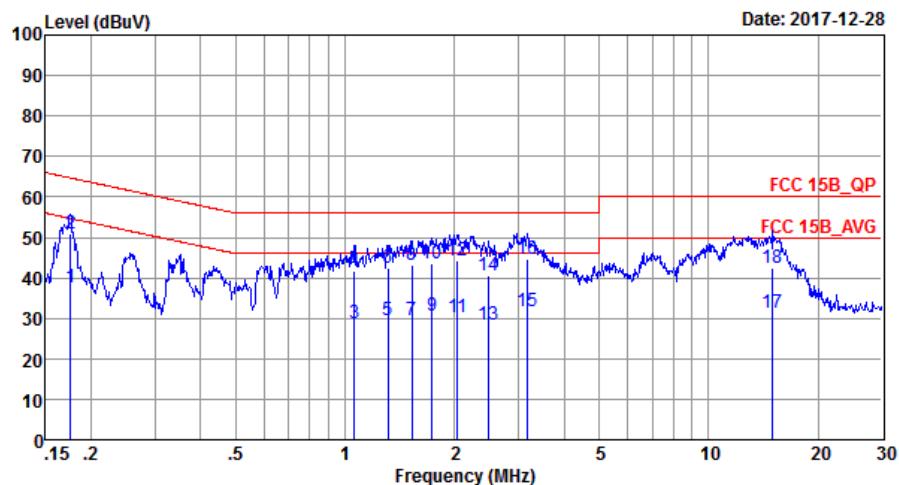
### 3.1.4 Test Setup





## 3.1.5 Test Result of AC Conducted Emission

Test Mode :	Mode 1	Temperature :	22~25°C
Test Engineer :	Peng wang	Relative Humidity :	50~55%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	WCDMA Band V Idle + USB Cable(Charging from Adapter) + Earphone + Battery + Bluetooth Idle + WLAN Idle(2.4G) + MPEG4 + SIM1 for Sample 1		

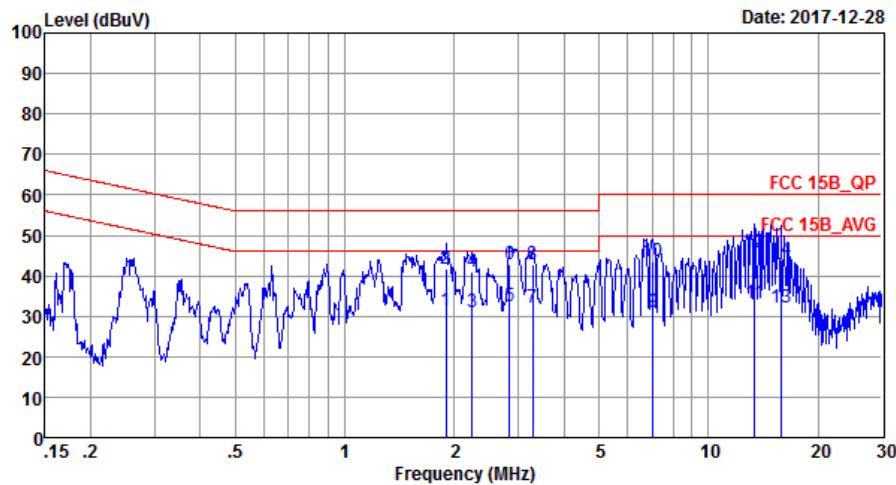


Site : CO01-SZ  
 Condition: FCC 15B\_QP LISN\_20170907\_L LINE

Freq	Level	Over	Limit	Read	LISN	Cable	
		Limit	Line	Level	Factor	Loss	
MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.18	37.80	-16.88	54.68	27.70	0.03	10.07 Average
2	0.18	51.10	-13.58	64.68	41.00	0.03	10.07 QP
3	1.06	28.96	-17.04	46.00	18.80	0.07	10.09 Average
4	1.06	41.66	-14.34	56.00	31.50	0.07	10.09 QP
5	1.31	29.38	-16.62	46.00	19.19	0.09	10.10 Average
6	1.31	42.38	-13.62	56.00	32.19	0.09	10.10 QP
7	1.53	29.40	-16.60	46.00	19.21	0.09	10.10 Average
8	1.53	43.00	-13.00	56.00	32.81	0.09	10.10 QP
9	1.73	30.51	-15.49	46.00	20.31	0.10	10.10 Average
10	1.73	43.71	-12.29	56.00	33.51	0.10	10.10 QP
11	2.03	30.12	-15.88	46.00	19.90	0.11	10.11 Average
12	2.03	44.12	-11.88	56.00	33.90	0.11	10.11 QP
13	2.47	28.36	-17.64	46.00	18.10	0.14	10.12 Average
14	2.47	40.46	-15.54	56.00	30.20	0.14	10.12 QP
15	3.17	31.91	-14.09	46.00	21.61	0.16	10.14 Average
16 *	3.17	44.51	-11.49	56.00	34.21	0.16	10.14 QP
17	14.99	31.32	-18.68	50.00	20.40	0.51	10.41 Average
18	14.99	42.42	-17.58	60.00	31.50	0.51	10.41 QP



<b>Test Mode :</b>	Mode 1	<b>Temperature :</b>	22~25°C
<b>Test Engineer :</b>	Peng wang	<b>Relative Humidity :</b>	50~55%
<b>Test Voltage :</b>	120Vac / 60Hz	<b>Phase :</b>	Neutral
<b>Function Type :</b>	WCDMA Band V Idle + USB Cable(Charging from Adapter) + Earphone + Battery + Bluetooth Idle + WLAN Idle(2.4G) + MPEG4 + SIM1 for Sample 1		

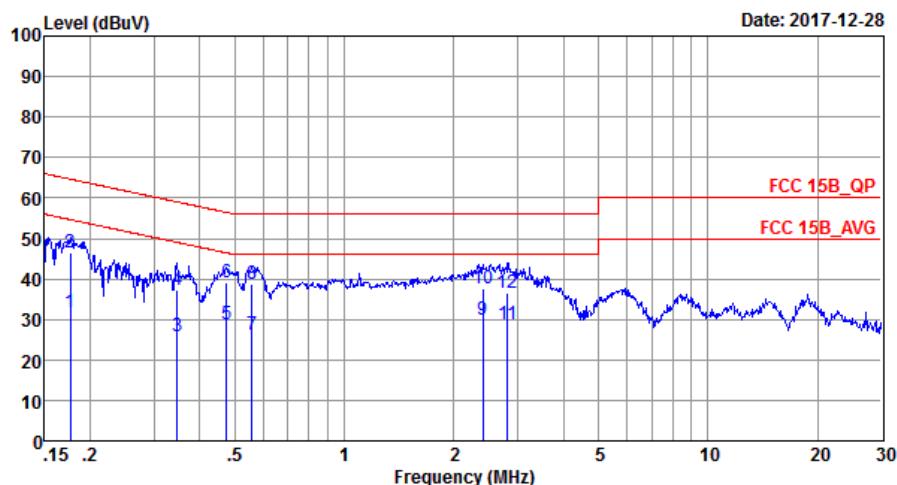


Site : CO01-SZ  
Condition: FCC 15B\_QP LISN\_20170907\_N NEUTRAL

Freq	Level	Over	Limit	Read	LISN	Cable	Remark
		Limit	Line	Level	Factor	Loss	
MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	1.90	31.26	-14.74	46.00	21.10	0.05	10.11 Average
2	1.90	41.86	-14.14	56.00	31.70	0.05	10.11 QP
3	2.24	30.96	-15.04	46.00	20.80	0.04	10.12 Average
4	2.24	41.06	-14.94	56.00	30.90	0.04	10.12 QP
5	2.84	32.57	-13.43	46.00	22.40	0.03	10.14 Average
6	2.84	42.67	-13.33	56.00	32.50	0.03	10.14 QP
7	3.29	32.29	-13.71	46.00	22.10	0.04	10.15 Average
8 *	3.29	42.69	-13.31	56.00	32.50	0.04	10.15 QP
9	7.02	30.92	-19.08	50.00	20.60	0.07	10.25 Average
10	7.02	43.72	-16.28	60.00	33.40	0.07	10.25 QP
11	13.41	33.17	-16.83	50.00	22.50	0.28	10.39 Average
12	13.41	45.67	-14.33	60.00	35.00	0.28	10.39 QP
13	15.80	32.17	-17.83	50.00	21.40	0.37	10.40 Average
14	15.80	44.07	-15.93	60.00	33.30	0.37	10.40 QP



<b>Test Mode :</b>	Mode 2	<b>Temperature :</b>	22~25°C
<b>Test Engineer :</b>	Peng wang	<b>Relative Humidity :</b>	50~55%
<b>Test Voltage :</b>	120Vac / 60Hz	<b>Phase :</b>	Line
<b>Function Type :</b>	LTE Band 7 Idle + USB Cable(Data Link with Notebook) + Earphone + Battery + Bluetooth Idle + WLAN Idle(2.4G) + GPS Rx + SIM2 for Sample 1		

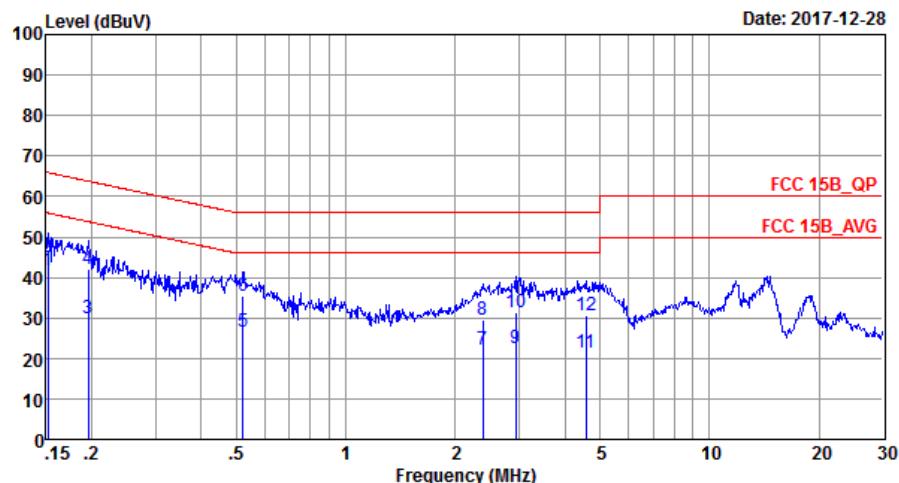


Site : C001-SZ  
Condition: FCC 15B\_QP LISN\_20170907\_L LINE

Freq	Level	Over	Limit	Read	LISN	Cable	Remark
		Line	Level	Factor	Loss		
MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.18	31.63	-23.01	54.64	21.30	0.03	10.30 Average
2	0.18	46.53	-18.11	64.64	36.20	0.03	10.30 QP
3	0.35	25.74	-23.31	49.05	15.51	0.03	10.20 Average
4	0.35	37.13	-21.92	59.05	26.90	0.03	10.20 QP
5	0.47	28.90	-17.55	46.45	18.70	0.02	10.18 Average
6	0.47	39.10	-17.35	56.45	28.90	0.02	10.18 QP
7	0.56	26.20	-19.80	46.00	16.00	0.02	10.18 Average
8	0.56	38.60	-17.40	56.00	28.40	0.02	10.18 QP
9 *	2.41	29.72	-16.28	46.00	19.41	0.13	10.18 Average
10	2.41	37.52	-18.48	56.00	27.21	0.13	10.18 QP
11	2.81	28.76	-17.24	46.00	18.41	0.15	10.20 Average
12	2.81	36.66	-19.34	56.00	26.31	0.15	10.20 QP



<b>Test Mode :</b>	Mode 2	<b>Temperature :</b>	22~25°C
<b>Test Engineer :</b>	Peng wang	<b>Relative Humidity :</b>	50~55%
<b>Test Voltage :</b>	120Vac / 60Hz	<b>Phase :</b>	Neutral
<b>Function Type :</b>	LTE Band 7 Idle + USB Cable(Data Link with Notebook) + Earphone + Battery + Bluetooth Idle + WLAN Idle(2.4G) + GPS Rx + SIM2 for Sample 1		



Freq	Level	Over	Limit	Read	LISN	Cable	Remark
		Line	Level	Factor	Loss		
	MHz	dBuV	dB	dBuV	dB	dB	
1 *	0.15	41.53	-14.38	55.91	31.10	0.03	10.40 Average
2	0.15	45.09	-20.82	65.91	34.66	0.03	10.40 QP
3	0.20	29.86	-23.94	53.80	19.60	0.03	10.23 Average
4	0.20	41.96	-21.84	63.80	31.70	0.03	10.23 QP
5	0.52	26.60	-19.40	46.00	16.40	0.02	10.18 Average
6	0.52	35.30	-20.70	56.00	25.10	0.02	10.18 QP
7	2.38	22.22	-23.78	46.00	12.00	0.04	10.18 Average
8	2.38	29.52	-26.48	56.00	19.30	0.04	10.18 QP
9	2.93	22.64	-23.36	46.00	12.40	0.03	10.21 Average
10	2.93	31.34	-24.66	56.00	21.10	0.03	10.21 QP
11	4.57	21.33	-24.67	46.00	11.00	0.06	10.27 Average
12	4.57	30.73	-25.27	56.00	20.40	0.06	10.27 QP



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

### 3.2.2. Measuring Instruments

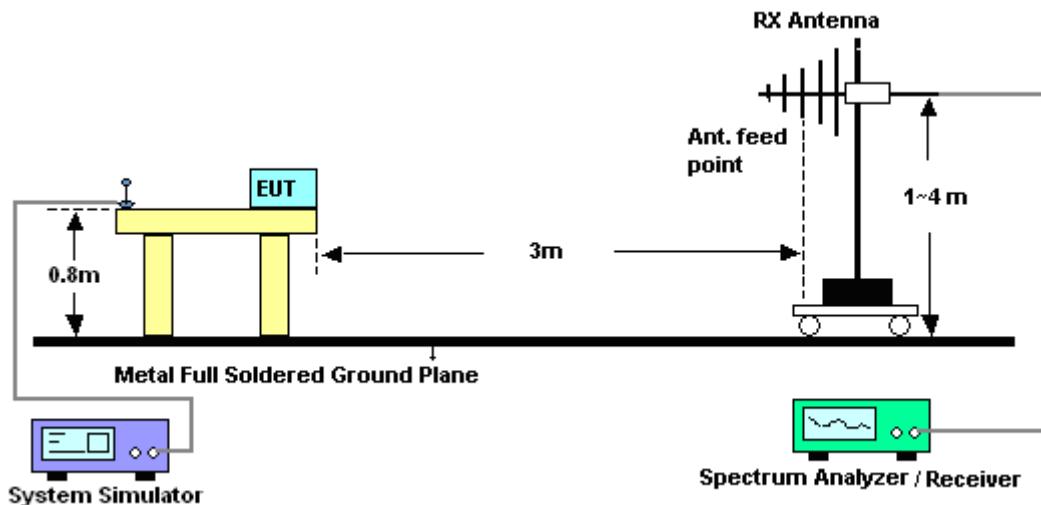
The measuring equipment is listed in the section 4 of this test report.

### 3.2.3. Test Procedures

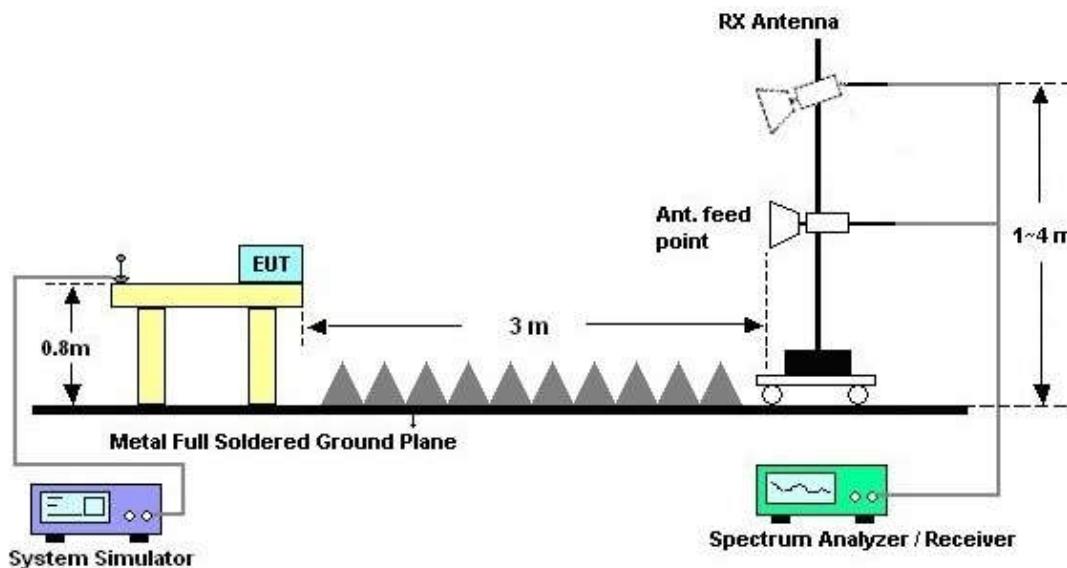
1. The EUT was placed on a turntable with 0.8 meter above ground.
2. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest radiation.
4. The antenna 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.
5. 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

### 3.2.4. Test Setup of Radiated Emission

For radiated emissions from 30MHz to 1GHz

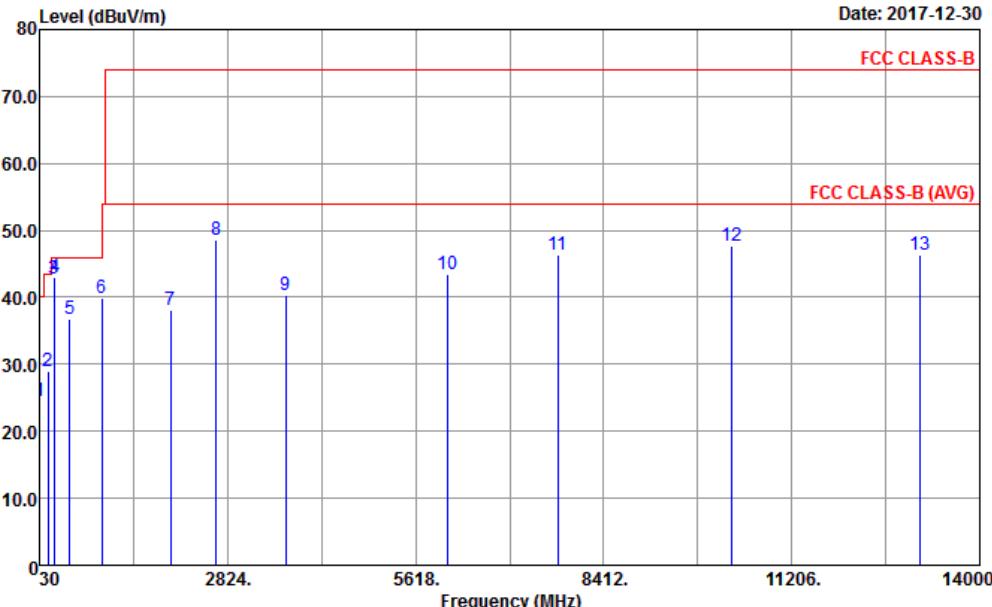


For radiated emissions above 1GHz





## 3.2.5. Test Result of Radiated Emission

<b>Test Mode :</b>	Mode 2	<b>Temperature :</b>	24 ~ 25°C																																																																																																																																																																			
<b>Test Engineer :</b>	Fuquan wu	<b>Relative Humidity :</b>	48~49%																																																																																																																																																																			
<b>Test Distance :</b>	3m	<b>Polarization :</b>	Horizontal																																																																																																																																																																			
<b>Function Type :</b>	LTE Band 7 Idle + USB Cable(Data Link with Notebook) + Earphone + Battery + Bluetooth Idle + WLAN Idle(2.4G) + GPS Rx + SIM2 for Sample 1																																																																																																																																																																					
<b>Remark :</b>	#8 is system simulator signal which can be ignored.																																																																																																																																																																					
 <p>Level (dBuV/m)</p> <p>Date: 2017-12-30</p> <p>FCC CLASS-B</p> <p>FCC CLASS-B (AVG)</p> <p>Frequency (MHz)</p>																																																																																																																																																																						
<b>Site</b>	: 03CH04-SZ																																																																																																																																																																					
<b>Condition</b>	: FCC CLASS-B 3m LF_ANT41909_6 HORIZONTAL																																																																																																																																																																					
<b>Project</b>	: 7O1303-01																																																																																																																																																																					
<table border="1"> <thead> <tr> <th rowspan="2">Freq</th> <th rowspan="2">Level</th> <th>Over</th> <th>Limit</th> <th>Read</th> <th>Antenna</th> <th>Cable</th> <th>Preamp</th> <th>A/Pos</th> <th>T/Pos</th> <th>Remark</th> </tr> <tr> <th>Limit</th> <th>Line</th> <th>Level</th> <th>Factor</th> <th>Loss</th> <th>Factor</th> <th>cm</th> <th>deg</th> <th></th> </tr> </thead> <tbody> <tr> <td>1</td> <td>31.94</td> <td>24.59</td> <td>-15.41</td> <td>40.00</td> <td>32.31</td> <td>23.96</td> <td>0.29</td> <td>31.97</td> <td>---</td> <td>--- Peak</td> </tr> <tr> <td>2</td> <td>160.95</td> <td>28.98</td> <td>-14.52</td> <td>43.50</td> <td>42.84</td> <td>16.33</td> <td>1.31</td> <td>31.50</td> <td>---</td> <td>--- Peak</td> </tr> <tr> <td>3</td> <td>246.31</td> <td>42.74</td> <td>-3.26</td> <td>46.00</td> <td>53.82</td> <td>18.47</td> <td>1.70</td> <td>31.25</td> <td>---</td> <td>--- Peak</td> </tr> <tr> <td>4</td> <td>256.01</td> <td>42.90</td> <td>-3.10</td> <td>46.00</td> <td>52.56</td> <td>19.85</td> <td>1.73</td> <td>31.24</td> <td>100</td> <td>178 Peak</td> </tr> <tr> <td>5</td> <td>480.08</td> <td>36.85</td> <td>-9.15</td> <td>46.00</td> <td>42.14</td> <td>23.58</td> <td>2.38</td> <td>31.25</td> <td>---</td> <td>--- Peak</td> </tr> <tr> <td>6</td> <td>960.23</td> <td>39.85</td> <td>-14.15</td> <td>54.00</td> <td>37.68</td> <td>30.02</td> <td>3.49</td> <td>31.34</td> <td>---</td> <td>--- Peak</td> </tr> <tr> <td>7</td> <td>1978.00</td> <td>38.19</td> <td>-35.81</td> <td>74.00</td> <td>66.22</td> <td>25.97</td> <td>4.31</td> <td>58.31</td> <td>---</td> <td>--- Peak</td> </tr> <tr> <td>8</td> <td>2655.00</td> <td>48.54</td> <td></td> <td></td> <td>73.18</td> <td>28.01</td> <td>5.01</td> <td>57.66</td> <td>---</td> <td>--- Peak</td> </tr> <tr> <td>9</td> <td>3692.00</td> <td>40.24</td> <td>-33.76</td> <td>74.00</td> <td>65.02</td> <td>29.16</td> <td>4.95</td> <td>58.89</td> <td>---</td> <td>--- Peak</td> </tr> <tr> <td>10</td> <td>6092.00</td> <td>43.46</td> <td>-30.54</td> <td>74.00</td> <td>61.01</td> <td>33.26</td> <td>6.56</td> <td>57.37</td> <td>---</td> <td>--- Peak</td> </tr> <tr> <td>11</td> <td>7728.00</td> <td>46.25</td> <td>-27.75</td> <td>74.00</td> <td>58.75</td> <td>36.82</td> <td>7.25</td> <td>56.57</td> <td>---</td> <td>--- Peak</td> </tr> <tr> <td>12</td> <td>10310.00</td> <td>47.69</td> <td>-26.31</td> <td>74.00</td> <td>55.65</td> <td>38.65</td> <td>9.22</td> <td>55.83</td> <td>100</td> <td>0 Peak</td> </tr> <tr> <td>13</td> <td>13109.00</td> <td>46.38</td> <td>-27.62</td> <td>74.00</td> <td>55.09</td> <td>39.59</td> <td>9.91</td> <td>58.21</td> <td>---</td> <td>--- Peak</td> </tr> </tbody> </table>				Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	A/Pos	T/Pos	Remark	Limit	Line	Level	Factor	Loss	Factor	cm	deg		1	31.94	24.59	-15.41	40.00	32.31	23.96	0.29	31.97	---	--- Peak	2	160.95	28.98	-14.52	43.50	42.84	16.33	1.31	31.50	---	--- Peak	3	246.31	42.74	-3.26	46.00	53.82	18.47	1.70	31.25	---	--- Peak	4	256.01	42.90	-3.10	46.00	52.56	19.85	1.73	31.24	100	178 Peak	5	480.08	36.85	-9.15	46.00	42.14	23.58	2.38	31.25	---	--- Peak	6	960.23	39.85	-14.15	54.00	37.68	30.02	3.49	31.34	---	--- Peak	7	1978.00	38.19	-35.81	74.00	66.22	25.97	4.31	58.31	---	--- Peak	8	2655.00	48.54			73.18	28.01	5.01	57.66	---	--- Peak	9	3692.00	40.24	-33.76	74.00	65.02	29.16	4.95	58.89	---	--- Peak	10	6092.00	43.46	-30.54	74.00	61.01	33.26	6.56	57.37	---	--- Peak	11	7728.00	46.25	-27.75	74.00	58.75	36.82	7.25	56.57	---	--- Peak	12	10310.00	47.69	-26.31	74.00	55.65	38.65	9.22	55.83	100	0 Peak	13	13109.00	46.38	-27.62	74.00	55.09	39.59	9.91	58.21	---	--- Peak
Freq	Level	Over	Limit			Read	Antenna	Cable	Preamp	A/Pos	T/Pos	Remark																																																																																																																																																										
		Limit	Line	Level	Factor	Loss	Factor	cm	deg																																																																																																																																																													
1	31.94	24.59	-15.41	40.00	32.31	23.96	0.29	31.97	---	--- Peak																																																																																																																																																												
2	160.95	28.98	-14.52	43.50	42.84	16.33	1.31	31.50	---	--- Peak																																																																																																																																																												
3	246.31	42.74	-3.26	46.00	53.82	18.47	1.70	31.25	---	--- Peak																																																																																																																																																												
4	256.01	42.90	-3.10	46.00	52.56	19.85	1.73	31.24	100	178 Peak																																																																																																																																																												
5	480.08	36.85	-9.15	46.00	42.14	23.58	2.38	31.25	---	--- Peak																																																																																																																																																												
6	960.23	39.85	-14.15	54.00	37.68	30.02	3.49	31.34	---	--- Peak																																																																																																																																																												
7	1978.00	38.19	-35.81	74.00	66.22	25.97	4.31	58.31	---	--- Peak																																																																																																																																																												
8	2655.00	48.54			73.18	28.01	5.01	57.66	---	--- Peak																																																																																																																																																												
9	3692.00	40.24	-33.76	74.00	65.02	29.16	4.95	58.89	---	--- Peak																																																																																																																																																												
10	6092.00	43.46	-30.54	74.00	61.01	33.26	6.56	57.37	---	--- Peak																																																																																																																																																												
11	7728.00	46.25	-27.75	74.00	58.75	36.82	7.25	56.57	---	--- Peak																																																																																																																																																												
12	10310.00	47.69	-26.31	74.00	55.65	38.65	9.22	55.83	100	0 Peak																																																																																																																																																												
13	13109.00	46.38	-27.62	74.00	55.09	39.59	9.91	58.21	---	--- Peak																																																																																																																																																												



<b>Test Mode :</b>	Mode 2	<b>Temperature :</b>	24 ~ 25°C																																																																																																																																																																																										
<b>Test Engineer :</b>	Fuquan wu	<b>Relative Humidity :</b>	48~49%																																																																																																																																																																																										
<b>Test Distance :</b>	3m	<b>Polarization :</b>	Vertical																																																																																																																																																																																										
<b>Function Type :</b>	LTE Band 7 Idle + USB Cable(Data Link with Notebook) + Earphone + Battery + Bluetooth Idle + WLAN Idle(2.4G) + GPS Rx + SIM2 for Sample 1																																																																																																																																																																																												
<b>Remark :</b>	#8 is system simulator signal which can be ignored.																																																																																																																																																																																												
Site	: 03CH04-SZ																																																																																																																																																																																												
Condition	: FCC CLASS-B 3m LF_ANT41909_6 VERTICAL																																																																																																																																																																																												
Project	: 7O1303-01																																																																																																																																																																																												
<table border="1"> <thead> <tr> <th rowspan="2">Freq MHz</th> <th rowspan="2">Level dBuV/m</th> <th rowspan="2">Over Limit dB</th> <th rowspan="2">Limit Line dBuV/m</th> <th rowspan="2">Read Antenna Level dBuV</th> <th rowspan="2">Antenna Factor</th> <th rowspan="2">Cable Loss dB</th> <th rowspan="2">Preamp Factor</th> <th rowspan="2">A/Pos dB</th> <th rowspan="2">T/Pos cm</th> <th rowspan="2">Remark</th> <th rowspan="2">A/Pos deg</th> </tr> <tr> <th>MHz</th> <th>dBuV/m</th> <th>dB</th> <th>dBuV/m</th> <th>dBuV</th> <th>dB/m</th> <th>dB</th> <th>dB</th> <th>cm</th> <th>deg</th> </tr> </thead> <tbody> <tr><td>1</td><td>31.94</td><td>24.37</td><td>-15.63</td><td>40.00</td><td>32.09</td><td>23.96</td><td>0.29</td><td>31.97</td><td>---</td><td>---</td><td>Peak</td></tr> <tr><td>2</td><td>166.77</td><td>22.35</td><td>-21.15</td><td>43.50</td><td>36.55</td><td>15.93</td><td>1.34</td><td>31.47</td><td>---</td><td>---</td><td>Peak</td></tr> <tr><td>3</td><td>253.10</td><td>35.54</td><td>-10.46</td><td>46.00</td><td>45.63</td><td>19.43</td><td>1.72</td><td>31.24</td><td>---</td><td>---</td><td>Peak</td></tr> <tr><td>4</td><td>480.08</td><td>42.01</td><td>-3.99</td><td>46.00</td><td>47.30</td><td>23.58</td><td>2.38</td><td>31.25</td><td>200</td><td>152</td><td>Peak</td></tr> <tr><td>5</td><td>714.82</td><td>36.12</td><td>-9.88</td><td>46.00</td><td>37.44</td><td>26.96</td><td>2.96</td><td>31.24</td><td>---</td><td>---</td><td>Peak</td></tr> <tr><td>6</td><td>960.00</td><td>36.50</td><td>-9.50</td><td>46.00</td><td>34.33</td><td>30.02</td><td>3.49</td><td>31.34</td><td>---</td><td>---</td><td>Peak</td></tr> <tr><td>7</td><td>2480.00</td><td>41.24</td><td>-32.76</td><td>74.00</td><td>66.48</td><td>27.74</td><td>4.85</td><td>57.83</td><td>---</td><td>---</td><td>Peak</td></tr> <tr><td>8</td><td>2655.00</td><td>49.97</td><td>---</td><td>74.61</td><td>28.01</td><td>5.01</td><td>57.66</td><td>---</td><td>---</td><td>---</td><td>Peak</td></tr> <tr><td>9</td><td>4322.00</td><td>42.45</td><td>-31.55</td><td>74.00</td><td>65.99</td><td>30.41</td><td>5.10</td><td>59.05</td><td>---</td><td>---</td><td>Peak</td></tr> <tr><td>10</td><td>6084.00</td><td>45.29</td><td>-28.71</td><td>74.00</td><td>62.78</td><td>33.23</td><td>6.62</td><td>57.34</td><td>---</td><td>---</td><td>Peak</td></tr> <tr><td>11</td><td>8504.00</td><td>46.45</td><td>-27.55</td><td>74.00</td><td>57.23</td><td>37.20</td><td>7.28</td><td>55.26</td><td>---</td><td>---</td><td>Peak</td></tr> <tr><td>12</td><td>10464.00</td><td>46.17</td><td>-27.83</td><td>74.00</td><td>54.03</td><td>38.77</td><td>9.26</td><td>55.89</td><td>---</td><td>---</td><td>Peak</td></tr> <tr><td>13</td><td>13364.00</td><td>47.63</td><td>-26.37</td><td>74.00</td><td>56.09</td><td>40.05</td><td>9.98</td><td>58.49</td><td>100</td><td>0</td><td>Peak</td></tr> </tbody> </table>												Freq MHz	Level dBuV/m	Over Limit dB	Limit Line dBuV/m	Read Antenna Level dBuV	Antenna Factor	Cable Loss dB	Preamp Factor	A/Pos dB	T/Pos cm	Remark	A/Pos deg	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	1	31.94	24.37	-15.63	40.00	32.09	23.96	0.29	31.97	---	---	Peak	2	166.77	22.35	-21.15	43.50	36.55	15.93	1.34	31.47	---	---	Peak	3	253.10	35.54	-10.46	46.00	45.63	19.43	1.72	31.24	---	---	Peak	4	480.08	42.01	-3.99	46.00	47.30	23.58	2.38	31.25	200	152	Peak	5	714.82	36.12	-9.88	46.00	37.44	26.96	2.96	31.24	---	---	Peak	6	960.00	36.50	-9.50	46.00	34.33	30.02	3.49	31.34	---	---	Peak	7	2480.00	41.24	-32.76	74.00	66.48	27.74	4.85	57.83	---	---	Peak	8	2655.00	49.97	---	74.61	28.01	5.01	57.66	---	---	---	Peak	9	4322.00	42.45	-31.55	74.00	65.99	30.41	5.10	59.05	---	---	Peak	10	6084.00	45.29	-28.71	74.00	62.78	33.23	6.62	57.34	---	---	Peak	11	8504.00	46.45	-27.55	74.00	57.23	37.20	7.28	55.26	---	---	Peak	12	10464.00	46.17	-27.83	74.00	54.03	38.77	9.26	55.89	---	---	Peak	13	13364.00	47.63	-26.37	74.00	56.09	40.05	9.98	58.49	100	0	Peak
Freq MHz	Level dBuV/m	Over Limit dB	Limit Line dBuV/m	Read Antenna Level dBuV	Antenna Factor	Cable Loss dB	Preamp Factor	A/Pos dB	T/Pos cm	Remark	A/Pos deg																																																																																																																																																																																		
												MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg																																																																																																																																																																								
1	31.94	24.37	-15.63	40.00	32.09	23.96	0.29	31.97	---	---	Peak																																																																																																																																																																																		
2	166.77	22.35	-21.15	43.50	36.55	15.93	1.34	31.47	---	---	Peak																																																																																																																																																																																		
3	253.10	35.54	-10.46	46.00	45.63	19.43	1.72	31.24	---	---	Peak																																																																																																																																																																																		
4	480.08	42.01	-3.99	46.00	47.30	23.58	2.38	31.25	200	152	Peak																																																																																																																																																																																		
5	714.82	36.12	-9.88	46.00	37.44	26.96	2.96	31.24	---	---	Peak																																																																																																																																																																																		
6	960.00	36.50	-9.50	46.00	34.33	30.02	3.49	31.34	---	---	Peak																																																																																																																																																																																		
7	2480.00	41.24	-32.76	74.00	66.48	27.74	4.85	57.83	---	---	Peak																																																																																																																																																																																		
8	2655.00	49.97	---	74.61	28.01	5.01	57.66	---	---	---	Peak																																																																																																																																																																																		
9	4322.00	42.45	-31.55	74.00	65.99	30.41	5.10	59.05	---	---	Peak																																																																																																																																																																																		
10	6084.00	45.29	-28.71	74.00	62.78	33.23	6.62	57.34	---	---	Peak																																																																																																																																																																																		
11	8504.00	46.45	-27.55	74.00	57.23	37.20	7.28	55.26	---	---	Peak																																																																																																																																																																																		
12	10464.00	46.17	-27.83	74.00	54.03	38.77	9.26	55.89	---	---	Peak																																																																																																																																																																																		
13	13364.00	47.63	-26.37	74.00	56.09	40.05	9.98	58.49	100	0	Peak																																																																																																																																																																																		
<b>Sportun International (Shenzhen) Inc.</b>	<b>Page Number</b>	: 20 of 22																																																																																																																																																																																											
TEL : +86-755-8637-9589	Report Issued Date	: Jan. 31, 2018																																																																																																																																																																																											
FAX : +86-755-8637-9595	Report Version	: Rev. 01																																																																																																																																																																																											
FCC ID : N2GSL548	Report Template No.:	BU5-FC15B Version 1.3																																																																																																																																																																																											



## 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;	Dec. 26, 2017	Dec. 28, 2017	Dec. 25, 2018	Conduction (CO01-SZ)
AC LISN	EMCO	3816/2SH	00103912	9kHz~30MHz	Dec. 26, 2017	Dec. 28, 2017	Dec. 25, 2018	Conduction (CO01-SZ)
AC LISN (for auxiliary equipment)	MessTec	3816/2SH	00103892	9kHz~30MHz	Nov. 01, 2017	Dec. 28, 2017	Oct. 31, 2018	Conduction (CO01-SZ)
AC Power Source	Chroma	61601	616010001985	N/A	NCR	Dec. 28, 2017	NCR	Conduction (CO01-SZ)
EMI Test Receiver&SA	R&S	ESR7	101404	9kHz~7GHz	Apr. 20, 2017	Dec. 30, 2017	Apr. 19, 2018	Radiation (03CH04-SZ)
EXA Spectrum Analyzer	KEYSIGHT	N9010A	MY55150213	10Hz~44GHz	Apr. 20, 2017	Dec. 30, 2017	Apr. 19, 2018	Radiation (03CH04-SZ)
Bilog Antenna	TeseQ	CBL6111D	41909	30MHz~1GHz	May 16, 2017	Dec. 30, 2017	May 15, 2018	Radiation (03CH04-SZ)
Double Ridge Horn Antenna	SCHWARZBECK	BBHA9120D	9120D-1474	1GHz~18GHz	Jan. 12, 2017	Dec. 30, 2017	Jan. 11, 2018	Radiation (03CH04-SZ)
Amplifier	Burgeon	BPA-530	102209	0.01~3000Mhz	Apr. 20, 2017	Dec. 30, 2017	Apr. 19, 2018	Radiation (03CH04-SZ)
HF Amplifier	MITEQ	AMF-7D-0010 1800-30-10P-R	1989346	1GHz~18GHz	Jul. 27, 2017	Dec. 30, 2017	Jul. 26, 2018	Radiation (03CH04-SZ)
AC Power Source	Chroma	61601	N/A	N/A	NCR	Dec. 30, 2017	NCR	Radiation (03CH04-SZ)
Turn Table	EM	EM1000	N/A	0~360 degree	NCR	Dec. 30, 2017	NCR	Radiation (03CH04-SZ)
Antenna Mast	EM	EM1000	N/A	1 m~4 m	NCR	Dec. 30, 2017	NCR	Radiation (03CH04-SZ)

NCR: No Calibration Required



## 5. Uncertainty of Evaluation

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

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

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	5.1 dB
---	--------

### Uncertainty of Radiated Emission Measurement (1GHz ~ 18GHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	4.8 dB
---	--------