# **FCC Test Report**

APPLICANT : Corporativo Lanix S.A. de C.V.

**EQUIPMENT**: Mobile phone

BRAND NAME : LANIX

MODEL NAME : Ilium S620
MARKETING NAME : Ilium S620
FCC ID : ZC4S620

STANDARD : FCC 47 CFR FCC Part 15 Subpart B

CLASSIFICATION : Certification

The product was received on Jun. 05, 2014 and testing was completed on Jun. 26, 2014. 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 C63.4-2003 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.

Reviewed by: Louis Wu / Manager

Lunis Win

Approved by: Jones Tsai / Manager

## SPORTON INTERNATIONAL (SHENZHEN) INC.

No. 3 Building, the third floor of south, Shahe River west, Fengzeyuan warehouse, Nanshan District, Shenzhen, Guangdong, P.R.C.

TEL: 86-755- 3320-2398 FCC ID: ZC4S620 Page Number : 1 of 27
Report Issued Date : Jul. 03, 2014

Report Version

Testing Laboratory

: Rev. 01

## **TABLE OF CONTENTS**

RE	VISIO	N HISTORY	3
e i i	NANA A I	RY OF TEST RESULT	4
30	IVIIVIAI	RT UF 1E31 RESULT	4
1.	GEN	ERAL DESCRIPTION	5
	1.1.	Applicant	5
	1.2.	Manufacturer	
	1.3.	Product Feature of Equipment Under Test	
	1.4.	Product Specification subjective to this standard	6
	1.5.	Modification of EUT	7
	1.6.		
	1.7.	Applicable Standards	7
2.	TEST	Γ CONFIGURATION OF EQUIPMENT UNDER TEST	8
	2.1.	Test Mode	8
	2.2.	Connection Diagram of Test System	
	2.3.	Support Unit used in test configuration and system	11
	2.4.	EUT Operation Test Setup	12
3.	TEST	Γ RESULT	13
	3.1.	Test of AC Conducted Emission Measurement	13
	3.2.		
4.	LIST	OF MEASURING EQUIPMENT	26
5.	UNC	ERTAINTY OF EVALUATION	27
AΡ	PEND	DIX A. SETUP PHOTOGRAPHS	

TEL: 86-755- 3320-2398 FCC ID: ZC4S620

## **REVISION HISTORY**

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FC460502	Rev. 01	Initial issue of report	Jul. 03, 2014

TEL: 86-755- 3320-2398 FCC ID: ZC4S620 Page Number : 3 of 27
Report Issued Date : Jul. 03, 2014

Report Version : Rev. 01

## **SUMMARY OF TEST RESULT**

Report Section	FCC Rule Description		Limit	Result	Remark
					Under limit
3.1	15.107	AC Conducted Emission	< 15.107 limits	PASS	5.72 dB at
					3.740 MHz
					Under limit
3.2	15.109	Radiated Emission	< 15.109 limits	PASS	5.76 dB at
					31.890 MHz

TEL: 86-755- 3320-2398 FCC ID: ZC4S620 Page Number : 4 of 27 Report Issued Date : Jul. 03, 2014

Report No.: FC460502

Report Version : Rev. 01

## 1. General Description

## 1.1. Applicant

#### Corporativo Lanix S.A. de C.V.

Carretera Internacional Hermosillo-Nogales Km 8.5, Hermosillo Sonora, Mexico

### 1.2. Manufacturer

#### **Tinno Mobile Technology Corp.**

4/F, H-3 Building, OCT Eastern industrial Park, No.1 XiangShan East Road, Nan Shan District, Shenzhen, P.R. China

Report No.: FC460502

### 1.3. Product Feature of Equipment Under Test

Product Feature					
Equipment	Mobile phone				
Brand Name	LANIX				
Model Name	Ilium S620				
Marketing Name	Ilium S620				
FCC ID	ZC4S620				
	GSM/GPRS/EGPRS/WCDMA/HSPA/HSPA+(Downlink Only)/				
EUT supports Radios application	WLAN 2.4GHz 802.11b/g/n HT20/HT40/				
	Bluetooth v3.0 + EDR/Bluetooth v4.0 LE				
HW Version	V1.1				
SW Version	ILIUMS620_TELCEL_SW_01_V01				
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.

SPORTON INTERNATIONAL (SHENZHEN) INC. Page Number : 5 of 27 TEL: 86-755-3320-2398 Report Issued Date: Jul. 03, 2014 FCC ID: ZC4S620 Report Version : Rev. 01

## 1.4. Product Specification subjective to this standard

Product Specification subjective to this standard						
Tx Frequency	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 802.11b/g/n: 2412 MHz ~ 2462 MHz Bluetooth: 2402 MHz ~ 2480 MHz					
Rx Frequency	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 802.11b/g/n: 2412 MHz ~ 2462 MHz Bluetooth: 2402 MHz ~ 2480 MHz GPS: 1.57542 GHz					
Antenna Type	WWAN : IFA Antenna WLAN : PIFA Antenna Bluetooth : PIFA Antenna					
Type of Modulation	GSM: GMSK GPRS: GMSK EDGE(MCS 0-4): GMSK / (MCS 5-9): 8PSK WCDMA: QPSK (Uplink) HSDPA: QPSK (Uplink) HSUPA: QPSK (Uplink) HSPA+: 16QAM (Downlink Only) 802.11b: DSSS (DBPSK / DQPSK / CCK) 802.11g/n: OFDM (BPSK / QPSK / 16QAM / 64QAM Bluetooth v4.0 LE: GFSK Bluetooth v3.0 EDR: GFSK, π /4-DQPSK, 8-DPSK GPS: BPSK					

TEL: 86-755- 3320-2398 FCC ID: ZC4S620 Page Number : 6 of 27
Report Issued Date : Jul. 03, 2014
Report Version : Rev. 01

#### 1.5. Modification of EUT

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

#### 1.6. Test Location

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.C.				
	TEL: +86-755- 3320-2398				
Test Site No.	Sporton	Site No.	FCC Registration No.		
lest site NO.	CO01-SZ	03CH01-SZ	831040		

## 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 C63.4-2003

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

TEL: 86-755- 3320-2398 FCC ID: ZC4S620

Page Number : 7 of 27
Report Issued Date : Jul. 03, 2014

Report No.: FC460502

Report Version : Rev. 01

## 2. Test Configuration of Equipment Under Test

### 2.1. Test Mode

The EUT has been associated with peripherals pursuant to ANSI C63.4-2003 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).

The following tables are showing the test modes as the worst cases and recorded in this report.

		Те	st Condition	on
Item	EUT Configuration	EMI	EMI	EMI
		AC	RE<1G	RE≥1G
1.	Charging Mode (EUT with adapter)	$\boxtimes$	$\boxtimes$	$\boxtimes$
2.	Data application transferred mode		$\boxtimes$	$\boxtimes$
	(EUT connected with notebook)			

#### Abbreviations:

EMI AC: AC conducted emissions

EMI RE ≥ 1G: EUT radiated emissions ≥ 1GHz

• EMI RE < 1G: EUT radiated emissions < 1GHz

SPORTON INTERNATIONAL (SHENZHEN) INC.

TEL: 86-755- 3320-2398 FCC ID: ZC4S620 Page Number : 8 of 27
Report Issued Date : Jul. 03, 2014

Report No.: FC460502

Report Version : Rev. 01

Test Items	EUT Configure Mode	Function Type
		Mode 1: GSM850 Idle + Bluetooth Idle + WLAN Idle + USB Cable (Charging from Adapter) + Earphone + Camera <fig.1></fig.1>
AC Conducted Emission	1/2	Mode 2: GSM1900 Idle + Bluetooth Idle + WLAN Idle + USB Cable (Charging from Adapter) + Earphone + MPEG4 <fig.1></fig.1>
LIIISSIOII		Mode 3: WCDMA Band V Idle + Bluetooth Idle + WLAN Idle + USB Cable (Data Link with Notebook) + Earphone + GPS Rx <fig.2></fig.2>
	1/2	Mode 1: GSM850 Idle + Bluetooth Idle + WLAN Idle + USB Cable (Charging from Adapter) + Earphone + Camera <fig.1></fig.1>
Radiated Emissions < 1GHz		Mode 2: GSM1900 Idle + Bluetooth Idle + WLAN Idle + USB Cable (Charging from Adapter) + Earphone + MPEG4 <fig.1></fig.1>
Lillipsions \ TOHZ		Mode 3: WCDMA Band V Idle + Bluetooth Idle + WLAN Idle + USB Cable (Data Link with Notebook) + Earphone + GPS Rx <fig.2></fig.2>
Dedicted	1/2	Mode 1: GSM850 Idle + Bluetooth Idle + WLAN Idle + USB Cable (Charging from Adapter) + Earphone + Camera <fig.1></fig.1>
Radiated Emissions ≥ 1GHz		Mode 2: WCDMA Band V Idle + Bluetooth Idle + WLAN Idle + USB

#### Remark:

1. The worst case of AC is mode 2, and the USB Link mode of AC is mode 3, the test data of these modes are reported.

<Fig.2>

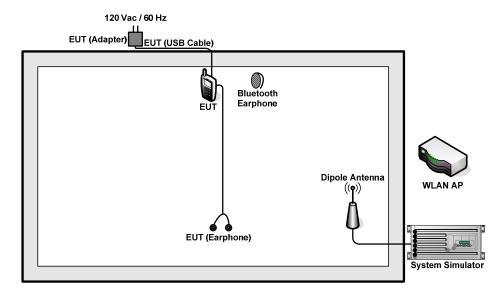
Cable (Data Link with Notebook) + Earphone + GPS Rx

- The worst case of RE < 1G is mode 1; and the USB Link mode of RE is mode 3, the test data of these modes are reported.
- 3. Link with Notebook means data application transferred mode between EUT and Notebook

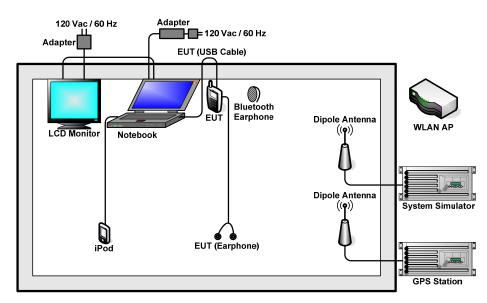
TEL: 86-755- 3320-2398 FCC ID: ZC4S620

Page Number : 9 of 27
Report Issued Date : Jul. 03, 2014
Report Version : Rev. 01

## 2.2. Connection Diagram of Test System



<Fig. 1>



<Fig. 2>

TEL: 86-755- 3320-2398 FCC ID: ZC4S620

Page Number : 10 of 27
Report Issued Date : Jul. 03, 2014

Report No. : FC460502

Report Version : Rev. 01

## 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	CMW 500	N/A	N/A	Unshielded, 1.8 m
2.	System Simulator	Agilent	8960	N/A	N/A	Unshielded, 1.8 m
3.	GPS Station	T&E	GS50	N/A	N/A	Unshielded, 1.8 m
4.	GPS Station	ADIVIC	MP9000	N/A	N/A	Unshielded, 1.8 m
5.	WLAN AP	D-link	DIR-628	KA2DIR628A2	N/A	Unshielded,1.8m
6.	WLAN AP	D-link	DIR-615	N/A	N/A	Unshielded,1.8m
7.	Bluetooth Earphone	Nokia	BH-108	PYAHS-107W	N/A	N/A
8.	Notebook	Lenovo	G480	FCC DoC	N/A	AC I/P: Unshielded, 1.2m DC O/P: Shielded, 1.8 m
9.	Notebook	Lenovo	E540	FCC DoC	N/A	AC I/P: Unshielded, 1.2m DC O/P: Shielded, 1.8 m
10.	LCD Monitor	DELL	IN1940MWb	FCC DoC	Shielded, 1.6 m	Unshielded, 1.8 m
11.	SD Card	SanDisk	4G class 4	FCC DoC	N/A	N/A
12.	iPod	Apple	MC525 ZP/A	FCC DoC	Shielded, 1.0 m	N/A

TEL: 86-755- 3320-2398 FCC ID: ZC4S620 Page Number : 11 of 27
Report Issued Date : Jul. 03, 2014
Report Version : Rev. 01

### 2.4. EUT Operation Test Setup

The EUT was in GSM or WCDMA idle mode during the testing. The EUT was synchronized to the BCCH, and was 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 "Video player" to play MPEG4 files.
- 3. Turn on camera to capture images.
- 4. Execute "GPS Test" to make the EUT receive continuous signals from GPS station.

TEL: 86-755- 3320-2398 FCC ID: ZC4S620 Page Number : 12 of 27
Report Issued Date : Jul. 03, 2014
Report Version : Rev. 01

### 3. Test Result

### **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.

**Report No. : FC460502** 

: 13 of 27

: Rev. 01

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 with Maximum Hold Mode.

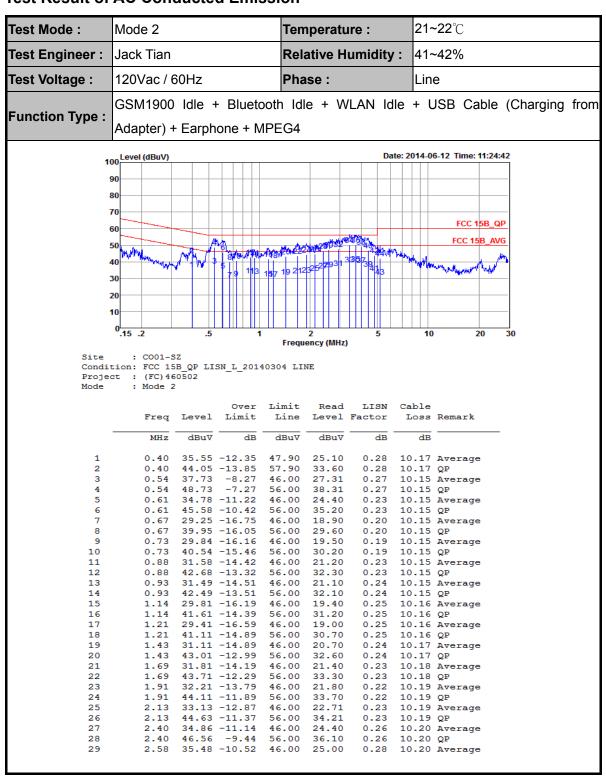
CC Test Report No. : FC460502

### 3.1.4 Test Setup



TEL: 86-755- 3320-2398 FCC ID: ZC4S620 Page Number : 14 of 27
Report Issued Date : Jul. 03, 2014
Report Version : Rev. 01

#### 3.1.5 Test Result of AC Conducted Emission



TEL: 86-755- 3320-2398 FCC ID: ZC4S620 Page Number : 15 of 27
Report Issued Date : Jul. 03, 2014
Report Version : Rev. 01

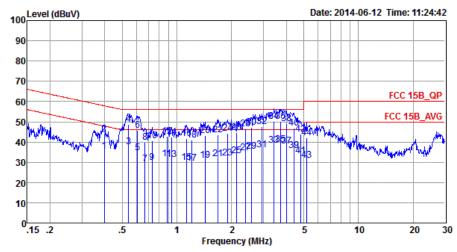


Test Mode : Mode 2 Temperature : 21~22℃

Test Engineer : Jack Tian Relative Humidity : 41~42%

Test Voltage : 120Vac / 60Hz Phase : Line

Function Type : GSM1900 Idle + Bluetooth Idle + WLAN Idle + USB Cable (Charging from Adapter) + Earphone + MPEG4



Site : CO01-SZ

Condition: FCC 15B\_QP LISN\_L\_20140304 LINE

Project : (FC)460502 Mode : Mode 2

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBu₹	dB	dB	
30	2.58	47.18	-8.82	56.00	36.70		10.20	
31	2.93	36.11	-9.89	46.00	25.60	0.30	10.21	Average
32	2.93	47.51	-8.49	56.00	37.00	0.30	10.21	QP
33	3.44	38.56	-7.44	46.00	28.00	0.34	10.22	Average
34	3.44	50.16	-5.84	56.00	39.60	0.34	10.22	QP
35	3.74	38.88	-7.12	46.00	28.30	0.36	10.22	Average
36 *	3.74	50.28	-5.72	56.00	39.70	0.36	10.22	QP
37	4.03	38.00	-8.00	46.00	27.40	0.37	10.23	Average
38	4.03	49.20	-6.80	56.00	38.60	0.37	10.23	QP
39	4.43	35.73	-10.27	46.00	25.11	0.39	10.23	Average
40	4.43	47.03	-8.97	56.00	36.41	0.39	10.23	QP
41	4.80	33.25	-12.75	46.00	22.60	0.41	10.24	Average
42	4.80	43.95	-12.05	56.00	33.30	0.41	10.24	QP
43	5.17	31.16	-18.84	50.00	20.50	0.42	10.24	Average
44	5.17	42.16	-17.84	60.00	31.50	0.42	10.24	_

TEL: 86-755- 3320-2398 FCC ID: ZC4S620 Page Number : 16 of 27
Report Issued Date : Jul. 03, 2014
Report Version : Rev. 01

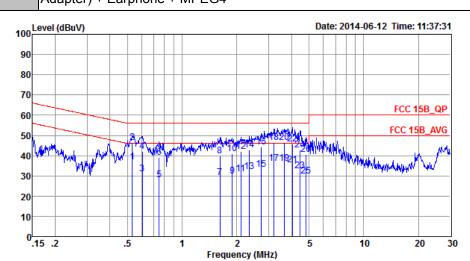


Test Mode: Mode 2 Temperature: 21~22°C

Test Engineer: Jack Tian Relative Humidity: 41~42%

Test Voltage: 120Vac / 60Hz Phase: Neutral

Function Type: GSM1900 Idle + Bluetooth Idle + WLAN Idle + USB Cable (Charging from Adapter) + Earphone + MPEG4



Site : CO01-SZ

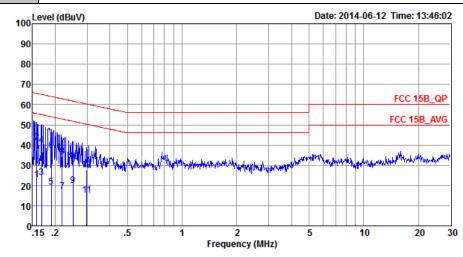
Condition: FCC 15B\_QP LISN\_N\_20140304 NEUTRAL

Project : (FC)460502 Mode : Mode 2

			Over	Limit	Read	LISN	Cable	
	Freq	Level	Limit	Line	Level	Factor	Loss	Remark
	MHz	dBuV	dB	dBuV	dBu∀	dB	dB	
	HIL	abav	ab.	abav	abav	ab.	QD.	
1 *	0.53	36.83	-9.17	46.00	26.30	0.38	10.15	Average
2	0.53	46.43	-9.57	56.00	35.90	0.38	10.15	QP
3	0.60	30.87	-15.13	46.00	20.40	0.32	10.15	Average
4	0.60	42.07	-13.93	56.00	31.60	0.32	10.15	QP
5	0.75	28.11	-17.89	46.00	17.70	0.26	10.15	Average
6	0.75	39.01	-16.99	56.00	28.60	0.26	10.15	QP
7	1.62	29.13	-16.87	46.00	18.59	0.36	10.18	Average
8	1.62	40.03	-15.97	56.00	29.49	0.36	10.18	QP
9	1.89	29.75	-16.25	46.00	19.19	0.37	10.19	Average
10	1.89	41.05	-14.95	56.00	30.49	0.37	10.19	QP
11	2.11	31.07	-14.93	46.00	20.50	0.38	10.19	Average
12	2.11	41.97	-14.03	56.00	31.40	0.38	10.19	QP
13	2.33	32.29	-13.71	46.00	21.70	0.39	10.20	Average
14	2.33	42.99	-13.01	56.00	32.40	0.39	10.20	QP
15	2.74	33.32	-12.68	46.00	22.70	0.41	10.21	Average
16	2.74	44.12	-11.88	56.00	33.50	0.41	10.21	QP
17	3.21	36.05	-9.95	46.00	25.40	0.43	10.22	Average
18	3.21	46.45	-9.55	56.00	35.80	0.43	10.22	QP
19	3.64	36.27	-9.73	46.00	25.60	0.45	10.22	Average
20	3.64	46.67	-9.33	56.00	36.00	0.45	10.22	QP
21	4.05	35.39	-10.61	46.00	24.70	0.46	10.23	Average
22	4.05	45.79	-10.21	56.00	35.10	0.46	10.23	QP
23	4.48	32.31	-13.69	46.00	21.60	0.48	10.23	Average
24	4.48	42.81	-13.19	56.00	32.10	0.48	10.23	QP
25	4.80	29.72	-16.28	46.00	19.00	0.48	10.24	Average
26	4.80	40.72	-15.28	56.00	30.00	0.48	10.24	

TEL: 86-755- 3320-2398 FCC ID: ZC4S620 Page Number : 17 of 27
Report Issued Date : Jul. 03, 2014
Report Version : Rev. 01

Test Mode :	Mode 3	Temperature :	21~22℃
Test Engineer :	Jack Tian	Relative Humidity :	41~42%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	le + USB Cable (Data Link with		
Function Type :			



Site : CO01-SZ

Condition: FCC 15B\_QP LISN\_L\_20140304 LINE

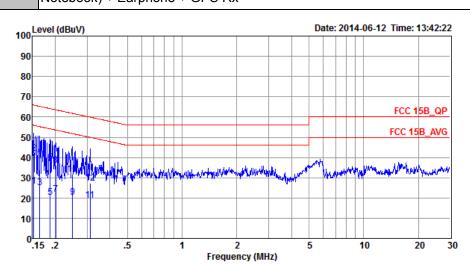
Project : (FC) 460502 Mode : Mode 3

			Over	Limit	Read	LISN	Cable	
	Freq	Level	Limit	Line	Level	Factor	Loss	Remark
	MHz	dBu∀	dB	dBu∀	dBu∀	dB	dB	
1	0.16	22.97	-32.59	55.56	12.40	0.22	10.35	Average
2 *	0.16	41.47	-24.09	65.56	30.90	0.22	10.35	QP
3	0.17	24.15	-30.88	55.03	13.60	0.22	10.33	Average
4	0.17	39.95	-25.08	65.03	29.40	0.22	10.33	QP
5	0.19	19.13	-34.89	54.02	8.60	0.22	10.31	Average
6	0.19	37.33	-26.69	64.02	26.80	0.22	10.31	QP
7	0.22	16.90	-35.98	52.88	6.40	0.23	10.27	Average
8	0.22	34.30	-28.58	62.88	23.80	0.23	10.27	QP
9	0.25	19.88	-31.85	51.73	9.40	0.24	10.24	Average
10	0.25	31.68	-30.05	61.73	21.20	0.24	10.24	QP
11	0.30	15.16	-35.12	50.28	4.70	0.26	10.20	Average
12	0.30	27.56	-32.72	60.28	17.10	0.26	10.20	QP

TEL: 86-755- 3320-2398 FCC ID: ZC4S620 Page Number : 18 of 27
Report Issued Date : Jul. 03, 2014
Report Version : Rev. 01



Test Mode :	Mode 3	Temperature :	<b>21~22</b> ℃					
Test Engineer :	Jack Tian	Relative Humidity :	41~42%					
Test Voltage :	120Vac / 60Hz	Phase :	Neutral					
Function Type	WCDMA Band V Idle + Bluetooth Idle + WLAN Idle + USB Cable (Data L Notebook) + Farphone + GPS Rx							
Function Type:								



Site : CO01-SZ

Condition: FCC 15B\_QP LISN\_N\_20140304 NEUTRAL

Project : (FC)460502 Mode : Mode 3

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBu∇	dB	dBu∇	dBu∇	dB	dB	
1	0.15	25.89	-29.98	55.87	15.20	0.33	10.36	Average
2 1	0.15	42.19	-23.68	65.87	31.50	0.33	10.36	QP
3	0.16	25.27	-29.98	55.25	14.60	0.33	10.34	Average
4	0.16	40.77	-24.48	65.25	30.10	0.33	10.34	QP
5	0.19	20.43	-33.72	54.15	9.80	0.32	10.31	Average
6	0.19	37.73	-26.42	64.15	27.10	0.32	10.31	QP
7	0.20	21.81	-31.73	53.54	11.20	0.32	10.29	Average
8	0.20	36.21	-27.33	63.54	25.60	0.32	10.29	QP
9	0.25	20.19	-31.59	51.78	9.61	0.34	10.24	Average
10	0.25	31.69	-30.09	61.78	21.11	0.34	10.24	QP
11	0.31	18.96	-30.97	49.93	8.40	0.36	10.20	Average
12	0.31	27.46	-32.47	59.93	16.90	0.36	10.20	QP

TEL: 86-755-3320-2398 FCC ID: ZC4S620

Page Number : 19 of 27 Report Issued Date: Jul. 03, 2014 Report Version : Rev. 01

#### **Test of Radiated Emission Measurement** 3.2.

#### 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:

**Report No. : FC460502** 

: 20 of 27

: Rev. 01

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.

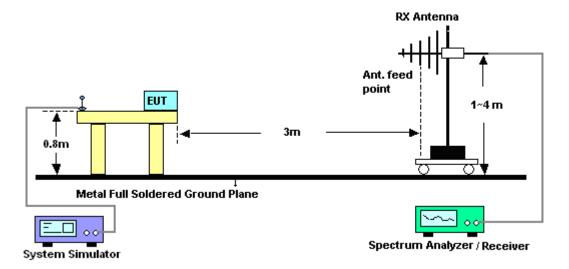
#### 3.2.3. Test Procedures

- 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 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.
- 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.
- Emission level (dB $\mu$ V/m) = 20 log Emission level ( $\mu$ V/m) 8.
- 9. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level

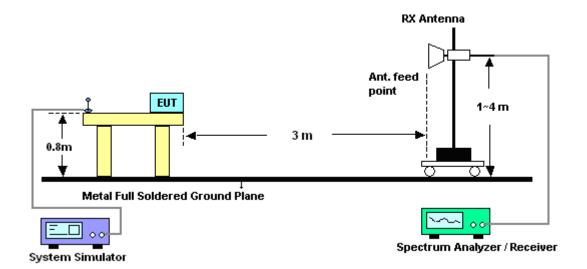
CC Test Report No. : FC460502

### 3.2.4. Test Setup of Radiated Emission

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

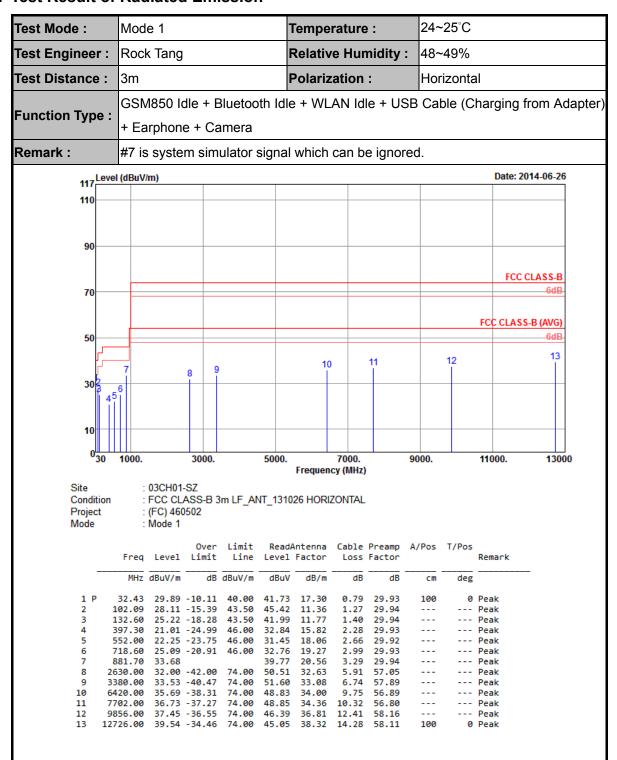


#### For radiated emissions above 1GHz



TEL: 86-755-3320-2398 FCC ID: ZC4S620 Page Number : 21 of 27
Report Issued Date : Jul. 03, 2014
Report Version : Rev. 01

#### 3.2.5. Test Result of Radiated Emission

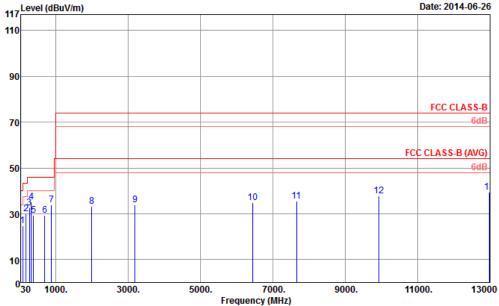


TEL: 86-755- 3320-2398 FCC ID: ZC4S620 Page Number : 22 of 27
Report Issued Date : Jul. 03, 2014
Report Version : Rev. 01

24~25°C Test Mode: Mode 1 Temperature: **Relative Humidity:** Test Engineer: Rock Tang 48~49% Vertical Test Distance: 3m Polarization: GSM850 Idle + Bluetooth Idle + WLAN Idle + USB Cable (Charging from Adapter) Function Type: + Earphone + Camera Remark: #7 is system simulator signal which can be ignored. 117 Level (dBuV/m) Date: 2014-06-26 110 90 FCC CLASS-B 70 FCC CLASS-B (AVG) 50 12 10 30 030 9000. 1000. 3000. 5000. 7000. 11000. 13000 Frequency (MHz) Site : 03CH01-SZ Condition : FCC CLASS-B 3m LF\_ANT\_131026 VERTICAL Project : (FC) 460502 Mode : Mode 1 Over Limit ReadAntenna Cable Preamp A/Pos T/Pos Freq Level Limit Line Level Factor Loss Factor Remark MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg 31.89 34.24 -5.76 40.00 17.90 0.78 0 Peak 104.25 30.81 -12.69 43.50 47.86 182.01 25.69 -17.81 43.50 46.02 7.98 1.63 29.94 --- Peak 22.04 -23.96 15.82 --- Peak 397.30 46.00 33.87 2.28 29.93 551.30 21.98 -24.02 46.00 --- Peak 31.17 2.65 18.08 29.92 741.70 25.76 -20.24 46.00 32.28 3.05 --- Peak 881.70 30.53 36.62 20.56 3.29 29.94 --- Peak 31.59 -42.41 2574.00 74.00 50.21 32.58 5.84 57.04 --- Peak 33.07 -40.93 4726.00 74.00 48.94 33.59 8.25 57.71 --- Peak 10 6842.00 35.52 -38.48 74.00 49.18 33.79 9.87 57.32 --- Peak 7770.00 36.48 -37.52 74.00 48.34 34.48 Peak 10.39 12 9894.00 37.88 -36.12 74.00 46.67 36.86 12.49 58.14 --- Peak 0 Peak 12174.00 39.90 -34.10 74.00 46.25 38.10 13.73 58.18

TEL: 86-755- 3320-2398 FCC ID: ZC4S620 Page Number : 23 of 27
Report Issued Date : Jul. 03, 2014
Report Version : Rev. 01

24~25°C Test Mode: Mode3 Temperature: Test Engineer: Rock Tang Relative Humidity: 48~49% Test Distance : Polarization: 3m Horizontal WCDMA Band V Idle + Bluetooth Idle + WLAN Idle + USB Cable (Data Link with **Function Type:** Notebook) + Earphone + GPS Rx Remark: #7 is system simulator signal which can be ignored. 117 Level (dBuV/m) Date: 2014-06-26 110



Site : 03CH01-SZ

Condition : FCC CLASS-B 3m LF\_ANT\_131026 HORIZONTAL

Project : (FC) 460502 Mode : Mode 3

	F		Level dBuV/m	Over Limit ———— dB			Antenna Factor dB/m		Preamp Factor dB	A/Pos 	T/Pos deg	Remark
1	85	5.35	24.84	-15.16	40.00	45.91	7.70	1.17	29.94			Peak
2	181	1.74	29.93	-13.57	43.50	50.36	7.89	1.62	29.94			Peak
3	275	.16	32.52	-13.48	46.00	48.37	12.15	1.93	29.93			Peak
4	P 328	3.00	35.07	-10.93	46.00	48.85	14.06	2.09	29.93	100	0	Peak
5	396	3.30	29.19	-16.81	46.00	41.36	15.50	2.26	29.93			Peak
6	696	5.90	29.46	-16.54	46.00	37.57	18.86	2.96	29.93			Peak
7	882	2.40	33.84			39.94	20.55	3.29	29.94			Peak
8	1992	2.00	33.11	-40.89	74.00	54.96	29.91	5.14	56.90			Peak
9	3196	00.6	33.93	-40.07	74.00	51.84	33.04	6.57	57.52			Peak
10	6438	3.00	34.98	-39.02	74.00	48.14	34.00	9.75	56.91			Peak
11	7658	3.00	35.46	-38.54	74.00	47.73	34.30	10.26	56.83			Peak
12	9922	2.00	37.79	-36.21	74.00	46.48	36.90	12.54	58.13			Peak
13	12976	00.6	39.58	-34.42	74.00	44.58	38.74	14.34	58.08	100	0	Peak

TEL: 86-755- 3320-2398 FCC ID: ZC4S620

Page Number : 24 of 27
Report Issued Date : Jul. 03, 2014
Report Version : Rev. 01

24~25°C Test Mode: Mode3 Temperature: Test Engineer: **Relative Humidity:** 48~49% Rock Tang Test Distance: Polarization: 3m Vertical WCDMA Band V Idle + Bluetooth Idle + WLAN Idle + USB Cable (Data Link with **Function Type:** Notebook) + Earphone + GPS Rx Remark: #7 is system simulator signal which can be ignored. 117 Level (dBuV/m) Date: 2014-06-26 90 FCC CLASS-B 70 FCC CLASS-B (AVG) 50 6dB 13 10 30 10 030 1000. 3000. 9000. 11000. 13000 5000. Frequency (MHz) Site : 03CH01-SZ Condition : FCC CLASS-B 3m LF\_ANT\_131026 VERTICAL Project : (FC) 460502 Mode : Mode 3 ReadAntenna Cable Preamp A/Pos T/Pos Over Limit Remark Freq Level Limit Line Level Factor Loss Factor MHz dBuV/m dB dBuV/m dBuV dB/m dB dB deg cm 42.15 29.17 -10.83 40.00 46.88 11.35 0.87 0 Peak 1 P 29.93 200 24.47 -19.03 8.78 --- Peak 162.84 43.50 44.07 1.56 29.94 ---27.31 -18.69 46.00 42.85 Peak 262.20 1.89 328.00 28.45 -17.55 46.00 42.23 14.06 2.09 29.93 --- Peak 458.90 31.69 -14.31 46.00 42.91 16.27 2.43 29.92 --- Peak 524.70 28.38 -17.62 46.00 38.24 17.45 2.61 29.92 --- Peak 33.42 881.70 39.51 20.56 3.29 --- Peak 29.94 2400.00 35.09 -38.91 --- Peak 31.98 5.62 4708.00 32.96 -41.04 74.00 48.91 33.56 8.23 --- Peak ---35.19 -38.81 --- Peak 10 6204.00 74.00 48.37 34.00 9.49 56.67 34.75 ---7916.00 35.65 -38.35 74.00 46.89 10.59 --- Peak 11 56.58 37.15 -36.85 10304.00 74.00 46.00 36.82 --- Peak 12 12.83 58.50 12328.00 40.01 -33.99 46.22 0 Peak

TEL: 86-755- 3320-2398 FCC ID: ZC4S620 Page Number : 25 of 27
Report Issued Date : Jul. 03, 2014
Report Version : Rev. 01

# 4. List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
ESCIO TEST Receiver	R&S	ESCI	100724	9kHz~3GHz	Feb. 21, 2014	Jun. 12, 2014	Feb. 20, 2015	Conduction (CO01-SZ)
AC LISN	EMCO	3816/2SH	00103912	9kHz~30MHz	Mar. 04, 2014	Jun. 12, 2014	Mar. 03, 2015	Conduction (CO01-SZ)
AC LISN (for auxiliary equipment)	EMCO	3816/2SH	00103892	9kHz~30MHz	Mar. 04, 2014	Jun. 12, 2014	Mar. 03, 2015	Conduction (CO01-SZ)
AC Power Source	Chroma	61602	616020000 891	100Vac~250Vac	Dec. 17, 2013	Jun. 12, 2014	Dec. 16, 2014	Conduction (CO01-SZ)
ESCIO TEST Receiver	R&S	ESCI	100724	9kHz~3GHz	Feb. 21, 2014	Jun. 26, 2014	Feb. 20, 2015	Radiation (03CH01-SZ)
Spectrum Analyzer	Agilent Technologies	N9038A	MY522601 85	20Hz~26.5GHz	May 26, 2014	Jun. 26, 2014	May 25, 2015	Radiation (03CH01-SZ)
Bilog Antenna	TESEQ	CBL 6112D	23188	30MHz~2GHz	Oct. 26, 2013	Jun. 26, 2014	Oct. 25, 2014	Radiation (03CH01-SZ)
Double Ridge Horn Antenna	ETS Lindgren	3117	00119436	1GHz~18GHz	Oct. 26, 2013	Jun. 26, 2014	Oct. 25, 2014	Radiation (03CH01-SZ)
Double Ridged Horn Antenna	COM-POWER	AH-840	101073	18GHz~40GHz	Jan. 27, 2014	Jun. 26, 2014	Jan. 26, 2015	Radiation (03CH01-SZ)
Amplifier	ADVANTEST	BB525C	E9007003	9kHz~3000MHz	Feb. 21, 2014	Jun. 26, 2014	Feb. 20, 2015	Radiation (03CH01-SZ)
Amplifier	Yiai	AV3860B	04030	2GHz~26.5GHz	May 08, 2014	Jun. 26, 2014	May 07, 2015	Radiation (03CH01-SZ)
AC Source(AVR)	Chroma	61601	616010001 985	100Vac~250Vac	Mar. 25, 2014	Jun. 26, 2014	Mar. 24, 2015	Radiation (03CH01-SZ)
Turn Table	EM Electronics	EM 1000	N/A	0~360 degree	NCR	Jun. 26, 2014	NCR	Radiation (03CH01-SZ)
Antenna Mast	EM Electronics	EM 1000	N/A	1 m~4 m	NCR	Jun. 26, 2014	NCR	Radiation (03CH01-SZ)

TEL: 86-755- 3320-2398 FCC ID: ZC4S620 Page Number : 26 of 27
Report Issued Date : Jul. 03, 2014
Report Version : Rev. 01



## 5. Uncertainty of Evaluation

#### <u>Uncertainty of Conducted Emission Measurement (150 kHz ~ 30 MHz)</u>

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	2.31
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Report No. : FC460502

### <u>Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)</u>

Measuring Uncertainty for a Level of	3.90
Confidence of 95% (U = 2Uc(y))	3.90

 SPORTON INTERNATIONAL (SHENZHEN) INC.
 Page Number
 : 27 of 27

 TEL: 86-755- 3320-2398
 Report Issued Date
 : Jul. 03, 2014

 FCC ID: ZC4S620
 Report Version
 : Rev. 01