

**FCC Test Report** 

APPLICANT : CORPORATIVO LANIX S.A. DE C.V.

**EQUIPMENT**: Smart Mobile Phone

BRAND NAME : LANIX

MODEL NAME : ilium S200 FCC ID : ZC4S200

STANDARD : FCC 47 CFR FCC Part 15 Subpart B

CLASSIFICATION : Certification

The product was received on May 03, 2013 and completely tested on May 18, 2013. We, SPORTON INTERNATIONAL (SHENZHEN) INC., would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.4-2003 and shown the 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:

Jones Tsai / Manager



Report No.: FC350312

## 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: ZC4S200 Page Number : 1 of 25
Report Issued Date : May 30, 2013

Report Version : Rev. 01



## **TABLE OF CONTENTS**

RE	VISIO	N HISTORY	3
SU	MMAF	RY OF TEST RESULT	4
1.	GEN	ERAL DESCRIPTION	5
	1.1.	Applicant	
	1.2.	Manufacturer	
	1.3.	Feature of Equipment Under Test	
	1.4.	Product Specification of Equipment Under Test	
	1.5.	Test Site	
	1.6.	Applied Standards	
2.	TES1	CONFIGURATION OF EQUIPMENT UNDER TEST	8
	2.1.	Test Mode	8
	2.2.	Connection Diagram of Test System	10
	2.3.	Support Unit used in test configuration and system	
	2.4.	Test Software	13
3.	TEST	result	14
	3.1.	Test of AC Conducted Emission Measurement	14
	3.2.	Test of Radiated Emission Measurement	20
4.	LIST	OF MEASURING EQUIPMENT	24
5.	UNC	ERTAINTY OF EVALUATION	25
ΑF	PEND	IX A. PHOTOGRAPHS OF EUT	
<b>A</b> E	DENID	NY P. SETUD DUOTOCDADUS	

TEL: 86-755- 3320-2398 FCC ID: ZC4S200

Page Number : 2 of 25
Report Issued Date : May 30, 2013
Report Version : Rev. 01



**REVISION HISTORY** 

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FC350312	Rev. 01	Initial issue of report	May 30, 2013

FCC ID: ZC4S200

Page Number : 3 of 25
Report Issued Date : May 30, 2013
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	8.68 dB at
					0.780 MHz
					3.23 dB at
3.2	15.109	Radiated Emission	< 15.109 limits	PASS	239.520 MHz
					for Quasi-Peak

TEL: 86-755- 3320-2398 FCC ID: ZC4S200

Page Number : 4 of 25
Report Issued Date : May 30, 2013
Report Version : Rev. 01



## 1. General Description

## 1.1. Applicant

**CORPORATIVO LANIX S.A. DE C.V.** 

CARRETERA INTERNACIONAL HERMOSILLO-NOGALE KM 8.5 HERMOSILLO MEXICO

Report No.: FC350312

### 1.2. Manufacturer

Shanghai Huaqin Telecom Technology Co.,Ltd

Building1, 399 Keyuan Road, Pudong district, Shanghai, China

## 1.3. Feature of Equipment Under Test

	Product Feature
Equipment	Smart Mobile Phone
Brand Name	LANIX
Model Name	ilium S200
FCC ID	ZC4S200
EUT supports Radios application	GSM/GPRS/WCDMA/HSPA/WLAN 11bgn / Bluetooth / Bluetooth v4.0-LE
HW Version	A51_MB_V2.0
SW Version	A51F_45A0_V8_0_3_20130320_DCC A51F_45A0_V0_0_P
EUT Stage	Production Unit

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

## 1.4. Product Specification of Equipment Under Test

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 Range	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 FM: 88 MHz ~ 108 MHz				

SPORTON INTERNATIONAL (SHENZHEN) INC.Page Number: 5 of 25TEL: 86-755- 3320-2398Report Issued Date: May 30, 2013FCC ID: ZC4S200Report Version: Rev. 01



## FCC Test Report

	Lanaras E. L. La .				
	WWAN : Fixed Internal Antenna				
Antenna Type	WLAN: PIFA Antenna				
	Bluetooth : PIFA Antenna				
	GSM: GMSK				
	GPRS: GMSK				
	WCDMA: QPSK (Uplink)				
	HSDPA: QPSK (Uplink)				
	HSUPA: QPSK (Uplink)				
	802.11b: DSSS (DBPSK / DQPSK / CCK)				
Type of Modulation	802.11g/n: OFDM (BPSK / QPSK / 16QAM / 64QAM)				
	Bluetooth BDR (1Mbps) : GFSK				
	Bluetooth EDR (2Mbps) : π /4-DQPSK				
	Bluetooth EDR (3Mbps) : 8-DPSK				
	Bluetooth v4.0 - LE: GFSK				
	GPS: BPSK				
	FM				

Report No.: FC350312

Page Number : 6 of 25 TEL: 86-755- 3320-2398 Report Issued Date: May 30, 2013 FCC ID: ZC4S200 Report Version : Rev. 01

### 1.5. Test Site

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					
Toot Site No.	Sporton	Site No.	FCC/IC Registration No.			
Test Site No.	CO01-SZ	03CH01-SZ	831040/4086F-1			

## 1.6. Applied 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.

**SPORTON INTERNATIONAL (SHENZHEN) INC.** TEL: 86-755-3320-2398

FCC ID: ZC4S200

Page Number : 7 of 25
Report Issued Date : May 30, 2013

Report No.: FC350312

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
		AC	RE<1G	RE≥1G
1.	Charging Mode (EUT with adapter)			Note 1
2.	Data application transferred mode (EUT with PC)	$\boxtimes$	$\boxtimes$	$\boxtimes$

#### Abbreviations:

EMI AC: AC conducted emissions

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

EMI RE < 1G: EUT radiated emissions < 1GHz</li>

Note 1: Testing for this mode is not required or not the worst case.

**Remark:** For signal above 1GHz, the worst case was test item 2.

SPORTON INTERNATIONAL (SHENZHEN) INC. TEL: 86-755-3320-2398

FCC ID: ZC4S200

Page Number : 8 of 25
Report Issued Date : May 30, 2013
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	4/0	Mode 2: GSM1900 Idle + Bluetooth Idle + WLAN Idle + USB Cable (Charging from Adapter) + Earphone + MPEG4 <fig.1></fig.1>
Emission	mission 1/2 Mode 3: WCDMA Cable (C Mode 4: WCDMA	Mode 3: WCDMA band V Idle + Bluetooth Idle + WLAN Idle + USB Cable (Charging from Adapter) + Earphone + FM Rx <fig.2></fig.2>
		Mode 4: WCDMA band II Idle + Bluetooth Idle + WLAN Idle + USB Cable (Data Link with PC) + Earphone + GPS Rx <fig.3></fig.3>
		Mode 1: GSM850 Idle + Bluetooth Idle + WLAN Idle + USB Cable (Charging from Adapter) + Earphone + Camera <fig.1></fig.1>
Radiated		Mode 2: GSM1900 Idle + Bluetooth Idle + WLAN Idle + USB Cable (Charging from Adapter) + Earphone + MPEG4 <fig.1></fig.1>
Emissions < 1GHz	1/2	Mode 3: WCDMA band V Idle + Bluetooth Idle + WLAN Idle + USB Cable (Charging from Adapter) + Earphone + FM Rx <fig.2></fig.2>
	Mode	Mode 4: WCDMA band II Idle + Bluetooth Idle + WLAN Idle + USB Cable (Data Link with PC) + Earphone + GPS Rx <fig.3></fig.3>
Radiated Emissions ≥ 1GHz	1	Mode 1: WCDMA band II Idle + Bluetooth Idle + WLAN Idle + USB Cable (Data Link with PC) + Earphone + GPS Rx <fig.3></fig.3>

#### Remark:

- 1. The worst case of AC Conducted Emission is mode 1; the test data of this mode was reported.
- 2. The USB Link mode of AC Conducted Emission is mode 4; the test data of this mode was also reported.
- 3. The worst case of Radiated Emissions is mode 4; only the test data of this mode was reported.
- 4. Link with PC means data application transferred mode between EUT and PC.

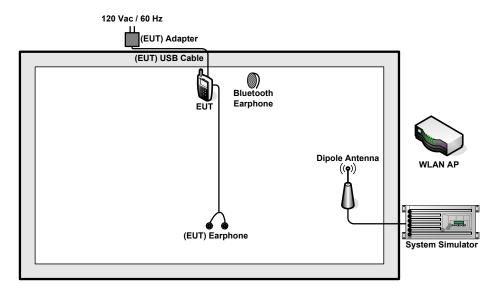
TEL: 86-755-3320-2398 FCC ID: ZC4S200 Page Number : 9 of 25
Report Issued Date : May 30, 2013
Report Version : Rev. 01



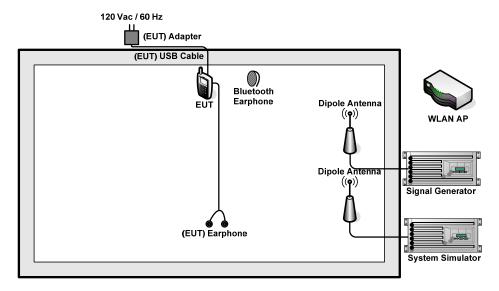
Report No.: FC350312

## 2.2. Connection Diagram of Test System

<EUT with Adapter Mode>



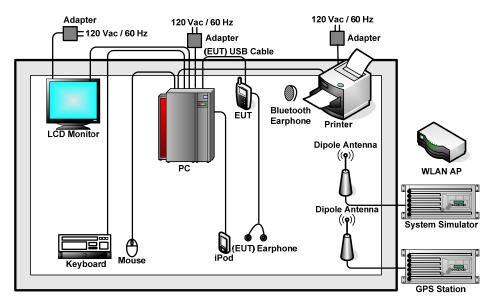
<Fig.1>



<Fig.2>

SPORTON INTERNATIONAL (SHENZHEN) INC. Page Number : 10 of 25 TEL: 86-755-3320-2398 Report Issued Date: May 30, 2013 FCC ID: ZC4S200 Report Version : Rev. 01

FCC Test Report No.: FC350312



<Fig.3>

TEL: 86-755- 3320-2398 FCC ID: ZC4S200

Page Number : 11 of 25
Report Issued Date : May 30, 2013
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.	signal generator	R&S	CMU 200	N/A	N/A	Unshielded, 1.8 m
2.	GPS Station	T&E	GS-50	N/A	N/A	Unshielded, 1.8 m
3.	System Simulator	Agilent	8960	N/A	N/A	Unshielded, 1.8 m
4.	WLAN AP	D-link	DIR-615	N/A	N/A	Unshielded, 1.8 m
5.	Bluetooth Earphone	Nokia	BH-108	N/A	N/A	N/A
6.	Printer	Samsung	ML-1610	Fcc DoC	Unshielded, 1.8 m	Unshielded, 1.8 m
7.	PC	Dell	OPTIPLEX390	FCC DoC	N/A	Unshielded, 1.8 m
8.	Monitor	Dell	IN1940MWB	FCC DoC	shielded, 1.2 m	Unshielded, 1.8 m
9.	Mouse	Dell	MS111-L	FCC DoC	Shielded, 1.5 m	N/A
10.	Keyboard	Dell	KB212-B	Fcc DoC	Shielded, 1.5m	N/A
11.	iPod	Apple	MC525 ZP/A	FCC DoC	Shielded, 1.0 m	N/A

TEL: 86-755-3320-2398 FCC ID: ZC4S200

: 12 of 25 Page Number Report Issued Date: May 30, 2013 : Rev. 01 Report Version

#### 2.4. Test Software

The EUT was in GSM or WCDMA 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. Execute the program, "Winthrax" under WIN7 installed in PC for files transfer with EUT via USB cable.
- 2. Turn on GPS function to make the EUT receive continuous signals from GPS station.
- 3. Execute "Video" to play MPEG4 files.
- 4. Turn on camera to capture images.
- 5. Execute "H Pattern" to show H Pattern via VGA Cable on the Monitor.

SPORTON INTERNATIONAL (SHENZHEN) INC.
TEL: 86-755- 3320-2398

FCC ID: ZC4S200

Page Number : 13 of 25
Report Issued Date : May 30, 2013
Report Version : Rev. 01

### 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

See list of measuring instruments 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.

FCC ID: ZC4S200

Report Issued Date: May 30, 2013
Report Version: Rev. 01

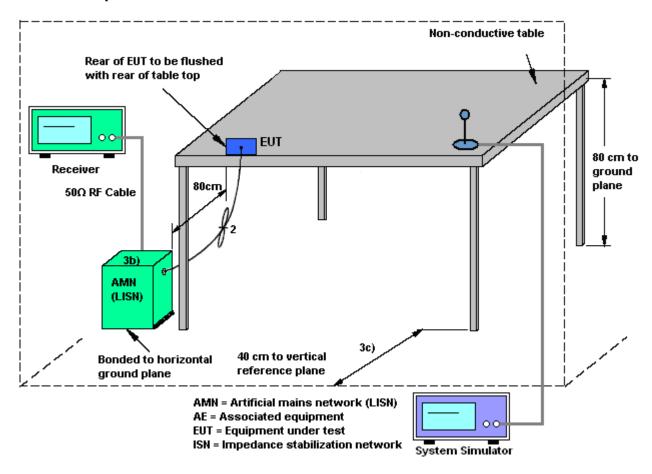
Page Number

: 14 of 25



Report No.: FC350312

### 3.1.4 Test Setup



TEL: 86-755-3320-2398 FCC ID: ZC4S200

Page Number : 15 of 25 Report Issued Date: May 30, 2013 : Rev. 01 Report Version



3.1.5 Test Result of AC Conducted Emission

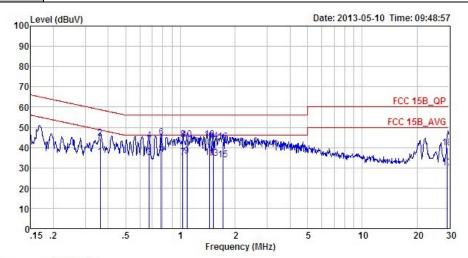
Test Mode :	Mode 1			Te	emperat	ture :	24~	<b>~25</b> ℃	
Test Engineer :	Leo Liao F			R	Relative Humidity :			49~50%	
Test Voltage :	120Va	c / 60Hz	7	Р	hase :		Lin	е	
Function Tune	GSM85	0 Idle	+ Bluetoo	oth Idle	+ WLAN	ldle + L	JSB Ca	ble (Charg	ing from Adapter)
Function Type :	+ Earphone + Camera								
Remark :	All emis	ssions r	not repor	ted her	e are mo	ore than	10 dB b	elow the p	rescribed limit.
100 Lev	el (dBuV)					Dat	te: 2013-0	5-10 Time: 09:4	40:52
90	-				9				
80					7 0		h 10101		
70								to portropy fine	
60	-				3 0		10000	FCC 15B	_QP
50 Å	-							FCC 15B_	AVG
40	MANAMAN	A Maria	neld anywhite	MANAGEMENT .	house March	ia Alla		A.A.	. Al
30		3 1/1 0.00/11/	AMILY	k territies of	רישויי אנייט	Maria Ma	ordinage property	desperantial the	WV
20					9				
10									
0.15			900						
Condition:	CO01-S FCC 15 Mode 1	B_QP LI	SN_L_2000		uency (MHz)				
			Over	Limit	Read	TTQN	Cable		
	Freq	Level	Limit		Level			Remark	
-	MHz	dBu∇	dB	dBu∇	dBuV	dB	dB		_
1	0.17	34.68	-20.40	55.08	24.60	0.03	10.05	Average	
2			-16.00		39.00		10.05		
3	0.36		-18.44 $-19.44$					Average	
5 *	0.60		-15.88	46.00	20.01	0.02		Average	
6	0.60		-18.08	56.00	27.81		10.09	QP	
7			-15.98					Average	
8			-18.98				10.10		
9			-22.23 -21.53					Average	
10 11			-21.53				10.14	Average	
12			-25.91						

TEL: 86-755- 3320-2398 FCC ID: ZC4S200

Page Number : 16 of 25
Report Issued Date : May 30, 2013
Report Version : Rev. 01



**24~25**℃ Test Mode: Mode 1 Temperature : 49~50% Test Engineer: Leo Liao Relative Humidity: Phase: Test Voltage : 120Vac / 60Hz Neutral GSM850 Idle + Bluetooth Idle + WLAN Idle + USB Cable (Charging from Adapter) Function Type: + Earphone + Camera Remark: All emissions not reported here are more than 10 dB below the prescribed limit.



Site : CO01-SZ Condition: FCC 15B\_QP LISN\_N\_2000601 NEUTRAL

Mode : Mode 1

_ ,	Cable		Read	Limit	Over	- 1	_		
Remark	Loss	Factor	телет	Line	Limit	Телет	rreq		
	dB	dB	dBu∇	dBu∇	dB	dBuV	MHz	-	
Average	10.07	0.02	25.40	48.69	-13.20	35.49	0.36		1
QP	10.07	0.02	34.70	58.69	-13.90	44.79	0.36		2
Average	10.10	0.02	24.80	46.00	-11.08	34.92	0.67		3
QP	10.10	0.02	33.30	56.00	-12.58	43.42	0.67		4
Average	10.10	0.02	27.20	46.00	-8.68	37.32	0.78	*	5
QP	10.10	0.02	34.80	56.00	-11.08	44.92	0.78		6
Average	10.12	0.02	25.10	46.00	-10.76	35.24	1.03		7
QP	10.12	0.02	33.70	56.00	-12.16	43.84	1.03		7
Average	10.12	0.02	25.60	46.00	-10.26	35.74	1.09		9
QP	10.12	0.02	33.70	56.00	-12.16	43.84	1.09		0
Average	10.13	0.03	24.79	46.00	-11.05	34.95	1.45		1
QP	10.13	0.03	33.69	56.00	-12.15	43.85	1.45		2
Average	10.13	0.03	24.49	46.00	-11.35	34.65	1.51		3
QP	10.13	0.03	33.19	56.00	-12.65	43.35	1.51		4
Average	10.13	0.03	23.80	46.00	-12.04	33.96	1.71		5
QP	10.13	0.03	32.50	56.00	-13.34	42.66	1.71		6
Average	10.46	0.99	18.40	50.00	-20.15	29.85	29.22		7
	10.46	0.99	28.50	60.00	-20.05	39.95	29.22		8

TEL: 86-755- 3320-2398 FCC ID: ZC4S200 Page Number : 17 of 25
Report Issued Date : May 30, 2013
Report Version : Rev. 01



**24~25**℃ Test Mode: Mode 4 Temperature : 49~50% Test Engineer: Leo Liao Relative Humidity: Phase: Test Voltage : 120Vac / 60Hz Line WCDMA band II Idle + Bluetooth Idle + WLAN Idle + USB Cable (Data Link with Function Type: PC) + Earphone + GPS Rx Remark: All emissions not reported here are more than 10 dB below the prescribed limit. 100 Level (dBuV) Date: 2013-05-10 Time: 14:15:18 90 80 70 FCC 15B\_QP 60 FCC 15B\_AVG 50 30

Frequency (MHz)

Site : C001-SZ Condition: FCC 15B\_QP LISN\_L\_2000601 LINE

Mode : Mode 4

0.15 .2

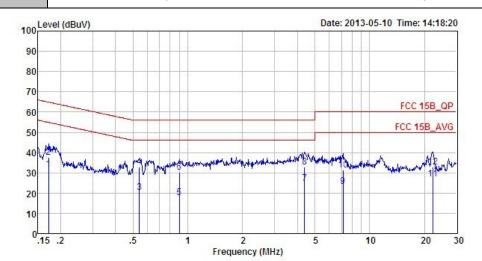
20

		Freq	Level	Over	Limit Line	Read Level	LISN	Cable Loss	Remark
	77	MHz	dBu∀	dB	dBu∀	dBuV	dB	dB	-
1 .	*	0.18	37.68	-16.91	54.59	27.60	0.03	10.05	Average
2		0.18	42.88	-21.71	64.59	32.80	0.03	10.05	QP
3		0.25	27.89	-23.71	51.60	17.81	0.02	10.06	Average
4 5		0.25	34.99	-26.61	61.60	24.91	0.02	10.06	QP
5		0.54	20.51	-25.49	46.00	10.40	0.02	10.09	Average
6		0.54	33.01	-22.99	56.00	22.90	0.02	10.09	QP
6 7 8		0.91	17.53	-28.47	46.00	7.39	0.03	10.11	Average
8		0.91	30.93	-25.07	56.00	20.79	0.03	10.11	QP
9		4.45	24.86	-21.14	46.00	14.61	0.06	10.19	Average
10		4.45	32.46	-23.54	56.00	22.21	0.06	10.19	QP
11		21.95	24.89	-25.11	50.00	14.00	0.41	10.48	Average
12		21.95	31.09	-28.91	60.00	20.20	0.41	10.48	QP

TEL: 86-755- 3320-2398 FCC ID: ZC4S200 Page Number : 18 of 25
Report Issued Date : May 30, 2013
Report Version : Rev. 01



**24~25**℃ Test Mode: Mode 4 Temperature : 49~50% Relative Humidity: Test Engineer: Leo Liao Phase: Test Voltage : 120Vac / 60Hz Neutral WCDMA band II Idle + Bluetooth Idle + WLAN Idle + USB Cable (Data Link with Function Type: PC) + Earphone + GPS Rx Remark: All emissions not reported here are more than 10 dB below the prescribed limit.



Site : COO1-SZ

Condition: FCC 15B\_QP LISN\_N\_2000601 NEUTRAL

Mode : Mode 4

		Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	777	MHz	dBu∇	dB	dBuV	dBuV	dB	dB	-
1		0.17	31.68	-23.22	54.90	21.61	0.02	10.05	Average
2		0.17	37.78	-27.12	64.90	27.71	0.02	10.05	QP
3		0.54	20.40	-25.60	46.00	10.29	0.02	10.09	Average
4		0.54	32.70	-23.30	56.00	22.59	0.02	10.09	QP
5		0.90	17.53	-28.47	46.00	7.40	0.02	10.11	Average
6		0.90	30.33	-25.67	56.00	20.20	0.02	10.11	QP
7	*	4.38	24.66	-21.34	46.00	14.40	0.07	10.19	Average
8		4.38	32.76	-23.24	56.00	22.50	0.07	10.19	QP
9		7.14	23.33	-26.67	50.00	13.00	0.13	10.20	Average
10		7.14	31.23	-28.77	60.00	20.90	0.13	10.20	QP
11		22.18	26.89	-23.11	50.00	15.80	0.62	10.47	Average
12		22.18	32.99	-27.01	60.00	21.90	0.62	10.47	QP

TEL: 86-755- 3320-2398 FCC ID: ZC4S200 Page Number : 19 of 25
Report Issued Date : May 30, 2013
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:

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

See list of measuring instruments 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.
- For each suspected emission, the EUT was arranged to its worst case and then tune the 5. antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.
- Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum 6. 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.
- 8. Emission level (dBuV/m) = 20 log Emission level (uV/m)
- 9. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor= Level

SPORTON INTERNATIONAL (SHENZHEN) INC. TEL: 86-755-3320-2398

FCC ID: ZC4S200

Page Number : 20 of 25 Report Issued Date: May 30, 2013

Report No.: FC350312

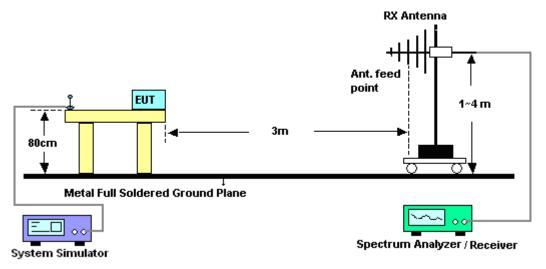
Report Version : Rev. 01



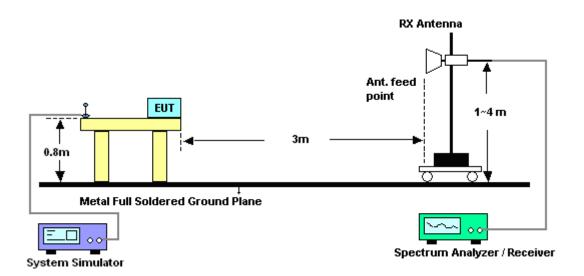
Report No.: FC350312

### 3.2.4. Test Setup of Radiated Emission

For radiated emissions from 30MHz to 1GHz



#### For radiated emissions above 1GHz



SPORTON INTERNATIONAL (SHENZHEN) INC.

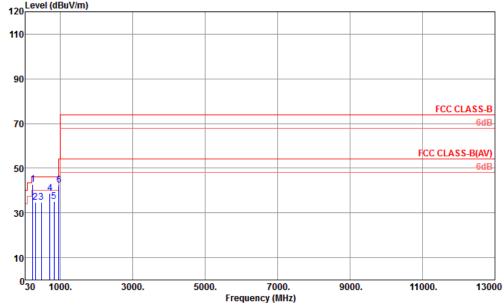
TEL: 86-755-3320-2398 FCC ID: ZC4S200

Page Number : 21 of 25 Report Issued Date: May 30, 2013 : Rev. 01 Report Version



3.2.5. Test Result of Radiated Emission

Test Mode :	Mode 4	Temperature :	24~25°C					
Test Engineer :	Robin Luo	Relative Humidity :	49~50%					
Test Distance :	3m	Polarization :	Horizontal					
Function Type :	WCDMA band II Idle + Bluetooth Idle + WLAN Idle + USB Cable (Data Link with							
Function Type :	PC) + Earphone + GPS Rx							
120 Level (dBuV/m)								
110								



Site

: 03CH01-SZ : FCC CLASS-B 3m LF ANT-H 121202 HORIZONTAL : (FC) 350312 Condition

Project Mode : Mode 4

	Freq	Level		Limit Line						T/Pos	Remark
	MHz	$\overline{\tt dBuV/m}$	dB	$\overline{\tt dBuV/m}$	dBuV	dB/m	dB	dB	cm	deg	
1 Q				46.00 46.00				30. 20 29. 95	100	21	QP Peak
3		34.79	-11. 21	46.00	44.91	17.20		29.40	100	330	Peak QP
5 6 P				46.00 46.00				28. 90 28. 72			Peak Peak

SPORTON INTERNATIONAL (SHENZHEN) INC.

TEL: 86-755-3320-2398 FCC ID: ZC4S200

Page Number : 22 of 25 Report Issued Date: May 30, 2013 : Rev. 01 Report Version

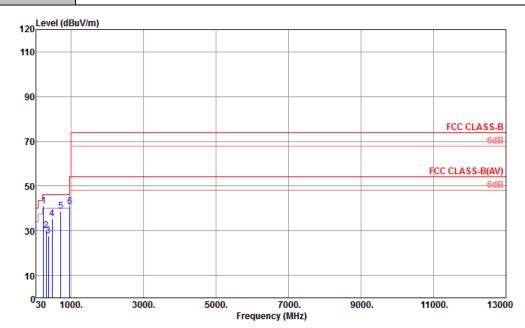


Test Mode: Mode 4 Temperature: 24~25°C

Test Engineer: Robin Luo Relative Humidity: 49~50%

Test Distance: 3m Polarization: Vertical

Function Type: WCDMA band II Idle + Bluetooth Idle + WLAN Idle + USB Cable (Data Link with PC) + Earphone + GPS Rx



Site : 03CH01-SZ

Condition : FCC CLASS-B 3m LF ANT-V 121202 VERTICAL

Project : (FC) 350312 Mode : Mode 4

Cable Preamp A/Pos T/Pos Remark Over Limit ReadAntenna Freq Level Limit Line Level Factor MHz dBuV/m dB dBuV/m dBuV − dB/m deg cm 1. 63 1. 73 1. 88 2. 08 2. 48 2. 81 239.52 -4.83 46.00 58.01 11.73 100 350 QP 239, 52 41, 17 -4, 83 314, 21 29, 98 -16, 02 379, 20 27, 73 -18, 27 480, 08 35, 37 -10, 63 720, 64 38, 91 -7, 09 959, 99 40, 64 -5, 36 46. 00 46. 00 46. 00 46. 00 46. 00 44. 66 39. 63 45. 49 45. 39 44. 75 13. 54 15. 96 17. 20 20. 08 21. 80 29. 95 29. 74 29. 40 2 --- Peak --- Peak --- Peak --- Peak 720.64 959.99 29.04 28.72 --- Peak

TEL: 86-755- 3320-2398 FCC ID: ZC4S200 Page Number : 23 of 25
Report Issued Date : May 30, 2013
Report Version : Rev. 01



4. List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
GPS Station	T&E	GS-50	N/A	N/A	Oct. 11, 2012	May 10, 2013	Oct. 10, 2013	Conduction (CO01-KS)
AC LISN	ETS-LINDGR EN	3816/2SH	00103912	0.1MHz~108MH z	Feb. 28, 2011	May 10, 2013	Feb. 27, 2014	Conduction (CO01-SZ)
AC LISN	ETS-LINDGR EN	3816/2SH	00103892	0.1MHz~108MH z	Feb. 28, 2011	May 10, 2013	Feb. 27, 2014	Conduction (CO01-SZ)
ESCIO TEST Receiver	R&S	1142.8007. 03	100724	9K-3GHz	Mar. 08, 2011	May 10, 2013	Mar. 07, 2014	Conduction (CO01-SZ)
AC Power Source	Chroma	61602	61602000089 1N/A	N/A	Oct. 12, 2011	May 10, 2013	Oct. 11, 2013	Conduction (CO01-SZ)
AC LISN	SCHWARZBE CK	NNLK 8121	8121370	10KHz-30MHz	Jun. 13, 2011	May 10, 2013	Jun. 12, 2013	Conduction (CO01-SZ)
ESCI TEST Receiver	R&S	ESCI	100724	9K-3GHz	Mar. 28, 2013	May 18, 2013	Mar. 27, 2014	Radiation (03CH01-SZ)
Spectrum Analyzer	R&S	FSP30	101362	9kHz~30GHz	Oct. 11, 2012	May 18, 2013	Oct. 10, 2013	Radiation (03CH01-SZ)
Double Ridge Horn Amtenna	ETS Lindgren	3117	00119436	1GHz~18GHz	Oct. 12, 2012	May 18, 2013	Oct. 11, 2013	Radiation (03CH01-SZ)
Bilog Antenna	SCHAFFNER	CBL6112B	2614	30Mhz~2Ghz	Nov. 03, 2012	May 18, 2013	Nov. 02, 2013	Radiation (03CH01-SZ)
Amplifier	ADVANTEST	BB525C	E9007003	9K-3000MHz GAIN 30db	Mar. 28, 2013	May 18, 2013	Mar. 27, 2014	Radiation (03CH01-SZ)
Amplifier	Yiai	AV3860B	04030	2GHz~26.5GHz	Mar. 28, 2013	May 18, 2013	Mar. 27, 2014	Radiation (03CH01-SZ)
Signal Generator	R&S	SMR40	100455	10MHz~40GHz	Dec. 29, 2012	May 10, 2013~ May 18, 2013	Dec. 28,2013	-
System Simulator	Agilent	E5515C	MY50264168	GSM/WCDMA /CDMA2000	Sep. 04, 2011	May 10, 2013~ May 18, 2013	Sep. 03,2013	-

TEL: 86-755- 3320-2398 FCC ID: ZC4S200

Page Number : 24 of 25
Report Issued Date : May 30, 2013
Report Version : Rev. 01



## FCC Test Report

## 5. Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of	2.26
Confidence of 95% (U = 2Uc(y))	2.20

Report No.: FC350312

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

Measuring Uncertainty for a Level of	2.54
Confidence of 95% (U = 2Uc(y))	2.04

#### **Uncertainty of Radiated Emission Measurement (1 GHz ~ 40 GHz)**

Measuring Uncertainty for a Level of	
Confidence of 95%	4.72
(U = 2Uc(y))	

 SPORTON INTERNATIONAL (SHENZHEN) INC.
 Page Number
 : 25 of 25

 TEL: 86-755- 3320-2398
 Report Issued Date
 : May 30, 2013

 FCC ID: ZC4S200
 Report Version
 : Rev. 01

# Appendix A. Photographs of EUT

Please refer to Sporton report number EP350312 as below.

SPORTON INTERNATIONAL (KUNSHAN) INC.

TEL: 86-755-3320-2398 FCC ID: ZC4S200

: A1 of A1 Page Number Report Issued Date: May 30, 2013

Report No. : FC350312

Report Version : Rev. 01