# **FCC Test Report**

APPLICANT : Solnik S.A.

EQUIPMENT : Smart phone

BRAND NAME : HYUNDAI

MODEL NAME : HY2-6275AZ

FCC ID : 2AFRUHY26275AZ

STANDARD : FCC 47 CFR FCC Part 15 Subpart B

**CLASSIFICATION**: Certification

The product testing was completed on Mar. 27, 2015. 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 C63.4-2009 and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL (SHENZHEN) INC., the test report shall not be reproduced except in full.

Prepared by: James Huang / Manager

James Muang

Approved by: Jones Tsai / Manager

SPORTON INTERNATIONAL (SHENZHEN) INC.

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SPORTON INTERNATIONAL (SHENZHEN) INC.

TEL: 86-755-8637-9589 FAX: 86-755-8637-9595 FCC ID: 2AFRUHY26275AZ Page Number : 1 of 25 Report Issued Date : Nov. 10, 2015

Testing Laboratory 2353

Report No.: FC531002-01

## **TABLE OF CONTENTS**

RE	VISIO	N HISTORY	3
SU	MMAF	RY OF TEST RESULT	
		ERAL DESCRIPTION	
	1.1. 1.2. 1.3. 1.4. 1.5. 1.6. 1.7.	Applicant.  Manufacturer  Product Feature of Equipment Under Test  Product Specification subjective to this standard.  Modification of EUT  Test Location  Applicable Standards	
2.	2.1. 2.2. 2.3. 2.4.	Support Unit used in test configuration and system	10 12
3.	3.1. 3.2.		14
		OF MEASURING EQUIPMENT	
		IX A. SETUP PHOTOGRAPHS	25

TEL: 86-755-8637-9589 FAX: 86-755-8637-9595 FCC ID: 2AFRUHY26275AZ Page Number : 2 of 25
Report Issued Date : Nov. 10, 2015
Report Version : Rev. 01

## **REVISION HISTORY**

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FC531002-01	Rev. 01	This is a variant product of BLU STUDIO MINI LTE 2, the new FCC application change the application, brand name, model name, FCC ID and has been authorized to re-use the test data by original application. The test result is not affected, all test cases were performed on original report which can be referred to Sporton report number FC531002 (Model name: BLU STUDIO MINI LTE 2; FCC ID: YHLBLUSTMNLTE2).	Nov. 10, 2015

TEL: 86-755-8637-9589 FAX: 86-755-8637-9595 FCC ID: 2AFRUHY26275AZ Page Number : 3 of 25
Report Issued Date : Nov. 10, 2015
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	13.12 dB at
					0.180 MHz
					Under limit
3.2	15.109	5.109 Radiated Emission	< 15.109 limits	PASS	8.59 dB at
					850.620 MHz

TEL: 86-755-8637-9589 FAX: 86-755-8637-9595 FCC ID: 2AFRUHY26275AZ Page Number : 4 of 25 Report Issued Date : Nov. 10, 2015

Report No. : FC531002-01

## 1. General Description

## 1.1. Applicant

#### Solnik S.A.

Unit 01, 15/F, Seaview Centre, 139-141 Hoi bun road, Kwun Tong, Kowloon, Hongkong

### 1.2. Manufacturer

### **Beijing Benywave Wireless Communication Co. Ltd.**

No 55, Jiachuang second road, Zhongguancun science Park OPTO—Mechatronics Industrial Park, Tongzhou District, Beijing, China 101111

### 1.3. Product Feature of Equipment Under Test

	Product Feature
Equipment	Smart phone
Brand Name	HYUNDAI
Model Name	HY2-6275AZ
FCC ID	2AFRUHY26275AZ
	GSM/GPRS/EGPRS/WCDMA/HSPA/LTE/
EUT supports Radios application	WLAN 2.4GHz 802.11b/g/n HT20/
	Bluetooth v3.0 + EDR/Bluetooth v4.0 LE
IMEI Code	Conduction: 354033028150194/354033028150202
I IVIET Code	Radiation: 354033028147935/354033028147943
HW Version	TBW5726_P1.1_002
SW Version	572614_9823_V009010
EUT Stage	Pre-Production

Remark:

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

TEL: 86-755-8637-9589 FAX: 86-755-8637-9595 FCC ID: 2AFRUHY26275AZ Page Number : 5 of 25
Report Issued Date : Nov. 10, 2015
Report Version : Rev. 01

## 1.4. Product Specification subjective to this standard

Product Specification subjective to this standard					
	GSM850 : 824.2 MHz ~ 848.8 MHz				
	GSM1900 : 1850.2 MHz ~ 1909.8MHz				
	WCDMA Band V : 826.4 MHz ~ 846.6 MHz				
	WCDMA Band IV : 1712.4 MHz ~ 1752.6 MHz				
Tx Frequency	WCDMA Band II : 1852.4 MHz ~ 1907.6 MHz				
1 x 1 requeries	LTE Band 4: 1710.7 MHz ~ 1754.3 MHz				
	LTE Band 7: 2502.5 MHz ~ 2567.5 MHz				
	LTE Band 17 : 706.5 MHz ~ 713.5 MHz				
	802.11b/g/n: 2412 MHz ~ 2462 MHz				
	Bluetooth: 2402 MHz ~ 2480 MHz				
	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 IV : 2112.4 MHz ~ 2152.6 MHz				
	WCDMA Band II: 1932.4 MHz ~ 1987.6 MHz				
Rx Frequency	LTE Band 4 : 2110.7 MHz ~ 2154.3 MHz				
TX Trequency	LTE Band 7 : 2622.5 MHz ~ 2687.5 MHz				
	LTE Band 17 : 736.5 MHz ~ 743.5 MHz				
	802.11b/g/n: 2412 MHz ~ 2462 MHz				
	Bluetooth: 2402 MHz ~ 2480 MHz				
	GPS : 1.57542 GHz				
	Glonass: 1602 MHz + n× 0.5625MHz (n=-7,-6,-5,0,,6)				
	WWAN : IFA Antenna				
Antenna Type	WLAN: IFA Antenna				
	Bluetooth : IFA Antenna				
	GPS/Glonass: IFA Antenna				
	GSM: GMSK				
	GPRS: GMSK				
	EDGE(MCS 0-4): GMSK / (MCS 5-9): 8PSK				
	WCDMA: QPSK (Uplink)				
	HSDPA: QPSK (Uplink)				
	HSUPA: QPSK (Uplink)				
Type of Modulation	LTE: QPSK / 16QAM				
Type of modulation	802.11b: DSSS (DBPSK / DQPSK / CCK)				
	802.11g/n: OFDM (BPSK / QPSK / 16QAM / 64QAM)				
	Bluetooth v4.0 LE : GFSK				
	Bluetooth (1Mbps) : GFSK				
	Bluetooth (2Mbps) : $\pi$ /4-DQPSK				
	Bluetooth (3Mbps): 8-DPSK				
	GPS / Glonass : BPSK				

### 1.5. Modification of EUT

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

SPORTON INTERNATIONAL (SHENZHEN) INC.

TEL: 86-755-8637-9589 FAX: 86-755-8637-9595 FCC ID: 2AFRUHY26275AZ Page Number : 6 of 25 Report Issued Date : Nov. 10, 2015

Report No.: FC531002-01

### 1.6. Test Location

Test Site	SPORTON INTERNATIONAL (KUNSHAN) INC.				
	No. 3-2, PingXiang Road, Kunshan, Jiangsu Province, P. R. China				
Test Site Location	TEL: +86-0512-5790-0158				
	FAX: +86-0512-5790-0958				
Toot Site No.	Sporton Site No.	FCC Registration No.			
Test Site No.	03CH01-KS	149928			

Test Site	Test Site SPORTON INTERNATIONAL (SHENZHEN) INC.						
	1F & 2F, Building A, Morning Business Center, No. 4003 ShiGu Rd., Xili						
Toot Site Legation	Town, Nanshan District, Shenzhen, Guangdong, P. R. China						
Test Site Location	TEL: +86-755-8637-9589						
	FAX: +86-755-8637-9595						
Took Cita No	Sporton Site No.						
Test Site No.	CO01-SZ						

## 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 C63.4-2009

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

TEL: 86-755-8637-9589 FAX: 86-755-8637-9595 FCC ID: 2AFRUHY26275AZ Page Number : 7 of 25
Report Issued Date : Nov. 10, 2015
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 C63.4-2009 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.

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

#### Abbreviations:

EMI AC: AC conducted emissions

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

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

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.

TEL: 86-755-8637-9589 FAX: 86-755-8637-9595 FCC ID: 2AFRUHY26275AZ Page Number : 8 of 25 Report Issued Date : Nov. 10, 2015

Report No.: FC531002-01

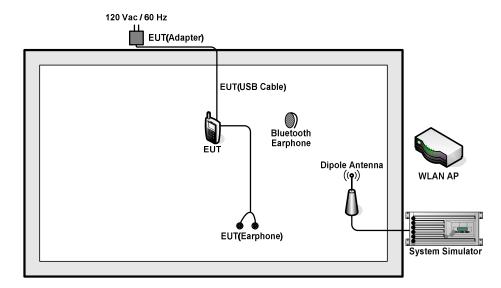
Test Items	EUT Configure Mode	Function Type
	1/2	Mode 1: GSM850 Idle + Bluetooth Idle + WLAN Idle + USB Cable (Charging from Adapter) + Earphone + Camera <fig.1></fig.1>
AC Conducted		Mode 2: WCDMA Band II Idle + Bluetooth Idle + WLAN Idle + USB Cable (Charging from Adapter) + Earphone + MPEG4 <fig.1></fig.1>
Emission		Mode 3: LTE Band 7 Idle + Bluetooth Idle + WLAN Idle + USB Cable (Data Link with Notebook) + Earphone + GPS Rx <fig.2></fig.2>
		Mode 4: WCDMA Band V Idle + Bluetooth Idle + WLAN Idle + USB Cable (Charging from Adapter) + Earphone + Glonass Rx <fig.3></fig.3>
	1/2	Mode 1: GSM850 Idle + Bluetooth Idle + WLAN Idle + USB Cable (Charging from Adapter) + Earphone + Camera <fig.1></fig.1>
Radiated		Mode 2: WCDMA Band II Idle + Bluetooth Idle + WLAN Idle + USB Cable (Charging from Adapter) + Earphone + MPEG4 <fig.1></fig.1>
Emissions < 1GHz		Mode 3: LTE Band 7 Idle + Bluetooth Idle + WLAN Idle + USB Cable (Data Link with Notebook) + Earphone + GPS Rx <fig.2></fig.2>
		Mode 4: WCDMA Band V Idle + Bluetooth Idle + WLAN Idle + USB Cable (Charging from Adapter) + Earphone + Glonass Rx <fig.3></fig.3>
Radiated Emissions ≥ 1GHz	2	Mode 1: LTE Band 7 Idle + Bluetooth Idle + WLAN Idle + USB Cable (Data Link with Notebook) + Earphone + GPS Rx <fig.2></fig.2>

### Remark:

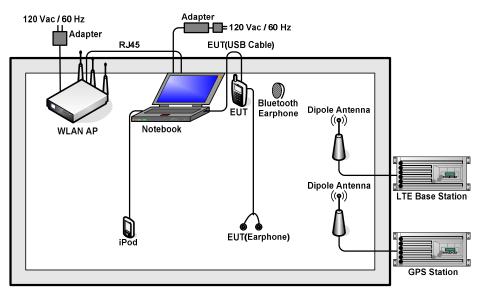
- 1. The worst case of AC is mode 1; and the USB Link mode of AC is mode 3, the test data of these modes were reported.
- 2. The worst case of RE < 1G is mode 3; only the test data of this mode was reported.
- 3. Link with Notebook means data application transferred mode between EUT and Notebook.

TEL: 86-755-8637-9589 FAX: 86-755-8637-9595 FCC ID: 2AFRUHY26275AZ Page Number : 9 of 25
Report Issued Date : Nov. 10, 2015
Report Version : Rev. 01

## 2.2. Connection Diagram of Test System



<Fig.1>

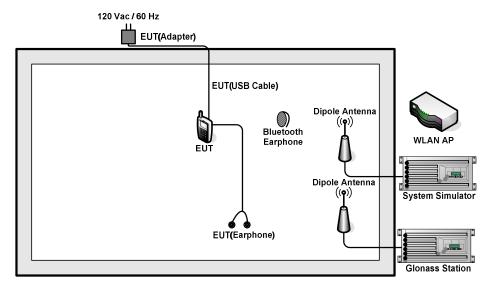


<Fig.2>

TEL: 86-755-8637-9589 FAX: 86-755-8637-9595 FCC ID: 2AFRUHY26275AZ Page Number : 10 of 25 Report Issued Date : Nov. 10, 2015

Report No.: FC531002-01

Report No. : FC531002-01



<Fig.3>

TEL: 86-755-8637-9589 FAX: 86-755-8637-9595 FCC ID: 2AFRUHY26275AZ Page Number : 11 of 25
Report Issued Date : Nov. 10, 2015
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.	LTE Base Station	Anritsu	MT8820C	N/A	N/A	Unshielded, 1.8 m
2.	System Simulator	R&S	CMU200	N/A	N/A	Unshielded, 1.8 m
3.	GPS Station	ADIVIC	MP9000	N/A	N/A	Unshielded, 1.8 m
4.	Glonass Station	RACELOGIC	RLLS03-2RP	N/A	N/A	Unshielded, 1.8 m
5.	WLAN AP	D-Link	DIR-855	KA2DIR855A2	N/A	Unshielded, 1.8 m
6.	WLAN AP	D-Link	DIR-815	KA2IR815A1	N/A	Unshielded, 1.8 m
7.	WLAN AP	ASUS	RT-AC66U	MSQ-RTAC66U	N/A	Unshielded, 1.8 m
8.	Notebook	Lenovo	G480	PRC4	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
9.	Bluetooth Earphone	Nokia	BH-102	PYAHS-107W	N/A	N/A
10.	Bluetooth Earphone	Nokia	BH-108	PYAHS-107W	N/A	N/A
11.	iPod	Apple	A1199	FCC DoC	Unshielded, 1.2 m	N/A
12.	IPod nano 8GB	Apple	MC690ZP/A	FCC DoC	Unshielded, 1.2 m	N/A

TEL: 86-755-8637-9589 FAX: 86-755-8637-9595 FCC ID: 2AFRUHY26275AZ Page Number : 12 of 25
Report Issued Date : Nov. 10, 2015
Report Version : Rev. 01

### 2.4. EUT Operation Test Setup

The EUT was in GSM or WCDMA or LTE 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. Turn on GPS/Glonass function to make the EUT receive continuous signals from GPS/Glonass station.

TEL: 86-755-8637-9589 FAX: 86-755-8637-9595 FCC ID: 2AFRUHY26275AZ Page Number : 13 of 25
Report Issued Date : Nov. 10, 2015
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

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

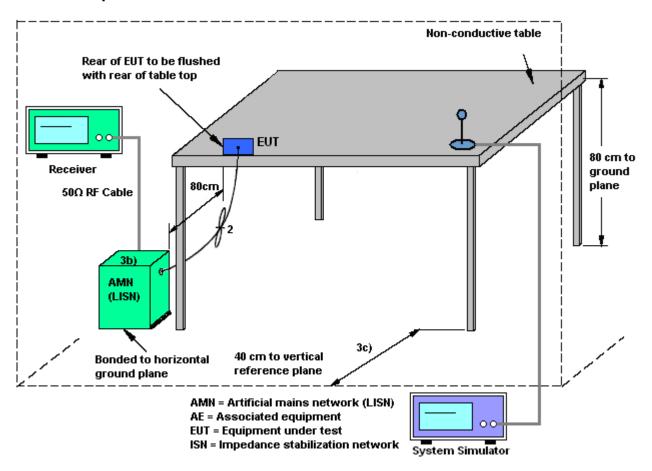
#### 3.1.3 Test Procedure

- 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.

TEL: 86-755-8637-9589 FAX: 86-755-8637-9595 FCC ID: 2AFRUHY26275AZ Page Number : 14 of 25
Report Issued Date : Nov. 10, 2015

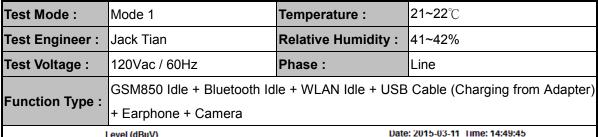
Report No.: FC531002-01

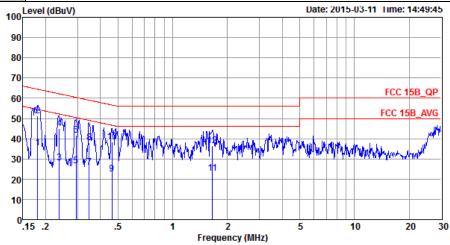
### 3.1.4 Test Setup



TEL: 86-755-8637-9589 FAX: 86-755-8637-9595 FCC ID: 2AFRUHY26275AZ Page Number : 15 of 25
Report Issued Date : Nov. 10, 2015
Report Version : Rev. 01

### 3.1.5 Test Result of AC Conducted Emission





Site : CO01-SZ

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

Mode : Mode 1

IMEI : 354033028150194/354033028150202

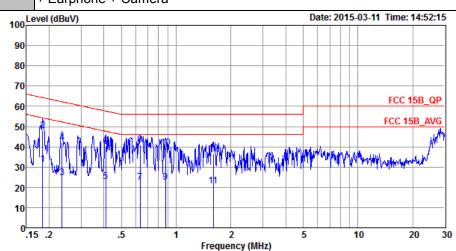
			Over	Limit	Read	LISN	Cable	
	Freq	Level	Limit	Line	Level	Factor	Loss	Remark
	MHz	dBuV	dB	dBu∇	dBuV	dB	dB	
1	0.18	35.34	-19.12	54.46	24.80	0.22	10.32	Average
2 *	0.18	51.34	-13.12	64.46	40.80	0.22	10.32	QP
3	0.24	28.09	-24.08	52.17	17.60	0.24	10.25	Average
4	0.24	44.89	-17.28	62.17	34.40	0.24	10.25	QP
5	0.29	26.46	-23.95	50.41	16.01	0.25	10.20	Average
6	0.29	41.86	-18.55	60.41	31.41	0.25	10.20	QP
7	0.35	25.65	-23.40	49.05	15.19	0.27	10.19	Average
8	0.35	38.15	-20.90	59.05	27.69	0.27	10.19	QP
9	0.46	22.35	-24.28	46.63	11.90	0.29	10.16	Average
10	0.46	38.45	-18.18	56.63	28.00	0.29	10.16	QP
11	1.65	22.81	-23.19	46.00	12.40	0.23	10.18	Average
12	1.65	36.71	-19.29	56.00	26.30	0.23	10.18	QP

TEL: 86-755-8637-9589 FAX: 86-755-8637-9595 FCC ID: 2AFRUHY26275AZ Page Number : 16 of 25
Report Issued Date : Nov. 10, 2015
Report Version : Rev. 01

SPORTON LAB.	FCC Test Report

Test Mode :	Mode 1	Temperature :	21~22℃			
Test Engineer :	Jack Tian	Relative Humidity :	41~42%			
Test Voltage :	120Vac / 60Hz	Phase :	Neutral			
	CSM850 Idle + Bluetooth Idle + WI AN Idle + LISB Cable (Charging from Ad					

Function Type: | GSM850 Idle + Bluetooth Idle + WLAN Idle + USB Cable (Charging from Adapter) | + Earphone + Camera



Site : CO01-SZ

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

Mode : Mode 1

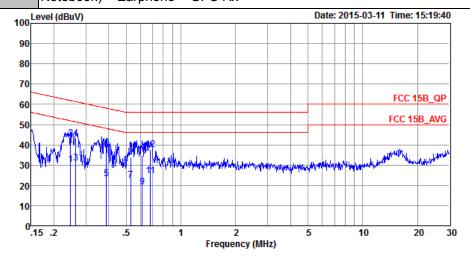
IMEI : 354033028150194/354033028150202

			OVEL	штипто	Read	TITOM	Cabic	
	Freq	Level	Limit	Line	Level	Factor	Loss	Remark
	MHz	dBuV	dB	dBu∇	dBu∀	dB	dB	
1	0.18	31.34	-22.94	54.28	20.71	0.32	10.31	Average
2	0.18	47.94	-16.34	64.28	37.31	0.32	10.31	QP
3	0.24	24.59	-27.67	52.26	13.99	0.34	10.26	Average
4	0.24	41.89	-20.37	62.26	31.29	0.34	10.26	QP
5	0.41	22.86	-24.78	47.64	12.30	0.39	10.17	Average
6	0.41	40.06	-17.58	57.64	29.50	0.39	10.17	QP
7	0.63	22.35	-23.65	46.00	11.90	0.30	10.15	Average
8 *	0.63	41.05	-14.95	56.00	30.60	0.30	10.15	QP
9	0.88	22.45	-23.55	46.00	12.00	0.30	10.15	Average
10	0.88	39.55	-16.45	56.00	29.10	0.30	10.15	QP
11	1.60	20.83	-25.17	46.00	10.29	0.36	10.18	Average
12	1.60	36.63	-19.37	56.00	26.09	0.36	10.18	QP

TEL: 86-755-8637-9589 FAX: 86-755-8637-9595 FCC ID: 2AFRUHY26275AZ Page Number : 17 of 25
Report Issued Date : Nov. 10, 2015
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				
LTE Band 7 Idle + Bluetooth Idle + WLAN Idle + USB Cable (Dat							
Function Type :	Notebook) + Earphone + GPS Rx						



Over Limit Read LISN Cable

Site : CO01-SZ

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

Mode : Mode 3

IMEI : 354033028150194/354033028150202

	Freq	Level	Limit	Line	Level	Factor	Loss	Remark
	MHz	dBu∇	dB	dBu∇	dBu∀	dB	dB	
1	0.25	30.08	-21.78	51.86	19.59	0.24	10.25	Average
2	0.25	43.18	-18.68	61.86	32.69	0.24	10.25	QP
3	0.26	30.87	-20.42	51.29	20.40	0.24	10.23	Average
4 *	0.26	43.27	-18.02	61.29	32.80	0.24	10.23	QP
5	0.39	23.15	-24.93	48.08	12.70	0.28	10.17	Average
6	0.39	37.15	-20.93	58.08	26.70	0.28	10.17	QP
7	0.53	22.63	-23.37	46.00	12.20	0.28	10.15	Average
8	0.53	33.83	-22.17	56.00	23.40	0.28	10.15	QP
9	0.61	19.08	-26.92	46.00	8.70	0.23	10.15	Average
10	0.61	34.78	-21.22	56.00	24.40	0.23	10.15	QP
11	0.68	24.54	-21.46	46.00	14.20	0.19	10.15	Average
12	0.68	37.54	-18.46	56.00	27.20	0.19	10.15	QP

TEL: 86-755-8637-9589 FAX: 86-755-8637-9595 FCC ID: 2AFRUHY26275AZ Page Number : 18 of 25
Report Issued Date : Nov. 10, 2015
Report Version : Rev. 01



Test Mode :	Mode 3	Tem	Temperature :			21~22℃				
Test Engineer :	Jack Tian	Rela	Relative Humidity :			41~42%				
Test Voltage :	120Vac / 6	Phas	Phase :			al				
Function Type :	LTE Band					LAN Idle	+ US	B Cable	(Data	ı Link v
	Level (dBuV)	,				Da	te: 2015-0	3-11 Time: 1	5:21:47	
90										
80										
70										
70								FCC 15	D OD	
60								rcc is	D_QP	
50	100							FCC 15E	3_AVG	
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0	.15 .2	.5		1	2	5	10	20	0 30	0
0	.15 .2	.5		-	2 lency (MHz	_	10	20	0 30	0
0 Site	.15 .2 : CO01-S	Z		Frequ	ency (MHz	_	10	20	0 30	0
0 Site	.15 .2	Z		Frequ	ency (MHz	_	10	20	0 30	0
0 Site	.15 .2 : CO01-S	Z B_QP LI:		Frequ	ency (MHz	_	10	20	0 30	0
0 Site Conditi	: CO01-S on: FCC 15 : Mode 3	Z B_QP LIS	SN_N_201	Frequ	ency (MHz	_	10	20	0 30	0
0 Site Conditi Mode	: CO01-S on: FCC 15 : Mode 3	Z B_QP LIS	SN_N_201 94/35403	Frequ	utral	)		20	0 30	0
0 Site Conditi Mode	: CO01-S on: FCC 15 : Mode 3 : 354033	Z B_QP LI: 0281501	SN_N_201 94/35403	Frequ 40304 NE 30281502 Limit	utral  Read	)	Cable	20 Remark	0 30	0
0 Site Conditi Mode	: CO01-S on: FCC 15 : Mode 3 : 354033 Freq	Z B_QP LI: 0281501: Level	SN_N_201 94/35403 Over Limit	Frequ 40304 NE 30281502 Limit Line	UTRAL  O2  Read  Level	LISN Factor	Cable Loss	_	0 30	D
0 Site Conditi Mode	: CO01-S on: FCC 15 : Mode 3 : 354033	Z B_QP LI: 0281501	SN_N_201 94/35403 Over	Frequ 40304 NE 30281502 Limit Line	utral  Read	LISN Factor	Cable	_	0 30	D
O Site Conditi Mode IMEI	: CO01-S on: FCC 15 : Mode 3 : 354033 Freq MHz	Z B_QP LI: 0281501: Level dBuV	5N_N_201 94/35403 Over Limit —	Frequence 40304 NE 30281502 Limit Line dBuV	UTRAL  02 Read Level  dBuV	LISN Factor	Cable Loss dB	Remark	0 30	0
Site Conditi Mode IMEI	: CO01-S on: FCC 15 : Mode 3 : 354033 Freq MHz 0.26	Z B_QP LI: 0281501: Level dBuV 30.78	5N_N_201 94/35403 Over Limit dB -20.69	Frequ 40304 NE 30281502 Limit Line dBuV 51.47	UTRAL  O2 Read Level  dBuV  20.20	LISN Factor dB	Cable Loss dB	Remark	0 30	0
Site Conditi Mode IMEI	: CO01-S on: FCC 15 : Mode 3 : 354033 Freq MHz 0.26 0.26	Z B_QP LI: 0281501: Level dBuV 30.78 47.58	5N_N_201 94/35403 Over Limit dB -20.69 -13.89	Frequ 40304 NE 30281502 Limit Line dBuV 51.47 61.47	UTRAL  02 Read Level  dBuV  20.20 37.00	LISN Factor  dB 0.35 0.35	Cable Loss  dB  10.23 10.23	Remark Average	0 30	0
Site Conditi Mode IMEI	: CO01-S on: FCC 15 : Mode 3 : 354033 Freq MHz 0.26	Z B_QP LIS 02815019 Level dBuV 30.78 47.58 26.36	5N_N_201 94/35403 Over Limit dB -20.69	### Freque ###################################	UTRAL  02 Read Level  dBuV  20.20 37.00 15.80	LISN Factor  dB  0.35 0.35 0.38	Cable Loss  dB  10.23 10.23 10.18	Remark Average QP Average	0 30	0
Site Conditi Mode IMEI	: CO01-S on: FCC 15 : Mode 3 : 354033 Freq MHz 0.26 0.26 0.37	Z B_QP LI: 02815019 Level dBuV 30.78 47.58 26.36 40.86	5N_N_201 94/35403 Over Limit dB -20.69 -13.89 -22.16	### Freque #### ##############################	02 Read Level dBuV 20.20 37.00 15.80 30.30	LISN Factor dB 0.35 0.35 0.38 0.38	Cable Loss  dB  10.23 10.23 10.18 10.18	Remark Average QP Average	0 30	0
Site Conditi Mode IMEI	: CO01-S on: FCC 15 : Mode 3 : 354033 Freq MHz 0.26 0.26 0.37 0.37	Z B_QP LI: 02815019 Level dBuV 30.78 47.58 26.36 40.86 27.66	94/35403 Over Limit ———————————————————————————————————	### Freque #### ##############################	UTRAL  02 Read Level  dBuV  20.20 37.00 15.80 30.30 17.10	LISN Factor  dB  0.35 0.35 0.38 0.38 0.39	Cable Loss  dB  10.23 10.23 10.18 10.18	Remark  Average QP Average QP Average	0 30	0
Site Conditi Mode IMEI  1 2 * 3 4 5	.15 .2 : CO01-S on: FCC 15 : Mode 3 : 354033 Freq MHz 0.26 0.26 0.37 0.37 0.39 0.39	Z B_QP LI: 02815019 Level dBuV 30.78 47.58 26.36 40.86 27.66 42.66	94/35403 Over Limit ———————————————————————————————————	## Freque ## ## ## ## ## ## ## ## ## ## ## ## ##	UTRAL  02 Read Level  dBuV  20.20 37.00 15.80 30.30 17.10 32.10	LISN Factor  dB  0.35 0.35 0.38 0.38 0.39 0.39	Cable Loss  dB  10.23 10.23 10.18 10.17 10.17	Remark  Average QP Average QP Average	0 30	0
Site Conditi Mode IMEI  1 2 * 3 4 5 6 7 8	.15 .2 : CO01-S on: FCC 15 : Mode 3 : 354033 Freq MHz 0.26 0.26 0.37 0.37 0.39 0.39 0.45 0.45	Z B_QF LIS 02815019 Level dBuV 30.78 47.58 26.36 40.86 27.66 42.66 28.06 41.06	94/35403 Over Limit -20.69 -13.89 -22.16 -17.66 -20.33 -15.33 -18.79 -15.79	### Freque #### ##############################	DEPT. (MHZ  UTRAL  02	LISN Factor  dB  0.35 0.35 0.38 0.38 0.39 0.39 0.40 0.40	Cable Loss  dB  10.23 10.18 10.17 10.16 10.16	Remark  Average QP Average QP Average QP Average QP	0 30	0
Site Conditi Mode IMEI  1 2 * 3 4 5 6 7 8 9	.15 .2 : CO01-S on: FCC 15 : Mode 3 : 354033 Freq MHz 0.26 0.26 0.37 0.37 0.39 0.39 0.45 0.45 0.56	Z B_QP LIS 02815019 Level dBuV 30.78 47.58 26.36 40.86 27.66 42.66 28.06 41.06 26.41	94/35403 Over Limit ———————————————————————————————————	### Freque #### ##############################	DEPT. (MHZ)  UTRAL  02 Read Level  dBuV  20.20 37.00 15.80 30.30 17.10 32.10 17.50 30.50 15.90	LISN Factor  dB  0.35 0.35 0.38 0.38 0.39 0.39 0.40 0.40 0.36	Cable Loss  dB  10.23 10.18 10.17 10.16 10.16 10.15	Remark  Average QP Average QP Average QP Average QP Average QP	0 30	0
Site Conditi Mode IMEI  1 2 * 3 4 5 6 7 8 9 10	.15 .2 : CO01-S on: FCC 15 : Mode 3 : 354033 Freq MHz 0.26 0.26 0.37 0.37 0.39 0.39 0.45 0.45 0.56	Z B_QP LIS 02815019 Level dBuV 30.78 47.58 26.36 40.86 27.66 42.66 28.06 41.06 26.41 41.21	94/35403 Over Limit -20.69 -13.89 -22.16 -17.66 -20.33 -15.33 -15.79 -15.79 -19.59 -14.79	### Freque ###################################	DEPT. (MHZ)  UTRAL  02 Read Level  dBuV  20.20 37.00 15.80 30.30 17.10 32.10 17.50 30.50 15.90 30.70	LISN Factor  dB  0.35 0.35 0.38 0.39 0.39 0.40 0.40 0.36 0.36	Cable Loss  dB  10.23 10.18 10.18 10.17 10.16 10.15	Remark  Average QP Average QP Average QP Average QP Average QP	0 30	0
Site Conditi Mode IMEI  1 2 * 3 4 5 6 7 8 9	.15 .2 : CO01-S on: FCC 15 : Mode 3 : 354033 Freq MHz 0.26 0.26 0.37 0.37 0.39 0.39 0.45 0.45 0.56	Z B_QP LIS 02815019 Level dBuV 30.78 47.58 26.36 40.86 27.66 42.66 28.06 41.06 26.41 41.21 22.92	94/35403 Over Limit -20.69 -13.89 -22.16 -17.66 -20.33 -15.33 -15.79 -15.79 -19.59 -14.79	### Frequence   100   10	DEPT. (MHZ)  UTRAL  02 Read Level  dBuV  20.20 37.00 15.80 30.30 17.10 32.10 17.50 30.50 15.90 30.70	LISN Factor  dB  0.35 0.35 0.38 0.39 0.40 0.40 0.36 0.36 0.27	Cable Loss  dB  10.23 10.18 10.17 10.16 10.15 10.15	Remark  Average QP Average QP Average QP Average QP Average QP Average	0 30	

TEL: 86-755-8637-9589 FAX: 86-755-8637-9595 FCC ID: 2AFRUHY26275AZ Page Number : 19 of 25 Report Issued Date: Nov. 10, 2015 Report Version : Rev. 01

#### 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:

Report No.: FC531002-01

: 20 of 25

: Rev. 01

Report Issued Date: Nov. 10, 2015

Page Number

Report Version

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

#### 3.2.2. Measuring Instruments

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

#### 3.2.3. Test Procedures

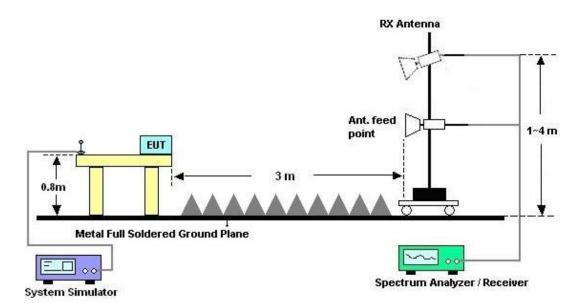
- 1. The EUT was placed on a turntable with 0.8 meter above ground.
- 2. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
- 3. The table was rotated 360 degrees to determine the position of the highest radiation.
- 4. The antenna is a Bi-Log antenna and its height is adjusted between one to four meters above ground to find the maximum value of the field strength for both horizontal polarization and vertical polarization of the antenna.
- 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

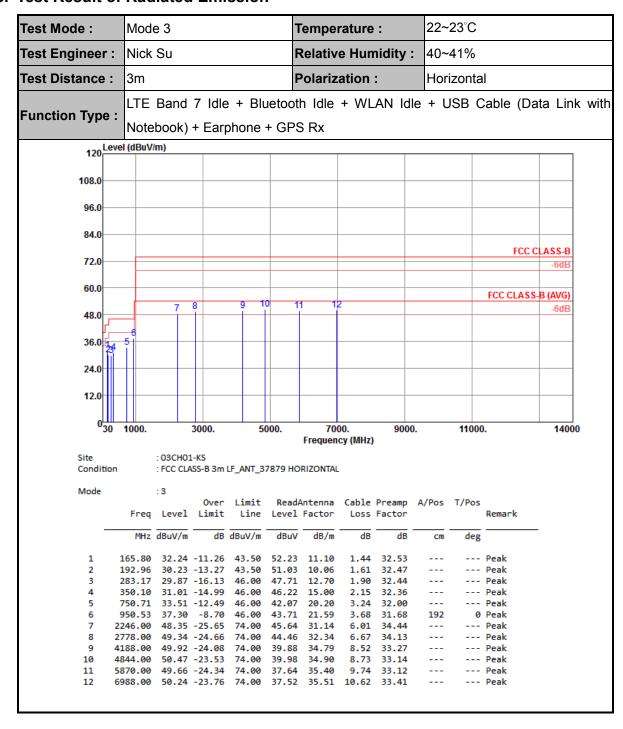


#### For radiated emissions above 1GHz



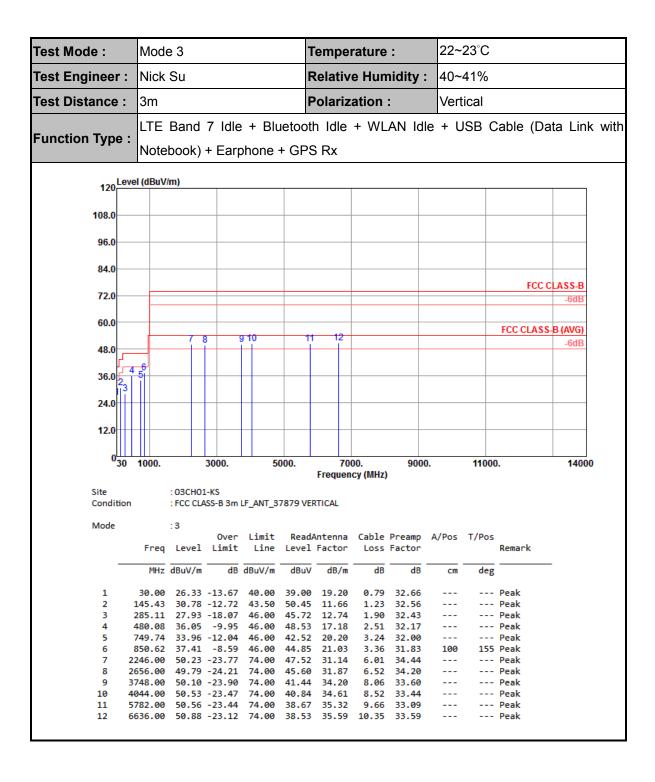
TEL: 86-755-8637-9589 FAX: 86-755-8637-9595 FCC ID: 2AFRUHY26275AZ Page Number : 21 of 25
Report Issued Date : Nov. 10, 2015
Report Version : Rev. 01

#### 3.2.5. Test Result of Radiated Emission



TEL: 86-755-8637-9589 FAX: 86-755-8637-9595 FCC ID: 2AFRUHY26275AZ Page Number : 22 of 25
Report Issued Date : Nov. 10, 2015
Report Version : Rev. 01





TEL: 86-755-8637-9589 FAX: 86-755-8637-9595 FCC ID: 2AFRUHY26275AZ Page Number : 23 of 25 Report Issued Date: Nov. 10, 2015 Report Version : Rev. 01

## 4. List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
EMI Test Receiver	R&S	ESCI	100534	9kHz~3GHz	Oct. 25, 2014	Mar. 27, 2015	Oct. 24, 2015	Radiation (03CH01-KS)
Spectrum Analyzer	R&S	FSP30	101399	9kHz~30GHz	May 04, 2014	Mar. 27, 2015	May 03, 2015	Radiation (03CH01-KS)
Bilog Antenna	TeseQ	CBL6112D	37879	30MHz-2GHz	Sep. 13, 2014	Mar. 27, 2015	Sep. 12, 2015	Radiation (03CH01-KS)
Double Ridge Horn Antenna	ETS-Lindgren	3117	75957	1GHz~18GHz	Nov. 08, 2014	Mar. 27, 2015	Nov. 07, 2015	Radiation (03CH01-KS)
Amplifier	com-power	PA-103A	161073	1MHz~1GHz	May 04, 2014	Mar. 27, 2015	May 03, 2015	Radiation (03CH01-KS)
Amplifier	Agilent	8449B	3008A02371	1GHz~26.5GHz	Oct. 28, 2014	Mar. 27, 2015	Oct. 27, 2015	Radiation (03CH01-KS)
AC Power Source	Chroma	61601	F104090004	N/A	NCR	Mar. 27, 2015	NCR	Radiation (03CH01-KS)
Turn Table	MF	MF7802	N/A	0~360 degree	NCR	Mar. 27, 2015	NCR	Radiation (03CH01-KS)
Antenna Mast	MF	MF7802	N/A	1 m~4 m	NCR	Mar. 27, 2015	NCR	Radiation (03CH01-KS)
EMI TEST Receiver	R&S	ESCI7	100768	9kHz~3GHz	May 04, 2014	Mar. 11, 2015	May 03, 2015	Conduction (CO01-SZ)
AC LISN	EMCO	3816/2SH	00103912	9kHz~30MHz	Feb. 02, 2015	Mar. 11, 2015	Feb. 01, 2016	Conduction (CO01-SZ)
AC LISN (for auxiliary equipment)	EMCO	3816/2SH	00103892	9kHz~30MHz	Feb. 02, 2015	Mar. 11, 2015	Feb. 01, 2016	Conduction (CO01-SZ)
AC Power Source	Chroma	61602	61602000089 1	100Vac~250Vac	Sep. 29, 2014	Mar. 11, 2015	Sep. 28, 2015	Conduction (CO01-SZ)

TEL: 86-755-8637-9589 FAX: 86-755-8637-9595 FCC ID: 2AFRUHY26275AZ Page Number : 24 of 25
Report Issued Date : Nov. 10, 2015
Report Version : Rev. 01



## 5. Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of	2.3dB
Confidence of 95% (U = 2Uc(y))	2.306

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

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

TEL: 86-755-8637-9589 FAX: 86-755-8637-9595 FCC ID: 2AFRUHY26275AZ Page Number : 25 of 25
Report Issued Date : Nov. 10, 2015
Report Version : Rev. 01