# **FCC Test Report**

APPLICANT : BLU Products, Inc.

**EQUIPMENT**: Smart Phone

BRAND NAME : BLU

MODEL NAME : ENERGY M

FCC ID : YHLBLUENERGYM

STANDARD : FCC 47 CFR FCC Part 15 Subpart B

**CLASSIFICATION**: Certification

The product was received on May 03, 2016 and testing was completed on May 21, 2016. We, SPORTON INTERNATIONAL (SHENZHEN) INC., would like to declare that the tested sample has been evaluated in accordance with the test procedures given in ANSI C63.4-2014 and has been in compliance with the applicable technical standards.

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

Prepared by: Ken Chen / Manager

len Cher

Approved by: Jones Tsai / Manager

### SPORTON INTERNATIONAL (SHENZHEN) INC.

1F & 2F, Building A, Morning Business Center, No. 4003 ShiGu Rd., Xili Town, Nanshan District, Shenzhen, Guangdong, P. R. China

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Report Issued Date : Jun. 02, 2016
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Testing Laboratory 2353

Report No.: FC650301

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## **REVISION HISTORY**

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FC650301	Rev. 01	Initial issue of report	Jun. 02, 2016

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## **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 8.92 dB at
5.1	10.107	, to defination Limbolois	< ICES003 6.1 limits		0.650 MHz
3.2	15.109	Radiated Emission	< 15.109 limits	PASS	Under limit 3.56 dB at
			< ICES003 6.2 limits		196.050 MHz for Quasi-Peak

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## 1. General Description

## 1.1. Applicant

**BLU Products, Inc.** 

10814 NW 33rd St # 100 Doral, FL 33172

### 1.2. Manufacturer

**BLU Products, Inc.** 

10814 NW 33rd St # 100 Doral, FL 33172

## 1.3. Product Feature of Equipment Under Test

	Product Feature
Equipment	Smart Phone
Brand Name	BLU
Model Name	ENERGY M
FCC ID	YHLBLUENERGYM
	GSM/GPRS/EGPRS(Downlink Only)
EUT supports Radios application	WCDMA/HSPA/HSPA+(16QAM uplink is not supported)
EOT Supports Radios application	WLAN2.4GHz 802.11b/g/n HT20/HT40/
	Bluetooth v3.0 + EDR/Bluetooth v4.0 LE
IMEI Code	Conduction: 868374029943735/868374029943743
I IVIEI Code	Radiation:868374029943776/868374029943784
HW Version	FS622-MB-V2.0
SW Version	BLU_E110_V01_GENERIC
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.

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## 1.4. Product Specification of Equipment Under Test

Standard	Is-related Product Specification
	GSM850: 824.2 MHz ~ 848.8 MHz
	GSM1900: 1850.2 MHz ~ 1909.8MHz
	WCDMA Band V: 826.4 MHz ~ 846.6 MHz
Tx Frequency	WCDMA Band IV : 1712.4 MHz ~ 1752.6 MHz
	WCDMA Band II: 1852.4 MHz ~ 1907.6 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
Rx Frequency	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
	WWAN : FPC Antenna
Antenna Type	WLAN: FPC Antenna
Antenna Type	Bluetooth : FPC Antenna
	GPS : FPC Antenna
	GSM: GMSK
	GPRS: GMSK
	EDGE(MCS 0-4): GMSK / (MCS 5-9): 8PSK(Downlink
	Only)
	WCDMA: QPSK (Uplink)
	HSDPA: QPSK (Uplink)
	HSUPA: QPSK (Uplink)
Type of Modulation	HSPA+ : 16QAM uplink is not supported
Type of Modulation	802.11b: DSSS (DBPSK / DQPSK / CCK)
	802.11g/n: OFDM (BPSK / QPSK / 16QAM / 64QAM)
	Bluetooth LE : GFSK
	Bluetooth (1Mbps) : GFSK
	Bluetooth (2Mbps) : π /4-DQPSK
	Bluetooth (3Mbps) : 8-DPSK
	GPS: BPSK
	FM

### 1.5. Modification of EUT

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

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### 1.6. Test Location

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

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

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

## 1.7. Applicable Standards

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

- FCC 47 CFR FCC Part 15 Subpart B
- ANSI C63.4-2014

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

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## 2. Test Configuration of Equipment Under Test

### 2.1. Test Mode

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

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

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)	$\boxtimes$	$\boxtimes$	Note1
2.	Data application transferred mode (EUT with notebook)	$\boxtimes$	$\boxtimes$	$\boxtimes$

#### 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.

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Test Items	EUT Configure Mode	Function Type
		Mode 1: GSM850 Idle + Bluetooth Idle + WLAN Idle + USB Cable (Charging from Adapter) + Earphone + Camera(Front) + SIM1 <fig.1></fig.1>
AC Conducted		Mode 2: GSM1900 Idle + Bluetooth Idle + WLAN Idle + USB Cable (Charging from Adapter) + Earphone + Camera(Back) + SIM2 <fig.1></fig.1>
Emission	1/2	Mode 3: WCDMA Band V Idle + Bluetooth Idle + WLAN Idle + USB Cable (Charging from Adapter) + Earphone + MPEG4 + SIM1 <fig.1></fig.1>
		Mode 4: WCDMA Band IV Idle + Bluetooth Idle + WLAN Idle + USB Cable (Data Link with Notebook) + Earphone + GPS Rx + FM Rx + SIM2 <fig.2></fig.2>
		Mode 1: GSM850 Idle + Bluetooth Idle + WLAN Idle + USB Cable (Charging from Adapter) + Earphone + Camera(Front) + SIM1 <fig.1></fig.1>
Radiated		Mode 2: GSM1900 Idle + Bluetooth Idle + WLAN Idle + USB Cable (Charging from Adapter) + Earphone + Camera(Back) + SIM2 <fig.1></fig.1>
Emissions < 1GHz	1/2	Mode 3: WCDMA Band V Idle + Bluetooth Idle + WLAN Idle + USB Cable (Charging from Adapter) + Earphone + MPEG4 + SIM1 <fig.1></fig.1>
		Mode 4: WCDMA Band IV Idle + Bluetooth Idle + WLAN Idle + USB Cable (Data Link with Notebook) + Earphone + GPS Rx + FM Rx + SIM2 <fig.2></fig.2>
Radiated Emissions ≥ 1GHz	2	Mode 1: WCDMA Band IV Idle + Bluetooth Idle + WLAN Idle + USB Cable (Data Link with Notebook) + Earphone + GPS Rx + FM Rx + SIM2 <fig.2></fig.2>

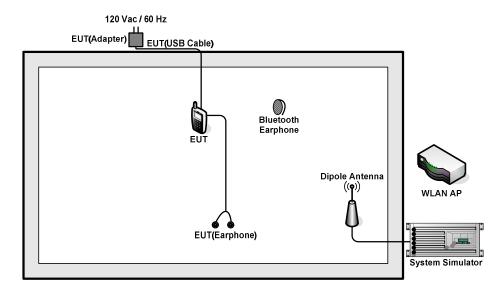
#### Remark:

- 1. The worst case of AC is mode 3; and the USB Link mode of AC is mode 4, the test data of these modes are reported.
- 2. The worst case of RE < 1G is mode 4; only the test data of this mode is reported.
- Data Link with notebook means data application transferred mode between EUT and notebook.

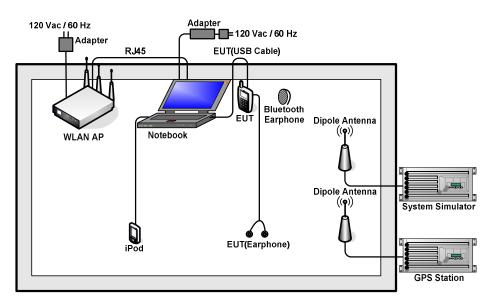
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## 2.2. Connection Diagram of Test System



<Fig.1>



<Fig.2>

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

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	System Simulator	Anritsu	MT8820C	N/A	N/A	Unshielded, 1.8 m
2.	System Simulator	R&S	CMU 200	N/A	N/A	Unshielded, 1.8 m
3.	GPS Station	ADIVIC	MP9000	N/A	N/A	Unshielded, 1.8 m
4.	WLAN AP	ASUSTek	RT-AC66U	MSQ-RTAC66U	N/A	Unshielded, 2.7 m
5.	Bluetooth Earphone	Nokia	BH-108	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	SanDisk	4G class 4	FCC DoC	N/A	N/A
9.	iPod nano 8GB	Apple	MC690 ZP/A	FCC DoC	Shielded, 1.2 m	N/A
10.	iPod	Apple	MC525 ZP/A	FCC DoC	Shielded, 1.0 m	N/A

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### 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 is in continuous receiving mode by setting system simulator's paging reorganization.

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

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

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### 3. Test Result

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

#### 3.1.1 Limits of AC Conducted Emission

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

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

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

#### 3.1.2 Measuring Instruments

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

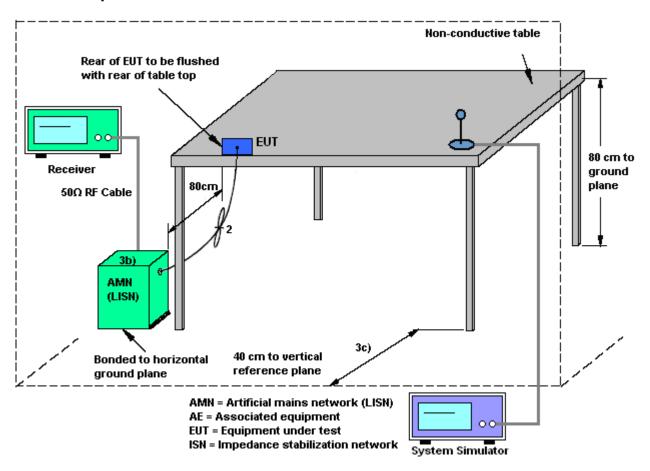
#### 3.1.3 Test Procedure

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

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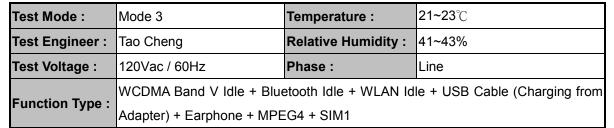
### 3.1.4 Test Setup

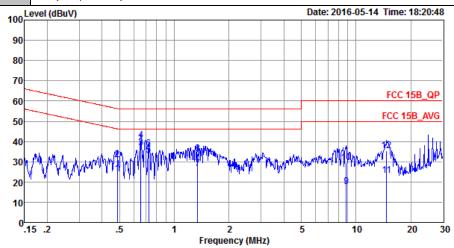


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#### 3.1.5 Test Result of AC Conducted Emission





Site : CO01-SZ

Condition: FCC 15B\_QP LISN\_20160509 LINE

Project : (FC)650301 Mode : Mode 3

IMEI : 868374029943735/868374029943743

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBu₹	dB	dBuV	dBuV	dB	dB	
1	0.49	23.93	-22.30	46.23	13.60	0.11	10.22	Average
2	0.49	31.03	-25.20	56.23	20.70	0.11	10.22	QP
3 *	0.65	37.08	-8.92	46.00	26.80	0.11	10.17	Average
4	0.65	40.58	-15.42	56.00	30.30	0.11	10.17	QP
5	0.72	33.07	-12.93	46.00	22.80	0.11	10.16	Average
6	0.72	36.67	-19.33	56.00	26.40	0.11	10.16	QP
7	1.34	26.67	-19.33	46.00	16.40	0.11	10.16	Average
8	1.34	34.07	-21.93	56.00	23.80	0.11	10.16	QP
9	8.82	17.79	-32.21	50.00	7.21	0.25	10.33	Average
10	8.82	29.49	-30.51	60.00	18.91	0.25	10.33	QP
11	14.75	23.39	-26.61	50.00	12.70	0.29	10.40	Average
12	14.75	35.29	-24.71	60.00	24.60	0.29	10.40	QP

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Test Mode :	Mode 3	Mode 3			Temperature :			21~23℃		
Test Engineer :	Jacky Ya	Jacky Yang				umidity :	41~4	41~43%		
Test Voltage :	120Vac	/ 60Hz		Pha	ise :		Neut	ral		
Function Type .	WCDMA	Band \	√ Idle +	Bluetoot	th Idle +	- WLAN I	dle + l	JSB Cable (	Charging from	
Function Type :	Adapter)	+ Earp	hone + N	MPEG4	+ SIM1					
400	evel (dBuV)					Dat	e: 2016-0	5-14 Time: 18:22	2:51	
100										
90									_	
80									_	
70							++++		_	
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10										
0	15.2	.5		<u> </u>	2	5			30	
	15 .2	.5	1		ency (MHz	_	10	) 20	30	
Site	: CO01-5	3Z								
Conditio	n: FCC 15	B_QP LI	SN_20160	509 NEUT	RAL					
Project										
Mode	: Mode 3		05/06005	40000400	40					
IMEI	: 8683/5	10299437	35/86837 Over	40299437 Limit	43 Read	LISN	Cable			
	Freq	Level	Limit	Line		Factor		Remark		
_	MHz	dBuV	dB	dBu₹	dBuV	dB	dB		-	
1 *	0.65	32.68	-13.32	46.00	22.40	0.11	10.17	Average		
2	0.65		-14.32	56.00	31.40	0.11	10.17	_		
3	0.73	28.87	-17.13	46.00	18.60	0.11	10.16	Average		
4	0.73	37.87	-18.13	56.00	27.60	0.11	10.16	QP		
5	1.34		-21.53	46.00	14.20			Average		
6	1.34			56.00	28.00		10.16			
7	2.98		-28.98	46.00	6.70			Average		
8	2.98		-25.38	56.00			10.20			
9	7.65		-32.89	50.00	6.60			Average		
10	7.65			60.00			10.31			
11 12	14.83 14.83		-27.91 -23.61	50.00	11.40 25.70	0.29 0.29	10.40	Average OP		
12	11.03	50.55	20.01	00.00	20.70	0.23	10.40	×-		

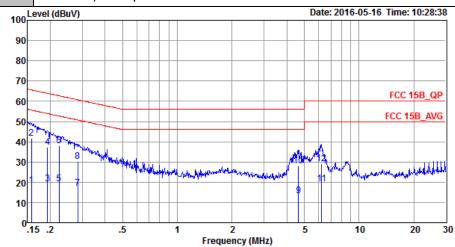
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Test Mode :	Mode 4	Temperature :	21~23℃
Test Engineer :	Jacky Yang	Relative Humidity :	41~43%
Test Voltage :	120Vac / 60Hz	Phase :	Line

WCDMA Band IV Idle + Bluetooth Idle + WLAN Idle + USB Cable (Data Link with Function Type : Notebook) + Earphone + GPS Rx + FM Rx + SIM2



Site : CO01-SZ

Condition: FCC 15B\_QP LISN\_20160509 LINE

Project : (FC) 650301 Mode : Mode 4

: 868374029943735/868374029943743 IMEI

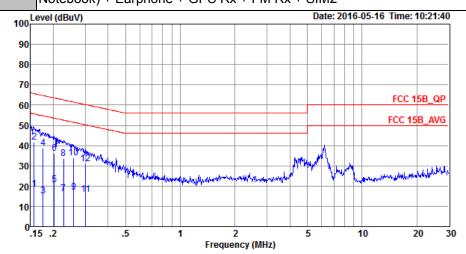
			Over	Limit	Read	LISN	Cable	
	Freq	Level	Limit	Line	Level	Factor	Loss	Remark
	MHz	dBuV	dB	dBuV	dBu∀	dB	dB	
1	0.16	18.42	-37.18	55.60	7.71	0.13	10.58	Average
2 *	0.16	41.72	-23.88	65.60	31.01	0.13	10.58	QP
3	0.19	19.32	-34.57	53.89	8.70	0.11	10.51	Average
4	0.19	37.22	-26.67	63.89	26.60	0.11	10.51	QP
5	0.22	19.09	-33.61	52.70	8.50	0.11	10.48	Average
6	0.22	38.09	-24.61	62.70	27.50	0.11	10.48	QP
7	0.28	16.84	-33.88	50.72	6.30	0.11	10.43	Average
8	0.28	30.14	-30.58	60.72	19.60	0.11	10.43	QP
9	4.65	13.18	-32.82	46.00	2.80	0.14	10.24	Average
10	4.65	27.88	-28.12	56.00	17.50	0.14	10.24	QP
11	6.22	19.14	-30.86	50.00	8.70	0.16	10.28	Average
12	6.22	29.24	-30.76	60.00	18.80	0.16	10.28	QP

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Test Mode :	Mode 4	Temperature :	<b>21~23</b> ℃				
Test Engineer :	Jacky Yang	Relative Humidity :	41~43%				
Test Voltage :	120Vac / 60Hz	Phase :	Neutral				
Function Type	WCDMA Band IV Idle + Bluetooth Idle + WLAN Idle + USB Cable (Data Link with						
Function Type :	  Notebook) + Farphone + GF	PS Rx + FM Rx + SIM2	)				



Site : CO01-SZ

Condition: FCC 15B\_QP LISN\_20160509 NEUTRAL

Project : (FC) 650301

Mode : Mode 4 IMEI : 868374029943735/868374029943743

	Freq	Level	Over Limit	Limit Line	Read Level	Factor	Loss	Remark
	MHz	dBuV	dB	dBu∀	dBu₹	dB	dB	
1	0.16	18.42	-37.23	55.65	7.69	0.14	10.59	Average
2 *	0.16	41.62	-24.03	65.65	30.89	0.14	10.59	QP
3	0.18	15.27	-39.41	54.68	4.61	0.12	10.54	Average
4	0.18	38.87	-25.81	64.68	28.21	0.12	10.54	QP
5	0.20	20.51	-32.98	53.49	9.90	0.11	10.50	Average
6	0.20	36.21	-27.28	63.49	25.60	0.11	10.50	QP
7	0.23	16.18	-36.34	52.52	5.60	0.11	10.47	Average
8	0.23	33.68	-28.84	62.52	23.10	0.11	10.47	QP
9	0.26	16.86	-34.61	51.47	6.30	0.11	10.45	Average
10	0.26	33.96	-27.51	61.47	23.40	0.11	10.45	QP
11	0.30	15.83	-34.36	50.19	5.30	0.11	10.42	Average
12	0.30	31.13	-29.06	60.19	20.60	0.11	10.42	QP

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### 3.2. Test of Radiated Emission Measurement

#### 3.2.1. Limit of Radiated Emission

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

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

### 3.2.2. Measuring Instruments

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

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#### 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 (RBW=120kHz/VBW=300kHz for frequency below 1GHz; RBW=1MHz VBW=3MHz (Peak), RBW=1MHz/VBW=10Hz (Average) for frequency above 1GHz).
- 7. If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, peak values of EUT will be reported. Otherwise, the emission will be repeated by using the quasi-peak method and reported.
- 8. Emission level (dB $\mu$ V/m) = 20 log Emission level ( $\mu$ V/m)
- 9. Corrected Reading: Antenna Factor + Cable Loss + Read Level Preamp Factor = Level

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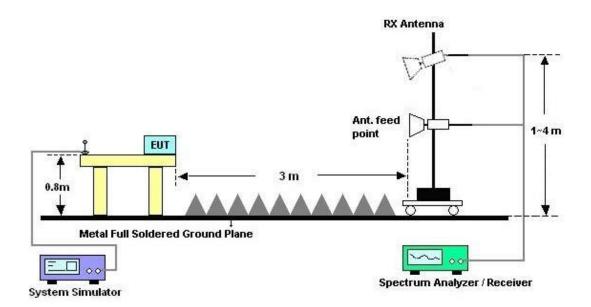
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### 3.2.4. Test Setup of Radiated Emission

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



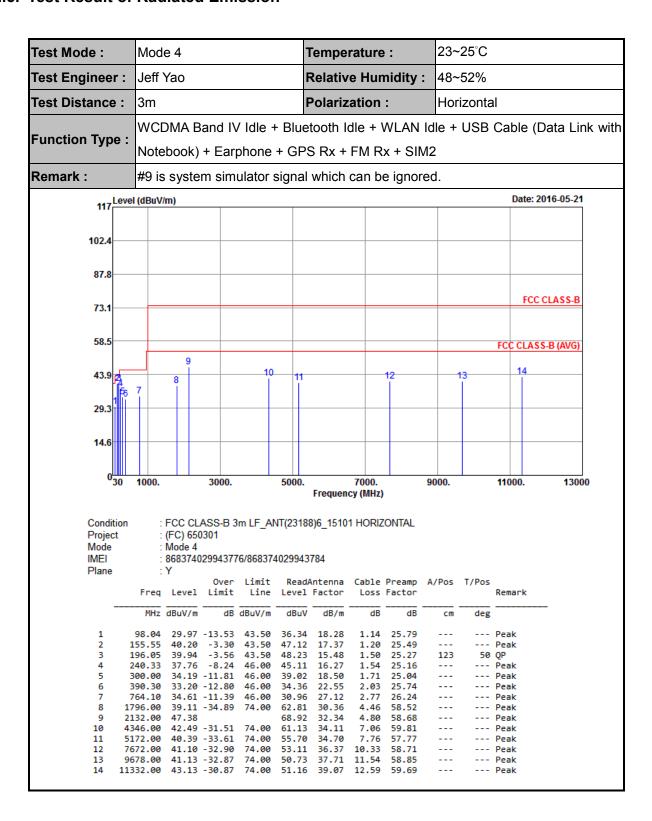
#### For radiated emissions above 1GHz



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#### 3.2.5. Test Result of Radiated Emission



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Test Mode :	Mode 4	Tem	perature :	23~25°C			
Test Engineer :	Jeff Yao		tive Humidity	: 48~52%	48~52%		
Test Distance :	3m		rization :	Vertical			
		IV Idle + Bluetoot	h Idle + WLAN	Idle + USB Ca	able (Data Link	with	
Function Type :	Notebook) + Ea	arphone + GPS R	c + FM Rx + SI	M2			
Remark :	#8 is system si	#8 is system simulator signal which can be ignored.					
117 Lev	el (dBuV/m)				Date: 2016-05-21		
102.4							
87.8							
73.1					FCC CLASS-B		
58.5							

: FCC CLASS-B 3m LF\_ANT(23188)6\_15101 VERTICAL : (FC) 650301 Condition

5000.

7000.

Frequency (MHz)

3000.

Project Mode

1000.

IMEI : 868374029943776/868374029943784

Plane

43.9

29.3

14.6

0<mark>1111</mark>

			Over	Limit	Read/	Antenna	Cable	Preamp	A/Pos	T/Pos	
	Freq	Level	Limit	Line	Level	Factor	Loss	Factor			Remark
	MHZ	dBuV/m	dВ	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	98.04	28.75	-14.75	43.50	35.12	18.28	1.14	25.79			Peak
2	196.05	35.35	-8.15	43.50	43.64	15.48	1.50	25.27			Peak
3	240.60	33.26	-12.74	46.00	40.61	16.27	1.54	25.16			Peak
4	298.92	33.13	-12.87	46.00	38.00	18.46	1.71	25.04			Peak
5	300.00	32.71	-13.29	46.00	37.54	18.50	1.71	25.04			Peak
6	479.90	41.62	-4.38	46.00	42.36	23.37	2.12	26.23	100	0	Peak
7	764.10	35.32	-10.68	46.00	31.67	27.12	2.77	26.24			Peak
8	2132.00	47.76			69.30	32.34	4.80	58.68			Peak
9	2300.00	42.68	-31.32	74.00	63.78	32.49	4.98	58.57			Peak
10	3308.00	42.01	-31.99	74.00	62.19	33.29	6.09	59.56			Peak
11	5406.00	40.31	-33.69	74.00	56.39	34.98	7.96	59.02			Peak
12	7996.00	43.10	-30.90	74.00	53.38	36.50	11.09	57.87			Peak
13	10024.00	42.73	-31.27	74.00	51.47	38.13	12.03	58.90			Peak
14	11408.00	43.17	-30.83	74.00	51.18	39.12	12.59	59.72			Peak

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13000

11000.

9000.

## 4. List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
EMI Test Receiver	R&S	ESR7	101404	9kHz~7GHz;Ma x 30dBm	Oct. 20, 2015	May 14, 2016~ May 16, 2016	Oct. 19, 2016	Conduction (CO01-SZ)
AC LISN	EMCO	3816/2SH	00103892	9kHz~30MHz	Jan. 12, 2016	May 14, 2016~ May 16, 2016	Jan. 11, 2017	Conduction (CO01-SZ)
AC LISN (for auxiliary equipment)	MessTec	3816/2SH	00103912	9kHz~30MHz	Jan. 12, 2016	May 14, 2016~ May 16, 2016	Jan. 11, 2017	Conduction (CO01-SZ)
AC Power Source	Chroma	61602	616020000891	100Vac~250Vac	Aug. 07, 2015	May 14, 2016~ May 16, 2016	Aug. 06, 2016	Conduction (CO01-SZ)
Pulse Limiter	COM-POWER	LIT-153 Transient Limiter	53139	150kHz~30MHz	Oct. 20, 2015	May 14, 2016~ May 16, 2016	Oct. 19, 2016	Conduction (CO01-SZ)
EMI Test Receiver&SA	KEYSIGHT	N9038A	MY54450083	20Hz~8.4GHz	May 07, 2016	May 21, 2016	May 07, 2017	Radiation (03CH03-SZ)
EXA Spectrum Anaiyzer	KEYSIGHT	N9010A	MY55150246	10Hz~44GHz;	May 07, 2016	May 21, 2016	May 07, 2017	Radiation (03CH03-SZ
Bilog Antenna	TeseQ	CBL6112D	35408	30MHz-2GHz	Oct. 17, 2015	May 21, 2016	Oct. 16, 2016	Radiation (03CH03-SZ)
Double Ridge Horn Antenna	SCHWARZBE CK	BBHA9120D	9120D-1355	1GHz~18GHz	May 07, 2016	May 21, 2016	May 07, 2017	Radiation (03CH03-SZ)
Amplifier	Agilent Technologies	83017A	MY39501302	500MHz~26.5G Hz	Jan. 12, 2016	May 21, 2016	Jan. 11, 2017	Radiation (03CH03-SZ)
Amplifier	PREAMPLIFIE R	BPA-530	102210	0.01Hz ~3000MHz	Oct 20, 2015	May 21, 2016	Oct. 20, 2016	Radiation (03CH03-SZ)
AC Power Source	Chroma	61601	616010001985	N/A	NCR	May 21, 2016	NCR	Radiation (03CH03-SZ)
Turn Table	EM	EM1000	N/A	0~360 degree	NCR	May 21, 2016	NCR	Radiation (03CH03-SZ)
Antenna Mast	EM	EM1000	N/A	1 m~4 m	NCR	May 21, 2016	NCR	Radiation (03CH03-SZ)
Bilog Antenna	TeseQ	CBL6112D	23188	30MHz-2GHz	Oct. 17, 2015	May 21, 2016	Oct. 16, 2016	Radiation (03CH03-SZ)

NCR: No Calibration Required

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## 5. Uncertainty of Evaluation

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

	4
Measuring Uncertainty for a Level of	2.3 dB
Confidence of 95% (U = 2Uc(y))	2.3 UB

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

Management Unique to the form of a collection	
Measuring Uncertainty for a Level of	5.0 dB
Confidence of 95% (U = 2Uc(y))	3.0 UB

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