# **FCC Test Report**

APPLICANT : CT Asia

**EQUIPMENT**: Mobile phone

BRAND NAME : BLU
MODEL NAME : Win HD

FCC ID : YHLBLUWINHD

STANDARD : FCC 47 CFR FCC Part 15 Subpart B

CLASSIFICATION : Certification

The product was received on Aug. 06, 2014 and testing was completed on Sep. 18, 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

Louis Wu

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.

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Testing Laboratory 2353

**Report No.: FC480603** 

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# **REVISION HISTORY**

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FC480603	Rev. 01	Initial issue of report	Sep. 28, 2014

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# **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	3.09 dB at
					0.560 MHz
					Under limit
3.2	15.109	15.109 Radiated Emission	< 15.109 limits	PASS	3.41 dB at
3.2					355.300 MHz
					for Quasi-Peak

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# 1. General Description

# 1.1. Applicant

#### **CT Asia**

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

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### 1.2. Manufacturer

#### BEIJING BENYWAVE TECHNOLOGY CO., LTD.

NO.55 Jiachang 2 road, OPTO-Mechatronics Industrial Park, Tongzhou district, Beijing 101111

## 1.3. Product Feature of Equipment Under Test

	Product Feature
Equipment	Mobile phone
Brand Name	BLU
Model Name	Win HD
FCC ID	YHLBLUWINHD
EUT supports Radios application	GSM/GPRS/EGPRS/ WCDMA/HSPA/DC-HSDPA/HSPA+(Downlink Only)/ WLAN 2.4GHz 802.11b/g/n HT20/ Bluetooth v3.0 + EDR
HW Version	TBW5705_P3
SW Version	01068.00016.57051.01029
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 subjective to this standard

Product Specifi	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 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				
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 IV: 2112.4 MHz ~ 2152.6 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 GPS: PIFA Antenna				
Type of Modulation	GSM: GMSK GPRS: GMSK EDGE(MCS 0-4): GMSK / (MCS 5-9): 8PSK WCDMA: QPSK (Uplink) HSDPA/DC-HSDPA: QPSK (Uplink) HSUPA: QPSK (Uplink) HSPA+: 16QAM (Downlink Only) DC-HSDPA: 64QAM 802.11b: DSSS (DBPSK / DQPSK / CCK) 802.11g/n: OFDM (BPSK / QPSK / 16QAM / 64QAM ) Bluetooth (1Mbps): GFSK Bluetooth (2Mbps): \pi /4-DQPSK Bluetooth (3Mbps): 8-DPSK GPS: BPSK				

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## 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					
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.

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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 C63.4-2003 and configuration operated in a manner tended to maximize its emission characteristics in a typical application.

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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)	$\boxtimes$	$\boxtimes$	$\boxtimes$
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

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Test Items	EUT Configure Mode	Function Type
		Mode 1: GSM850 Idle + Bluetooth Idle + WLAN Idle + Earphone + USB Cable (Charging from Adapter) + Camera + SIM1 <fig.1></fig.1>
AC Conducted Emission	1/2	Mode 2: GSM1900 Idle + Bluetooth Idle + WLAN Idle + Earphone + USB Cable (Charging from Adapter) + MPEG4 + SIM2 <fig.1></fig.1>
EIIIISSIOII	Mode 3: WCDMA Band V + Bluetooth Idle + WLAN Idle + USB Cable (Charging from Adapter) + 0 SIM2 <fig.2>  Mode 4: WCDMA Band V + Bluetooth Idle + WLAN Idle</fig.2>	Mode 3: WCDMA Band V + Bluetooth Idle + WLAN Idle + Earphone + USB Cable (Charging from Adapter) + GPS Rx + SIM2 <fig.2></fig.2>
		Mode 4: WCDMA Band V + Bluetooth Idle + WLAN Idle + Earphone + USB Cable (Data Link with Notebook) + SIM2 <fig.3></fig.3>
	1/2	Mode 1: GSM850 Idle + Bluetooth Idle + WLAN Idle + Earphone + USB Cable (Charging from Adapter) + Camera + SIM1 <fig.1></fig.1>
Radiated Emissions < 1GHz		Mode 2: GSM1900 Idle + Bluetooth Idle + WLAN Idle + Earphone + USB Cable (Charging from Adapter) + MPEG4 + SIM1 <fig.1></fig.1>
EIIIISSIOIIS < TGHZ		Mode 3: WCDMA Band V + Bluetooth Idle + WLAN Idle + Earphone + USB Cable (Charging from Adapter) + GPS Rx + SIM1 <fig.2></fig.2>
		Mode 4: WCDMA Band V + Bluetooth Idle + WLAN Idle + Earphone + USB Cable (Data Link with Notebook) + SIM1 <fig.3></fig.3>
Radiated Emissions ≥ 1GHz	1/2	Mode 1: GSM850 Idle + Bluetooth Idle + WLAN Idle + Earphone + USB Cable (Charging from Adapter) + Camera + SIM1 <fig.1></fig.1>
EIIIISSIUIIS Z TUITZ		Mode 2: WCDMA Band V + Bluetooth Idle + WLAN Idle + Earphone + USB Cable (Data Link with Notebook) + SIM1 <fig.3></fig.3>

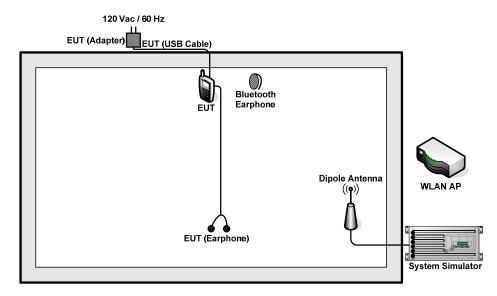
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#### Remark:

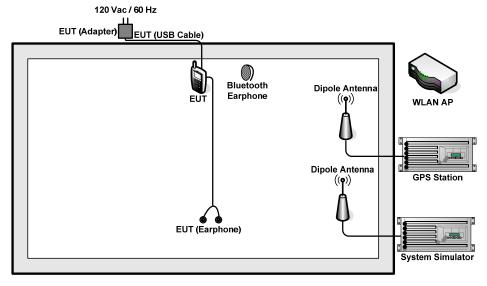
- 1. The worst case of AC is mode 2, and the USB Link mode of AC is mode 4; the test data of these modes are reported.
- 2. The worst case of RE < 1G is mode 1, and the USB Link mode of RE is mode 4; the test data of these modes are reported.
- 3. Link with notebook means data application transferred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

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# 2.2. Connection Diagram of Test System



<Fig.1>



<Fig.2>

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Adapter
RJ45

EUT(USB Cable)

Bluetooth
Earphone

Dipole Antenna

((e))

System Simulator

<Fig.3>

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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	R&S	CMW 500	N/A	N/A	Unshielded, 1.8 m
2.	Bluetooth Earphone	Nokia	BH-108	PYAHS-107W	N/A	N/A
3.	WLAN AP	D-link	DIR-815	KA2IR815A1	N/A	Unshielded,1.8m
4.	WLAN AP	ASUSTek	RT-AC66U	MSQ-RTAC66U	N/A	Unshielded,2.7m
5.	WLAN AP	D-link	DIR-628	KA2DIR628A2	N/A	Unshielded,1.8m
6.	GPS Station	ADIVIC	MP9000	N/A	N/A	Unshielded, 1.8 m
7.	Notebook	Lenovo	G480	FCC DoC	N/A	AC I/P: Unshielded, 1.2m DC O/P: Shielded, 1.8 m
8.	Notebook	Lenovo	E540	FCC DoC	N/A	AC I/P: Unshielded, 1.2m DC O/P: Shielded, 1.8 m
9.	SD Card	SanDisk	4G class 4	FCC DoC	N/A	N/A
10.	iPod nano 8GB	Apple	MC690 ZP/A	FCC DoC	Shielded, 1.2 m	N/A

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## 2.4. EUT Operation Test Setup

The EUT was in GSM and 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. Execute the program, "Winthrax" under WIN7 installed in notebook for files transfer with EUT via USB cable.
- 2. Execute "GPS Test" to make the EUT receive continuous signals from GPS station.
- 3. Execute "Windows Media 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

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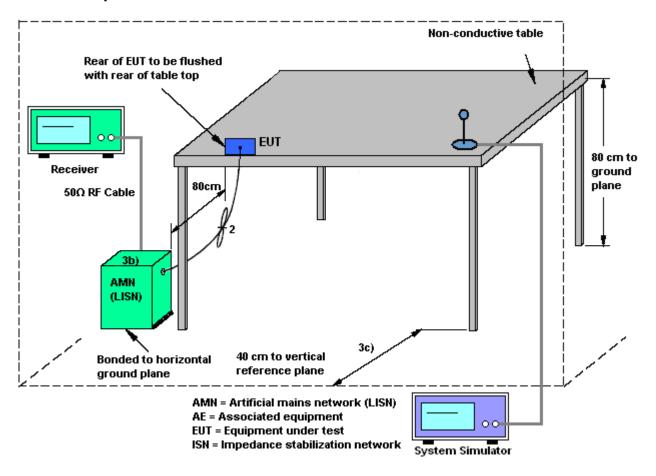
- The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least
   80 centimeters from any other grounded conducting surface.
- 2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
- 3. All the support units are connecting to the other 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

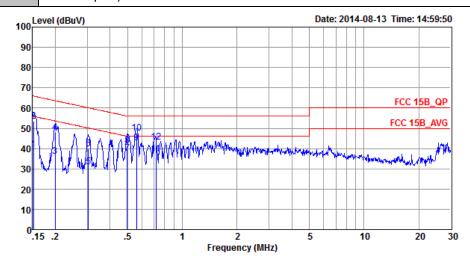


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### 3.1.5 Test Result of AC Conducted Emission

Test Mode :	Mode 2	Temperature :	<b>21~22</b> ℃		
Test Engineer :	Jack Tian	Relative Humidity: 41~42%			
Test Voltage :	120Vac / 60Hz	Phase :	Line		
Function Type	GSM1900 Idle + Bluetooth Idle + WLAN Idle + Earphone + USB Cable (Charging				
Function Type :	from Adapter) + MPEG4 + S	IM2			



Site : CO01-SZ

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

Project : (FC)480603 Mode : Mode 2

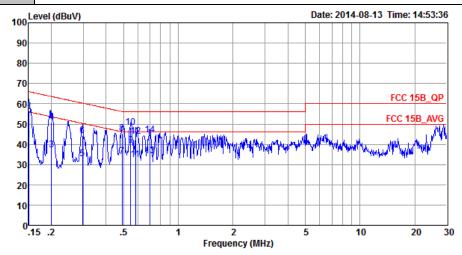
			Over	Limit	Read	LISN	Cable	
	Freq	Level	Limit	Line	Level	Factor	Loss	Remark
	MHz	dBu∀	dB	dBu∀	dBu∀	dB	dB	
1	0.15	39.58	-16.33	55.91	29.00	0.22	10.36	Average
2	0.15	53.48	-12.43	65.91	42.90	0.22	10.36	QP
3	0.20	36.11	-17.51	53.62	25.60	0.22	10.29	Average
4	0.20	47.81	-15.81	63.62	37.30	0.22	10.29	QP
5	0.30	30.86	-19.29	50.15	20.40	0.26	10.20	Average
6	0.30	39.76	-20.39	60.15	29.30	0.26	10.20	QP
7	0.50	37.46	-8.59	46.05	27.00	0.30	10.16	Average
8	0.50	41.46	-14.59	56.05	31.00	0.30	10.16	QP
9 *	0.56	42.91	-3.09	46.00	32.50	0.26	10.15	Average
10	0.56	47.51	-8.49	56.00	37.10	0.26	10.15	QP
11	0.72	37.34	-8.66	46.00	27.00	0.19	10.15	Average
12	0.72	43.34	-12.66	56.00	33.00	0.19	10.15	QP

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Test Mode :	Mode 2	Temperature :	21~22℃					
Test Engineer :	Jack Tian	Relative Humidity :	41~42%					
Test Voltage :	120Vac / 60Hz	Phase :	Neutral					
Function Time	GSM1900 Idle + Bluetooth Idle + WLAN Idle + Earphone + USB Cable (Charging							
Function Type :	from Adapter) + MPEG4 + SIM2							



Site : CO01-SZ

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

Project : (FC)480603 Mode : Mode 2

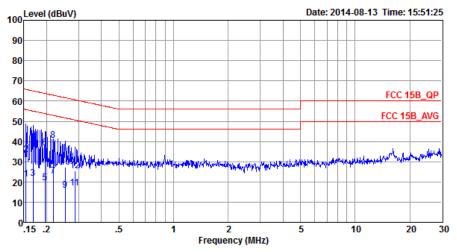
			Over	Limit	Read	LISN	Cable	
	Freq	Level	Limit	Line	Level	Factor	Loss	Remark
	MHz	dBu∀	dB	dBu∀	dBu∀	dB	dB	
1	0.15	42.59	-13.41	56.00	31.90	0.33	10.36	Average
2	0.15	56.39	-9.61	66.00	45.70	0.33	10.36	QP
3	0.20	37.11	-16.47	53.58	26.50	0.32	10.29	Average
4	0.20	50.91	-12.67	63.58	40.30	0.32	10.29	QP
5	0.30	32.86	-17.46	50.32	22.30	0.36	10.20	Average
6	0.30	44.26	-16.06	60.32	33.70	0.36	10.20	QP
7	0.49	34.07	-12.07	46.14	23.50	0.41	10.16	Average
8	0.49	45.37	-10.77	56.14	34.80	0.41	10.16	QP
9 *	0.55	39.42	-6.58	46.00	28.90	0.37	10.15	Average
10	0.55	48.42	-7.58	56.00	37.90	0.37	10.15	QP
11	0.58	32.59	-13.41	46.00	22.10	0.34	10.15	Average
12	0.58	43.89	-12.11	56.00	33.40	0.34	10.15	QP
13	0.70	34.30	-11.70	46.00	23.90	0.25	10.15	Average
14	0.70	44.80	-11.20	56.00	34.40	0.25	10.15	QP

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Test Mode:	Mode 4	Temperature :	<b>21~22</b> ℃					
Test Engineer :	Jack Tian	Relative Humidity :	41~42%					
Test Voltage :	120Vac / 60Hz	Phase :	Line					
Function Type	WCDMA Band V + Bluetooth Idle + WLAN Idle + Earphone + USB Cable (Data							
Function Type :	Link with Notebook) + SIM2							



Site : CO01-SZ Condition: FCC 15B\_QP LISN\_L\_20140304 LINE

Project : (FC) 480603 : Mode 4 Mode

			Over	Limit	Read	LISN	Cable	
	Freq	Level	Limit	Line	Level	Factor	Loss	Remark
_	MHz	dBu₹	dB	dBu₹	dBu₹	dB	dB	
1	0.15	21.37	-34.41	55.78	10.80	0.22	10.35	Average
2	0.15	33.47	-32.31	65.78	22.90	0.22	10.35	QP
3	0.17	21.95	-33.08	55.03	11.40	0.22	10.33	Average
4	0.17	37.15	-27.88	65.03	26.60	0.22	10.33	QP
5	0.20	19.72	-34.08	53.80	9.20	0.22	10.30	Average
6	0.20	36.72	-27.08	63.80	26.20	0.22	10.30	QP
7	0.22	22.90	-30.02	52.92	12.40	0.23	10.27	Average
8 *	0.22	40.70	-22.22	62.92	30.20	0.23	10.27	QP
9	0.25	15.88	-35.76	51.64	5.40	0.24	10.24	Average
10	0.25	27.18	-34.46	61.64	16.70	0.24	10.24	QP
11	0.29	16.86	-33.77	50.63	6.40	0.25	10.21	Average
12	0.29	25.56	-35.07	60.63	15.10	0.25	10.21	QP

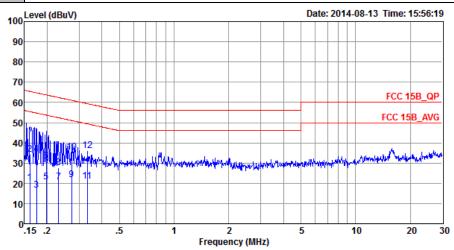
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Test Mode :	Mode 4	Temperature :	21~22℃
Test Engineer :	Jack Tian	Relative Humidity :	41~42%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	WCDMA Band V + Bluetoo	th Idle + WLAN Idle +	Earphone + USB Cable (Data

Function Type : | WCDMA Band V + Bluetooth Idle + WLAN Idle + Earphone + USB Cable (Data Link with Notebook) + SIM2



Site : CO01-SZ

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

Project : (FC)480603 Mode : Mode 4

			Over	Limit	Read	LISN	Cable	
	Freq	Level	Limit	Line	Level	Factor	Loss	Remark
	MHz	dBu∀	dB	dBuV	dBu₹	dB	dB	
1	0.16	20.17	-35.26	55.43	9.50	0.33	10.34	Average
2	0.16	34.27	-31.16	65.43	23.60	0.33	10.34	QP
3	0.17	16.55	-38.17	54.72	5.91	0.32	10.32	Average
4	0.17	34.45	-30.27	64.72	23.81	0.32	10.32	QP
5	0.20	20.62	-33.09	53.71	10.00	0.32	10.30	Average
6	0.20	30.92	-32.79	63.71	20.30	0.32	10.30	QP
7	0.23	20.79	-31.60	52.39	10.20	0.33	10.26	Average
8	0.23	27.79	-34.60	62.39	17.20	0.33	10.26	QP
9	0.27	21.77	-29.26	51.03	11.20	0.35	10.22	Average
10	0.27	35.57	-25.46	61.03	25.00	0.35	10.22	QP
11	0.33	21.06	-28.34	49.40	10.50	0.37	10.19	Average
12 *	0.33	36.06	-23.34	59.40	25.50	0.37	10.19	

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#### **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:

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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 (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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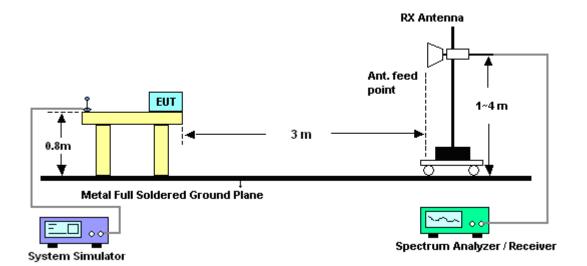
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# 3.2.4. Test Setup of Radiated Emission

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



#### For radiated emissions above 1GHz



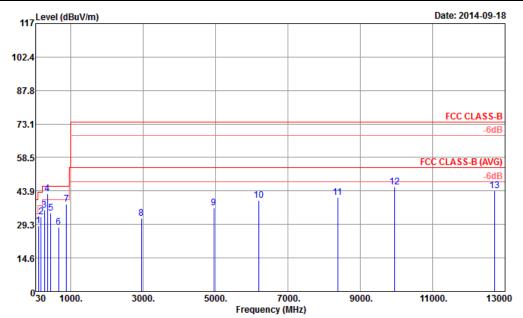
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#### 3.2.5. Test Result of Radiated Emission

23~25°C Test Mode: Mode 1 Temperature: 48~52% Test Engineer: Kaer Huang Relative Humidity: Test Distance : Polarization: Horizontal 3m GSM850 Idle + Bluetooth Idle + WLAN Idle + Earphone + USB Cable (Charging **Function Type:** from Adapter) + Camera + SIM1 Remark: #7 is system simulator signal which can be ignored.



Site : 03CH01-SZ

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

Project : (FC)480603 Mode : Mode 1

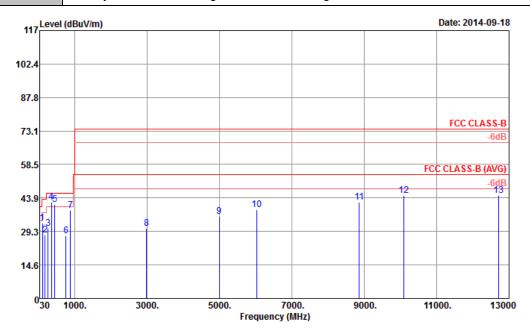
		Freq	Level	Over Limit	Limit Line		Antenna Factor		Preamp Factor	A/Pos	T/Pos	Remark
		MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	1	104.25	28.62	-14.88	43.50	45.48	11.60	1.48	29.94			Peak
2	1	182.55	32.62	-10.88	43.50	52.63	7.98	1.95	29.94			Peak
3	- 2	268.68	35.59	-10.41	46.00	50.98	12.15	2.39	29.93			Peak
4 (	) :	355.30	42.59	-3.41	46.00	55.28	14.50	2.74	29.93	100	320	QP
5	_ 4	451.20	34.36	-11.64	46.00	45.15	16.03	3.10	29.92			Peak
6	6	559.10	28.13	-17.87	46.00	35.66	18.50	3.90	29.93			Peak
7 F	,	881.70	38.25			43.01	20.56	4.62	29.94			Peak
8	29	958.00	31.80	-42.20	74.00	34.33	32.95	10.88	46.36			Peak
9	49	954.00	36.42	-37.58	74.00	35.54	34.12	12.95	46.19			Peak
10	63	192.00	39.65	-34.35	74.00	36.50	34.00	14.27	45.12			Peak
11	83	380.00	41.15	-32.85	74.00	35.86	35.58	16.22	46.51			Peak
12	99	944.00	45.69	-28.31	74.00	38.00	36.93	17.60	46.84			Peak
13	127	708.00	44.06	-29.94	74.00	36.40	38.29	18.65	49.28			Peak

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Report No.: FC480603

Report No. : FC480603

Test Mode :	Mode 1	Temperature :	23~25°C							
Test Engineer :	Kaer Huang	Relative Humidity :	48~52%							
Test Distance :	3m Polarization : Vertical									
F	GSM850 Idle + Bluetooth Idle + WLAN Idle + Earphone + USB Cable (Charging									
Function Type :	from Adapter) + Camera + SIM1									
Remark :	#7 is system simulator signal which can be ignored.									



Site : 03CH01-SZ

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

Project Mode : (FC)480603 : Mode 1

	Freq	Level	Over Limit			Antenna Factor		Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	104.25	32.80	-10.70	43.50	49.66	11.60	1.48	29.94			Peak
2	176.07	27.68	-15.82	43.50	47.65	8.05	1.92	29.94			Peak
3	265.71	30.51	-15.49	46.00	45.76	12.30	2.38	29.93			Peak
4 1	358.10	41.92	-4.08	46.00	54.42	14.68	2.75	29.93	200	360	Peak
5	451.20	41.02	-4.98	46.00	51.81	16.03	3.10	29.92			Peak
6	752.20	27.47	-18.53	46.00	32.82	20.38	4.20	29.93			Peak
7	881.70	38.40			43.16	20.56	4.62	29.94			Peak
8	2984.00	30.49	-43.51	74.00	32.93	32.98	10.95	46.37			Peak
9	4996.00	35.72	-38.28	74.00	34.65	34.20	13.00	46.13			Peak
10	6038.00	38.91	-35.09	74.00	35.16	34.00	14.00	44.25			Peak
11	8860.00	41.98	-32.02	74.00	35.67	36.22	16.15	46.06			Peak
12	10088.00	44.93	-29.07	74.00	37.39	36.94	17.63	47.03			Peak
13	12718.00	45.02	-28.98	74.00	37.40	38.29	18.61	49.28			Peak

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Kaer Huang Bm WCDMA B Link with N	and V		etooth	Polariz	ation		Hor	52% izonta rphone	e + USE	3 Cable 014-09-18
NCDMA B ∟ink with N			etooth						e + USE	
_ink with N				ı Idle -	+ WL£	AN Idle	+ Ear	rphon		
	oteboo	ok) + S	SIM1						Date: 20	014-09-18
dBuV/m)									Date: 20	014-09-18
									FCC	-6dB
									FCC CLASS	S-B (AVG) -6dB
				9			10	_ <del>11</del>		12
	7		8							
000.	3000.		5000.	Fraguan	7000.		9000.		11000.	13000
: 03CH01-	SZ			rrequeir	cy (miiz)					
		n LF_Al	NT_1310	26 HORI	ZONTAL					
: Mode 4	505									
Enca Laval							A/Pos	T/Pos	Domank	
								deg		_
								_	Desk	
6.08 33.94	-9.56	43.50	53.37	8.66	1.85	29.94			Peak	
9.90 30.90	-15.10	46.00	40.18	17.40	3.24	29.92			Peak	
6.00 39.39	-34.61	74.00	36.08	34.00	14.14	44.83			Peak	
F 5 6 6 8 6 6 8	: 03CH01- : FCC CL/ : (FC)4800 : Mode 4 Freq Level MHz dBuV/m 5.61 31.06 5.08 33.94 9.06 41.88 4.20 31.57 9.90 30.90 9.00 34.73 2.00 32.78 3.00 35.97 5.00 42.36 5.00 42.36	: 03CH01-SZ : FCC CLASS-B 3r : (FC)480603 : Mode 4 Over Level Limit  MHz dBuV/m dB 6.61 31.06 -12.44 5.08 33.94 -9.56 6.06 41.88 -4.12 4.20 31.57 -14.43 6.00 34.73 -11.27 6.00 32.78 -41.22 6.00 35.97 -38.03 6.00 42.36 -31.64 6.00 45.85 -28.15	: 03CH01-SZ : FCC CLASS-B 3m LF_AN : (FC)480603 : Mode 4 Over Limit Freq Level Limit Line MHz dBuV/m dB dBuV/m 5.61 31.06 -12.44 43.50 6.08 33.94 -9.56 43.50 9.06 41.88 -4.12 46.00 4.20 31.57 -14.43 46.00 9.90 30.90 -15.10 46.00 9.90 30.90 -15.10 46.00 9.90 32.78 -41.22 74.00 3.00 35.97 -38.03 74.00 6.00 39.39 -34.61 74.00 6.00 42.36 -31.64 74.00 6.00 45.85 -28.15 74.00	: 03CH01-SZ : FCC CLASS-B 3m LF_ANT_1310 : (FC)480603 : Mode 4	Frequence: 03CH01-SZ: FCC CLASS-B 3m LF_ANT_131026 HORIZ: (FC)480603: Mode 4    Over Limit ReadAntenna Level Factor	Frequency (MHz) : 03CH01-SZ : FCC CLASS-B 3m LF_ANT_131026 HORIZONTAL : (FC)480603 : Mode 4  Freq Level Limit Line Level Factor Loss  MHz dBuV/m dB dBuV/m dBuV dB/m dB  5.61 31.06 -12.44 43.50 49.15 10.44 1.41  5.08 33.94 -9.56 43.50 53.37 8.66 1.85  9.06 41.88 -4.12 46.00 58.20 11.35 2.26  4.20 31.57 -14.43 46.00 43.29 15.40 2.81  9.90 30.90 -15.10 46.00 43.29 15.40 2.81  9.90 30.90 -15.10 46.00 40.18 17.40 3.24  9.00 32.78 -41.22 74.00 35.22 32.98 10.95  8.00 35.97 -38.03 74.00 35.09 34.12 12.95  8.00 39.39 -34.61 74.00 36.08 34.00 14.14  8.00 42.36 -31.64 74.00 36.05 36.22 16.15  8.00 45.85 -28.15 74.00 38.24 36.90 17.53	Frequency (MHz)  : 03CH01-SZ : FCC CLASS-B 3m LF_ANT_131026 HORIZONTAL : (FC)480603 : Mode 4  Over Limit ReadAntenna Cable Preamp Freq Level Limit Line Level Factor Loss Factor  MHz dBuV/m dB dBuV/m dBuV dB/m dB dB  5.61 31.06 -12.44 43.50 49.15 10.44 1.41 29.94 5.08 33.94 -9.56 43.50 53.37 8.66 1.85 29.94	Frequency (MHz)  : 03CH01-SZ : FCC CLASS-B 3m LF_ANT_131026 HORIZONTAL : (FC)480603 : Mode 4	Frequency (MHz)  : 03CH01-SZ : FCC CLASS-B 3m LF_ANT_131026 HORIZONTAL : (FC)480603 : Mode 4   Over Limit ReadAntenna Cable Preamp A/Pos T/Pos Level Limit Line Level Factor Loss Factor  MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg  5.61 31.06 -12.44 43.50 49.15 10.44 1.41 29.94  6.68 33.94 -9.56 43.50 53.37 8.66 1.85 29.94  7.006 41.88 -4.12 46.00 58.20 11.35 2.26 29.93 100 20  7.10 31.57 -14.43 46.00 43.29 15.40 2.81 29.93  7.10 30.90 30.90 -15.10 46.00 40.18 17.40 3.24 29.92  7.10 31.77 46.00 41.29 19.30 4.07 29.93  7.10 32.78 -41.22 74.00 35.22 32.98 10.95 46.37  7.10 39.39 -34.61 74.00 35.09 34.12 12.95 46.19  7.10 39.39 -34.61 74.00 36.08 34.00 14.14 44.83  7.10 42.86 -31.64 74.00 36.05 36.22 16.15 46.06  7.10 45.85 -28.15 74.00 38.24 36.90 17.53 46.82	Frequency (MHz)  : 03CH01-SZ : FCC CLASS-B 3m LF_ANT_131026 HORIZONTAL : (FC)480603 : Mode 4   Over Limit ReadAntenna Cable Preamp A/Pos T/Pos Remark  Freq Level Limit Line Level Factor Loss Factor Remark  MHz dBuV/m dB dBuV/m dB dBuV dB/m dB dB cm deg  5.61 31.06 -12.44 43.50 49.15 10.44 1.41 29.94 Peak 5.08 33.94 -9.56 43.50 53.37 8.66 1.85 29.94 Peak 6.08 33.94 -9.56 43.50 53.37 8.66 1.85 29.94 Peak 6.08 31.97 -14.43 46.00 58.20 11.35 2.26 29.93 100 20 Peak 6.20 31.57 -14.43 46.00 43.29 15.40 2.81 29.93 Peak 6.00 34.73 -11.27 46.00 40.18 17.40 3.24 29.92 Peak 6.00 32.78 -41.22 74.00 35.22 32.98 10.95 46.37 Peak 6.00 32.78 -41.22 74.00 35.09 34.12 12.95 46.19 Peak 6.00 39.39 -34.61 74.00 36.08 34.00 14.14 44.83 Peak 6.00 42.36 -31.64 74.00 36.08 36.22 16.15 46.06 Peak 6.00 42.36 -31.64 74.00 36.05 36.22 16.15 46.06 Peak 6.00 45.85 -28.15 74.00 38.24 36.90 17.53 46.82 Peak

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Report No.: FC480603

Report No.: FC480603 23~25°C Test Mode: Mode 4 Temperature: Test Engineer: Relative Humidity: Kaer Huang 48~52% Test Distance: 3m Polarization: Vertical WCDMA Band V + Bluetooth Idle + WLAN Idle + Earphone + USB Cable (Data **Function Type:** Link with Notebook) + SIM1 117 Level (dBuV/m) Date: 2014-09-18 102.4 87.8 FCC CLASS-B 73.1 58.5 FCC CLASS-B (AVG) 43.9 29.3 14.6

: 03CH01-SZ

1000.

Condition FCC CLASS-B 3m LF\_ANT\_131026 VERTICAL

3000.

Project (FC)480603 Mode : Mode 4

			Over	Limit	Read/	Antenna	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	
1	40.26	27.31	-12.69	40.00	43.84	12.50	0.90	29.93			Peak
2	104.25	31.89	-11.61	43.50	48.75	11.60	1.48	29.94			Peak
3	239.52	29.21	-16.79	46.00	45.58	11.30	2.26	29.93			Peak
4	399.40	30.20	-15.80	46.00	41.32	15.90	2.91	29.93			Peak
5 P	479.90	37.24	-8.76	46.00	46.52	17.40	3.24	29.92	150	30	Peak
6	715.10	29.52	-16.48	46.00	36.24	19.15	4.06	29.93			Peak
7	2582.00	31.74	-42.26	74.00	35.63	32.58	9.77	46.24			Peak
8	4980.00	36.32	-37.68	74.00	35.34	34.16	12.98	46.16			Peak
9	6368.00	39.48	-34.52	74.00	37.06	34.00	14.59	46.17			Peak
10	8994.00	42.45	-31.55	74.00	35.96	36.38	16.08	45.97			Peak
11	9772.00	45.52	-28.48	74.00	38.34	36.69	17.10	46.61			Peak
12	12712.00	45.43	-28.57	74.00	37.77	38.29	18.65	49.28			Peak

5000.

7000.

Frequency (MHz)

9000.

11000.

13000

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# 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	Aug. 13, 2014	Feb. 20, 2015	Conduction (CO01-SZ)
AC LISN	EMCO	3816/2SH	00103912	9kHz~30MHz	Mar. 04, 2014	Aug. 13, 2014	Mar. 03, 2015	Conduction (CO01-SZ)
AC LISN (for auxiliary equipment)	EMCO	3816/2SH	00103892	9kHz~30MHz	Mar. 04, 2014	Aug. 13, 2014	Mar. 03, 2015	Conduction (CO01-SZ)
AC Power Source	Chroma	61602	6160200008 91	100Vac~250Vac	Dec. 17, 2013	Aug. 13, 2014	Dec. 16, 2014	Conduction (CO01-SZ)
ESCIO TEST Receiver	R&S	ESCI	100724	9kHz~3GHz	Feb. 21, 2014	Sep. 18, 2014	Feb. 20, 2015	Radiation (03CH01-SZ)
Spectrum Analyzer	Agilent Technologies	N9038A	MY52260185	20Hz~26.5GHz	May 26, 2014	Sep. 18, 2014	May 25, 2015	Radiation (03CH01-SZ)
Bilog Antenna	TESEQ	CBL 6112D	23188	30MHz~2GHz	Oct. 26, 2013	Sep. 18, 2014	Oct. 25, 2014	Radiation (03CH01-SZ)
Double Ridge Horn Antenna	ETS Lindgren	3117	00119436	1GHz~18GHz	Oct. 26, 2013	Sep. 18, 2014	Oct. 25, 2014	Radiation (03CH01-SZ)
Amplifier	ADVANTEST	BB525C	E9007003	9kHz~3000MHz	Feb. 21, 2014	Sep. 18, 2014	Feb. 20, 2015	Radiation (03CH01-SZ)
Amplifier	Yiai	AV3860B	04030	2GHz~26.5GHz	May 08, 2014	Sep. 18, 2014	May 07, 2015	Radiation (03CH01-SZ)
AC Source(AVR)	Chroma	61601	6160100019 85	100Vac~250Vac	Mar. 25, 2014	Sep. 18, 2014	Mar. 24, 2015	Radiation (03CH01-SZ)
Turn Table	EM Electronics	EM 1000	N/A	0~360 degree	NCR	Sep. 18, 2014	NCR	Radiation (03CH01-SZ)
Antenna Mast	EM Electronics	EM 1000	N/A	1 m~4 m	NCR	Sep. 18, 2014	NCR	Radiation (03CH01-SZ)

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# 5. Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of	2.2
Confidence of 95% (U = 2Uc(y))	2.3

Report No. : FC480603

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

Measuring Uncertainty for a Level of	2.0
Confidence of 95% (U = 2Uc(y))	3.9

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