

# FCC Test Report

FCC 47 CFR FCC Part 15 Subpart B

Product Name : WCDMA mobile phone  
Model No. : Elite 4.7 HD  
FCC ID : YHLBLUELITE47HD

Prepared By: : Inventec Appliances(Pudong) Corporation  
Address: : No.789 Pu Xing Road,Shanghai,PRC  
Date of Receipt : 2013.02.20  
Date of Test : 2013.02.20-2013.03.04  
Report No. : 20130220FCC-A



## Test Report Certification

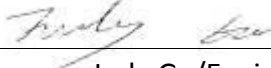
Date of Issue : Mar.07.2013

Report No. : 20130220FCC-A

Product Name : WCDMA mobile phone  
Model No. : Elite 4.7 HD  
Trade Name : BLU  
Applicant : CT Asia (HK) Ltd  
Address : Unit 1309-11, 13/F,9 Wing Hong Street, Cheung Sha Wan, Kowloon,  
Hong Kong  
Standard : FCC 47 CFR FCC Part 15 Subpart B  
Classification : JBP  
Test Result : Complied

The Test Results relate only to the samples tested.

The test report shall not be reproduced except in full without the written approval of IAC regulatory Laboratory

Documented By :  , Mar.07.2013  
Judy Ge/Engineer

Tested By :  , Mar.07.2013  
Alice Lee/Engineer

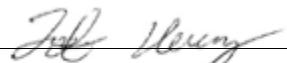
Approved By :  , Mar.07.2013  
Jeff Huang/Director of Operations

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**SUMMARY OF TEST RESULT**

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	15.107	7.2.2	AC Conducted Emission	< 15.107 limits < RSS-Gen table 2 limits	PASS	Under limit 6 dB
3.2	15.109	7.2.3.2	Radiated Emission	< 15.109 limits or < RSS-Gen table 1 limits (Section 6)	PASS	Under limit 6dB

## 1. GENERAL INFORMATION

### 1.1 Applicant

Company Name: CT Asia (HK) Ltd

Address: Unit 1309-11, 13/F,9 Wing Hong Street, Cheung Sha Wan, Kowloon, Hong Kong

### 1.2 Manufacturer

Company Name: Cellon Communications Technology(Shenzhen)Co., Ltd.

Address: 13/F, Skyworth Building C Gaoxin S. Ave. 1st, High-Tech industrial Park NanShan, ShenZhen

### 1.3 Feature of Equipment Under Test

Product Feature & Specification	
Equipment	WCDMA mobile phone
Brand Name	BLU
Model Name	Elite 4.7 HD
FCC ID	YHLBLUELITE47HD
HW Version	P3
SW Version	BLU_E800_V14_GENERIC

#### Remark:

1. For other wireless features of this EUT, test report will be issued separately.
2. This test report recorded only product characteristics and test results of JBP.
3. The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

### 1.4 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.

## 2. Test Configuration of Equipment Under Test

### 2.1 Test Modes

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).

#### Abbreviations:

- EMI AC: AC conducted emissions
- EMI RE  $\geq$  1G: EUT radiated emissions  $\geq$  1GHz
- EMI RE < 1G: EUT radiated emissions < 1GHz

Test Item	Function Type
<b>AC Conducted Emission</b>	Mode 1: GSM 850 Idle + Bluetooth Idle + WiFi Idle + GPS Rx + Battery + Earphone + LCD monitor+ Notebook

Test Item	Function Type
<b>RadiatedEmissions &lt; 1GHz</b>	Mode 1: GSM 850 Idle + Bluetooth Idle + WiFi Idle + GPS Rx + Battery + Earphone + LCD monitor+ Notebook

Test Item	Function Type
<b>RadiatedEmissions &gt; 1GHz</b>	Mode 1: GSM 850 Idle + Bluetooth Idle + WiFi Idle + GPS Rx + Battery + Earphone + LCD monitor+ Notebook

### 2.2 Testing Environment

Items	Ambient Temperature	Relative Humidity	Test Distance
Normal Condition	22~24°C	35~60%	3m

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

\*Decreases with the logarithm of the frequency.

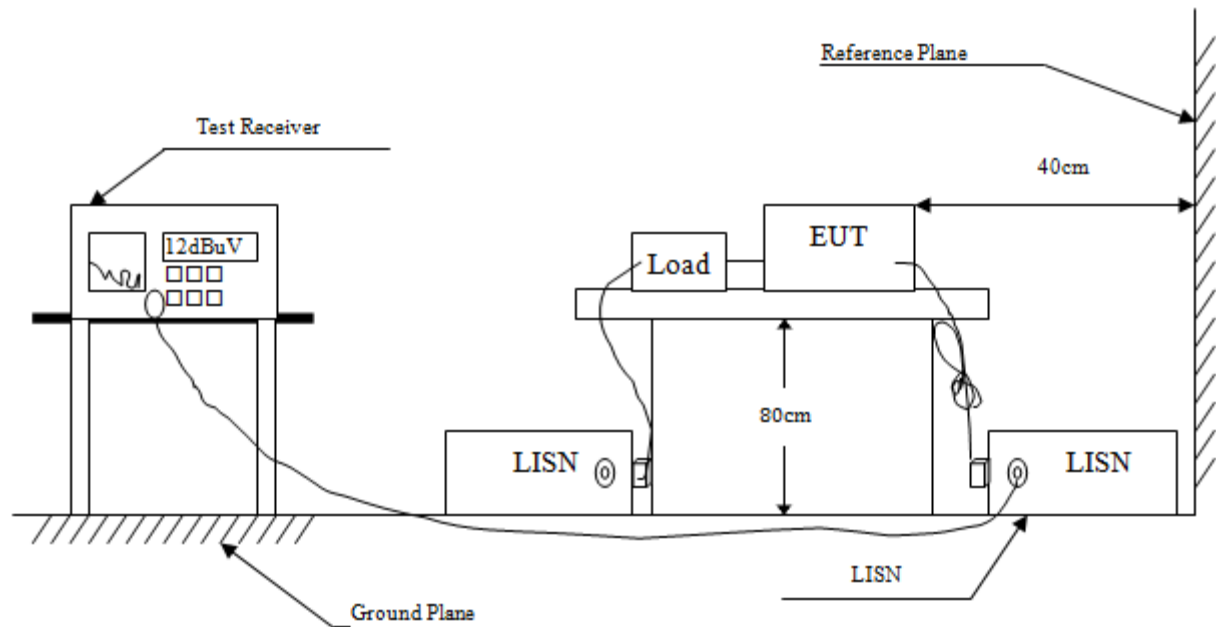
##### 3.1.2 Measuring Instruments

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 (RBW=9kHz and VBW=30kHz) with Maximum Hold Mode for QP limit measurement.
9. Set the test-receiver system to Average Detect Function and specified bandwidth (RBW=9kHz and VBW=30kHz) with Maximum Hold Mode for QP limit measurement.

### 3.1.4 Test Setup

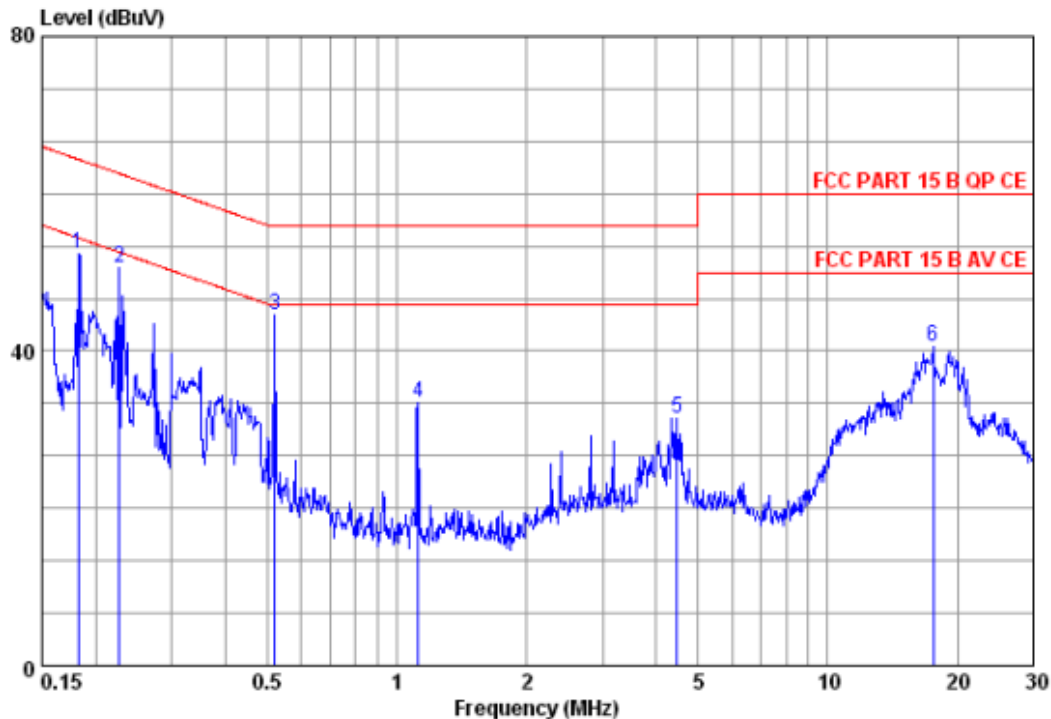




### 3.1.5 Test Result of AC Conducted Emission

Test Voltage:120V/60Hz

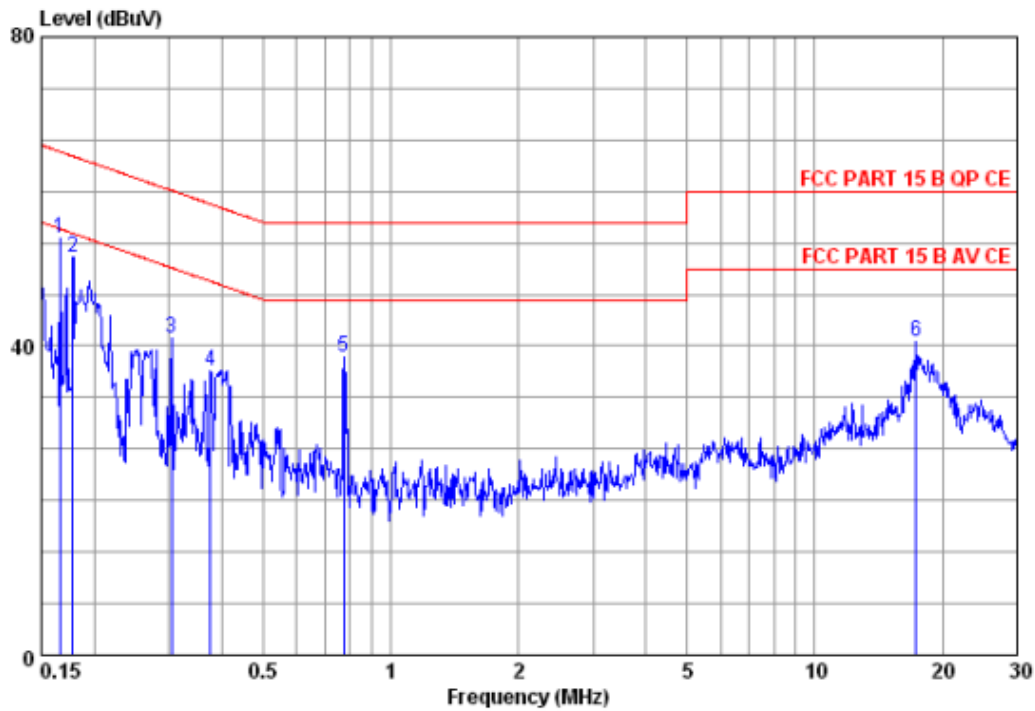
Mode 1: GSM 850 Idle + Bluetooth Idle + WiFi Idle + GPS Rx + Battery + Earphone +  
LCD monitor+ Notebook+ Adapter +Neutral



Site : 966 CHAMBER  
 Condition : FCC PART 15 B QP CE ENV216 NEW NEUTRAL  
 : RBW:9.000KHz VBW:30.000KHz SWT:Auto  
 ext : C8669BL  
 mode : WCDMA 850 idle +wifi link+ BT link+LCD  
 memo : Monitor+Notebook

		LISN		Read	Preamp	Cable	Limit	Over	A/Pos	T/Pos	
	Freq	Factor	Level	Level	Factor	Loss	Line	Limit			Remark
	MHz	dB	dBuV	dBuV	dB	dB	dBuV	dB	cm	deg	
1	0.18	9.91	52.33	42.41	0.00	0.01	64.37	-12.04	160	0	Peak
2	0.23	10.16	50.66	40.48	0.00	0.02	62.57	-11.91	160	0	Peak
3	0.52	9.76	44.51	34.73	0.00	0.02	56.00	-11.49	160	0	Peak
4	1.12	9.66	33.33	23.65	0.00	0.02	56.00	-22.67	160	0	Peak
5	4.48	9.66	31.43	21.74	0.00	0.03	56.00	-24.57	160	0	Peak
6	17.57	9.91	40.51	30.45	0.00	0.15	60.00	-19.49	160	0	Peak

**Mode 1: GSM 850 Idle + Bluetooth Idle + WiFi Idle + GPS Rx + Battery + Earphone + LCD monitor+ Notebook+ Adapter + Line**



Site : 966 CHAMBER  
 Condition : FCC PART 15 B QP CE ENV216 NEW LINE  
 : RBW:9.000KHz VBW:30.000KHz SWT:auto  
 ext : C8669BL  
 mode : WCDMA 850 idle +wifi link+ BT link+LCD  
 memo : Monitor+Notebook

		LISN		Read Preampl		Cable	Limit	Over	A/Pos	T/Pos	Remark
	Freq	Factor	Level	Level	Factor	Loss	Line	Limit			
	MHz	dB	dBuV	dBuV	dB	dB	dBuV	dB	cm	deg	
1	0.17	9.45	53.95	44.49	0.00	0.01	65.16	-11.21	160	0	Peak
2	0.18	9.53	51.53	41.99	0.00	0.01	64.59	-13.06	160	0	Peak
3	0.31	9.65	41.07	31.40	0.00	0.02	60.10	-19.03	160	0	Peak
4	0.38	9.67	36.83	27.14	0.00	0.02	58.39	-21.56	160	0	Peak
5	0.78	9.70	38.48	28.76	0.00	0.02	56.00	-17.52	160	0	Peak
6	17.29	9.85	40.49	30.50	0.00	0.14	60.00	-19.51	160	0	Peak

### 3.2 Test of Radiated Emission Measurement

#### 3.2.1 Limit of Radiated Emission

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

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30.0	30	30
30 – 88	100	3
88 – 216	150	3
216 - 960	200	3
Above 960	500	3

#### 3.2.2 Measuring Instruments

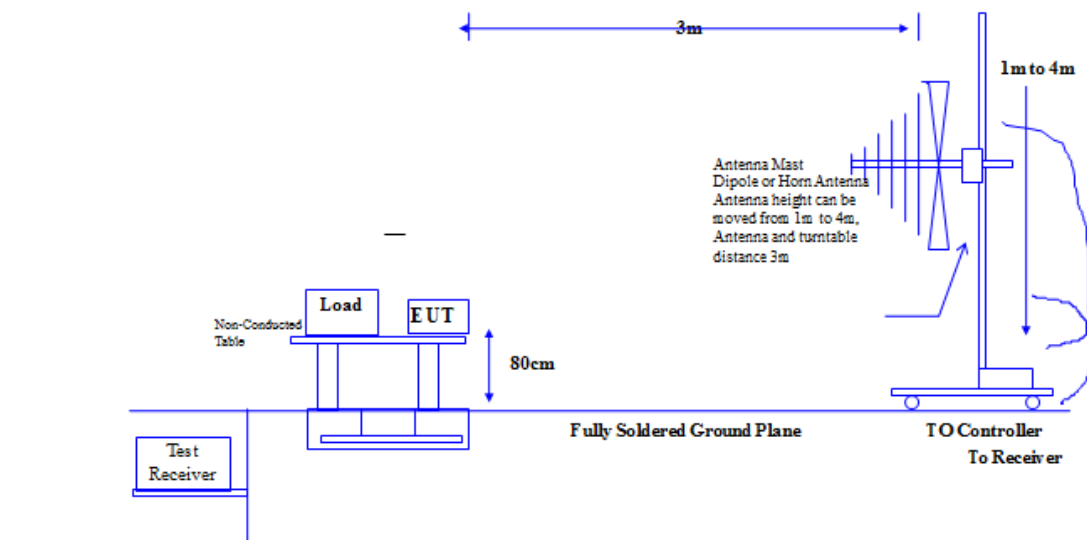
See list of measuring instruments of this test report.

#### 3.2.3 Test Procedure

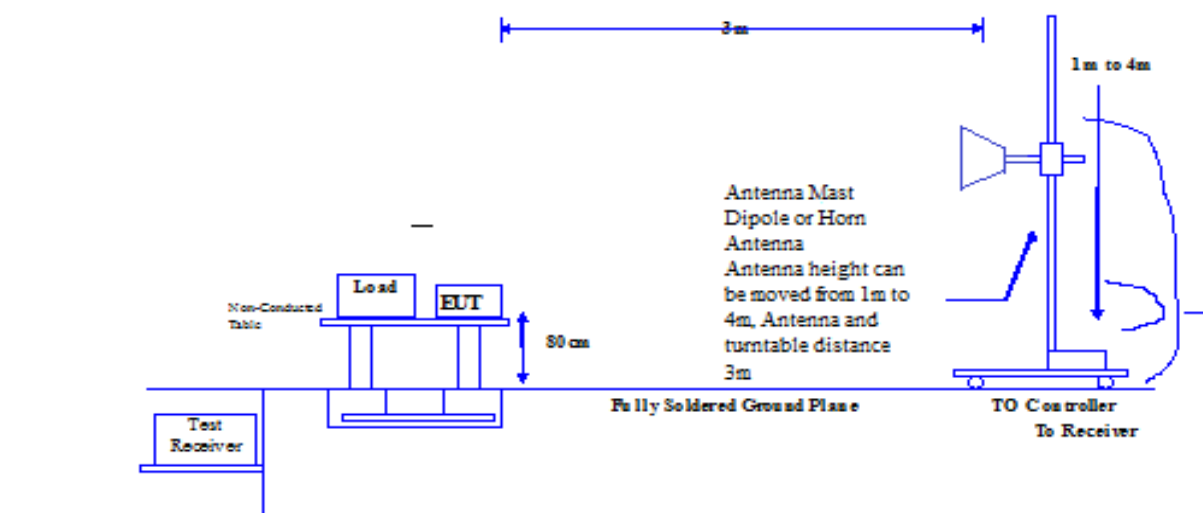
1. The EUT was placed on a turntable with 0.8 meter above ground.
2. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest radiation.
4. The antenna is a Bi-Log antenna and its height is adjusted between one meter and 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 (RBW=120kHz and VBW=300kHz with Maximum Hold Mode.
7. If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be repeated one by one 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

### 3.2.4 Test Setup

30MHz~1GHz



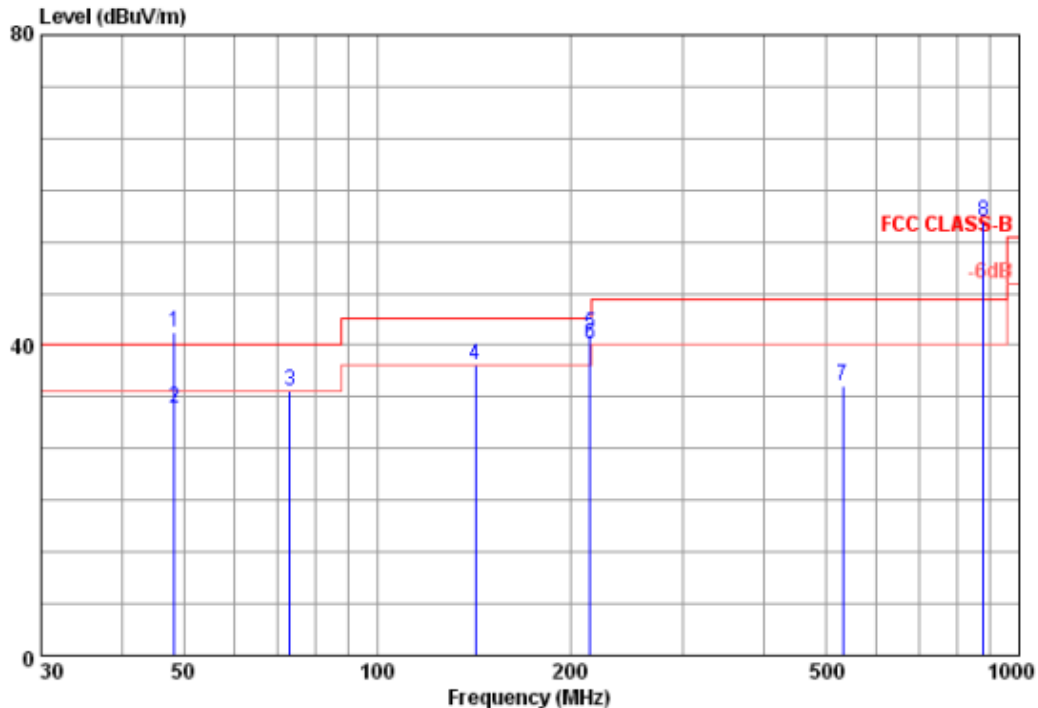
Above 1GHz



### 3.2.5 Test Result of Radiated Emission

Test Distance : 3m

Mode1: GSM 850 Idle + Bluetooth Idle + WiFi Idle + GPS Rx + Battery + Earphone +  
LCD monitor+ Notebook+ Adapter –Vertical

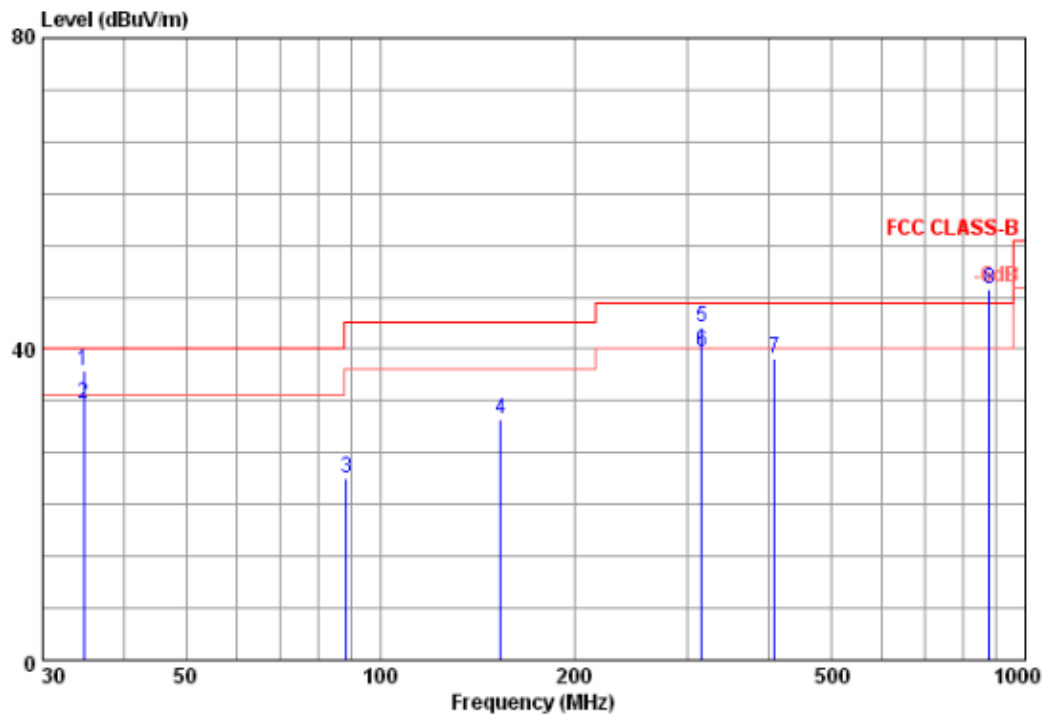


Site : 966 CHAMBER  
Condition : FCC CLASS-B 3m 2011 HL562 VERTICAL  
RBW:100.000KHz VBW:300.000KHz SWT:Auto  
ant : phone C8690BL  
mode : gsm 850 idle+BT idle+Wifi idle+gps Rx+  
memo : LCD+NoteBook+Earphone

	Antenna	Read	Preamp	Cable	Limit	Over	A/Pos	T/Pos	
	Freq	Factor	Level	Level	Factor	Loss	Line	Limit	Remark
	MHz	dB/m	dBuV/m	dBuV	dB	dB	dBuV/m	dB	cm
1	48.43	8.79	41.70	58.94	27.15	1.12	40.00	1.70	104
2	48.43	8.79	31.80	49.04	27.15	1.12	40.00	-8.20	275 QP
3	73.17	7.23	33.99	52.13	26.82	1.45	40.00	-6.01	104
4	142.52	7.91	37.47	54.53	26.87	1.90	43.50	-6.03	104
5	214.79	7.99	41.34	57.47	26.43	2.31	43.50	-2.16	104
6	214.91	8.03	40.20	56.29	26.43	2.31	43.50	-3.30	142
7	530.52	15.92	34.82	42.87	27.79	3.82	46.00	-11.18	104
8	878.27	20.32	55.92	58.07	27.41	4.94	46.00	9.92	104

Remark: #8 is communication signal which can be ignored.

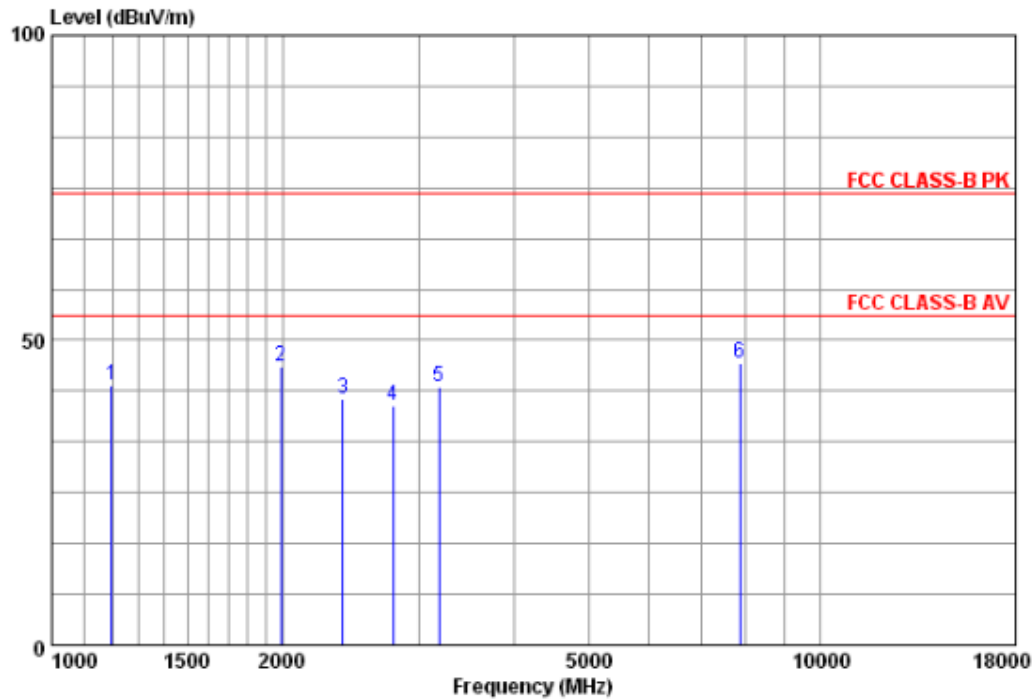
**Mode1: GSM 850 Idle + Bluetooth Idle + WiFi Idle + GPS Rx + Battery + Earphone + LCD monitor+ Notebook+ Adapter –Horizontal**



Site : 966 CHAMBER  
 Condition : FCC CLASS-B 3m 2011 HL562 VERTICAL  
 : RBW:100.000KHz VBW:300.000KHz SWT:Auto  
 ext : phone C8690BL  
 mode : gsm 850 idle+BT idle+Wifi idle+gps Rx+  
 memo : adapter+Earphone

	Antenna	Read	Preamp	Cable	Limit	Over	A/Pos	T/Pos	
	Freq	Factor	Level	Level	Factor	Loss	Line	Limit	Remark
	MHz	dB/m	dBuV/m	dBuV	dB	dB	dBuV/m	dB	cm
1	34.76	16.73	37.18	46.41	27.10	1.14	40.00	-2.82	200
2	34.76	16.73	32.87	42.10	27.10	1.14	40.00	-7.13	104
3	88.65	8.59	23.36	40.49	27.46	1.74	43.50	-20.14	200
4	153.74	7.44	31.03	48.29	26.78	2.08	43.50	-12.47	200
5	315.48	11.46	42.69	54.59	26.31	2.95	46.00	-3.31	200
6	315.48	11.46	39.71	51.61	26.31	2.95	46.00	-6.29	153
7	408.95	13.65	38.88	49.06	27.24	3.41	46.00	-7.12	200
8	878.32	20.32	47.79	49.94	27.41	4.94	46.00	1.79	200

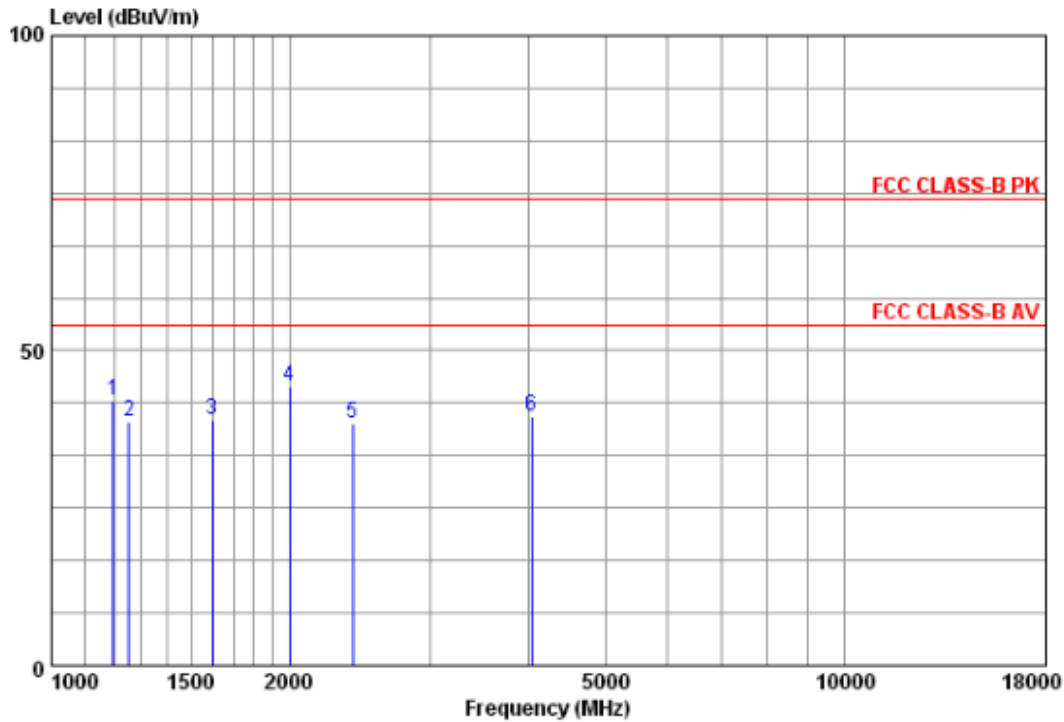
Remark: #8 is communication signal which can be ignored.

**Radiated Emission above 1GHz****Test Distance : 3m****Mode1: GSM 850 Idle + Bluetooth Idle + WiFi Idle + GPS Rx + Battery + Earphone +****LCD monitor+ Notebook+ Adapter -Vertical****1GHz~18GHz**

Site : 966 CHAMBER  
 Condition : FCC CLASS-B PK 3m HF906 VERTICAL  
 : RBW:1000.000KHz VEW:1000.000KHz SWT:Auto  
 ext : GSM MOBILE PHONE  
 mode : WCDMA 850 idle +wifi link+ BT link+LCD  
 memo : +MONITOR+NOTEBOOK

	Antenna	Read	Preamp	Cable	Limit	Over	A/Pos	T/Pos	
	Freq	Factor	Level	Level	Factor	Loss	Line	Limit	Remark
	MHz	dB/m	dBUV/m	dBuV	dB	dB	dBUV/m	dB	cm deg
1	1196.26	24.04	42.74	60.42	46.01	4.29	74.00	-31.26	200 0 Peak
2	1989.55	27.03	45.65	57.53	44.70	5.79	74.00	-28.35	200 0 Peak
3	2393.82	27.58	40.31	51.12	45.09	6.70	74.00	-33.69	200 0 Peak
4	2782.06	28.50	39.26	47.62	44.88	8.02	74.00	-34.74	200 0 Peak
5	3196.09	29.72	42.29	49.32	44.62	7.87	74.00	-31.71	200 0 Peak
6	7875.25	35.53	46.17	40.71	42.78	12.71	74.00	-27.83	200 0 Peak

**Mode 1: GSM 850 Idle + Bluetooth Idle + WiFi Idle + GPS Rx + Battery + Earphone +  
LCD monitor+ Notebook+ Adapter -Horizontal  
1GHz~18GHz**



Site : 966 CHAMBER  
 Condition : FCC CLASS-B PK 3m HP906 HORIZONTAL  
 : RBW:1000.000KHz VBW:1000.000KHz SWT:Auto  
 ant : GSM MOBILE PHONE  
 mode : WCDMA 850 idle +wifi link+ BT link+LCD  
 memo : +MONITOR+NOTEBOOK

Antenna			Read	Preamp	Cable	Limit	Over	A/Pos	T/Pos	Remark
Freq	Factor	Level	Level	Factor	Loss	Line	Limit			
MHz	dB/m	dBuV/m	dBuV	dB	dB	dBuV/m	dB	cm	deg	
1196.26	24.04	42.02	59.70	46.01	4.29	74.00	-31.98	200	0	Peak
1252.89	24.20	38.80	55.94	45.84	4.50	74.00	-35.20	200	0	Peak
1597.18	25.32	38.95	53.84	45.30	5.09	74.00	-35.05	200	0	Peak
1995.31	27.10	44.19	56.00	44.70	5.79	74.00	-29.81	200	0	Peak
2400.75	27.58	38.45	49.26	45.10	6.71	74.00	-35.55	200	0	Peak
4039.21	31.59	39.47	43.02	44.00	8.86	74.00	-34.53	200	0	Peak



#### 4. List of Measuring Equipment

No	Instrument/Ancillary	Provider	Type/Model	Cal. Date
01	Base Station	R&S	CMU200	2012.12.08
02	Spectrum Analyzer	R&S	FSP30(9kHz~30GHz)	2012.07.19
03	Antenna	R&S	HL562 (30M-1G)	2012.11.09
04	Loop Antenna	Schwarzbeck	FMZB1516(9KHz~30MHz)	2013.02.03
05	Antenna	R&S	HF906(1G-18G)	2012.08.02
06	Antenna	Schwarzbeck	BBHA 9170 (15G-26.5G)	2012.11.09
07	High Pass Filter	R&S	System Integrated	2012.11.14
08	Thermal chamber	Hitachi	EC- 85MHP	2012.12.25
09	Pre-Amplifier	Agilent	83006A(0.01GHz-26.5GHz)	2012.08.06
10	Pre-Amplifier	Agilent	83006A(0.01GHz-26.5GHz)	2012.08.06
11	Helical Antenna	ETS	3102 (1G-10G )	NCR
12	Power Meter	R&S	NRP(10MHz~8GHz)	2012.12.05
13	Relay Switch	R&S	TS-REMI	NCR
14	Signal Generator	R&S	SMR20(10MHz-20 GHz)	2012.12.08
15	LISN	ROHDE&SCHWARZ	ENV216 TWO-LINE V-NETWORK	2012.11.13
16	Power Meter	Agilent	E4418B (EPM Series)	2012.12.08
17	Power Sensor	Agilent	E4412A (E-series CW)	

#### 5 Ancillary Equipment List

Product	Manufacturer	Model No.	Serial No.	FCC approval	Power Cord
Notebook PC	Toshiba	PSAGCT-0 K501P	59162409Q	FCC DOC	N/A
Adapter (NB)	Toshiba	PA-1750-09	PA3468E1AC3	FCC DOC	M/N A-1750-09 PA -1750-09
LCD Monitor	HP	GTM002	3CQ84343SG	FCC DOC	Unshielded 1.8m
Bluetooth headset	acer	S100FBT	N/A	HLZDMS100FBT	N/A
Wlan AP	D-Link	DWL-2000 AP+A	B2D3161002856	KA2DWLG700APB1	AC: I/P: Unshielded 1.8m DC:O/P: Unshielded 1.8m

#### 6 Uncertainty Evaluation

##### 6.1 Uncertainty of Radiated Spurious Emission evaluation (30MHz~1GHz)

Radiated Spurious Emission Measurement Uncertainty Evaluation					
Contribution		Probability Distribution	Partition Coefficient	u(xi)	
				Horizontal 30-1000MHz	Vertical 30-1000MHz
Cable Loss Calibration	U <sub>01</sub>	U-Shape	1.41	0.16	0.16
Sine wave voltage accuracy of Spectrum analyzer	U02	Triangle	2.45	0.82	0.82
Impulse response of spectrum analyzer	U03	Triangle	2.45	0.61	0.61
Pulse repetition rate of spectrum analyzer	U04	Triangle	2.45	0.61	0.61
Spectrum analyzer noise level	U05	Normal	2.00	0.25	0.25
Measurement of the signal path mismatch	U06	U-Shape	1.41	0.28	0.28
Free-space antenna factor	U07	Normal	2.00	0.70	0.70
Antenna Factor Interpolation for Frequency	U08	Rectangular	1.73	0.17	0.17
Antenna factor with height in the correlation	U09	Rectangular	1.73	0.17	0.17
Measurement antenna and the absorbing material in the image of the mutual coupling effect	U10	Rectangular	1.73	0.58	0.58
Antenna phase center variation	U11	Rectangular	1.73	0.13	0.13
Antenna cross polarization response	U12	Rectangular	1.73	0.52	0.52
Antenna imbalance	U13	Rectangular	1.73	0.52	0.52
Test distance error	U14	Rectangular	2.45	1.02	1.22
Desktop terrain clearance variation	U15	Normal	1.73	0.17	0.17
Random uncertainty	U16	Standard deviation	2.00	0.05	0.05
Pre-Amplifier gain Calibration	U17	U-Shape	1.00	0.10	0.11
Combined Standard Uncertainty U <sub>c</sub> (y)	U <sub>c</sub>	Normal	1.00	2.03	2.14
Measuring Uncertainty for a level of Confidence of 95%(U=2U <sub>c</sub> (y))	U=kU <sub>c</sub>	Normal	k	4.05	4.28

**6.2 Uncertainty of Radiated Spurious Emission evaluation (1GHz~26.5GHz)**

Radiated Spurious Emission Measurement Uncertainty Evaluation					
Contribution		Probability Distribution	Partition Coefficient	u(xi)	
				Horizontal 1-26.5GHz	Vertical 1-26.5GHz
Cable Loss Calibration	U01	U-Shape	2.00	0.04	0.04
Sine wave voltage accuracy of Spectrum analyzer	U02	Triangle	2.45	0.82	0.82
Impulse response of spectrum analyzer	U03	Triangle	2.45	0.61	0.61
Pulse repetition rate of spectrum analyzer	U04	Triangle	2.45	0.61	0.61
Spectrum analyzer noise level	U05	Normal	2.00	0.25	0.25
Measurement of the signal path mismatch	U06	U-Shape	1.41	0.69	0.69
Free-space antenna factor	U07	Normal	2.00	0.50	0.50
Antenna Factor Interpolation for Frequency	U08	Rectangular	1.73	0.17	0.17
Antenna factor with height in the correlation	U09	Rectangular	1.73	NA	NA
Measurement antenna and the absorbing material in the image of the mutual coupling effect	U10	Rectangular	1.73	0.58	0.58
Antenna phase center variation	U11	Rectangular	1.73	0.13	0.13
Antenna cross polarization response	U12	Rectangular	1.73	0.52	0.52
Antenna imbalance	U13	Rectangular	1.73	0.52	0.52
Test distance error	U14	Rectangular	2.45	2.36	2.36
Desktop terrain clearance variation	U15	Normal	1.73	0.17	0.17
Random uncertainty	U16	Standard deviation	2.00	0.05	0.05
Pre-Amplifier gain Calibration	U17	U-Shape	1.00	0.09	0.10
Combined Standard Uncertainty Uc(y)	Uc	Normal	1.00	2.95	2.96
Measuring Uncertainty for a level of Confidence of 95%(U=2Uc(y))	U=kUc	Normal	k	5.91	5.92