FCC Test Report

APPLICANT	:	Brightstar Corporation
EQUIPMENT	:	Mobile phone
BRAND NAME	:	Avvio, PULSARE, WUPA
MODEL NAME	:	Avvio 777, Avvio 777S, Pulsare 777, Pulsare 777S, WUPA 777, WUPA 777S
FCC ID	:	WVBA777X
STANDARD	:	FCC 47 CFR FCC Part 15 Subpart B
CLASSIFICATION	:	Certification

The product was received on Sep. 19, 2014 and testing was completed on Oct. 20, 2014. We, SPORTON INTERNATIONAL (KUNSHAN) 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 (KUNSHAN) INC., the test report shall not be reproduced except in full.

Louis Wu

Reviewed by: Louis Wu / Manager

Jones Tsai

Approved by: Jones Tsai / Manager

Testing Laboratory 2627

SPORTON INTERNATIONAL (KUNSHAN) INC.

No. 3-2, PingXiang Road, Kunshan, Jiangsu Province, P.R.C.

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FC491904	Rev. 01	Initial issue of report	Oct. 23, 2014

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 4.95 dB at 0.560 MHz
3.2	15.109	Radiated Emission	< 15.109 limits	PASS	Under limit 3.92 dB at 239.520 MHz

1. General Description

1.1. Applicant

Brightstar Corporation
9725 NW 117th Ave., Miami, Florida, FL 33178, United States

1.2. Manufacturer

KCMobile Co.,Ltd.
#1305-1, Kolon Digital Tower Villant II , 31, Digital-ro 30-gil, Guro-Gu, Seoul, KOREA (152-727)

1.3. Product Feature of Equipment Under Test

Product Feature	
Equipment	Mobile phone
Brand Name	Avvio, PULSARE, WUPA
Model Name	Avvio 777, Avvio 777S, Pulsare 777, Pulsare 777S, WUPA 777, WUPA 777S
FCC ID	WVBA777X
EUT supports Radios application	GSM/GPRS/EGPRS(Downlink only)/WCDMA/HSPA WLAN 2.4GHz 802.11b/g/n HT20/HT40/ Bluetooth v3.0 + EDR/Bluetooth v4.0 LE
HW Version	V1.01
SW Version	M7202.Viano.KC777.WD4+4.V1.02.20140826
EUT Stage	Production Unit

Remark:

1. The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.
2. There are six types of EUT for this project. The differences between them are summary below:

Sample List	Model name	Brand name	SIM Slots
Sample 1	Avvio 777	Avvio	1
Sample 2	Avvio 777S	Avvio	2
Sample 3	PULSARE 777	PULSARE	1
Sample 4	PULSARE 777S	PULSARE	2
Sample 5	WUPA 777	WUPA	1
Sample 6	WUPA 777S	WUPA	2

These models are identical on hardware except the SIM slots. The different model with different brand is for market purpose.

1.4. Product Specification subjective to this standard

Product Specification subjective to this standard	
Tx Frequency	GSM850 : 824.2 MHz ~ 848.8 MHz GSM1900 : 1850.2 MHz ~ 1909.8MHz WCDMA Band V : 826.4 MHz ~ 846.6 MHz WCDMA Band II : 1852.4 MHz ~ 1907.6 MHz 802.11b/g/n: 2412 MHz ~ 2462 MHz Bluetooth: 2402 MHz ~ 2480 MHz
Rx Frequency	GSM850 : 869.2 MHz ~ 893.8 MHz GSM1900 : 1930.2 MHz ~ 1989.8 MHz WCDMA Band V : 871.4 MHz ~ 891.6 MHz WCDMA Band II : 1932.4 MHz ~ 1987.6 MHz 802.11b/g/n: 2412 MHz ~ 2462 MHz Bluetooth: 2402 MHz ~ 2480 MHz GPS : 1.57542 GHz
Antenna Type	WWAN : PIFA 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(Downlink only) WCDMA: QPSK (Uplink) HSDPA: QPSK (Uplink) HSUPA: QPSK (Uplink) 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

1.5. Modification of EUT

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

1.6. Test Location

Test Site	SPORTON INTERNATIONAL (KUNSHAN) INC.		
Test Site Location	No. 3-2, PingXiang Road, Kunshan, Jiangsu Province, P.R.C. TEL: +86-0512-5790-0158 FAX: +86-0512-5790-0958		
Test Site No.	**Sporton Site No.**		**FCC Registration No.**
	CO01-KS	03CH01-KS	149928

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.

2. Test Configuration of Equipment Under Test

2.1. Test Mode

The EUT has been associated with peripherals pursuant to ANSI C63.4-2003 and configuration operated in a manner tended to maximize its emission characteristics in a typical application.

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

The following tables are showing the test modes as the worst cases and recorded in this report.

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

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.

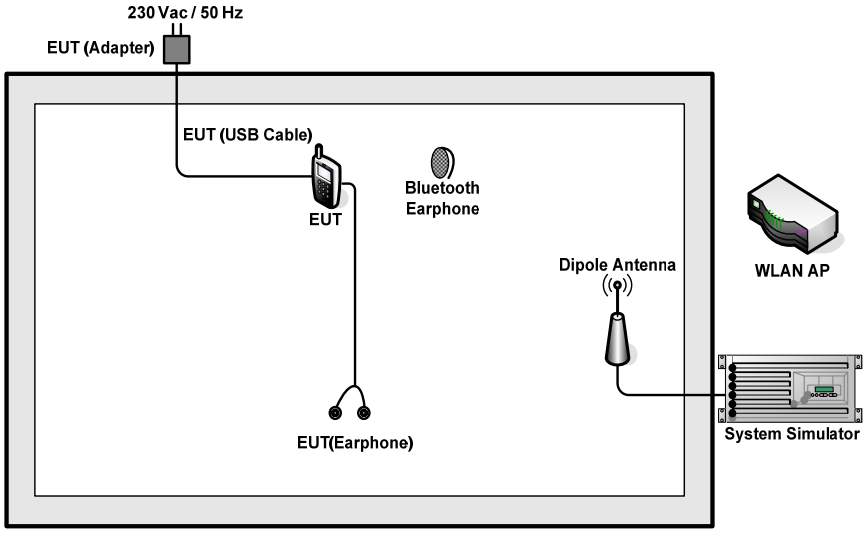
Remark: For signal above 1GHz, the worst case was test item 2.

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

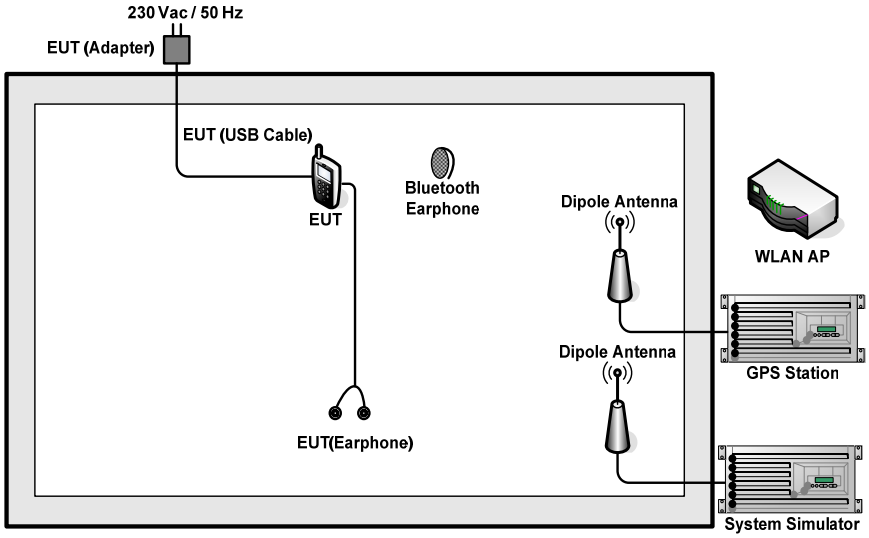
Remark:

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 4; only the test data of this mode was reported.
3. Link with Notebook means data application transferred mode between EUT and Notebook.

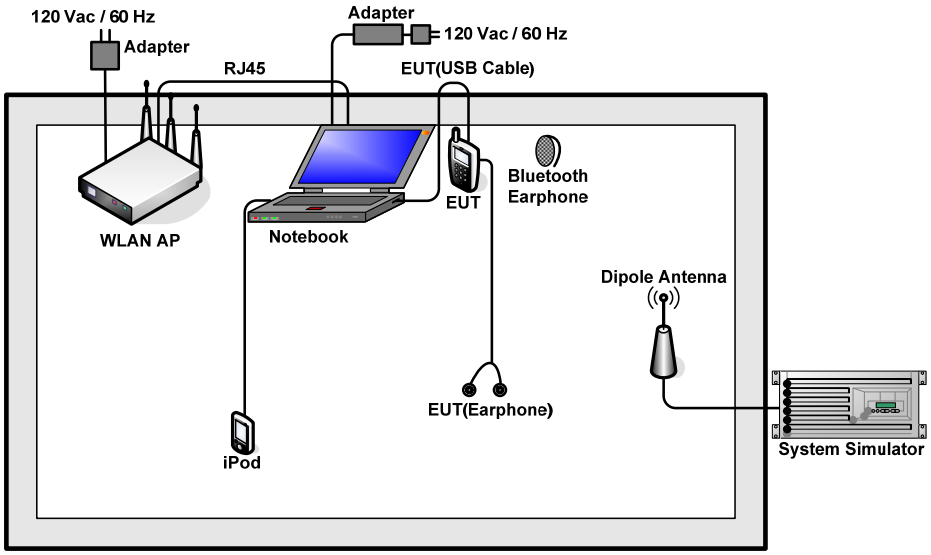
2.2. Connection Diagram of Test System



<Fig.1>



<Fig.2>


120 Vac / 60 Hz
Adapter
Adapter
120 Vac / 60 Hz
RJ45
EUT(USB Cable)
Bluetooth
Earphone
EUT
WLAN AP
Notebook
Dipole Antenna
EUT(Earphone)
iPod
System Simulator

<Fig.3>

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	CMU 200	N/A	N/A	Unshielded, 1.8 m
2.	WLAN AP	D-link	DIR-855	KA2DIR855A2	N/A	Unshielded, 1.8 m
3.	GPS Station	ADIVIC	MP9000	N/A	N/A	Unshielded, 1.8 m
4.	Notebook	Lenovo	G480	FCC DoC	N/A	AC I/P: Unshielded, 1.2m DC O/P: Shielded, 1.8 m
5.	iPod	Apple	A1199	FCC DoC	Shielded, 1.2 m	N/A
6.	Bluetooth Earphone	Lenovo	LBH301	N/A	N/A	N/A
7.	Bluetooth Earphone	Lenovo	LBH505	N/A	N/A	N/A

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 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 Laptop and EUT via USB cable.
2. Execute "GPS Test" to make the EUT receive continuous signals from GPS station.
3. Execute "Video Media Player" to play MPEG4 files.
4. Turn on camera to capture images.

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.

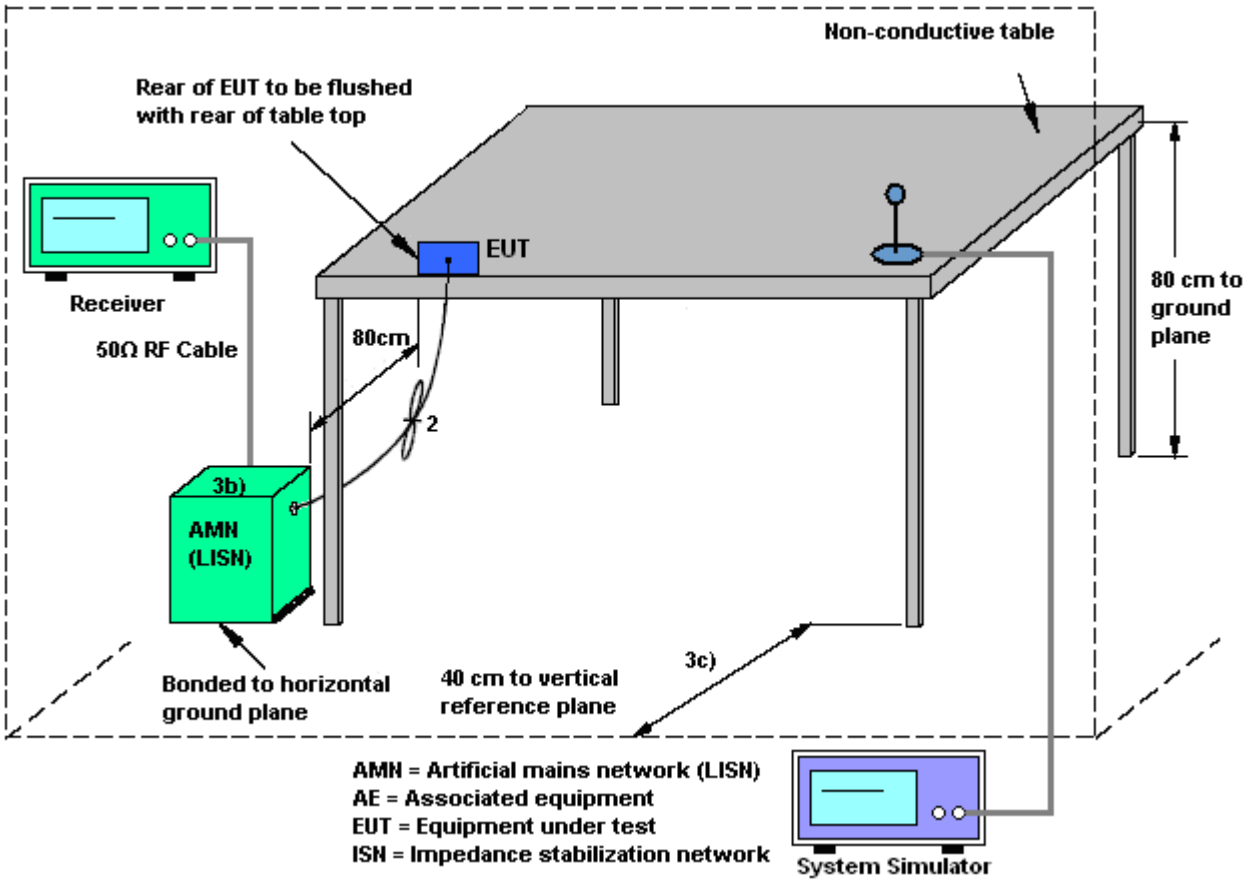
3.1.2 Measuring Instruments

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

3.1.3 Test Procedure

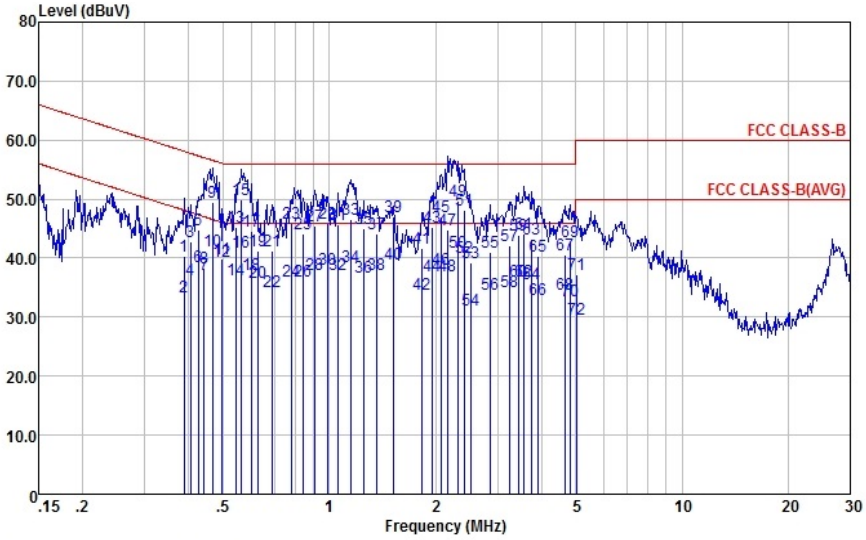
1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.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

3.1.4 Test Setup



3.1.5 Test Result of AC Conducted Emission

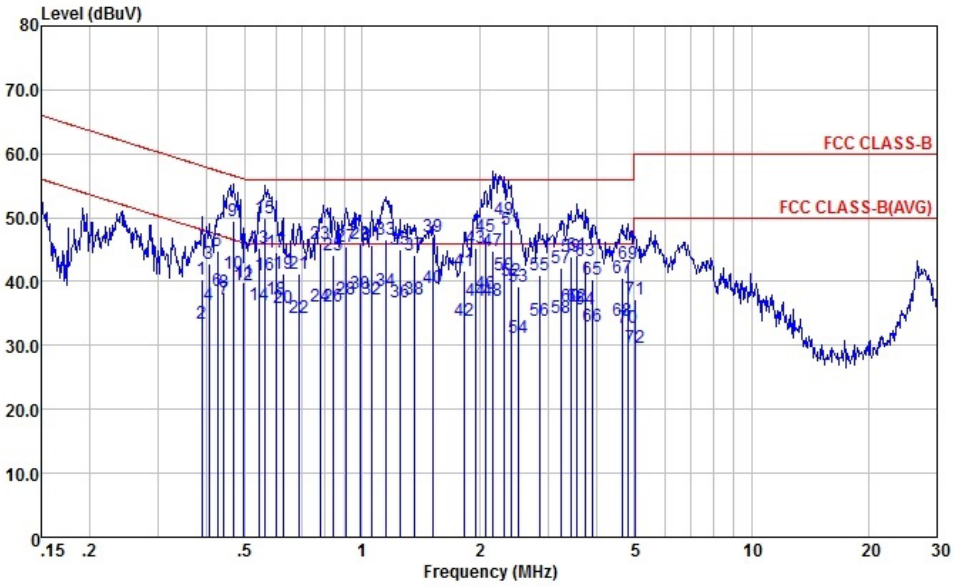
Test Mode :	Mode 2	**Temperature :**	22~24℃
Test Engineer :	Eligan Wang	**Relative Humidity :**	55~58%
Test Voltage :	120Vac / 60Hz	**Phase :**	Line
Function Type :	GSM1900 Idle + Bluetooth Idle + WLAN Idle + Earphone + USB Cable (Charging from Adapter) + MPEG4 for SIM 1		



Site : CO01-KS
Condition : FCC CLASS-B LISN-L20140306 LINE
Project : (FC) 491904
mode : Mode 2

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.39	40.43	-17.69	58.12	29.80	0.34	10.29	QP
2	0.39	33.33	-14.79	48.12	22.70	0.34	10.29	Average
3	0.40	42.79	-14.98	57.77	32.20	0.31	10.28	QP
4	0.40	36.39	-11.38	47.77	25.80	0.31	10.28	Average
5	0.43	44.75	-12.58	57.33	34.19	0.28	10.28	QP
6	0.43	38.45	-8.88	47.33	27.89	0.28	10.28	Average
7	0.44	37.23	-19.79	57.02	26.70	0.26	10.27	QP
8	0.44	38.43	-8.59	47.02	27.90	0.26	10.27	Average
9	0.47	49.40	-7.18	56.58	38.90	0.23	10.27	QP
10	0.47	41.30	-5.28	46.58	30.80	0.23	10.27	Average
11	0.50	39.87	-16.18	56.05	29.41	0.20	10.26	QP
12	0.50	39.37	-6.68	46.05	28.91	0.20	10.26	Average
13	0.54	45.25	-10.75	56.00	34.80	0.20	10.25	QP
14	0.54	36.35	-9.65	46.00	25.90	0.20	10.25	Average
15	0.56	49.85	-6.15	56.00	39.40	0.20	10.25	QP
16	0.56	41.05	-4.95	46.00	30.60	0.20	10.25	Average
17	0.60	44.64	-11.36	56.00	34.20	0.20	10.24	QP
18	0.60	37.24	-8.76	46.00	26.80	0.20	10.24	Average
19	0.63	41.23	-14.77	56.00	30.80	0.20	10.23	QP
20	0.63	35.83	-10.17	46.00	25.40	0.20	10.23	Average
21	0.69	41.31	-14.69	56.00	30.90	0.20	10.21	QP
22	0.69	34.21	-11.79	46.00	23.80	0.20	10.21	Average
23	0.78	45.97	-10.03	56.00	35.59	0.18	10.20	QP
24	0.78	36.17	-9.83	46.00	25.79	0.18	10.20	Average
25	0.84	44.14	-11.86	56.00	33.80	0.15	10.19	QP
26	0.84	36.04	-9.96	46.00	25.70	0.15	10.19	Average
27	0.91	45.50	-10.50	56.00	35.19	0.12	10.19	QP
28	0.91	37.20	-8.80	46.00	26.89	0.12	10.19	Average
29	0.99	45.88	-10.12	56.00	35.60	0.10	10.18	QP
30	0.99	38.08	-7.92	46.00	27.80	0.10	10.18	Average
31	1.06	45.68	-10.32	56.00	35.40	0.10	10.18	QP
32	1.06	37.18	-8.82	46.00	26.90	0.10	10.18	Average
33	1.15	46.48	-9.52	56.00	36.20	0.10	10.18	QP
34	1.15	38.48	-7.52	46.00	28.20	0.10	10.18	Average
35	1.25	45.08	-10.92	56.00	34.80	0.10	10.18	QP
36	1.25	36.68	-9.32	46.00	26.40	0.10	10.18	Average
37	1.36	44.18	-11.82	56.00	33.90	0.10	10.18	QP
38	1.36	37.18	-8.82	46.00	26.90	0.10	10.18	Average
39	1.52	47.09	-8.91	56.00	36.80	0.10	10.19	QP

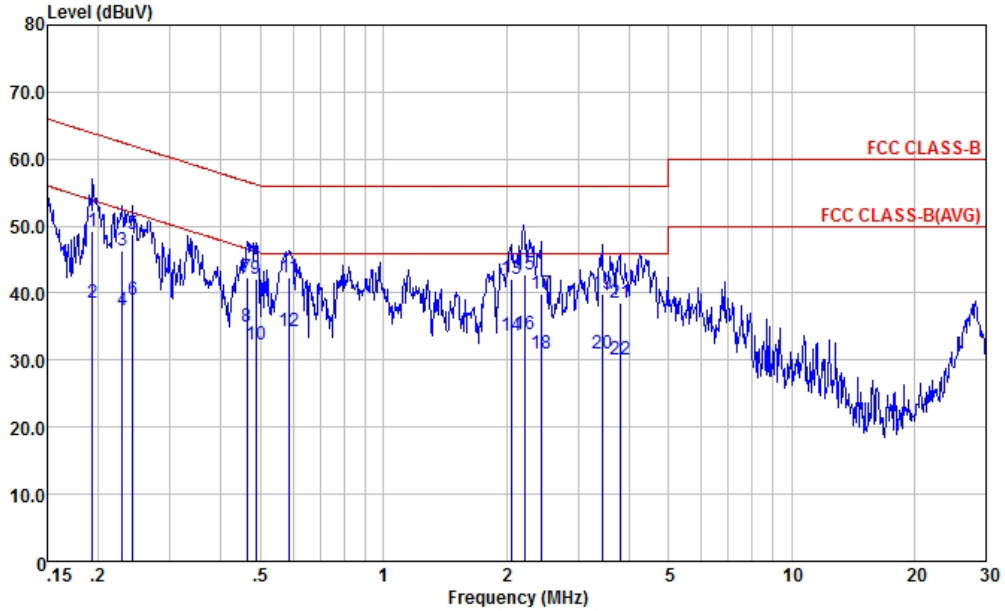
Test Mode :	Mode 2	Temperature :	22~24℃
Test Engineer :	Eligan Wang	Relative Humidity :	55~58%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	GSM1900 Idle + Bluetooth Idle + WLAN Idle + Earphone + USB Cable (Charging from Adapter) + MPEG4 for SIM 1		



Site : CO01-KS
Condition : FCC CLASS-B LISN-L20140306 LINE
Project : (FC) 491904
mode : Mode 2

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
40	1.52	38.89	-7.11	46.00	28.60	0.10	10.19	Average
41	1.83	41.69	-14.31	56.00	31.40	0.10	10.19	QP
42	1.83	33.89	-12.11	46.00	23.60	0.10	10.19	Average
43	1.96	45.19	-10.81	56.00	34.90	0.10	10.19	QP
44	1.96	37.09	-8.91	46.00	26.80	0.10	10.19	Average
45	2.08	47.09	-8.91	56.00	36.80	0.10	10.19	QP
46	2.08	38.09	-7.91	46.00	27.80	0.10	10.19	Average
47	2.17	44.90	-11.10	56.00	34.61	0.10	10.19	QP
48	2.17	37.00	-9.00	46.00	26.71	0.10	10.19	Average
49	2.32	49.71	-6.29	56.00	39.40	0.11	10.20	QP
50	2.32	41.01	-4.99	46.00	30.70	0.11	10.20	Average
51	2.41	48.21	-7.79	56.00	37.90	0.11	10.20	QP
52	2.41	40.11	-5.89	46.00	29.80	0.11	10.20	Average
53	2.51	39.22	-16.78	56.00	28.90	0.12	10.20	QP
54	2.51	31.12	-14.88	46.00	20.80	0.12	10.20	Average
55	2.85	40.95	-15.05	56.00	30.60	0.13	10.22	QP
56	2.85	33.95	-12.05	46.00	23.60	0.13	10.22	Average
57	3.24	42.18	-13.82	56.00	31.79	0.16	10.23	QP
58	3.24	34.28	-11.72	46.00	23.89	0.16	10.23	Average
59	3.44	44.00	-12.00	56.00	33.60	0.17	10.23	QP
60	3.44	36.00	-10.00	46.00	25.60	0.17	10.23	Average
61	3.57	44.21	-11.79	56.00	33.81	0.17	10.23	QP
62	3.57	36.01	-9.99	46.00	25.61	0.17	10.23	Average
63	3.76	43.22	-12.78	56.00	32.80	0.18	10.24	QP
64	3.76	35.62	-10.38	46.00	25.20	0.18	10.24	Average
65	3.92	40.32	-15.68	56.00	29.90	0.18	10.24	QP
66	3.92	33.02	-12.98	46.00	22.60	0.18	10.24	Average
67	4.65	40.65	-15.35	56.00	30.20	0.20	10.25	QP
68	4.65	33.95	-12.05	46.00	23.50	0.20	10.25	Average
69	4.82	42.85	-13.15	56.00	32.39	0.20	10.26	QP
70	4.82	32.65	-13.35	46.00	22.19	0.20	10.26	Average
71	5.03	37.16	-22.84	60.00	26.70	0.20	10.26	QP
72	5.03	29.66	-20.34	50.00	19.20	0.20	10.26	Average

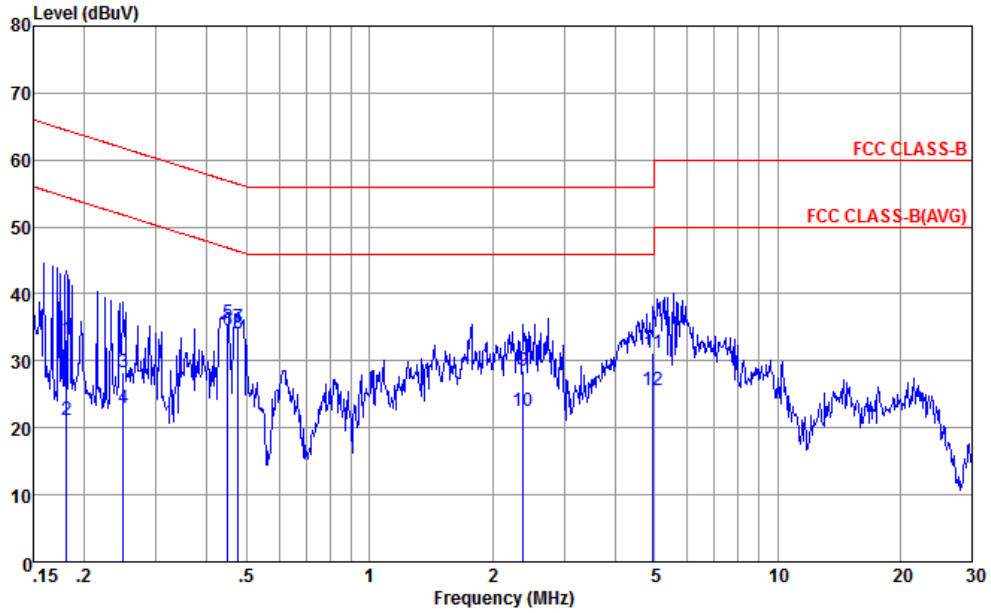
Test Mode :	Mode 2	Temperature :	22~24℃
Test Engineer :	Eligan Wang	Relative Humidity :	55~58%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	GSM1900 Idle + Bluetooth Idle + WLAN Idle + Earphone + USB Cable (Charging from Adapter) + MPEG4 for SIM 1		



Site : CO01-KS
Condition : FCC CLASS-B LISN-N20140306 NEUTRAL
Project : (FC) 491904
mode : Mode 2

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.19	49.26	-14.63	63.89	37.60	1.07	10.59	QP
2	0.19	38.46	-15.43	53.89	26.80	1.07	10.59	Average
3	0.23	46.38	-16.10	62.48	34.90	0.94	10.54	QP
4	0.23	37.38	-15.10	52.48	25.90	0.94	10.54	Average
5	0.24	48.83	-13.17	62.00	37.40	0.91	10.52	QP
6	0.24	39.03	-12.97	52.00	27.60	0.91	10.52	Average
7	0.46	42.40	-14.23	56.63	31.80	0.33	10.27	QP
8	0.46	35.00	-11.63	46.63	24.40	0.33	10.27	Average
9	0.49	42.18	-14.05	56.23	31.60	0.31	10.27	QP
10	0.49	32.38	-13.85	46.23	21.80	0.31	10.27	Average
11	0.59	42.30	-13.70	56.00	31.81	0.25	10.24	QP
12	0.59	34.40	-11.60	46.00	23.91	0.25	10.24	Average
13	2.05	42.09	-13.91	56.00	31.80	0.10	10.19	QP
14	2.05	33.69	-12.31	46.00	23.40	0.10	10.19	Average
15	2.21	42.70	-13.30	56.00	32.39	0.11	10.20	QP
16	2.21	33.90	-12.10	46.00	23.59	0.11	10.20	Average
17	2.43	39.91	-16.09	56.00	29.60	0.11	10.20	QP
18	2.43	30.91	-15.09	46.00	20.60	0.11	10.20	Average
19	3.44	39.80	-16.20	56.00	29.40	0.17	10.23	QP
20	3.44	31.00	-15.00	46.00	20.60	0.17	10.23	Average
21	3.80	38.52	-17.48	56.00	28.10	0.18	10.24	QP
22	3.80	30.02	-15.98	46.00	19.60	0.18	10.24	Average

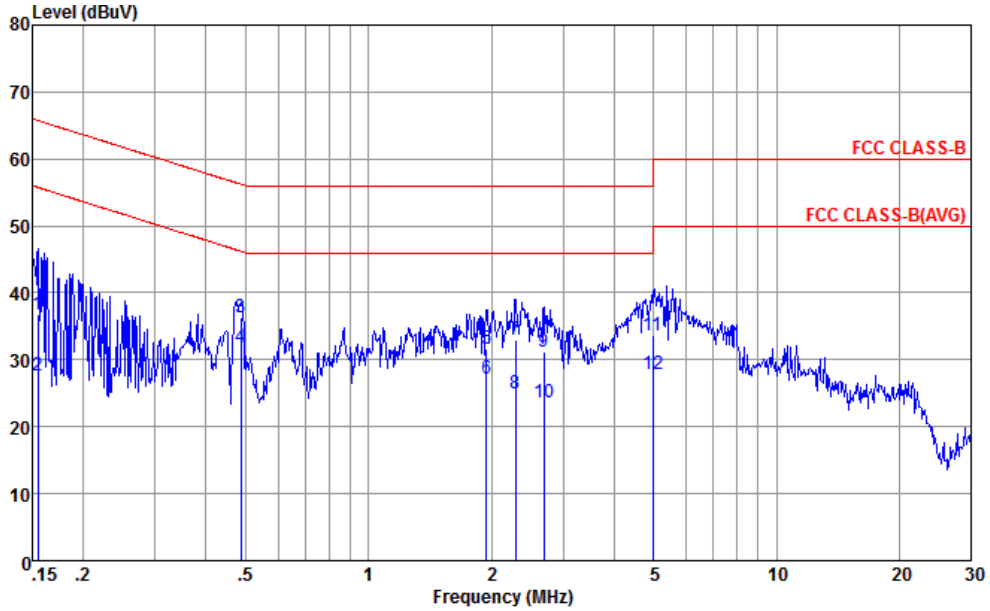
Test Mode :	Mode 4	Temperature :	22~24℃
Test Engineer :	Eligan Wang	Relative Humidity :	55~58%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	WCDMA Band V + Bluetooth Idle + WLAN Idle + Earphone + USB Cable (Data Link with Notebook)		



Site : CO01-KS
Condition : FCC CLASS-B LISN-L20140306 LINE
Project : (FC) 491904
mode : Mode 4

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.18	33.20	-31.26	64.46	21.29	1.29	10.62	QP
2	0.18	21.20	-33.26	54.46	9.29	1.29	10.62	Average
3	0.25	28.28	-33.50	61.78	16.90	0.88	10.50	QP
4	0.25	22.98	-28.80	51.78	11.60	0.88	10.50	Average
5	0.45	35.62	-21.27	56.89	25.10	0.25	10.27	QP
6	0.45	34.52	-12.37	46.89	24.00	0.25	10.27	Average
7	0.48	35.09	-21.32	56.41	24.60	0.22	10.27	QP
8	0.48	33.99	-12.42	46.41	23.50	0.22	10.27	Average
9	2.38	28.61	-27.39	56.00	18.30	0.11	10.20	QP
10	2.38	22.41	-23.59	46.00	12.10	0.11	10.20	Average
11	4.95	31.16	-24.84	56.00	20.70	0.20	10.26	QP
12	4.95	25.66	-20.34	46.00	15.20	0.20	10.26	Average

Test Mode :	Mode 4	Temperature :	22~24℃
Test Engineer :	Eligan Wang	Relative Humidity :	55~58%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	WCDMA Band V + Bluetooth Idle + WLAN Idle + Earphone + USB Cable (Data Link with Notebook)		



Site : CO01-KS
Condition : FCC CLASS-B LISN-N20140306 NEUTRAL
Project : (FC) 491904
mode : Mode 4

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.15	36.82	-28.92	65.74	24.30	1.83	10.69	QP
2	0.15	27.62	-28.12	55.74	15.10	1.83	10.69	Average
3	0.49	36.28	-19.95	56.23	25.70	0.31	10.27	QP
4	0.49	31.88	-14.35	46.23	21.30	0.31	10.27	Average
5	1.95	31.59	-24.41	56.00	21.30	0.10	10.19	QP
6	1.95	27.09	-18.91	46.00	16.80	0.10	10.19	Average
7	2.30	32.91	-23.09	56.00	22.60	0.11	10.20	QP
8	2.30	24.91	-21.09	46.00	14.60	0.11	10.20	Average
9	2.69	31.13	-24.87	56.00	20.80	0.12	10.21	QP
10	2.69	23.63	-22.37	46.00	13.30	0.12	10.21	Average
11	4.98	33.76	-22.24	56.00	23.30	0.20	10.26	QP
12	4.98	27.76	-18.24	46.00	17.30	0.20	10.26	Average

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

3.2.2. Measuring Instruments

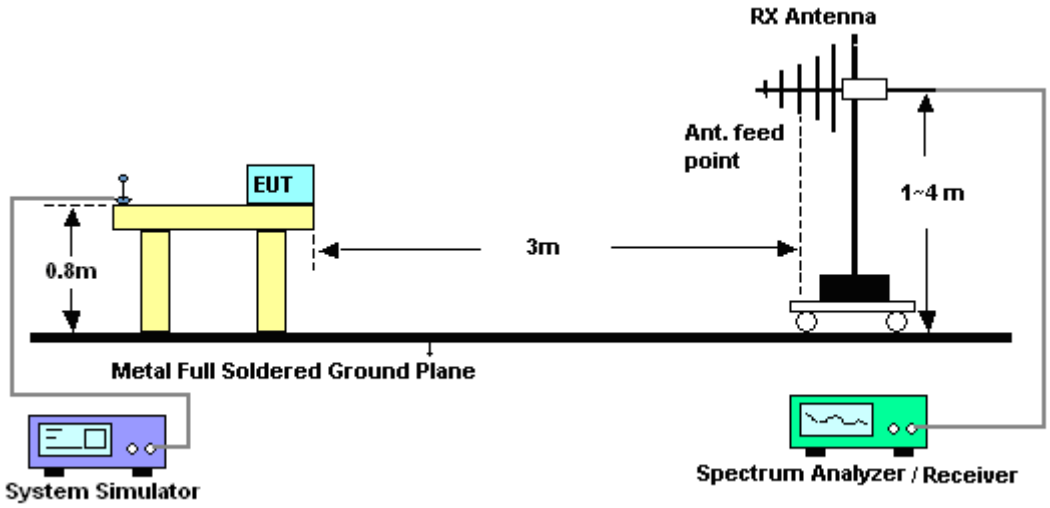
The measuring equipment is listed in the section 4 of this test report.

3.2.3. Test Procedures

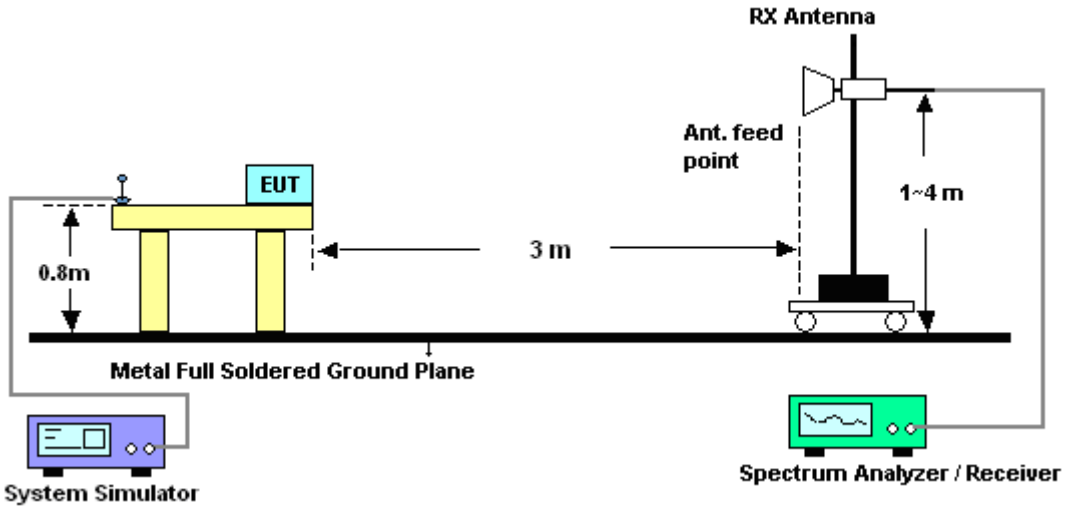
1. The EUT was placed on a turntable with 0.8 meter above ground.
2. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest radiation.
4. The antenna 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 (dBμV/m) = 20 log Emission level (μV/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

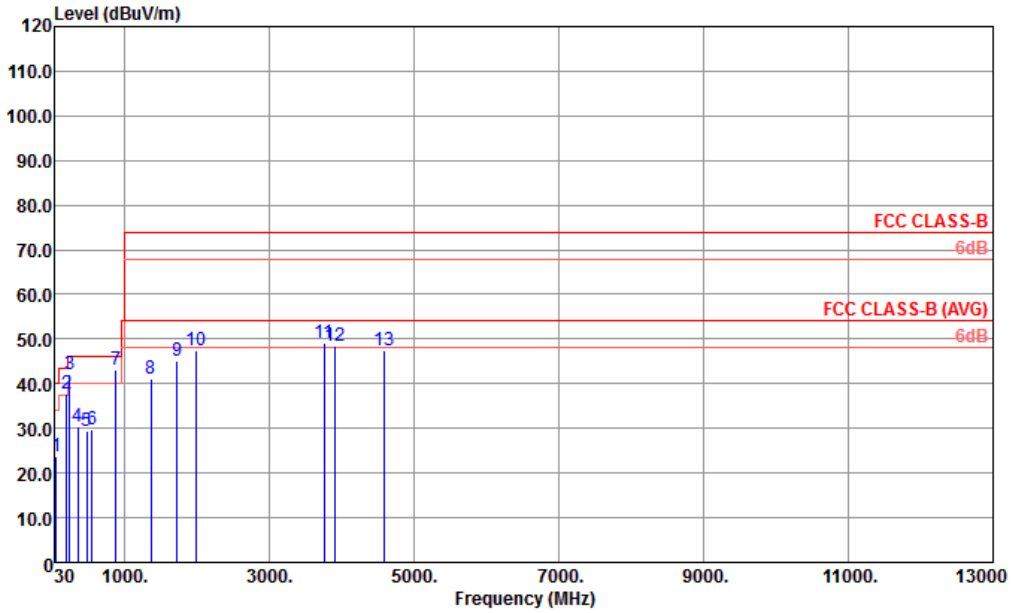


For radiated emissions above 1GHz



3.2.5. Test Result of Radiated Emission

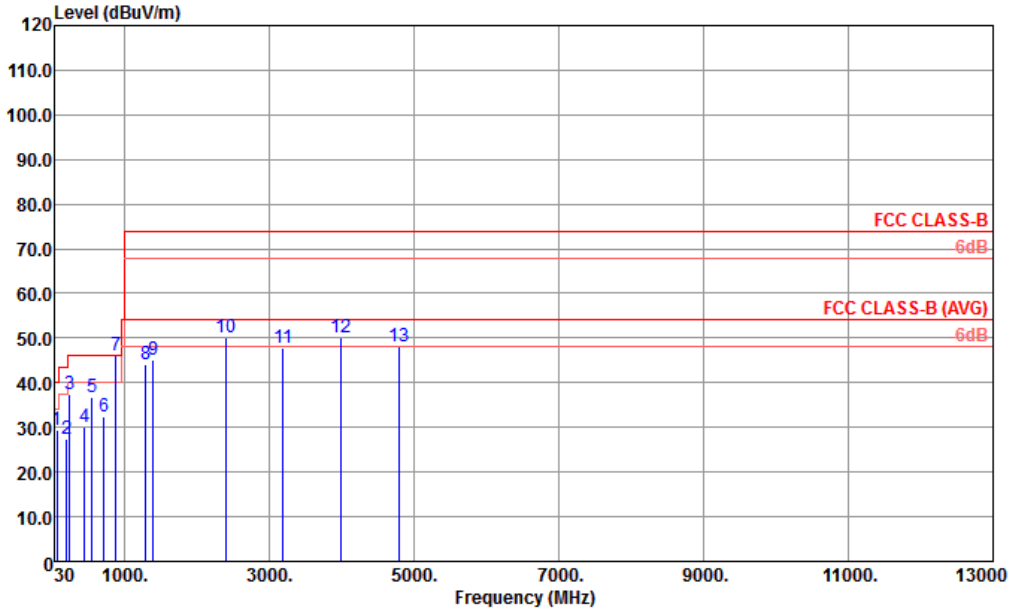
Test Mode :	Mode 4	Temperature :	22~23℃
Test Engineer :	Levi Quan	Relative Humidity :	40~41%
Test Distance :	3m	Polarization :	Horizontal
Function Type :	WCDMA Band V + Bluetooth Idle + WLAN Idle + Earphone + USB Cable (Data Link with Notebook)		
Remark :	#7 is system simulator signal which can be ignored.		



Site : 03CH01-KS
Condition : FCC CLASS-B 3m LF_ANT_23182 HORIZONTAL
Project : (FC) 491904
Mode : mode 4

		Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
		MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1		52.31	23.83	-16.17	40.00	49.73	7.01	0.67	33.58	---	---	Peak
2	!	195.87	37.82	-5.68	43.50	61.30	8.80	1.28	33.56	---	---	Peak
3	!	239.52	42.08	-3.92	46.00	62.59	11.51	1.44	33.46	200	247	Peak
4		350.10	30.35	-15.65	46.00	47.51	14.50	1.70	33.36	---	---	Peak
5		480.08	29.30	-16.70	46.00	43.59	16.87	2.00	33.16	---	---	Peak
6		549.92	29.80	-16.20	46.00	42.22	18.50	2.09	33.01	---	---	Peak
7	!	881.66	43.13			52.50	20.47	2.68	32.52	---	---	Peak
8		1362.00	40.96	-33.04	74.00	41.85	29.66	2.74	33.29	---	---	Peak
9		1728.00	45.02	-28.98	74.00	43.52	31.54	3.06	33.10	---	---	Peak
10		1992.00	47.57	-26.43	74.00	45.02	32.36	3.29	33.10	---	---	Peak
11		3762.00	49.18	-24.82	74.00	43.50	34.76	4.57	33.65	---	---	Peak
12		3900.00	48.41	-25.59	74.00	42.48	34.92	4.62	33.61	---	---	Peak
13		4584.00	47.55	-26.45	74.00	41.17	35.12	5.06	33.80	---	---	Peak

Test Mode :	Mode 4	Temperature :	22~23℃
Test Engineer :	Levi Quan	Relative Humidity :	40~41%
Test Distance :	3m	Polarization :	Vertical
Function Type :	WCDMA Band V + Bluetooth Idle + WLAN Idle + Earphone + USB Cable (Data Link with Notebook)		
Remark :	#7 is system simulator signal which can be ignored.		



Site : 03CH01-KS
Condition : FCC CLASS-B 3m LF_ANT_23182 VERTICAL
Project : (FC) 491904
Mode : mode 4

		Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
		MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1		68.80	29.42	-10.58	40.00	56.96	5.28	0.77	33.59	---	---	Peak
2		195.87	27.29	-16.21	43.50	50.77	8.80	1.28	33.56	---	---	Peak
3		239.52	37.44	-8.56	46.00	57.95	11.51	1.44	33.46	100	218	Peak
4		450.01	30.12	-15.88	46.00	45.08	16.30	1.95	33.21	---	---	Peak
5		549.92	36.76	-9.24	46.00	49.18	18.50	2.09	33.01	---	---	Peak
6		716.76	32.41	-13.59	46.00	43.36	19.48	2.42	32.85	---	---	Peak
7	*	881.66	46.24			55.61	20.47	2.68	32.52	---	---	Peak
8		1296.00	44.19	-29.81	74.00	45.54	29.38	2.67	33.40	---	---	Peak
9		1392.00	45.17	-28.83	74.00	45.82	29.81	2.77	33.23	---	---	Peak
10		2392.00	49.99	-24.01	74.00	46.80	32.86	3.59	33.26	---	---	Peak
11		3186.00	47.86	-26.14	74.00	43.41	33.88	4.21	33.64	---	---	Peak
12		3982.00	49.97	-24.03	74.00	43.93	34.99	4.65	33.60	---	---	Peak
13		4790.00	48.25	-25.75	74.00	41.66	35.17	5.22	33.80	---	---	Peak

4. List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
EMI Receiver	R&S	ESCI7	100768	9kHz~7GHz;	May 04, 2014	Oct. 13, 2014	May 03, 2015	Conduction (CO01-KS)
AC LISN	MessTec	AN3016	060103	9kHz~30MHz	Dec. 10, 2013	Oct. 13, 2014	Dec. 09, 2014	Conduction (CO01-KS)
AC LISN (for auxiliary equipment)	MessTec	AN3016	060105	9kHz~30MHz	Dec. 10, 2013	Oct. 13, 2014	Dec. 09, 2014	Conduction (CO01-KS)
AC Power Source	Chroma	61602	ABP000000811	AC 0V~300V, 45Hz~1000Hz	Nov. 12, 2013	Oct. 13, 2014	Nov. 11, 2014	Conduction (CO01-KS)
EMI Test Receiver	R&S	ESCI	100534	9kHz~3GHz	Nov. 05, 2013	Oct. 20, 2014	Nov. 04, 2014	Radiation (03CH01-KS)
Spectrum Analyzer	R&S	FSP30	101399	9kHz~30GHz	May 04, 2014	Oct. 20, 2014	May 03, 2015	Radiation (03CH01-KS)
Bilog Antenna	SCHAFFNER	CBL6112D	23182	25MHz~2GHz	Jan. 08, 2014	Oct. 20, 2014	Jan. 07, 2015	Radiation (03CH01-KS)
Double Ridge Horn Antenna	ETS-Lindgren	3117	75959	1GHz~18GHz	Jan. 08, 2014	Oct. 20, 2014	Jan. 07, 2015	Radiation (03CH01-KS)
Amplifier	com-power	PA-103A	161073	1MHz~1GHz	May 04, 2014	Oct. 20, 2014	May 03, 2015	Radiation (03CH01-KS)
Amplifier	Agilent	8449B	3008A02371	1GHz~26.5GHz	Dec. 10, 2013	Oct. 20, 2014	Dec. 09, 2014	Radiation (03CH01-KS)
AC Power Source	Chroma	61601	F104090004	N/A	NCR	Oct. 20, 2014	NCR	Radiation (03CH01-KS)
Turn Table	MF	MF7802	N/A	0~360 degree	NCR	Oct. 20, 2014	NCR	Radiation (03CH01-KS)
Antenna Mast	MF	MF7802	N/A	1 m~4 m	NCR	Oct. 20, 2014	NCR	Radiation (03CH01-KS)

5. Uncertainty of Evaluation

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

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

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**2.5**