



FCC Test Report

APPLICANT : Xiaomi Communications Co., Ltd.
EQUIPMENT : Mobile Phone
BRAND NAME : MI
FCC ID : 2AFZZ-RSG138
STANDARD : FCC 47 CFR FCC Part 15 Subpart B
CLASSIFICATION : Certification

The product was received on Dec. 14, 2016 and testing was completed on Jan. 22, 2017. 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 C63.4-2014 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 (KUNSHAN) INC., the test report shall not be reproduced except in full.

Prepared by: James Huang / Manager

Approved by: Jones Tsai / Manager



SPORTON INTERNATIONAL (KUNSHAN) INC.
No. 3-2, PingXiang Road, Kunshan, Jiangsu Province, P. R. China



TABLE OF CONTENTS

REVISION HISTORY.....3

SUMMARY OF TEST RESULT4

1. GENERAL DESCRIPTION5

 1.1. Applicant.....5

 1.2. Manufacturer5

 1.3. Product Feature of Equipment Under Test5

 1.4. Product Specification of Equipment Under Test6

 1.5. Ancillary Equipment Used During the Test7

 1.6. Modification of EUT7

 1.7. Test Location7

 1.8. Applicable Standards7

2. TEST CONFIGURATION OF EQUIPMENT UNDER TEST.....8

 2.1. Test Mode8

 2.2. Connection Diagram of Test System 10

 2.3. Support Unit used in test configuration and system..... 13

 2.4. EUT Operation Test Setup 14

3. TEST RESULT..... 15

 3.1. Test of AC Conducted Emission Measurement 15

 3.2. Test of Radiated Emission Measurement 22

4. LIST OF MEASURING EQUIPMENT26

5. UNCERTAINTY OF EVALUATION27

APPENDIX A. SETUP PHOTOGRAPHS



REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FC6D1401	Rev. 01	Initial issue of report	Feb. 13, 2017



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 2.65 dB at 0.169 MHz
3.2	15.109	Radiated Emission	< 15.109 limits	PASS	Under limit 3.59 dB at 480.080 MHz



1. General Description

1.1. Applicant

Xiaomi Communications Co., Ltd.

The Rainbow City of China Resources, NO.68, Qinghe Middle Street, Haidian District, Beijing, China

1.2. Manufacturer

Xiaomi Communications Co., Ltd.

The Rainbow City of China Resources, NO.68, Qinghe Middle Street, Haidian District, Beijing, China

1.3. Product Feature of Equipment Under Test

Product Feature	
Equipment	Mobile Phone
Brand Name	MI
FCC ID	2AFZZ-RSG138
EUT supports Radios application	GSM/GPRS/EGPRS/WCDMA/HSPA/DC-HSDPA/ HSPA+ (16QAM uplink is not supported)/LTE/ WLAN 2.4GHz 802.11b/g/n HT20/ Bluetooth v3.0 + EDR/Bluetooth v4.0 LE/Bluetooth v4.1 LE
IMEI Code	Conduction: 863674030024820/863674030024838 Radiation: 863674030025405/863674030025413
HW Version	A
SW Version	MIUI 8
EUT Stage	Identical Prototype

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



1.4. Product Specification of Equipment Under Test

Standards-related Product Specification	
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 LTE Band 4 : 1710.7 MHz ~ 1754.3 MHz LTE Band 5 : 824.7 MHz ~ 848.3 MHz LTE Band 7 : 2502.5 MHz ~ 2567.5 MHz LTE Band 38 : 2572.5MHz ~ 2617.5MHz 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 LTE Band 4 : 2110.7 MHz ~ 2154.3 MHz LTE Band 5 : 869.7 MHz ~ 893.3 MHz LTE Band 7: 2622.5 MHz ~ 2687.5 MHz LTE Band 38 : 2572.5MHz ~ 2617.5MHz 802.11b/g/n: 2412 MHz ~ 2462 MHz Bluetooth: 2402 MHz ~ 2480 MHz GPS : 1.57542 GHz Glonass: 1602 MHz + n× 0.5625MHz (n=-7,-6,-5,...0,...,6) FM : 88 MHz ~ 108 MHz
Antenna Type	WWAN : PIFA/LDS Antenna WLAN : LDS Antenna Bluetooth : LDS Antenna GPS/Glonass: LDS Antenna FM: External headset Antenna
Type of Modulation	GSM: GMSK GPRS: GMSK EDGE(MCS 0-4): GMSK / (MCS 5-9): 8PSK WCDMA : BPSK (Uplink) HSDPA/DC-HSDPA : QPSK (Uplink) HSUPA : QPSK (Uplink) HSPA+ : 16QAM uplink is not supported DC-HSDPA : 64QAM LTE: QPSK / 16QAM 802.11b : DSSS (DBPSK / DQPSK / CCK) 802.11g/n : OFDM (BPSK / QPSK / 16QAM / 64QAM) Bluetooth LE : GFSK Bluetooth (1Mbps) : GFSK Bluetooth (2Mbps) : $\pi/4$ -DQPSK Bluetooth (3Mbps) : 8-DPSK GPS/Glonass : BPSK FM: FM

1.5. Ancillary Equipment Used During the Test

Specification of Accessory				
AC Adapter	Brand Name	MI	Model Name	MDY-08-EZ
	Power Rating	I/P: 100 - 240 Vac, 350 mA, O/P: 5 Vdc, 1.2 - 2 A		
Battery	Brand Name	MI	Model Name	BM47
	Power Rating	0.385 Vdc, 4000 mAh	Type	Li-ion
USB Cable	Brand Name	MI	Model Name	KLC-2468
	Signal Line Type	0.8m shielded cable without core		
Car Charger	Brand Name	Xiaomi	Model Name	CZCDQ01ZM
	Power Rating	I/P: 12 - 24 Vac O/P: 5 Vdc, 2.4 A x2 (Max 3.6A)		
Earphone	Brand Name	Xiaomi	Model Name	QTER01JY
	Signal Line Type	1.25m unshielded cable without core		
Bluetooth Earphone	Brand Name	Xiaomi	Model Name	LYEJ02LM

1.6. Modification of EUT

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

1.7. Test Location

Test Site	SPORTON INTERNATIONAL (KUNSHAN) INC.		
Test Site Location	No. 3-2, PingXiang Road, Kunshan, Jiangsu Province, P. R. China TEL: +86-0512-5790-0158 FAX: +86-0512-5790-0958		
Test Site No.	Sporton Site No.		FCC Registration No.
	CO01-KS	03CH02-KS	418269

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

1.8. 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.

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).

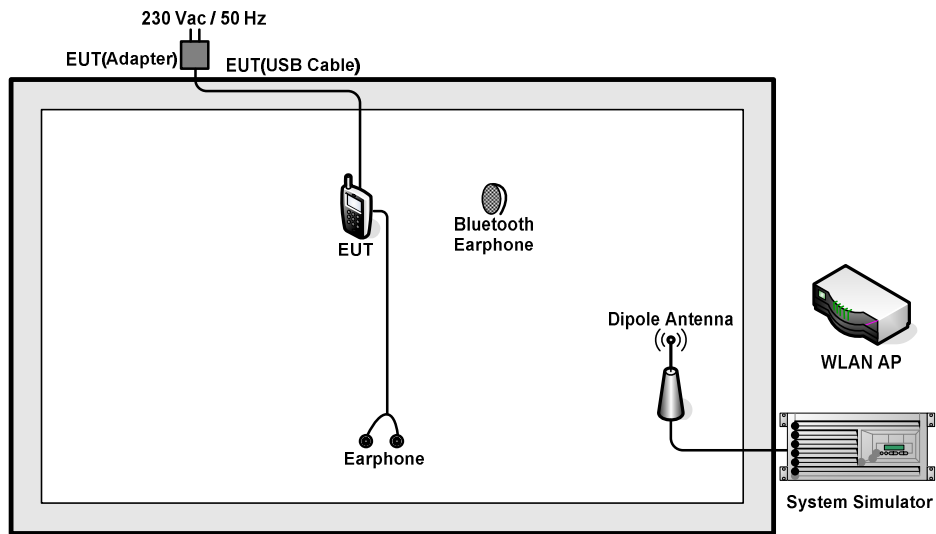
Test Items	Function Type
AC Conducted Emission	Mode 1: GSM850 Idle + Bluetooth Idle + WLAN Idle + USB Cable (Charging from Adapter) + Earphone + Camera(Rear) + SIM1 <Fig.1> Mode 2: GSM1900 Idle + Bluetooth Idle + WLAN Idle + USB Cable (Charging from Adapter) + Earphone + Camera(Front) + SIM2 <Fig.1> Mode 3: WCDMA Band V Idle + Bluetooth Idle + WLAN Idle + USB Cable (Charging from Adapter) + Earphone + MPEG4 + SIM1<Fig.1> Mode 4: LTE Band 4 Idle + Bluetooth Idle + WLAN Idle + USB Cable (Charging from Adapter) + Earphone + FM Rx(98MHz) + SIM2 <Fig.2> Mode 5: LTE Band 5 Idle + Bluetooth Idle + WLAN Idle + USB Cable (Charging from Adapter) + Earphone + Glonass Rx + SIM1<Fig.3> Mode 6: LTE Band 7 Idle + Bluetooth Idle + WLAN Idle + USB Cable (Data Link with Notebook) + Earphone + GPS Rx + SIM2<Fig.4>
Radiated Emissions < 1GHz	Mode 1: GSM850 Idle + Bluetooth Idle + WLAN Idle + USB Cable (Charging from Adapter) + Earphone + Camera(Rear) + SIM1 <Fig.1> Mode 2: GSM1900 Idle + Bluetooth Idle + WLAN Idle + USB Cable (Charging from Adapter) + Earphone + Camera(Front) + SIM2 <Fig.1> Mode 3: WCDMA Band V Idle + Bluetooth Idle + WLAN Idle + USB Cable (Charging from Adapter) + Earphone + MPEG4 + SIM1<Fig.1> Mode 4: LTE Band 4 Idle + Bluetooth Idle + WLAN Idle + USB Cable (Charging from Adapter) + Earphone + FM Rx(98MHz) + SIM2 <Fig.2> Mode 5: LTE Band 5 Idle + Bluetooth Idle + WLAN Idle + USB Cable (Charging from Adapter) + Earphone + Glonass Rx + SIM1<Fig.3> Mode 6: LTE Band 7 Idle + Bluetooth Idle + WLAN Idle + USB Cable (Data Link with Notebook) + Earphone + GPS Rx + SIM2<Fig.4> Mode 7: LTE Band 7 Idle + Bluetooth Idle + WLAN Idle + Car Charger 12V + Earphone + GPS Rx + SIM1<Fig.5> Mode 8: LTE Band 7 Idle + Bluetooth Idle + WLAN Idle + Car Charger 24V + Earphone + GPS Rx + SIM2<Fig.5>
Radiated Emissions ≥ 1GHz	Mode 1: LTE Band 7 Idle + Bluetooth Idle + WLAN Idle + USB Cable (Data Link with Notebook) + Earphone + GPS Rx + SIM2 <Fig.4>



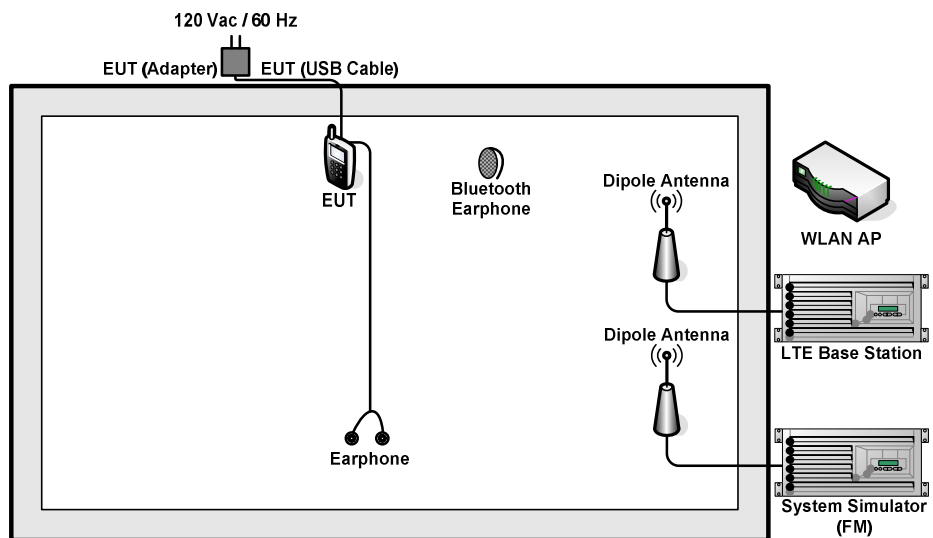
Remark:

1. The worst case of AC is mode 1; and the USB link mode of AC is mode 6, the test data of these modes are reported.
2. The worst case of RE < 1G is mode 6; only the test data of this mode is reported.
3. Data link with notebook means data application transferred mode between EUT and notebook.

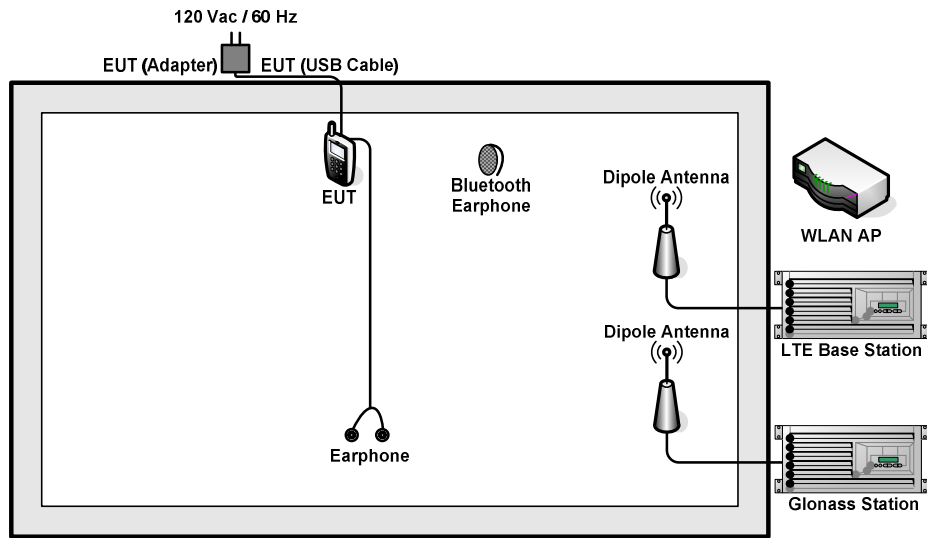
2.2. Connection Diagram of Test System



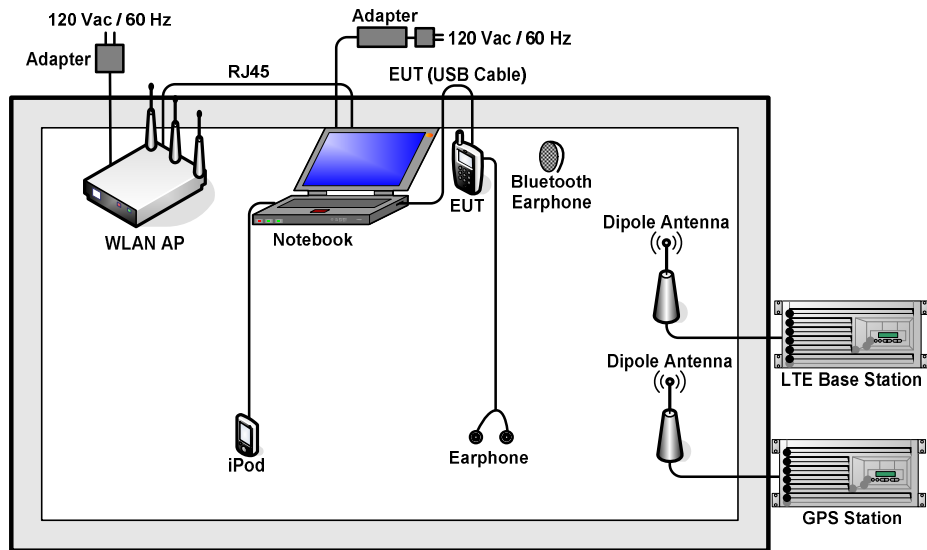
<Fig.1>



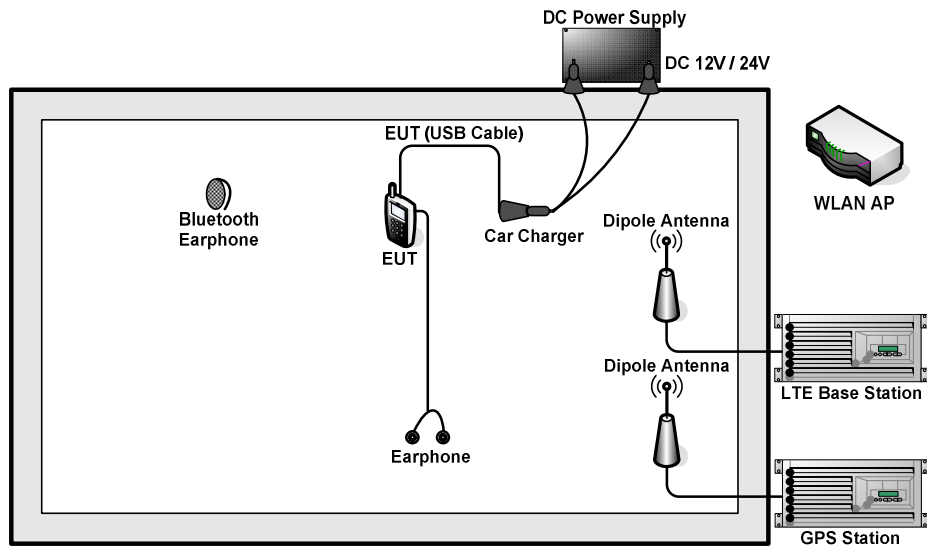
<Fig.2>



<Fig.3>



<Fig.4>



<Fig.5>



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.	System Simulator(FM)	R&S	SMBV100A	N/A	N/A	Unshielded, 1.8 m
3.	LTE Base Station	Anritsu	MT8820C	N/A	N/A	Unshielded, 1.8 m
4.	GPS Station	ADIVIC	MP9000	N/A	N/A	Unshielded, 1.8 m
5.	Glomass Station	RACELOGIC	RLLS03-2RP	N/A	N/A	Unshielded, 1.8 m
6.	WLAN AP	D-link	DIR855	KA2DIR855A2	N/A	Unshielded, 1.8 m
7.	WLAN AP	TP-Link	TL-WDR5600	N/A	N/A	Unshielded, 1.8 m
8.	DC Power Supply	GW	GPS-3030D	N/A	N/A	Unshielded, 1.8 m
9.	Notebook	Lenovo	G480	N/A	N/A	AC I/P: Unshielded, 1.8 m DC O/P: Shielded, 1.8 m
10.	Notebook	DELL	Latitude3440	N/A	N/A	AC I/P: Unshielded, 1.8 m DC O/P: Shielded, 1.8 m
11.	SD Card	Kingston	4GB	N/A	N/A	N/A
12.	SD Card	SanDisk	Uitra	N/A	N/A	N/A
13.	iPod	Apple	A1199	FCC DoC	Shielded, 1.2 m	N/A



2.4. EUT Operation Test Setup

The EUT was in GSM or WCDMA or LTE idle mode during the testing. The EUT was synchronized to the BCCH, and 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/Glonass function to make the EUT receive continuous signals from GPS/Glonass station.
3. Turn on FM function to make the EUT receive continuous signals from system simulator (FM).
4. Execute "Video player" to play MPEG4 files.
5. 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.

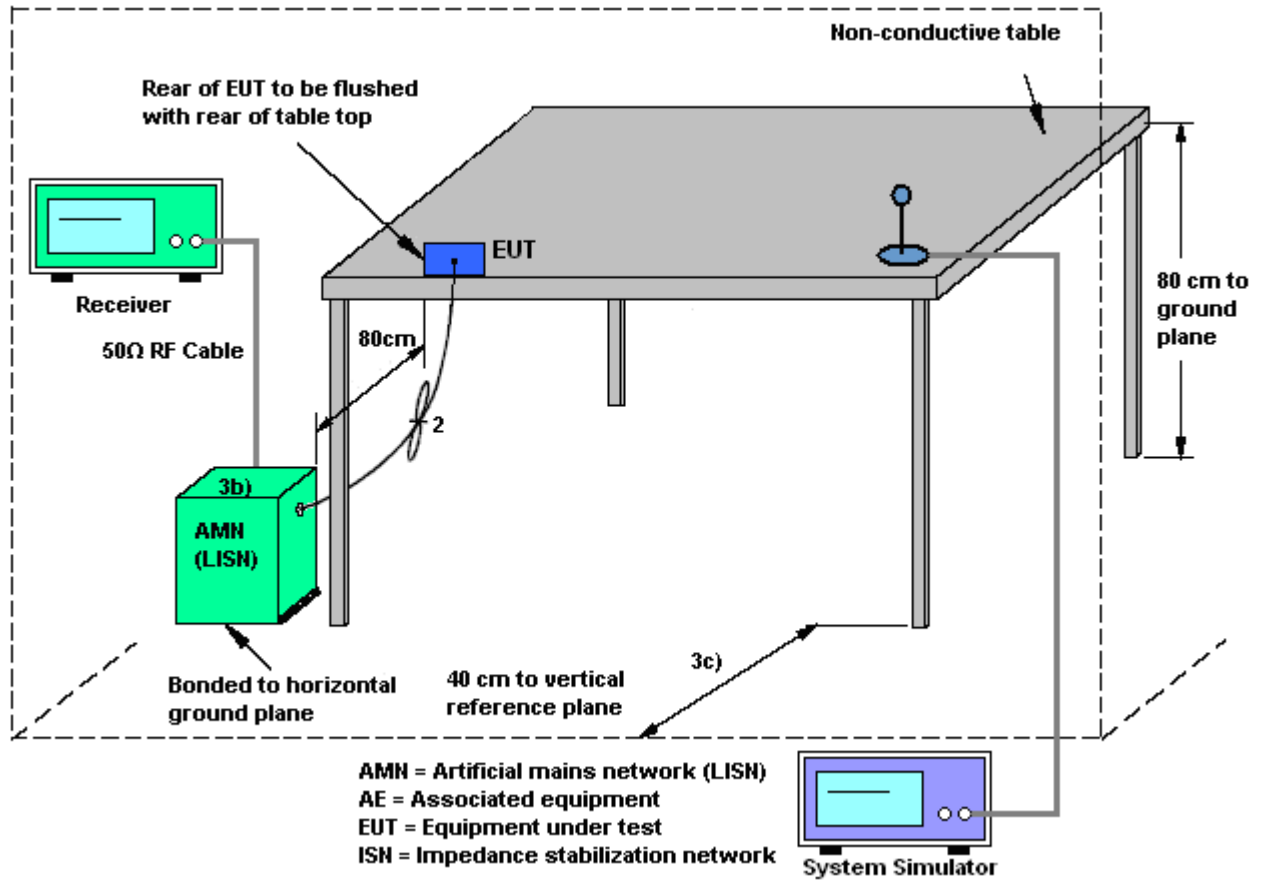
3.1.2 Measuring Instruments

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.

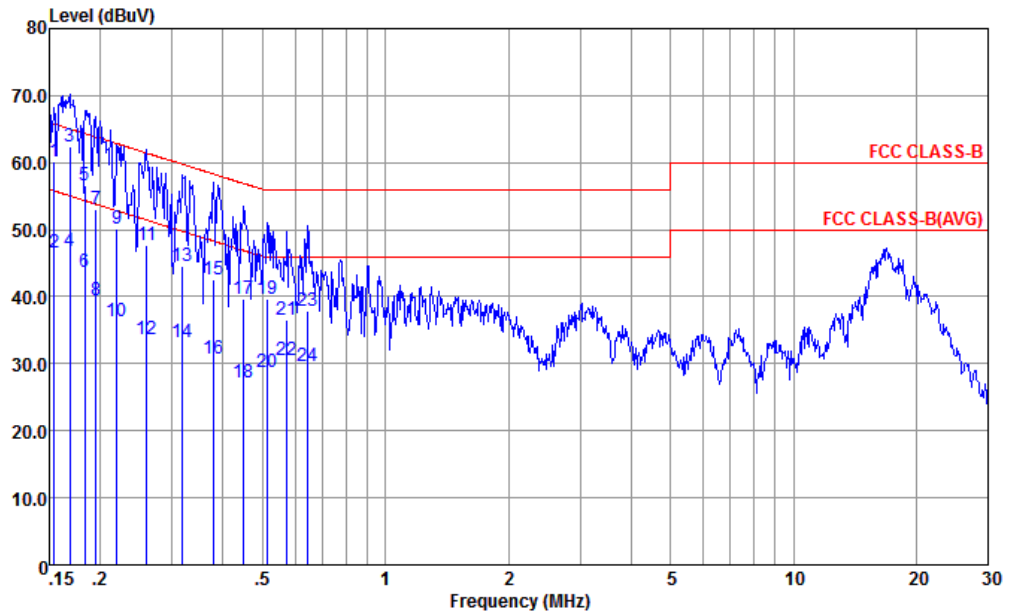
3.1.4 Test Setup





3.1.5 Test Result of AC Conducted Emission

Test Mode :	Mode 1	Temperature :	20~22°C
Test Engineer :	Peter Wei	Relative Humidity :	40~42%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	GSM850 Idle + Bluetooth Idle + WLAN Idle + USB Cable (Charging from Adapter) + Earphone + Camera(Rear) + SIM1		

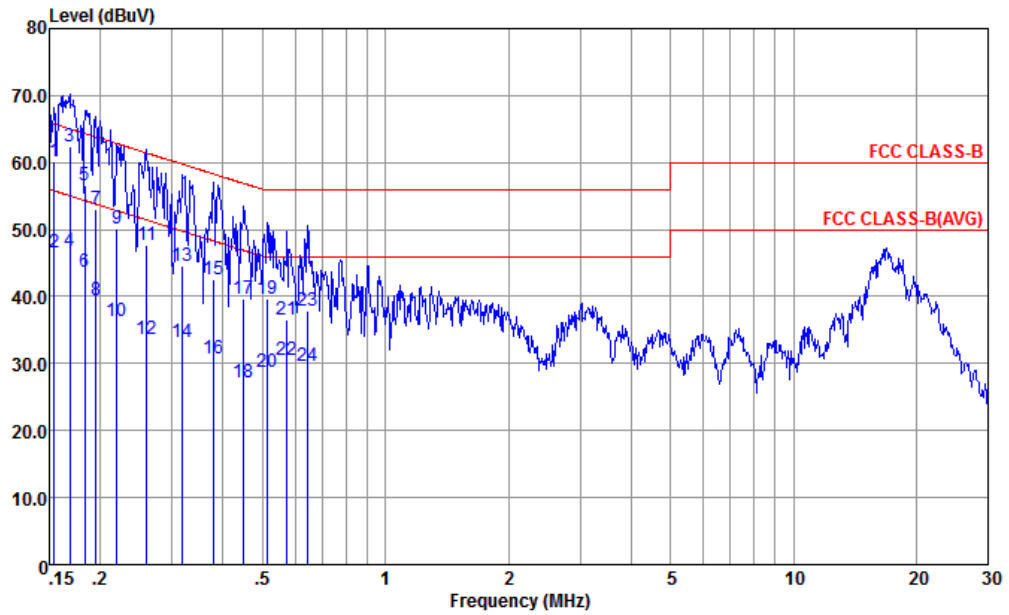


Site : CO01-KS
 Condition : FCC CLASS-B LISN-L-20151024 LINE
 Project : (FC) 6D1401
 mode : Mode 1
 IMEI : 863674030024820/863674030024838
 : #6

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.154	60.19	-5.59	65.78	49.30	0.50	10.39	QP
2	0.154	46.49	-9.29	55.78	35.60	0.50	10.39	Average
3 *	0.169	62.38	-2.65	65.03	51.60	0.41	10.37	QP
4	0.169	46.88	-8.15	55.03	36.10	0.41	10.37	Average
5	0.183	56.66	-7.67	64.33	46.00	0.31	10.35	QP
6	0.183	43.76	-10.57	54.33	33.10	0.31	10.35	Average
7	0.195	53.08	-10.72	63.80	42.49	0.25	10.34	QP
8	0.195	39.48	-14.32	53.80	28.89	0.25	10.34	Average
9	0.220	50.14	-12.69	62.83	39.61	0.22	10.31	QP
10	0.220	36.34	-16.49	52.83	25.81	0.22	10.31	Average
11	0.260	47.70	-13.72	61.42	37.20	0.22	10.28	QP
12	0.260	33.70	-17.72	51.42	23.20	0.22	10.28	Average
13	0.318	44.67	-15.08	59.75	34.20	0.23	10.24	QP
14	0.318	33.17	-16.58	49.75	22.70	0.23	10.24	Average
15	0.379	42.54	-15.76	58.30	32.10	0.23	10.21	QP
16	0.379	30.74	-17.56	48.30	20.30	0.23	10.21	Average



Test Mode :	Mode 1	Temperature :	20~22°C
Test Engineer :	Peter Wei	Relative Humidity :	40~42%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	GSM850 Idle + Bluetooth Idle + WLAN Idle + USB Cable (Charging from Adapter) + Earphone + Camera(Rear) + SIM1		

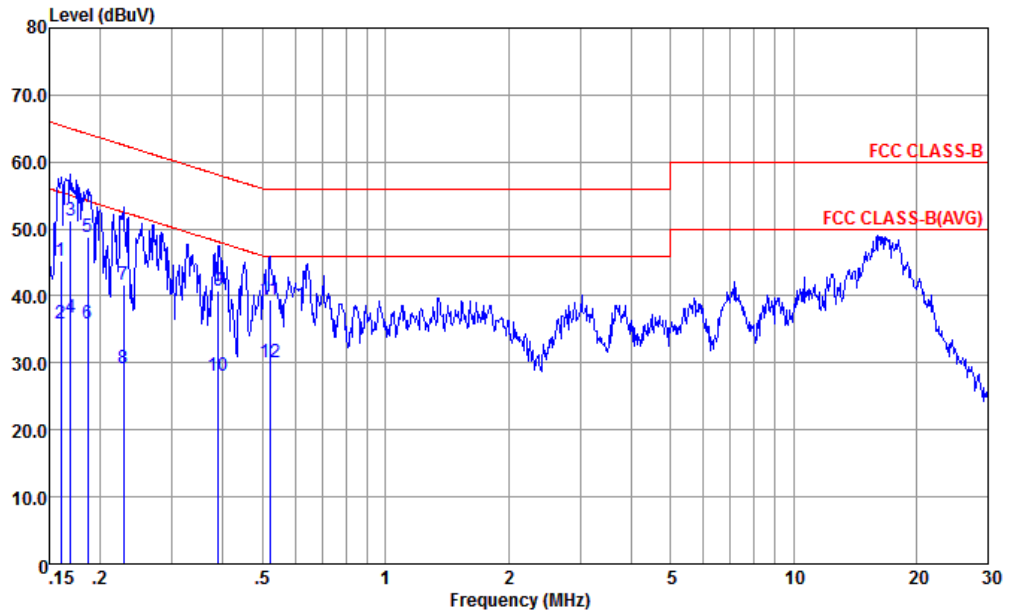


Site : CO01-KS
 Condition : FCC CLASS-B LISN-L-20151024 LINE
 Project : (FC) 6D1401
 mode : Mode 1
 IMEI : 863674030024820/863674030024838
 : #6

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
17	0.449	39.62	-17.27	56.89	29.20	0.23	10.19	QP
18	0.449	27.22	-19.67	46.89	16.80	0.23	10.19	Average
19	0.513	39.62	-16.38	56.00	29.20	0.23	10.19	QP
20	0.513	28.72	-17.28	46.00	18.30	0.23	10.19	Average
21	0.573	36.52	-19.48	56.00	26.11	0.23	10.18	QP
22	0.573	30.52	-15.48	46.00	20.11	0.23	10.18	Average
23	0.644	37.92	-18.08	56.00	27.50	0.24	10.18	QP
24	0.644	29.62	-16.38	46.00	19.20	0.24	10.18	Average



Test Mode :	Mode 1	Temperature :	20~22°C
Test Engineer :	Peter Wei	Relative Humidity :	40~42%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	GSM850 Idle + Bluetooth Idle + WLAN Idle + USB Cable (Charging from Adapter) + Earphone + Camera(Rear) + SIM1		

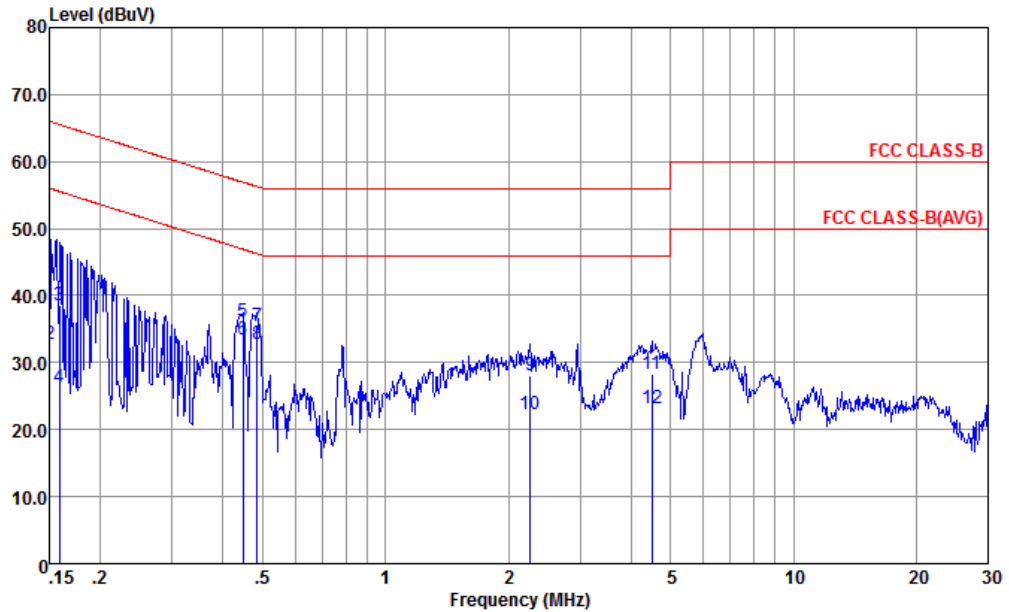


Site : CO01-KS
 Condition : FCC CLASS-B LISN-N-20151024 NEUTRAL
 Project : (FC) 6D1401
 mode : Mode 1
 IMEI : 863674030024820/863674030024838
 : #6

	Freq	Level	Over	Limit	Read	LISN	Cable	Remark
	MHz	dBuV	Limit	Line	Level	Factor	Loss	
			dB	dBuV	dBuV	dB	dB	
1	0.160	45.28	-20.19	65.47	34.60	0.30	10.38	QP
2	0.160	35.78	-19.69	55.47	25.10	0.30	10.38	Average
3 *	0.169	51.17	-13.82	64.99	40.50	0.30	10.37	QP
4	0.169	36.77	-18.22	54.99	26.10	0.30	10.37	Average
5	0.186	48.86	-15.34	64.20	38.20	0.31	10.35	QP
6	0.186	35.86	-18.34	54.20	25.20	0.31	10.35	Average
7	0.228	41.62	-20.90	62.52	31.00	0.31	10.31	QP
8	0.228	29.12	-23.40	52.52	18.50	0.31	10.31	Average
9	0.389	40.72	-17.36	58.08	30.20	0.32	10.20	QP
10	0.389	28.02	-20.06	48.08	17.50	0.32	10.20	Average
11	0.521	39.41	-16.59	56.00	28.90	0.32	10.19	QP
12	0.521	30.11	-15.89	46.00	19.60	0.32	10.19	Average



Test Mode :	Mode 6	Temperature :	20~22°C
Test Engineer :	Peter Wei	Relative Humidity :	40~42%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	LTE Band 7 Idle + Bluetooth Idle + WLAN Idle + USB Cable (Data Link with Notebook) + Earphone + GPS Rx + SIM2		

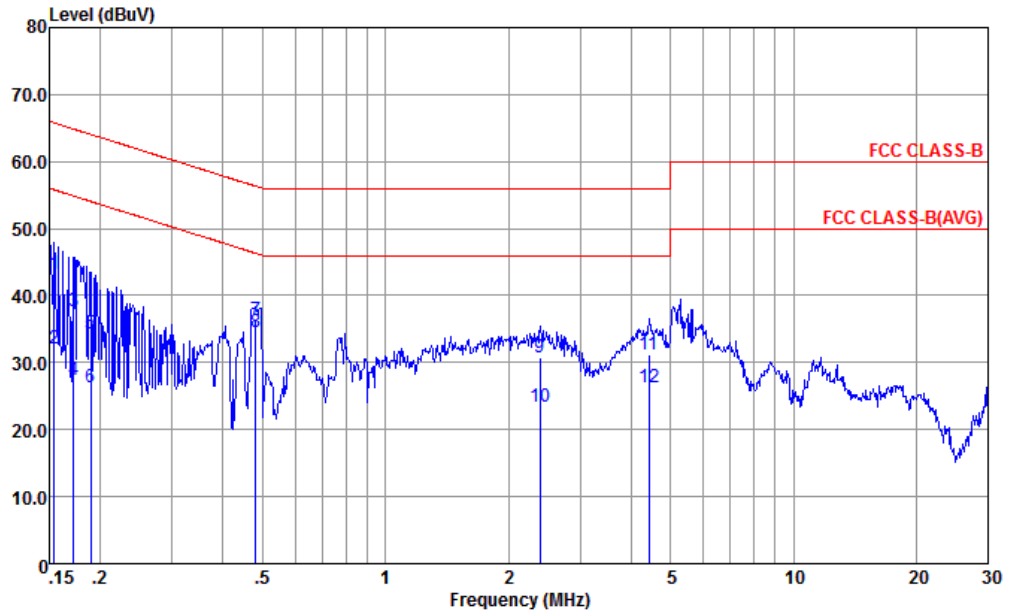


Site : CO01-KS
 Condition : FCC CLASS-B LISN-L-20151024 LINE
 Project : (FC) 6D1401
 mode : Mode 6
 IMEI : 863674030024820/863674030024838
 : #6

	Freq	Level	Over	Limit	Read	LISN	Cable	Remark
	MHz	dBuV	Limit	Line	Level	Factor	Loss	
			dB	dBuV	dBuV	dB	dB	
1	0.150	43.72	-22.28	66.00	32.80	0.53	10.39	QP
2	0.150	32.72	-23.28	56.00	21.80	0.53	10.39	Average
3	0.159	38.65	-26.87	65.52	27.80	0.47	10.38	QP
4	0.159	26.25	-29.27	55.52	15.40	0.47	10.38	Average
5	0.447	36.12	-20.81	56.93	25.70	0.23	10.19	QP
6 *	0.447	33.52	-13.41	46.93	23.10	0.23	10.19	Average
7	0.484	35.52	-20.75	56.27	25.10	0.23	10.19	QP
8	0.484	32.82	-13.45	46.27	22.40	0.23	10.19	Average
9	2.261	28.18	-27.82	56.00	17.80	0.18	10.20	QP
10	2.261	22.18	-23.82	46.00	11.80	0.18	10.20	Average
11	4.501	28.33	-27.67	56.00	17.90	0.19	10.24	QP
12	4.501	23.23	-22.77	46.00	12.80	0.19	10.24	Average



Test Mode :	Mode 6	Temperature :	20~22°C
Test Engineer :	Peter Wei	Relative Humidity :	40~42%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	LTE Band 7 Idle + Bluetooth Idle + WLAN Idle + USB Cable (Data Link with Notebook) + Earphone + GPS Rx + SIM2		



Site : CO01-KS
 Condition : FCC CLASS-B LISN-N-20151024 NEUTRAL
 Project : (FC) 6D1401
 mode : Mode 6
 IMEI : 863674030024820/863674030024838
 : #6

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.154	43.29	-22.49	65.78	32.60	0.30	10.39	QP
2	0.154	31.99	-23.79	55.78	21.30	0.30	10.39	Average
3	0.172	37.57	-27.29	64.86	26.91	0.30	10.36	QP
4	0.172	27.47	-27.39	54.86	16.81	0.30	10.36	Average
5	0.189	34.35	-29.71	64.06	23.70	0.31	10.34	QP
6	0.189	26.35	-27.71	54.06	15.70	0.31	10.34	Average
7	0.481	36.41	-19.91	56.32	25.90	0.32	10.19	QP
8 *	0.481	34.61	-11.71	46.32	24.10	0.32	10.19	Average
9	2.396	30.68	-25.32	56.00	20.10	0.38	10.20	QP
10	2.396	23.38	-22.62	46.00	12.80	0.38	10.20	Average
11	4.430	31.20	-24.80	56.00	20.60	0.36	10.24	QP
12	4.430	26.30	-19.70	46.00	15.70	0.36	10.24	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

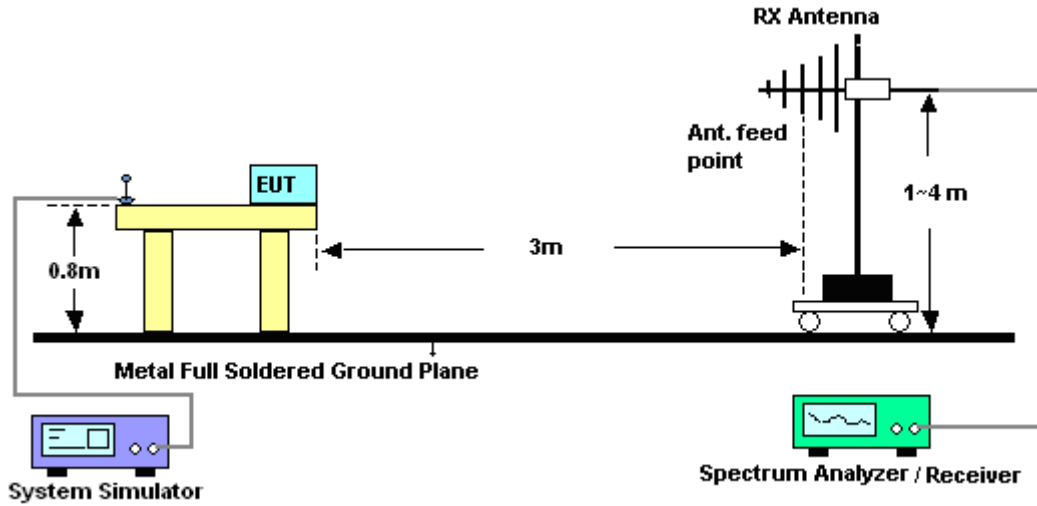
The measuring equipment is listed in the section 4 of this test report.

3.2.3. Test Procedures

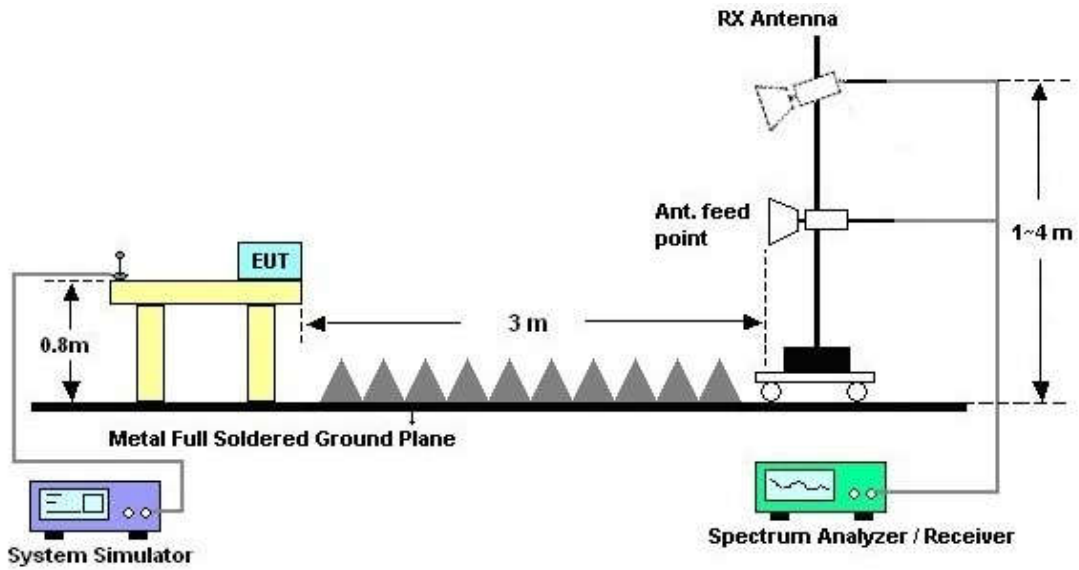
1. The EUT was placed on a turntable with 0.8 meter above ground.
2. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest radiation.
4. The antenna 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



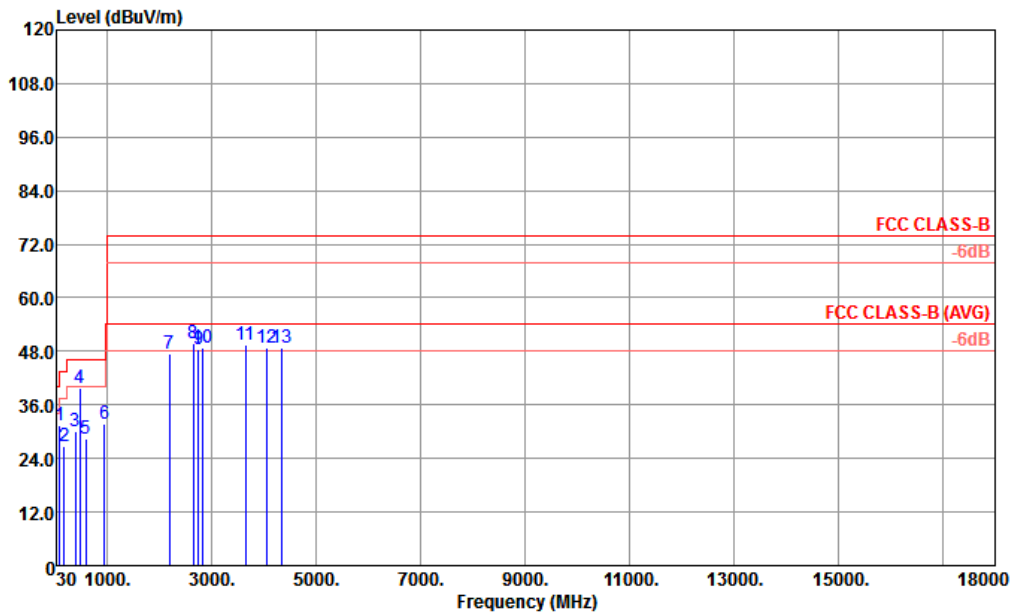
For radiated emissions above 1GHz





3.2.5. Test Result of Radiated Emission

Test Mode :	Mode 6	Temperature :	21~22°C
Test Engineer :	Jason Peng	Relative Humidity :	41~42%
Test Distance :	3m	Polarization :	Horizontal
Function Type :	LTE Band 7 Idle + Bluetooth Idle + WLAN Idle + USB Cable (Data Link with Notebook) + Earphone + GPS Rx + SIM2		
Remark :	#8 is system simulator signal which can be ignored.		

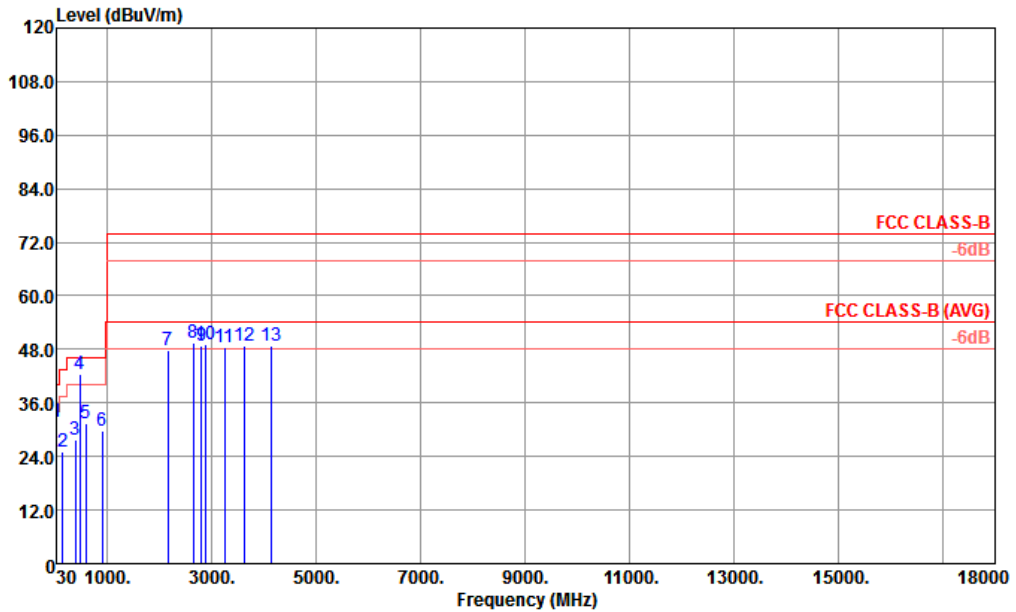


Site : 03CH02-KS
 Condition : FCC CLASS-B 3m 966-02 LF ANT HORIZONTAL
 Project : (FC) 6D1401
 Mode : 6
 IMEI : 863674030025405 863674030025413 #1

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark	
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	95.96	31.34	-12.16	43.50	45.09	17.63	0.23	31.61	---	---	Peak
2	179.38	26.60	-16.90	43.50	41.73	16.27	0.38	31.78	---	---	Peak
3	388.90	30.16	-15.84	46.00	35.59	24.15	0.88	30.46	---	---	Peak
4	480.08	39.81	-6.19	46.00	45.22	23.37	0.92	29.70	100	0	Peak
5	598.42	28.31	-17.69	46.00	31.99	24.33	0.90	28.91	---	---	Peak
6	949.56	31.76	-14.24	46.00	28.15	28.39	1.71	26.49	---	---	Peak
7	2190.00	47.37	-26.63	74.00	44.74	31.14	5.80	34.31	---	---	Peak
8	2655.00	49.65			45.00	31.78	3.31	30.44	---	---	Peak
9	2752.00	48.63	-25.37	74.00	42.29	31.99	2.91	28.56	---	---	Peak
10	2822.00	48.81	-25.19	74.00	41.53	32.14	2.76	27.62	---	---	Peak
11	3645.00	49.45	-24.55	74.00	40.35	34.10	6.19	31.19	---	---	Peak
12	4065.00	48.75	-25.25	74.00	39.37	34.93	6.24	31.79	---	---	Peak
13	4347.00	48.80	-25.20	74.00	39.95	35.21	5.13	31.49	---	---	Peak



Test Mode :	Mode 6	Temperature :	21~22°C
Test Engineer :	Jason Peng	Relative Humidity :	41~42%
Test Distance :	3m	Polarization :	Vertical
Function Type :	LTE Band 7 Idle + Bluetooth Idle + WLAN Idle + USB Cable (Data Link with Notebook) + Earphone + GPS Rx + SIM2		
Remark :	#8 is system simulator signal which can be ignored.		



Site : 03CH02-KS
 Condition : FCC CLASS-B 3m 966-02 LF ANT VERTICAL
 Project : (FC) 6D1401
 Mode : 6
 IMEI : 863674030025405 863674030025413 #1

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark	
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	42.61	31.77	-8.23	40.00	42.81	20.70	0.13	31.87	---	---	Peak
2	153.19	25.11	-18.39	43.50	38.83	17.46	0.33	31.51	---	---	Peak
3	399.57	27.85	-18.15	46.00	32.28	25.20	0.92	30.55	---	---	Peak
4	480.08	42.41	-3.59	46.00	47.82	23.37	0.92	29.70	100	0	Peak
5	596.48	31.50	-14.50	46.00	35.20	24.33	0.90	28.93	---	---	Peak
6	913.67	29.89	-16.11	46.00	27.16	27.81	1.71	26.79	---	---	Peak
7	2168.00	47.91	-26.09	74.00	45.54	31.08	5.65	34.36	---	---	Peak
8	2655.00	49.55			44.90	31.78	3.31	30.44	---	---	Peak
9	2802.00	48.69	-25.31	74.00	41.50	32.10	2.71	27.62	---	---	Peak
10	2884.00	49.01	-24.99	74.00	41.91	32.31	2.90	28.11	---	---	Peak
11	3258.00	48.58	-25.42	74.00	40.12	33.49	6.02	31.05	---	---	Peak
12	3642.00	48.90	-25.10	74.00	39.87	34.03	6.19	31.19	---	---	Peak
13	4146.00	48.80	-25.20	74.00	39.08	35.05	6.53	31.86	---	---	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	Apr. 29, 2016	Jan. 22, 2017	Apr. 28, 2017	Conduction (CO01-KS)
AC LISN	MessTec	AN3016	060103	9kHz~30MHz	Oct. 13, 2016	Jan. 22, 2017	Oct. 12, 2017	Conduction (CO01-KS)
AC LISN (for auxiliary equipment)	MessTec	AN3016	060105	9kHz~30MHz	Oct. 13, 2016	Jan. 22, 2017	Oct. 12, 2017	Conduction (CO01-KS)
AC Power Source	Chroma	61602	ABP000000811	AC 0V~300V, 45Hz~1000Hz	Oct. 13, 2016	Jan. 22, 2017	Oct. 12, 2017	Conduction (CO01-KS)
EMI Test Receiver	R&S	ESR7	101403	9kHz~7GHz; Max 30dBm	Aug. 09, 2016	Jan. 15, 2017	Aug. 08, 2017	Radiation (03CH02-KS)
EXA Spectrum Analyzer	Keysight	N9010A	MY55150208	10Hz~44GHz, MAX 30dB	Apr. 22, 2016	Jan. 15, 2017	Apr. 21, 2017	Radiation (03CH02-KS)
Bilog Antenna	TeseQ	CBL6112D	37879	30MHz~2GHz	Aug. 20, 2016	Jan. 15, 2017	Aug. 19, 2017	Radiation (03CH02-KS)
Double Ridge Horn Antenna	ETS-Lindgren	3117	75957	1GHz~18GHz	Oct. 22, 2016	Jan. 15, 2017	Oct. 21, 2017	Radiation (03CH02-KS)
Amplifier	com-power	PA-103A	161069	1kHz~1000MHz / 32 dB	Apr. 22, 2016	Jan. 15, 2017	Apr. 21, 2017	Radiation (03CH02-KS)
Amplifier	Agilent	8449B	3008A02384	1~26.5GHz Gain 30dB	Oct. 13, 2016	Jan. 15, 2017	Oct. 12, 2017	Radiation (03CH02-KS)
AC Power Source	Chroma	61601	616010002473	N/A	NCR	Jan. 15, 2017	NCR	Radiation (03CH02-KS)
Turn Table	MF	MF7802	N/A	0~360 degree	NCR	Jan. 15, 2017	NCR	Radiation (03CH02-KS)
Antenna Mast	MF	MF7802	N/A	1 m~4 m	NCR	Jan. 15, 2017	NCR	Radiation (03CH02-KS)

NCR: No Calibration Required



5. Uncertainty of Evaluation

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

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

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.1dB
---	-------

Uncertainty of Radiated Emission Measurement (1GHz ~ 18GHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	4.5dB
---	-------