

FCC Test Report

APPLICANT : ZTE CORPORATION
EQUIPMENT : LTE Digital Mobile Phone
BRAND NAME : ZTE
MODEL NAME : Z839
FCC ID : SRQ-Z839
STANDARD : FCC 47 CFR FCC Part 15 Subpart B
CLASSIFICATION : Certification

The product was received on Apr. 05, 2017 and testing was completed on May 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 Development Zone, Jiangsu, China



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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FC740501	Rev. 01	Initial issue of report	May 25, 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 6.18 dB at 0.452 MHz
3.2	15.109	Radiated Emission	< 15.109 limits	PASS	Under limit 3.45 dB at 30.540 MHz for Quasi-Peak



1. General Description

1.1. Applicant

ZTE CORPORATION

ZTE Plaza, Keji Road South, Hi-Tech, Industrial Park, Nanshan District, Shenzhen, Guangdong, 518057, P. R. China

1.2. Manufacturer

ZTE CORPORATION

ZTE Plaza, Keji Road South, Hi-Tech, Industrial Park, Nanshan District, Shenzhen, Guangdong, 518057, P. R. China

1.3. Product Feature of Equipment Under Test

Product Feature	
Equipment	LTE Digital Mobile Phone
Brand Name	ZTE
Model Name	Z839
FCC ID	SRQ-Z839
EUT supports Radios application	LTE/ WLAN 2.4GHz 802.11b/g/n HT20/ Bluetooth v3.0 + EDR/Bluetooth v4.0 LE
IMEI Code	Conduction: 004401784150688 Radiation: 004401784150621
HW Version	Z839HW1.0
SW Version	Z839V1.0.0B01
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	LTE Band 2 : 1850.7 MHz ~ 1909.3 MHz LTE Band 4 : 1710.7 MHz ~ 1754.3 MHz LTE Band 5 : 824.7 MHz ~ 848.3 MHz LTE Band 13 : 779.5 MHz ~ 784.5 MHz 802.11b/g/n: 2412 MHz ~ 2462 MHz Bluetooth: 2402 MHz ~ 2480 MHz
Rx Frequency	LTE Band 2 : 1930.7 MHz ~ 1989.3 MHz LTE Band 4 : 2110.7 MHz ~ 2154.3 MHz LTE Band 5 : 869.7 MHz ~ 893.3 MHz LTE Band 13 : 748.5 MHz ~ 753.5 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	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 : 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 Development Zone, Jiangsu, 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.

1.7. Applicable Standards

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

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

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

2. Test Configuration of Equipment Under Test

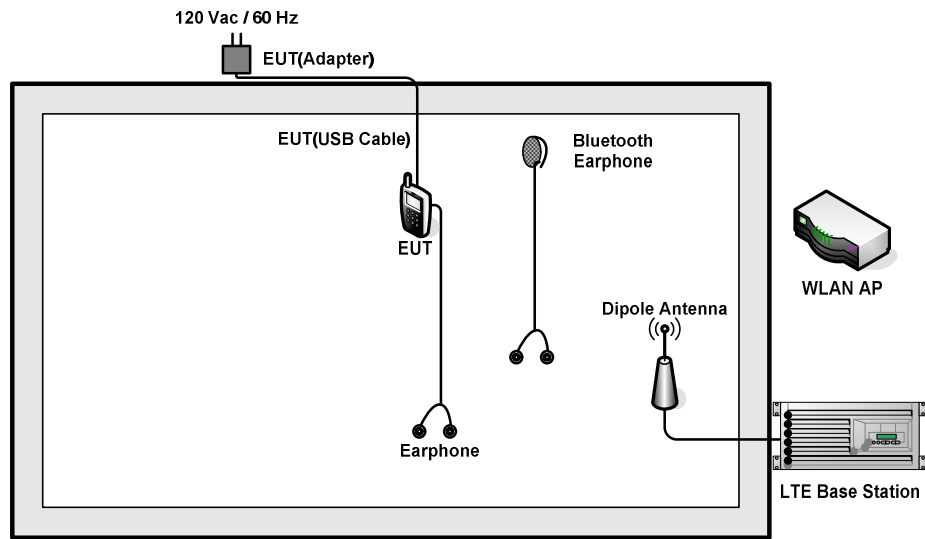
2.1. Test Mode

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.

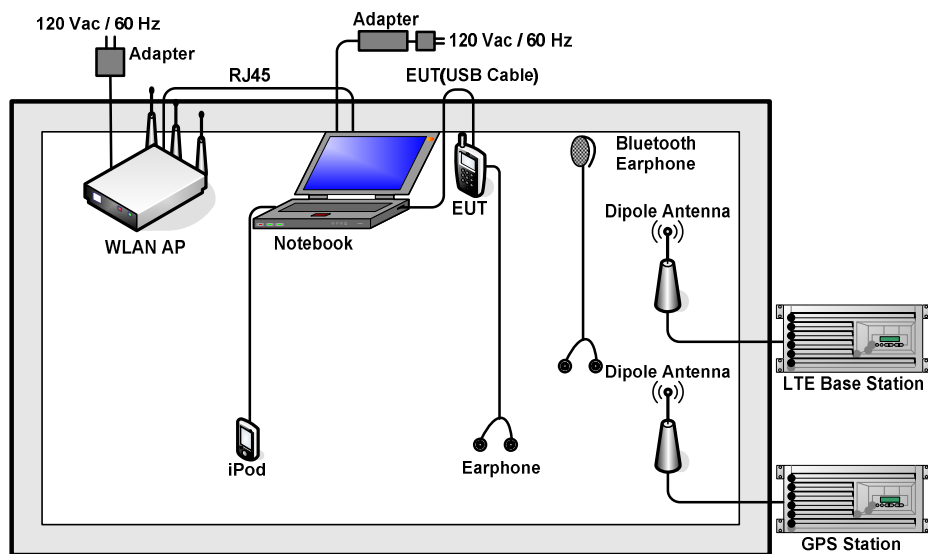
Frequency range investigated: conduction (150 kHz to 30 MHz), radiation (30MHz to the 5th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower).

Test Items	Function Type
AC Conducted Emission	Mode 1: LTE Band 2 Idle + Bluetooth Idle + WLAN Idle + USB Cable (Charging from Adapter) + Earphone + Camera(Rear) <Fig.1> Mode 2: LTE Band 4 Idle + Bluetooth Idle + WLAN Idle + USB Cable (Charging from Adapter) + Earphone + Camera(Front) <Fig.1> Mode 3: LTE Band 5 Idle + Bluetooth Idle + WLAN Idle + USB Cable (Charging from Adapter) + Earphone + MPEG4<Fig.1> Mode 4: LTE Band 13 Idle + Bluetooth Idle + WLAN Idle + USB Cable (Data Link with Notebook) + Earphone + GPS Rx<Fig.2>
Radiated Emissions < 1GHz	Mode 1: LTE Band 2 Idle + Bluetooth Idle + WLAN Idle + USB Cable (Charging from Adapter) + Earphone + Camera(Rear) <Fig.1> Mode 2: LTE Band 4 Idle + Bluetooth Idle + WLAN Idle + USB Cable (Charging from Adapter) + Earphone + Camera(Front) <Fig.1> Mode 3: LTE Band 5 Idle + Bluetooth Idle + WLAN Idle + USB Cable (Charging from Adapter) + Earphone + MPEG4<Fig.1> Mode 4: LTE Band 13 Idle + Bluetooth Idle + WLAN Idle + USB Cable (Data Link with Notebook) + Earphone + GPS Rx<Fig.2>
Radiated Emissions ≥ 1GHz	Mode 1: LTE Band 4 Idle + Bluetooth Idle + WLAN Idle + USB Cable (Charging from Adapter) + Earphone + Camera(Front) <Fig.1> Mode 2: LTE Band 13 Idle + Bluetooth Idle + WLAN Idle + USB Cable (Data Link with Notebook) + Earphone + GPS Rx<Fig.2>
Remark: - 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. - The worst case of RE < 1G is mode 2; and the USB Link mode of RE is mode 4, the test data of these modes are reported. - Data Link with Notebook means data application transferred mode between EUT and Notebook.	

2.2. Connection Diagram of Test System



<Fig.1>



<Fig.2>

2.3. Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	LTE Base Station	Anritus	MT8820C	N/A	N/A	Unshielded, 1.8 m
2.	GPS Station	ADIVIC	MP9000	N/A	N/A	Unshielded, 1.8 m
3.	WLAN AP	TP-Link	TL-WDR5600	N/A	N/A	Unshielded, 1.8 m
4.	WLAN AP	SAUS	RT-AC66U	MSQ-RAC66U	N/A	Unshielded, 1.8 m
5.	Notebook	Lenovo	G480	PRC4	N/A	AC I/P: Unshielded, 1.8 m DC O/P: Shielded, 1.8 m
6.	Notebook	DELL	Latitude3440	N/A	N/A	AC I/P: Unshielded, 1.8 m DC O/P: Shielded, 1.8 m
7.	Bluetooth Earphone	Lenovo	LBH308	N/A	N/A	N/A
8.	Bluetooth Earphone	Lenovo	LBH301	N/A	N/A	N/A
9.	SD Card	Kingston	4GB	N/A	N/A	N/A
10.	SD Card	SanDisk	Uitra	N/A	N/A	N/A
11.	iPod	Apple	A1199	FCC DoC	Unshielded, 1.2 m	N/A
12.	Earphone	Lenovo	LH102	N/A	N/A	Unshielded, 1.2 m

2.4. EUT Operation Test Setup

The EUT was in 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 function to make the EUT receive continuous signals from GPS station.
3. Execute "Video player" to play MPEG4 files.
4. Turn on camera to capture images.

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.

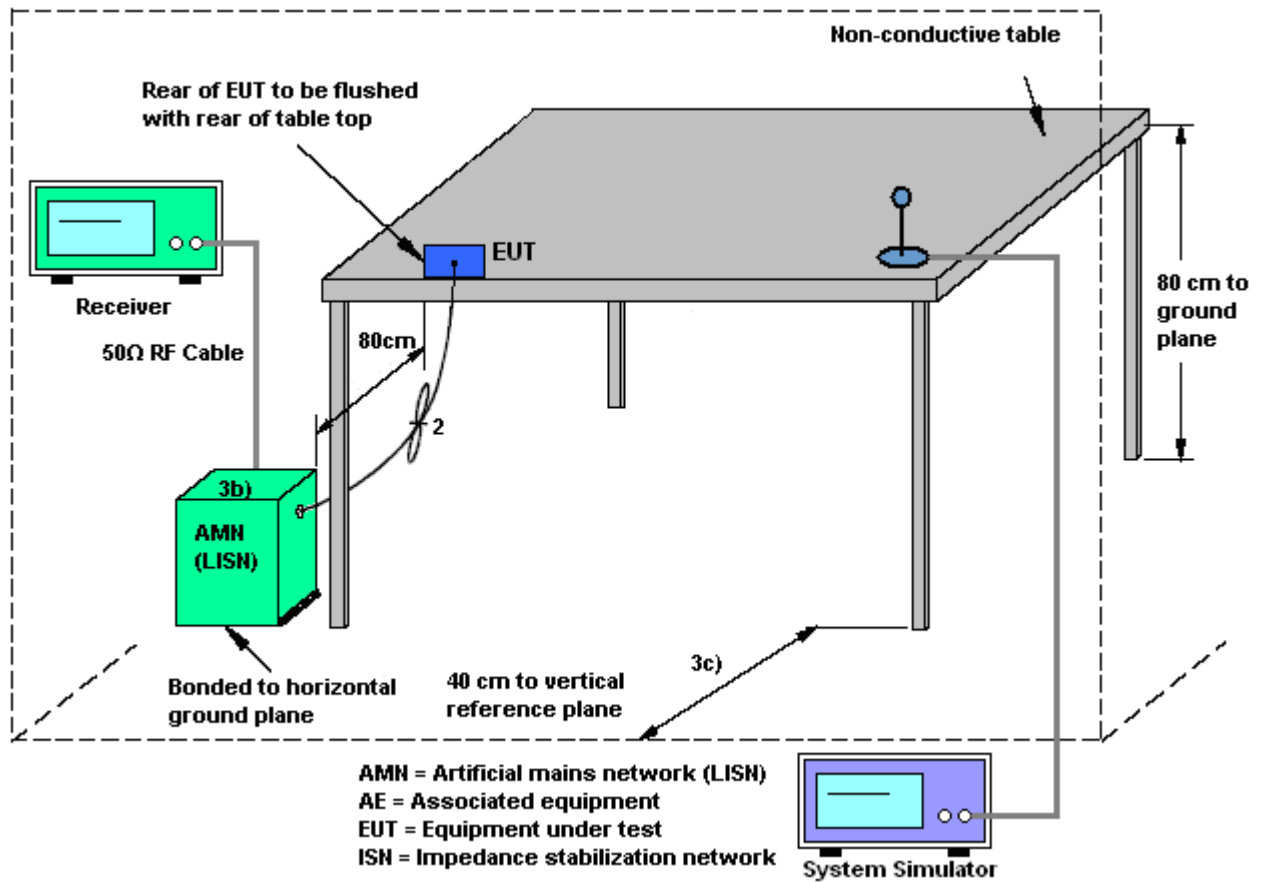
3.1.2 Measuring Instruments

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.

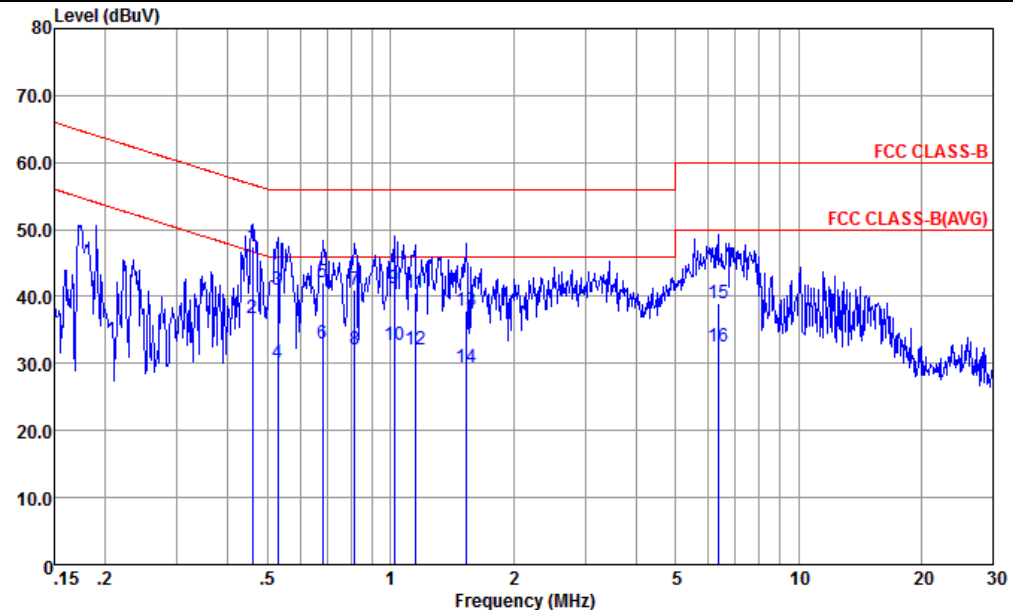
3.1.4 Test Setup





3.1.5 Test Result of AC Conducted Emission

Test Mode :	Mode 2	Temperature :	22~24℃
Test Engineer :	Amos Zhang	Relative Humidity :	42~46%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	LTE Band 4 Idle + Bluetooth Idle + WLAN Idle + USB Cable (Charging from Adapter) + Earphone + Camera(Front)		

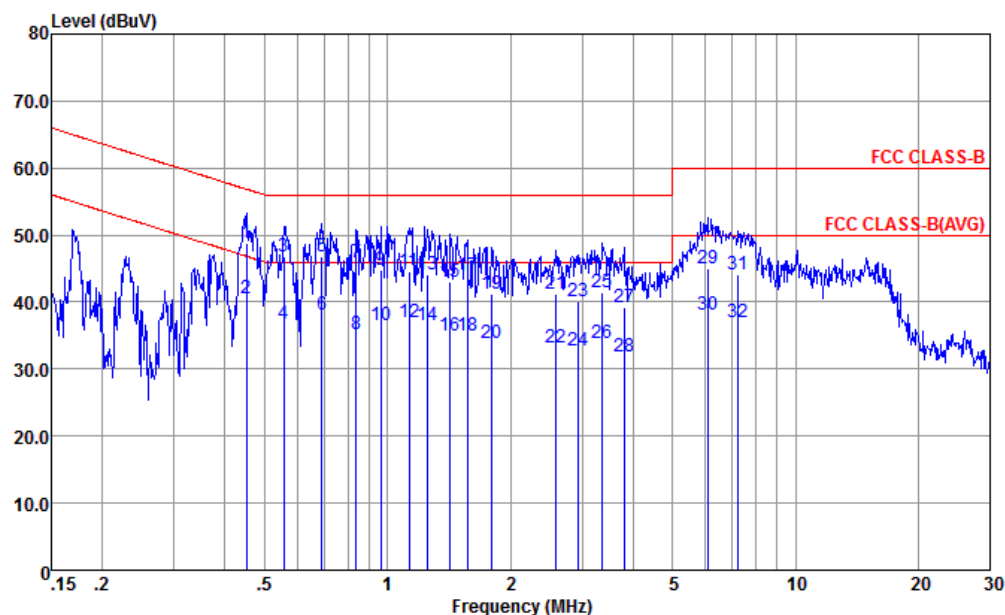


Site : CO01-KS
Condition : FCC CLASS-B LISN-L-161013-060103 LINE
Project : (FC) 740501
mode : Mode 2
: 004401784150688 #7

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1 *	0.459	47.36	-9.35	56.71	36.90	0.27	10.19	QP
2	0.459	36.76	-9.95	46.71	26.30	0.27	10.19	Average
3	0.529	41.05	-14.95	56.00	30.59	0.27	10.19	QP
4	0.529	30.05	-15.95	46.00	19.59	0.27	10.19	Average
5	0.683	42.03	-13.97	56.00	31.60	0.25	10.18	QP
6	0.683	33.03	-12.97	46.00	22.60	0.25	10.18	Average
7	0.817	41.03	-14.97	56.00	30.61	0.25	10.17	QP
8	0.817	32.03	-13.97	46.00	21.61	0.25	10.17	Average
9	1.021	41.25	-14.75	56.00	30.80	0.26	10.19	QP
10	1.021	32.75	-13.25	46.00	22.30	0.26	10.19	Average
11	1.147	40.64	-15.36	56.00	30.20	0.25	10.19	QP
12	1.147	32.04	-13.96	46.00	21.60	0.25	10.19	Average
13	1.535	37.92	-18.08	56.00	27.50	0.23	10.19	QP
14	1.535	29.32	-16.68	46.00	18.90	0.23	10.19	Average
15	6.352	39.11	-20.89	60.00	28.60	0.24	10.27	QP
16	6.352	32.61	-17.39	50.00	22.10	0.24	10.27	Average



Test Mode :	Mode 2	Temperature :	22~24℃
Test Engineer :	Amos Zhang	Relative Humidity :	42~46%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	LTE Band 4 Idle + Bluetooth Idle + WLAN Idle + USB Cable (Charging from Adapter) + Earphone + Camera(Front)		

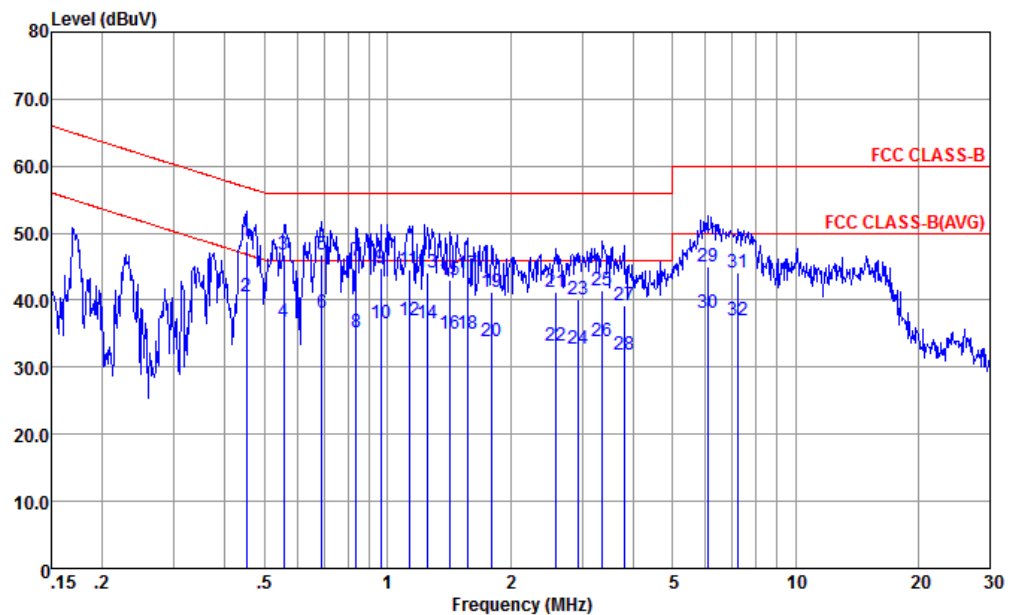


Site : CO01-KS
 Condition : FCC CLASS-B LISN-N-161013-060103 NEUTRAL
 Project : (FC) 740501
 mode : Mode 2
 : 004401784150688 #7

	Freq	Level	Over	Limit	Read	LISN	Cable	
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.452	48.77	-8.08	56.85	38.21	0.37	10.19	QP
2 *	0.452	40.67	-6.18	46.85	30.11	0.37	10.19	Average
3	0.558	46.86	-9.14	56.00	36.30	0.38	10.18	QP
4	0.558	36.76	-9.24	46.00	26.20	0.38	10.18	Average
5	0.690	46.76	-9.24	56.00	36.20	0.38	10.18	QP
6	0.690	38.16	-7.84	46.00	27.60	0.38	10.18	Average
7	0.839	45.87	-10.13	56.00	35.30	0.39	10.18	QP
8	0.839	35.17	-10.83	46.00	24.60	0.39	10.18	Average
9	0.963	44.88	-11.12	56.00	34.29	0.40	10.19	QP
10	0.963	36.48	-9.52	46.00	25.89	0.40	10.19	Average
11	1.129	44.49	-11.51	56.00	33.90	0.40	10.19	QP
12	1.129	36.89	-9.11	46.00	26.30	0.40	10.19	Average
13	1.249	44.09	-11.91	56.00	33.50	0.40	10.19	QP
14	1.249	36.49	-9.51	46.00	25.90	0.40	10.19	Average
15	1.426	43.09	-12.91	56.00	32.49	0.41	10.19	QP
16	1.426	34.89	-11.11	46.00	24.29	0.41	10.19	Average
17	1.568	43.89	-12.11	56.00	33.29	0.41	10.19	QP



Test Mode :	Mode 2	Temperature :	22~24°C
Test Engineer :	Amos Zhang	Relative Humidity :	42~46%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	LTE Band 4 Idle + Bluetooth Idle + WLAN Idle + USB Cable (Charging from Adapter) + Earphone + Camera(Front)		

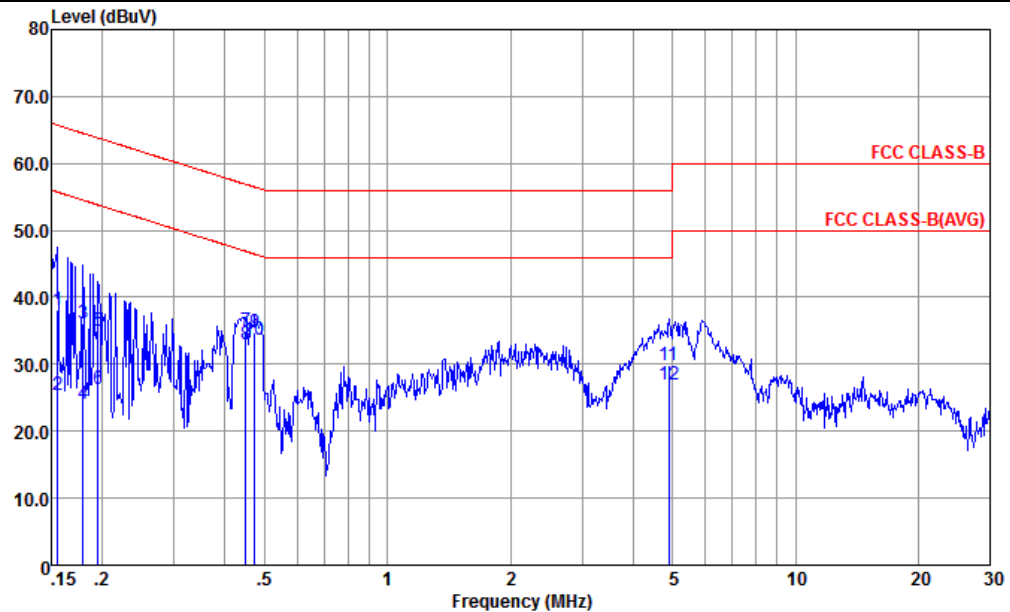


Site : CO01-KS
 Condition : FCC CLASS-B LISN-N-161013-060103 NEUTRAL
 Project : (FC) 740501
 mode : Mode 2
 : 004401784150688 #7

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
18	1.568	34.89	-11.11	46.00	24.29	0.41	10.19	Average
19	1.800	41.20	-14.80	56.00	30.60	0.41	10.19	QP
20	1.800	33.90	-12.10	46.00	23.30	0.41	10.19	Average
21	2.594	41.21	-14.79	56.00	30.60	0.40	10.21	QP
22	2.594	33.21	-12.79	46.00	22.60	0.40	10.21	Average
23	2.946	40.21	-15.79	56.00	29.59	0.40	10.22	QP
24	2.946	32.81	-13.19	46.00	22.19	0.40	10.22	Average
25	3.364	41.52	-14.48	56.00	30.90	0.39	10.23	QP
26	3.364	33.92	-12.08	46.00	23.30	0.39	10.23	Average
27	3.799	39.22	-16.78	56.00	28.59	0.39	10.24	QP
28	3.799	31.92	-14.08	46.00	21.29	0.39	10.24	Average
29	6.089	44.91	-15.09	60.00	34.30	0.35	10.26	QP
30	6.089	38.21	-11.79	50.00	27.60	0.35	10.26	Average
31	7.213	44.12	-15.88	60.00	33.50	0.33	10.29	QP
32	7.213	36.92	-13.08	50.00	26.30	0.33	10.29	Average



Test Mode :	Mode 4	Temperature :	22~24℃
Test Engineer :	Amos Zhang	Relative Humidity :	42~46%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	LTE Band 13 Idle + Bluetooth Idle + WLAN Idle + USB Cable (Data Link with Notebook) + Earphone + GPS Rx		

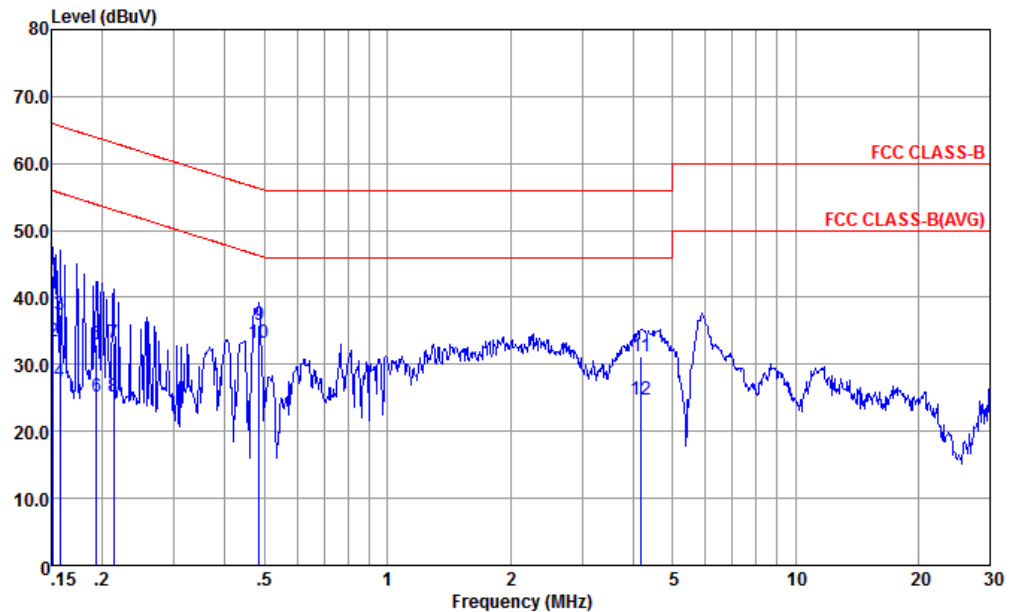


Site : CO01-KS
Condition : FCC CLASS-B LISN-L-161013-060103 LINE
Project : (FC) 740501
mode : Mode 4
: 004401784150688 #7

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV		dBuV	dBuV	dB	dB	
1	0.156	38.20	-27.49	65.69	27.29	0.52	10.39	QP
2	0.156	25.50	-30.19	55.69	14.59	0.52	10.39	Average
3	0.180	36.03	-28.47	64.50	25.30	0.37	10.36	QP
4	0.180	24.03	-30.47	54.50	13.30	0.37	10.36	Average
5	0.195	34.93	-28.87	63.80	24.30	0.29	10.34	QP
6	0.195	26.23	-27.57	53.80	15.60	0.29	10.34	Average
7	0.449	35.06	-21.83	56.89	24.60	0.27	10.19	QP
8	0.449	33.06	-13.83	46.89	22.60	0.27	10.19	Average
9	0.474	34.76	-21.69	56.45	24.30	0.27	10.19	QP
10 *	0.474	33.66	-12.79	46.45	23.20	0.27	10.19	Average
11	4.900	29.75	-26.25	56.00	19.30	0.21	10.24	QP
12	4.900	26.95	-19.05	46.00	16.50	0.21	10.24	Average



Test Mode :	Mode 4	Temperature :	22~24℃
Test Engineer :	Amos Zhang	Relative Humidity :	42~46%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	LTE Band 13 Idle + Bluetooth Idle + WLAN Idle + USB Cable (Data Link with Notebook) + Earphone + GPS Rx		



Site : CO01-KS
Condition : FCC CLASS-B LISN-N-161013-060103 NEUTRAL
Project : (FC) 740501
mode : Mode 4
: 004401784150688 #7

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.152	43.23	-22.68	65.91	32.50	0.34	10.39	QP
2	0.152	33.33	-22.58	55.91	22.60	0.34	10.39	Average
3	0.157	37.52	-28.08	65.60	26.80	0.34	10.38	QP
4	0.157	27.32	-28.28	55.60	16.60	0.34	10.38	Average
5	0.193	32.97	-30.92	63.89	22.30	0.33	10.34	QP
6	0.193	25.27	-28.62	53.89	14.60	0.33	10.34	Average
7	0.213	33.25	-29.85	63.10	22.60	0.33	10.32	QP
8	0.213	25.15	-27.95	53.10	14.50	0.33	10.32	Average
9	0.484	35.77	-20.50	56.27	25.20	0.38	10.19	QP
10 *	0.484	33.17	-13.10	46.27	22.60	0.38	10.19	Average
11	4.180	31.23	-24.77	56.00	20.60	0.39	10.24	QP
12	4.180	24.83	-21.17	46.00	14.20	0.39	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

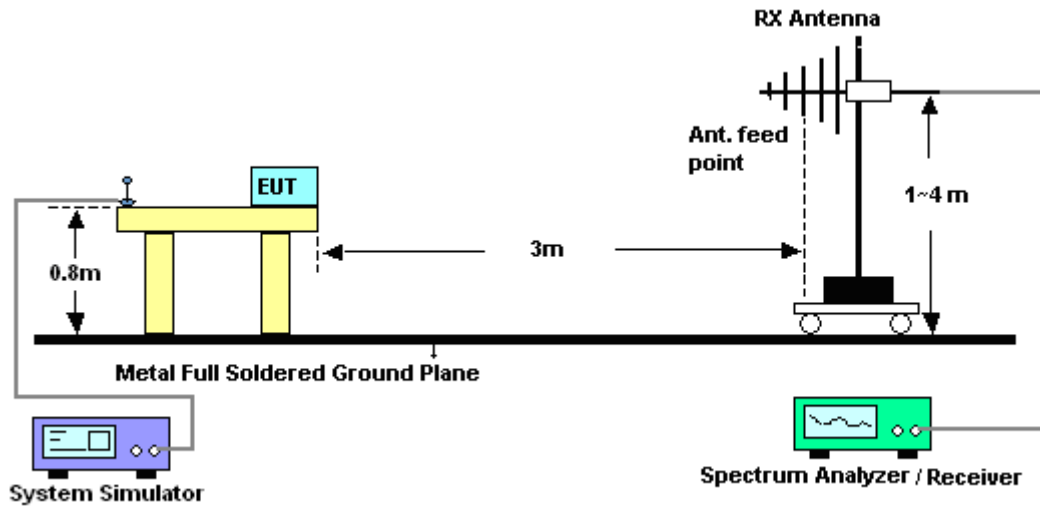
The measuring equipment is listed in the section 4 of this test report.

3.2.3. Test Procedures

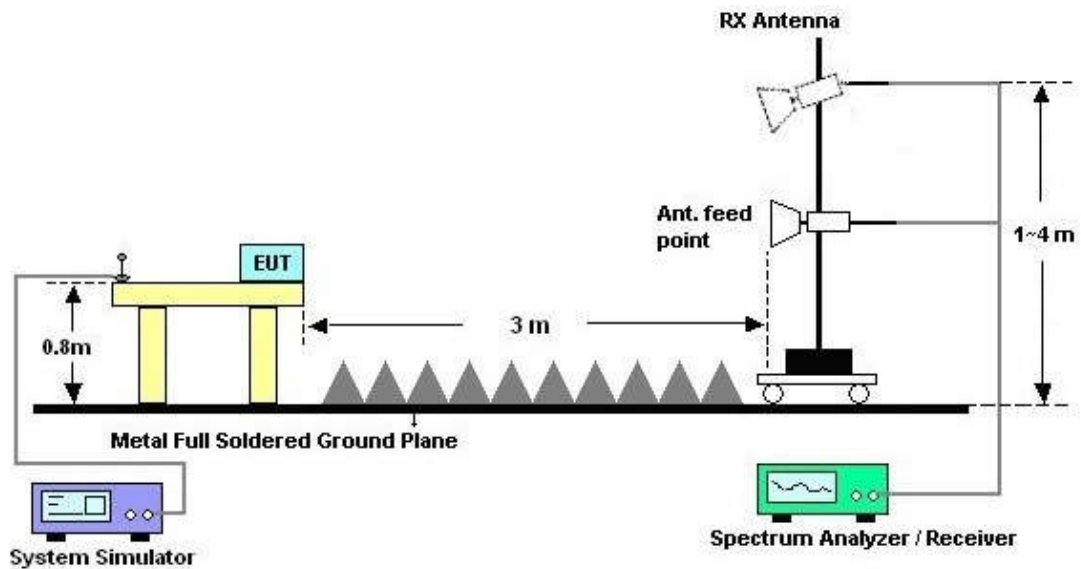
1. The EUT was placed on a turntable with 0.8 meter above ground.
2. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest radiation.
4. The antenna 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 (dB μ V/m) = 20 log Emission level (μ V/m)
9. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamplifier Factor = Level

3.2.4. Test Setup of Radiated Emission

For radiated emissions from 30MHz to 1GHz



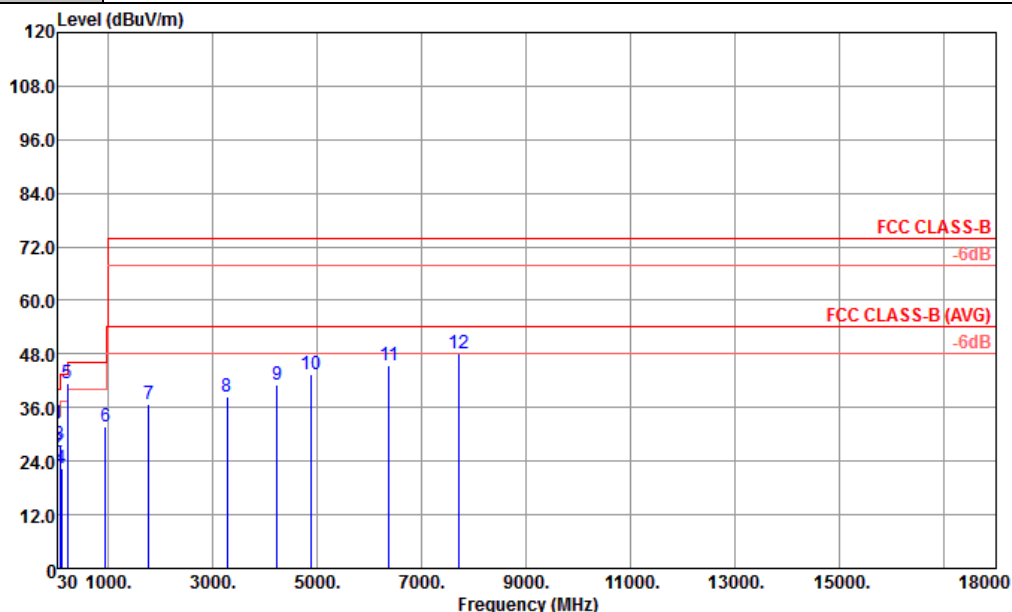
For radiated emissions above 1GHz





3.2.5. Test Result of Radiated Emission

Test Mode :	Mode 2	Temperature :	22~23°C
Test Engineer :	Leve Zhao	Relative Humidity :	41~42%
Test Distance :	3m	Polarization :	Horizontal
Function Type :	LTE Band 4 Idle + Bluetooth Idle + WLAN Idle + USB Cable (Charging from Adapter) + Earphone + Camera(Front)		

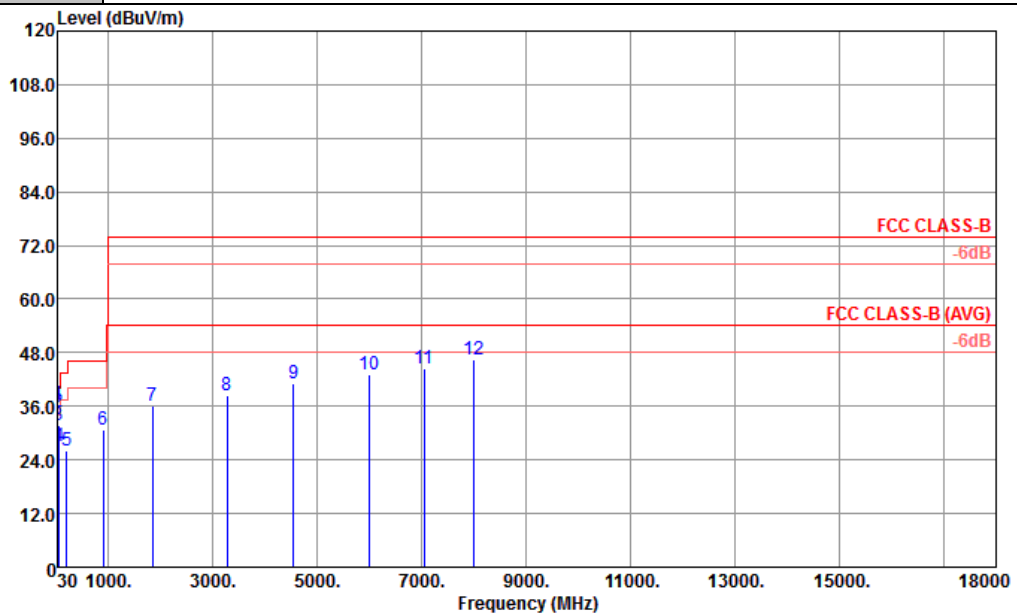


Site : 03CH02-KS
Condition : FCC CLASS-B 3m 966-04 LF ANT HORIZONTAL
Project : (FC)740501
Mode : 2
IMEI : 004401784150621 #9

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	cm	deg	
			dB	dBuV/m	dBuV	dB/m	dB	dB		
1	30.27	32.54	-7.46	40.00	37.25	26.30	0.09	31.10	---	Peak
2	36.75	26.08	-13.92	40.00	34.90	22.14	0.12	31.08	---	Peak
3	72.93	27.75	-12.25	40.00	44.20	14.16	0.79	31.40	---	Peak
4	104.25	22.51	-20.99	43.50	35.02	17.75	0.46	30.72	---	Peak
5	222.78	41.59	-4.41	46.00	54.37	16.72	1.65	31.15	100	Peak
6	953.80	31.61	-14.39	46.00	29.61	30.26	3.05	31.31	---	Peak
7	1784.00	36.80	-37.20	74.00	40.42	24.55	4.02	32.19	---	Peak
8	3280.00	38.60	-35.40	74.00	37.81	27.51	5.69	32.41	---	Peak
9	4240.00	41.15	-32.85	74.00	38.03	29.33	6.23	32.44	---	Peak
10	4880.00	43.52	-30.48	74.00	37.78	31.01	6.86	32.13	---	Peak
11	6384.00	45.52	-28.48	74.00	36.06	33.64	8.05	32.23	---	Peak
12	7720.00	48.20	-25.80	74.00	35.54	35.80	8.63	31.77	---	Peak



Test Mode :	Mode 2	Temperature :	22~23°C
Test Engineer :	Leve Zhao	Relative Humidity :	41~42%
Test Distance :	3m	Polarization :	Vertical
Function Type :	LTE Band 4 Idle + Bluetooth Idle + WLAN Idle + USB Cable (Charging from Adapter) + Earphone + Camera(Front)		

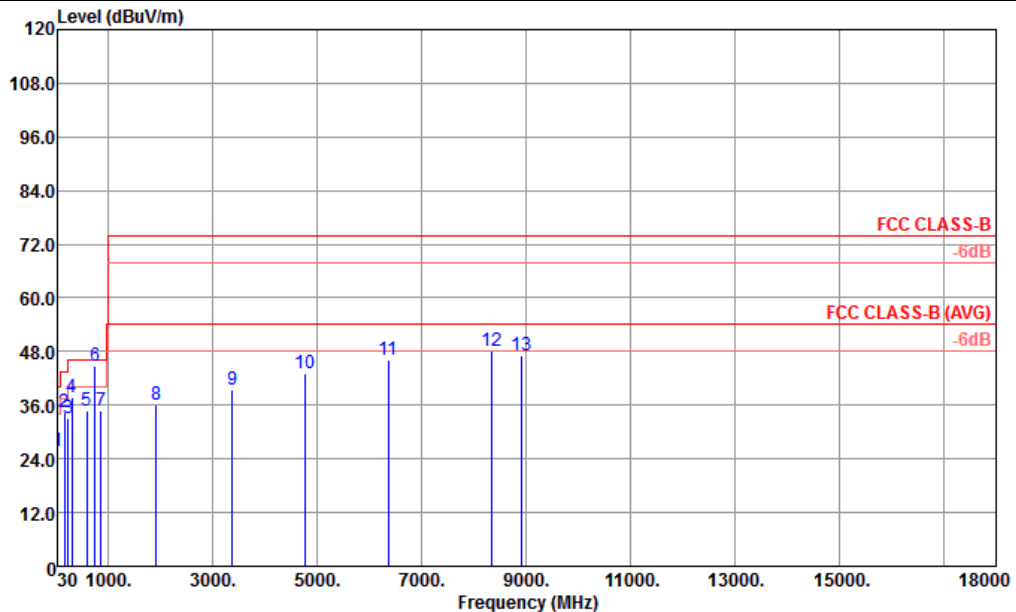


Site : 03CH02-KS
Condition : FCC CLASS-B 3m 966-04 LF ANT VERTICAL
Project : (FC)740501
Mode : 2
IMEI : 004401784150621 #9

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	cm	deg	
1 !	30.54	36.55	-3.45	40.00	41.81	25.74	0.08	31.08	100	23 QP
2 !	41.34	34.71	-5.29	40.00	46.44	19.18	0.37	31.28	100	23 QP
3	49.44	31.82	-8.18	40.00	47.18	15.47	0.65	31.48	---	Peak
4	69.15	27.02	-12.98	40.00	44.30	13.36	0.78	31.42	---	Peak
5	204.96	26.15	-17.35	43.50	39.74	15.91	1.61	31.11	---	Peak
6	915.30	30.71	-15.29	46.00	29.56	29.45	2.86	31.16	---	Peak
7	1856.00	36.26	-37.74	74.00	39.65	24.65	4.11	32.15	---	Peak
8	3280.00	38.58	-35.42	74.00	37.79	27.51	5.69	32.41	---	Peak
9	4544.00	41.24	-32.76	74.00	36.67	30.27	6.49	32.19	---	Peak
10	6008.00	42.98	-31.02	74.00	35.46	32.48	7.67	32.63	---	Peak
11	7048.00	44.59	-29.41	74.00	33.55	34.72	8.37	32.05	---	Peak
12	7992.00	46.40	-27.60	74.00	33.96	35.80	8.63	31.99	---	Peak



Test Mode :	Mode 4	Temperature :	22~23°C
Test Engineer :	Leve Zhao	Relative Humidity :	41~42%
Test Distance :	3m	Polarization :	Horizontal
Function Type :	LTE Band 13 Idle + Bluetooth Idle + WLAN Idle + USB Cable (Data Link with Notebook) + Earphone + GPS Rx		
Remark :	#6 is system simulator signal which can be ignored.		

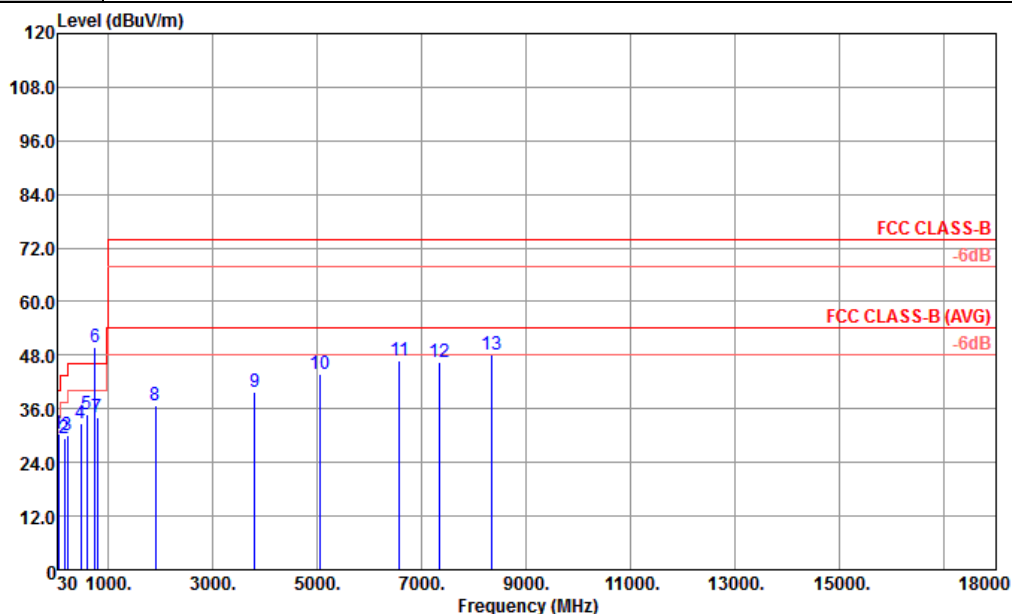


Site : 03CH02-KS
Condition : FCC CLASS-B 3m 966-04 LF ANT HORIZONTAL
Project : (FC)740501
Mode : 4
IMEI : 004401784150621 #9

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor			
			dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	30.97	25.62	-14.38	40.00	30.44	25.74	0.52	31.08	---	Peak
2	170.65	34.34	-9.16	43.50	47.27	16.64	1.41	30.98	---	Peak
3	239.52	33.21	-12.79	46.00	45.41	17.43	1.55	31.18	---	Peak
4	314.21	37.84	-8.16	46.00	47.51	20.06	1.77	31.50	100	26 Peak
5	598.42	34.88	-11.12	46.00	38.45	25.47	2.46	31.50	---	Peak
6	752.65	44.69			45.37	27.33	2.78	30.79	---	Peak
7	862.26	34.71	-11.29	46.00	34.06	28.65	3.18	31.18	---	Peak
8	1928.00	36.06	-37.94	74.00	39.28	24.61	4.24	32.07	---	Peak
9	3376.00	39.48	-34.52	74.00	37.81	28.03	5.75	32.11	---	Peak
10	4768.00	42.99	-31.01	74.00	37.53	30.79	6.82	32.15	---	Peak
11	6368.00	46.01	-27.99	74.00	36.65	33.59	8.02	32.25	---	Peak
12	8344.00	48.08	-25.92	74.00	34.56	36.28	9.03	31.79	---	Peak
13	8912.00	47.17	-26.83	74.00	33.15	36.42	9.22	31.62	---	Peak



Test Mode :	Mode 4	Temperature :	22~23°C
Test Engineer :	Leve Zhao	Relative Humidity :	41~42%
Test Distance :	3m	Polarization :	Vertical
Function Type :	LTE Band 13 Idle + Bluetooth Idle + WLAN Idle + USB Cable (Data Link with Notebook) + Earphone + GPS Rx		
Remark :	#6 is system simulator signal which can be ignored.		



Site : 03CH02-KS
 Condition : FCC CLASS-B 3m 966-04 LF ANT VERTICAL
 Project : (FC)740501
 Mode : 4
 IMEI : 004401784150621 #9

	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	47.46	30.42	-9.58	40.00	44.81	16.40	0.66	31.45	100	65 Peak
2	166.77	29.32	-14.18	43.50	42.01	16.77	1.51	30.97	---	---
3	223.03	30.20	-15.80	46.00	43.10	16.72	1.53	31.15	---	---
4	480.08	32.91	-13.09	46.00	38.51	23.78	2.22	31.60	---	---
5	597.45	34.84	-11.16	46.00	38.42	25.46	2.46	31.50	---	---
6 *	748.77	49.90			50.64	27.29	2.77	30.80	---	---
7	799.21	34.06	-11.94	46.00	34.10	27.79	2.87	30.70	---	---
8	1904.00	36.73	-37.27	74.00	39.97	24.67	4.19	32.10	---	---
9	3808.00	39.90	-34.10	74.00	38.39	28.31	5.70	32.50	---	---
10	5072.00	43.71	-30.29	74.00	37.71	31.18	6.93	32.11	---	---
11	6576.00	46.90	-27.10	74.00	36.49	34.23	8.21	32.03	---	---
12	7336.00	46.57	-27.43	74.00	34.42	35.43	8.48	31.76	---	---
13	8336.00	48.30	-25.70	74.00	34.78	36.28	9.03	31.79	---	---



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	Apr. 15, 2017	Apr. 28, 2017	Conduction (CO01-KS)
AC LISN	MessTec	AN3016	060103	9kHz~30MHz	Oct. 13, 2016	Apr. 15, 2017	Oct. 13, 2017	Conduction (CO01-KS)
AC LISN (for auxiliary equipment)	MessTec	AN3016	060105	9kHz~30MHz	Oct. 13, 2016	Apr. 15, 2017	Oct. 13, 2017	Conduction (CO01-KS)
AC Power Source	Chroma	61602	ABP0000008 11	AC 0V~300V, 45Hz~1000Hz	Oct. 13, 2016	Apr. 15, 2017	Oct. 13, 2017	Conduction (CO01-KS)
EMI Test Receiver	R&S	ESR7	101403	9kHz~7GHz;Ma x 30dBm	Aug. 09, 2016	May 22, 2017	Aug. 08, 2017	Radiation (03CH02-KS)
EXA Spectrum Analyzer	Keysight	N9010A	MY55150208	10Hz~44G,MAX 30dB	Apr. 18, 2017	May 22, 2017	Apr. 17, 2018	Radiation (03CH02-KS)
Bilog Antenna	TeseQ	CBL6112D	37879	30MHz-2GHz	Aug. 20, 2016	May 22, 2017	Aug. 19, 2017	Radiation (03CH02-KS)
Double Ridge Horn Antenna	ETS-Lindgren	3117	75957	1GHz~18GHz	Oct. 22, 2016	May 22, 2017	Oct. 21, 2017	Radiation (03CH02-KS)
Amplifier	SONOMA	310N	187289	9KHz-1GHz	Aug.09, 2016	May 22, 2017	Aug.08, 2017	Radiation (03CH02-KS)
Amplifier	Agilent	8449B	3008A02384	1-26.5GHz Gain 30dB	Oct. 13, 2016	May 22, 2017	Oct. 12, 2017	Radiation (03CH02-KS)
AC Power Source	Chroma	61601	61601000247 3	N/A	NCR	May 22, 2017	NCR	Radiation (03CH02-KS)
Turn Table	MF	MF7802	N/A	0~360 degree	NCR	May 22, 2017	NCR	Radiation (03CH02-KS)
Antenna Mast	MF	MF7802	N/A	1 m~4 m	NCR	May 22, 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
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Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.2dB
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Uncertainty of Radiated Emission Measurement (1GHz ~ 18GHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	4.7dB
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