



# FCC Test Report

**APPLICANT** : Motorola Mobility LLC  
**EQUIPMENT** : Mobile Phone  
**BRAND NAME** : Motorola  
**MODEL NAME** : XT2097-7  
**FCC ID** : IHDT56ZJ6  
**STANDARD** : 47 CFR Part 15 Subpart B  
**CLASSIFICATION** : Certification

The product was received on Feb. 05, 2021 and testing was completed on Feb. 25, 2021. 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.

*Jason Jia*

Reviewed by: Jason Jia / Supervisor

*James Huang*

Approved by: James Huang / Manager



**Sporton International (Kunshan) Inc.**

**No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300  
People's Republic of China**



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### REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FC0N1205-08	Rev. 01	Initial issue of report	Mar. 01, 2021



### 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 6.42 dB at 0.150 MHz
3.2	15.109	Radiated Emission	< 15.109 limits	PASS	Under limit 3.40 dB at 232.730 MHz

**Declaration of Conformity:**

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

**Comments and Explanations:**

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.



# 1. General Description

## 1.1. Applicant

Motorola Mobility LLC  
222 W,Merchandise Mart Plaza, Chicago IL 60654 USA

## 1.2. Manufacturer

Motorola Mobility LLC  
222 W,Merchandise Mart Plaza, Chicago IL 60654 USA

## 1.3. Product Feature of Equipment Under Test

Product Feature	
Equipment	Mobile Phone
Brand Name	Motorola
Model Name	XT2097-7
FCC ID	IHDT56ZJ6
EUT supports Radios application	GSM/WCDMA/LTE WLAN 2.4GHz 802.11b/g/n HT20 Bluetooth BR/EDR/LE FM Receiver / GNSS
IMEI Code	Conduction/ Radiation: 353913480024808/353913480044806 for Sample1 353913480024816/353913480044814 for Sample2 353913480024824/353913480044822 for Sample3
HW Version	DVT2
SW Version	QOL30.277
EUT Stage	Identical Prototype

**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 three types of EUT, please refer to the product equality declaration exhibit separately. According to the difference, sample 1 perform full test and the sample 2/3 verified the worst cases.



### 1.4. Product Specification of Equipment Under Test

Standards-related Product Specification	
<b>Tx Frequency</b>	GSM850: 824 MHz ~ 849 MHz GSM1900: 1850MHz ~ 1910MHz WCDMA Band II: 1850 MHz ~ 1910 MHz WCDMA Band V: 824 MHz ~ 849 MHz LTE Band 2 : 1850 MHz ~ 1910 MHz LTE Band 5 : 824 MHz ~ 849 MHz LTE Band 7 : 2500 MHz ~ 2570 MHz LTE Band 26 : 814 MHz ~ 849 MHz LTE Band 38 : 2570 MHz ~ 2620 MHz LTE Band 41 : 2535 MHz ~ 2655 MHz 802.11b/g/n: 2400 MHz ~ 2483.5 MHz Bluetooth: 2400 MHz ~ 2483.5 MHz
<b>Rx Frequency</b>	GSM850: 869 MHz ~ 894 MHz GSM1900: 1930 MHz ~ 1990 MHz WCDMA Band II: 1930 MHz ~ 1990 MHz WCDMA Band V: 869 MHz ~ 894 MHz LTE Band 2 : 1930 MHz ~ 1990 MHz LTE Band 5 : 869 MHz ~ 894 MHz LTE Band 7 : 2620 MHz ~ 2690 MHz LTE Band 26 : 859 MHz ~ 894 MHz LTE Band 38: 2570 MHz ~ 2620 MHz LTE Band 41 : 2535 MHz ~ 2655 MHz 802.11b/g/n: 2400 MHz ~ 2483.5 MHz Bluetooth: 2400 MHz ~ 2483.5 MHz GNSS : 1559 MHz ~ 1610 MHz FM : 88 MHz ~ 108 MHz
<b>Antenna Type</b>	WWAN : Fixed Internal Antenna WLAN : PIFA Antenna Bluetooth : PIFA Antenna GNSS: PIFA Antenna FM : External headset Antenna
<b>Type of Modulation</b>	GSM/GPRS: GMSK EDGE(MCS 0-4): GMSK / (MCS 5-9): 8PSK WCDMA : BPSK HSDPA/DC-HSDPA : QPSK HSUPA : QPSK HSPA+ : 16QAM DC-HSDPA : 64QAM LTE: QPSK / 16QAM / 64QAM 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 GNSS : BPSK FM

### 1.5. Specification of Accessory

Specification of Accessory				
AC Adapter 1(US)	Brand Name	Motorola (Chenyang)	Model Name	MC-101
AC Adapter 1(EU)	Brand Name	Motorola (Chenyang)	Model Name	MC-102
AC Adapter 1(UK)	Brand Name	Motorola (Chenyang)	Model Name	MC-103
AC Adapter 1(AU)	Brand Name	Motorola (Chenyang)	Model Name	MC-105
AC Adapter 1(AR)	Brand Name	Motorola (Chenyang)	Model Name	MC-106
AC Adapter 1(BR)	Brand Name	Motorola (Chenyang)	Model Name	MC-107
AC Adapter 2(IN)	Brand Name	Motorola (Chenyang)	Model Name	MC-104
AC Adapter 3(US)	Brand Name	Motorola (Salcomp)	Model Name	MC-101
AC Adapter 3(EU)	Brand Name	Motorola (Salcomp)	Model Name	MC-102
AC Adapter 3(UK)	Brand Name	Motorola (Salcomp)	Model Name	MC-103
AC Adapter 3(AU)	Brand Name	Motorola (Salcomp)	Model Name	MC-105
AC Adapter 3(AR)	Brand Name	Motorola (Salcomp)	Model Name	MC-106
AC Adapter 3(Chile)	Brand Name	Motorola (Salcomp)	Model Name	MC-109
AC Adapter 4(US)	Brand Name	Motorola (Aohai)	Model Name	MC-101
AC Adapter 4(EU)	Brand Name	Motorola (Aohai)	Model Name	MC-102
AC Adapter 4(UK)	Brand Name	Motorola (Aohai)	Model Name	MC-103
AC Adapter 4(AU)	Brand Name	Motorola (Aohai)	Model Name	MC-105
AC Adapter 4(AR)	Brand Name	Motorola (Aohai)	Model Name	MC-106
AC Adapter 5(BR)	Brand Name	Motorola (Flex)	Model Name	MC-107
AC Adapter 6(BR)	Brand Name	Motorola (Salcomp)	Model Name	MC-107
AC Adapter 7(UK)	Brand Name	Lenovo (Chenyang)	Model Name	SC-43
AC Adapter 8(EU)	Brand Name	Lenovo(Salom)	Model Name	SC-42
AC Adapter 8(US)	Brand Name	Lenovo(Salom)	Model Name	SC-41
Battery 1	Brand Name	Motorola (Sunwoda)	Model Name	JK50
Battery 2	Brand Name	Motorola (ATL)	Model Name	JK50
Battery 3	Brand Name	Motorola (SCUD)	Model Name	JK50
Earphone 1	Brand Name	Motorola (NEW LEADER)	Model Name	NLD-EM313A-23SF
Earphone 2	Brand Name	Motorola (Ju wei)	Model Name	JWPE1185-ZN01H
USB Cable 1	Brand Name	Motorola (Washin)	Model Name	HX-ZN-04
USB Cable 2	Brand Name	Motorola (Ju wei)	Model Name	JWUB1472-ZN01H
USB Cable 3	Brand Name	Motorola (I SHENG)	Model Name	SC18C28955

### 1.6. Modification of EUT

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



### 1.7. Test Location

Sporton International (Kunshan) Inc. is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.02.

<b>Test Firm</b>	Sporton International (Kunshan) Inc.		
<b>Test Site Location</b>	No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300 People’s Republic of China TEL : +86-512-57900158 FAX : +86-512-57900958		
<b>Test Site No.</b>	<b>Sporton Site No.</b>	<b>FCC Designation No.</b>	<b>FCC Test Firm Registration No.</b>
	CO01-KS 03CH02-KS	CN1257	314309

### 1.8. Test Software

Item	Site	Manufacturer	Name	Version
1.	03CH02-KS	AUDIX	E3	6.2009-8-24a
2.	CO01-KS	AUDIX	E3	6.2009-8-24

### 1.9. Applicable Standards

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

- 47 CFR 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 emission (150 kHz to 30 MHz), radiation emission (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: GSM 850 Rx(Middle) + BT Idle + WLAN Idle(2.4G) + Camera(Rear) + Earphone1 + Battery 1 + USB Cable1(Charging from Adapter1) for Sample 1
	Mode 2: GSM 1900 + BT Idle + WLAN Idle(2.4G) + Camera(Front) + Earphone2 + Battery 1 + USB Cable2(Charging from Adapter2) for Sample 1
	Mode 3: WCDMA V Rx(Low) + BT Idle + WLAN Idle(2.4G) + MPEG4 + Earphone2 + Battery 1 + USB Cable3(Charging from Adapter3) for Sample 1
	Mode 4: WCDMA II Rx + BT Idle + WLAN Idle(2.4G) + FM Rx(98MHZ) + Earphone2 + Battery 1 + USB Cable3(Charging from Adapter4) for Sample 1
	Mode 5: LTE Band 2 Rx + BT Idle + WLAN Idle(2.4G) + GNSS Rx + Earphone2 + Battery 1 + USB Cable3(Charging from Adapter5) for Sample 1
	Mode 6: LTE Band 5 Rx(High) + BT Idle + WLAN Idle(2.4G) + FM Rx(98MHZ) + Earphone2 + Battery 1 + USB Cable3(Charging from Adapter6) for Sample 1
	Mode 7: LTE Band 7 Rx + BT Idle + WLAN Idle(2.4G) + FM Rx(98MHZ) + Earphone2 + Battery 1 + USB Cable3(Charging from Adapter7) for Sample 1
	Mode 8: LTE Band 26 Rx(High) + BT Idle + WLAN Idle(2.4G) + FM Rx(98MHZ) + Earphone2 + Battery 1 + USB Cable3(Charging from Adapter8) for Sample 1
	Mode 9: LTE Band 38 Rx + BT Idle + WLAN Idle(2.4G) + GNSS Rx + Earphone2 + Battery 1 + USB Cable1(Data Link with Notebook) for Sample 1
	Mode 10 :LTE Band 41 Rx + BT Idle + WLAN Idle(2.4G) + GNSS Rx + Earphone2 + Battery 1 + USB Cable2(Data Link with Notebook) for Sample 1
	Mode 11 :LTE Band 5 Rx(High) + BT Idle + WLAN Idle(2.4G) + GNSS Rx + Earphone2 + Battery 1 + USB Cable3(Data Link with Notebook) for Sample 1
	Mode 12 :LTE Band 5 Rx(High) + BT Idle + WLAN Idle(2.4G) + Camera(Front) + Earphone2 + Battery 1 + USB Cable3(Charging from Adapter6) for Sample 1
	Mode 13 :LTE Band 5 Rx(High) + BT Idle + WLAN Idle(2.4G) + GNSS Rx + Earphone2 + Battery 2 + USB Cable2(Data Link with Notebook) for Sample 2
	Mode 14 :LTE Band 5 Rx(High) + BT Idle + WLAN Idle(2.4G) + FM Rx( 98MHz) + Earphone2 + Battery 3 + USB Cable3(Charging from Adapter6) for Sample 3
Radiated Emissions	Mode 1: GSM 850 Rx(Middle) + BT Idle + WLAN Idle(2.4G) + Camera(Rear) + Earphone1 + Battery 1 + USB Cable1(Charging from Adapter1) for Sample 1
	Mode 2: GSM 1900 + BT Idle + WLAN Idle(2.4G) + Camera(Front) + Earphone2 + Battery 1 + USB Cable2(Charging from Adapter2) for Sample 1
	Mode 3: WCDMA V Rx(Low) + BT Idle + WLAN Idle(2.4G) + MPEG4 + Earphone1 +

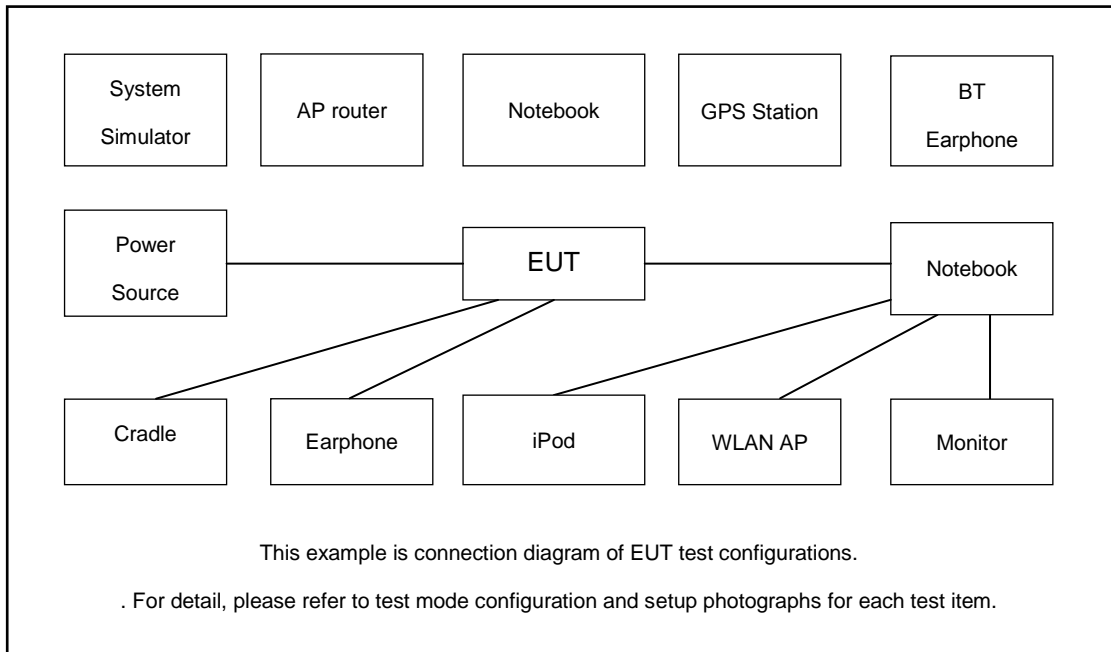


	Battery 1 + USB Cable3(Charging from Adapter3) for Sample 1
	Mode 4: WCDMA II Rx + BT Idle + WLAN Idle(2.4G) + FM Rx(98MHZ) + Earphone1 + Battery 1 + USB Cable1(Charging from Adapter4) for Sample 1
	Mode 5: LTE Band 2 Rx + BT Idle + WLAN Idle(2.4G) + GNSS Rx + Earphone1 + Battery 1 + USB Cable1(Charging from Adapter5) for Sample 1
	Mode 6: LTE Band 5 Rx(High) + BT Idle + WLAN Idle(2.4G) + FM Rx(98MHZ) + Earphone1 + Battery 1 + USB Cable1(Charging from Adapter6) for Sample 1
	Mode 7: LTE Band 7 Rx + BT Idle + WLAN Idle(2.4G) + FM Rx(98MHZ) + Earphone1 + Battery 1 + USB Cable1(Charging from Adapter7) for Sample 1
	Mode 8: LTE Band 26 Rx(High) + BT Idle + WLAN Idle(2.4G) + FM Rx(98MHZ) + Earphone1 + Battery 1 + USB Cable1(Charging from Adapter8) for Sample 1
	Mode 9: LTE Band 38 Rx + BT Idle + WLAN Idle(2.4G) + GNSS Rx + Earphone1 + Battery 1 + USB Cable1(Data Link with Notebook) for Sample 1
	Mode 10 :LTE Band 41 Rx + BT Idle + WLAN Idle(2.4G) + GNSS Rx + Earphone1 + Battery 1 + USB Cable2(Data Link with Notebook) for Sample 1
	Mode 11 : LTE Band 38 Rx + BT Idle + WLAN Idle(2.4G) + GNSS Rx + Earphone1 + Battery 1 + USB Cable3(Data Link with Notebook) for Sample 1
	Mode 12 : GSM 850 Rx(Middle) + BT Idle + WLAN Idle(2.4G) + Camera(Rear) + Earphone1 + Battery 2 + USB Cable1(Charging from Adapter1) for Sample 2
	Mode 13 : LTE Band 38 Rx + BT Idle + WLAN Idle(2.4G) + GNSS Rx + Earphone1 + Battery 2 + USB Cable3(Data Link with Notebook) for Sample 2
	Mode 14 :LTE Band 38 Rx + BT Idle + WLAN Idle(2.4G) + GNSS Rx + Earphone1 + Battery 3 + USB Cable3(Data Link with Notebook) for Sample 3

**Remark:**

1. The worst case of AC is mode 6; only the test data of this mode is reported.
2. The worst case of RE is mode 13; only the test data of this mode is reported.
3. Data Link with Notebook means data application transferred mode between EUT and Notebook.
4. Pre-scanned Low/Middle/High channel, the worst channel was recorded in this report.

## 2.2. Connection Diagram of Test System



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

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

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	Notebook	Lenovo	G480	QDS-BRCM1050I	N/A	shielded cable DC O/P 1.8m ; Unshielded AC I/P cable 1.8m
2.	Notebook	Dell	Latitude3440	N/A	N/A	shielded cable DC O/P 1.8m ; Unshielded AC I/P cable 1.8m
3.	WLAN AP	D-link	DIR-655	KA21R655B1	N/A	Unshielded,1.8m
4.	WLAN AP	TP-Link	TL-WDR5600	N/A	N/A	N/A
5.	SD Card	Kingston	8GB	N/A	N/A	N/A
6.	Hard Disk	Lenovo	F310	DoC	Shielded, 1.2m	N/A
7.	Hard disk	KINGSHARE	KSP6120G	Fcc DoC	N/A	Shielded, 1.2m
8.	LTE Base Station	Anritsu	MT8821C	N/A	N/A	Unshielded,1.8m
9.	Bluetooth Earphone	Lenovo	LBH308	N/A	N/A	N/A
10.	Bluetooth Earphone	XiaoMi	LYEJ02LM	N/A	N/A	N/A
11.	Vector Signal Generator	R&S	SMBV100A	N/A	N/A	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 GNSS function to make the EUT receive continuous signals from GNSS station.
3. Turn on FM receiver function to make the EUT receive continuous signals from FM station.
4. Turn on camera to capture images.
5. Turn on MPEG4 function.

### 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.

<Class B Limit>

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.

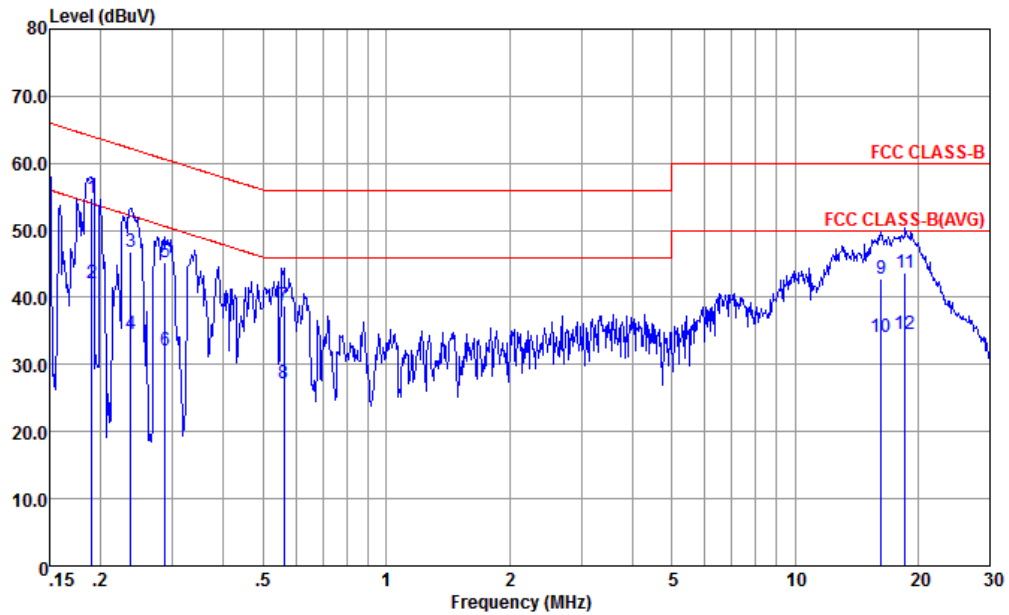
### 3.1.4 Test Setup





3.1.5 Test Result of AC Conducted Emission

Test Engineer :	Amos Wang	Temperature :	25.3~26.2°C
		Relative Humidity :	38~40%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		

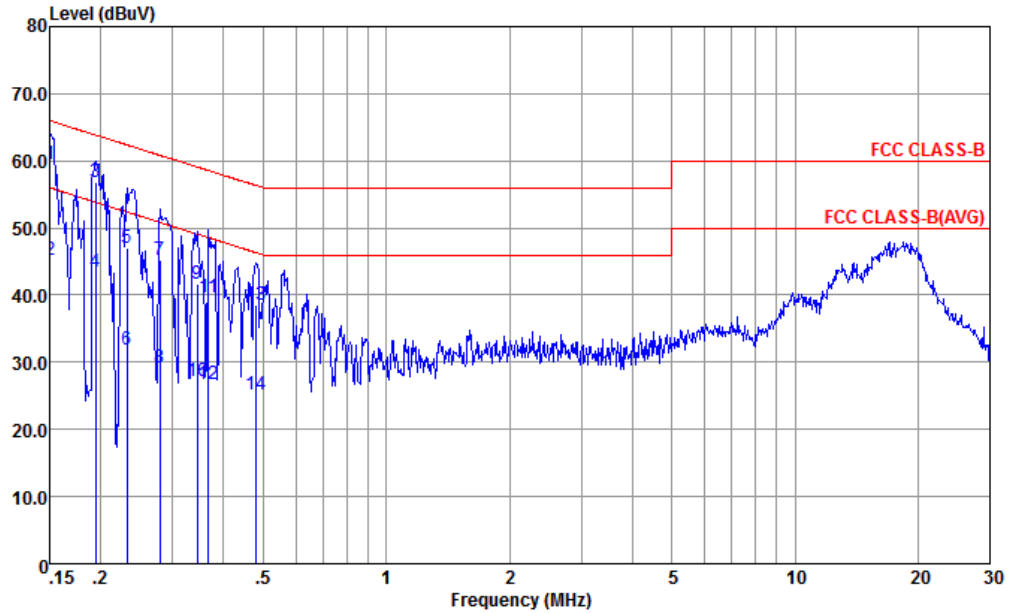


Site : CO01-KS  
 Condition : FCC CLASS-B TWO-LISN-CN02-L LINE  
 Project : (FC) 0N1205-08  
 mode : Mode 6  
 : 356615380007273/356615380032271 #10

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1 *	0.190	54.93	-9.09	64.02	34.91	9.64	10.38	QP
2	0.190	42.23	-11.79	54.02	22.21	9.64	10.38	Average
3	0.237	46.88	-15.34	62.22	26.90	9.64	10.34	QP
4	0.237	34.48	-17.74	52.22	14.50	9.64	10.34	Average
5	0.288	45.15	-15.44	60.59	25.20	9.64	10.31	QP
6	0.288	32.15	-18.44	50.59	12.20	9.64	10.31	Average
7	0.561	38.79	-17.21	56.00	18.90	9.65	10.24	QP
8	0.561	27.09	-18.91	46.00	7.20	9.65	10.24	Average
9	16.226	42.69	-17.31	60.00	21.30	10.97	10.42	QP
10	16.226	33.99	-16.01	50.00	12.60	10.97	10.42	Average
11	18.622	43.66	-16.34	60.00	22.10	11.09	10.47	QP
12	18.622	34.46	-15.54	50.00	12.90	11.09	10.47	Average



Test Engineer :	Amos Wang	Temperature :	25.3~26.2°C
		Relative Humidity :	38~40%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Site : CO01-KS  
 Condition : FCC CLASS-B TWO-LISN-CN02-N NEUTRAL  
 Project : (FC) 0N1205-08

	Freq	Level	Limit	Line	Level	Factor	Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1 *	0.150	59.58	-6.42	66.00	39.30	9.80	10.48	QP
2	0.150	45.18	-10.82	56.00	24.90	9.80	10.48	Average
3	0.194	56.86	-6.98	63.84	36.61	9.88	10.37	QP
4	0.194	43.56	-10.28	53.84	23.31	9.88	10.37	Average
5	0.232	47.10	-15.29	62.39	26.90	9.86	10.34	QP
6	0.232	31.80	-20.59	52.39	11.60	9.86	10.34	Average
7	0.279	45.33	-15.52	60.85	25.20	9.81	10.32	QP
8	0.279	29.23	-21.62	50.85	9.10	9.81	10.32	Average
9	0.345	41.66	-17.43	59.09	21.60	9.77	10.29	QP
10	0.345	27.26	-21.83	49.09	7.20	9.77	10.29	Average
11	0.367	39.65	-18.91	58.56	19.60	9.77	10.28	QP
12	0.367	26.65	-21.91	48.56	6.60	9.77	10.28	Average
13	0.479	38.58	-17.78	56.36	18.61	9.73	10.24	QP
14	0.479	25.18	-21.18	46.36	5.21	9.73	10.24	Average

Note:

- Level(dBμV) = Read Level(dBμV) + LISN Factor(dB) + Cable Loss(dB)
- Over Limit(dB) = Level(dBμV) – Limit Line(dBμV)





### 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:

<Class B Limit>

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**

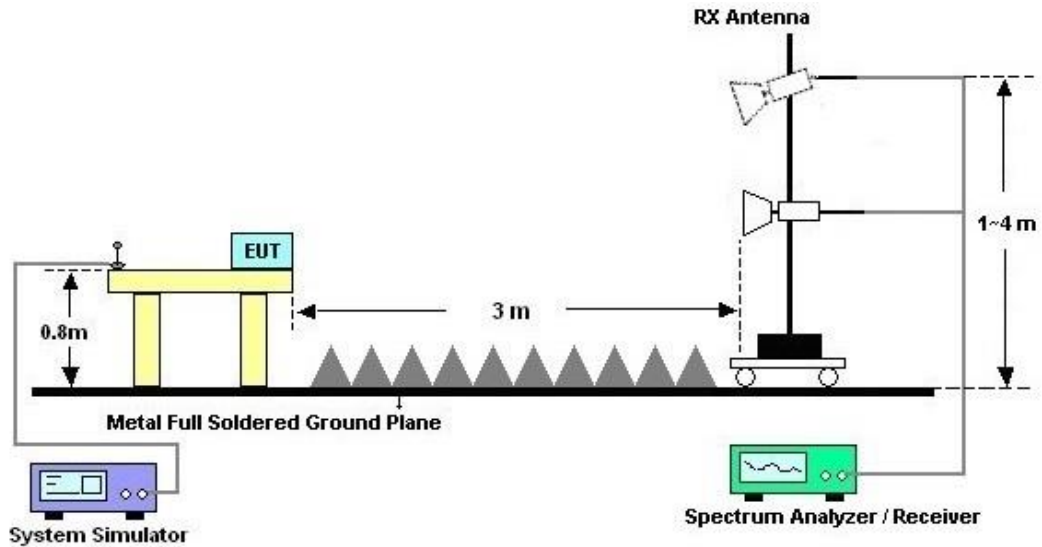
1. The EUT was placed on a turntable with 0.8 meter above ground.
2. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest radiation.
4. The antenna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



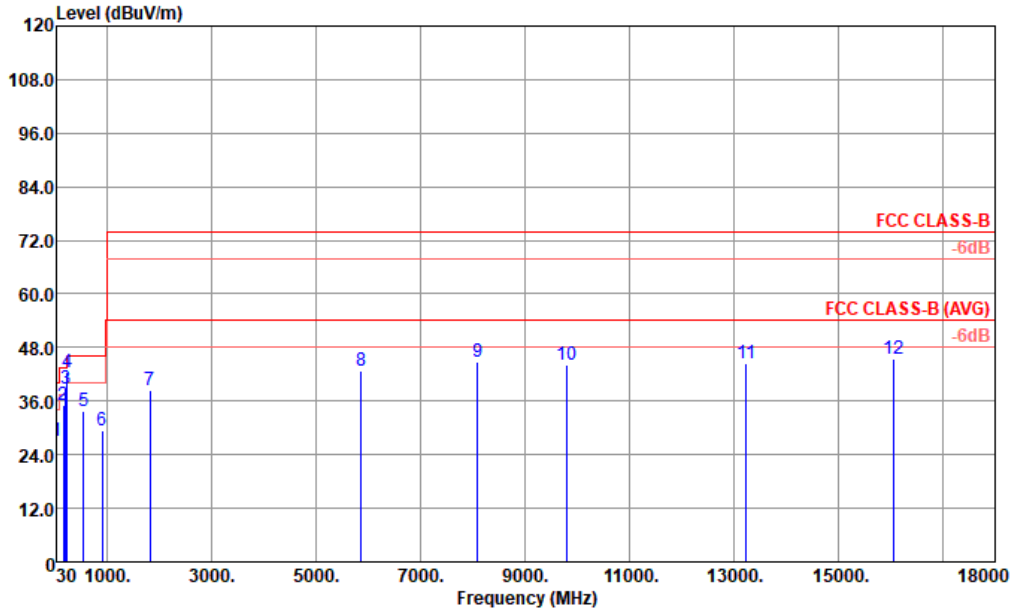
For radiated emissions above 1GHz





3.2.5. Test Result of Radiated Emission

Test Engineer :	Fang Li	Temperature :	21~22°C
		Relative Humidity :	41~42%
Test Distance :	3m	Polarization :	Horizontal

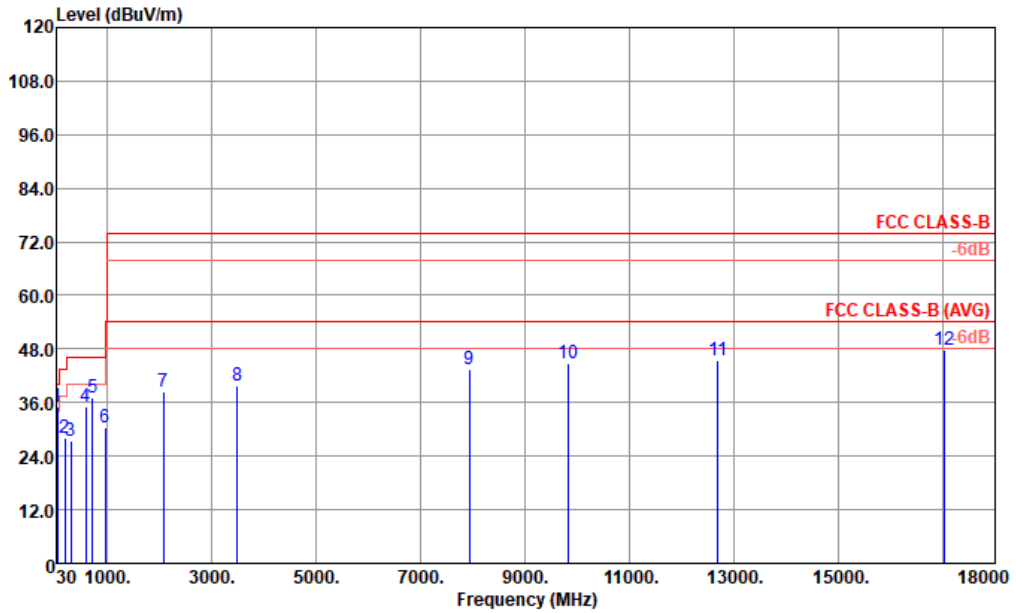


Site : 03CH02-KS  
 Condition : FCC CLASS-B 3m LF 49921 HORIZONTAL  
 Project : (FC)0N1205-08

	Freq	Level	Over Limit	Limit Line	ReadAntenna 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	42.61	27.20	-12.80	40.00	40.12	18.10	1.12	32.14	---	---	Peak
2	167.74	35.14	-8.36	43.50	48.46	16.52	2.26	32.10	---	---	Peak
3	202.66	38.82	-4.68	43.50	53.13	15.30	2.49	32.10	---	---	Peak
4	232.73	42.60	-3.40	46.00	54.71	17.39	2.66	32.16	200	0	Peak
5	551.86	33.83	-12.17	46.00	36.71	25.33	4.09	32.30	---	---	Peak
6	911.73	29.44	-16.56	46.00	26.94	29.45	5.25	32.20	---	---	Peak
7	1824.00	38.48	-35.52	74.00	35.29	30.90	7.46	35.17	---	---	Peak
8	5864.00	42.66	-31.34	74.00	25.34	36.08	13.47	32.23	---	---	Peak
9	8088.00	44.64	-29.36	74.00	25.95	37.33	15.98	34.62	---	---	Peak
10	9792.00	44.14	-29.86	74.00	22.14	39.32	17.64	34.96	---	---	Peak
11	13239.00	44.47	-29.53	74.00	18.87	40.50	20.61	35.51	---	---	Peak
12	16056.00	45.41	-28.59	74.00	15.16	42.45	23.08	35.28	---	---	Peak



Test Engineer :	Fang Li	Temperature :	21~22°C
		Relative Humidity :	41~42%
Test Distance :	3m	Polarization :	Vertical



Site : 03CH02-KS  
 Condition : FCC CLASS-B 3m LF 49921 VERTICAL  
 Project : (FC)0N1205-08

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Cable Factor	Preamp Loss	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	52.31	35.03	-4.97	40.00	51.98	14.00	1.25	32.20	200	0 Peak
2	198.78	28.24	-15.26	43.50	42.74	15.14	2.46	32.10	---	--- Peak
3	309.36	27.54	-18.46	46.00	37.04	19.55	3.07	32.12	---	--- Peak
4	599.39	34.99	-11.01	46.00	37.04	25.99	4.26	32.30	---	--- Peak
5	719.67	36.98	-9.02	46.00	37.19	27.37	4.66	32.24	---	--- Peak
6	960.23	30.57	-23.43	54.00	27.29	30.08	5.38	32.18	---	--- Peak
7	2080.00	38.44	-35.56	74.00	32.85	32.59	8.02	35.02	---	--- Peak
8	3496.00	39.87	-34.13	74.00	28.77	34.20	10.40	33.50	---	--- Peak
9	7936.00	43.45	-30.55	74.00	24.80	37.42	15.79	34.56	---	--- Peak
10	9819.00	44.80	-29.20	74.00	22.80	39.33	17.68	35.01	---	--- Peak
11	12699.00	45.57	-28.43	74.00	20.54	40.38	20.19	35.54	---	--- Peak
12	17037.00	47.67	-26.33	74.00	15.85	43.22	23.61	35.01	---	--- Peak

Note:

- Level(dBμV/m) = Read Level(dBμV) + Antenna Factor(dB/m) + Cable Loss(dB) - Preamp Factor(dB)
- Over Limit(dB) = Level(dBμV/m) – Limit Line(dBμV/m)



## 4. List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
EMI Test Receiver	R&S	ESR7	101403	9kHz~7GHz;Max 30dBm	Oct. 17, 2020	Feb. 25, 2021	Oct. 16, 2021	Radiation (03CH02-KS)
EXA Spectrum Analyzer	Keysight	N9010A	MY55370528	10Hz-44G,MAX 30dB	Oct. 17, 2020	Feb. 25, 2021	Oct. 16, 2021	Radiation (03CH02-KS)
Bilog Antenna	TeseQ	CBL6111D	44483	30MHz-1GHz	Jan. 26, 2021	Feb. 25, 2021	Jan. 25, 2022	Radiation (03CH02-KS)
Double Ridge Horn Antenna	ETS-Lindgren	3117	75957	1GHz~18GHz	Nov. 01, 2020	Feb. 25, 2021	Oct. 31, 2021	Radiation (03CH02-KS)
SHF-EHF Horn	Com-power	AH-840	101115	18GHz~40GHz	Jun. 05, 2020	Feb. 25, 2021	Jun. 04, 2021	Radiation (03CH02-KS)
Amplifier	SONOMA	310N	187289	9KHz-1GHz	Jan. 06, 2021	Feb. 25, 2021	Jan. 05, 2022	Radiation (03CH02-KS)
Amplifier	MITEQ	EM18G40GGA	060728	18~40GHz	Jan. 06, 2021	Feb. 25, 2021	Jan. 05, 2022	Radiation (03CH02-KS)
Amplifier	Keysight	83017A	MY53270316	500MHz~26.5GHz	Oct. 17, 2020	Feb. 25, 2021	Oct. 16, 2021	Radiation (03CH02-KS)
AC Power Source	Chroma	61601	616010002473	N/A	NCR	Feb. 25, 2021	NCR	Radiation (03CH02-KS)
Turn Table	MF	MF7802	N/A	0~360 degree	NCR	Feb. 25, 2021	NCR	Radiation (03CH02-KS)
Antenna Mast	MF	MF7802	N/A	1 m~4 m	NCR	Feb. 25, 2021	NCR	Radiation (03CH02-KS)
EMI Receiver	R&S	ESC17	100768	9kHz~7GHz;	Apr. 14, 2020	Feb. 25, 2021	Apr. 13, 2021	Conduction (CO01-KS)
AC LISN (for auxiliary equipment)	MessTec	AN3016	060103	9kHz~30MHz	Oct. 17, 2020	Feb. 25, 2021	Oct. 16, 2021	Conduction (CO01-KS)
AC LISN	R&S	ENV216	100334	9kHz~30MHz	Oct. 17, 2020	Feb. 25, 2021	Oct. 16, 2021	Conduction (CO01-KS)
AC Power Source	Chroma	61602	ABP000000811	AC 0V~300V, 45Hz~1000Hz	Oct. 17, 2020	Feb. 25, 2021	Oct. 16, 2021	Conduction (CO01-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% ( $U = 2Uc(y)$ )	2.9dB
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### Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ )	4.9dB
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### Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ )	5.0dB
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### Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)

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