



# FCC Test Report

**APPLICANT** : Motorola Mobility LLC  
**EQUIPMENT** : Mobile Cellular Phone  
**BRAND NAME** : Motorola  
**MODEL NAME** : XT2073-2  
**FCC ID** : IHDT56ZA1  
**STANDARD** : 47 CFR Part 15 Subpart B  
**CLASSIFICATION** : Certification

The product was received on Jan. 17, 2020 and testing was completed on Feb. 17, 2020. We, SPORTON INTERNATIONAL 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 INC., the test report shall not be reproduced except in full.

Reviewed by: Louis Wu / Manager

Approved by: Jones Tsai / Manager



**SPORTON INTERNATIONAL INC.**

No. 52, Hwa Ya 1<sup>st</sup> Rd., Hwa Ya Technology Park, Kwei-Shan District, Tao Yuan City, Taiwan,  
R.O.C.



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### REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FC011708	Rev. 01	Initial issue of report	May 07, 2020



### 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 3.32 dB at 0.57021 MHz
3.2	15.109	Radiated Emission	< 15.109 limits	PASS	Under limit 4.70 dB at 78.870 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 Cellular Phone
Brand Name	Motorola
Model Name	XT2073-2
FCC ID	IHDT56ZA1
EUT supports Radios application	GSM/WCDMA/LTE WLAN 2.4GHz 802.11b/g/n HT20 Bluetooth BR/EDR/LE FM Receiver and GNSS
IMEI Code	Conduction/ Radiation: Sample1:353596110006418/353596110006426 Sample2:353596110004122
HW Version	DVT2
SW Version	QPL30.50
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 two types of EUT, the sample 1 is dual SIM slot and the sample 2 is single SIM slot. We only choose sample 1 to perform full tests and the sample 2 is verified.



### 1.4. Product Specification of Equipment Under Test

Standards-related Product Specification	
<b>Tx Frequency</b>	GSM850: 824.2 MHz ~ 848.8 MHz GSM1900: 1850.2 MHz ~ 1909.8MHz WCDMA Band V: 826.4 MHz ~ 846.6 MHz WCDMA Band IV : 1712.4 MHz ~ 1752.6 MHz WCDMA Band II: 1852.4 MHz ~ 1907.6 MHz 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 7 : 2502.5 MHz ~ 2567.5 MHz LTE Band 66 : 1710.7 MHz ~ 1779.3 MHz 802.11b/g/n: 2412 MHz ~ 2462 MHz Bluetooth: 2402 MHz ~ 2480 MHz
<b>Rx Frequency</b>	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 IV : 2112.4 MHz ~ 2152.6 MHz WCDMA Band II: 1932.4 MHz ~ 1987.6 MHz 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 7 : 2622.5 MHz ~ 2687.5 MHz LTE Band 66 : 2110.7 MHz~ 2179.3 MHz 802.11b/g/n: 2412 MHz ~ 2462 MHz Bluetooth: 2402 MHz ~ 2480 MHz GNSS : 1559 MHz ~ 1610 MHz FM: 88MHz~108MHz
<b>Antenna Type</b>	WWAN : Fixed Internal Antenna WLAN : IPA Antenna Bluetooth : IPA Antenna GNSS: IPA Antenna FM : External Handset Antenna
<b>Type of Modulation</b>	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 / 64QAM 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 GNSS : BPSK FM



### 1.5. Modification of EUT

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

### 1.6. Test Location

SPORTON INTERNATIONAL INC. is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code: 1190) and under the FCC-recognized accredited testing laboratories by Mutual Recognition Agreement (MRA) in FCC Test.

<b>Test Site</b>	SPORTON INTERNATIONAL INC.		
<b>Test Site Location</b>	No.52, Huaya 1st Rd., Guishan Dist. Taoyuan City Taiwan Tel: 886-3-327-3456 FAX: +886-3-327-0978		
<b>Test Site No.</b>	<b>Sporton Site No.</b>	<b>FCC designation No.</b>	<b>FCC Test Firm Registration No.</b>
	03CH06-HY, CO05-HY	TW1190	553509



### 1.7. Test Software

Item	Site	Manufacture	Name	Version
1.	03CH06-HY	AUDIX	E3	6.2009-8-24(k5)
2.	CO05-HY	Rohde & Schwarz	EMC32	V10.30

### 1.8. 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.

### 1.9. Specification of Accessory

Specification of Accessory			
AC Adapter 1(US)	Brand Name	Motorola(Acbel)	Model Name SC-41
	Power Rating	I/P: 100-240 Vac, 300mA , O/P: 5Vdc, 2000mA	
AC Adapter 1(EU)	Brand Name	Motorola(Acbel)	Model Name SC-42
	Power Rating	I/P: 100-240 Vac, 300mA , O/P: 5Vdc, 2000mA	
AC Adapter 1(AR)	Brand Name	Motorola(Acbel)	Model Name SC-46
	Power Rating	I/P: 100-240 Vac, 300mA , O/P: 5Vdc, 2000mA	
AC Adapter 2(US)	Brand Name	Motorola(Chenyang)	Model Name SC-41
	Power Rating	I/P: 100-240 Vac, 300mA , O/P: 5Vdc, 2000mA	
AC Adapter 2(EU)	Brand Name	Motorola(Chenyang)	Model Name SC-42
	Power Rating	I/P: 100-240 Vac, 300mA , O/P: 5Vdc, 2000mA	
AC Adapter 2(AR)	Brand Name	Motorola(Chenyang)	Model Name SC-46
	Power Rating	I/P: 100-240 Vac, 300mA , O/P: 5Vdc, 2000mA	
AC Adapter 2(UK)	Brand Name	Motorola(Chenyang)	Model Name SC-43
	Power Rating	I/P: 100-240 Vac, 300mA , O/P: 5Vdc, 2000mA	
AC Adapter 3(Chile)	Brand Name	Motorola(Salom)	Model Name SC-42
	Power Rating	I/P: 100-240 Vac, 300mA , O/P: 5Vdc, 2000mA	
AC Adapter 3 (BR) (Salom China build)	Brand Name	Motorola(Salom)	Model Name SC-47
	Power Rating	I/P: 100-240 Vac, 300mA , O/P: 5Vdc, 2000mA	





<b>AC Adapter 3 (BR)</b> (Flex Brazil local build)	<b>Brand Name</b>	Motorola(Flex)	<b>Model Name</b>	SC-47
	<b>Power Rating</b>	I/P: 100-240 Vac, 300mA , O/P: 5Vdc, 2000mA		
<b>AC Adapter 4 (BR)</b> (Cliptech Brazil local build)	<b>Brand Name</b>	Motorola(Cliptech)	<b>Model Name</b>	SC-47
	<b>Power Rating</b>	I/P: 100-240 Vac, 300mA , O/P: 5Vdc, 2000mA		
<b>Battery 1</b>	<b>Brand Name</b>	Motorola (SCUD)	<b>Model Name</b>	JK50
	<b>Power Rating</b>	3.8Vdc, 4000mAh	<b>Type</b>	Li-ion, Polymer
<b>Battery 2</b>	<b>Brand Name</b>	Motorola (ATL)	<b>Model Name</b>	JK50
	<b>Power Rating</b>	3.8Vdc, 4000mAh	<b>Type</b>	Li-ion, Polymer
<b>Earphone 1</b>	<b>Brand Name</b>	Motorola (NEW LEADER)	<b>Model Name</b>	NLD-EM301K-01SF
	<b>Signal Line Type</b>	1.2 meter, non-shielded cable, without ferrite core		
<b>Earphone 2</b>	<b>Brand Name</b>	Motorola (Lianyun)	<b>Model Name</b>	MI181 (SH38C37773)
	<b>Signal Line Type</b>	1.1 meter, non-shielded cable, without ferrite core		
<b>Earphone 3</b>	<b>Brand Name</b>	Motorola (Cosonic)	<b>Model Name</b>	MI181 (SH38C44959)
	<b>Signal Line Type</b>	1.1 meter, non-shielded cable, without ferrite core		
<b>USB Cable 1</b>	<b>Brand Name</b>	Motorola (Saibao)	<b>Model Name</b>	SC18C24367
	<b>Signal Line Type</b>	1.0 meter, shielded cable, without ferrite core		
<b>USB Cable 2</b>	<b>Brand Name</b>	Motorola (Luxshare)	<b>Model Name</b>	SC18C24368
	<b>Signal Line Type</b>	1.0 meter, shielded cable, without ferrite core		
<b>USB Cable 3</b>	<b>Brand Name</b>	Motorola (Cabletech)	<b>Model Name</b>	SC18C49697
	<b>Signal Line Type</b>	1.0 meter, shielded cable, without ferrite core		
<b>USB Cable 4</b>	<b>Brand Name</b>	Motorola (I SHENG)	<b>Model Name</b>	SC18C28955
	<b>Signal Line Type</b>	1.0 meter, shielded cable, without ferrite core		



## 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) + Bluetooth Idle + Earphone1 + USB Cable 1(Charging from Adapter1) + WLAN Idle(2.4G) + Camera(Rear) + Battery 2 + SIM 1 for Sample 1
	Mode 2: PCS 1900 Rx + Bluetooth Idle + Earphone2 + USB Cable 2(Charging from Adapter2) + WLAN Idle(2.4G) + Camera(Front) + Battery 2 + SIM 2 for Sample 1
	Mode 3: WCDMA Band V Rx(Low) + Bluetooth Idle + Earphone 3 + USB Cable 3(Charging from Adapter3) + WLAN Idle(2.4G) + MPEG4 + Battery 2 + SIM 1 for Sample 1
	Mode 4: WCDMA Band IV Rx + Bluetooth Idle + Earphone2 + USB Cable 4(Charging from Adapter4) + WLAN Idle(2.4G) + FM Rx(98Hz) + Battery 2 + SIM 2 for Sample 1
	Mode 5: LTE Band 5 Rx(High) + Bluetooth Idle + Earphone2 + USB Cable 1(Data Link with Notebook) + WLAN Idle(2.4G) + GNSS Rx + Battery 2 + SIM 1 for Sample 1
	Mode 6: LTE Band 7 Rx + Bluetooth Idle + Earphone2 + USB Cable 2(Data Link with Notebook) + WLAN Idle(2.4G) + GNSS Rx + Battery 2 + SIM 2 for Sample 1
	Mode 7: LTE Band 2 Rx + Bluetooth Idle + Earphone2 + USB Cable 3(Data Link with Notebook) + WLAN Idle(2.4G) + GNSS Rx + Battery 2 + SIM 1 for Sample 1
	Mode 8: LTE Band 4 Rx + Bluetooth Idle + Earphone2 + USB Cable 4(Data Link with Notebook) + WLAN Idle(2.4G) + GNSS Rx + Battery 2 + SIM 2 for Sample 1
	Mode 9: PCS 1900 Rx + Bluetooth Idle + Earphone2 + USB Cable 2(Charging from Adapter2) + WLAN Idle(2.4G) + Camera(Front) + Battery 1 for Sample 2
Radiated Emissions	Mode 1: GSM 850 Rx(Middle) + Bluetooth Idle + Earphone1 + USB Cable 1(Charging from Adapter1) + WLAN Idle(2.4G) + Camera(Rear) + Battery 2 + SIM 1 for Sample 1
	Mode 2: PCS 1900 Rx + Bluetooth Idle + Earphone2 + USB Cable 2(Charging from Adapter2) + WLAN Idle(2.4G) + Camera(Front) + Battery 2 + SIM 2 for Sample 1
	Mode 3: WCDMA Band V Rx(Low) + Bluetooth Idle + Earphone 3 + USB Cable 3(Charging from Adapter3) + WLAN Idle(2.4G) + MPEG4 + Battery 2 +

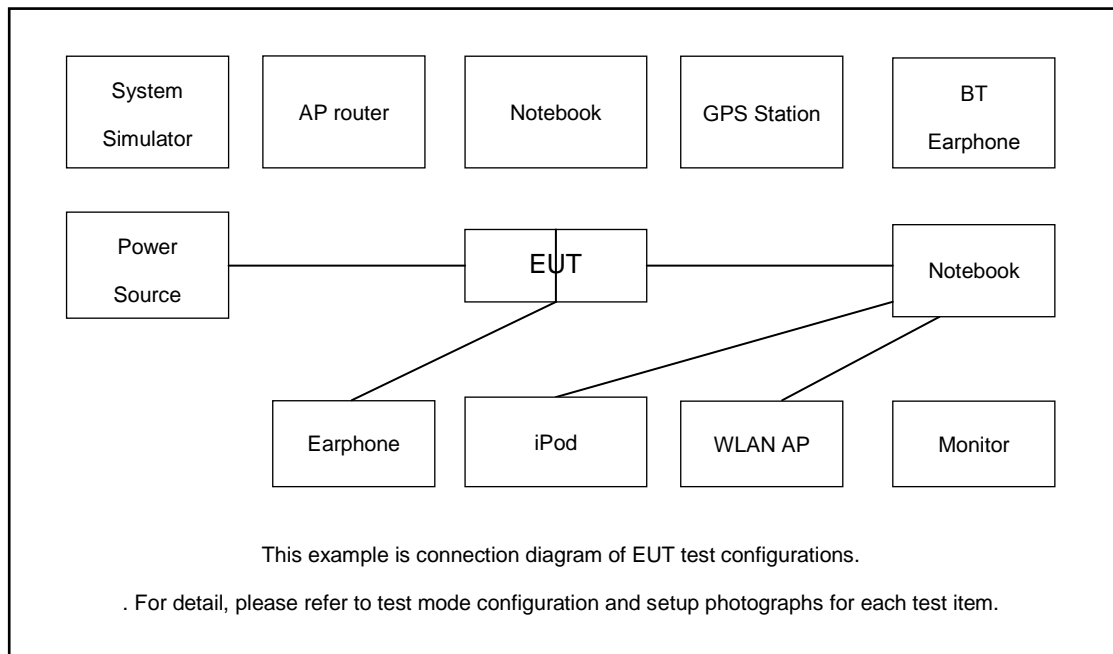


	<p>SIM 1 for Sample 1</p> <p>Mode 4: WCDMA Band IV Rx + Bluetooth Idle + Earphone2 + USB Cable 4(Charging from Adapter4) + WLAN Idle(2.4G) + FM Rx(88Hz) + Battery 2 + SIM 2 for Sample 1</p> <p>Mode 5: LTE Band 5 Rx(High) + Bluetooth Idle + Earphone2 + USB Cable 1(Data Link with Notebook) + WLAN Idle(2.4G) + GNSS Rx + Battery 2 + SIM 1 for Sample 1</p> <p>Mode 6: LTE Band 7 Rx + Bluetooth Idle + Earphone2 + USB Cable 2(Data Link with Notebook) + WLAN Idle(2.4G) + GNSS Rx + Battery 2 + SIM 2 for Sample 1</p> <p>Mode 7: LTE Band 2 Rx + Bluetooth Idle + Earphone2 + USB Cable 3(Data Link with Notebook) + WLAN Idle(2.4G) + GNSS Rx + Battery 2 + SIM 1 for Sample 1</p> <p>Mode 8: LTE Band 4 Rx + Bluetooth Idle + Earphone + USB Cable 4(Data Link with Notebook) + WLAN Idle(2.4G) + GNSS Rx + Battery 2 + SIM 2 for Sample 1</p> <p>Mode 9: LTE Band 2 Rx + Bluetooth Idle + Earphone2 + USB Cable 3(Data Link with Notebook) + WLAN Idle(2.4G) + GNSS Rx + Battery 1 for Sample 2</p>
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**Remark:**

1. The worst case of AC is mode 2; only the test data of this mode is reported.
2. The worst case of RE is mode 7; only the test data of this mode is reported.
3. Data Link with Notebook / PC means data application transferred mode between EUT and Notebook / PC.
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.	iPod	Apple	A1285	DoC	Shielded, 1.0m	N/A
2.	SD Card	SanDisk	MicroSD HC	FCC DoC	N/A	N/A
3.	Base Station	Anritsu	MT8820C	N/A	N/A	Unshielded, 1.8m
4.	Base Station(FM)	R&S	CMU 200	N/A	N/A	Unshielded, 1.8m
5.	GNSS Station	Pendulum	GSG-54	N/A	N/A	Unshielded, 1.8m
6.	WLAN AP	ASUS	RT-AC66U	MSQ-RTAC66U	N/A	Unshielded, 1.8m
7.	NOTE BOOK	Dell	Latitude 3400	FCC DoC	AC I/P : Unshielded, 1.2m DC O/P : Shielded, 1.8m	N/A
8.	NOTE BOOK	ASUS	P2430U	FCC DoC	N/A	AC I/P : Unshielded, 1.2m DC O/P: Shielded, 1.8m
9.	Bluetooth Earphone	Sony Ericsson	MW600	PY700A2029	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 camera to capture images.
3. Turn on MPEG4 function.
4. Turn on GNSS function to make the EUT receive continuous signals from GNSS station.
5. Turn on FM function to make the EUT receive continuous signals from FM station.



### 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.

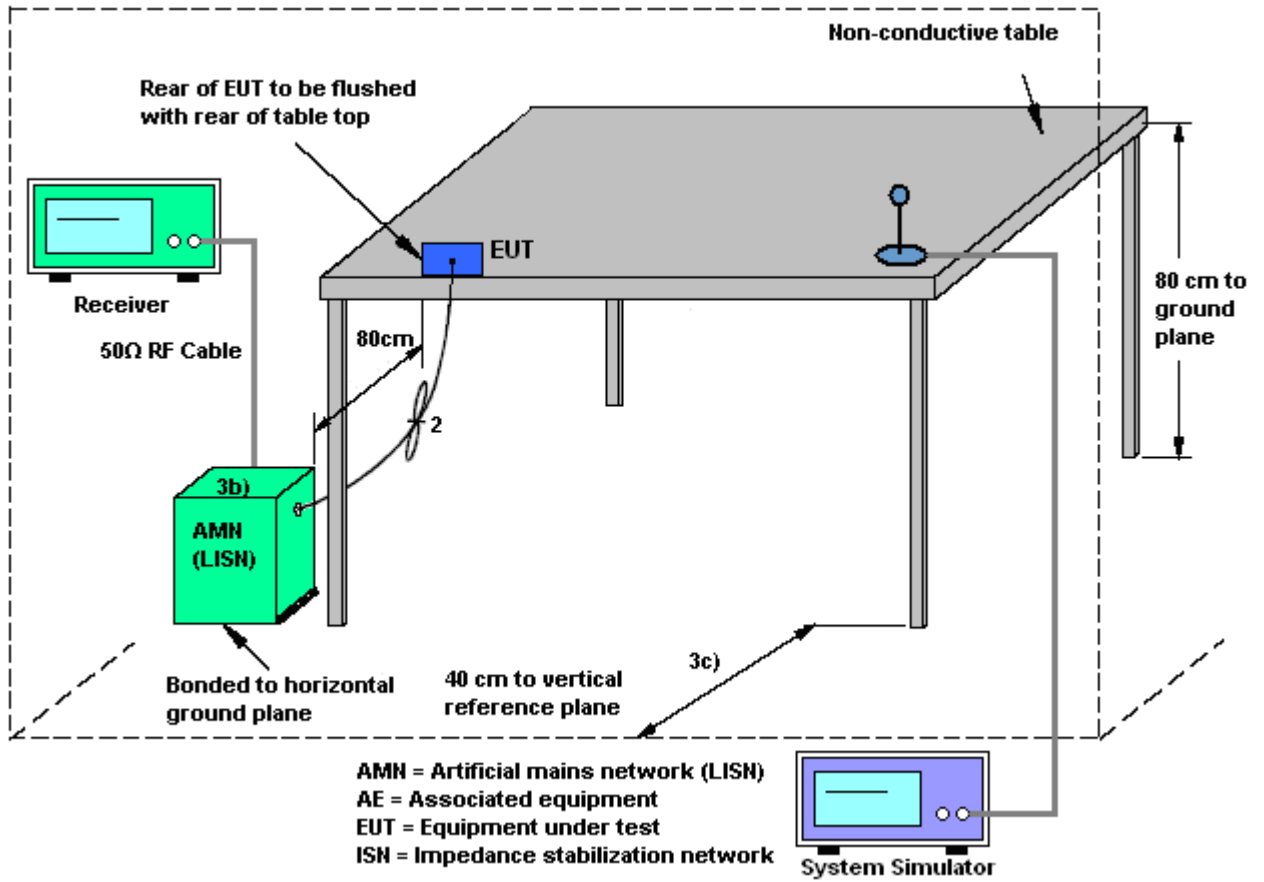
##### 3.1.2 Measuring Instruments

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

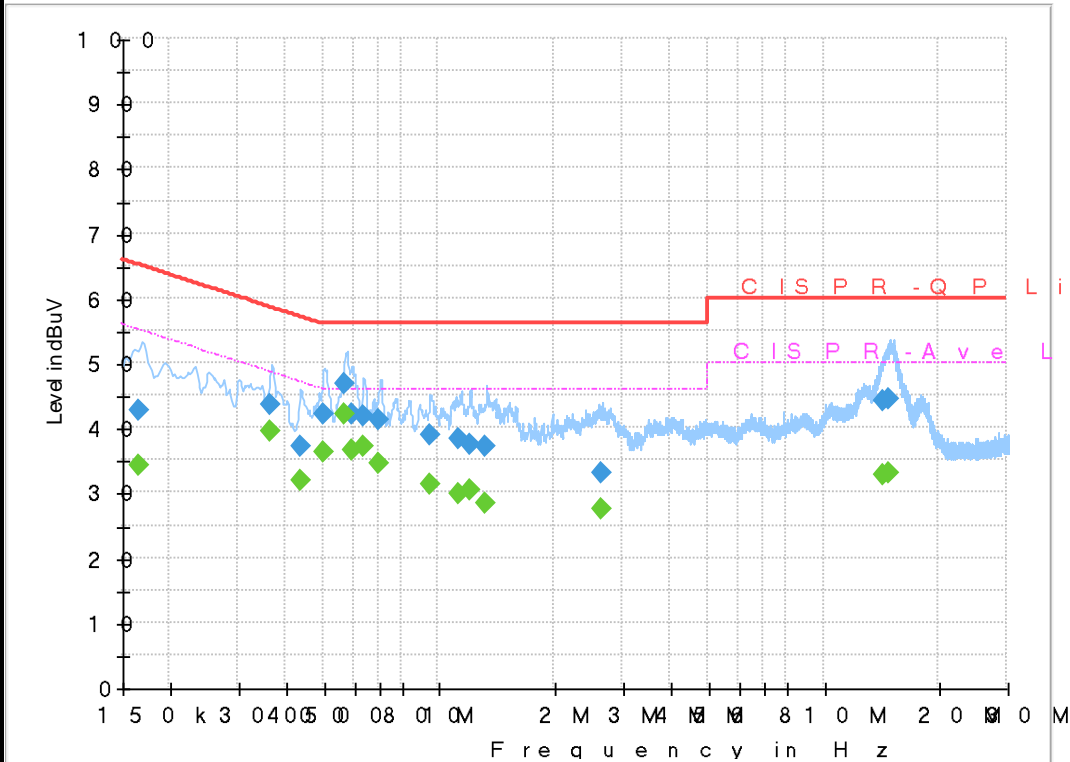




3.1.5 Test Result of AC Conducted Emission

Test Engineer :	Tom Lee&Howard Huang	Temperature :	21~24°C
		Relative Humidity :	40~50%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		

F u l l S p e c t r u m



Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.166920	---	34.11	55.11	21.00	L1	OFF	19.5
0.166920	42.60	---	65.11	22.51	L1	OFF	19.5
0.364290	---	39.53	48.63	9.10	L1	OFF	19.5
0.364290	43.48	---	58.63	15.15	L1	OFF	19.5
0.438810	---	31.77	47.08	15.31	L1	OFF	19.5
0.438810	37.01	---	57.08	20.07	L1	OFF	19.5
0.499200	---	36.38	46.01	9.63	L1	OFF	19.5
0.499200	42.02	---	56.01	13.99	L1	OFF	19.5
0.569310	---	42.03	46.00	3.97	L1	OFF	19.5
0.569310	46.74	---	56.00	9.26	L1	OFF	19.5
0.593880	---	36.64	46.00	9.36	L1	OFF	19.5
0.593880	42.19	---	56.00	13.81	L1	OFF	19.5
0.635910	---	37.09	46.00	8.91	L1	OFF	19.5
0.635910	41.88	---	56.00	14.12	L1	OFF	19.5



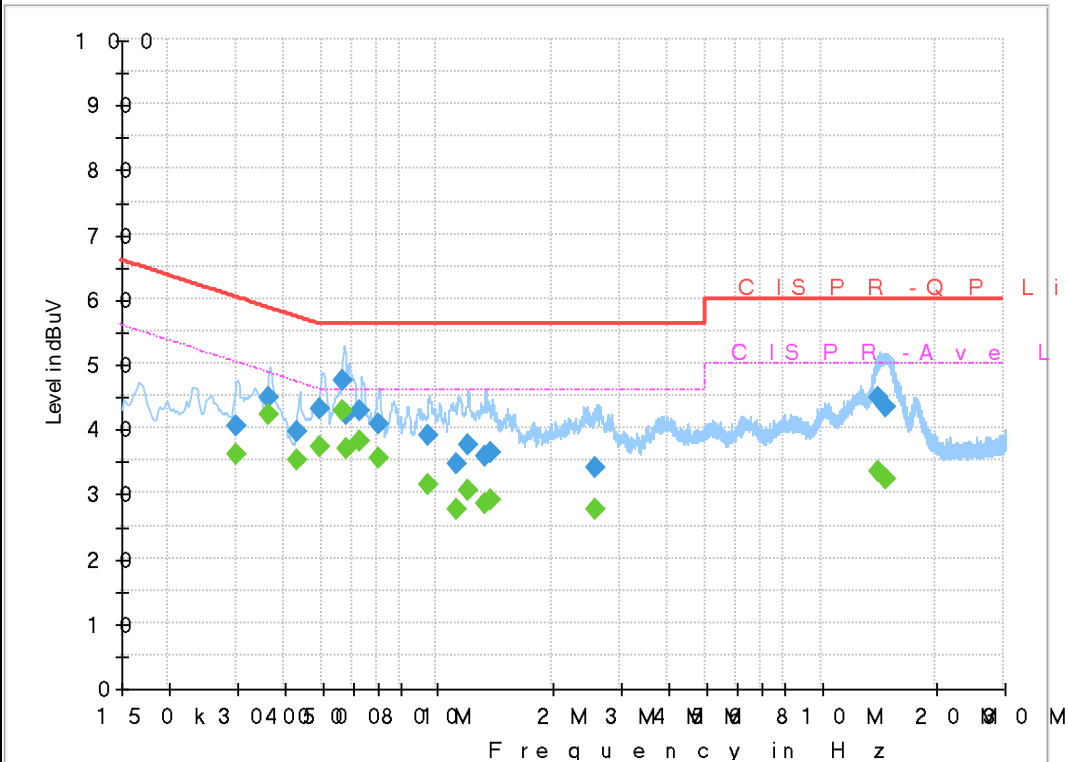


0.699000	---	34.51	46.00	11.49	L1	OFF	19.5
0.699000	41.19	---	56.00	14.81	L1	OFF	19.5
0.949020	---	31.35	46.00	14.65	L1	OFF	19.6
0.949020	38.90	---	56.00	17.10	L1	OFF	19.6
1.133340	---	29.90	46.00	16.10	L1	OFF	19.6
1.133340	38.31	---	56.00	17.69	L1	OFF	19.6
1.203000	---	30.30	46.00	15.70	L1	OFF	19.6
1.203000	37.47	---	56.00	18.53	L1	OFF	19.6
1.320000	---	28.49	46.00	17.51	L1	OFF	19.6
1.320000	37.26	---	56.00	18.74	L1	OFF	19.6
2.658750	---	27.56	46.00	18.44	L1	OFF	19.7
2.658750	33.10	---	56.00	22.90	L1	OFF	19.7
14.271090	---	32.77	50.00	17.23	L1	OFF	20.1
14.271090	44.04	---	60.00	15.96	L1	OFF	20.1
14.862750	---	33.16	50.00	16.84	L1	OFF	20.1
14.862750	44.58	---	60.00	15.42	L1	OFF	20.1



Test Engineer :	Tom Lee&Howard Huang	Temperature :	21~24°C
		Relative Humidity :	40~50%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		

F u l l S p e c t r u m



Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.300030	---	36.04	50.24	14.20	N	OFF	19.6
0.300030	40.49	---	60.24	19.75	N	OFF	19.6
0.364920	---	41.99	48.62	6.63	N	OFF	19.6
0.364920	44.75	---	58.62	13.87	N	OFF	19.6
0.434580	---	35.14	47.17	12.03	N	OFF	19.6
0.434580	39.51	---	57.17	17.66	N	OFF	19.6
0.497130	---	37.09	46.05	8.96	N	OFF	19.6
0.497130	42.95	---	56.05	13.10	N	OFF	19.6
0.570210	---	42.68	46.00	3.32	N	OFF	19.6
0.570210	47.44	---	56.00	8.56	N	OFF	19.6
0.585330	---	36.82	46.00	9.18	N	OFF	19.6
0.585330	42.12	---	56.00	13.88	N	OFF	19.6
0.633750	---	38.00	46.00	8.00	N	OFF	19.6
0.633750	42.66	---	56.00	13.34	N	OFF	19.6
0.703230	---	35.30	46.00	10.70	N	OFF	19.6



0.703230	40.73	---	56.00	15.27	N	OFF	19.6
0.948390	---	31.15	46.00	14.85	N	OFF	19.6
0.948390	38.81	---	56.00	17.19	N	OFF	19.6
1.122900	---	27.38	46.00	18.62	N	OFF	19.6
1.122900	34.63	---	56.00	21.37	N	OFF	19.6
1.203000	---	30.27	46.00	15.73	N	OFF	19.6
1.203000	37.47	---	56.00	18.53	N	OFF	19.6
1.335750	---	28.36	46.00	17.64	N	OFF	19.6
1.335750	35.75	---	56.00	20.25	N	OFF	19.6
1.391100	---	28.96	46.00	17.04	N	OFF	19.6
1.391100	36.25	---	56.00	19.75	N	OFF	19.6
2.585850	---	27.62	46.00	18.38	N	OFF	19.6
2.585850	33.94	---	56.00	22.06	N	OFF	19.6
14.187750	---	33.32	50.00	16.68	N	OFF	20.2
14.187750	44.87	---	60.00	15.13	N	OFF	20.2
14.750250	---	32.26	50.00	17.74	N	OFF	20.2
14.750250	43.33	---	60.00	16.67	N	OFF	20.2

Note:

1. Level(dBμV) = Read Level(dBμV) + LISN Factor(dB) + Cable Loss(dB)
2. 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.

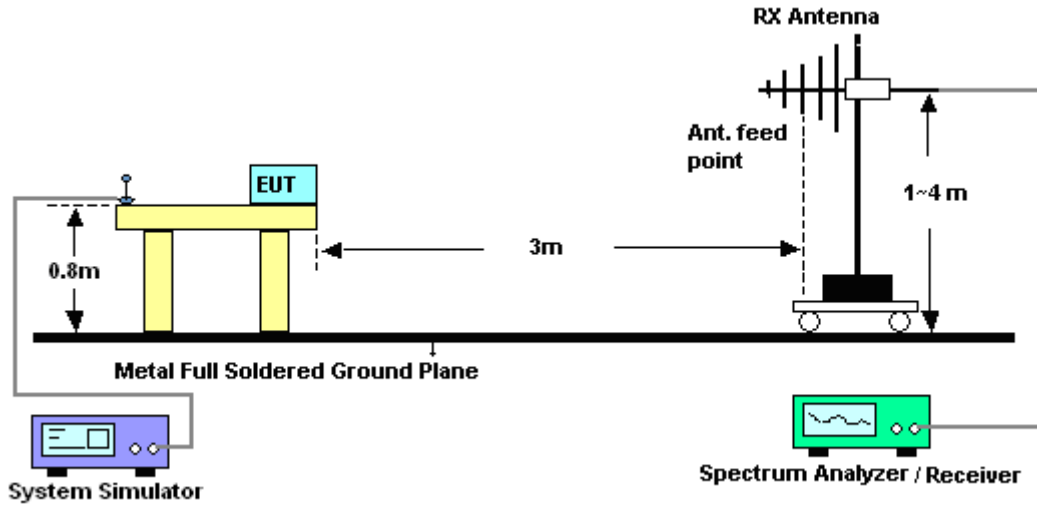


### **3.2.3. Test Procedures**

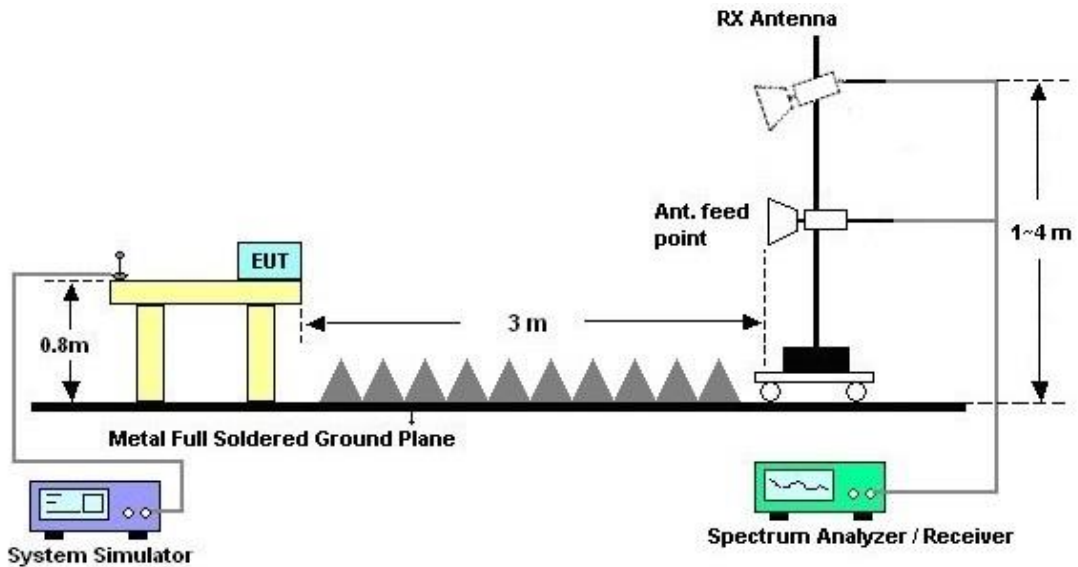
1. The EUT was placed on a turntable with 0.8 meter above ground.
2. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest radiation.
4. The antenna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



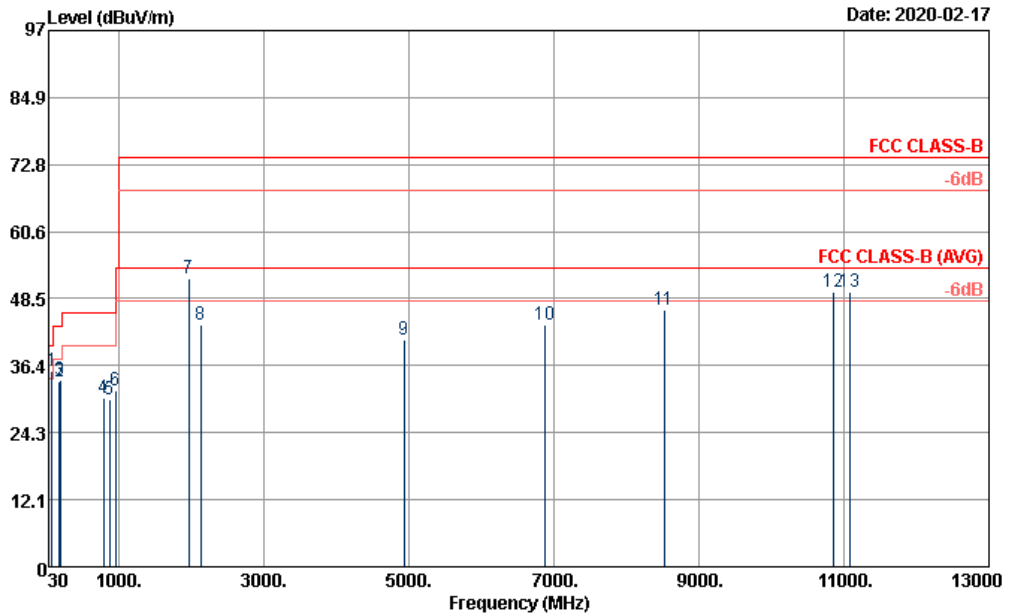
For radiated emissions above 1GHz





3.2.5. Test Result of Radiated Emission

Test Engineer :	YouXian Chen	Temperature :	20~24°C
		Relative Humidity :	40~47%
Test Distance :	3m	Polarization :	Horizontal
Remark :	#7 is system simulator signal which can be ignored.		

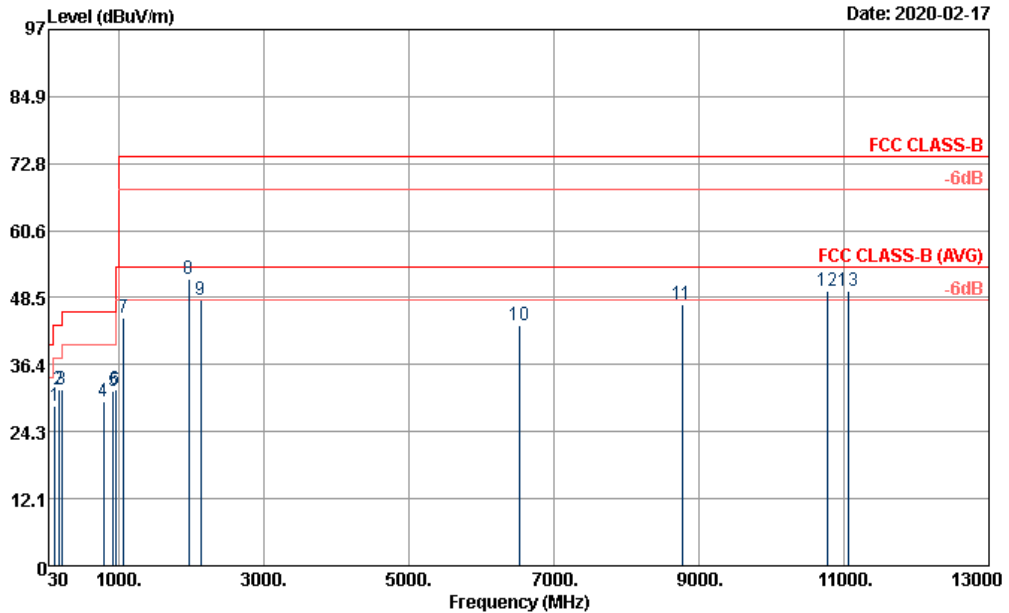


Site : 03CH06-HY  
 Condition : FCC CLASS-B 3m 9120D\_1156 HORIZONTAL

	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	cm	deg		
1	78.87	35.30	-4.70	40.00	52.88	12.90	1.12	31.64	100	0 Peak	
2	177.96	33.38	-10.12	43.50	48.40	14.81	1.69	31.58	---	---	Peak
3	194.70	33.87	-9.63	43.50	48.98	14.57	1.81	31.56	---	---	Peak
4	792.10	30.59	-15.41	46.00	30.30	28.00	3.72	31.70	---	---	Peak
5	872.60	30.26	-15.74	46.00	28.35	29.06	3.94	31.43	---	---	Peak
6	953.10	31.99	-14.01	46.00	28.08	30.25	4.07	30.84	---	---	Peak
7	1960.00	52.15			81.43	26.00	5.82	61.10	---	---	Peak
8	2128.00	43.76	-30.24	74.00	71.27	27.30	6.26	61.07	---	---	Peak
9	4930.00	41.01	-32.99	74.00	58.25	31.30	9.74	58.28	---	---	Peak
10	6874.00	43.85	-30.15	74.00	55.25	34.83	12.22	58.45	---	---	Peak
11	8518.00	46.54	-27.46	74.00	52.31	37.00	14.45	57.22	---	---	Peak
12	10864.00	49.76	-24.24	74.00	49.52	40.37	16.55	56.68	100	0 Peak	
13	11080.00	49.74	-24.26	74.00	49.23	40.15	16.71	56.35	---	---	Peak



Test Engineer :	YouXian Chen	Temperature :	20~24°C
		Relative Humidity :	40~47%
Test Distance :	3m	Polarization :	Vertical
Remark :	#7 is system simulator signal which can be ignored.		



Site : 03CH06-HY  
 Condition : FCC CLASS-B 3m 9120D\_1156 VERTICAL

	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	117.21	28.82	-14.68	43.50	41.82	17.15	1.43	31.64	---	---	Peak
2	165.81	31.78	-11.72	43.50	45.97	15.69	1.65	31.59	---	---	Peak
3	209.82	32.00	-11.50	43.50	46.66	14.93	1.90	31.56	100	0	Peak
4	792.10	29.69	-16.31	46.00	29.40	28.00	3.72	31.70	---	---	Peak
5	924.40	31.66	-14.34	46.00	29.36	29.03	4.01	31.11	---	---	Peak
6	957.30	32.00	-14.00	46.00	27.80	30.49	4.07	30.81	---	---	Peak
7	1066.00	44.81	-29.19	74.00	77.37	24.80	4.26	61.62	---	---	Peak
8	1960.00	51.99			81.27	26.00	5.82	61.10	---	---	Peak
9	2128.00	48.08	-25.92	74.00	75.59	27.30	6.26	61.07	---	---	Peak
10	6532.00	43.53	-30.47	74.00	56.52	34.15	11.45	58.59	---	---	Peak
11	8764.00	47.17	-26.83	74.00	52.40	37.63	14.67	57.53	---	---	Peak
12	10780.00	49.82	-24.18	74.00	49.98	40.24	16.47	56.87	100	0	Peak
13	11062.00	49.73	-24.27	74.00	49.20	40.20	16.69	56.36	---	---	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
AC Power Source	ChainTek	APC-1000W	N/A	N/A	NCR	Feb. 15, 2020	NCR	Conduction (CO05-HY)
EMI Test Receiver	Rohde & Schwarz	ESR3	102388	9kHz~3.6GHz	Nov. 15, 2019	Feb. 15, 2020	Nov. 14, 2020	Conduction (CO05-HY)
Hygrometer	Testo	608-H1	34913912	N/A	Mar. 19, 2019	Feb. 15, 2020	Mar. 18, 2020	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100080	9kHz~30MHz	Nov. 20, 2019	Feb. 15, 2020	Nov. 19, 2020	Conduction (CO05-HY)
LF Cable	HUBER + SUHNER	RG-214/U	LF01	N/A	Jan. 02, 2020	Feb. 15, 2020	Jan. 01, 2021	Conduction (CO05-HY)
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100851	N/A	Jan. 02, 2020	Feb. 15, 2020	Jan. 01, 2021	Conduction (CO05-HY)
Amplifier	SONOMA	310N	186713	9kHz~1GHz	May 01, 2019	Feb. 16, 2020~ Feb. 17, 2020	Apr. 30, 2020	Radiation (03CH06-HY)
Bilog Antenna	TESEQ	CBL 6111D & N-6-06	35414 & AT-N0602	30MHz~1GHz	Oct. 12, 2019	Feb. 16, 2020~ Feb. 17, 2020	Oct. 11, 2020	Radiation (03CH06-HY)
EMI Test Receiver	Rohde & Schwarz	ESU26	100472	20Hz~26.5GHz	Jan. 10, 2020	Feb. 16, 2020~ Feb. 17, 2020	Jan. 09, 2021	Radiation (03CH06-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	9120D-1156	1GHz~18GHz	Aug. 30, 2019	Feb. 16, 2020~ Feb. 17, 2020	Aug. 29, 2020	Radiation (03CH06-HY)
Preamplifier	MITEQ	00101800-30-10P	1850117	1GHz~18GHz	May 23, 2019	Feb. 16, 2020~ Feb. 17, 2020	May 22, 2020	Radiation (03CH06-HY)
Controller	INN-CO	EM1000	060782	Control Turn table & Ant Mast	NCR	Feb. 16, 2020~ Feb. 17, 2020	NCR	Radiation (03CH06-HY)
Antenna Mast	MF	MF-7802	MF780208212	1m~4m	NCR	Feb. 16, 2020~ Feb. 17, 2020	NCR	Radiation (03CH06-HY)
Turn Table	INN-CO	DS2000	420/650/00	0-360 degree	NCR	Feb. 16, 2020~ Feb. 17, 2020	NCR	Radiation (03CH06-HY)
RF Cable	HUBER+SUHNER/WOKEN/HARBOUR INDUSTRIES	SUCOFLEX 104 /STORM/LL142	MY24966/4/00100A1O2A178T/CA3601-3601-1000	30MHz-26GHz	Nov. 21, 2019	Feb. 16, 2020~ Feb. 17, 2020	Nov. 20, 2020	Radiation (03CH06-HY)

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% ( $U = 2Uc(y)$ )	2.7 dB
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### Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ )	3.9 dB
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### Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ )	4.7 dB
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### Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)

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