



# FCC Test Report

**APPLICANT** : Lenovo(Shanghai) Electronics  
Technology Co., Ltd.  
**EQUIPMENT** : Portable Tablet Computer  
**BRAND NAME** : Lenovo  
**MODEL NAME** : Lenovo TB-8506X  
**FCC ID** : O57TB8506X  
**STANDARD** : 47 CFR Part 15 Subpart B  
**CLASSIFICATION** : Certification

The product was received on Feb. 24, 2021 and testing was completed on Mar. 17, 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.

Reviewed by: Jason Jia / Supervisor

Approved by: Alex Wang / 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
FC120606-01	Rev. 01	Initial issue of report	Apr. 16, 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 6.79 dB at 0.172 MHz
3.2	15.109	Radiated Emission	< 15.109 limits	PASS	Under limit 8.06 dB at 157.070 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

Lenovo(Shanghai) Electronics Technology Co., Ltd.  
Section 304-305, Building No. 4, # 222, Meiyue Road, China (Shanghai) Pilot Free Trade Zone

## 1.2. Manufacturer

Lenovo PC HK Limited  
23/F, Lincoln House, Taikoo Place 979 King's Road, Quarry Bay, Hong Kong, P.R.China

## 1.3. Product Feature of Equipment Under Test

Product Feature	
Equipment	Portable Tablet Computer
Brand Name	Lenovo
Model Name	Lenovo TB-8506X
FCC ID	O57TB8506X
EUT supports Radios application	GSM/WCDMA/LTE, WLAN 2.4GHz 802.11b/g/n HT20/HT40 WLAN 5GHz 802.11a/n HT20/HT40 WLAN 5GHz 802.11ac VHT20/VHT40/VHT80 Bluetooth BR/EDR/LE FM Receiver and GNSS
IMEI Code	Conduction: 868869050005122 for Sample1 868869050005940 for Sample2 868869050008456 for Sample3 868869050007664 for Sample4 Radiation: 868869050005346 for Sample1 868869050005940 for Sample2 868869050008076 for Sample3 868869050008126 for Sample4
HW Version	Lenovo TB-8506X
SW Version	Lenovo TB-8506X_RF01_210305
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 four types of EUT, please refer to the product equality declaration exhibit submitted. According to the difference, we choose the sample 1 to full test and the sample 2/3/4 are verified the difference.



### 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 4 : 1710 MHz ~ 1755 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 : 2496 MHz ~ 2690 MHz 802.11b/g/n: 2400 MHz ~ 2483.5 MHz 802.11a/n/ac: 5150 MHz ~ 5250 MHz; 5250 MHz ~ 5350 MHz; 5470 MHz ~ 5725 MHz 5725 MHz ~ 5850 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 4 : 2110 MHz ~ 2155 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 : 2496 MHz ~ 2690 MHz 802.11b/g/n: 2400 MHz ~ 2483.5 MHz 802.11a/n/ac: 5150 MHz ~ 5250 MHz; 5250 MHz ~ 5350 MHz; 5470 MHz ~ 5725 MHz 5725 MHz ~ 5850 MHz Bluetooth: 2400 MHz ~ 2483.5 MHz GNSS : 1559 MHz ~ 1610 MHz FM : 88 MHz ~ 108 MHz
<b>Antenna Type</b>	WWAN : PIFA Antenna WLAN : IFA Antenna Bluetooth : IFA Antenna GNSS: IFA Antenna FM : External Earphone Antenna
<b>Type of Modulation</b>	GSM/GPRS: GMSK EDGE(MCS 0-4): GMSK / (MCS 5-9): 8PSK WCDMA : BPSK (Uplink) HSDPA/DC-HSDPA : QPSK (Uplink) HSUPA : QPSK (Uplink) HSPA+ : 16QAM DC-HSDPA : 64QAM LTE: QPSK / 16QAM 802.11b : DSSS (DBPSK / DQPSK / CCK)

	802.11a/g/n/ac : OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM) Bluetooth LE : GFSK Bluetooth (1Mbps) : GFSK Bluetooth (2Mbps) : $\pi/4$ -DQPSK Bluetooth (3Mbps) : 8-DPSK GNSS : BPSK FM
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### 1.5. Modification of EUT

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

### 1.6. 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

### 1.7. 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

### 1.8. 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
- ♦ ANSI C63.4a-2017

**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) + Bluetooth Idle + WLAN Idle(2.4G) + Earphone + Camera(Rear) + USB Cable 1 (Charging from Adapter1) + Battery1 for Sample 1
	Mode 2: WCDMA 1900 Rx + Bluetooth Idle + WLAN Idle(5G) + Earphone + Camera(Front) + USB Cable 2 (Charging from Adapter2) + Battery1 for Sample 1
	Mode 3: WCDMA 850 Rx(Low) + Bluetooth Idle + WLAN Idle(2.4G) + Earphone + MPEG4 + USB Cable 2 (Charging from Adapter3) + Battery1 for Sample 1
	Mode 4: LTE Band 26 Rx(Low) + Bluetooth Idle + WLAN Idle(5G) + Earphone + FM Rx(98MHZ) + USB Cable 2 (Charging from Adapter3) + Battery1 for Sample 1
	Mode 5: LTE Band 7 Rx + Bluetooth Idle + WLAN Idle(2.4G) + Earphone + GNSS Rx + USB Cable 1 (Data Link with NoteBook) + Battery1 for Sample 1
	Mode 6: LTE Band 41 Rx + Bluetooth Idle + WLAN Idle(5G) + Earphone + GNSS Rx + USB Cable 2 (Data Link with NoteBook) + Battery1 for Sample 1
	Mode 7: WCDMA 1900 Rx + Bluetooth Idle + WLAN Idle(5G) + Earphone + Camera(Front) + USB Cable 2 (Charging from Adapter2) + Battery2 for Sample 2
	Mode 8: LTE Band 7 Rx + Bluetooth Idle + WLAN Idle(2.4G) + Earphone + GNSS Rx + USB Cable 1 (Data Link with NoteBook) + Battery2 for Sample 2
	Mode 9: WCDMA 1900 Rx + Bluetooth Idle + WLAN Idle(5G) + Earphone + Camera(Front) + USB Cable 2 (Charging from Adapter2) + Battery2 for Sample 3
	Mode 10 : LTE Band 7 Rx + Bluetooth Idle + WLAN Idle(2.4G) + Earphone + GNSS Rx + USB Cable 1 (Data Link with NoteBook) + Battery2 for Sample 4
Radiated Emissions	Mode 1: GSM 850 Rx(Middle) + Bluetooth Idle + WLAN Idle(2.4G) + Earphone + Camera(Rear) + USB Cable 1 (Charging from Adapter1) + Battery1 for Sample 1
	Mode 2: WCDMA 1900 Rx + Bluetooth Idle + WLAN Idle(5G) + Earphone + Camera(Front) + USB Cable 2 (Charging from Adapter2) + Battery1 for Sample 1
	Mode 3: WCDMA 850 Rx(Low) + Bluetooth Idle + WLAN Idle(2.4G) + Earphone + MPEG4 + USB Cable 2 (Charging from Adapter3) + Battery1 for Sample 1



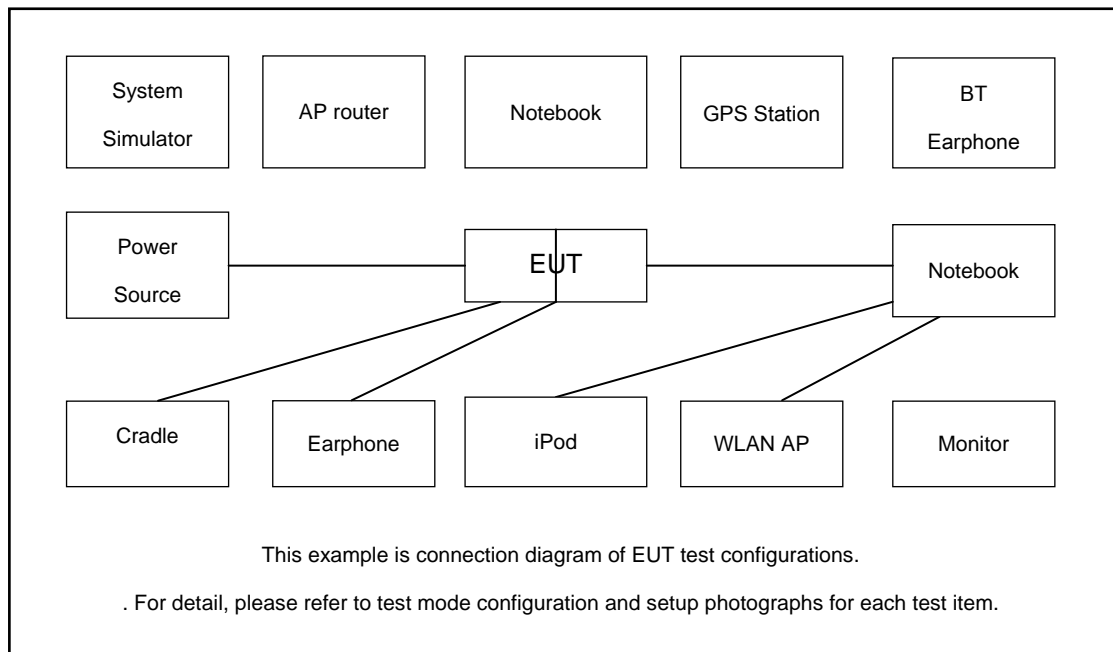


Mode 4: LTE Band 26 Rx(Low) + Bluetooth Idle + WLAN Idle(5G) + Earphone + FM RX(88MHz) + USB Cable 2 (Charging from Adapter3) + Battery1 for Sample 1
Mode 5: LTE Band 7 Rx + Bluetooth Idle + WLAN Idle(2.4G) + Earphone + GNSS Rx + USB Cable 1 (Data Link with NoteBook) + Battery1 for Sample 1
Mode 6: LTE Band 41 Rx + Bluetooth Idle + WLAN Idle(5G) + Earphone + GNSS Rx + USB Cable 2 (Data Link with NoteBook) + Battery1 for Sample 1
Mode 7: LTE Band 41 Rx + Bluetooth Idle + WLAN Idle(5G) + Earphone + Camera(Rear) + USB Cable 2 (Charging from Adapter2) + Battery2 for Sample 2
Mode 8: LTE Band 41 Rx + Bluetooth Idle + WLAN Idle(5G) + Earphone + GNSS Rx + USB Cable 2 (Data Link with NoteBook) + Battery2 for Sample 2
Mode 9: LTE Band 41 Rx + Bluetooth Idle + WLAN Idle(5G) + Earphone + GNSS Rx + USB Cable 2 (Data Link with NoteBook) + Battery2 for Sample 3
Mode 10 : LTE Band 41 Rx + Bluetooth Idle + WLAN Idle(5G) + Earphone + GNSS Rx + USB Cable 2 (Data Link with NoteBook) + Battery2 for Sample 4

**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 6; 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	Dell	Latitude3440	N/A	N/A	shielded cable DC O/P 1.8m , Unshielded AC I/P cable 1.8m
2.	Notebook	Lenovo	G480	QDS-BRCM1050I	N/A	shielded cable DC O/P 1.8m , Unshielded AC I/P cable 1.8m
3.	SD Card	SanDisk	Uitra	N/A	N/A	N/A
4.	SD Card	Kingston	8GB	N/A	N/A	N/A
5.	Hard disk	KINGSHARE	KSP6120G	N/A	Shielded, 1.2m	N/A
6.	Hard Disk	Lenovo	F310	N/A	Shielded, 1.2m	N/A
7.	WLAN AP	TP-Link	TL-WDR5600	N/A	N/A	Unshielded,1.8m
8.	WLAN AP	D-link	DIR-655	KA21R655B1	N/A	Unshielded,1.8m
9.	Signal Generator	R&S	SMBV100A	N/A	N/A	Unshielded,1.8m
10.	LTE Base Station	Anritsu	MT8820C	N/A	N/A	Unshielded,1.8m
11.	LTE Base Station	Anritsu	MT8821C	N/A	N/A	Unshielded,1.8m
12.	Bluetooth Earphone	Xiaomi	LYEJ02LM	N/A	N/A	N/A
13.	Bluetooth Earphone	Lenovo	LBH308	N/A	N/A	N/A
14.	Earphone	Lenovo	SH100	N/A	Unshielded, 1.2m	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.

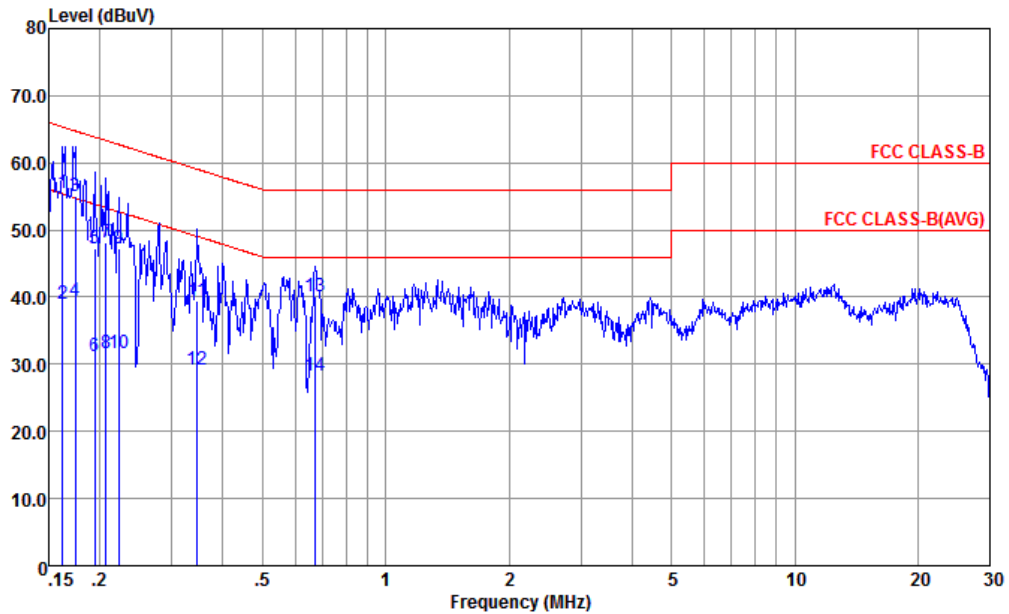
### 3.1.4 Test Setup





3.1.5 Test Result of AC Conducted Emission

Test Engineer :	Amos Zhang	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.		

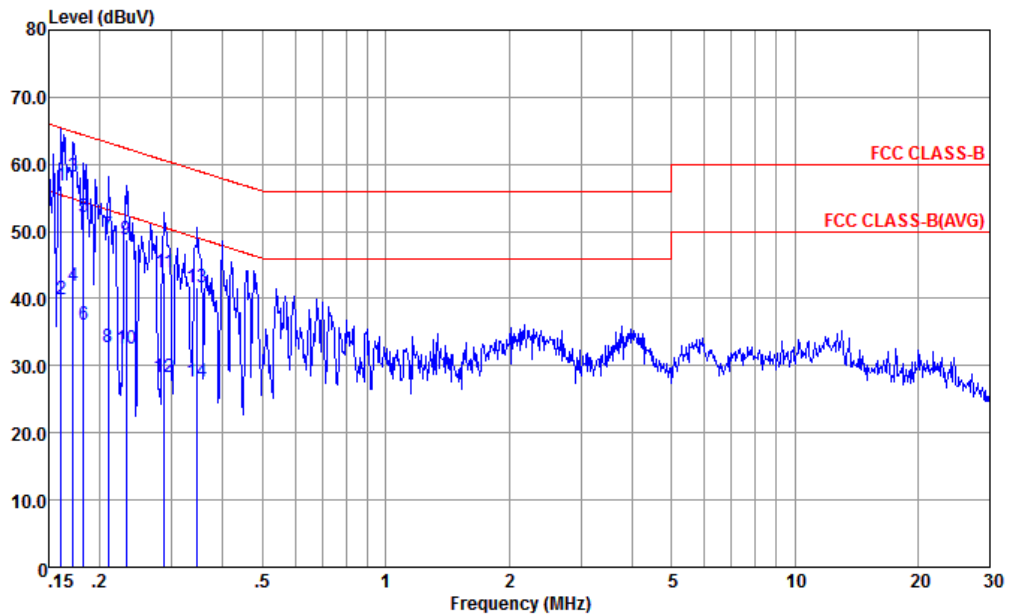


Site : CO01-KS  
 Condition : FCC CLASS-B TWO-LISN-CN02-L LINE

	Freq	Level	Over	Limit	Read	LISN	Cable	Remark
	MHz	dBuV	Limit	Line	Level	Factor	Loss	
			dB	dBuV	dBuV	dB	dB	
1 *	0.162	55.59	-9.75	65.34	35.50	9.64	10.45	QP
2	0.162	38.99	-16.35	55.34	18.90	9.64	10.45	Average
3	0.174	54.96	-9.81	64.77	34.90	9.64	10.42	QP
4	0.174	39.36	-15.41	54.77	19.30	9.64	10.42	Average
5	0.194	47.22	-16.62	63.84	27.21	9.64	10.37	QP
6	0.194	31.22	-22.62	53.84	11.21	9.64	10.37	Average
7	0.207	48.20	-15.12	63.32	28.20	9.64	10.36	QP
8	0.207	31.60	-21.72	53.32	11.60	9.64	10.36	Average
9	0.222	47.19	-15.55	62.74	27.20	9.64	10.35	QP
10	0.222	31.59	-21.15	52.74	11.60	9.64	10.35	Average
11	0.346	39.53	-19.52	59.05	19.60	9.64	10.29	QP
12	0.346	29.23	-19.82	49.05	9.30	9.64	10.29	Average
13	0.672	40.10	-15.90	56.00	20.20	9.66	10.24	QP
14	0.672	28.20	-17.80	46.00	8.30	9.66	10.24	Average



Test Engineer :	Amos Zhang	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

	Freq	Level	Over	Limit	Read	LISN	Cable	Remark
	MHz	dBuV	Limit	Line	Level	Factor	Loss	
			dB	dBuV	dBuV	dB	dB	
1	0.161	56.87	-8.56	65.43	36.60	9.82	10.45	QP
2	0.161	39.87	-15.56	55.43	19.60	9.82	10.45	Average
3 *	0.172	58.07	-6.79	64.86	37.81	9.84	10.42	QP
4	0.172	41.87	-12.99	54.86	21.61	9.84	10.42	Average
5	0.182	52.16	-12.21	64.37	31.90	9.86	10.40	QP
6	0.182	36.16	-18.21	54.37	15.90	9.86	10.40	Average
7	0.209	49.44	-13.79	63.23	29.20	9.88	10.36	QP
8	0.209	32.84	-20.39	53.23	12.60	9.88	10.36	Average
9	0.232	48.80	-13.59	62.39	28.60	9.86	10.34	QP
10	0.232	32.50	-19.89	52.39	12.30	9.86	10.34	Average
11	0.288	43.91	-16.68	60.59	23.80	9.80	10.31	QP
12	0.288	28.21	-22.38	50.59	8.10	9.80	10.31	Average
13	0.346	41.66	-17.39	59.05	21.60	9.77	10.29	QP
14	0.346	27.56	-21.49	49.05	7.50	9.77	10.29	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.



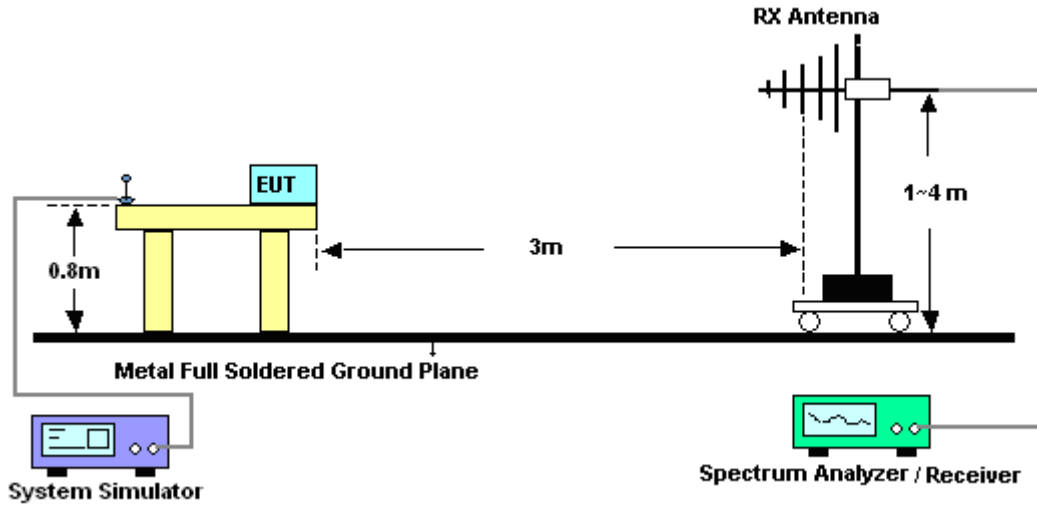


### **3.2.3. Test Procedures**

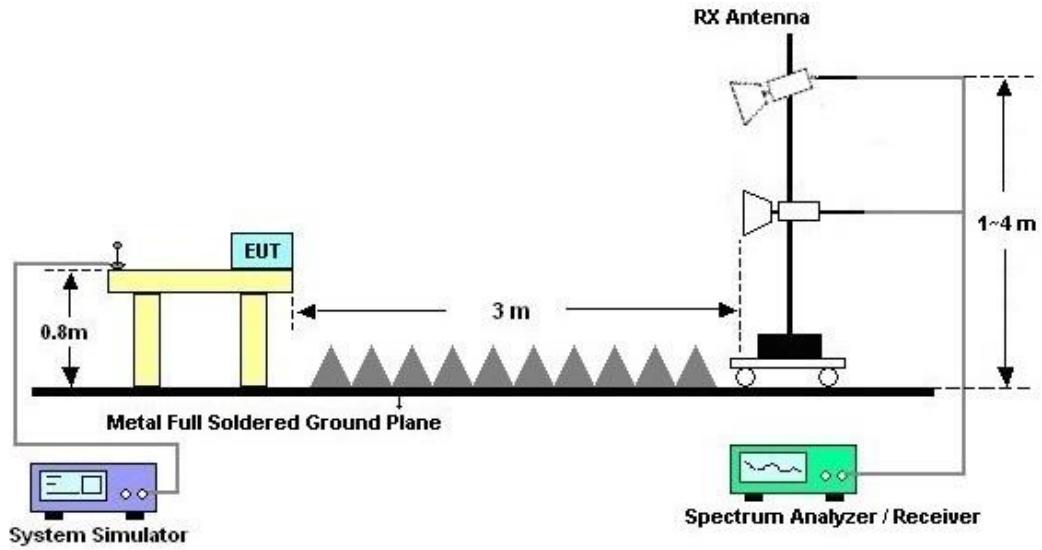
1. The EUT was placed on a turntable with 0.8 meter above ground.
2. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest radiation.
4. The antenna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



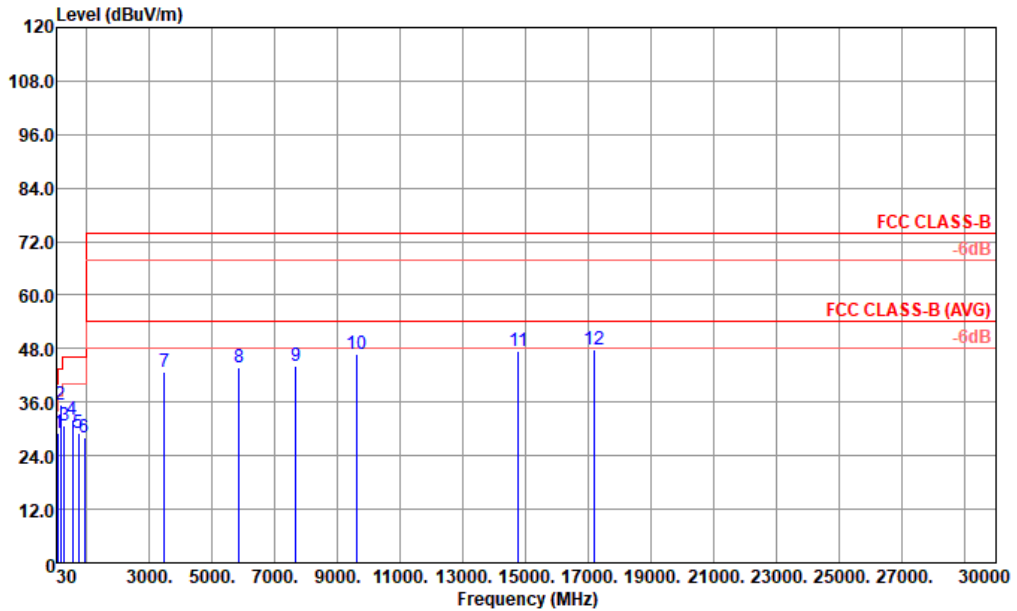
For radiated emissions above 1GHz





3.2.5. Test Result of Radiated Emission

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

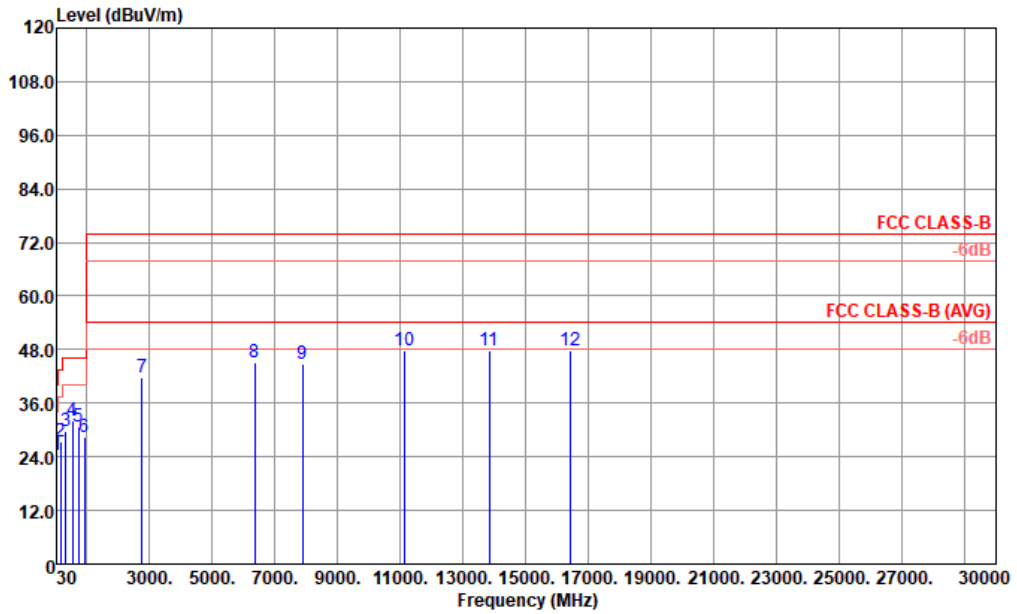


Site : 03CH02-KS  
 Condition : FCC CLASS-B 3m LF 49921 HORIZONTAL

	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	88.20	29.25	-14.25	43.50	45.18	14.66	1.63	32.22	---	---	Peak
2	157.07	35.44	-8.06	43.50	48.45	16.90	2.19	32.10	100	0	Peak
3	287.05	30.83	-15.17	46.00	40.88	19.12	2.96	32.13	---	---	Peak
4	531.49	32.02	-13.98	46.00	35.49	24.85	4.02	32.34	---	---	Peak
5	741.01	29.18	-16.82	46.00	28.63	28.10	4.73	32.28	---	---	Peak
6	928.22	28.08	-17.92	46.00	25.32	29.67	5.29	32.20	---	---	Peak
7	3480.00	42.70	-31.30	74.00	31.65	34.17	10.38	33.50	---	---	Peak
8	5848.00	43.75	-30.25	74.00	26.50	36.05	13.43	32.23	---	---	Peak
9	7664.00	44.19	-29.81	74.00	24.67	37.90	15.50	33.88	---	---	Peak
10	9585.00	46.93	-27.07	74.00	24.90	39.23	17.43	34.63	---	---	Peak
11	14769.00	47.55	-26.45	74.00	19.85	40.92	21.93	35.15	---	---	Peak
12	17163.00	47.77	-26.23	74.00	15.79	43.30	23.74	35.06	---	---	Peak



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



Site : 03CH02-KS  
 Condition : FCC CLASS-B 3m LF 49921 VERTICAL

	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	47.46	24.47	-15.53	40.00	39.63	15.85	1.19	32.20	---	---	Peak
2	158.04	27.38	-16.12	43.50	40.39	16.89	2.20	32.10	---	---	Peak
3	329.73	29.89	-16.11	46.00	38.80	20.08	3.17	32.16	---	---	Peak
4	531.49	31.97	-14.03	46.00	35.44	24.85	4.02	32.34	100	0	Peak
5	727.43	30.85	-15.15	46.00	30.78	27.63	4.69	32.25	---	---	Peak
6	934.04	28.56	-17.44	46.00	25.71	29.74	5.31	32.20	---	---	Peak
7	2752.00	41.73	-32.27	74.00	33.23	33.45	9.23	34.18	---	---	Peak
8	6344.00	45.14	-28.86	74.00	27.03	36.30	14.22	32.41	---	---	Peak
9	7880.00	44.77	-29.23	74.00	25.97	37.51	15.72	34.43	---	---	Peak
10	11115.00	47.73	-26.27	74.00	24.59	39.52	18.84	35.22	---	---	Peak
11	13824.00	47.65	-26.35	74.00	20.90	40.88	21.08	35.21	---	---	Peak
12	16398.00	47.71	-26.29	74.00	16.41	43.18	23.26	35.14	---	---	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 Receiver	R&S	ESC17	100768	9kHz~7GHz;	Apr. 14, 2020	Mar. 17, 2021	Apr. 13, 2021	Conduction (CO01-KS)
AC LISN (for auxiliary equipment)	MessTec	AN3016	060103	9kHz~30MHz	Oct. 17, 2020	Mar. 17, 2021	Oct. 16, 2021	Conduction (CO01-KS)
AC LISN	MessTec	AN3016	060105	9kHz~30MHz	Oct. 27, 2020	Mar. 17, 2021	Oct. 26, 2021	Conduction (CO01-KS)
AC Power Source	Chroma	61602	ABP0000008 11	AC 0V~300V, 45Hz~1000Hz	Oct. 17, 2020	Mar. 17, 2021	Oct. 16, 2021	Conduction (CO01-KS)
EMI Test Receiver	R&S	ESR7	101403	9kHz~7GHz;Ma x 30dBm	Oct. 17, 2020	Mar. 06, 2021	Oct. 16, 2021	Radiation (03CH02-KS)
EXA Spectrum Analyzer	Keysight	N9010A	MY55370528	10Hz-44G,MAX 30dB	Oct. 17, 2020	Mar. 06, 2021	Oct. 16, 2021	Radiation (03CH02-KS)
Bilog Antenna	TeseQ	CBL6111D	44483	30MHz-1GHz	Dec. 29, 2020	Mar. 06, 2021	Dec. 28, 2021	Radiation (03CH02-KS)
Double Ridge Horn Antenna	ETS-Lindgren	3117	75957	1GHz~18GHz	Nov. 09, 2020	Mar. 06, 2021	Nov. 08, 2021	Radiation (03CH02-KS)
SHF-EHF Horn	Com-power	AH-840	101115	18GHz~40GHz	Nov. 09, 2020	Mar. 06, 2021	Nov. 08, 2021	Radiation (03CH02-KS)
Amplifier	MITEQ	EM18G40GGA	060728	18~40GHz	Jan. 06, 2021	Mar. 06, 2021	Jan. 05, 2022	Radiation (03CH02-KS)
Amplifier	SONOMA	310N	187289	9KHz-1GHz	Jan. 06, 2021	Mar. 06, 2021	Jan. 05, 2022	Radiation (03CH02-KS)
Amplifier	Keysight	83017A	MY53270316	500MHz~26.5G Hz	Oct. 17, 2020	Mar. 06, 2021	Oct. 16, 2021	Radiation (03CH02-KS)
AC Power Source	Chroma	61601	61601000247 3	N/A	NCR	Mar. 06, 2021	NCR	Radiation (03CH02-KS)
Turn Table	MF	MF7802	N/A	0~360 degree	NCR	Mar. 06, 2021	NCR	Radiation (03CH02-KS)
Antenna Mast	MF	MF7802	N/A	1 m~4 m	NCR	Mar. 06, 2021	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% ( $U = 2Uc(y)$ )	2.94dB
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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% ( $U = 2Uc(y)$ )	5.1 dB
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