FCC Test Report

APPLICANT	:	Xiaomi Communications Co., Ltd.
EQUIPMENT	:	Mobile Phone
BRAND NAME	:	Redmi
MODEL NAME	:	25028RN03L
FCC ID	:	2AFZZRN03L
STANDARD	:	47 CFR Part 15 Subpart B
CLASSIFICATION	:	Certification
TEST DATE(S)	:	Dec. 27, 2024 ~ Dec. 29, 2024

We, Sporton International Inc. (Kunshan), 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. (Kunshan), the test report shall not be reproduced except in full.

Jason Jia

Approved by: Jason Jia

ACCREDITED Cert #5145.02

Sporton International Inc. (Kunshan)
No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300
People's Republic of China

TABLE OF CONTENTS

REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FC4D0203	Rev. 01	Initial issue of report	Jan. 14, 2025

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 3.29 dB at 0.164 MHz
3.2	15.109	Radiated Emission	< 15.109 limits	PASS	Under limit 3.99 dB at 34.85 MHz

Conformity Assessment Condition:
The test results (PASS/FAIL) with all measurement uncertainty excluded are presented against the regulation limits or in accordance with the requirements stipulated by the applicant/manufacturer who shall bear all the risks of non-compliance that may potentially occur if measurement uncertainty is taken into account. Please refer to each test results in the section “Measurement Uncertainty”.
Disclaimer:
The product specifications of the EUT presented in the test report that may affect the test assessments are declared by the manufacturer who shall take full responsibility for the authenticity.

1. General Description

1.1. Applicant

Xiaomi Communications Co., Ltd.
#019, 9th Floor, Building 6, 33 Xi'erqi Middle Road, Haidian District, Beijing, China, 100085

1.2. Manufacturer

Xiaomi Communications Co., Ltd.
#019, 9th Floor, Building 6, 33 Xi'erqi Middle Road, Haidian District, Beijing, China, 100085

1.3. Product Feature of Equipment Under Test

Product Feature	
Equipment	Mobile Phone
Brand Name	Redmi
Model Name	25028RN03L
FCC ID	2AFZZRN03L
EUT supports Radios application	GSM/WCDMA/LTE WLAN 2.4GHz 802.11b/g/n HT20 WLAN 5GHz 802.11a/n HT20/HT40 WLAN 5GHz 802.11ac VHT20/VHT40/VHT80 Bluetooth BR/EDR/LE GNSS/FM
IMEI Code	Conduction: 864596070041480/864596070041498 for Sample 1 864596070045846/864596070045853 for Sample 2 864596070037967/864596070037975 for Sample 3 864596070055860/864596070055878 for Sample 4 Radiation: 864596070039740/864596070039757 for Sample 1 864596070045846/864596070045853 for Sample 2 864596070042702/864596070042710 for Sample 3 864596070060969/864596070060977 for Sample 4
HW Version	135100C3Z
SW Version	Android 15
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 samples under test, and the differences are shown in the following table. According to the difference, we chose sample 1 to perform full test and sample 2/3/4 to verify the worst cases.

Sample	Memory	Battery	Screen
Sample 1	6+128G	Battery 1	1st Screen
Sample 2	3+64G	Battery 2	2nd Screen
Sample 3	4+128G	Battery 3	4th Screen
Sample 4	4+64G	Battery 1	3rd Screen

1.4. Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx Frequency	GSM850: 824 MHz ~ 849 MHz GSM1900: 1850MHz ~ 1910MHz WCDMA Band II: 1850 MHz ~ 1910 MHz WCDMA Band IV : 1710 MHz ~ 1755 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 13 : 777 MHz ~ 787 MHz LTE Band 26 : 814 MHz ~ 849 MHz LTE Band 38 : 2570 MHz ~ 2620 MHz LTE Band 41 : 2496 MHz ~ 2690 MHz LTE Band 66 : 1710 MHz ~ 1780 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
Rx Frequency	GSM850: 869 MHz ~ 894 MHz GSM1900: 1930 MHz ~ 1990 MHz WCDMA Band II: 1930 MHz ~ 1990 MHz WCDMA Band IV : 2110 MHz ~ 2155 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 13 : 746 MHz ~ 756 MHz LTE Band 26 : 859 MHz ~ 894 MHz LTE Band 38: 2570 MHz ~ 2620 MHz LTE Band 41 : 2496 MHz ~ 2690 MHz LTE Band 66 : 2110 MHz~ 2180 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

Antenna Type	WWAN : PIFA Antenna WLAN : PIFA Antenna Bluetooth : PIFA Antenna GNSS: PIFA Antenna FM : External Earphone Antenna
Type of Modulation	WCDMA : BPSK HSPA : QPSK HSPA+ : 16QAM DC-HSDPA : 64QAM LTE: QPSK / 16QAM / 64QAM 802.11b: DSSS (DBPSK / DQPSK / CCK) 802.11a/g/n: OFDM (BPSK / QPSK / 16QAM / 64QAM) 802.11ac: OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM) 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. (Kunshan) is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.02.

Test Firm	Sporton International Inc. (Kunshan)		
Test Site Location	No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300 People's Republic of China TEL : +86-512-57900158		
Test Site No.	**Sporton Site No.**	**FCC Designation No.**	**FCC Test Firm Registration No.**
	CO01-KS 03CH07-KS	CN1257	314309

1.7. Test Software

Item	Site	Manufacturer	Name	Version
1.	03CH07-KS	AUDIX	E3	210616
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

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 frequency or to 40 GHz, whichever is lower).

Test Items	Function Type
AC Conducted Emission	Mode 1 : GSM 850 Rx(Low) + Bluetooth Idle + WLAN (2.4G) Idle + Camera(Rear) + Earphone + Battery 1 + USB Cable 1(Charging from Adapter 1) + SIM 1 for Sample 1 Mode 2 : WCDMA band V Rx(Middle) + Bluetooth Idle + WLAN (5G) Idle + Camera(Front) + Earphone + Battery 1 + USB Cable 2(Charging from Adapter 2) + SIM 2 for Sample 1 Mode 3 : LTE B13 Rx(High) + Bluetooth Idle + WLAN(5G) Idle + FM RX + Earphone + Battery 1 + USB Cable 3(Charging from Adapter 1) + SIM 1 for Sample 1 Mode 4 : LTE B5 Rx(Low) + Bluetooth Idle + WLAN (2.4G) Idle + GNSS Rx + Earphone + Battery 1 + USB Cable 4(Charging from Adapter 1) + SIM 1 for Sample 1 Mode 5 : LTE B26 Rx(Middle) + Bluetooth Idle + WLAN (5G) Idle + MPEG4(Run Color Bar) + Earphone + Battery 1 + USB Cable 1(Charging from Adapter 1) + SIM 1 for Sample 1 Mode 6 : LTE B26 Rx(High) + Bluetooth Idle + WLAN(2.4G) Idle + Camera(Rear) + Earphone + Battery 1 + USB Cable 1(Data Link with Notebook) + EUT (eMMC) USB Data Link to PC/NB + SIM 1 for Sample 1 Mode 7 : GSM 850 Rx(Low) + Bluetooth Idle + WLAN (2.4G) Idle + Camera(Rear) + Earphone + Battery 1 + USB Cable 1(Data Link with Notebook) + PC/NB USB Data Link to EUT (eMMC) + SIM 1 for Sample 1 Mode 8 : GSM 850 Rx(Low) + Bluetooth Idle + WLAN (2.4G) Idle + Camera(Rear) + Earphone + Battery 1 + USB Cable 1(Data Link with Notebook) + EUT (SD card) USB Data Link to PC/NB + SIM 1 for Sample 1 Mode 9 : GSM 850 Rx(Low) + Bluetooth Idle + WLAN (2.4G) Idle + Camera(Rear) + Earphone + Battery 1 + USB Cable 1(Data Link with Notebook) + PC/NB USB Data Link to EUT (SD card) + SIM 1 for Sample 1 Mode 10 : GSM 850 Rx(Low) + Bluetooth Idle + WLAN (2.4G) Idle + Camera(Rear) + Earphone + Battery 1 + USB Cable 2(Data Link with Notebook) + EUT (eMMC) USB Data Link to PC/NB + SIM 1 for Sample 1 Mode 11 : GSM 850 Rx(Low) + Bluetooth Idle + WLAN (2.4G) Idle + Camera(Rear) + Earphone + Battery 1 + USB Cable 3(Data Link with Notebook) + EUT (eMMC) USB Data Link to PC/NB + SIM 1 for Sample 1

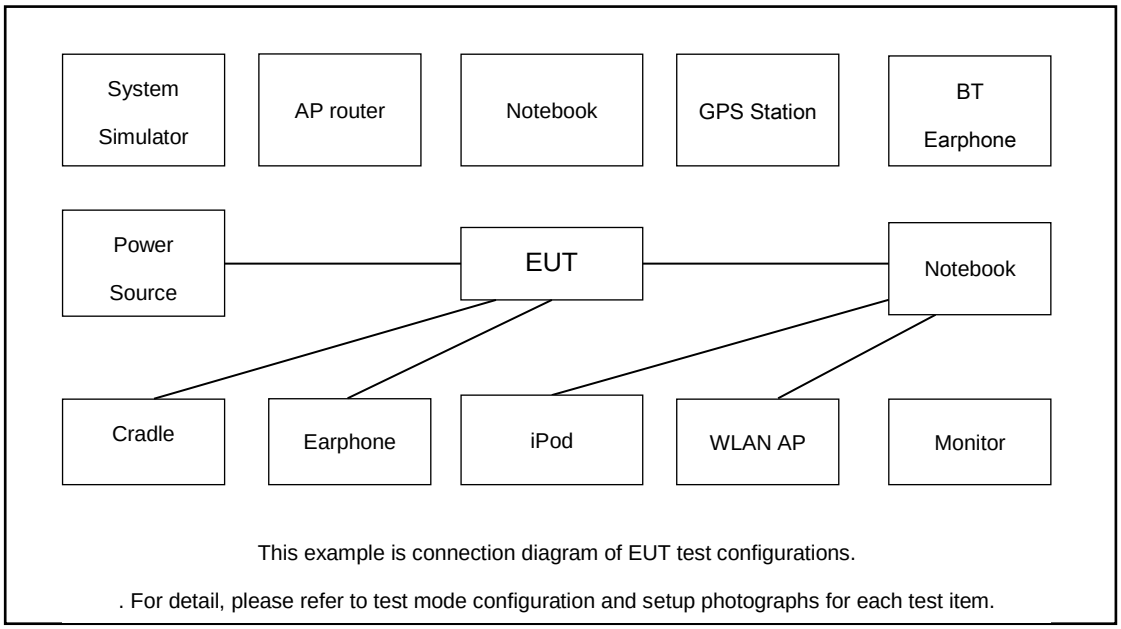
AC Conducted Emission	Mode 12 : GSM 850 Rx(Low) + Bluetooth Idle + WLAN (2.4G) Idle + Camera(Rear) + Earphone + Battery 1 + USB Cable 4(Data Link with Notebook) + EUT (eMMC) USB Data Link to PC/NB + SIM 1 for Sample 1 Mode 13 : GSM 850 Rx(Low) + Bluetooth Idle + WLAN (2.4G) Idle + Camera(Rear) + Earphone + Battery 2 + USB Cable 1(Data Link with Notebook) + EUT (eMMC) USB Data Link to PC/NB + SIM 1 for Sample 2 Mode 14 : GSM 850 Rx(Low) + Bluetooth Idle + WLAN (2.4G) Idle + Camera(Rear) + Earphone + Battery 3 + USB Cable 1(Data Link with Notebook) + EUT (eMMC) USB Data Link to PC/NB + SIM 1 for Sample 3 Mode 15 : GSM 850 Rx(Low) + Bluetooth Idle + WLAN (2.4G) Idle + Camera(Rear) + Earphone + Battery 1 + USB Cable 1(Data Link with Notebook) + EUT (eMMC) USB Data Link to PC/NB + SIM 1 for Sample 4 Mode 16 : GSM 850 Rx(Low) + Bluetooth Idle + WLAN (2.4G) Idle + Camera(Rear) + Earphone + Battery 2 + USB Cable 1(Charging from Adapter 1) + SIM 1 for Sample 2 Mode 17 : GSM 850 Rx(Low) + Bluetooth Idle + WLAN (2.4G) Idle + Camera(Rear) + Earphone + Battery 3 + USB Cable 1(Charging from Adapter 1) + SIM 1 for Sample 3 Mode 18 : GSM 850 Rx(Low) + Bluetooth Idle + WLAN (2.4G) Idle + Camera(Rear) + Earphone + Battery 1 + USB Cable 1(Charging from Adapter 1) + SIM 1 for Sample 4
Radiated Emissions	Mode 1 : GSM 850 Rx(Low) + Bluetooth Idle + WLAN (2.4G) Idle + Camera(Rear) + Earphone + Battery 1 + USB Cable 1(Charging from Adapter 1) + SIM 1 for Sample 1 Mode 2 : WCDMA band V Rx(Middle) + Bluetooth Idle + WLAN (5G) Idle + Camera(Front) + Earphone + Battery 1 + USB Cable 2(Charging from Adapter 2) + SIM 2 for Sample 1 Mode 3 : LTE B13 Rx(High) + Bluetooth Idle + WLAN(5G) Idle + FM RX + Earphone + Battery 1 + USB Cable 3(Charging from Adapter 2) + SIM 2 for Sample 1 Mode 4 : LTE B5 Rx(Low) + Bluetooth Idle + WLAN (2.4G) Idle + GNSS Rx + Earphone + Battery 1 + USB Cable 4(Charging from Adapter 2) + SIM 2 for Sample 1 Mode 5 : LTE B26 Rx(Middle) + Bluetooth Idle + WLAN (5G) Idle + MPEG4(Run Color Bar) + Earphone + Battery 1 + SIM 2 for Sample 1 Mode 6 : LTE B26 Rx(High) + Bluetooth Idle + WLAN(2.4G) Idle + Camera(Front) + Earphone + Battery 1 + USB Cable 1(Data Link with Notebook) + EUT (eMMC) USB Data Link to PC/NB + SIM 2 for Sample 1 Mode 7 : WCDMA band V Rx(Middle) + Bluetooth Idle + WLAN (5G) Idle + Camera(Front) + Earphone + Battery 1 + USB Cable 1(Data Link with Notebook) + PC/NB USB Data Link to EUT (eMMC) + SIM 2 for Sample 1 Mode 8 : WCDMA band V Rx(Middle) + Bluetooth Idle + WLAN (5G) Idle + Camera(Front) + Earphone + Battery 1 + USB Cable 1(Data Link with Notebook) + EUT(SD card) USB Data Link to PC/NB + SIM 2 for Sample 1

Radiated Emissions	Mode 9 : WCDMA band V Rx(Middle) + Bluetooth Idle + WLAN (5G) Idle + Camera(Front) + Earphone + Battery 1 + USB Cable 1(Data Link with Notebook) + PC/NB USB Data Link to EUT(SD card) + SIM 2 for Sample 1 Mode 10 : WCDMA band V Rx(Middle) + Bluetooth Idle + WLAN (5G) Idle + Camera(Front) + Earphone + Battery 1 + USB Cable 2(Data Link with Notebook) + PC/NB USB Data Link to EUT (eMMC) + SIM 2 for Sample 1 Mode 11 : WCDMA band V Rx(Middle) + Bluetooth Idle + WLAN (5G) Idle + Camera(Front) + Earphone + Battery 1 + USB Cable 3(Data Link with Notebook) + PC/NB USB Data Link to EUT (eMMC) + SIM 2 for Sample 1 Mode 12 : WCDMA band V Rx(Middle) + Bluetooth Idle + WLAN (5G) Idle + Camera(Front) + Earphone + Battery 1 + USB Cable 4(Data Link with Notebook) + PC/NB USB Data Link to EUT (eMMC) + SIM 2 for Sample 1 Mode 13 : WCDMA band V Rx(Middle) + Bluetooth Idle + WLAN (5G) Idle + Camera(Front) + Earphone + Battery 2 + USB Cable 2(Data Link with Notebook) + PC/NB USB Data Link to EUT (eMMC) + SIM 2 for Sample 2 Mode 14 : WCDMA band V Rx(Middle) + Bluetooth Idle + WLAN (5G) Idle + Camera(Front) + Earphone + Battery 3 + USB Cable 2(Data Link with Notebook) + PC/NB USB Data Link to EUT (eMMC) + SIM 2 for Sample 3 Mode 15 : WCDMA band V Rx(Middle) + Bluetooth Idle + WLAN (5G) Idle + Camera(Front) + Earphone + Battery 1 + USB Cable 2(Data Link with Notebook) + PC/NB USB Data Link to EUT (eMMC) + SIM 2 for Sample 4 Mode 16 : WCDMA band V Rx(Middle) + Bluetooth Idle + WLAN (5G) Idle + Camera(Front) + Earphone + Battery 2 + USB Cable 2(Charging from Adapter 2) + SIM 2 for Sample 2 Mode 17 : WCDMA band V Rx(Middle) + Bluetooth Idle + WLAN (5G) Idle + Camera(Front) + Earphone + Battery 3 + USB Cable 2(Charging from Adapter 2) + SIM 2 for Sample 3 Mode 18 : WCDMA band V Rx(Middle) + Bluetooth Idle + WLAN (5G) Idle + Camera(Front) + Earphone + Battery 1 + USB Cable 2(Charging from Adapter 2) + SIM 2 for Sample 4

Remark:

1. The worst case of AC is mode 1; only the test data of this mode is reported.
2. The worst case of RE is mode 16; 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



This example is connection diagram of EUT test configurations.

. For detail, please refer to test mode configuration and setup photographs for each test item.

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.	LTE Base Station	Anritus	MT8821C	N/A	N/A	Unshielded,1.8m
2.	GNSS Station	R&S	SMBV100A	258305	N/A	N/A
3.	WLAN AP	D-link	DIR-655	KA21R655B1	N/A	Unshielded,1.8m
4.	WLAN AP	TP-Link	TL-WDR5600	N/A	N/A	Unshielded,1.8m
5.	Bluetooth Earphone	Xiaomi	LYEJ02LM	N/A	N/A	N/A
6.	Notebook	Lenovo	G480	QDS-BRCM1050I	N/A	AC I/P: Unshielded, 1.8 m DC O/P: Shielded, 1.8 m
7.	Notebook	Lenovo	V130-14IKB001	N/A	N/A	AC I/P: Unshielded, 1.8 m DC O/P: Shielded, 1.8 m
8.	Hard Disk	Lenovo	F310	DoC	Shielded, 1.2m	N/A
9.	Hard disk	KINGSHARE	KSP6120G	N/A	N/A	N/A
10.	SD Card	Kingston	8GB	N/A	N/A	N/A
11.	SD Card	SanDisk	Uitra	N/A	N/A	N/A
12.	Earphone	N/A	N/A	N/A	N/A	N/A

2.4. EUT Operation Test Setup

The EUT was in GSM or WCDMA 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 FM function to make the EUT receive continuous signals from FM station.
5. Turn on GNSS function to make the EUT receive continuous signals from GNSS 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.

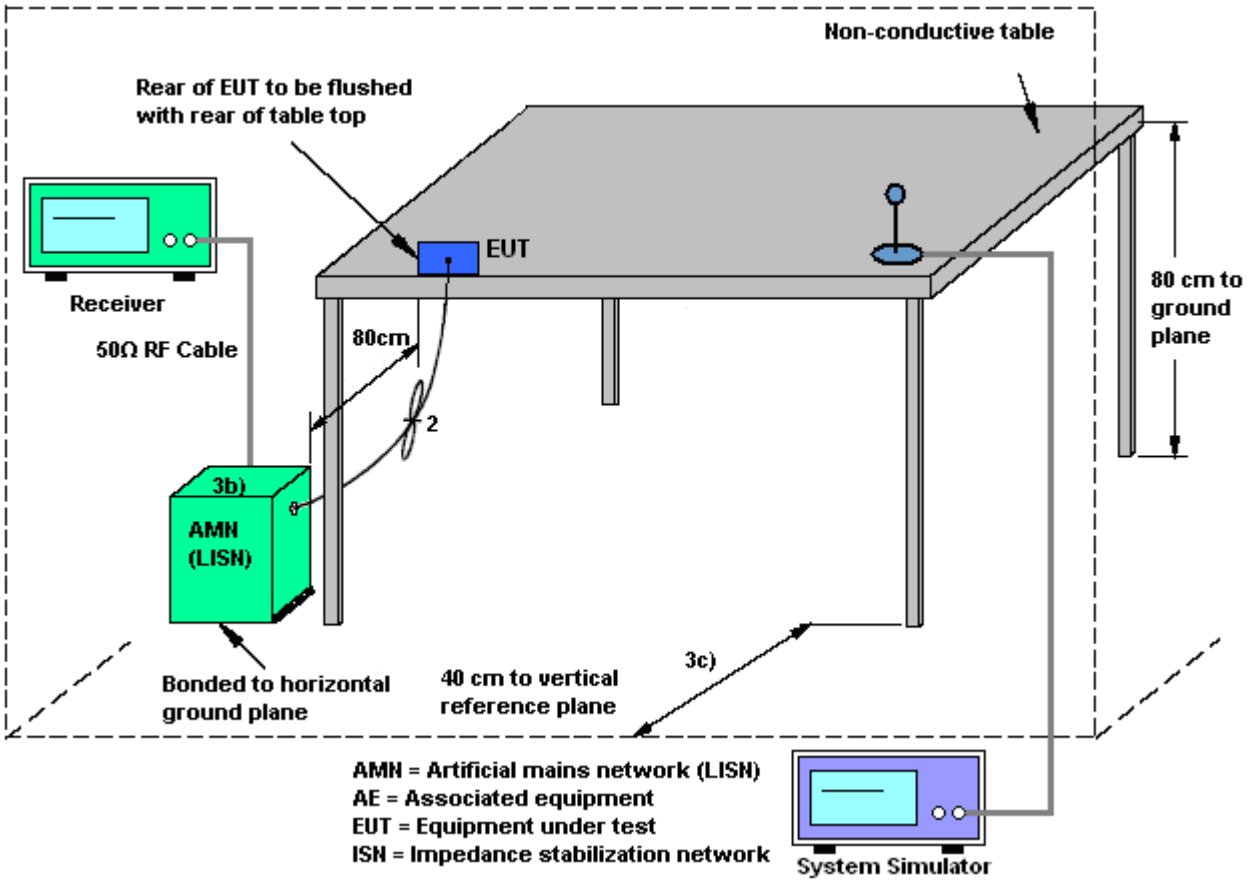
3.1.2 Measuring Instruments

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

3.1.3 Test Procedure

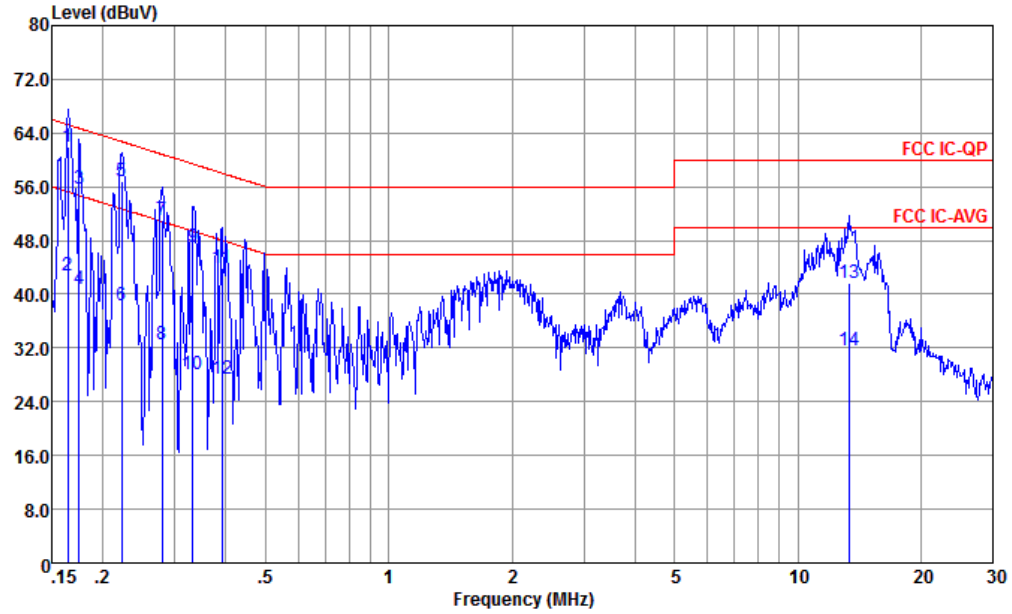
1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
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

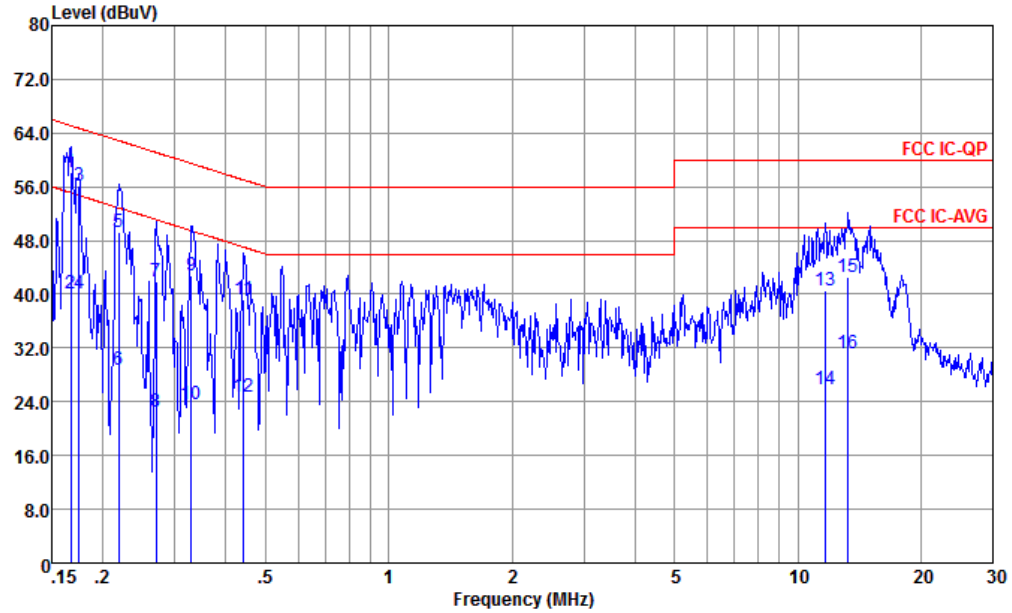
Test Engineer :	Amos Zhang	**Temperature :**	25.3 ~26.2℃
		Relative Humidity :	38 ~ 40%
Test Voltage :	120Vac / 60Hz	**Phase :**	Line
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Site : CO01-KS
Condition : FCC IC-QP LISN-060105-L 2024 LINE

		Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
		MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	*	0.164	61.96	-3.29	65.25	51.40	0.11	10.45	QP
2		0.164	42.76	-12.49	55.25	32.20	0.11	10.45	Average
3		0.175	55.75	-8.97	64.72	45.19	0.10	10.46	QP
4		0.175	40.75	-13.97	54.72	30.19	0.10	10.46	Average
5		0.222	56.75	-5.99	62.74	46.21	0.08	10.46	QP
6		0.222	38.35	-14.39	52.74	27.81	0.08	10.46	Average
7		0.279	51.06	-9.79	60.85	40.50	0.09	10.47	QP
8		0.279	32.46	-18.39	50.85	21.90	0.09	10.47	Average
9		0.332	47.13	-12.27	59.40	36.60	0.05	10.48	QP
10		0.332	28.03	-21.37	49.40	17.50	0.05	10.48	Average
11		0.391	43.97	-14.06	58.03	33.49	-0.01	10.49	QP
12		0.391	27.37	-20.66	48.03	16.89	-0.01	10.49	Average
13		13.337	41.57	-18.43	60.00	31.50	-0.20	10.27	QP
14		13.337	31.67	-18.33	50.00	21.60	-0.20	10.27	Average

Test Engineer :	Amos Zhang	**Temperature :**	25.3 ~26.2℃
		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 IC-QP LISN-060105-N 2024 NEUTRAL

		Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
		MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	*	0.167	58.18	-6.94	65.12	47.61	0.12	10.45	QP
2		0.167	40.18	-14.94	55.12	29.61	0.12	10.45	Average
3		0.175	56.18	-8.54	64.72	45.59	0.13	10.46	QP
4		0.175	40.08	-14.64	54.72	29.49	0.13	10.46	Average
5		0.219	49.34	-13.54	62.88	38.81	0.07	10.46	QP
6		0.219	28.74	-24.14	52.88	18.21	0.07	10.46	Average
7		0.270	41.92	-19.20	61.12	31.51	-0.06	10.47	QP
8		0.270	22.62	-28.50	51.12	12.21	-0.06	10.47	Average
9		0.329	42.86	-16.63	59.49	32.51	-0.13	10.48	QP
10		0.329	23.66	-25.83	49.49	13.31	-0.13	10.48	Average
11		0.442	39.11	-17.91	57.02	28.80	-0.14	10.45	QP
12		0.442	24.81	-22.21	47.02	14.50	-0.14	10.45	Average
13		11.683	40.51	-19.49	60.00	30.49	-0.24	10.26	QP
14		11.683	25.81	-24.19	50.00	15.79	-0.24	10.26	Average
15		13.267	42.56	-17.44	60.00	32.50	-0.21	10.27	QP
16		13.267	31.26	-18.74	50.00	21.20	-0.21	10.27	Average

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.

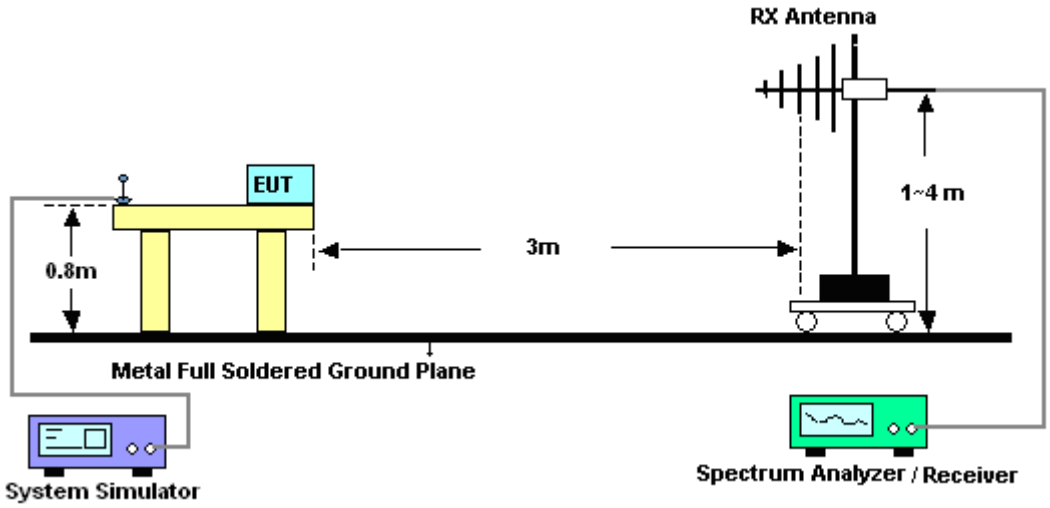
3.2.3. Test Procedures

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 EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
4. The table was rotated 360 degrees to determine the position of the highest radiation.
5. 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.
6. 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.
7. 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).
8. 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.

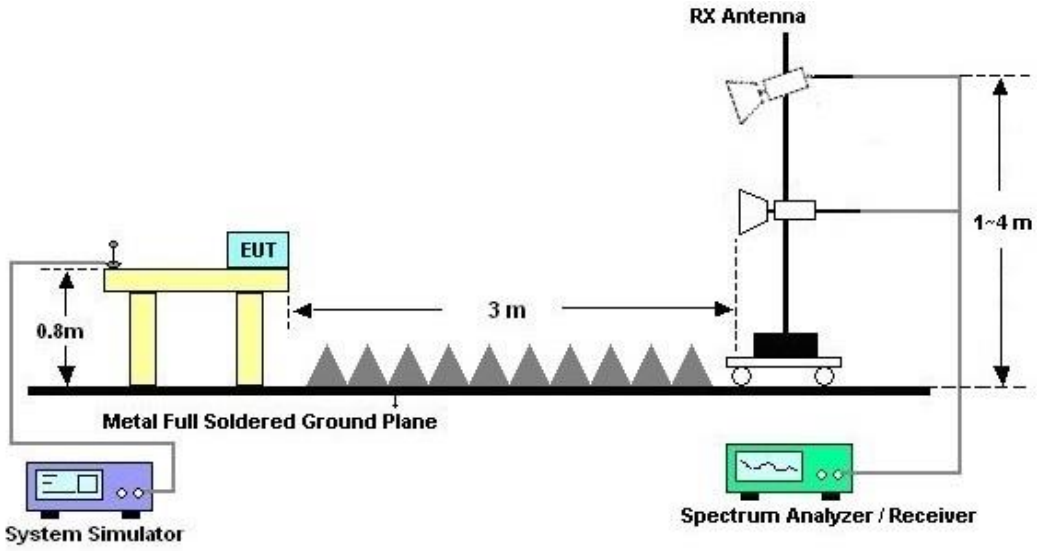
9. Emission level (dBμV/m) = 20 log Emission level (μV/m)
10. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level
11. Exploratory radiated emissions testing of handheld and/or body-worn devices shall include rotation of the EUT through three orthogonal axes (X/Y/Z Plane) to determine the orientation (attitude) that maximizes the emissions.

3.2.4. Test Setup of Radiated Emission

For radiated emissions from 30MHz to 1GHz

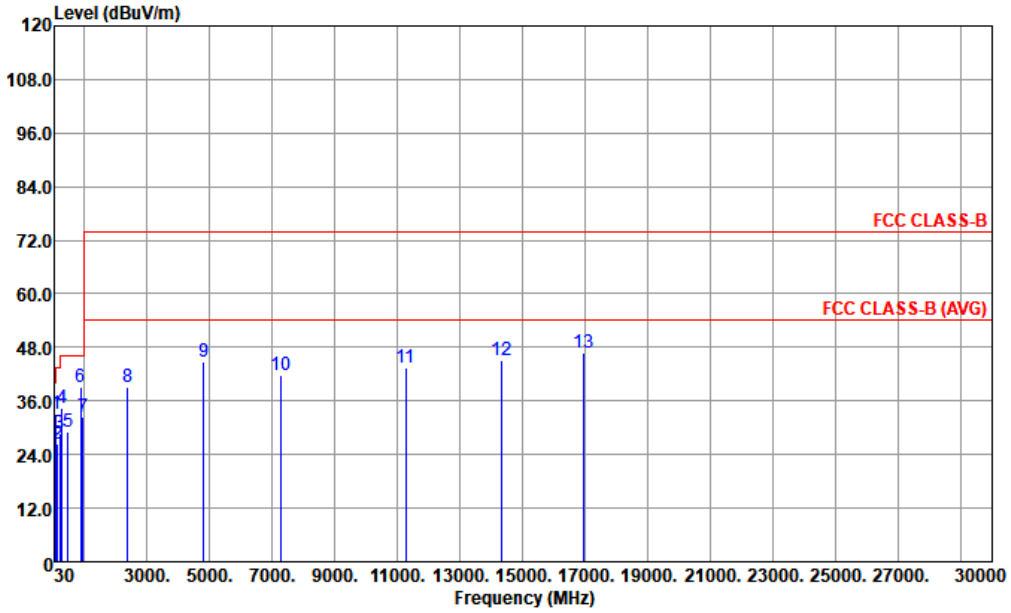


For radiated emissions above 1GHz



3.2.5. Test Result of Radiated Emission

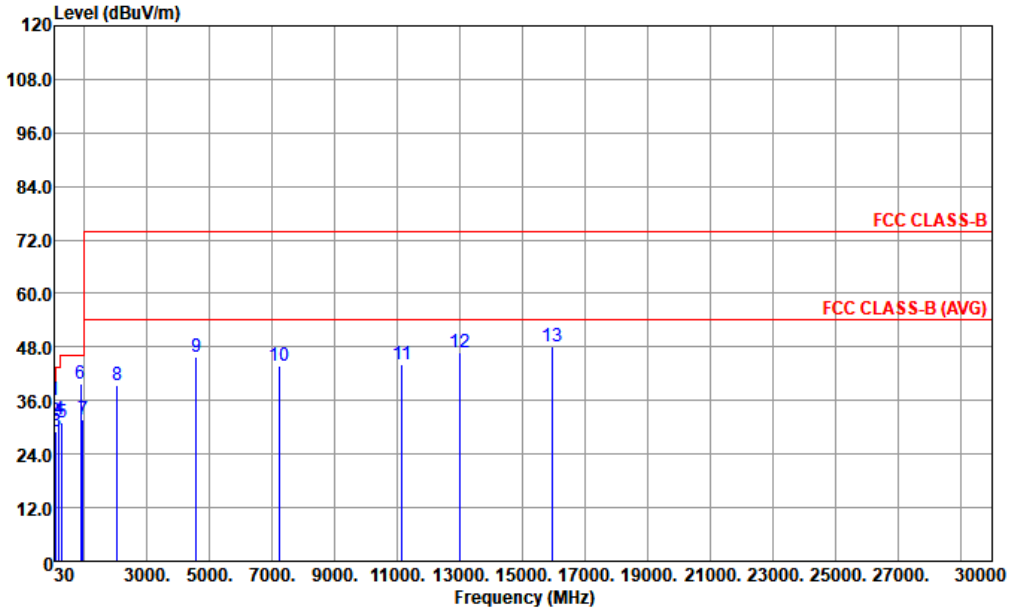
Test Engineer :	Levi Zhuo	**Temperature :**	21 ~ 22°C
		Relative Humidity :	41 ~ 42%
Test Distance :	3m	**Polarization :**	Horizontal
Remark :	#6 is system simulator signal which can be ignored.		



Site : 03CH07-KS
Condition : FCC CLASS-B 3m 3117 00240132 HORIZONTAL

	Freq	Level	Over Limit	Limit Line	Read 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	99.84	33.25	-10.25	43.50	47.82	15.96	1.53	32.06	---	---	Peak
2	147.37	26.36	-17.14	43.50	39.21	17.36	1.85	32.06	---	---	Peak
3	201.69	28.89	-14.61	43.50	43.95	14.86	2.16	32.08	---	---	Peak
4	277.35	34.58	-11.42	46.00	45.45	18.66	2.55	32.08	---	---	Peak
5	467.47	28.99	-17.01	46.00	34.59	23.34	3.30	32.24	---	---	Peak
6 p	881.66	39.24			37.16	29.02	4.51	31.45	---	---	Peak
7	953.44	32.42	-13.58	46.00	27.84	30.58	4.70	30.70	---	---	Peak
8	2377.00	39.22	-34.78	74.00	62.57	31.98	7.60	62.93	---	---	Peak
9	4808.00	44.71	-29.29	74.00	63.68	34.22	10.91	64.10	---	---	Peak
10	7273.00	41.87	-32.13	74.00	56.44	35.80	13.63	64.00	---	---	Peak
11	11251.00	43.60	-30.40	74.00	49.61	38.30	17.51	61.82	---	---	Peak
12	14311.00	45.24	-28.76	74.00	48.19	39.44	19.71	62.10	---	---	Peak
13	16929.00	46.66	-27.34	74.00	47.06	42.06	21.00	63.46	---	---	Peak

Test Engineer :	Levi Zhuo	Temperature :	21 ~ 22°C
		Relative Humidity :	41 ~ 42%
Test Distance :	3m	Polarization :	Vertical
Remark :	#6 is system simulator signal which can be ignored.		



Site : 03CH07-KS
Condition : FCC CLASS-B 3m 3117 00240132 VERTICAL

	Freq	Level	Over Limit	Limit Line	Read 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 p	34.85	36.01	-3.99	40.00	44.84	22.47	0.90	32.20	100	147	Peak
2	46.49	31.49	-8.51	40.00	46.57	16.05	1.03	32.16	---	---	Peak
3	97.90	29.00	-14.50	43.50	43.90	15.63	1.51	32.04	---	---	Peak
4	173.56	31.62	-11.88	43.50	46.53	15.16	2.00	32.07	---	---	Peak
5	275.41	31.13	-14.87	46.00	41.97	18.68	2.54	32.06	---	---	Peak
6	881.66	39.66			37.58	29.02	4.51	31.45	---	---	Peak
7	946.65	31.86	-14.14	46.00	27.65	30.31	4.68	30.78	---	---	Peak
8	2037.00	39.36	-34.64	74.00	63.60	31.47	7.00	62.71	---	---	Peak
9	4570.00	45.81	-28.19	74.00	65.30	34.13	10.53	64.15	---	---	Peak
10	7205.00	43.62	-30.38	74.00	58.22	35.80	13.57	63.97	---	---	Peak
11	11149.00	43.98	-30.02	74.00	50.20	38.22	17.44	61.88	---	---	Peak
12	13002.00	46.64	-27.36	74.00	50.70	39.10	18.51	61.67	---	---	Peak
13	15926.00	48.15	-25.85	74.00	49.64	40.84	20.61	62.94	---	---	Peak

Note:

1. Level(dBμV/m) = Read Level(dBμV) + Antenna Factor(dB/m) + Cable Loss(dB) - Preamp Factor(dB)
2. 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. 11, 2024	Dec. 27, 2024	Oct. 10, 2025	Radiation (03CH07-KS)
EXA Spectrum Analyzer	Keysight	N9010A	MY55370528	10Hz-44G,MAX 30dB	Oct. 11, 2024	Dec. 27, 2024	Oct. 10, 2025	Radiation (03CH07-KS)
Bilog Antenna	TESEQ	CBL 6111D	49921	30MHz-1GHz	Apr. 18, 2024	Dec. 27, 2024	Apr. 17, 2025	Radiation (03CH07-KS)
Double Ridge Horn Antenna	ETS-Lindgren	3117	00240132	1GHz~18GHz	Jul. 06, 2024	Dec. 27, 2024	Jul. 05, 2025	Radiation (03CH07-KS)
SHF-EHF Horn	Com-power	AH-840	101070	18GHz~40GHz	Jan. 27, 2024	Dec. 27, 2024	Jan. 26, 2025	Radiation (03CH07-KS)
Amplifier	EM	EM18G40GGA	060851	18~40GHz	Jan. 03, 2024	Dec. 27, 2024	Jan. 02, 2025	Radiation (03CH07-KS)
Amplifier	SONOMA	310N	413740	9KHz-1GHz	Jan. 03, 2024	Dec. 27, 2024	Jan. 02, 2025	Radiation (03CH07-KS)
Amplifier	Keysight	83017A	MY57280106	0.5GHz-26.5GHz	Apr. 18, 2024	Dec. 27, 2024	Apr. 17, 2025	Radiation (03CH07-KS)
AC Power Source	Chroma	61601	616010002473	N/A	NCR	Dec. 27, 2024	NCR	Radiation (03CH07-KS)
Turn Table	EM	EM 1000-T	N/A	0~360 degree	NCR	Dec. 27, 2024	NCR	Radiation (03CH07-KS)
Antenna Mast	EM	EM 1000-A	N/A	1 m~4 m	NCR	Dec. 27, 2024	NCR	Radiation (03CH07-KS)
EMI Receiver	R&S	ESCI7	100768	9kHz~7GHz;	Apr. 18, 2024	Dec. 29, 2024	Apr. 17, 2025	Conduction (CO01-KS)
AC LISN (for auxiliary equipment)	MessTec	AN3016	060103	9kHz~30MHz	Aug. 20, 2024	Dec. 29, 2024	Aug. 19, 2025	Conduction (CO01-KS)
AC LISN	MessTec	AN3016	060105	9kHz~30MHz	Apr. 18, 2024	Dec. 29, 2024	Apr. 17, 2025	Conduction (CO01-KS)
AC Power Source	Chroma	61602	ABP000000811	AC 0V~300V, 45Hz~1000Hz	Oct. 09, 2024	Dec. 29, 2024	Oct. 08, 2025	Conduction (CO01-KS)

NCR: No Calibration Required

5. Measurement Uncertainty

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**2.84 dB**

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**6.06 dB**

Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**5.16 dB**

Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**5.28 dB**

---------- THE END ----------