FCC Test Report

APPLICANT	:	Motorola Mobility LLC
EQUIPMENT	:	Mobile Cellular Phone
BRAND NAME	:	Motorola
MODEL NAME	:	XT2521-2
FCC ID	:	IHDT56AT1
STANDARD	:	47 CFR Part 15 Subpart B
CLASSIFICATION	:	Certification
TEST DATE(S)	:	Sep. 19, 2024 ~ Sep. 28, 2024

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

Jason Jia

Approved by: Jason Jia

ACCREDITED Cert #5145.01

Sporton International Inc. (ShenZhen)

1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan, Shenzhen, 518055

People's Republic of China

TABLE OF CONTENTS

REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FC482104	Rev. 01	Initial issue of report	Oct. 19, 2024

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 6.80 dB at 15.070 MHz
3.2	15.109	Radiated Emission	< 15.109 limits	PASS	Under limit 5.53 dB at 38.730 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

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	XT2521-2
FCC ID	IHDT56AT1
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 GNSS/NFC/FM
IMEI Code	Conduction: 355811120027892/355811120027900 for Sample 1 356072250004339 for Sample 2 355811120040895/355811120040903 for Sample 3 Radiation: 355811120027959/355811120027967 for Sample 1 356072250003364 for Sample 2 355811120041257/355811120041265 for Sample 3
HW Version	DVT2
SW Version	VVTA35.44
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 type of EUT, the differences could be referred to the XT2521-2_Operational Description of Product Equality Declaration which is exhibit separately. According to the difference, we chose sample 1 to perform full test and sample 2/3 to verify the worst cases of sample 1.

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 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 NFC : 13.56 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 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 NFC : 13.56 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 NFC: Loop Antenna FM : External Earphone Antenna
Type of Modulation	GSM/GPRS: GMSK EDGE(MCS 0-4): GMSK / (MCS 5-9): 8PSK

	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 NFC: ASK FM

1.5. Modification of EUT

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

1.6. Test Location

Sporton International Inc. (Shenzhen) is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.01.

Test Firm	Sporton International Inc. (Shenzhen)		
Test Site Location	1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan, Shenzhen, 518055 People's Republic of China TEL: +86-755-86379589 FAX: +86-755-86379595		
Test Site No.	**Sporton Site No.**	**FCC Designation No.**	**FCC Test Firm Registration No.**
	CO01-SZ	CN1256	421272

Test Firm	Sporton International Inc. (Shenzhen)		
Test Site Location	101, 1st Floor, Block B, Building 1, No. 2, Tengfeng 4th Road, Fenghuang Community, Fuyong Street, Baoan District, Shenzhen City, Guangdong Province 518103 People's Republic of China TEL: +86-755-86066985		
Test Site No.	**Sporton Site No.**	**FCC Designation No.**	**FCC Test Firm Registration No.**
	03CH05-SZ	CN1256	421272

1.7. Test Software

Item	Site	Manufacturer	Name	Version
1.	03CH05-SZ	AUDIX	E3	6.2009-8-24
2.	CO01-SZ	AUDIX	E3	6.120613b

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(AOHAI)	**Model Name**	MC-201L
AC Adapter 1(EU)	**Brand Name**	Motorola(AOHAI)	**Model Name**	MC-202L
AC Adapter 1(UK)	**Brand Name**	Motorola(AOHAI)	**Model Name**	MC-203L
AC Adapter 1(IN)	**Brand Name**	Motorola(AOHAI)	**Model Name**	MC-204
AC Adapter 1(AU)	**Brand Name**	Motorola(AOHAI)	**Model Name**	MC-205L
AC Adapter 1(AR)	**Brand Name**	Motorola(AOHAI)	**Model Name**	MC-206L
AC Adapter 1(PRC)	**Brand Name**	Motorola(AOHAI)	**Model Name**	MC-208L
AC Adapter 2(US)	**Brand Name**	Motorola(SALCOMP)	**Model Name**	MC-201L
AC Adapter 2(EU)	**Brand Name**	Motorola(SALCOMP)	**Model Name**	MC-202L
AC Adapter 2(UK)	**Brand Name**	Motorola(SALCOMP)	**Model Name**	MC-203L
AC Adapter 2(AU)	**Brand Name**	Motorola(SALCOMP)	**Model Name**	MC-205L
AC Adapter 2(AR)	**Brand Name**	Motorola(SALCOMP)	**Model Name**	MC-206L
AC Adapter 2(BR)	**Brand Name**	Motorola(SALCOMP)	**Model Name**	MC-207L
AC Adapter 2(PRC)	**Brand Name**	Motorola(SALCOMP)	**Model Name**	MC-208L
AC Adapter 2(CHILE)	**Brand Name**	Motorola(SALCOMP)	**Model Name**	MC-209L
AC Adapter 3(US)	**Brand Name**	Motorola(CHENYANG)	**Model Name**	MC-201L
AC Adapter 3(EU)	**Brand Name**	Motorola(CHENYANG)	**Model Name**	MC-202L
AC Adapter 3(AR)	**Brand Name**	Motorola(CHENYANG)	**Model Name**	MC-206L
AC Adapter 3(BR)	**Brand Name**	Motorola(CHENYANG)	**Model Name**	MC-207L
Battery 1	**Brand Name**	Motorola(ATL)	**Model Name**	RL52
Battery 2	**Brand Name**	Motorola(Jiade)	**Model Name**	RL52
Battery 3	**Brand Name**	Motorola(COSMX)	**Model Name**	RL52
USB Cable 1	**Brand Name**	Motorola(Yihuaxing)	**Model Name**	T365-020 T365-020-01 T365-020-02
USB Cable 2	**Brand Name**	Motorola(WASHIN)	**Model Name**	HX-TL-01 HX-TL-08 HX-TL-07
USB Cable 3	**Brand Name**	Motorola(Juwei)	**Model Name**	JWUB1614-T03H JWUB1705-T03H JWUB1856-T03H
USB Cable 4	**Brand Name**	Motorola(I-SHENG)	**Model Name**	SC18D38574

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).

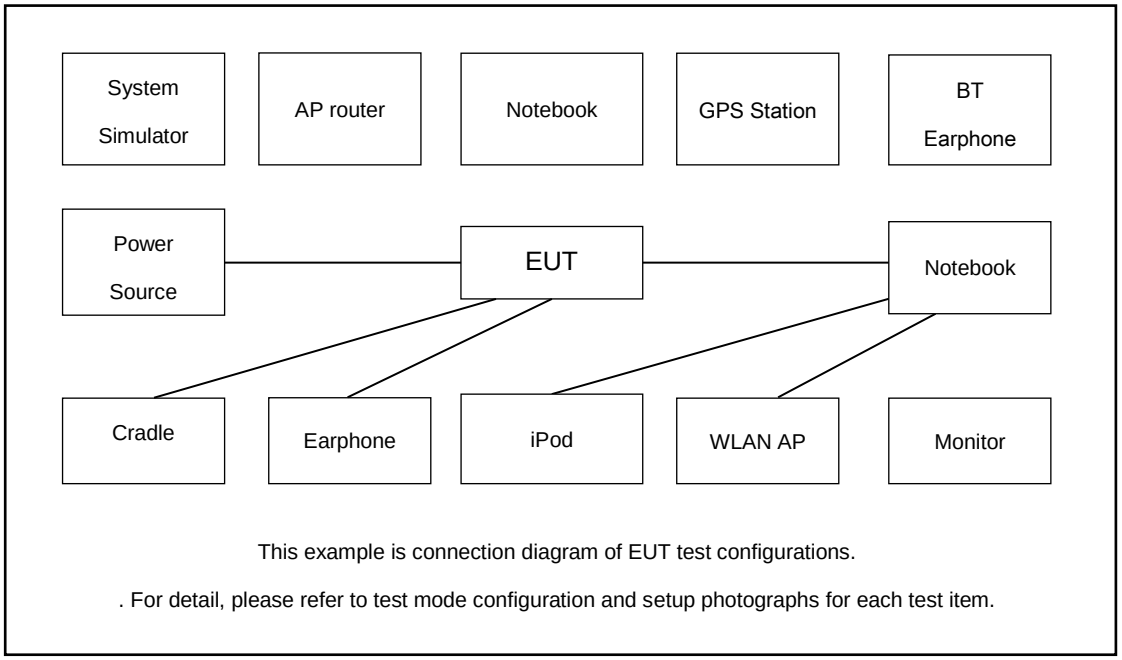
Test Items	Function Type
AC Conducted Emission	Mode 1: GSM 850 Idle(Middle CH) + Camera(Rear) + Earphone 1 + USB Cable 1 (Charging from Adapter 1) + Battery 1 + SIM 1 for Sample 1 Mode 2: LTE Band 26(Low CH) + Camera(Front) + Earphone 2 + USB Cable 2 (Charging from Adapter 2) + Battery 1 + SIM 2 for Sample 1 Mode 3: LTE Band 13 Idle(Middle CH) + MPEG4(Run Color Bar) + Earphone 1 + USB Cable 3 (Charging from Adapter 3) + Battery 1 + SIM 1 for Sample 1 Mode 4: LTE Band 5 Idle(High CH) + GNSS RX + Earphone 2 + USB Cable 4 (Charging from Adapter 3) + Battery 1 + SIM 1 for Sample 1 Mode 5: LTE Band 13 Idle(Middle CH) + FM RX(98M) + Earphone 1 + USB Cable 3 (Data Link with Notebook) + EUT (eMMC) USB Data Link to NB + Battery 1 + SIM 2 for Sample 1 Mode 6: LTE Band 13 Idle(Middle CH) + NFC RX + Earphone 1 + USB Cable 3 (Data Link with Notebook) + NB USB Data Link to EUT (eMMC) + Battery 1 + SIM 1 for Sample 1 Mode 7: LTE Band 13 Idle(Middle CH) + MPEG4(Run Color Bar) + Earphone 1 + USB Cable 3(Data Link with Notebook) + EUT (SD Card) USB Data Link to NB + Battery 1 + SIM 2 for Sample 1 Mode 8: LTE Band 13 Idle(Middle CH) + MPEG4(Run Color Bar) + Earphone 1 + USB Cable 3(Data Link with Notebook) + EUT (SD Card) USB Data Link to NB + Battery 1 + SIM 1 for Sample 1 Mode 9: LTE Band 13 Idle(Middle CH) + MPEG4(Run Color Bar) + Earphone 1 + USB Cable 3 (Charging from Adapter 3) + Battery 2 + SIM 1 for Sample 2 Mode 10 : LTE Band 13 Idle(Middle CH) + MPEG4(Run Color Bar) + Earphone 1 + USB Cable 3 (Charging from Adapter 3) + Battery 3 + SIM 1 for Sample 3

Radiated Emissions	Mode 1: GSM 850 Idle(Middle CH) + Camera(Rear) + Earphone 1 + USB Cable 1 (Charging from Adapter 1) + Battery 1 + SIM 1 for Sample 1 Mode 2: LTE Band 26(Low CH) + Camera(Front) + Earphone 2 + USB Cable 2 (Charging from Adapter 2) + Battery 1 + SIM 2 for Sample 1 Mode 3: LTE Band 13 Idle(Middle CH) + MPEG4(Run Color Bar) + Earphone 1 + USB Cable 3 (Charging from Adapter 3) + Battery 1 + SIM 1 for Sample 1 Mode 4: LTE Band 5 Idle(High CH) + GNSS RX + Earphone 2 + USB Cable 4 (Charging from Adapter 3) + Battery 1 + SIM 1 for Sample 1 Mode 5: LTE Band 13 Idle(Middle CH) + FM RX(98M) + Earphone 1 + USB Cable 1 (Data Link with Notebook) + EUT (eMMC) USB Data Link to NB + Battery 1 + SIM 2 for Sample 1 Mode 6: LTE Band 13 Idle(Middle CH) + NFC RX + Earphone 1 + USB Cable 1 (Data Link with Notebook) + NB USB Data Link to EUT (eMMC) + Battery 1 + SIM 1 for Sample 1 Mode 7: LTE Band 13 Idle(Middle CH) + MPEG4(Run Color Bar) + Earphone 1 + USB Cable 1(Data Link with Notebook) + EUT (SD Card) USB Data Link to NB + Battery 1 + SIM 2 for Sample 1 Mode 8: LTE Band 13 Idle(Middle CH) + MPEG4(Run Color Bar) + Earphone 1 + USB Cable 1(Data Link with Notebook) + EUT (SD Card) USB Data Link to NB + Battery 1 + SIM 1 for Sample 1 Mode 9: LTE Band 13 Idle(Middle CH) + MPEG4(Run Color Bar) + Earphone 1 + USB Cable 2 (Data Link with Notebook) + NB USB Data Link to EUT (eMMC)) + Battery 1 + SIM 1 for Sample1 Mode 10 : LTE Band 13 Idle(Middle CH) + MPEG4(Run Color Bar) + Earphone 1 + USB Cable 3 (Data Link with Notebook) + NB USB Data Link to EUT (eMMC) + Battery 1 + SIM 1 for Sample 1 Mode 11 : LTE Band 13 Idle(Middle CH) + MPEG4(Run Color Bar) + Earphone 1 + USB Cable 4 (Data Link with Notebook) + NB USB Data Link to EUT (eMMC) + Battery 1 + SIM 1 for Sample 1 Mode 12 : LTE Band 13 Idle(Middle CH) + MPEG4(Run Color Bar) + Earphone 1 + USB Cable 3 (Charging from Adapter 3) + Battery 2 + SIM 1 for Sample 2 Mode 13 : LTE Band 13 Idle(Middle CH) + MPEG4(Run Color Bar) + Earphone 1 + USB Cable 3 (Charging from Adapter 3) + Battery 3 + SIM 1 for Sample 3

Remark:

1. The worst case of AC is mode 3; only the test data of this mode is reported.
2. The worst case of RE is mode 3; 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 for GSM 850/LTE Band 5/13/26 and FM Rx, 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.	Base Station	Anritsu	MT8820C	N/A	N/A	Unshielded,1.8m
2.	GPS Station	T&E	GS-50	N/A	N/A	Unshielded,1.8m
3.	GPS Station	Labsat	RLLS03-2P	N/A	N/A	Unshielded,1.8m
4.	Notebook	Thinkpad	Thinkpad E14	N/A	N/A	N/A
5.	NOTE BOOK	Lenovo	E540	FCC DoC	N/A	AC I/P：Unshielded, 1.2m DC O/P：Shielded, 1.8m
6.	IPod	Apple	MC69029/A	N/A	N/A	N/A
7.	IPod	Apple	MC525 ZP/A	Fcc DoC	N/A	Shielded, 1.0m
8.	WLAN AP	ASUSTek	RT-AC66U	MSQ-RTAC66U	N/A	Unshielded,2.7m with Core
9.	WLAN AP	Dlink	DIR-820L	KA2IR820LA1	N/A	Unshielded,1.8m
10.	Bluetooth Earphone	Samsung	EO-MG900	CCAH14LP1680T5	N/A	N/A
11.	SD Card	Kingston	3300-10000-078	Fcc DoC	N/A	N/A
12.	FM Base Station	R&S	SMB100A	Fcc DoC	N/A	Shielded, 1.5m
13.	Earphone1	N/A	MH202	N/A	N/A	N/A
14.	Earphone2	N/A	M191	N/A	N/A	N/A

2.4. EUT Operation Test Setup

The EUT was in GSM 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 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.
6. Turn on NFC 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.

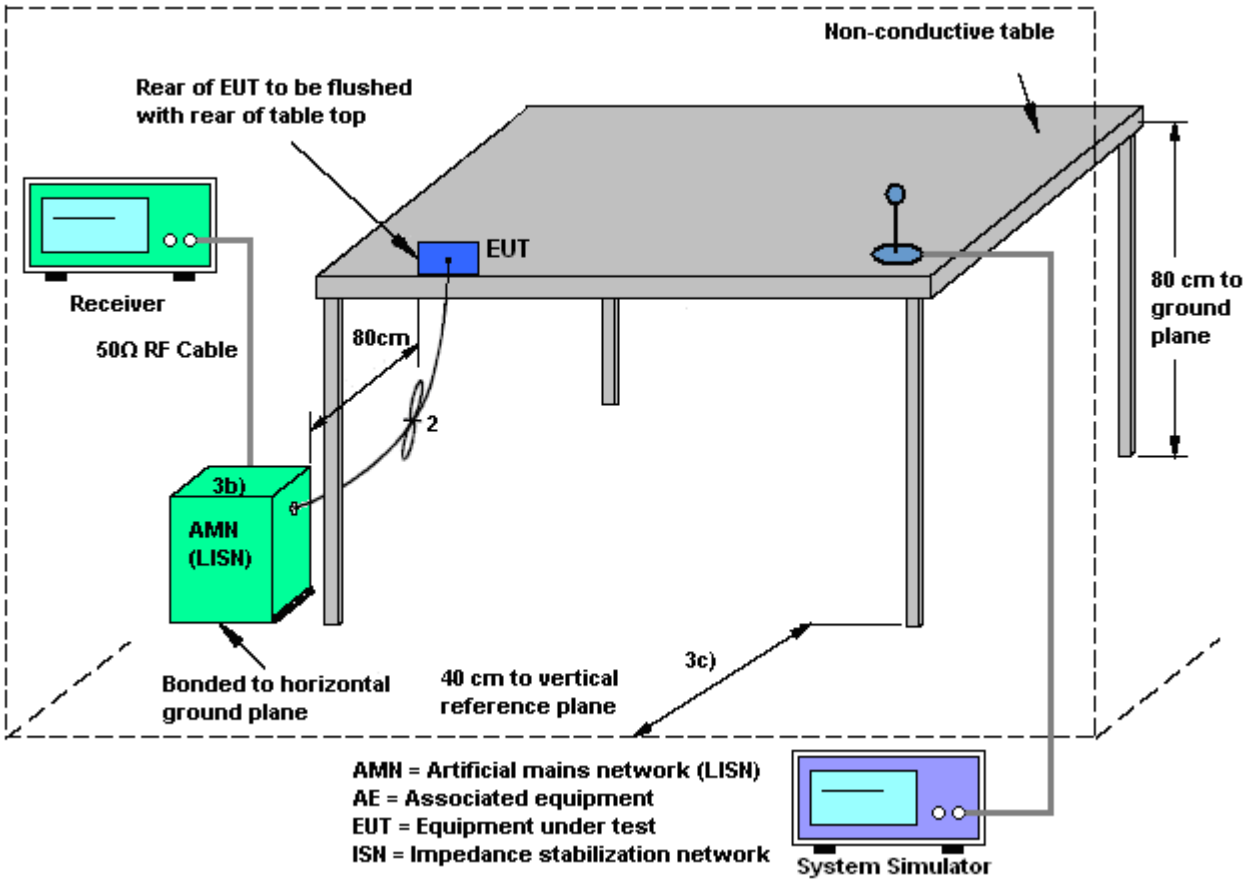
3.1.2 Measuring Instruments

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

3.1.3 Test Procedure

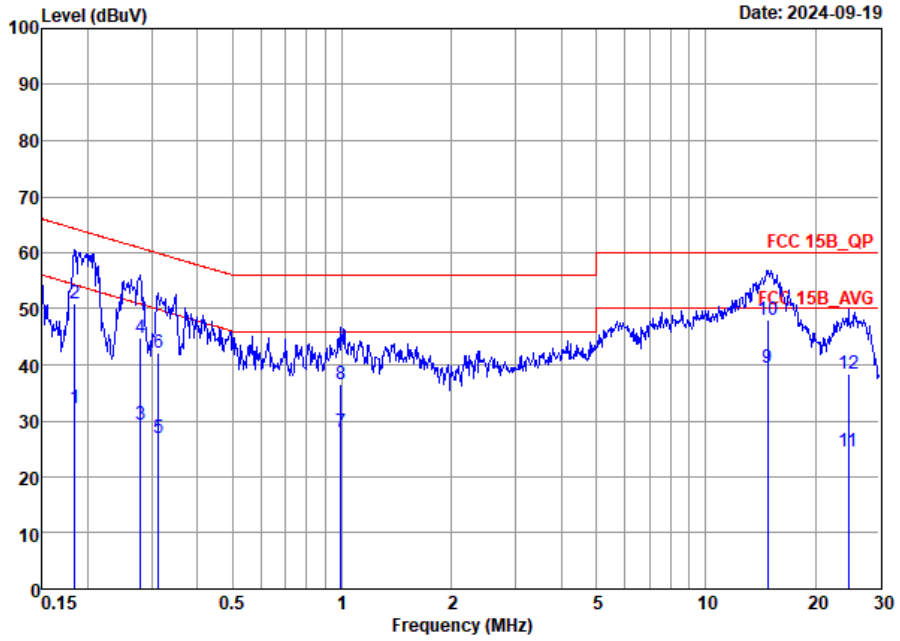
1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.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

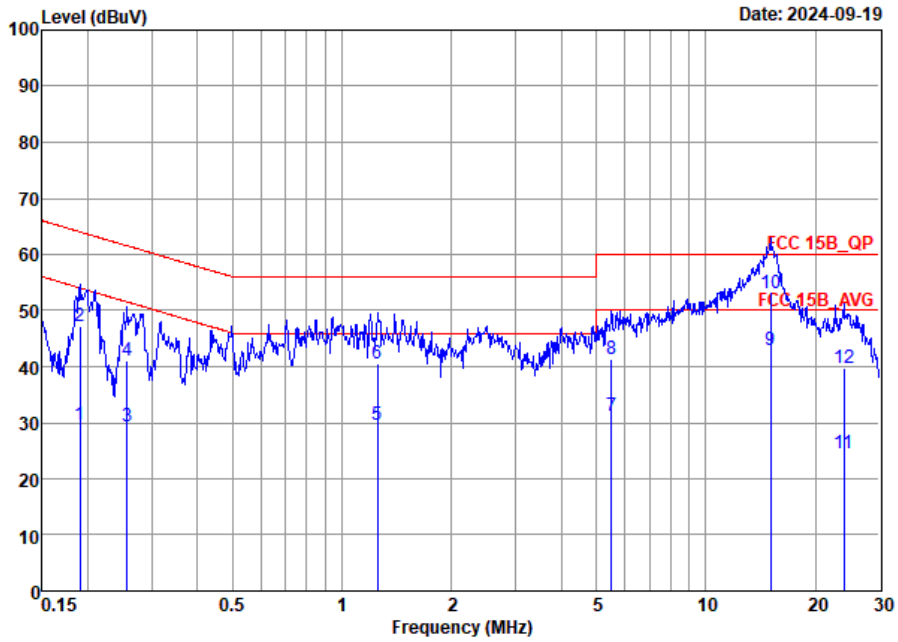
Test Engineer :	Chase Nathon	**Temperature :**	22~24℃
		Relative Humidity :	44~50%
Test Voltage :	120Vac / 60Hz	**Phase :**	Line
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Site : CO01-SZ
Condition: FCC 15B_QP AC LISN 100063_L LINE
Project : 482104
Mode : Mode 3
IMEI : 355811120027892/355811120027900

		Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
		MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1		0.18	32.36	-21.92	54.28	12.40	9.81	10.15	Average
2		0.18	51.06	-13.22	64.28	31.10	9.81	10.15	QP
3		0.28	29.21	-21.64	50.85	9.30	9.76	10.15	Average
4		0.28	44.71	-16.14	60.85	24.80	9.76	10.15	QP
5		0.31	26.82	-23.06	49.88	6.91	9.76	10.15	Average
6		0.31	42.12	-17.76	59.88	22.21	9.76	10.15	QP
7		0.99	27.88	-18.12	46.00	8.00	9.72	10.16	Average
8		0.99	36.48	-19.52	56.00	16.60	9.72	10.16	QP
9	*	14.83	39.55	-10.45	50.00	19.10	9.96	10.49	Average
10		14.83	48.05	-11.95	60.00	27.60	9.96	10.49	QP
11		24.66	24.65	-25.35	50.00	3.90	10.00	10.75	Average
12		24.66	38.45	-21.55	60.00	17.70	10.00	10.75	QP

Test Engineer :	Chase Nathon	**Temperature :**	22~24℃
		Relative Humidity :	44~50%
Test Voltage :	120Vac / 60Hz	**Phase :**	Neutral
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Site : CO01-SZ
Condition: FCC 15B_QP AC LISN 100063_N NEUTRAL
Project : 482104
Mode : Mode 3
IMEI : 355811120027892/355811120027900

		Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
		MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1		0.19	29.52	-24.50	54.02	9.60	9.77	10.15	Average
2		0.19	47.22	-16.80	64.02	27.30	9.77	10.15	QP
3		0.26	29.31	-22.25	51.56	9.41	9.75	10.15	Average
4		0.26	41.11	-20.45	61.56	21.21	9.75	10.15	QP
5		1.25	29.57	-16.43	46.00	9.70	9.69	10.18	Average
6		1.25	40.57	-15.43	56.00	20.70	9.69	10.18	QP
7		5.51	31.09	-18.91	50.00	11.00	9.74	10.35	Average
8		5.51	41.39	-18.61	60.00	21.30	9.74	10.35	QP
9		15.07	42.90	-7.10	50.00	22.60	9.81	10.49	Average
10	*	15.07	53.20	-6.80	60.00	32.90	9.81	10.49	QP
11		24.01	24.58	-25.42	50.00	3.50	10.36	10.72	Average
12		24.01	39.78	-20.22	60.00	18.70	10.36	10.72	QP

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

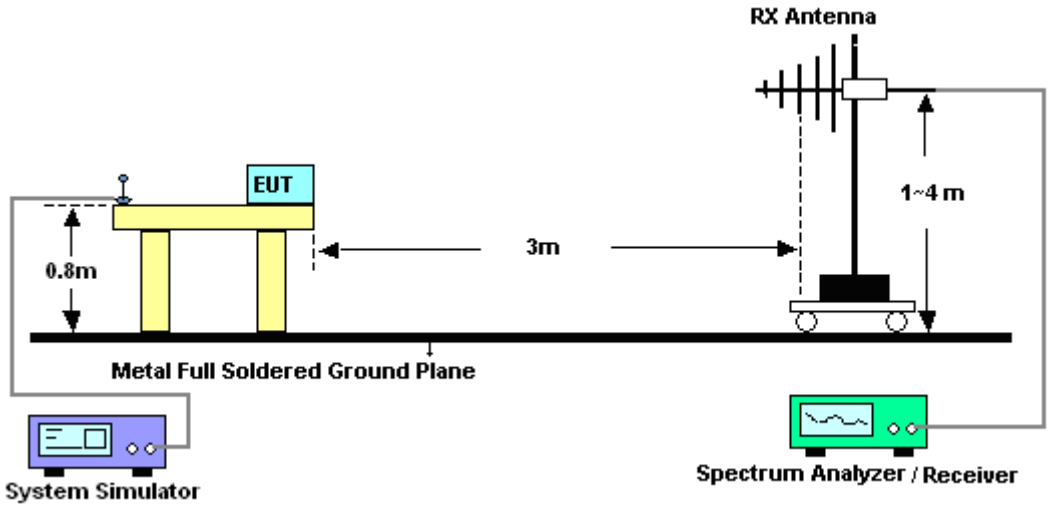
The measuring equipment is listed in the section 4 of this test report.

3.2.3. Test Procedures

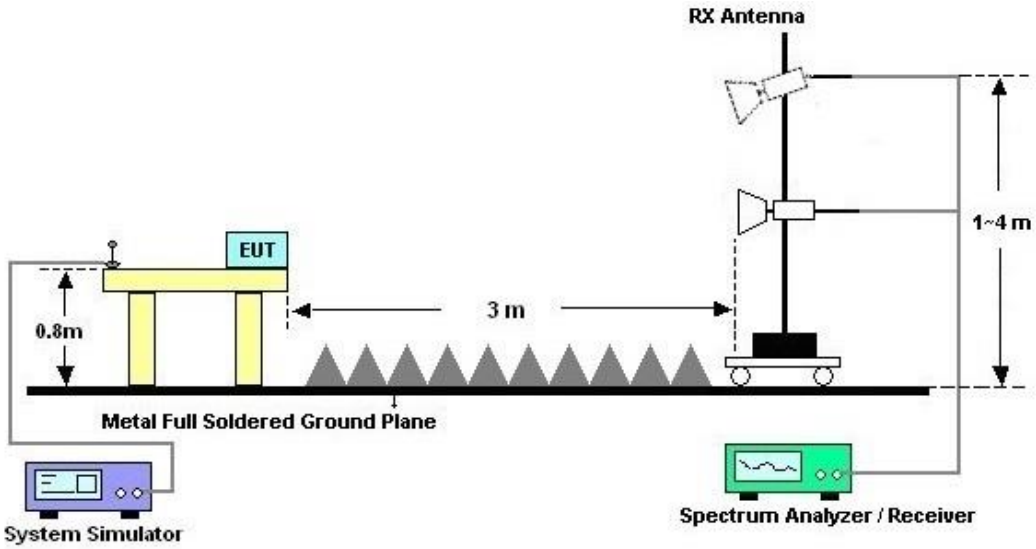
1. The EUT was placed on a turntable with 0.8 meter above ground.
2. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
3. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of 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

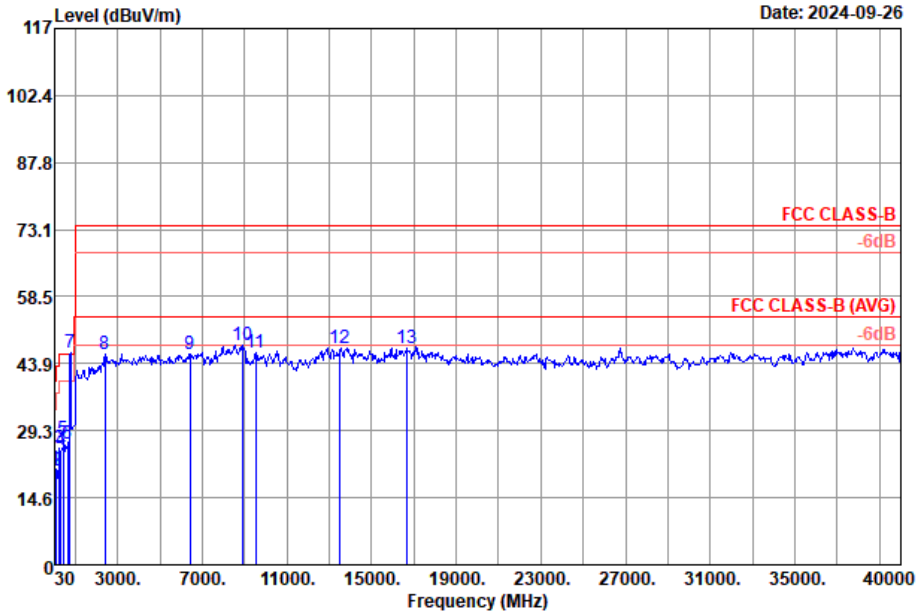


For radiated emissions above 1GHz



3.2.5. Test Result of Radiated Emission

Test Engineer :	TaoZhang	Temperature :	24~25°C
		Relative Humidity :	48~49%
Test Distance :	3m	Polarization :	Horizontal
Remark :	#7 is system simulator signal which can be ignored.		

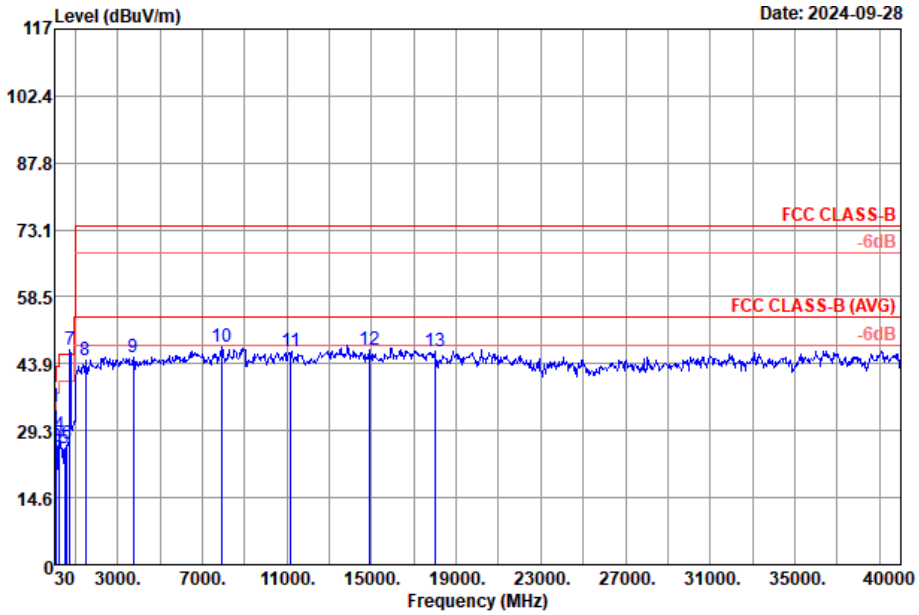


Site : 03CH05-SZ
Condition : FCC CLASS-B 3m VULB9168--01003 HORIZONTAL

Plane : Y

		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		92.08	20.71	-22.79	43.50	39.80	14.00	2.01	35.10	---	---	Peak
2		132.82	20.48	-23.02	43.50	35.69	17.59	2.23	35.03	---	---	Peak
3		258.92	25.52	-20.48	46.00	39.37	18.00	3.05	34.90	---	---	Peak
4		345.25	24.98	-21.02	46.00	36.07	20.21	3.42	34.72	---	---	Peak
5		439.34	27.52	-18.48	46.00	36.11	22.65	3.44	34.68	---	---	Peak
6		633.34	26.35	-19.65	46.00	31.08	26.13	3.64	34.50	---	---	Peak
7	*	751.00	46.39			49.21	27.74	3.74	34.30	---	---	Peak
8		2400.00	45.88	-28.12	74.00	55.82	33.33	7.17	50.44	---	---	Peak
9		6440.00	45.98	-28.02	74.00	47.65	36.87	10.37	48.91	---	---	Peak
10		8896.00	48.00	-26.00	74.00	46.87	38.41	12.26	49.54	---	---	Peak
11		9513.00	46.38	-27.62	74.00	43.80	38.90	12.97	49.29	---	---	Peak
12		13518.00	47.14	-26.86	74.00	39.20	40.61	14.36	47.03	---	---	Peak
13		16632.00	47.18	-26.82	74.00	40.20	43.25	15.35	51.62	---	---	Peak

Test Engineer :	TaoZhang	Temperature :	24~25°C
		Relative Humidity :	48~49%
Test Distance :	3m	Polarization :	Vertical
Remark :	#7 is system simulator signal which can be ignored.		



Site : 03CH05-SZ
Condition : FCC CLASS-B 3m VULB9168--01003 VERTICAL

Plane : Y

		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		38.73	34.47	-5.53	40.00	48.99	19.12	1.33	34.97	---	---	Peak
2		91.11	22.30	-21.20	43.50	41.53	13.87	2.00	35.10	---	---	Peak
3		132.82	25.89	-17.61	43.50	41.10	17.59	2.23	35.03	---	---	Peak
4		257.95	28.24	-17.76	46.00	42.13	17.97	3.04	34.90	---	---	Peak
5		498.51	25.40	-20.60	46.00	32.76	23.96	3.38	34.70	---	---	Peak
6		602.30	26.52	-19.48	46.00	31.69	25.74	3.59	34.50	---	---	Peak
7	*	751.00	46.93			49.75	27.74	3.74	34.30	---	---	Peak
8		1504.00	44.49	-29.51	74.00	59.28	29.30	5.91	50.00	---	---	Peak
9		3760.00	45.34	-28.66	74.00	52.24	34.46	8.24	49.60	---	---	Peak
10		7896.00	47.66	-26.34	74.00	49.17	37.24	11.35	50.10	---	---	Peak
11		11196.00	46.71	-27.29	74.00	41.67	39.60	13.40	47.96	---	---	Peak
12		14886.00	46.85	-27.15	74.00	40.49	41.51	15.40	50.55	---	---	Peak
13		17973.00	46.45	-27.55	74.00	39.16	44.97	15.29	52.97	---	---	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	102261	9kHz~7GHz	Apr. 09, 2024	Sep. 26, 2024~ Sep. 28, 2024	Apr. 08, 2025	Radiation (03CH05-SZ)
EXA Spectrum Analyzer	KEYSIGHT	N9010B	MY59071191	10Hz~44GHz	Apr. 09, 2024	Sep. 26, 2024~ Sep. 28, 2024	Apr. 08, 2025	Radiation (03CH05-SZ)
Log-periodic Antenna	SCHWARZBECK	VULB 9168	01001	20MHz~1.5GHz	Jul. 07, 2024	Sep. 26, 2024~ Sep. 28, 2024	Jul. 06, 2025	Radiation (03CH05-SZ)
Amplifier	EM Electronics	EM330	060756	0.01Hz ~3000MHz	Apr. 09, 2024	Sep. 26, 2024~ Sep. 28, 2024	Apr. 08, 2025	Radiation (03CH05-SZ)
Double Ridge Horn Antenna	SCHWARZBECK	BBHA9120D	9120D-2206	1GHz~18GHz	Apr. 09, 2024	Sep. 26, 2024~ Sep. 28, 2024	Apr. 08, 2025	Radiation (03CH05-SZ)
HF Amplifier	EM Electronics	EM01G18GA	060781	1GHz~18GHz	Apr. 09, 2024	Sep. 26, 2024~ Sep. 28, 2024	Apr. 08, 2025	Radiation (03CH05-SZ)
HF Amplifier	EM Electronics	EM18G40G	060778	18GHz~40GHz	Apr. 09, 2024	Sep. 26, 2024~ Sep. 28, 2024	Apr. 08, 2025	Radiation (03CH05SZ)
Horn Antenna	SCHWARZBECK	BBHA9170	00983	15GHz~40GHz	Apr. 09, 2024	Sep. 26, 2024~ Sep. 28, 2024	Apr. 08, 2025	Radiation (03CH05-SZ)
AC Power Source	APC	AFV-S-600	F119050013	N/A	Oct. 18, 2023	Sep. 26, 2024~ Sep. 28, 2024	Oct. 17, 2024	Radiation (03CH05-SZ)
Turn Table	EMEC	T-200-S-1	060925-T	0~360 degree	NCR	Sep. 26, 2024~ Sep. 28, 2024	NCR	Radiation (03CH05-SZ)
Antenna Mast	EMEC	MBS-400-1	060927	1 m~4 m	NCR	Sep. 26, 2024~ Sep. 28, 2024	NCR	Radiation (03CH05-SZ)
EMI Receiver	R&S	ESR7	101630	9kHz~7GHz;	Jul. 04, 2024	Sep. 19, 2024	Jul. 03, 2025	Conduction (CO01-SZ)
AC LISN	R&S	ENV216	100063	9kHz~30MHz	Jul. 04, 2024	Sep. 19, 2024	Jul. 03, 2025	Conduction (CO01-SZ)
AC LISN (for auxiliary equipment)	EMCO	3816/2SH	00103892	9kHz~30MHz	Oct. 16, 2023	Sep. 19, 2024	Oct. 15, 2024	Conduction (CO01-SZ)
AC Power Source	CHROMA	61601	616010002470	100Vac~250Vac	Dec.25, 2023	Sep. 19, 2024	Dec. 24, 2024	Conduction (CO01-SZ)

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))	**2.5 dB**

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**4.2 dB**

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

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

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**4.1 dB**

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