

TEST REPORT

Applicant: Lunar USA Inc.
Address: 1721 W Plano Parkway, Suite 128, Plano, TX 75075
Equipment Type: Lunar Eclipse L1
Model Name: Eclipse L1
Brand Name: Lunar Eclipse L1
FCC ID: 2A5SE-ECLIPSE-L1
Test Standard: 47 CFR Part 15 Subpart B
ANSI C63.4-2014
Sample Arrival Date: Apr. 30, 2024
Test Date: May 13, 2024 - May 15, 2024
Date of Issue: Jul. 26, 2024

ISSUED BY:

Shenzhen BALUN Technology Co., Ltd.

Tested by: Li Junfeng

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(Technical Director)

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Jim Liao

Revision History

Version	Issue Date	Revisions
<u>Rev. 01</u>	<u>Jul. 26, 2024</u>	<u>Initial Issue</u>

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1 GENERAL INFORMATION

1.1 Test Laboratory

Name	Shenzhen BALUN Technology Co., Ltd.
Address	Block B, 1/F, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China
Phone Number	+86 755 6685 0100

1.2 Test Location

Name	Shenzhen BALUN Technology Co., Ltd.
Location	☒ Block B, 1/F, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China
	☐ 1/F, Building B, Ganghongji High-tech Intelligent Industrial Park, No. 1008, Songbai Road, Yangguang Community, Xili Sub-district, Nanshan District, Shenzhen, Guangdong Province, P. R. China
Accreditation Certificate	The laboratory is a testing organization accredited by FCC as a accredited testing laboratory. The designation number is CN1196.

2 PRODUCT INFORMATION

2.1 Applicant Information

Applicant	Lunar USA Inc.
Address	1721 W Plano Parkway, Suite 128, Plano, TX 75075

2.2 Manufacturer Information

Manufacturer	Lunar USA Inc.
Address	1721 W Plano Parkway, Suite 128, Plano, TX 75075

2.3 General Description for Equipment under Test (EUT)

EUT Name	Lunar Eclipse L1
Model Name Under Test	Eclipse L1
Series Model Name	N/A
Description of Model name differentiation	N/A
Hardware Version	M155-MUB-V2
Software Version	R03
Dimensions (Approx.)	169mm*76.3mm*8.8mm
Weight (Approx.)	N/A

2.4 Ancillary Equipment

Ancillary Equipment 1	Battery	
	Brand Name	N/A
	Model No.	EBT476591HV
	Serial No.	N/A
	Capacity	5000 mAh/19.35Wh
	Rated Voltage	3.87 V
	Limit Charge Voltage	4.45 V
	Manufacturer	Jiangxi Guihang New Energy Technology Co., Ltd.
Ancillary Equipment 2	Adapter	
	Brand Name	N/A
	Model No.	TPA-10S120150UU01
	Serial No.	N/A
	Rated Input	100-240V~, 50/60Hz, 0.6A
	Rated Output	3.6-6V= 3A/6-9V= 2A/9-12V= 1.5A
	Manufacturer	Shenzhen Tianyin Electronics Co., Ltd.
Ancillary Equipment 3	USB Cable	
	Model No.	Y500005
	Length (Approx.)	1.0m

2.5 Technical Information

Network and Wireless connectivity	2G Network GSM/GPRS/EDGE 850/1900 MHz 3G Network WCDMA/HSDPA Band 2/4/5 4G Network LTE FDD Band 2/4/5/12/17/25/26/66/71 LTE TDD Band 41 LTE CA Uplink (UL): CA_5B, CA_41C, CA_66B, CA_66C LTE Downlink (DL): CA_2B, CA_2C, CA_4B, CA_4C, CA_5B, CA_12B, CA_41C, CA_66B, CA_66C, CA_71B, CA_2A-2A, CA_2A-4A, CA_2A-5A, CA_2A-66A, CA_4A-4A, CA_4A-5A, CA_4A-12A, CA_5A-66A, CA_25A-25A, CA_41A-41A, CA_66A-66 5G Network SA: NR n2/n5/n25/n66/n71/n41/n77 NSA(EN-DC): DC_2A_n41A, DC_2A_n66A, DC_2A_n71A, DC_66A_25A, DC_66A_n41A, DC_66A_n71A DL(EN-DC): DC_2A_n41A, DC_2C_n41A, DC_2A_n66A, DC_2A_n71A, DC_2C_n71A, DC_66A_n25A, DC_66A_n41A, DC_66A_n71A, DC_66C_n71A Bluetooth (BR+EDR+BLE) 2.4G WIFI 802.11b, 802.11g, 802.11n(HT20) 5G WIFI 802.11a, 802.11n(HT20/40), 802.11ac(VHT20/40/80) U-NII-1/2A/2C/3, GPS, GLONASS, BDS, Galileo
Classification of equipment	Class B
The highest internal frequency of EUT	5850 MHz

3 SUMMARY OF TEST RESULTS

3.1 Test Standards

No.	Identity	Document Title
1	47 CFR Part 15 Subpart B	Unintentional Radiators
2	ANSI C63.4-2014	American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz

3.2 Verdict

No.	Description	FCC Rule	Test Verdict	Remark
1	Radiated Emission	15.109	Pass	--
2	Conducted Emission, AC Ports	15.107	Pass	--

3.3 Test Uncertainty

The following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.

Measurement	Value
Conducted emissions (9 kHz-30 MHz)	3.2 dB
Radiated emissions (30 MHz-1 GHz)-966#2	4.4 dB
Radiated emissions (1 GHz-18 GHz)-966#2	5.0 dB

4 GENERAL TEST CONFIGURATIONS

4.1 Test Enclosure List

Description	Manufacturer	Model	Serial No.	Length	Description	Use
Wireless Communications Test Set	R&S	CMW500	127801	N/A	Cal. Due 2024.12.04	☒
5G comprehensive tester	Keysight	E7515B	MY593216 17	N/A	Cal. Due 2024.10.26	☒
Laptop	Lenovo	N/A	N/A	N/A	N/A	☒
Data connector	N/A	N/A	N/A	N/A	N/A	☒
USB disk	Sandisk	N/A	N/A	N/A	32G	☒
TF Card	SAMSUNG	N/A	N/A	N/A	256G	☒
Type-C Headset	N/A	N/A	N/A	N/A	1.12m	☒
Headset	N/A	N/A	N/A	N/A	1.12m	☒

4.2 Test Configurations

All test modes of EUT are listed in the table below.

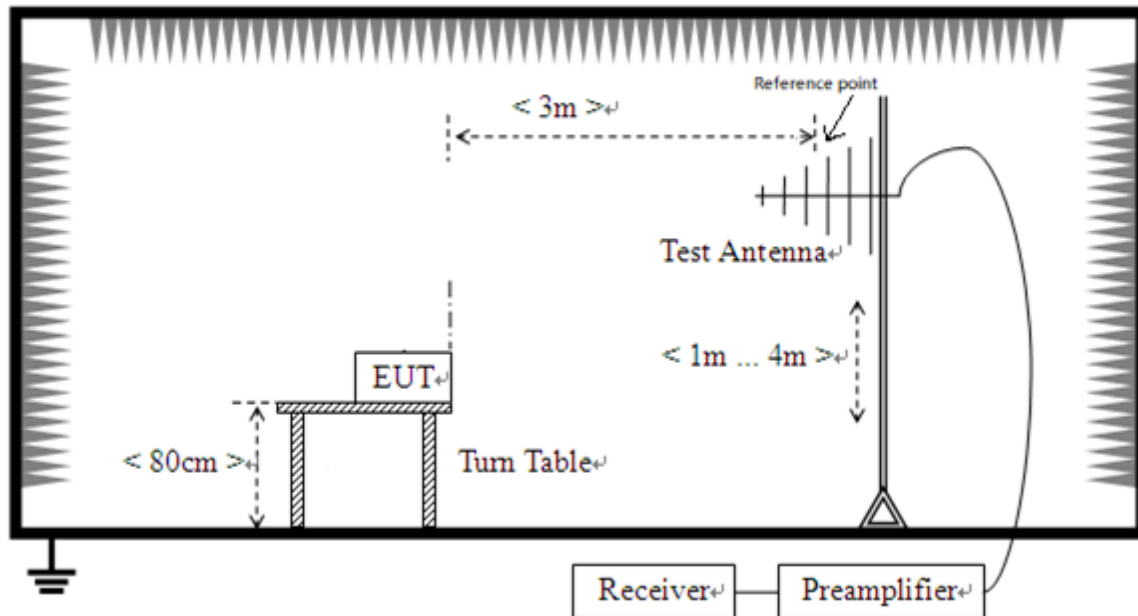
Test Mode Configuration	Description
Mode 1	<u>The GSM850 RX Test Mode</u> GSM850 RX + EUT +Adapter + USB Cable + Battery + Headset + TF Card
Mode 2	<u>The WCDMA Band 5 RX Test Mode</u> WCDMA Band 5 RX + EUT +Adapter + USB Cable + Battery + Headset + TF Card
Mode 3	<u>The FDD LTE Band 5 RX Test Mode</u> LTE Band 5 RX + EUT +Adapter + USB Cable + Battery + Headset + TF Card
Mode 4	<u>The FDD LTE Band 12 RX Test Mode</u> LTE Band 12 RX + EUT +Adapter + USB Cable + Battery + Headset + TF Card
Mode 5	<u>The FDD LTE Band 17 RX Test Mode</u> LTE Band 17 RX + EUT +Adapter + USB Cable + Battery + Headset + TF Card
Mode 6	<u>The FDD LTE Band 26 RX Test Mode</u> LTE Band 26 RX + EUT +Adapter + USB Cable + Battery + Headset + TF Card
Mode 7	<u>The FDD LTE Band 71 RX Test Mode</u> LTE Band 71 RX + EUT +Adapter + USB Cable + Battery + Headset + TF Card
Mode 8	<u>The NR SA Band 5 RX Test Mode\</u>

	NR SA Band 5 RX + EUT +Adapter + USB Cable + Battery + Headset + TF Card
Mode 9	<u>The NR SA Band 71 RX Test Mode</u> NR SA Band 71 RX + EUT +Adapter + USB Cable + Battery + Headset + TF Card
Mode 10	<u>The Standby Test Mode</u> EUT + Adapter + USB Cable + Battery + Headset + TF Card
Mode 11	<u>The Rear Camera Test Mode</u> EUT + Adapter + USB Cable + Battery + Headset + TF Card
Mode 12	<u>The Front Camera Test Mode</u> EUT + Adapter + USB Cable + Battery + Headset + TF Card
Mode 13	<u>The Video Play Test Mode</u> EUT + Adapter + USB Cable + Battery + Headset + TF Card
Mode 14	<u>The USB Test Mode</u> EUT + USB Cable + Battery + Laptop + Headset + TF Card
Mode 15	<u>The OTG Test Mode</u> EUT + Battery + Data connector + USB Disk + Headset + TF Card
Mode 16	<u>The Type-C Headset Test Mode</u> EUT + Type-C Headset + Battery
Mode 17	<u>The FM Test Mode</u> FM RX + EUT + Adapter + USB Cable + Battery + Headset + TF Card
Mode 18	<u>The Type-C Headset FM Test Mode</u> FM RX + EUT Battery + Type-C Headset + TF Card

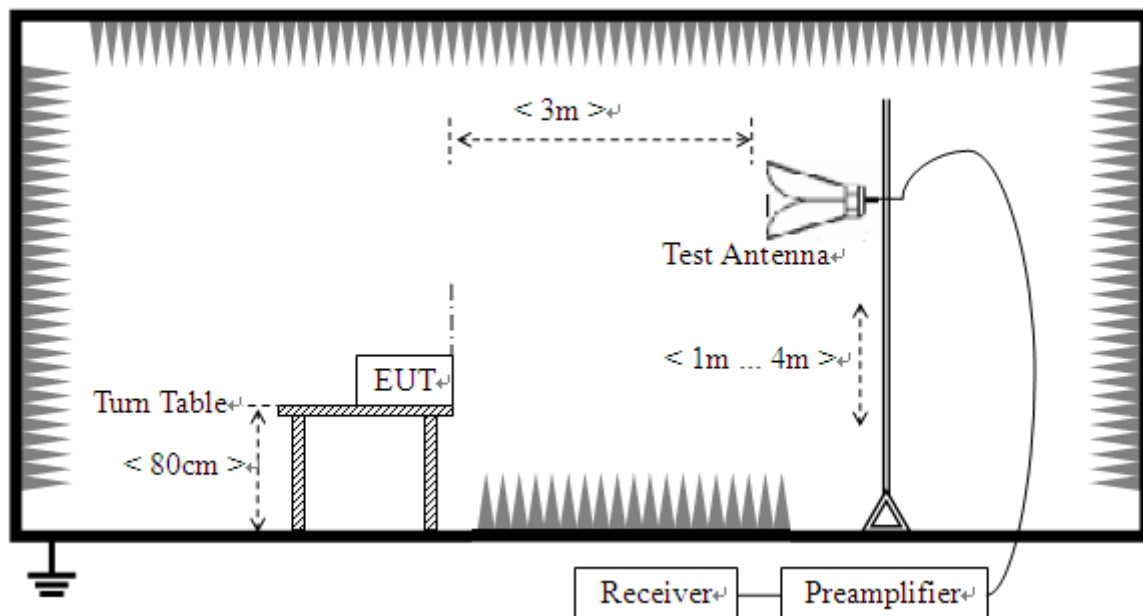
Test Case	Test Mode Configuration	Worst Mode
Radiated Emission	Mode 1~Mode 18	13, 14
Conducted Emission, AC Ports	Mode 1~Mode 14 , Mode17	13, 14
Note: All operation modes were tested, but only test data of the worst mode was presented in this report.		

4.3 Test Setups

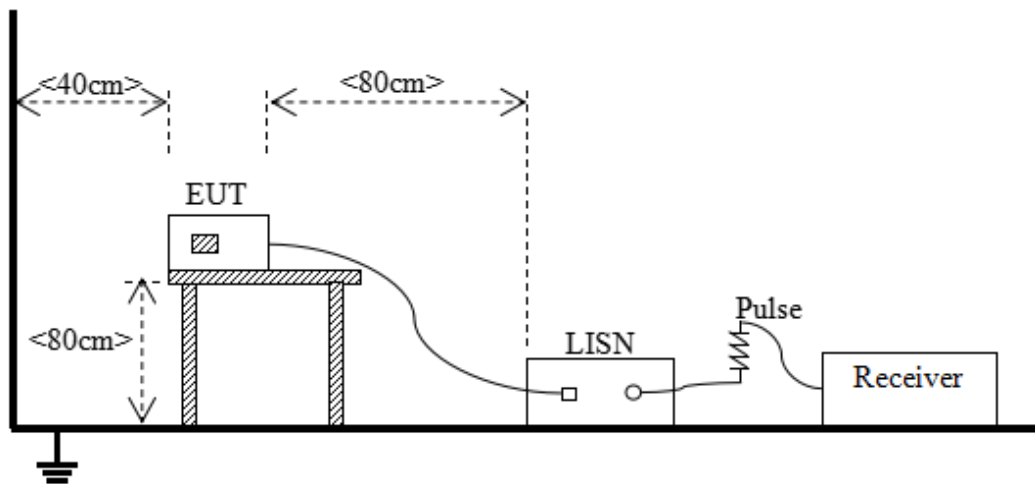
Test Setup 1



Radiated Emission (30 MHz-1 GHz)



Radiated Emission (above 1 GHz)

Test Setup 2

Conducted Emissions, AC Ports

5 TEST ITEMS

5.1 Emission Tests

5.1.1 Radiated Emission

5.1.1.1 Limit

Frequency range (MHz)	Class B (at 3 m)		Class A (at 3 m)
	Field Strength ($\mu\text{V/m}$)	Field Strength (dB $\mu\text{V/m}$)	Field Strength (dB $\mu\text{V/m}$)
30 - 88	100	40	49.5
88 - 216	150	43.5	54
216 - 960	200	46	56.9
Above 960	500	54	60

NOTE:

- 1) Field Strength (dB $\mu\text{V/m}$) = $20 \cdot \log [\text{Field Strength } (\mu\text{V/m})]$.
- 2) In the emission tables above, the tighter limit applies at the band edges.
- 3) For 30 MHz to 1000 MHz, the CISPR quasi-peak is employed.

For above 1000 MHz, according to the requirements of FCC 15.35, unless otherwise specified, the limit on peak radio frequency emissions is 20 dB above the maximum permitted average emission limit applicable to the equipment under test.

Frequency range (GHz)	Class B (at 3 m)			Class A (at 3 m)	
	Field Strength ($\mu\text{V/m}$)	Field Strength Average (dB $\mu\text{V/m}$)	Field Strength Peak (dB $\mu\text{V/m}$)	Field Strength Average (dB $\mu\text{V/m}$)	Field Strength Peak (dB $\mu\text{V/m}$)
1 - F_M	500	54	74	60	80

Note 1: The highest measurement frequency, F_M , in GHz, shall be determined as next Table.

Note 2: Average Class A limit at 3m L_{3m} is determined by the following conversion formula:

$$L_{3m} = L_{10m} + 20 \cdot \log(d_{10m}/d_{3m})$$
Where:
 L_{3m} is Average Class A limit at 3m;
 L_{10m} is Average Class A limit at 10m;
 d_{10m} is Measurement distance in 10m;
 d_{3m} is Measurement distance in 3m.
For this case: $L_{3m} = 49.5 + 20 \cdot \log(10/3) = 60$ (dB $\mu\text{V/m}$).

Highest internal frequency (F_X)	Highest measurement frequency (F_M)
$F_X \leq 108 \text{ MHz}$	1 GHz
$108 \text{ MHz} \leq F_X \leq 500 \text{ MHz}$	2 GHz
$500 \text{ MHz} \leq F_X \leq 1 \text{ GHz}$	5 GHz
$F_X \geq 1 \text{ GHz}$	$5 * F_X$ or 40 GHz, whichever is lower.
Note: F_X is Highest frequency generated or used in the device or on which the device operates or tunes.	

5.1.1.2 Test Setup

Refer to 4.3 section (test setup 1) for radiated emission test, the photo of test setup please refer to ANNEX B.

5.1.1.3 Test Procedure

All Radiated Emission tests were performed in X, Y, Z axis direction. And only the worst axis test condition was recorded in this test report.

An initial pre-scan was performed in the chamber using the EMI Receiver in peak detection mode. Quasi-peak measurements were conducted based on the peak sweep graph. The EUT was measured by Bi-Log antenna with 2 orthogonal polarities.

The measurement frequency range is from 30 MHz to the 5th harmonic of the maximum frequency of the EUT internal source. The Turn Table is actuated to turn from 0° to 360° , and both horizontal and vertical polarizations of the Test Antenna are used to find the maximum radiated power. Mid channels on all channel bandwidth verified. Only the worst RB size/offset presented.

Use the following spectrum analyzer settings:

Span = wide enough to fully capture the emission being measured

RBW = 1 MHz for $f \geq 1 \text{ GHz}$, 100 kHz for $f < 1 \text{ GHz}$

VBW $\geq$ RBW

Sweep = auto

Detector function = peak for $f < 1 \text{ GHz}$, peak & RMS Average for $f \geq 1 \text{ GHz}$

Trace = max hold

5.1.1.4 Test Result and Test Equipment List

Please refer to ANNEX A.1.

NOTE:

1. Results (dB μ V/m) = Reading (dB μ V) + Factor (dB/m)

The reading level is calculated by software which is not shown in the sheet

2. Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) – Amplifier Gain (dB)

3. Margin = Limit - Results

5.1.2 Conducted Emission, AC Ports

5.1.2.1 Test Limit

Frequency range (MHz)	Class A	
	Quasi-peak (dB μ V)	Average (dB μ V)
0.15 - 0.50	79	66
0.50 - 30	73	60

Frequency range (MHz)	Class B	
	Quasi-peak (dB μ V)	Average (dB μ V)
0.15 - 0.50	66 to 56	56 to 46
0.50 - 5	56	46
5 - 30	60	50

NOTE:

- 1) The lower limit shall apply at the band edges.
- 2) The limit decreases linearly with the logarithm of the frequency in the range 0.15 - 0.50 MHz.

5.1.2.2 Test Setup

Refer to 4.3 section test (test setup 2) for conducted emission, the photo of test setup please refer to ANNEX B.

5.1.2.3 Test Procedure

The EUT is connected to the power mains through a LISN which provides 50 Ω /50 μ H of coupling impedance for the measuring instrument. The test frequency range is from 150 kHz to 30 MHz. The maximum conducted interference is searched using Peak (PK), Quasi-peak (QP) and Average (AV) detectors; the emission levels that are more than the AV and QP limits, and that have narrow margins from the AV and QP limits will be re-measured with AV and QP detectors. Tests for both L phase and N phase lines of the power mains connected to the EUT are performed.

Devices subject to Part 15 must be tested for all available U.S. voltages and frequencies (such as a nominal 120 VAC, 50/60 Hz and 240 VAC, 50/60 Hz) for which the device is capable of operation. A device rated for 50/60 Hz operation need not be tested at both frequencies provided the radiated and line conducted emissions are the same at both frequencies.

Use the following spectrum analyzer settings:

RBW = 9 kHz

VBW $\geq$ RBW

Sweep = 10ms

Detector function = peak & Average

Trace = max hold

5.1.2.4 Test Result and Test Equipment List

Please refer to ANNEX A.2.

NOTE:

1. Results (dB μ V) = Reading (dB μ V) + Factor (dB)

The reading level is calculated by software which is not shown in the sheet

2. Factor = Insertion loss + Cable loss

3. Margin = Limit - Results

ANNEX A TEST RESULTS

A.1 Radiated Emission

Note 1: The symbol of “--” in the table which means not application.

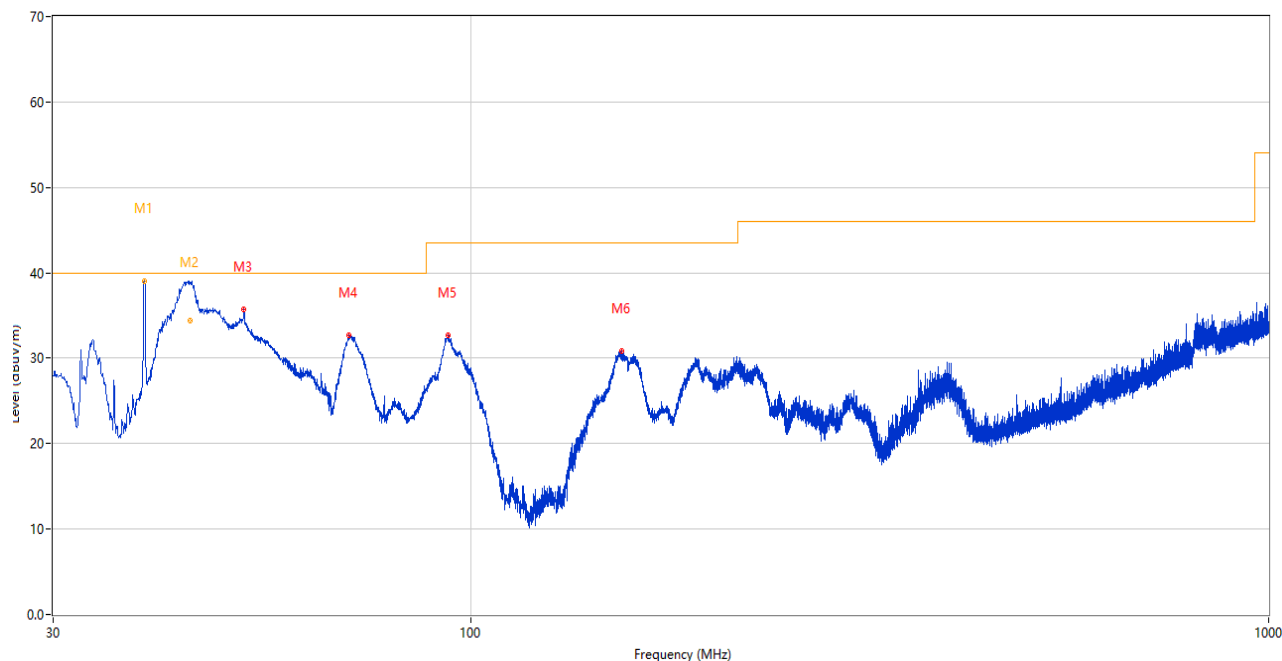
Note 2: For the test data above 1 GHz, according the ANSI C63.4-2014, where limits are specified for both average and peak (or quasi-peak) detector functions, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement.

Note 3: The Radiated Emission is required to be investigated to the upper frequency of 5th harmonic of the highest internal frequency of EUT or 40 GHz, whichever is lower. The test results above 18GHz are only noise and are not recorded in the report.

Sample No.	S04	Temperature	20.7℃
Humidity	50%RH	Pressure	101kPa
Test Engineer	He Shichang	Test Date	2024.05.13

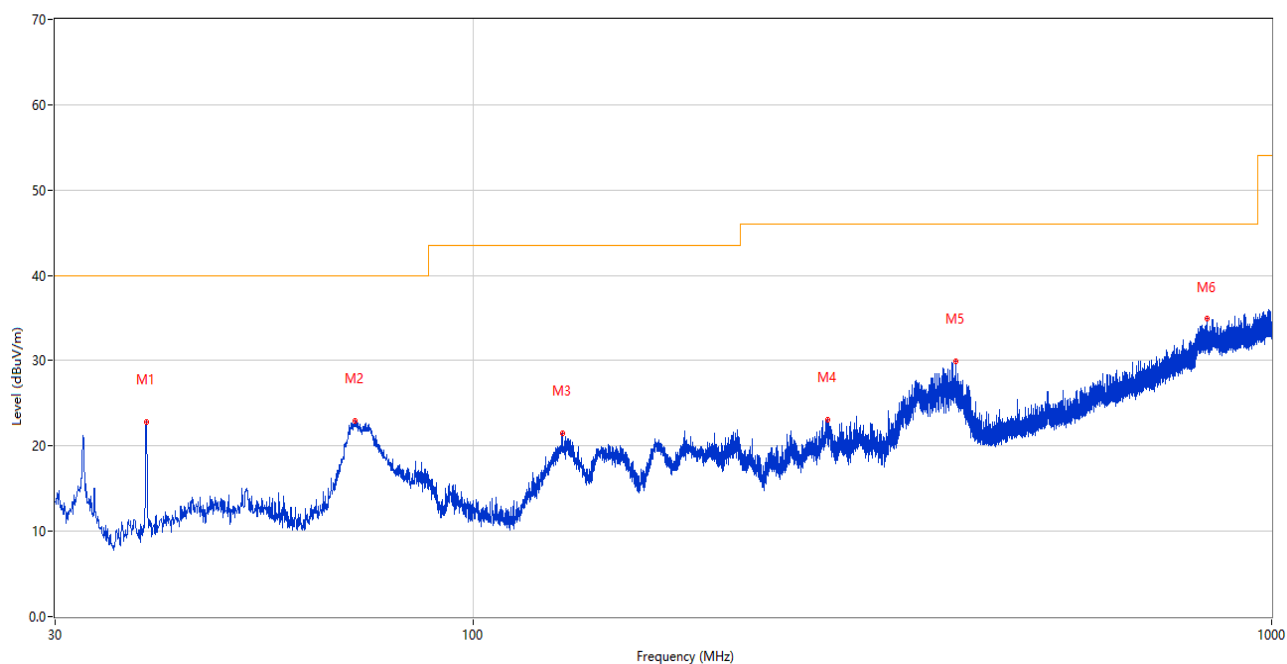
Test Mode 13

1) Test Antenna Vertical, 30 MHz – 1 GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	39.000	44.59	-25.90	40.0	-4.59	Peak	313.00	101	Vertical	N/A
1*	39.000	39.12	-25.90	40.0	0.88	QP	313.00	101	Vertical	Pass
2	44.568	37.04	-24.67	40.0	2.96	Peak	250.00	100	Vertical	N/A
2*	44.568	34.43	-24.67	40.0	5.57	QP	250.00	100	Vertical	Pass
3	52.019	35.67	-24.35	40.0	4.33	Peak	265.00	100	Vertical	Pass
4	70.352	32.71	-28.19	40.0	7.29	Peak	288.00	100	Vertical	Pass
5	93.632	32.65	-26.24	43.5	10.85	Peak	352.00	100	Vertical	Pass
6	154.645	30.85	-28.01	43.5	12.65	Peak	270.00	100	Vertical	Pass

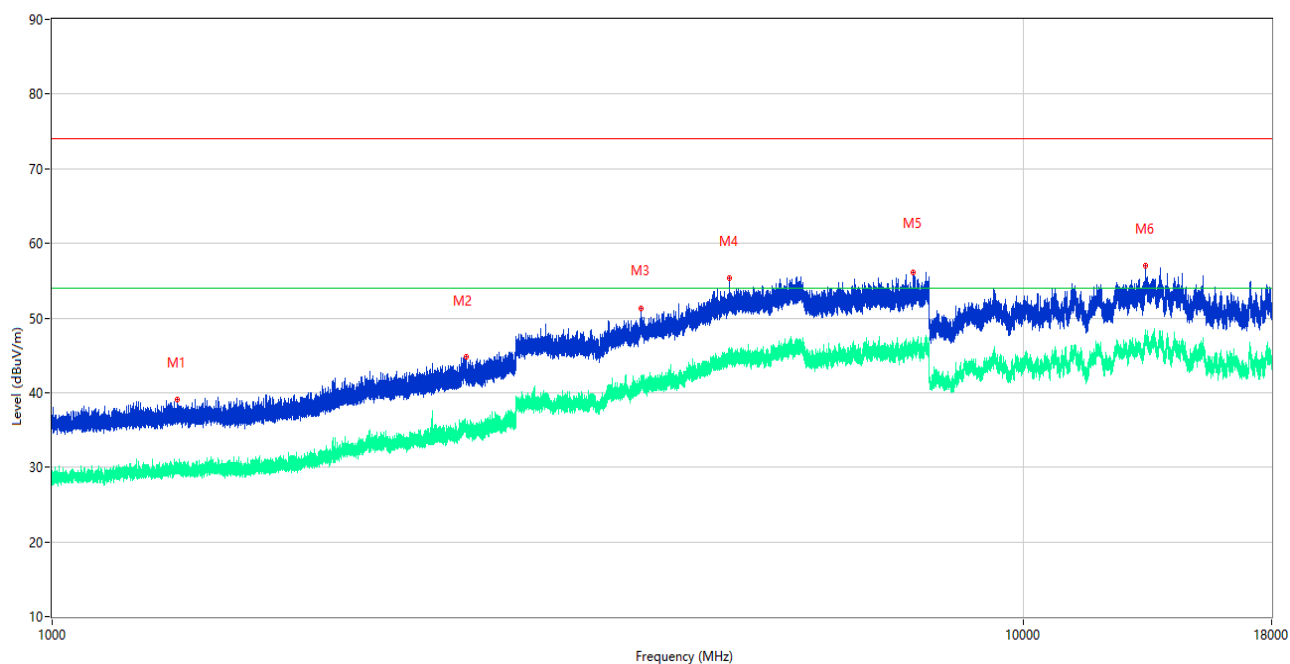
2) Test Antenna Horizontal, 30 MHz – 1 GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	39.021	22.80	-25.90	40.0	17.20	Peak	349.00	200	Horizontal	Pass
2	71.176	22.99	-28.51	40.0	17.01	Peak	324.00	200	Horizontal	Pass
3	129.376	21.51	-27.97	43.5	21.99	Peak	111.00	200	Horizontal	Pass
4	278.514	23.03	-21.43	46.0	22.97	Peak	216.00	100	Horizontal	Pass
5	401.995	29.90	-17.43	46.0	16.10	Peak	61.00	100	Horizontal	Pass
6	829.959	34.91	-4.33	46.0	11.09	Peak	208.00	100	Horizontal	Pass

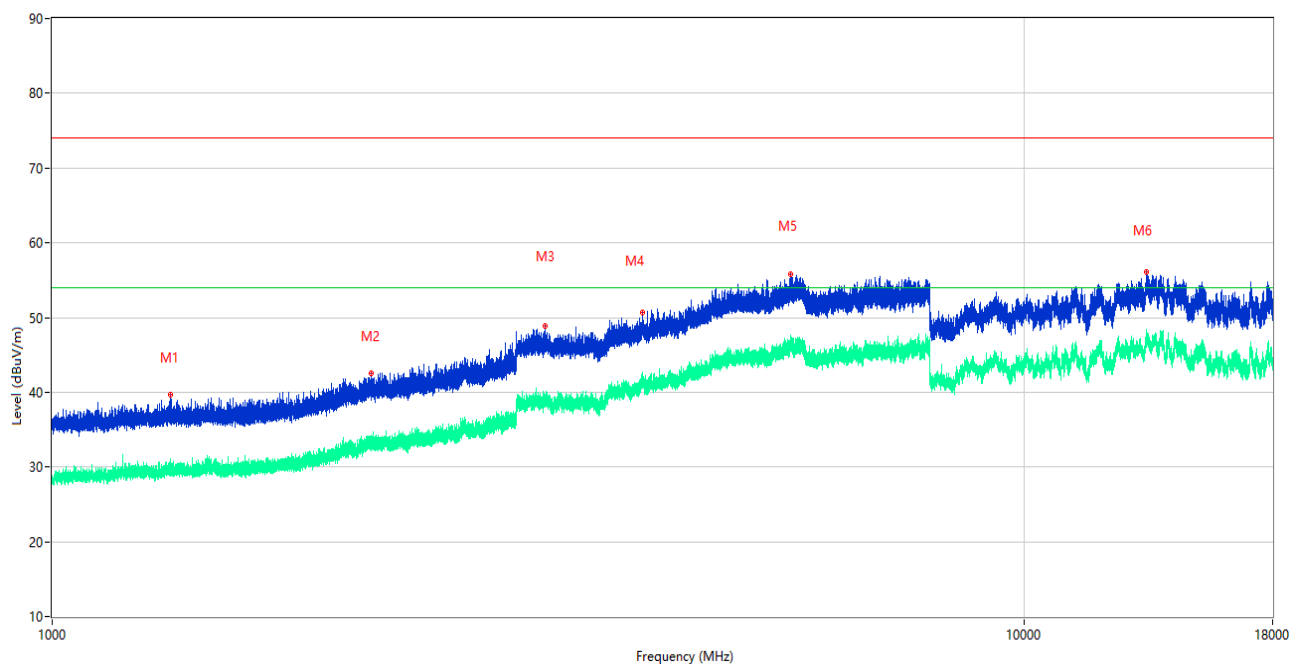
Equipment Information						
Equipment Name	Supplier	Model	Serial No.	Cal. Date	Cal. Due	Use
Frequency Below 1 GHz						
EMI Receiver	Keysight	N9038A	MY55330120	2023.09.05	2024.09.04	☒
Amplifier (30-1GHz)	COM-MV	ZT30-1000M	B2017119081	2023.12.05	2024.12.04	☒
Test Antenna- Bi-Log	SCHWARZB ECK	VULB 9168	9168-00867	2022.04.12	2025.04.11	☒
Anechoic Chamber (#2)	YiHeng	9m*6m*6m	142	2021.08.19	2024.08.18	☒
Description	Supplier	Name	Version	/		Use
Test Software	BALUN	BL410-E	V22.930	/		☒

3) Test Antenna Vertical, 1 GHz – 18 GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1345.000	39.02	-15.99	74.0	34.98	Peak	155.00	100	Vertical	Pass
1**	1345.000	29.16	-15.99	54.0	24.84	AV	155.00	100	Vertical	Pass
2	2668.500	44.81	-8.80	74.0	29.19	Peak	81.00	100	Vertical	Pass
2**	2668.500	34.49	-8.80	54.0	19.51	AV	81.00	100	Vertical	Pass
3	4041.750	51.35	-1.27	74.0	22.65	Peak	149.00	100	Vertical	Pass
3**	4041.750	41.41	-1.27	54.0	12.59	AV	149.00	100	Vertical	Pass
4	4981.750	55.37	2.36	74.0	18.63	Peak	113.00	100	Vertical	Pass
4**	4981.750	44.92	2.36	54.0	9.08	AV	113.00	100	Vertical	Pass
5	7701.750	56.11	2.80	74.0	17.89	Peak	166.00	100	Vertical	Pass
5**	7701.750	45.46	2.80	54.0	8.54	AV	166.00	100	Vertical	Pass
6	13357.000	57.00	5.19	74.0	17.00	Peak	167.00	100	Vertical	Pass
6**	13357.000	47.19	5.19	54.0	6.81	AV	167.00	100	Vertical	Pass

4) Test Antenna Horizontal, 1 GHz – 18 GHz

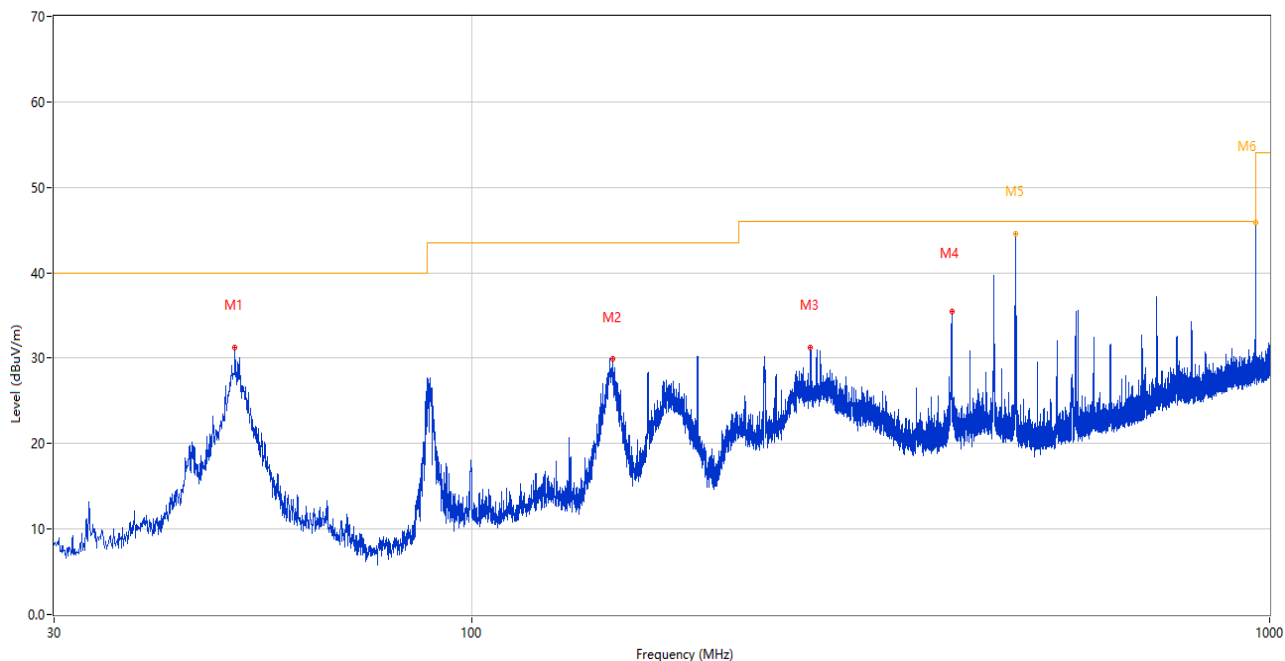


No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1323.800	39.62	-15.98	74.0	34.38	Peak	189.00	100	Horizontal	Pass
1**	1323.800	29.07	-15.98	54.0	24.93	AV	189.00	100	Horizontal	Pass
2	2129.300	42.57	-12.89	74.0	31.43	Peak	123.00	100	Horizontal	Pass
2**	2129.300	33.48	-12.89	54.0	20.52	AV	123.00	100	Horizontal	Pass
3	3213.500	48.84	-4.96	74.0	25.16	Peak	60.00	100	Horizontal	Pass
3**	3213.500	38.58	-4.96	54.0	15.42	AV	60.00	100	Horizontal	Pass
4	4046.750	50.65	-0.79	74.0	23.35	Peak	132.00	100	Horizontal	Pass
4**	4046.750	42.64	-0.79	54.0	11.36	AV	132.00	100	Horizontal	Pass
5	5751.500	55.74	3.31	74.0	18.26	Peak	348.00	100	Horizontal	Pass
5**	5751.500	47.34	3.31	54.0	6.66	AV	348.00	100	Horizontal	Pass
6	13340.000	56.03	4.88	74.0	17.97	Peak	0.00	100	Horizontal	Pass
6**	13340.000	46.93	4.88	54.0	7.07	AV	0.00	100	Horizontal	Pass

Equipment Information						
Equipment Name	Supplier	Model	Serial No.	Cal. Date	Cal. Due	Use
Frequency Above 1 GHz						
EMI Receiver	Keysight	N9038A	MY55330120	2023.09.05	2024.09.04	☒
Amplifier (1-12GHz)	Advanced Microwave	WLA652A	1740103	2023.12.05	2024.12.04	☒
Amplifier (0.8-21GHz)	Mini-Circuits	ZVA-213-S+	225321316	2023.12.05	2024.12.04	☒
Test Antenna- Horn	SCHWARZB ECK	BBHA 9120D	01917	2022.06.09	2025.06.08	☒
Anechoic Chamber (#2)	YiHeng	9m*6m*6m	142	2021.08.19	2024.08.18	☒
Description	Supplier	Name	Version	/		Use
Test Software	BALUN	BL410-E	V22.930	/		☒

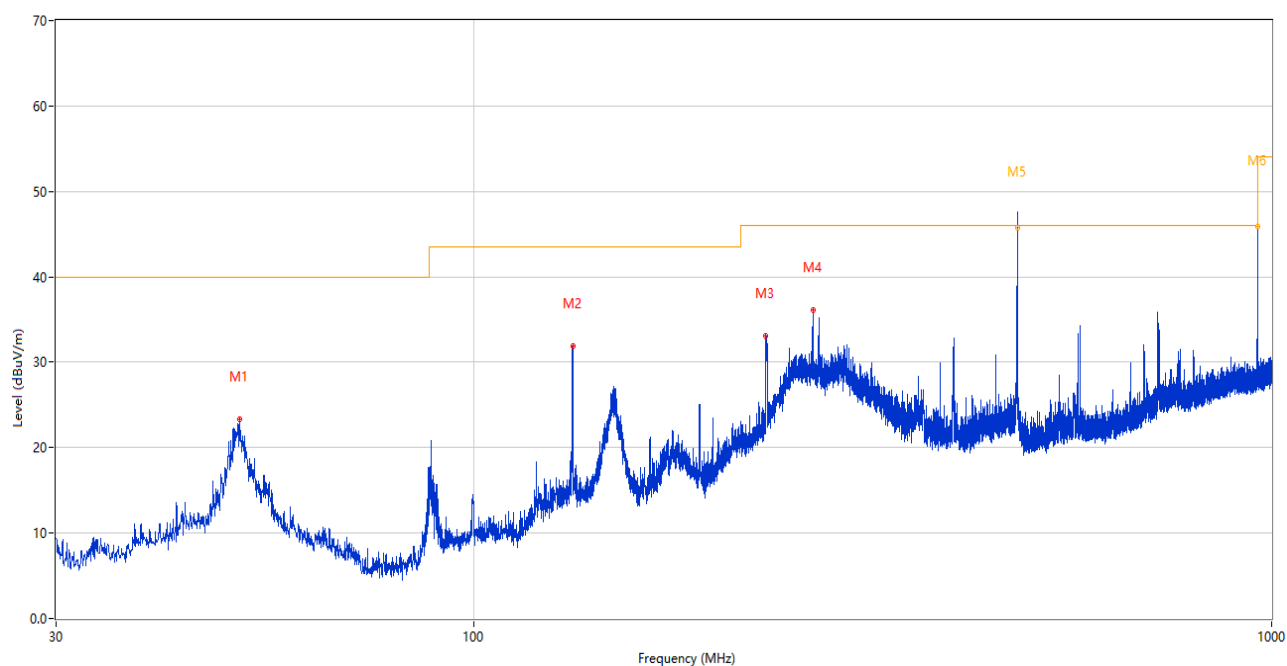
Test Mode 14

5) Test Antenna Vertical, 30 MHz – 1 GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	50.516	31.23	-25.55	40.0	8.77	Peak	216.00	100	Vertical	Pass
2	150.280	29.87	-30.08	43.5	13.63	Peak	285.00	100	Vertical	Pass
3	266.050	31.20	-24.52	46.0	14.80	Peak	149.00	100	Vertical	Pass
4	399.861	35.41	-20.95	46.0	10.59	Peak	176.00	100	Vertical	Pass
5	479.999	46.53	-19.19	46.0	-0.53	Peak	300.00	122	Vertical	N/A
5*	479.999	44.50	-19.19	46.0	1.50	QP	300.00	122	Vertical	Pass
6	959.999	51.82	-9.29	46.0	-5.82	Peak	50.00	106	Vertical	N/A
6*	959.999	45.89	-9.29	46.0	0.11	QP	50.00	106	Vertical	Pass

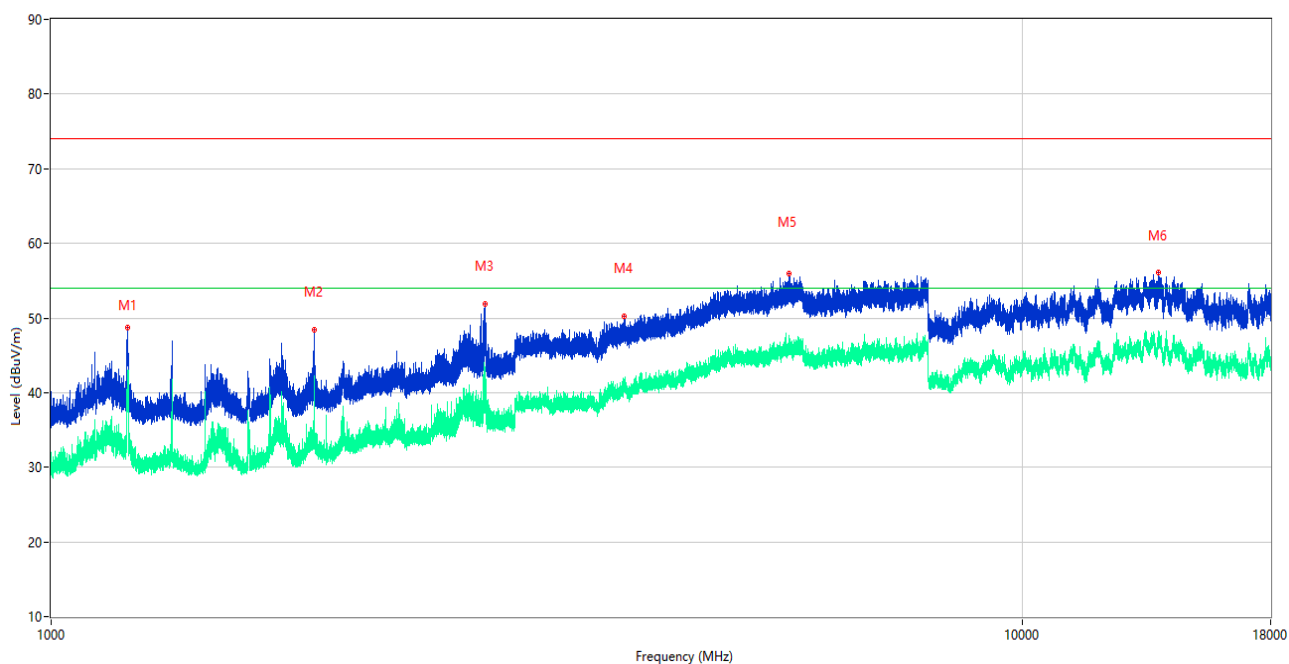
6) Test Antenna Horizontal, 30 MHz – 1 GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	50.904	23.32	-25.50	40.0	16.68	Peak	146.00	200	Horizontal	Pass
2	133.111	31.95	-29.98	43.5	11.55	Peak	235.00	200	Horizontal	Pass
3	232.536	33.08	-25.43	46.0	12.92	Peak	219.00	100	Horizontal	Pass
4	266.244	36.18	-24.51	46.0	9.82	Peak	72.00	100	Horizontal	Pass
5	479.999	48.89	-19.19	46.0	-2.89	Peak	103.00	101	Horizontal	N/A
5*	479.999	45.79	-19.19	46.0	0.21	QP	103.00	101	Horizontal	Pass
6	959.999	50.79	-9.29	46.0	-4.79	Peak	219.00	101	Horizontal	N/A
6*	959.999	45.85	-9.29	46.0	0.15	QP	219.00	101	Horizontal	Pass

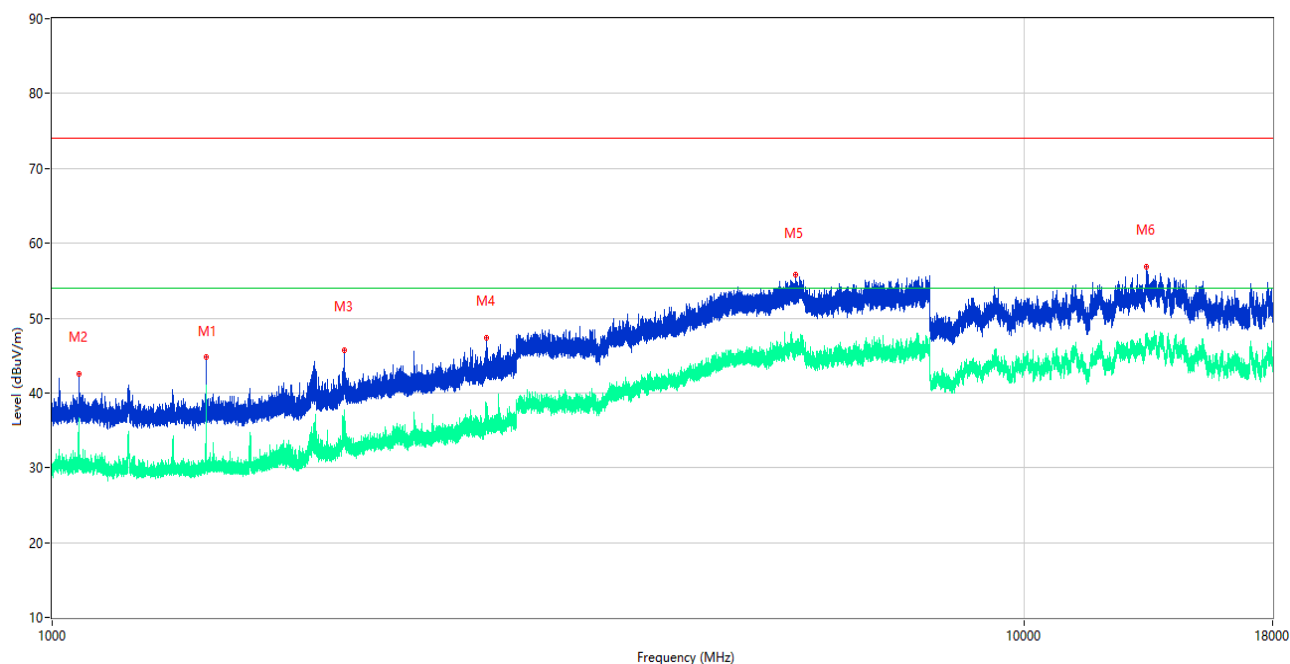
Equipment Information						
Equipment Name	Supplier	Model	Serial No.	Cal. Date	Cal. Due	Use
Frequency Below 1 GHz						
EMI Receiver	Keysight	N9038A	MY55330120	2023.09.05	2024.09.04	☒
Amplifier (30-1GHz)	COM-MV	ZT30-1000M	B2017119081	2023.12.05	2024.12.04	☒
Test Antenna- Bi-Log	SCHWARZB ECK	VULB 9168	9168-00867	2022.04.12	2025.04.11	☒
Anechoic Chamber (#2)	YiHeng	9m*6m*6m	142	2021.08.19	2024.08.18	☒
Description	Supplier	Name	Version	/		Use
Test Software	BALUN	BL410-E	V22.930	/		☒

7) Test Antenna Vertical, 1 GHz – 18 GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1199.800	48.76	-16.21	74.0	25.24	Peak	215.00	100	Vertical	Pass
1**	1199.800	42.13	-16.21	54.0	11.87	AV	215.00	100	Vertical	Pass
2	1864.700	48.49	-14.86	74.0	25.51	Peak	215.00	100	Vertical	Pass
2**	1864.700	39.30	-14.86	54.0	14.70	AV	215.00	100	Vertical	Pass
3	2797.200	51.94	-8.20	74.0	22.06	Peak	167.00	100	Vertical	Pass
3**	2797.200	42.80	-8.20	54.0	11.20	AV	167.00	100	Vertical	Pass
4	3891.250	50.17	-1.21	74.0	23.83	Peak	135.00	100	Vertical	Pass
4**	3891.250	40.94	-1.21	54.0	13.06	AV	135.00	100	Vertical	Pass
5	5752.500	55.98	3.34	74.0	18.02	Peak	30.00	100	Vertical	Pass
5**	5752.500	46.40	3.34	54.0	7.60	AV	30.00	100	Vertical	Pass
6	13808.500	56.11	5.70	74.0	17.89	Peak	257.00	100	Vertical	Pass
6**	13808.500	47.00	5.70	54.0	7.00	AV	257.00	100	Vertical	Pass

8) Test Antenna Horizontal, 1 GHz – 18 GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1440.100	44.78	-15.96	74.0	29.22	Peak	241.00	100	Horizontal	Pass
1**	1440.100	40.81	-15.96	54.0	13.19	AV	241.00	100	Horizontal	Pass
2	1065.800	42.57	-16.42	74.0	31.43	Peak	181.00	100	Horizontal	Pass
2**	1065.800	34.04	-16.42	54.0	19.96	AV	181.00	100	Horizontal	Pass
3	1998.100	45.63	-13.89	74.0	28.37	Peak	155.00	100	Horizontal	Pass
3**	1998.100	36.52	-13.89	54.0	17.48	AV	155.00	100	Horizontal	Pass
4	2794.300	47.39	-8.38	74.0	26.61	Peak	159.00	100	Horizontal	Pass
4**	2794.300	35.93	-8.38	54.0	18.07	AV	159.00	100	Horizontal	Pass
5	5813.000	55.74	3.53	74.0	18.26	Peak	203.00	100	Horizontal	Pass
5**	5813.000	45.95	3.53	54.0	8.05	AV	203.00	100	Horizontal	Pass
6	13358.000	56.81	5.18	74.0	17.19	Peak	315.00	100	Horizontal	Pass
6**	13358.000	46.60	5.18	54.0	7.40	AV	315.00	100	Horizontal	Pass

Equipment Information						
Equipment Name	Supplier	Model	Serial No.	Cal. Date	Cal. Due	Use
Frequency Above 1 GHz						
EMI Receiver	Keysight	N9038A	MY55330120	2023.09.05	2024.09.04	☒
Amplifier (1-12GHz)	Advanced Microwave	WLA652A	1740103	2023.12.05	2024.12.04	☒
Amplifier (0.8-21GHz)	Mini-Circuits	ZVA-213-S+	225321316	2023.12.05	2024.12.04	☒
Test Antenna- Horn	SCHWARZB ECK	BBHA 9120D	01917	2022.06.09	2025.06.08	☒
Anechoic Chamber (#2)	YiHeng	9m*6m*6m	142	2021.08.19	2024.08.18	☒
Description	Supplier	Name	Version	/		Use
Test Software	BALUN	BL410-E	V22.930	/		☒

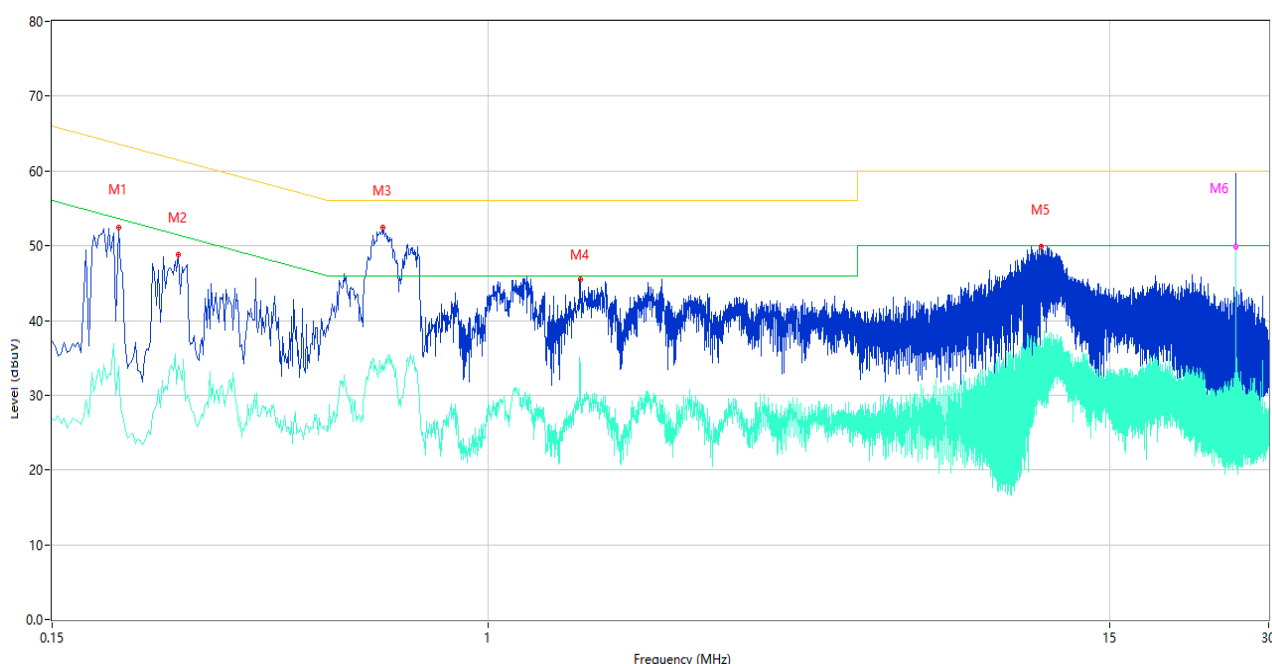
A.2 Conducted Emission, AC Ports

Note: Devices subject to Part 15 must be tested for all available U.S. voltages and frequencies (such as a nominal 120 VAC, 50/60 Hz and 240 VAC, 50/60 Hz) for which the device is capable of operation. So, The configuration 120 VAC, 60 Hz and 240 VAC, 50 Hz were tested respectively, but only the worst configuration (240 VAC, 60 Hz) shown here.

Sample No.	S04	Temperature	20.7℃
Humidity	50%RH	Pressure	101kPa
Test Engineer	Yangyang	Test Date	2024.05.14

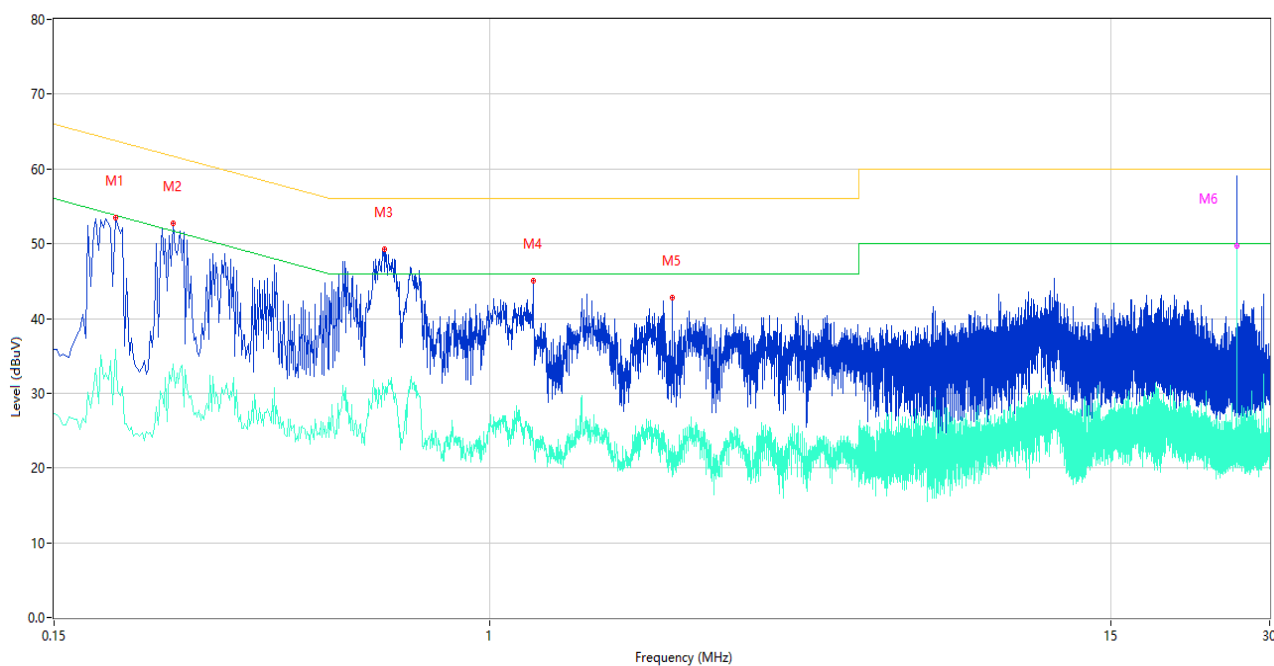
Test Mode 13

1) AC Ports - L Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.200	52.50	10.04	63.61	11.11	Peak	L	Pass
1**	0.200	33.88	10.04	53.61	19.73	AV	L	Pass
2	0.260	48.75	10.05	61.43	12.68	Peak	L	Pass
2**	0.260	34.10	10.05	51.43	17.33	AV	L	Pass
3	0.634	52.41	10.43	56.00	3.59	Peak	L	Pass
3**	0.634	34.08	10.43	46.00	11.92	AV	L	Pass
4	1.496	45.42	10.42	56.00	10.58	Peak	L	Pass
4**	1.496	33.89	10.42	46.00	12.11	AV	L	Pass
5	11.142	49.86	11.57	60.00	10.14	Peak	L	Pass
5**	11.142	35.48	11.57	50.00	14.52	AV	L	Pass
6	26.000	59.75	13.97	60.00	0.25	Peak	L	Pass
6**	26.000	49.90	13.97	50.00	0.10	AV	L	Pass

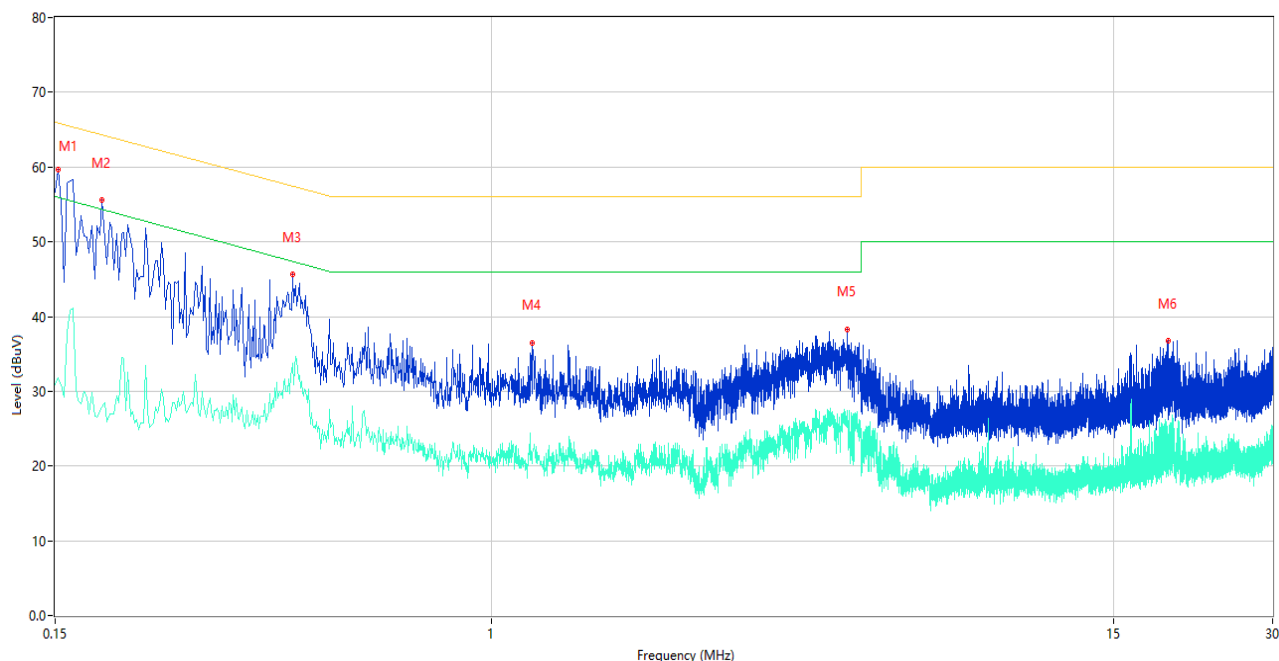
2) AC Ports - N Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.196	53.52	10.05	63.78	10.26	Peak	N	Pass
1**	0.196	35.93	10.05	53.78	17.85	AV	N	Pass
2	0.252	52.75	10.05	61.69	8.94	Peak	N	Pass
2**	0.252	33.86	10.05	51.69	17.83	AV	N	Pass
3	0.632	49.26	10.45	56.00	6.74	Peak	N	Pass
3**	0.632	30.48	10.45	46.00	15.52	AV	N	Pass
4	1.210	44.98	10.59	56.00	11.02	Peak	N	Pass
4**	1.210	23.54	10.59	46.00	22.46	AV	N	Pass
5	2.222	42.76	10.55	56.00	13.24	Peak	N	Pass
5**	2.222	23.03	10.55	46.00	22.97	AV	N	Pass
6	25.998	58.94	13.96	60.00	1.06	Peak	N	Pass
6**	25.998	49.68	13.96	50.00	0.32	AV	N	Pass

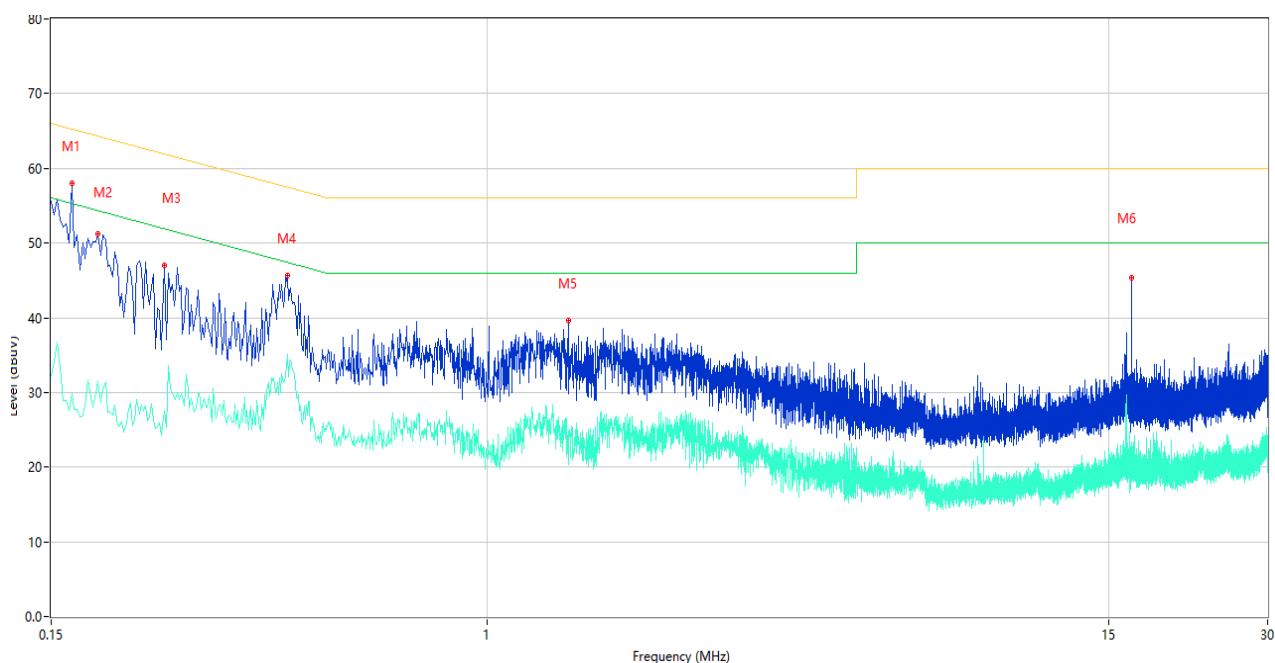
Test Mode 14

3) AC Ports - L Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.152	59.73	10.11	65.89	6.16	Peak	L	Pass
1**	0.152	31.74	10.11	55.89	24.15	AV	L	Pass
2	0.184	55.56	10.06	64.30	8.74	Peak	L	Pass
2**	0.184	27.91	10.06	54.30	26.39	AV	L	Pass
3	0.422	45.68	10.62	57.41	11.73	Peak	L	Pass
3**	0.422	33.77	10.62	47.41	13.64	AV	L	Pass
4	1.194	36.53	10.72	56.00	19.47	Peak	L	Pass
4**	1.194	21.33	10.72	46.00	24.67	AV	L	Pass
5	4.720	38.32	10.76	56.00	17.68	Peak	L	Pass
5**	4.720	26.38	10.76	46.00	19.62	AV	L	Pass
6	19.016	36.73	12.87	60.00	23.27	Peak	L	Pass
6**	19.016	22.77	12.87	50.00	27.23	AV	L	Pass

4) AC Ports - N Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.164	57.96	10.09	65.26	7.30	Peak	N	Pass
1**	0.164	29.83	10.09	55.26	25.43	AV	N	Pass
2	0.184	51.27	10.06	64.30	13.03	Peak	N	Pass
2**	0.184	31.51	10.06	54.30	22.79	AV	N	Pass
3	0.246	47.08	10.05	61.89	14.81	Peak	N	Pass
3**	0.246	27.63	10.05	51.89	24.26	AV	N	Pass
4	0.420	45.59	10.62	57.45	11.86	Peak	N	Pass
4**	0.420	35.11	10.62	47.45	12.34	AV	N	Pass
5	1.426	39.66	10.68	56.00	16.34	Peak	N	Pass
5**	1.426	24.30	10.68	46.00	21.70	AV	N	Pass
6	16.602	45.41	13.05	60.00	14.59	Peak	N	Pass
6**	16.602	21.84	13.05	50.00	28.16	AV	N	Pass

Equipment Information						
Equipment Name	Supplier	Model	Serial No.	Cal. Date	Cal. Due	Use
EMI Receiver	KEYSIGHT	N9010B	MY57110309	2023.09.05	2024.09.04	☒
LISN	SCHWARZB ECK	NSLK 8127	8127-687	2024.05.09	2025.05.08	☒
ISN	TESEQ	ISN T800	34449	2023.11.10	2024.11.09	☐
ISN	TESEQ	ISN T8-Cat6	53561	2024.04.24	2025.04.23	☐
Shielded Room	YiHeng Electronic Co., Ltd	3.5m*3.1m*2. 8m	112	2022.02.19	2025.02.18	☒
Description	Supplier	Name	Version	/		Use
Test Software	BALUN	BL410-E	V22.930	/		☒

ANNEX B TEST SETUP PHOTOS

Please refer the document “BL-SZ2450047-AE.PDF”.

ANNEX C EUT EXTERNAL PHOTOS

Please refer the document “BL-SZ2450047-AW.PDF”.

ANNEX D EUT INTERNAL PHOTOS

Please refer the document “BL-SZ2450047-AI.PDF”.

Statement

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--END OF REPORT--