

TEST REPORT

Applicant: vivo Mobile Communication Co., Ltd.
Address: No.1, vivo Road, Chang'an, Dongguan,
Guangdong, China
Equipment Type: Mobile Phone
Model Name: V2419
Brand Name: vivo
FCC ID: 2AUCY-V2419
Test Standard: 47 CFR Part 15 Subpart B
ANSI C63.4-2014
Sample Arrival Date: Aug. 27, 2024
Test Date: Aug. 29, 2024 - Sep. 03, 2024
Date of Issue: Sep. 25, 2024

ISSUED BY:

Shenzhen BALUN Technology Co., Ltd.

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(Technical Director)

Qiu Yongjing

Liu Zhenxiang

Sunny Zou

Revision History

Version	Issue Date	Revisions
<u>Rev. 01</u>	<u>Sep. 25, 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	vivo Mobile Communication Co., Ltd.
Address	No.1, vivo Road, Chang'an, Dongguan, Guangdong, China

2.2 Manufacturer Information

Manufacturer	vivo Mobile Communication Co., Ltd.
Address	No.1, vivo Road, Chang'an, Dongguan, Guangdong, China

2.3 General Description for Equipment under Test (EUT)

EUT Name	Mobile Phone
Model Name Under Test	V2419
Series Model Name	N/A
Description of Model name differentiation	N/A
Hardware Version	MP_0.1
Software Version	PD2420F_EX_A_14.0.5.2.W30
Dimensions (Approx.)	165.66*76.03*8.24mm
Weight (Approx.)	198g

2.4 Ancillary Equipment

Ancillary Equipment 1	Battery	
	Brand Name	N/A
	Model No.	BA60
	Serial No.	N/A
	Capacity	Rated Capacity: 5050mAh Typical capacity: 5150mAh
	Rated Voltage	3.85V
	Limit Charge Voltage	4.39V
	Manufacturer	SUNWODA Electronic Co., Ltd.
Ancillary Equipment 2	Adapter 1	
	Brand Name	N/A
	Model No.	V1530L0B0-EU (EU Plug)
	Serial No.	N/A
	Rated Input	100-240V~50/60Hz, 0.5A
	Rated Output	5.0V= 3.0A
	Manufacturer	Dongguan Aohai Technology Co., Ltd.
Ancillary Equipment 3	Adapter 2	

	Brand Name	N/A
	Model No.	V1530L0B0-US (US Plug)
	Serial No.	N/A
	Rated Input	100-240V~50/60Hz, 0.5A
	Rated Output	5.0V= 3.0A
	Manufacturer	Dongguan Aohai Technology Co., Ltd.
Ancillary Equipment 4	USB Cable	
	Model No.	BK-C-50-B
Ancillary Equipment 5	battery cover 1	
	Model No.	Kaixin AC-211CG-U2/0.5-Y1-SL
	Manufacturer	TONGDA (SHISHI) TECHNOLOGY Co., Ltd.
Ancillary Equipment 6	battery cover 2	
	Model No.	FD101-50
	Manufacturer	Zosun Optoelectronic Technology CO., LTD.
Ancillary Equipment 7	battery cover 3	
	Model No.	DFS-PM13-45-0500
	Manufacturer	Zosun Optoelectronic Technology CO., LTD.
Ancillary Equipment 8	battery cover 4	
	Model No.	DXM-HI050
	Manufacturer	Zosun Optoelectronic Technology CO., LTD.
Ancillary Equipment 9	battery cover 5	
	Model No.	Kaixin AC-211CG-U2/0.5-Y1-SL
	Manufacturer	Zhejiang Decotec Co., Ltd.
Note 1: Letter in () means plug type.		
Note 2: All adapters are tested, only the worst data of V1530L0B0-US (US Plug) shown in this report.		

2.5 Technical Information

Network and Wireless connectivity	2G Network GSM/GPRS/EDGE 850/1900MHz 3G Network WCDMA/HSDPA/HSUPA/HSPA+ Band 2/4/5 4G Network FDD LTE Band 2/4/5/7/13/18/19/26/66 TDD-LTE Band 38/41 WIFI 802.11b, 802.11g, WIFI 802.11a, 802.11n(HT20/40) and 802.11ac(VHT20/40/80) Bluetooth (BR+EDR+BLE) GPS, Galileo, GLONASS, BDS, QZSS, FM receiver
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
Laptop	Lenovo	ThinkPad E495	N/A	N/A	N/A	☒
Laptop	HONOR	KPRC-W10	N/A	N/A	N/A	☒
Data connector	UGREEN	40702	N/A	N/A	N/A	☒
USB disk	Sandisk	DTMC3G2	N/A	N/A	64G	☒
TF Card	SAMSUNG	MB-MD256KA	N/A	N/A	256G	☒
Type-C Headset	OPPO	N/A	N/A	1.12m	N/A	☒
Headset	OPPO	N/A	N/A	1.12m	N/A	☒

4.2 Test Configurations

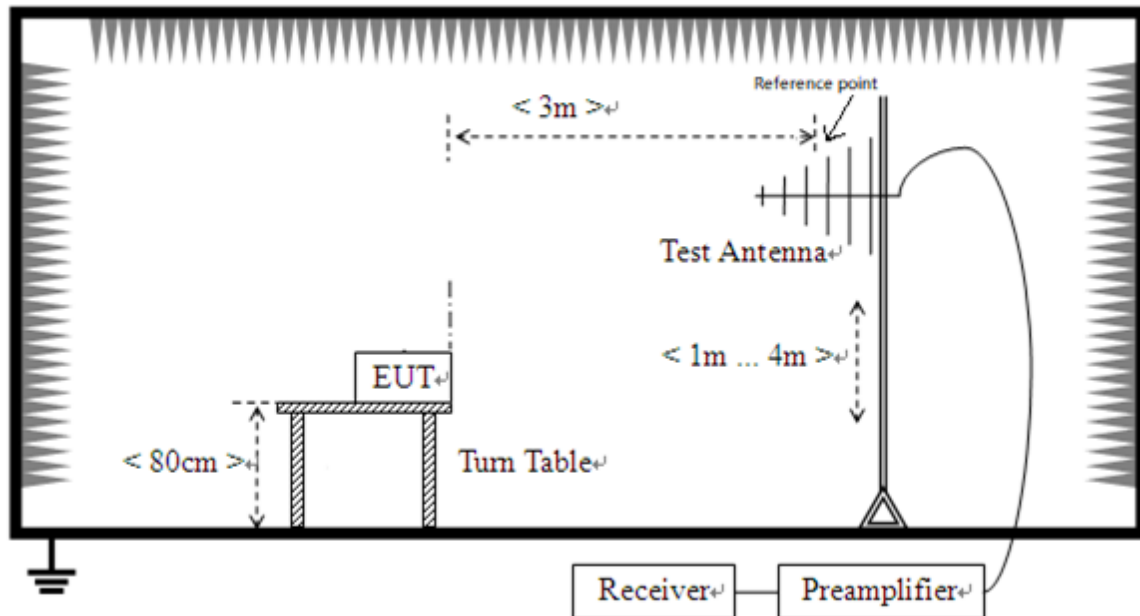
All test modes of EUT are listed in the table below.

Test Mode Configuration	Description
Mode 1	<u>The Standby Test Mode</u> EUT + Adapter + USB Cable + Battery + Headset + TF Card
Mode 2	<u>The Front Camera Test Mode</u> EUT + Adapter + USB Cable + Battery + Headset + TF Card
Mode 3	<u>The Rear Camera Test Mode</u> EUT + Adapter + USB Cable + Battery + Headset + TF Card
Mode 4	<u>The Video Play Test Mode</u> EUT + Adapter + USB Cable + Battery + Headset + TF Card
Mode 5	<u>The USB Test Mode</u> EUT + USB Cable + Battery + Laptop + Headset + TF Card
Mode 6	<u>The FM Test Mode</u> EUT + Adapter + USB Cable + Battery + Headset + TF Card + FM RX
Mode 7	<u>The OTG Test Mode</u> EUT + Battery + Data connector + USB Disk + TF Card
Mode 8	<u>The Type-C Headset Test Mode</u> EUT + Type-C Headset + Battery + TF Card

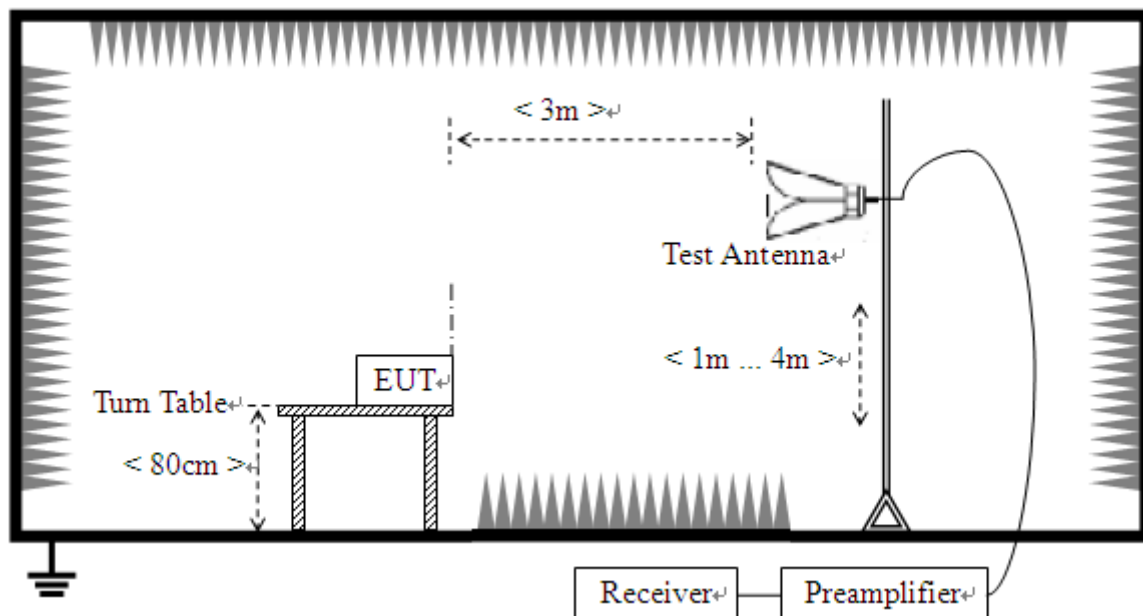
Test Case	Test Mode Configuration	Worst Mode
Radiated Emission	Mode 1~Mode 8	1, 5
Conducted Emission, AC Ports	Mode 1~Mode 6	1, 5
Note: All operation modes were tested, but only test data of the worst mode was presented in this report.		

4.3 Test Setups

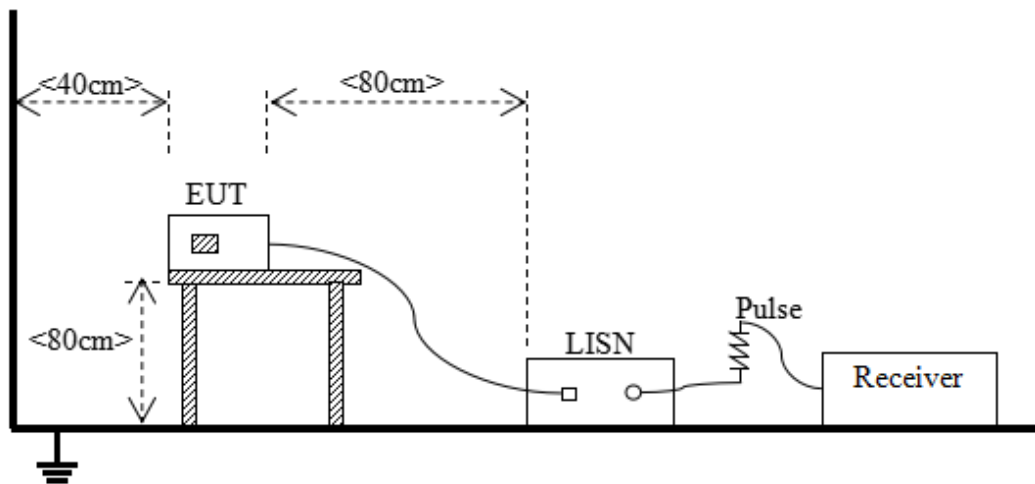
Test Setup 1



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 (dBμV) = Reading (dBμV) + 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.

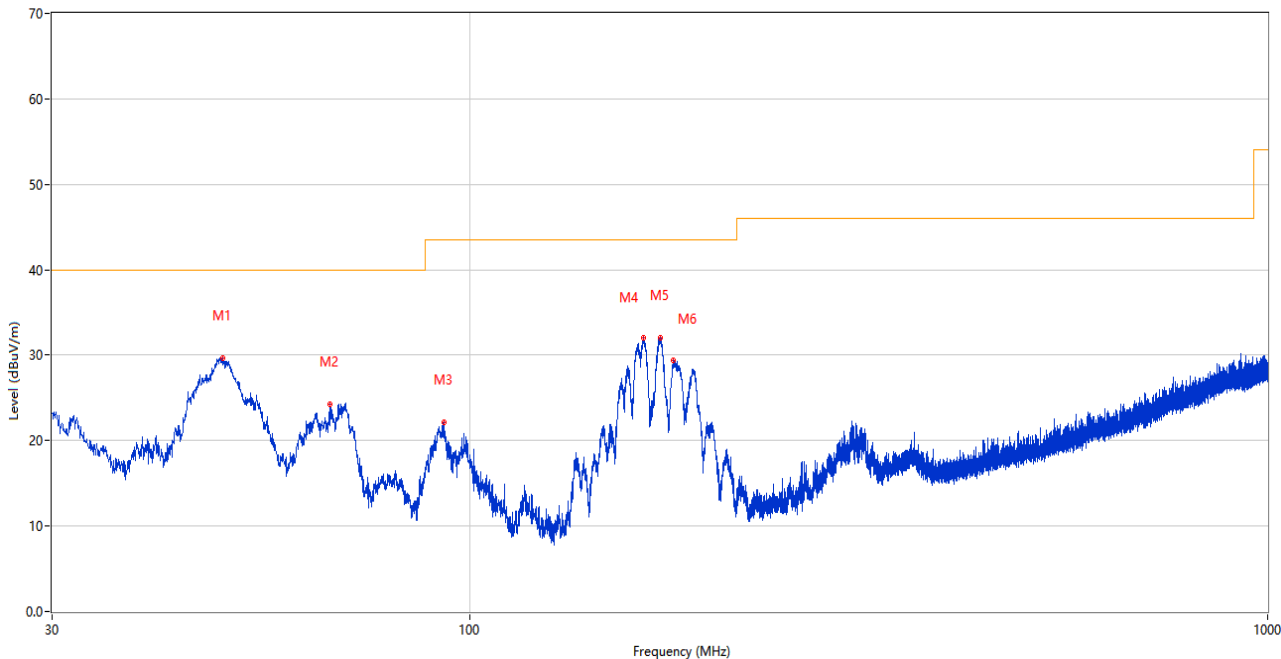
Note 2: For the test data above 1 GHz, according the ANSI C63.4-2014, where limits are specified for both average and peak (or quasi-peak) detector functions, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement.

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.	S02	Temperature	22.7℃
Humidity	41%RH	Pressure	101kPa
Test Engineer	He Shichang	Test Date	2024.08.29 – 2024.08.30

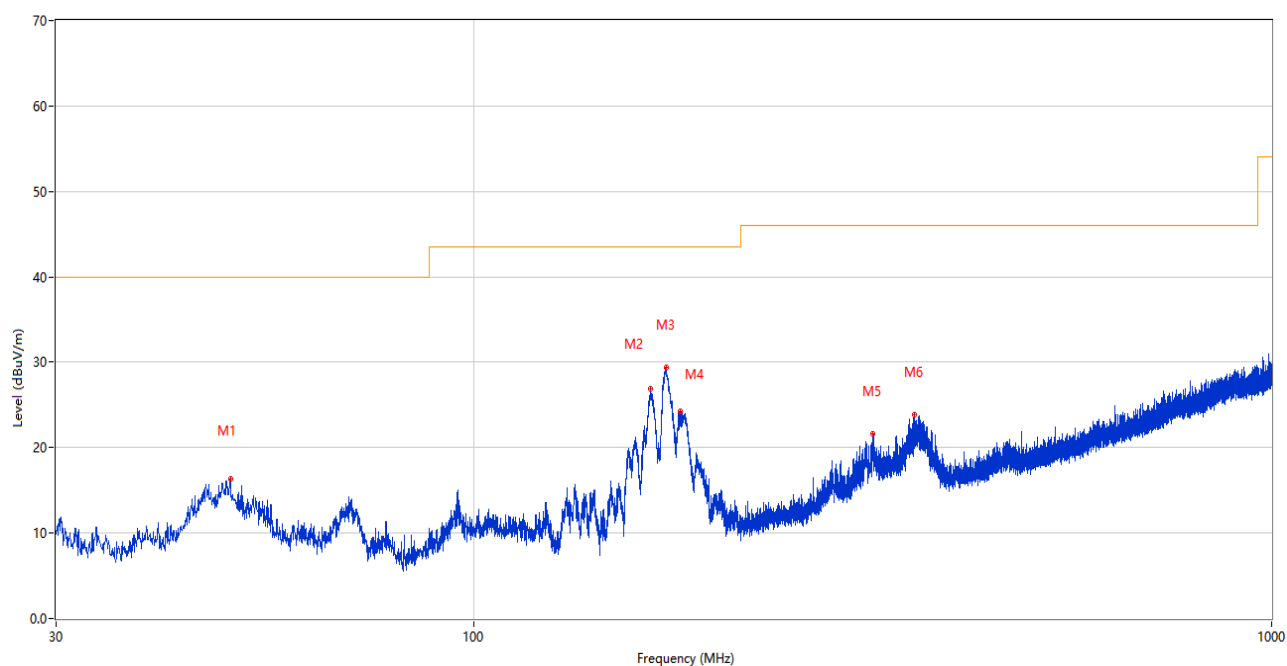
Test Mode 1

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	49.060	29.63	-25.41	40.0	10.37	Peak	33.00	100	Vertical	Pass
2	66.909	24.20	-28.07	40.0	15.80	Peak	20.00	100	Vertical	Pass
3	92.953	22.13	-27.89	43.5	21.37	Peak	185.00	100	Vertical	Pass
4	165.072	32.00	-29.32	43.5	11.50	Peak	208.00	100	Vertical	Pass
5	173.560	32.04	-28.94	43.5	11.46	Peak	257.00	100	Vertical	Pass
6	180.204	29.38	-28.52	43.5	14.12	Peak	86.00	100	Vertical	Pass

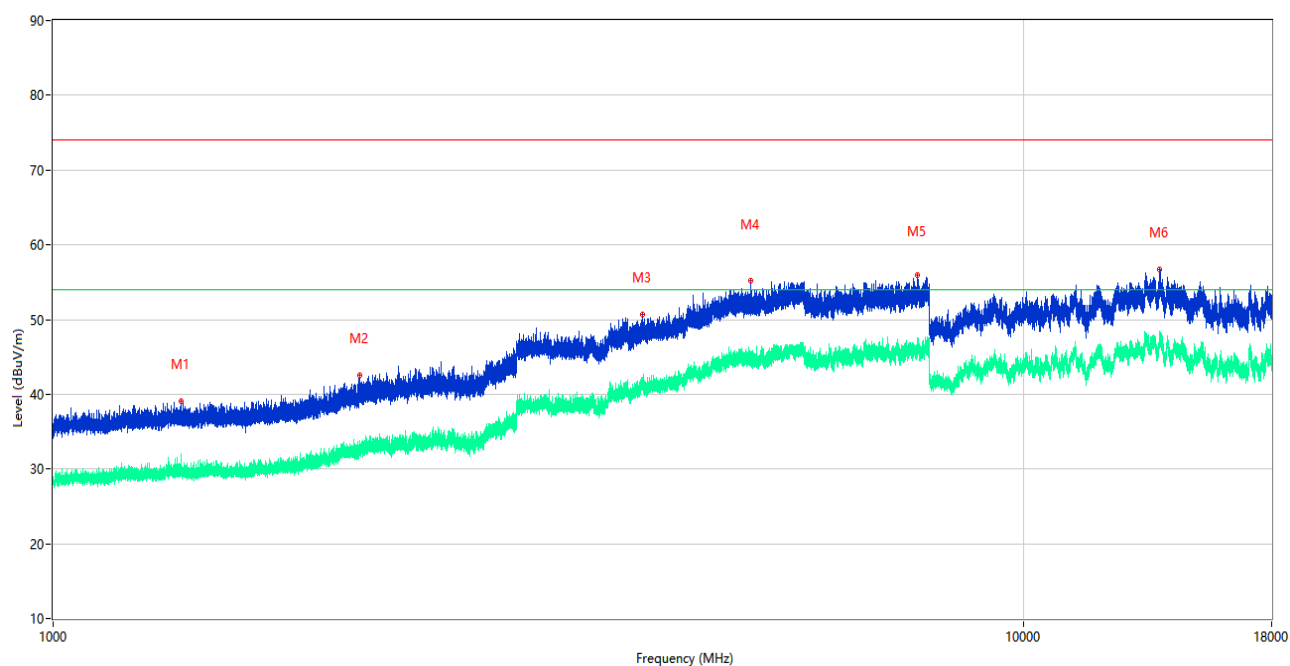
2) Test Antenna Horizontal, 30 MHz – 1 GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	49.594	16.32	-25.54	40.0	23.68	Peak	290.00	100	Horizontal	Pass
2	166.867	26.85	-29.22	43.5	16.65	Peak	47.00	200	Horizontal	Pass
3	174.239	29.39	-28.91	43.5	14.11	Peak	52.00	200	Horizontal	Pass
4	181.514	24.26	-28.39	43.5	19.24	Peak	47.00	200	Horizontal	Pass
5	316.780	21.59	-23.19	46.0	24.41	Peak	53.00	100	Horizontal	Pass
6	356.696	23.86	-21.90	46.0	22.14	Peak	62.00	100	Horizontal	Pass

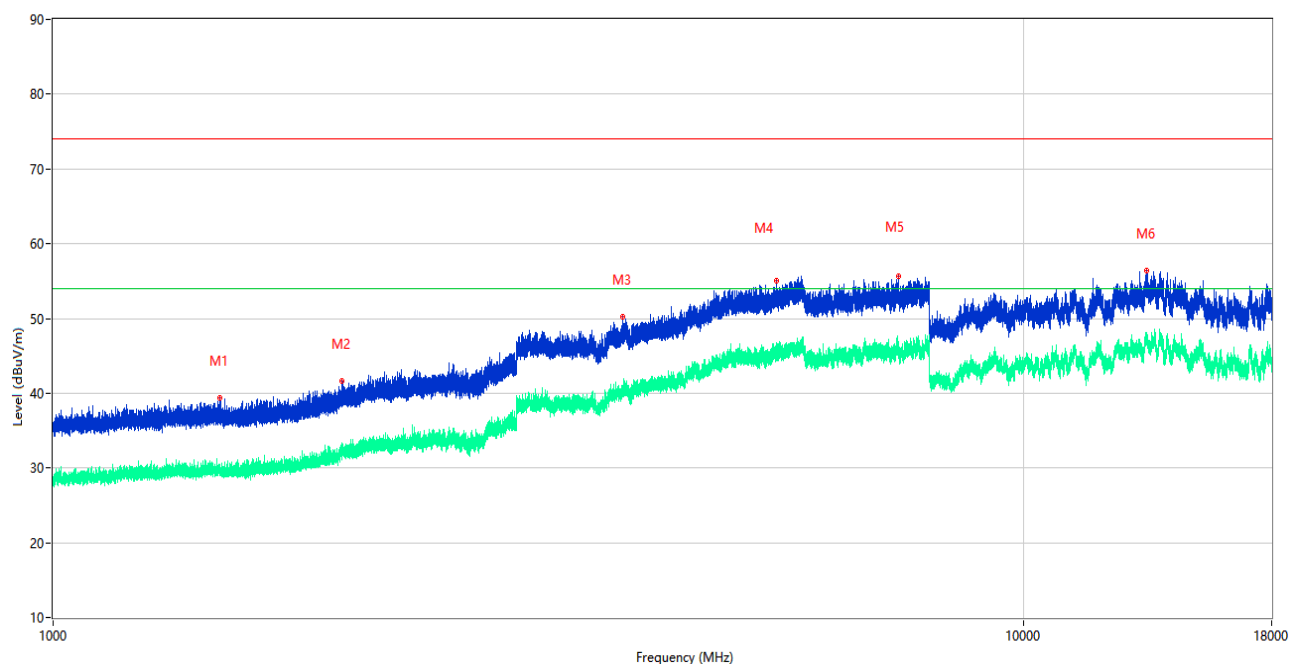
Equipment Information						
Equipment Name	Supplier	Model	Serial No.	Cal. Date	Cal. Due	Use
Frequency Below 1 GHz						
EMI Receiver	Keysight	N9038A	MY55330120	2024.08.01	2025.07.31	☒
Amplifier (30-1GHz)	COM-MV	ZT30-1000M	B2017119081	2023.12.05	2024.12.04	☒
Test Antenna- Bi-Log	SCHWARZB ECK	VULB 9168	9168-00867	2022.04.12	2025.04.11	☒
Anechoic Chamber (#2)	YiHeng	9m*6m*6m	142	2024.07.21	2027.07.20	☒
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	1355.200	39.04	-15.98	74.0	34.96	Peak	224.00	100	Vertical	Pass
1**	1355.200	29.81	-15.98	54.0	24.19	AV	224.00	100	Vertical	Pass
2	2071.800	42.54	-12.58	74.0	31.46	Peak	102.00	100	Vertical	Pass
2**	2071.800	31.99	-12.58	54.0	22.01	AV	102.00	100	Vertical	Pass
3	4051.500	50.70	-0.52	74.0	23.30	Peak	177.00	100	Vertical	Pass
3**	4051.500	41.79	-0.52	54.0	12.21	AV	177.00	100	Vertical	Pass
4	5237.250	55.16	1.70	74.0	18.84	Peak	243.00	100	Vertical	Pass
4**	5237.250	45.12	1.70	54.0	8.88	AV	243.00	100	Vertical	Pass
5	7766.000	55.96	2.53	74.0	18.04	Peak	357.00	100	Vertical	Pass
5**	7766.000	46.44	2.53	54.0	7.56	AV	357.00	100	Vertical	Pass
6	13807.000	56.65	5.72	74.0	17.35	Peak	360.00	100	Vertical	Pass
6**	13807.000	47.67	5.72	54.0	6.33	AV	360.00	100	Vertical	Pass

4) Test Antenna Horizontal, 1 GHz – 18 GHz

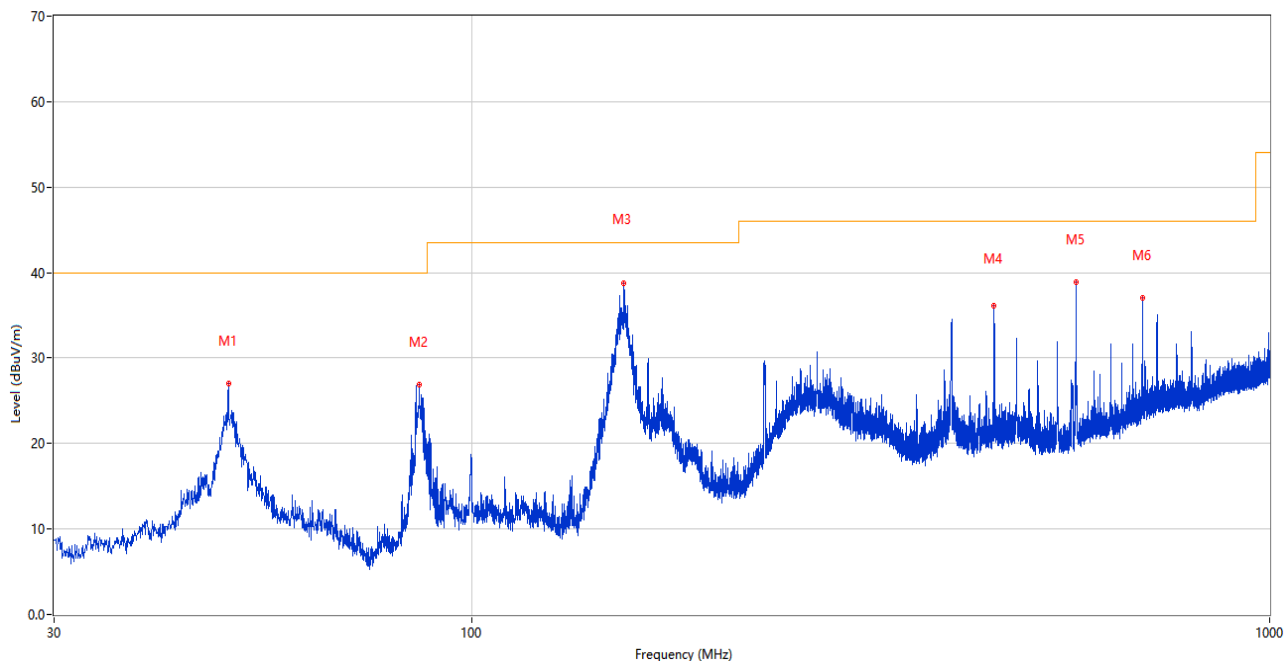


No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1483.300	39.36	-15.96	74.0	34.64	Peak	64.00	100	Horizontal	Pass
1**	1483.300	30.50	-15.96	54.0	23.50	AV	64.00	100	Horizontal	Pass
2	1984.700	41.62	-13.46	74.0	32.38	Peak	248.00	100	Horizontal	Pass
2**	1984.700	31.95	-13.46	54.0	22.05	AV	248.00	100	Horizontal	Pass
3	3864.750	50.27	-1.52	74.0	23.73	Peak	48.00	100	Horizontal	Pass
3**	3864.750	39.67	-1.52	54.0	14.33	AV	48.00	100	Horizontal	Pass
4	5564.250	55.01	1.91	74.0	18.99	Peak	94.00	100	Horizontal	Pass
4**	5564.250	45.17	1.91	54.0	8.83	AV	94.00	100	Horizontal	Pass
5	7423.250	55.63	2.93	74.0	18.37	Peak	113.00	100	Horizontal	Pass
5**	7423.250	45.51	2.93	54.0	8.49	AV	113.00	100	Horizontal	Pass
6	13371.000	56.37	5.09	74.0	17.63	Peak	349.00	100	Horizontal	Pass
6**	13371.000	46.89	5.09	54.0	7.11	AV	349.00	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	2024.08.01	2025.07.31	☒
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	2024.07.21	2027.07.20	☒
Description	Supplier	Name	Version	/		Use
Test Software	BALUN	BL410-E	V22.930	/		☒

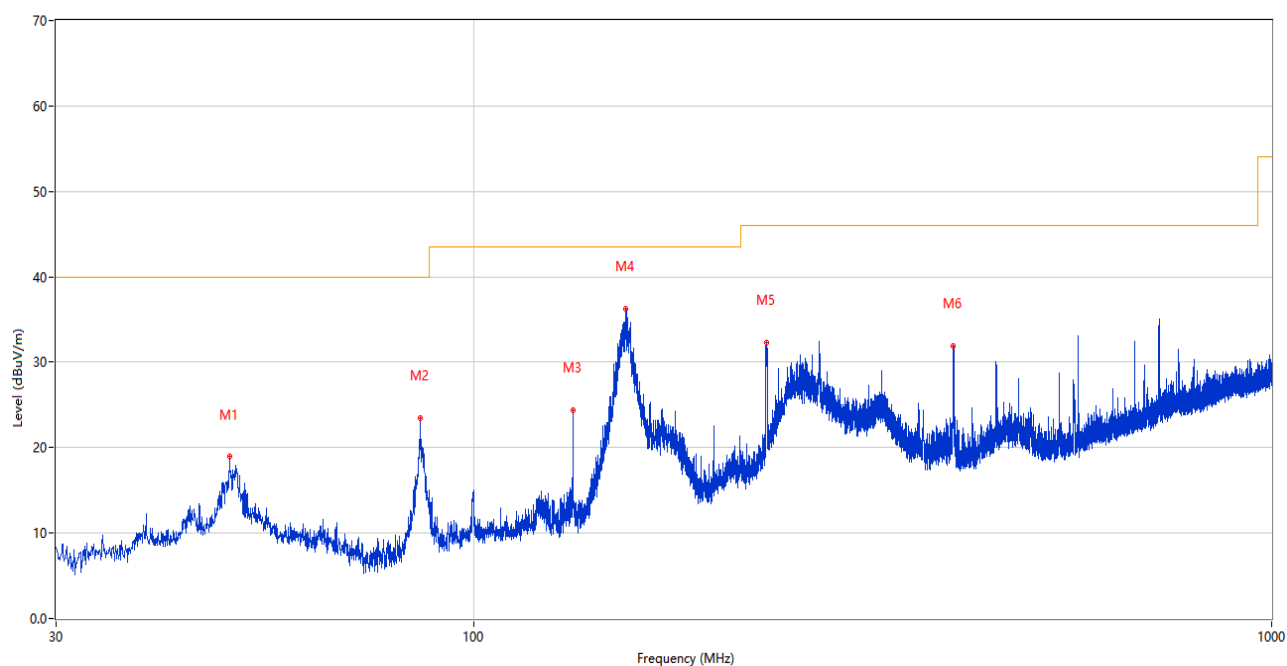
Test Mode 5

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	49.594	27.07	-25.54	40.0	12.93	Peak	271.00	100	Vertical	Pass
2	86.066	26.87	-29.71	40.0	13.13	Peak	158.00	200	Vertical	Pass
3	155.033	38.76	-29.85	43.5	4.74	Peak	242.00	100	Vertical	Pass
4	451.659	36.13	-19.85	46.0	9.87	Peak	157.00	100	Vertical	Pass
5	572.618	38.94	-16.98	46.0	7.06	Peak	127.00	200	Vertical	Pass
6	692.753	37.07	-14.20	46.0	8.93	Peak	170.00	100	Vertical	Pass

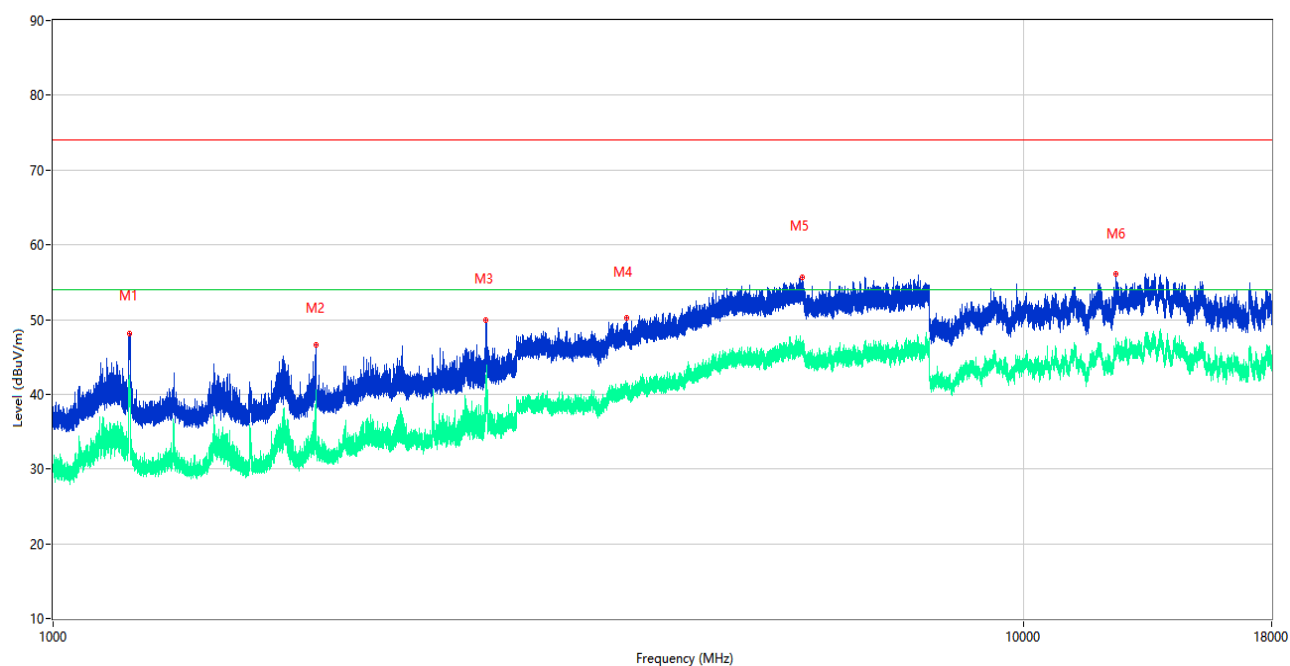
6) Test Antenna Horizontal, 30 MHz – 1 GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	49.497	18.92	-25.52	40.0	21.08	Peak	189.00	200	Horizontal	Pass
2	85.775	23.53	-29.79	40.0	16.47	Peak	64.00	200	Horizontal	Pass
3	133.208	24.41	-29.99	43.5	19.09	Peak	214.00	200	Horizontal	Pass
4	155.082	36.25	-29.85	43.5	7.25	Peak	181.00	200	Horizontal	Pass
5	233.264	32.25	-25.44	46.0	13.75	Peak	226.00	100	Horizontal	Pass
6	398.600	31.93	-21.01	46.0	14.07	Peak	179.00	100	Horizontal	Pass

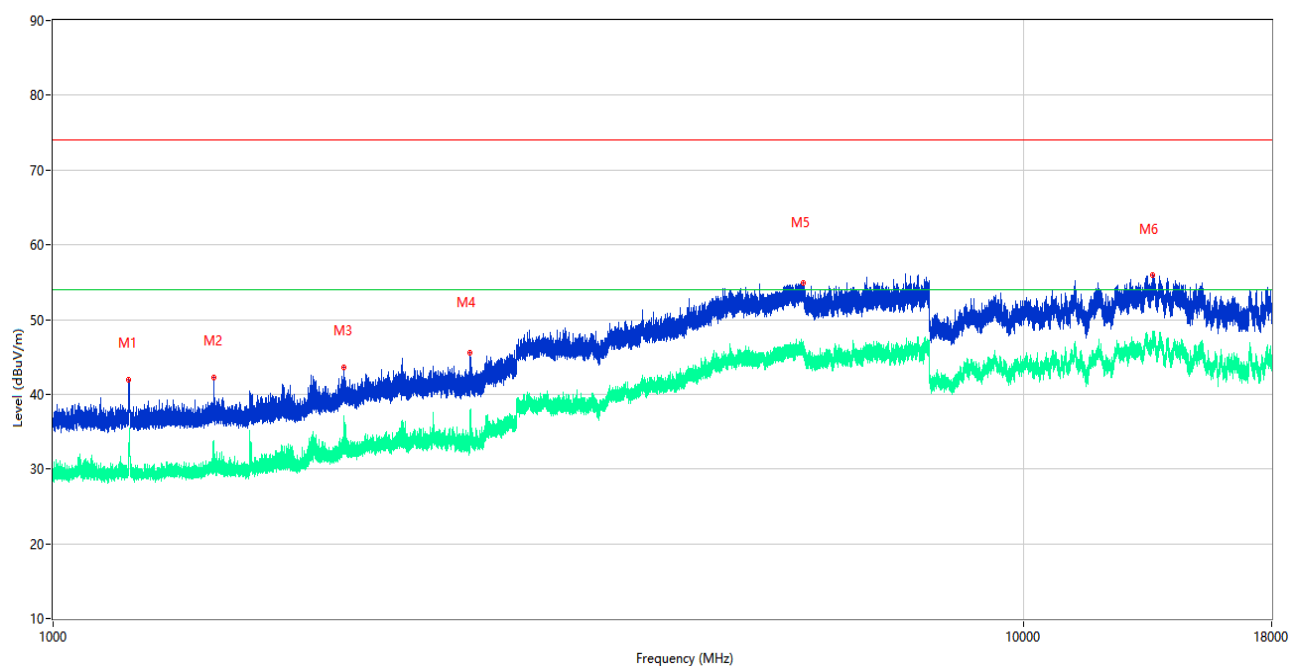
Equipment Information						
Equipment Name	Supplier	Model	Serial No.	Cal. Date	Cal. Due	Use
Frequency Below 1 GHz						
EMI Receiver	Keysight	N9038A	MY55330120	2024.08.01	2025.07.31	☒
Amplifier (30-1GHz)	COM-MV	ZT30-1000M	B2017119081	2023.12.05	2024.12.04	☒
Test Antenna- Bi-Log	SCHWARZB ECK	VULB 9168	9168-00867	2022.04.12	2025.04.11	☒
Anechoic Chamber (#2)	YiHeng	9m*6m*6m	142	2024.07.21	2027.07.20	☒
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	48.17	-16.21	74.0	25.83	Peak	232.00	100	Vertical	Pass
1**	1199.800	41.20	-16.21	54.0	12.80	AV	232.00	100	Vertical	Pass
2	1866.700	46.59	-14.88	74.0	27.41	Peak	242.00	100	Vertical	Pass
2**	1866.700	33.42	-14.88	54.0	20.58	AV	242.00	100	Vertical	Pass
3	2789.800	49.92	-8.48	74.0	24.08	Peak	166.00	100	Vertical	Pass
3**	2789.800	37.92	-8.48	54.0	16.08	AV	166.00	100	Vertical	Pass
4	3899.000	50.25	-0.99	74.0	23.75	Peak	212.00	100	Vertical	Pass
4**	3899.000	40.39	-0.99	54.0	13.61	AV	212.00	100	Vertical	Pass
5	5919.000	55.58	3.49	74.0	18.42	Peak	202.00	100	Vertical	Pass
5**	5919.000	45.47	3.49	54.0	8.53	AV	202.00	100	Vertical	Pass
6	12431.000	56.04	2.48	74.0	17.96	Peak	110.00	100	Vertical	Pass
6**	12431.000	45.32	2.48	54.0	8.68	AV	110.00	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	1195.600	41.98	-16.24	74.0	32.02	Peak	251.00	100	Horizontal	Pass
1**	1195.600	30.38	-16.24	54.0	23.62	AV	251.00	100	Horizontal	Pass
2	1463.800	42.27	-15.76	74.0	31.73	Peak	227.00	100	Horizontal	Pass
2**	1463.800	30.50	-15.76	54.0	23.50	AV	227.00	100	Horizontal	Pass
3	1993.000	43.62	-13.69	74.0	30.38	Peak	160.00	100	Horizontal	Pass
3**	1993.000	33.39	-13.69	54.0	20.61	AV	160.00	100	Horizontal	Pass
4	2690.200	45.54	-9.06	74.0	28.46	Peak	347.00	100	Horizontal	Pass
4**	2690.200	37.84	-9.06	54.0	16.16	AV	347.00	100	Horizontal	Pass
5	5929.750	54.84	3.04	74.0	19.16	Peak	353.00	100	Horizontal	Pass
5**	5929.750	45.35	3.04	54.0	8.65	AV	353.00	100	Horizontal	Pass
6	13579.500	55.90	4.72	74.0	18.10	Peak	213.00	100	Horizontal	Pass
6**	13579.500	46.48	4.72	54.0	7.52	AV	213.00	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	2024.08.01	2025.07.31	☒
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	2024.07.21	2027.07.20	☒
Description	Supplier	Name	Version	/		Use
Test Software	BALUN	BL410-E	V22.930	/		☒

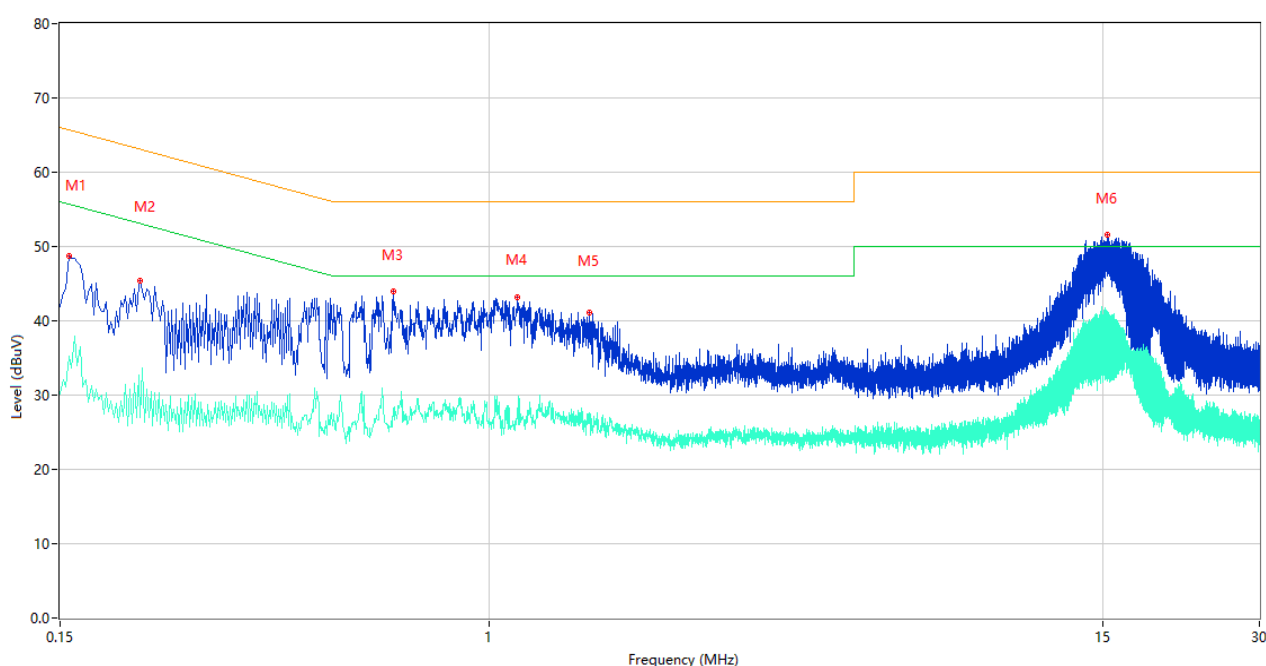
A.2 Conducted Emission, AC Ports

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 (120 VAC, 60 Hz) shown here.

Sample No.	S02	Temperature	22.5°C
Humidity	58%RH	Pressure	101kPa
Test Engineer	Yang Yang	Test Date	2024.09.03

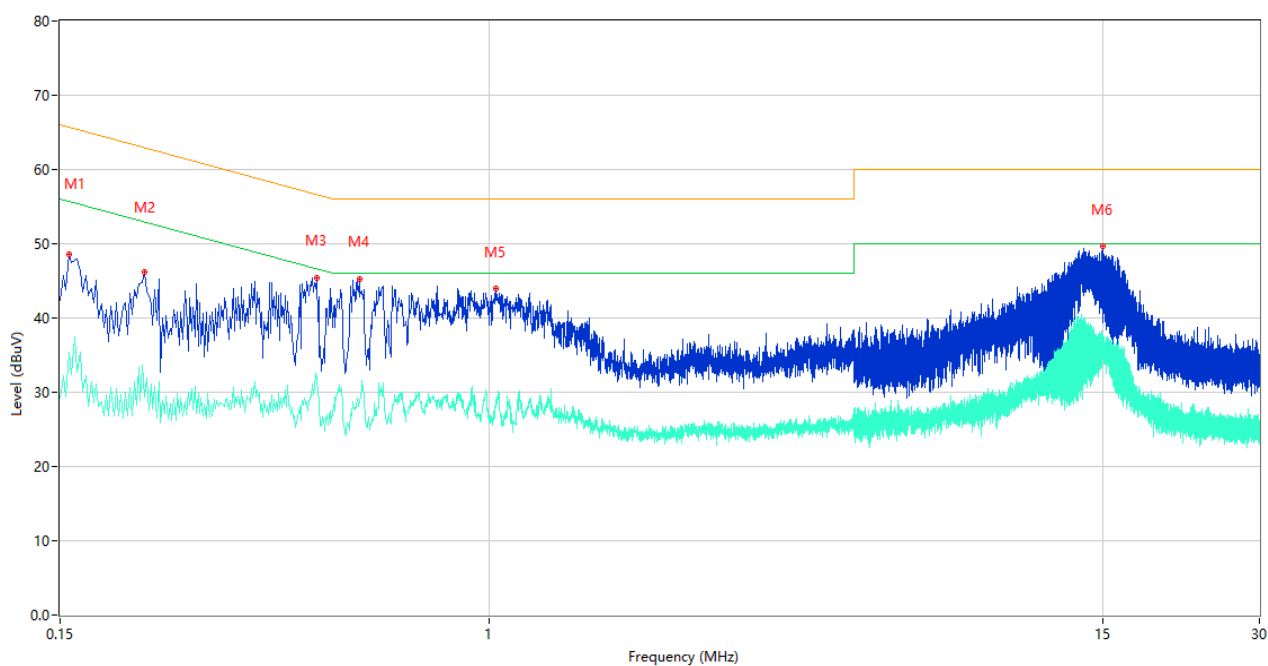
Test Mode 1

1) AC Ports - L Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.156	48.73	9.78	65.67	16.94	Peak	L	Pass
1**	0.156	35.28	9.78	55.67	20.39	AV	L	Pass
2	0.214	45.39	9.77	63.05	17.66	Peak	L	Pass
2**	0.214	26.95	9.77	53.05	26.10	AV	L	Pass
3	0.654	43.89	10.25	56.00	12.11	Peak	L	Pass
3**	0.654	28.22	10.25	46.00	17.78	AV	L	Pass
4	1.130	43.19	10.25	56.00	12.81	Peak	L	Pass
4**	1.130	26.90	10.25	46.00	19.10	AV	L	Pass
5	1.558	41.14	10.10	56.00	14.86	Peak	L	Pass
5**	1.558	27.61	10.10	46.00	18.39	AV	L	Pass
6	15.348	51.55	10.72	60.00	8.45	Peak	L	Pass
6**	15.348	39.78	10.72	50.00	10.22	AV	L	Pass

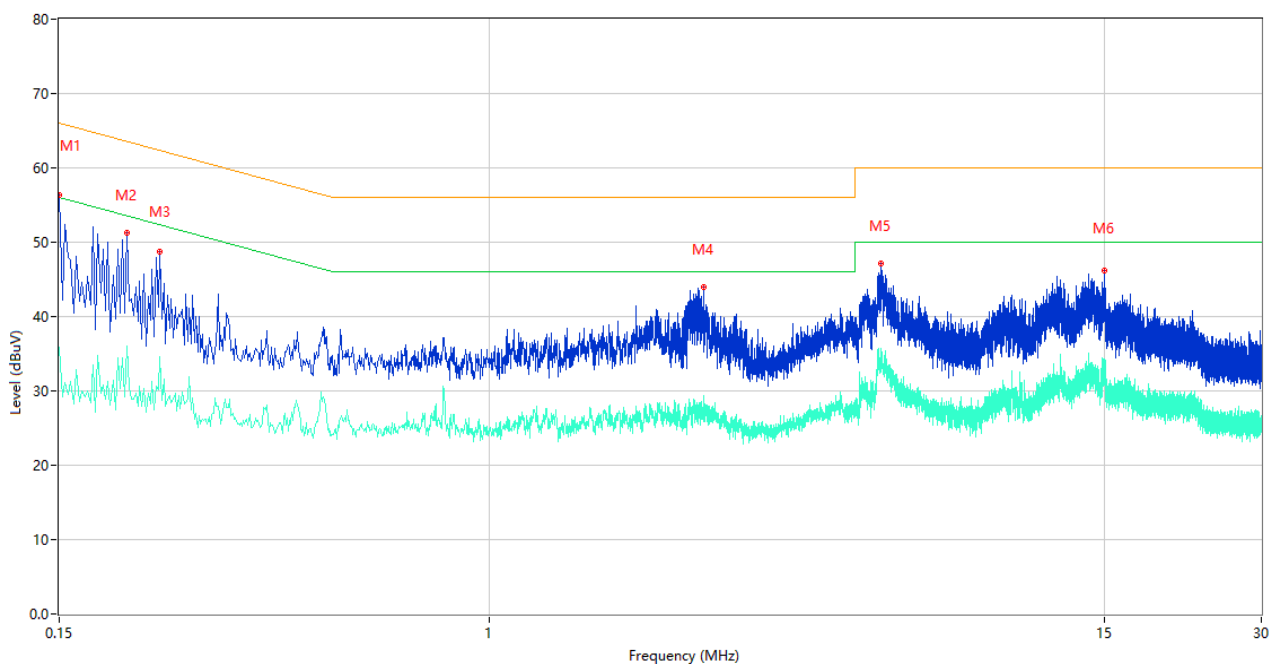
2) AC Ports - N Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.156	48.64	9.78	65.67	17.03	Peak	N	Pass
1**	0.156	35.48	9.78	55.67	20.19	AV	N	Pass
2	0.218	46.12	9.77	62.89	16.77	Peak	N	Pass
2**	0.218	29.30	9.77	52.89	23.59	AV	N	Pass
3	0.466	45.46	10.01	56.58	11.12	Peak	N	Pass
3**	0.466	32.09	10.01	46.58	14.49	AV	N	Pass
4	0.562	45.30	10.06	56.00	10.70	Peak	N	Pass
4**	0.562	28.67	10.06	46.00	17.33	AV	N	Pass
5	1.030	43.97	10.10	56.00	12.03	Peak	N	Pass
5**	1.030	28.66	10.10	46.00	17.34	AV	N	Pass
6	15.052	49.67	10.61	60.00	10.33	Peak	N	Pass
6**	15.052	35.77	10.61	50.00	14.23	AV	N	Pass

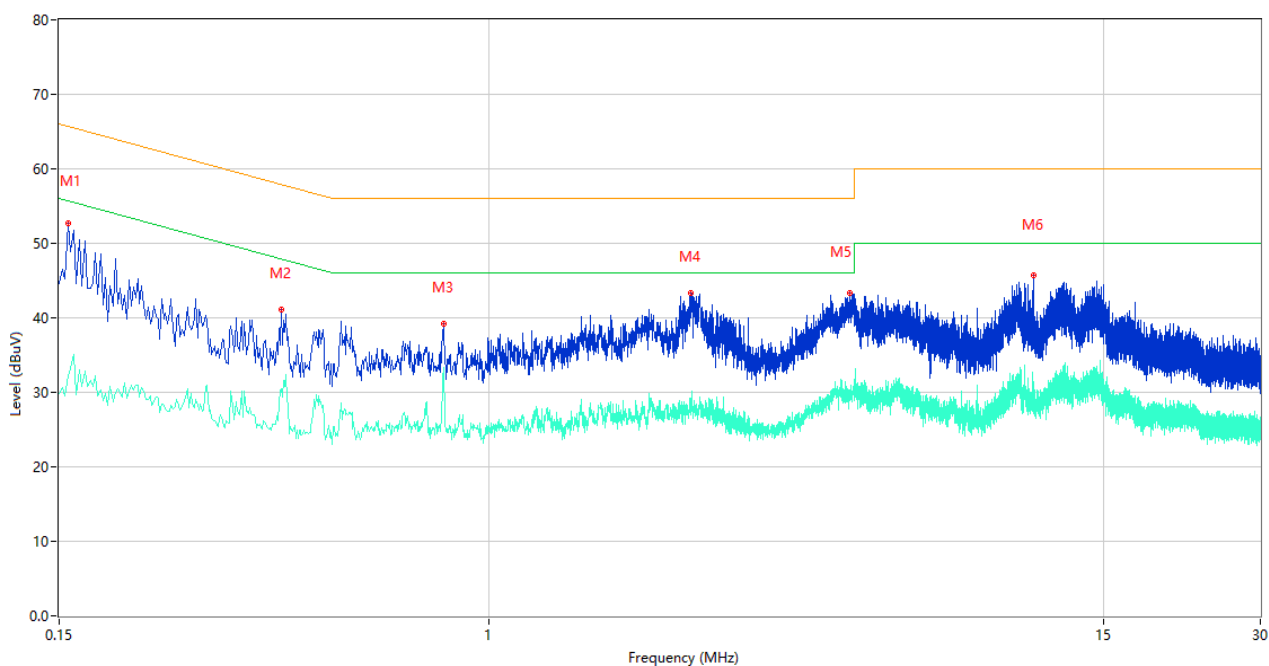
Test Mode 5

3) AC Ports - L Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.150	56.39	9.78	66.00	9.61	Peak	L	Pass
1**	0.150	35.81	9.78	56.00	20.19	AV	L	Pass
2	0.202	51.32	9.77	63.53	12.21	Peak	L	Pass
2**	0.202	36.00	9.77	53.53	17.53	AV	L	Pass
3	0.234	48.69	9.77	62.31	13.62	Peak	L	Pass
3**	0.234	34.59	9.77	52.31	17.72	AV	L	Pass
4	2.574	43.97	9.87	56.00	12.03	Peak	L	Pass
4**	2.574	29.31	9.87	46.00	16.69	AV	L	Pass
5	5.624	47.20	10.42	60.00	12.80	Peak	L	Pass
5**	5.624	34.40	10.42	50.00	15.60	AV	L	Pass
6	15.048	46.18	10.59	60.00	13.82	Peak	L	Pass
6**	15.048	33.76	10.59	50.00	16.24	AV	L	Pass

4) AC Ports - N Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.156	52.66	9.78	65.67	13.01	Peak	N	Pass
1**	0.156	32.27	9.78	55.67	23.40	AV	N	Pass
2	0.400	41.05	10.55	57.85	16.80	Peak	N	Pass
2**	0.400	30.40	10.55	47.85	17.45	AV	N	Pass
3	0.818	39.16	10.56	56.00	16.84	Peak	N	Pass
3**	0.818	33.29	10.56	46.00	12.71	AV	N	Pass
4	2.432	43.30	10.22	56.00	12.70	Peak	N	Pass
4**	2.432	29.23	10.22	46.00	16.77	AV	N	Pass
5	4.894	43.39	10.17	56.00	12.61	Peak	N	Pass
5**	4.894	29.31	10.17	46.00	16.69	AV	N	Pass
6	11.012	45.78	10.62	60.00	14.22	Peak	N	Pass
6**	11.012	31.38	10.62	50.00	18.62	AV	N	Pass

Equipment Information						
Equipment Name	Supplier	Model	Serial No.	Cal. Date	Cal. Due	Use
EMI Receiver	KEYSIGHT	N9010B	MY57110309	2024.08.01	2025.07.31	☒
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-SZ2481209-AE.PDF”.

ANNEX C EUT EXTERNAL PHOTOS

Please refer the document “BL-SZ2481209-AW.PDF”.

ANNEX D EUT INTERNAL PHOTOS

Please refer the document “BL-SZ2481209-AI.PDF”.

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--END OF REPORT--