TEST REPORT

Applicant:	Mudita Sp. z o.o.
Address:	Jana Czeczota 6, 02-607 Warszawa, Poland
Equipment Type:	GSM/WCDMA/LTE Mobile Phone
Model Name:	Kompakt (refer to section 2.3)
Brand Name:	Mudita
FCC ID:	2BCWI-KOMPAKT
	47 CFR Part 15 Subpart B
Test Standard:	ICES-003 (Issue 7,October 15, 2020)
	ANSI C63.4-2014
Sample Arrival Date:	Nov. 21, 2023
Test Date:	Nov. 28, 2023 - Dec. 04, 2023
Date of Issue:	Mar. 19, 2024

ISSUED BY:

Shenzhen BALUN Technology Co., Ltd.

Tested by: Xin Liao **Checked by:** Zhenxiang Liu **Approved by:** Liao Jianming (Technical Director)

Revision History

Version	Issue Date	Revisions Content
Rev. 01	Mar. 19, 2024	Initial Issue

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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. The laboratory has been listed by Industry Canada to perform electromagnetic emission measurements. The recognition numbers of test site are 11524A.

2 PRODUCT INFORMATION

2.1 Applicant Information

Applicant	Mudita Sp. z o.o.
Address	Jana Czeczota 6, 02-607 Warszawa, Poland

2.2 Manufacturer Information

Manufacturer	Mudita Sp. z o.o.
Address	Jana Czeczota 6, 02-607 Warszawa, Poland

2.3 General Description for Equipment under Test (EUT)

EUT Name	GSM/WCDMA/LTE Mobile Phone
Model Name Under Test	Kompakt
Series Model Name	/
Description of Model name differentiation	/
Hardware Version	V0.3
Software Version	/
Dimensions (Approx.)	/
Weight (Approx.)	/
Note: The product is available in three different appearance colours (black, white and gray), the software and hardware are identical, only the color is different.	

2.4 Ancillary Equipment

Ancillary Equipment 1	Battery	
	Brand Name	/
	Model No.	LS061A
	Serial No.	N/A
	Capacity	3300 mAh
	Rated Voltage	3.87 V
	Limit Charge Voltage	4.45 V
Ancillary Equipment 2	USB Cable	
	Model No.	N/A
	Length (Approx.)	1.0 m

2.5 Technical Information

Network and Wireless connectivity	2G Network GPRS 850 MHz 3G Network WCDMA/HSDPA/HSUPA Band 5 4G Network LTE FDD Band 5/7/12/13/18/19/26 LTE TDD Band 38/41 Bluetooth (BR+EDR+BLE) 2.4G WIFI 802.11b, 802.11g, 802.11n(HT20/40) 5G WIFI 802.11a, 802.11n(HT20/40), 802.11ac(VHT20/40/80) U-NII-1/2A/2C/3, GPS, GLONASS, FM Receiver, NFC, WPT(receiver only)
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	ICES-003 (Issue 7,October 15, 2020)	Information Technology Equipment (Including Digital Apparatus)
3	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	ISED Rule	Test Verdict	Remark
1	Radiated Emission	15.109	ICES-003, 3.2.2	Pass	--
2	Conducted Emission, AC Ports	15.107	ICES-003, 3.2.1	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	4.8 dB
Radiated emissions (1 GHz-18 GHz)-966#2	4.9 dB

4 GENERAL TEST CONFIGURATIONS

4.1 Test Enclosure List

Description	Manufacturer	Model	Serial No.	Length	Description	Use
SD Card	N/A	N/A	N/A	N/A	N/A	☒
Adaptor	N/A	N/A	N/A	N/A	N/A	☒
Earphone	N/A	N/A	N/A	N/A	N/A	☒
USB Cable	N/A	N/A	N/A	N/A	N/A	☒
Laptop	N/A	N/A	N/A	N/A	N/A	☒

4.2 Test Configurations

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

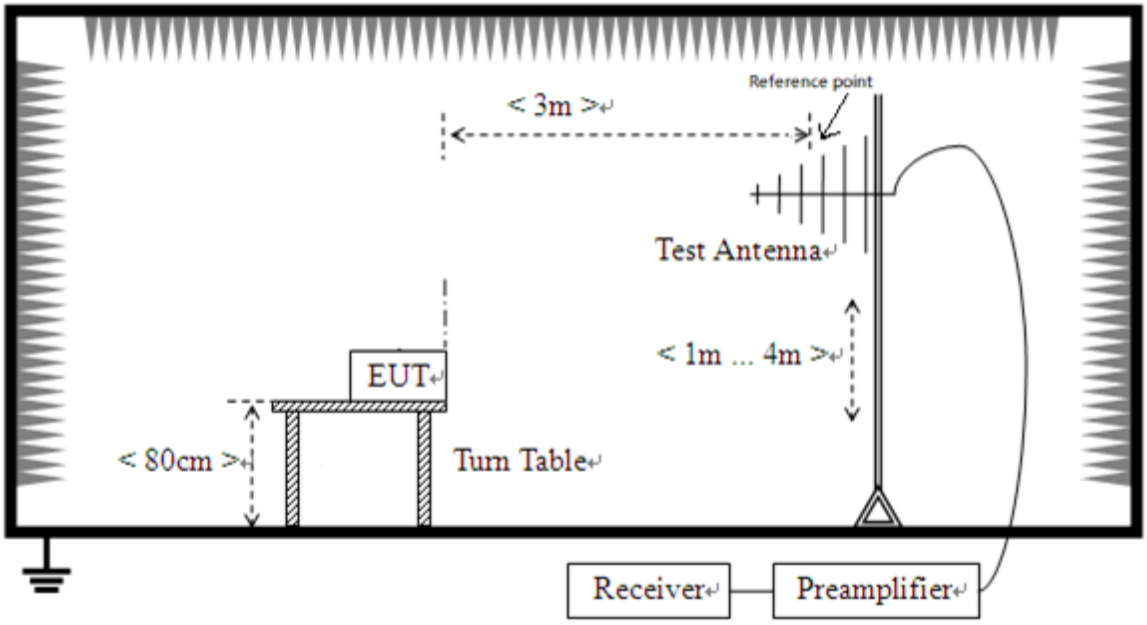
Test Mode Configuration	Description
Mode 1	The Charging Test Mode EUT + Adapter + USB Cable + Battery + Earphone
Mode 2	The Camera Test Mode EUT + Adapter + USB Cable + Battery + Earphone + SD Card
Mode 3	The Video Play Test Mode EUT + Adapter + USB Cable + Battery + Earphone + SD Card
Mode 4	The USB Test Mode EUT + Adapter + USB Cable + Battery + Earphone + SD Card + Laptop
Mode 5	The FM Test Mode EUT + Adapter + USB Cable + Battery + Earphone + SD Card + FM RX
Mode 6	The EGPRS 850 RX Test Mode EUT + Adapter + USB Cable + Battery + Earphone + SD Card + EGPRS 850 RX
Mode 7	The WCDMA Band 5 RX Test Mode EUT + Adapter + USB Cable + Battery + Earphone + SD Card + WCDMA Band 5 RX
Mode 8	The FDD LTE Band 5 RX Test Mode EUT + Adapter + USB Cable + Battery + Earphone + SD Card + LTE Band 5 RX
Mode 9	The FDD LTE Band 12 RX Test Mode EUT + Adapter + USB Cable + Battery + Earphone + SD Card + LTE Band 12 RX
Mode 10	The FDD LTE Band 13 RX Test Mode EUT + Adapter + USB Cable + Battery + Earphone + SD Card + LTE Band 13 RX

Mode 11	The FDD LTE Band 26 RX Test Mode EUT + Adapter + USB Cable + Battery + Earphone + SD Card + LTE Band 26 RX

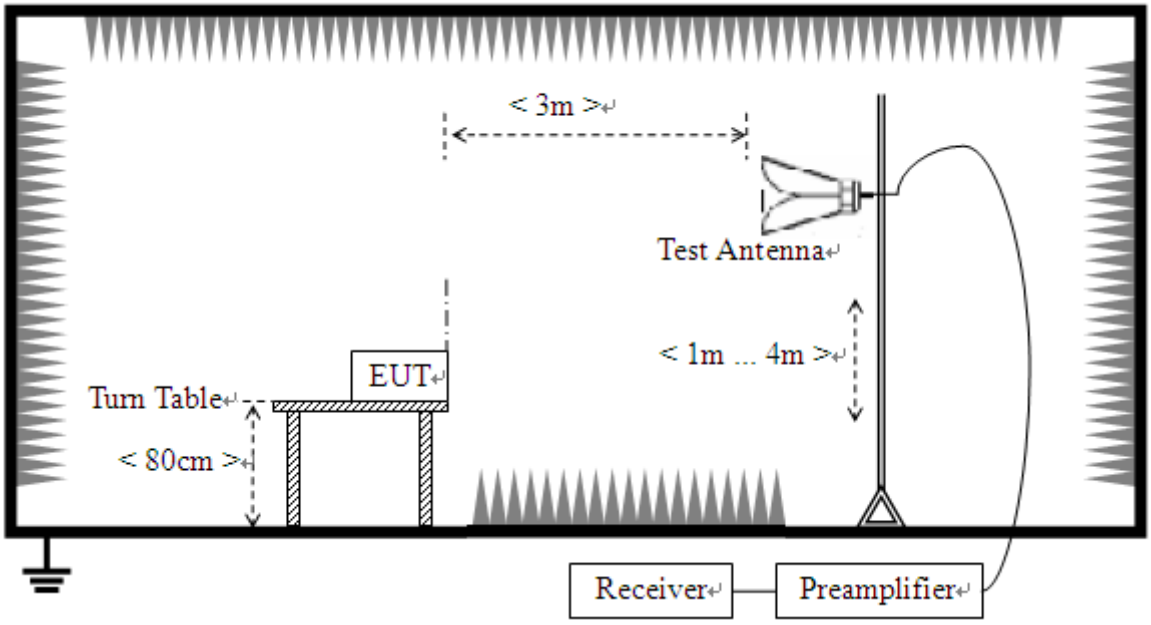
Test Case	Test Mode Configuration	Worst Mode
Radiated Emission	Mode 1~Mode 11	2, 4
Conducted Emission, AC Ports	Mode 1~Mode 11	2, 4
Note: Based on client request, all normal using modes of the normal function were tested, but only data of the worst mode was reported in this report.		

4.3 Test Setups

Test Setup 1

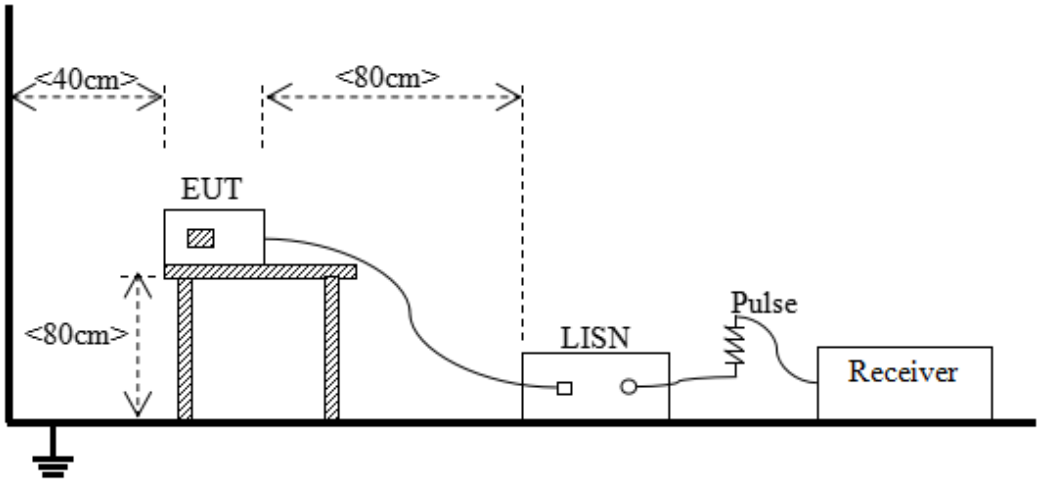


Radiated Emission (30 MHz-1 GHz)



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

FCC:

Frequency range (MHz)	Class B (at 3 m)		Class A (at 3 m)
	Field Strength (μV/m)	Field Strength (dBμV/m)	Field Strength (dBμV/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 (dBμV/m) = 20*log [Field Strength (μV/m)]. 2) In the emission tables above, the tighter limit applies at the band edges. 3) The limits using ANSI C63.4. 4) 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 (μV/m)	Field Strength Average (dBμV/m)	Field Strength Peak (dBμV/m)	Field Strength Average (dBμV/m)	Field Strength Peak (dBμV/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: $L_{3m} = L_{10m} + 20*\log(d_{10m}/d_{3m})$ 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*log(10/3)=60 (dBμV/m).					

Highest internal frequency (F_X)	Highest measurement frequency (F_M)
$F_X \leq$ 108 MHz	1 GHz
108 MHz ≤ $F_X \leq$ 500 MHz	2 GHz

Highest internal frequency (F_X)	Highest measurement frequency (F_M)
500 MHz ≤ F_X ≤ 1 GHz	5 GHz
F_X ≥ 1 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.	

IC:

Frequency range (MHz)	Class A (3 m)	Class B (3 m)
	Quasi-peak (dBμV/m)	Quasi-peak (dBμV/m)
30 - 88	50.0	40.0
88 - 216	54.0	43.5
216 - 230	56.9	46.0
230 - 960	57.0	47.0
960 - 1000	60.0	54.0
Note: The more stringent limit applies at transition frequencies.		

Frequency range (GHz)	Class A (3 m)		Class B (3 m)	
	Average (dBμV/m)	Peak (dBμV/m)	Average (dBμV/m)	Peak (dBμV/m)
1 - F_M	60	80	54	74

Note:
1.The highest measurement frequency, F_M, in GHz, shall be determined as next Table.
2.The measurement bandwidth shall be 1 MHz or greater.
3.These limit levels apply for a measurement distance of 3 m. If using a different measurement distance, the measured levels shall be extrapolated to the 3 m limit distance using a factor of 20 dB per decade of distance. The measurement distance shall place the measurement antenna in the far field of the ITE or digital apparatus under test.
4.The test site shall have been validated at the distance used for radiated emission measurements on the ITE or digital apparatus under test.

Highest internal frequency (F_X)	Highest measurement frequency (F_M)
F_X ≤ 108 MHz	1GHz
108 MHz ≤ F_X ≤ 500 MHz	2GHz
500 MHz ≤ F_X ≤ 1 GHz	5GHz
F_X ≥ 1 GHz	5 *F_X up to a maximum of 40 GHz
Note:F_X is the highest fundamental frequency generated and/or used in the ITE or digital apparatus under test.	

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

The test employing the methods of measurement described in the publication referenced in Section 3(b) (ANSI C63.4);

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 ≥ 1 GHz, 100 kHz for f < 1 GHz

VBW ≥ RBW

Sweep = auto

Detector function = peak for f <1 GHz, peak & RMS Average for f ≥ 1 GHz

Trace = max hold

5.1.1.4 Test Result and Test Equipment List

Please refer to ANNEX A.1.

NOTE:

1. Results (dBμV/m) = Reading (dBμV/m) + 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 (dBμV)	Average (dBμV)
0.15 - 0.50	79	66
0.50 - 30	73	60

Frequency range (MHz)	Class B	
	Quasi-peak (dBμV)	Average (dBμV)
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.
3) The limit using ANSI C63.4.

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 test employing the methods of measurement described in the publication referenced in Section 3(b) (ANSI C63.4);

The EUT is connected to the power mains through a LISN which provides 50 Ω/50 μH 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 ≥ 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

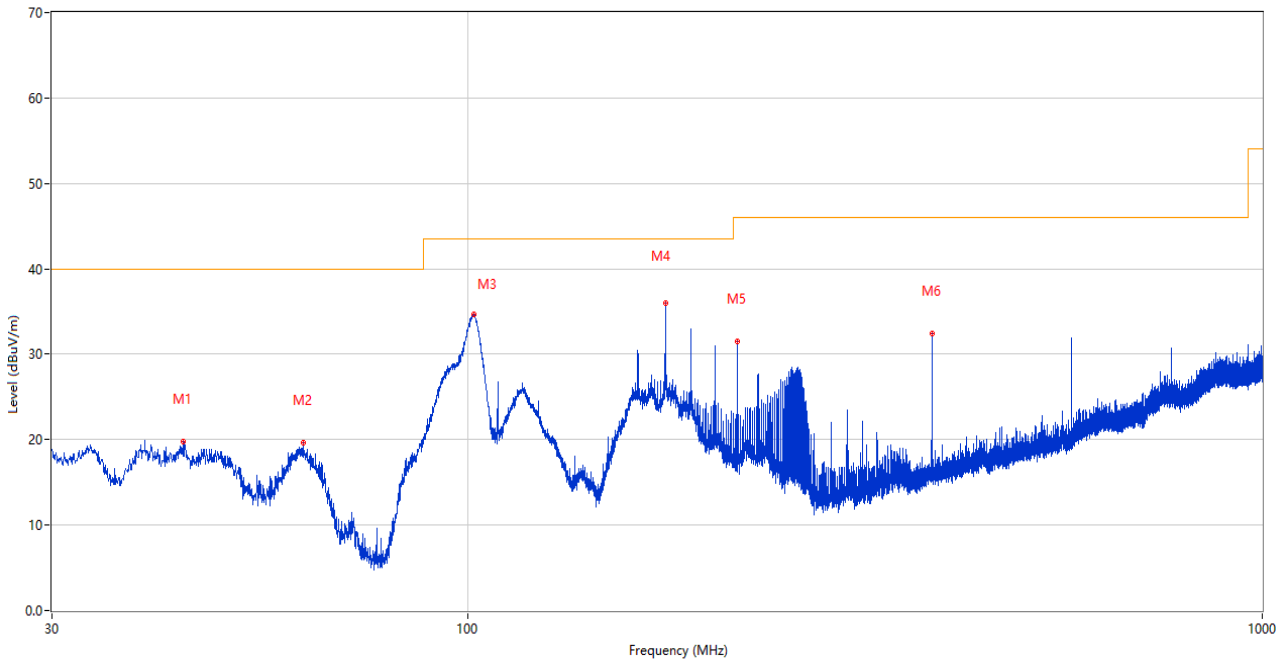
Note 1: For the test data above 1 GHz, according the ANSI C63.4-2014, where limits are specified for both average and peak (or quasi-peak) detector functions, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement.

Note 2: 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.	S16	Temperature	25.3℃
Humidity	44%RH	Pressure	101kPa
Test Engineer	He Shichang	Test Date	2023.12.01-2023.12.04

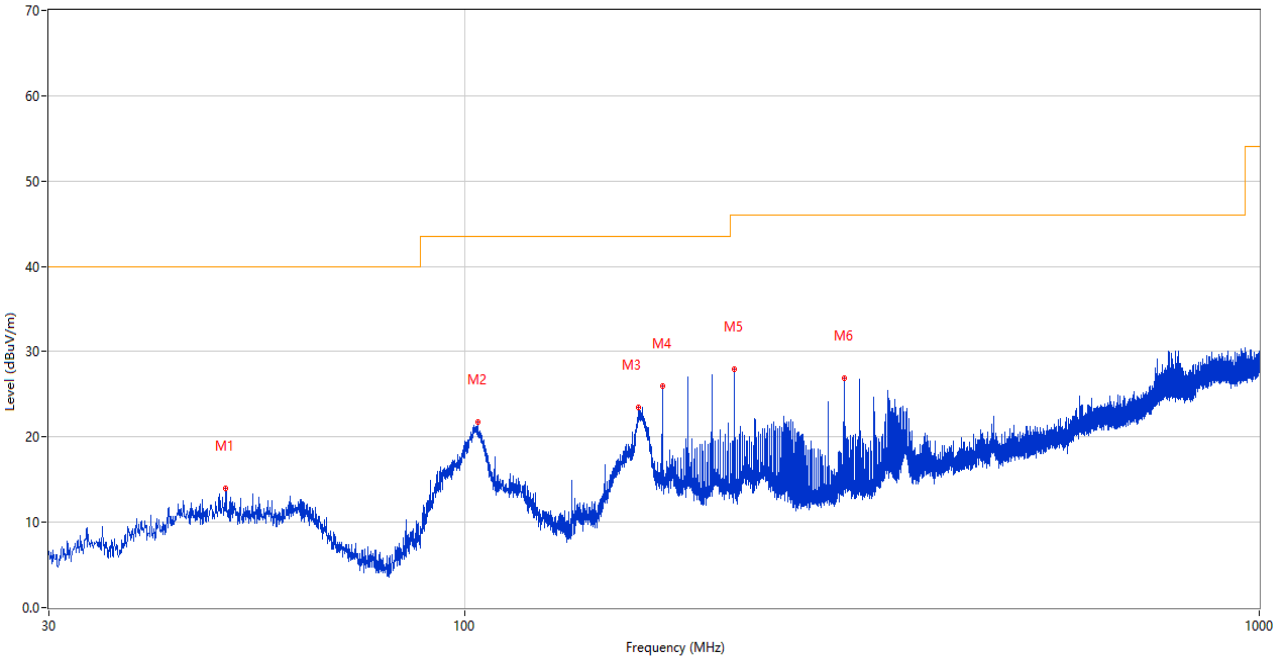
Test Mode 2

1) Test Antenna Vertical, 30 MHz – 1 GHz (FCC)



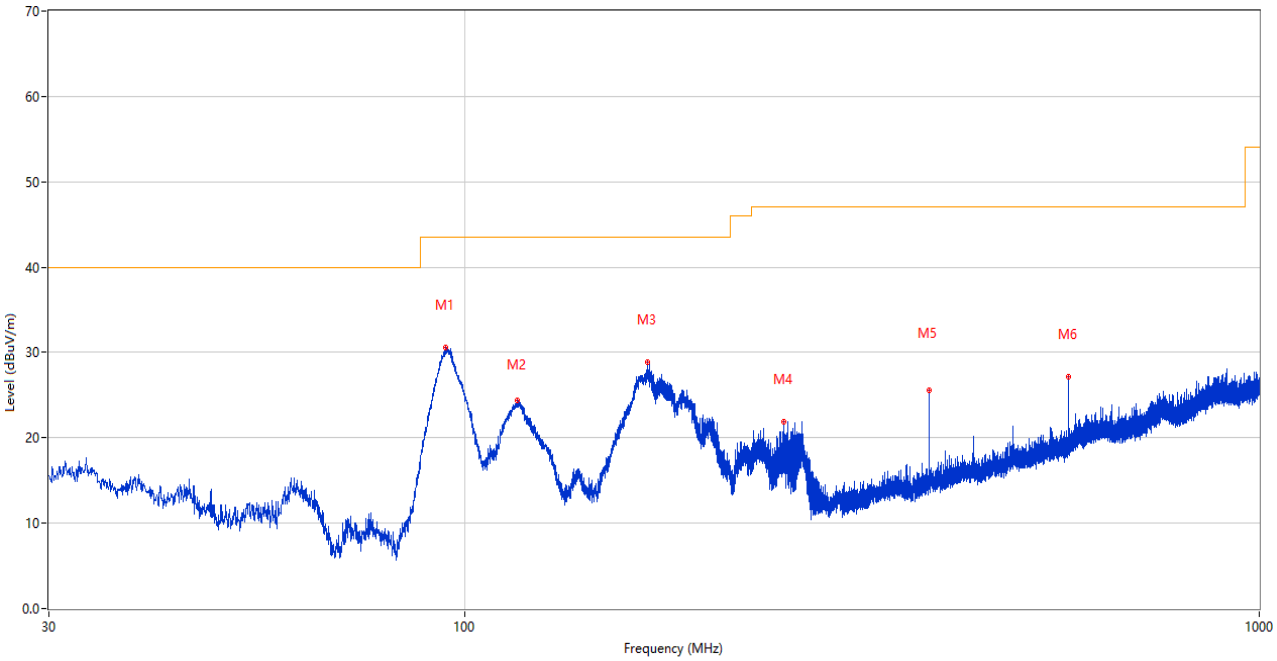
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	43.919	19.79	-26.18	40.0	20.21	Peak	48.00	100	Vertical	Pass
2	62.156	19.64	-26.54	40.0	20.36	Peak	98.00	100	Vertical	Pass
3	101.877	34.71	-26.89	43.5	8.79	Peak	105.00	100	Vertical	Pass
4	177.440	35.99	-28.74	43.5	7.51	Peak	252.00	100	Vertical	Pass
5	218.422	31.48	-26.06	46.0	14.52	Peak	294.00	100	Vertical	Pass
6	384.002	32.44	-21.29	46.0	13.56	Peak	31.00	100	Vertical	Pass

2) Test Antenna Horizontal, 30 MHz – 1 GHz (FCC)



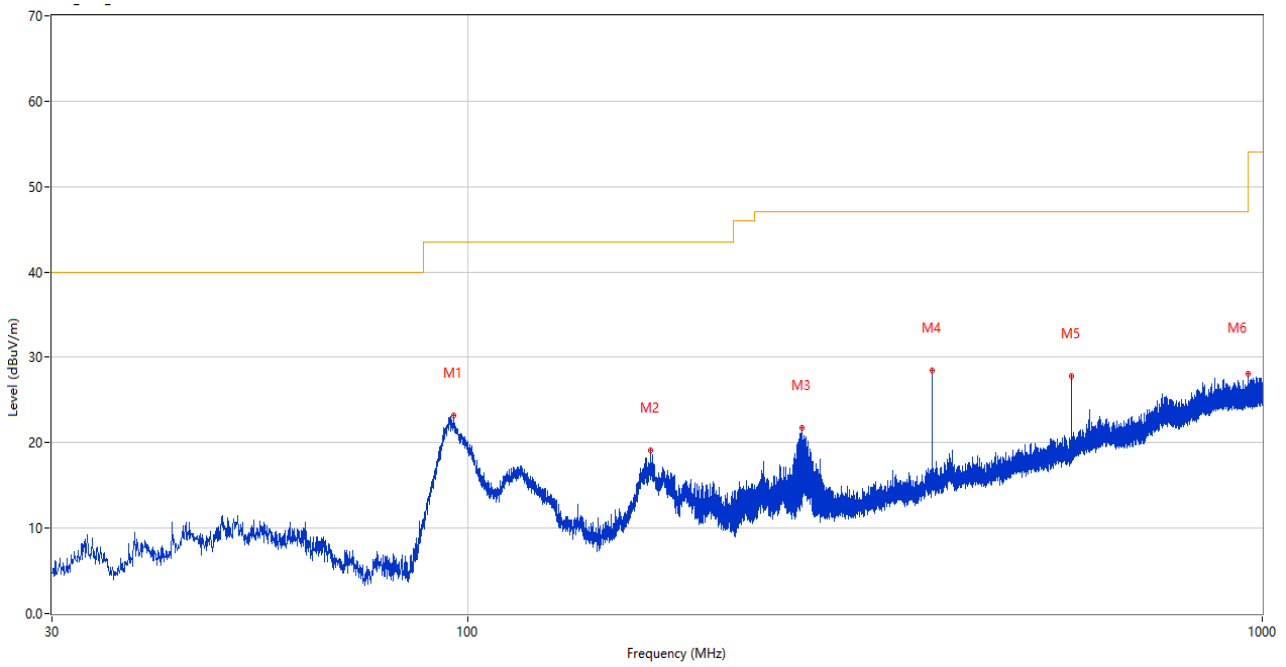
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	50.079	13.96	-25.24	40.0	26.04	Peak	111.00	100	Horizontal	Pass
2	103.914	21.76	-26.79	43.5	21.74	Peak	201.00	200	Horizontal	Pass
3	165.751	23.46	-29.24	43.5	20.04	Peak	42.00	200	Horizontal	Pass
4	177.440	25.96	-28.74	43.5	17.54	Peak	254.00	200	Horizontal	Pass
5	218.422	27.96	-26.06	46.0	18.04	Peak	237.00	100	Horizontal	Pass
6	300.290	26.87	-23.63	46.0	19.13	Peak	70.00	100	Horizontal	Pass

3) Test Antenna Vertical, 30 MHz – 1 GHz (IC)



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	94.796	30.56	-27.53	43.5	12.94	Peak	62.00	100	Vertical	Pass
2	116.476	24.45	-28.63	43.5	19.05	Peak	258.00	100	Vertical	Pass
3	170.068	28.91	-29.15	43.5	14.59	Peak	267.00	100	Vertical	Pass
4	252.470	21.84	-24.26	47.0	25.16	Peak	210.00	100	Vertical	Pass
5	384.002	25.58	-21.29	47.0	21.42	Peak	19.00	100	Vertical	Pass
6	576.013	27.10	-16.94	47.0	19.90	Peak	75.00	200	Vertical	Pass

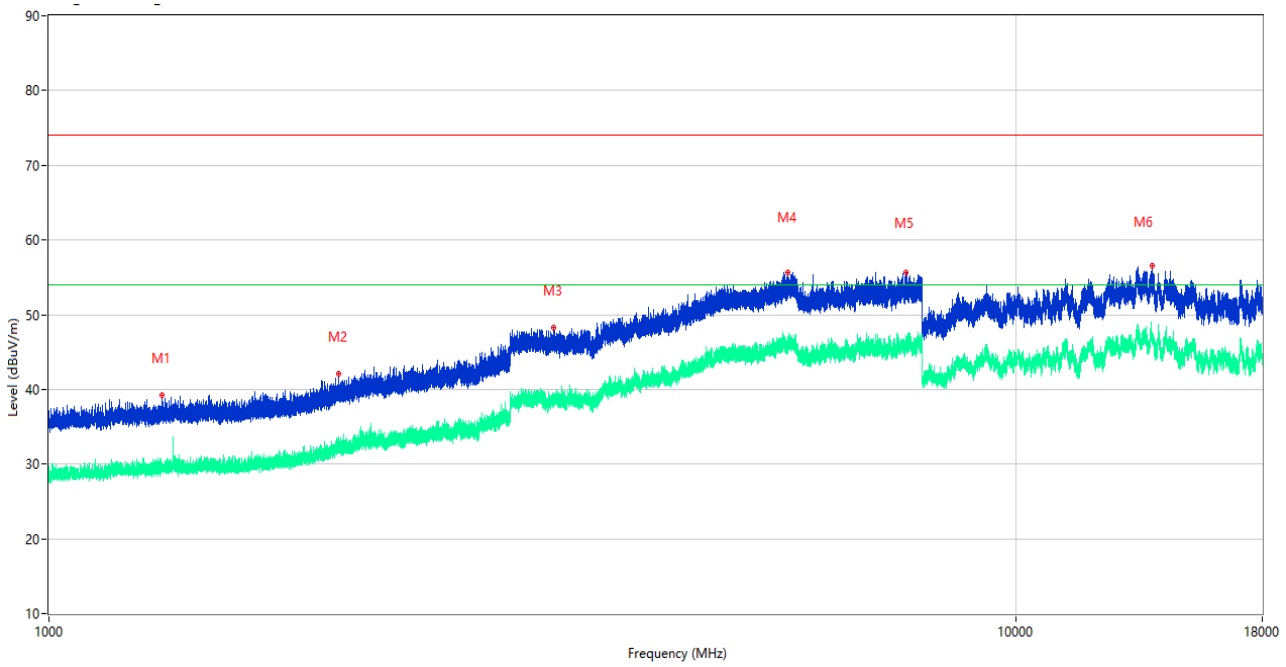
4) Test Antenna Horizontal, 30 MHz – 1 GHz (IC)



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	95.960	23.17	-27.24	43.5	20.33	Peak	116.00	200	Horizontal	Pass
2	170.020	19.10	-29.16	43.5	24.40	Peak	274.00	100	Horizontal	Pass
3	263.722	21.72	-24.57	47.0	25.28	Peak	353.00	200	Horizontal	Pass
4	384.002	28.46	-21.29	47.0	18.54	Peak	44.00	100	Horizontal	Pass
5	576.013	27.83	-16.94	47.0	19.17	Peak	308.00	100	Horizontal	Pass
6	959.987	28.13	-8.98	47.0	18.87	Peak	92.00	100	Horizontal	Pass

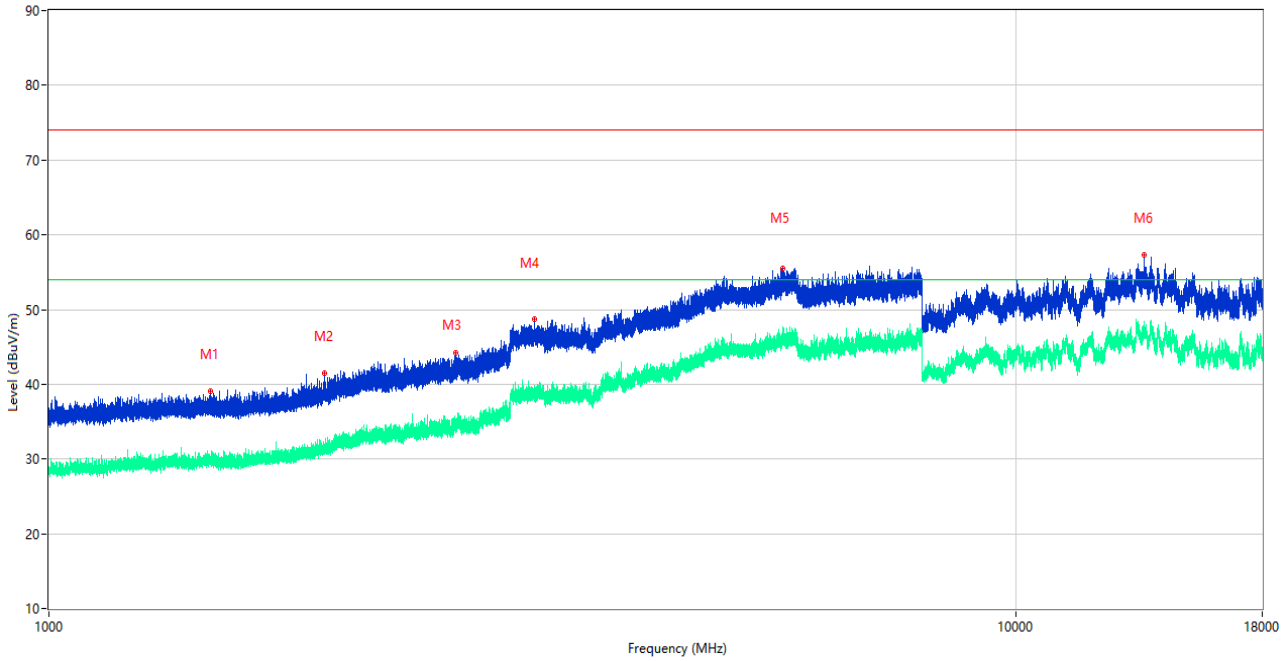
Equipment Information						
Equipment Name	Supplier	Model	Serial No.	Cal. Date	Cal. Due	Use
Frequency Below 1 GHz						
EMI Receiver	Keysight	N9038A	MY55330120	2023.09.05	2024.09.04	☒
Amplifier (30-1GHz)	COM-MV	ZT30-1000M	B2017119081	2022.12.07	2023.12.06	☒
Test Antenna-Bi-Log	SCHWARZBECK	VULB 9168	9168-00867	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	/		☒

5) 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	1307.800	39.27	-15.76	74.0	34.73	Peak	345.00	100	Vertical	Pass
1**	1307.800	29.42	-15.76	54.0	24.58	AV	345.00	100	Vertical	Pass
2	1994.300	42.02	-13.78	74.0	31.98	Peak	175.00	100	Vertical	Pass
2**	1994.300	33.33	-13.78	54.0	20.67	AV	175.00	100	Vertical	Pass
3	3326.000	48.25	-4.16	74.0	25.75	Peak	7.00	100	Vertical	Pass
3**	3326.000	39.08	-4.16	54.0	14.92	AV	7.00	100	Vertical	Pass
4	5817.000	55.72	3.67	74.0	18.28	Peak	127.00	100	Vertical	Pass
4**	5817.000	45.42	3.67	54.0	8.58	AV	127.00	100	Vertical	Pass
5	7706.500	55.58	2.63	74.0	18.42	Peak	291.00	100	Vertical	Pass
5**	7706.500	46.01	2.63	54.0	7.99	AV	291.00	100	Vertical	Pass
6	13855.000	56.58	5.13	74.0	17.42	Peak	202.00	100	Vertical	Pass
6**	13855.000	46.59	5.13	54.0	7.41	AV	202.00	100	Vertical	Pass

6) Test Antenna Horizontal, 1 GHz – 18 GHz

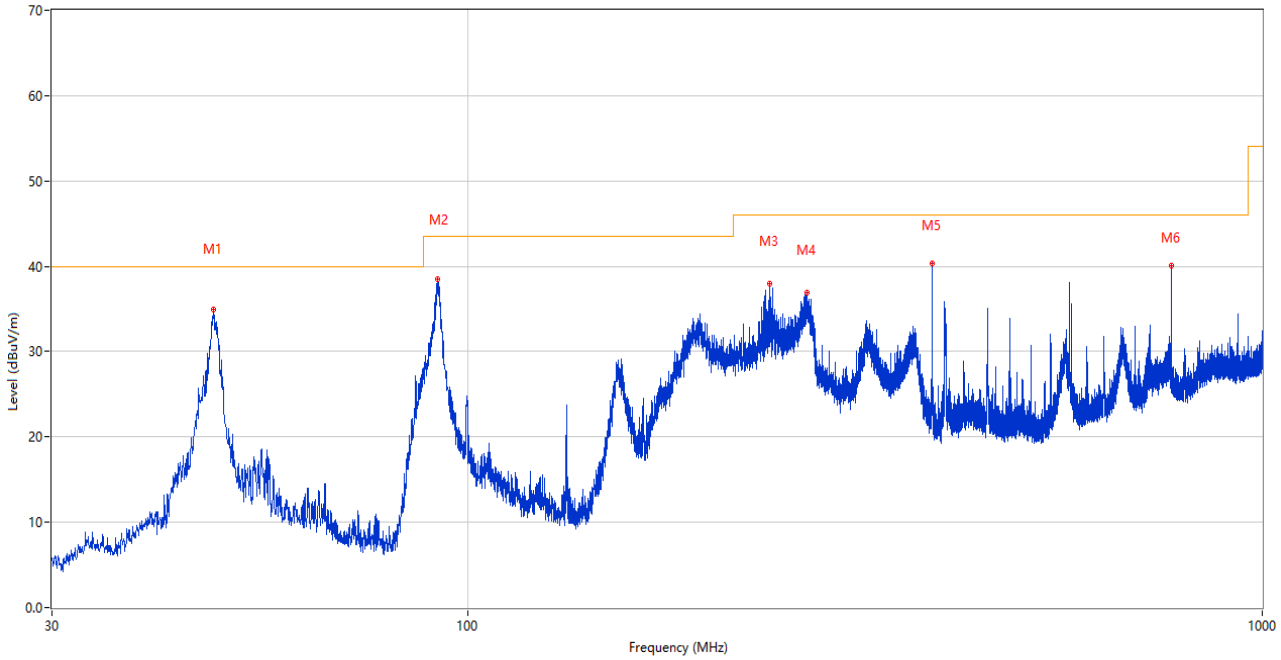


No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1467.800	39.02	-15.89	74.0	34.98	Peak	243.00	100	Horizontal	Pass
1**	1467.800	30.01	-15.89	54.0	23.99	AV	243.00	100	Horizontal	Pass
2	1926.200	41.53	-14.09	74.0	32.47	Peak	318.00	100	Horizontal	Pass
2**	1926.200	31.45	-14.09	54.0	22.55	AV	318.00	100	Horizontal	Pass
3	2638.100	44.25	-9.74	74.0	29.75	Peak	37.00	100	Horizontal	Pass
3**	2638.100	35.25	-9.74	54.0	18.75	AV	37.00	100	Horizontal	Pass
4	3180.500	48.65	-3.52	74.0	25.35	Peak	353.00	100	Horizontal	Pass
4**	3180.500	38.70	-3.52	54.0	15.30	AV	353.00	100	Horizontal	Pass
5	5750.750	55.49	3.28	74.0	18.51	Peak	326.00	100	Horizontal	Pass
5**	5750.750	47.72	3.28	54.0	6.28	AV	326.00	100	Horizontal	Pass
6	13590.000	57.32	4.72	74.0	16.68	Peak	0.00	100	Horizontal	Pass
6**	13590.000	46.97	4.72	54.0	7.03	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	☒
Spectrum Analyzer	ROHDE & SCHWARZ	FSV40	101544	2023.01.03	2024.01.02	☒
Amplifier (1-12GHz)	Advanced Microwave	WLA652A	1740103	2022.12.07	2023.12.06	☒
Amplifier （0.8-21GHz）	Mini-Circuits	ZVA-213-S+	225321316	2022.12.07	2023.12.06	☒
Amplifier (18-40GHz)	COM-MV	KA LNA18-40G-01	18050001	2022.12.07	2023.12.06	☒
Test Antenna-Horn	SCHWARZBECK	BBHA 9120D	01917	2022.06.09	2025.06.08	☒
Test Antenna-Horn	A-INFOMW	LB-180400KF	J211060273	2021.07.02	2024.07.01	☒
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	/		☒

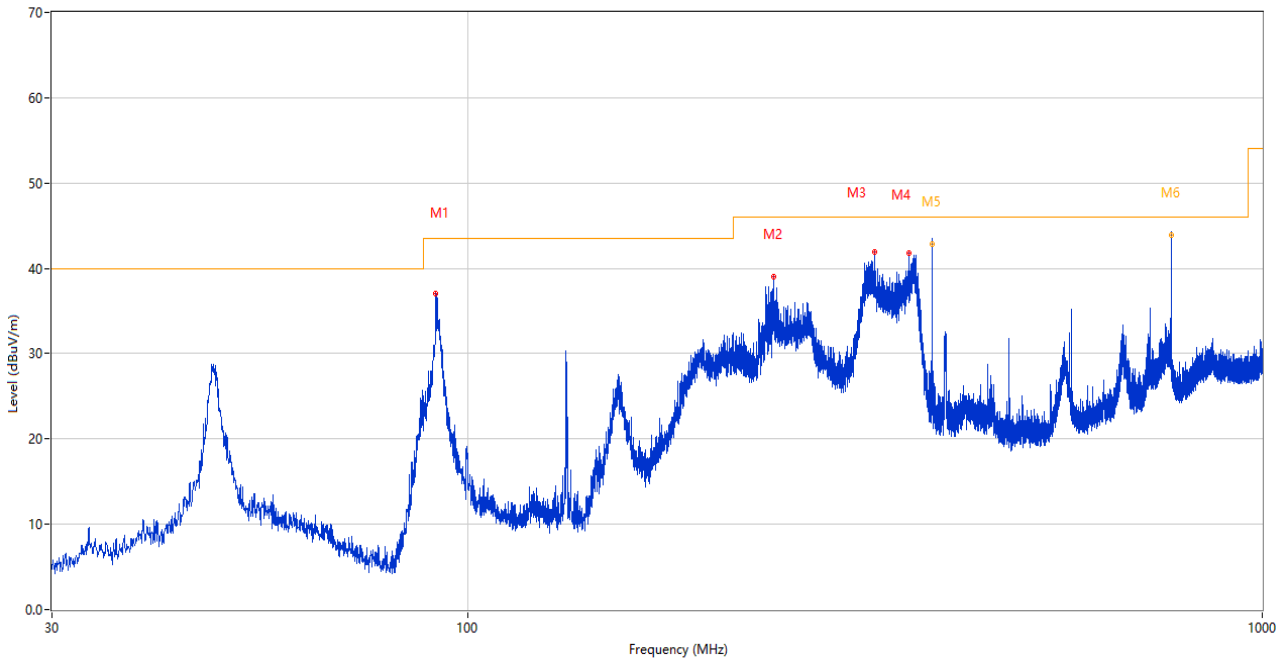
Test Mode 4

7) Test Antenna Vertical, 30 MHz – 1 GHz (FCC)



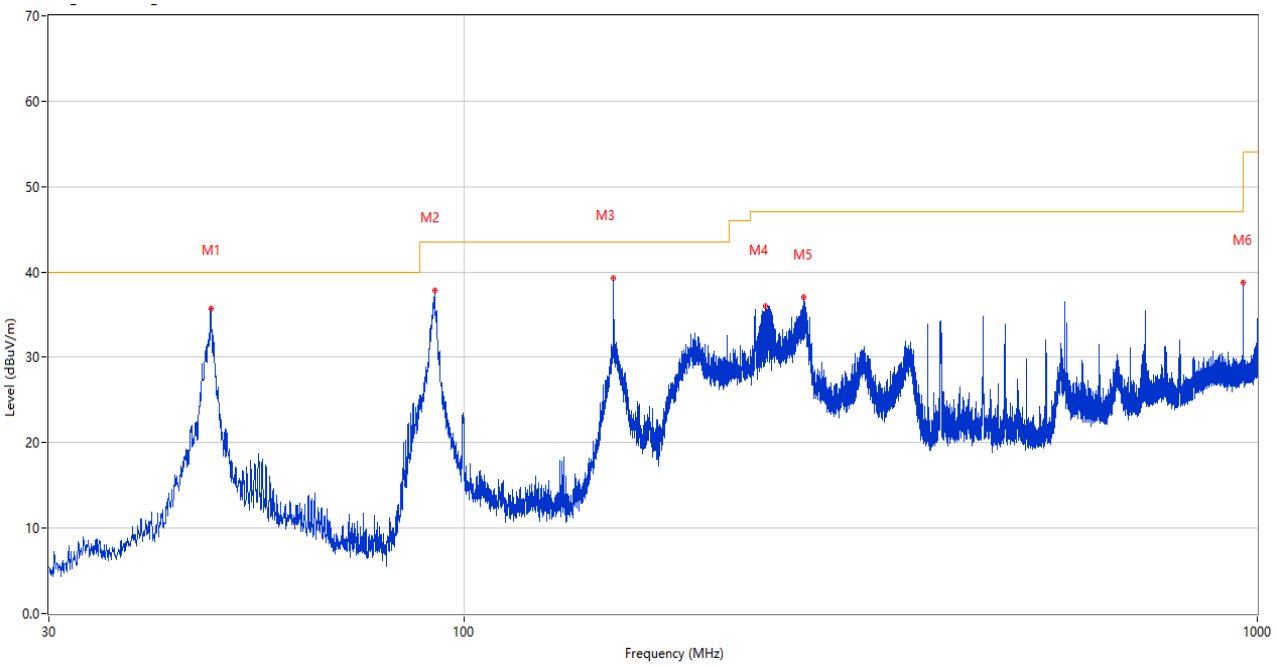
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	47.897	34.92	-25.30	40.0	5.08	Peak	227.00	100	Vertical	Pass
2	91.644	38.55	-28.33	43.5	4.95	Peak	331.00	100	Vertical	Pass
3	240.005	37.94	-24.85	46.0	8.06	Peak	0.00	100	Vertical	Pass
4	267.650	36.95	-24.48	46.0	9.05	Peak	315.00	100	Vertical	Pass
5	384.002	40.30	-21.29	46.0	5.70	Peak	286.00	200	Vertical	Pass
6	768.024	40.04	-12.08	46.0	5.96	Peak	269.00	100	Vertical	Pass

8) Test Antenna Horizontal, 30 MHz – 1 GHz (FCC)



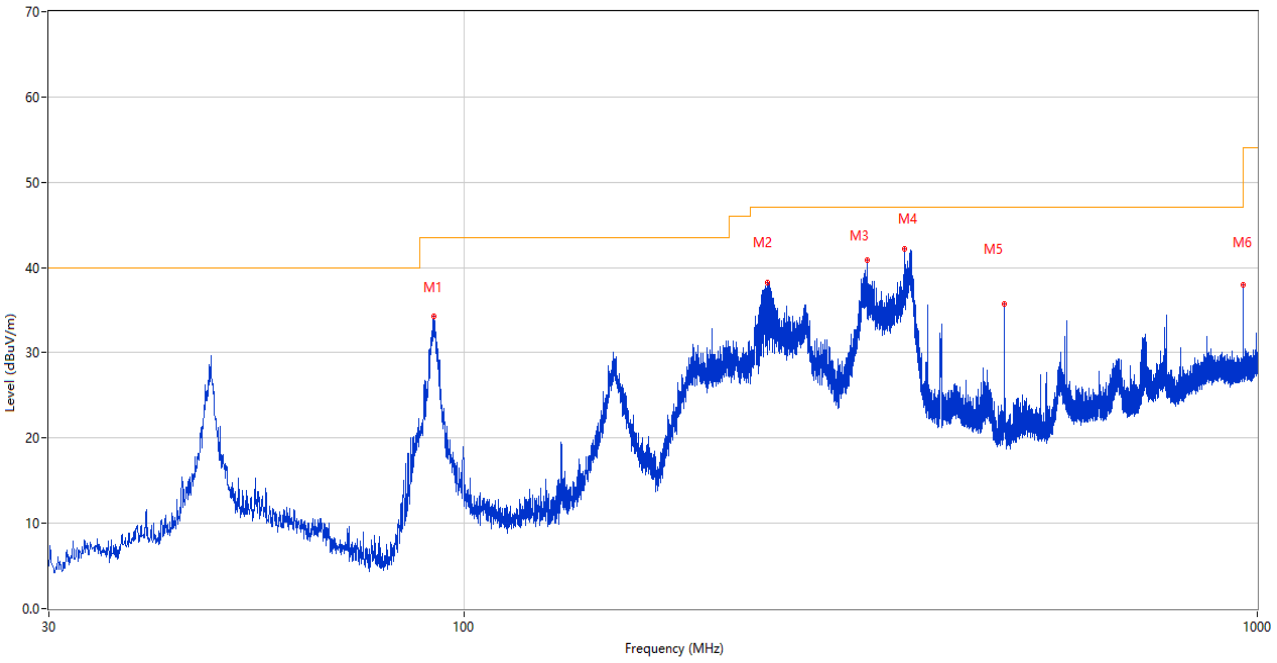
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	91.256	37.08	-28.45	43.5	6.42	Peak	282.00	200	Horizontal	Pass
2	242.915	39.01	-24.64	46.0	6.99	Peak	255.00	100	Horizontal	Pass
3	325.122	41.96	-22.89	46.0	4.04	Peak	331.00	100	Horizontal	Pass
4	359.509	41.73	-22.36	46.0	4.27	Peak	339.00	100	Horizontal	Pass
5	383.999	45.35	-21.29	46.0	0.65	Peak	292.00	111	Horizontal	N/A
5*	383.999	42.78	-21.29	46.0	3.22	QP	292.00	111	Horizontal	Pass
6	767.998	45.27	-12.08	46.0	0.73	Peak	149.00	189	Horizontal	N/A
6*	767.998	43.92	-12.08	46.0	2.08	QP	149.00	189	Horizontal	Pass

9) Test Antenna Vertical, 30 MHz – 1 GHz (IC)



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	47.993	35.67	-25.27	40.0	4.33	Peak	208.00	100	Vertical	Pass
2	91.838	37.81	-28.27	43.5	5.69	Peak	155.00	100	Vertical	Pass
3	154.257	39.25	-29.53	43.5	4.25	Peak	208.00	100	Vertical	Pass
4	240.005	36.03	-24.85	47.0	10.97	Peak	335.00	100	Vertical	Pass
5	268.038	37.09	-24.46	47.0	9.91	Peak	325.00	100	Vertical	Pass
6	959.987	38.78	-8.98	47.0	8.22	Peak	278.00	100	Vertical	Pass

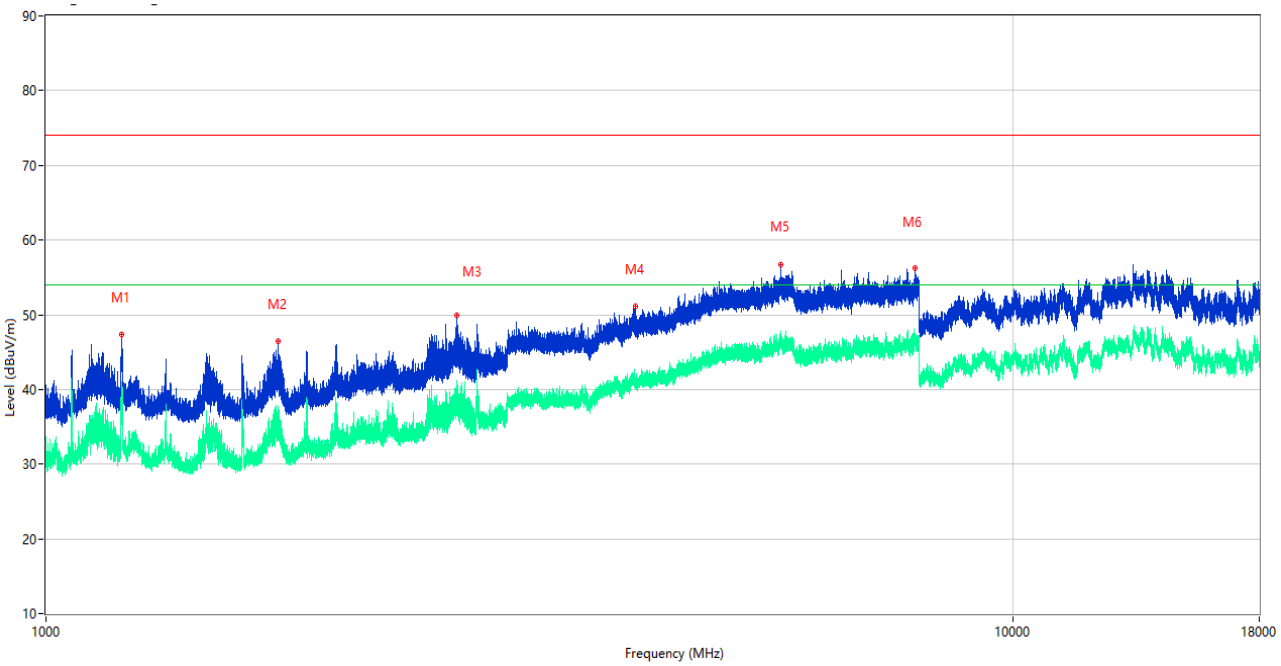
10) Test Antenna Horizontal, 30 MHz – 1 GHz (IC)



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	91.692	34.25	-28.31	43.5	9.25	Peak	321.00	200	Horizontal	Pass
2	241.218	38.29	-24.76	47.0	8.71	Peak	294.00	100	Horizontal	Pass
3	322.164	40.89	-23.08	47.0	6.11	Peak	334.00	100	Horizontal	Pass
4	359.751	42.13	-22.36	47.0	4.87	Peak	340.00	100	Horizontal	Pass
5	480.031	33.66	-19.16	47.0	13.34	Peak	58.00	100	Horizontal	Pass
6	960.036	38.01	-8.98	54.0	15.99	Peak	322.00	100	Horizontal	Pass

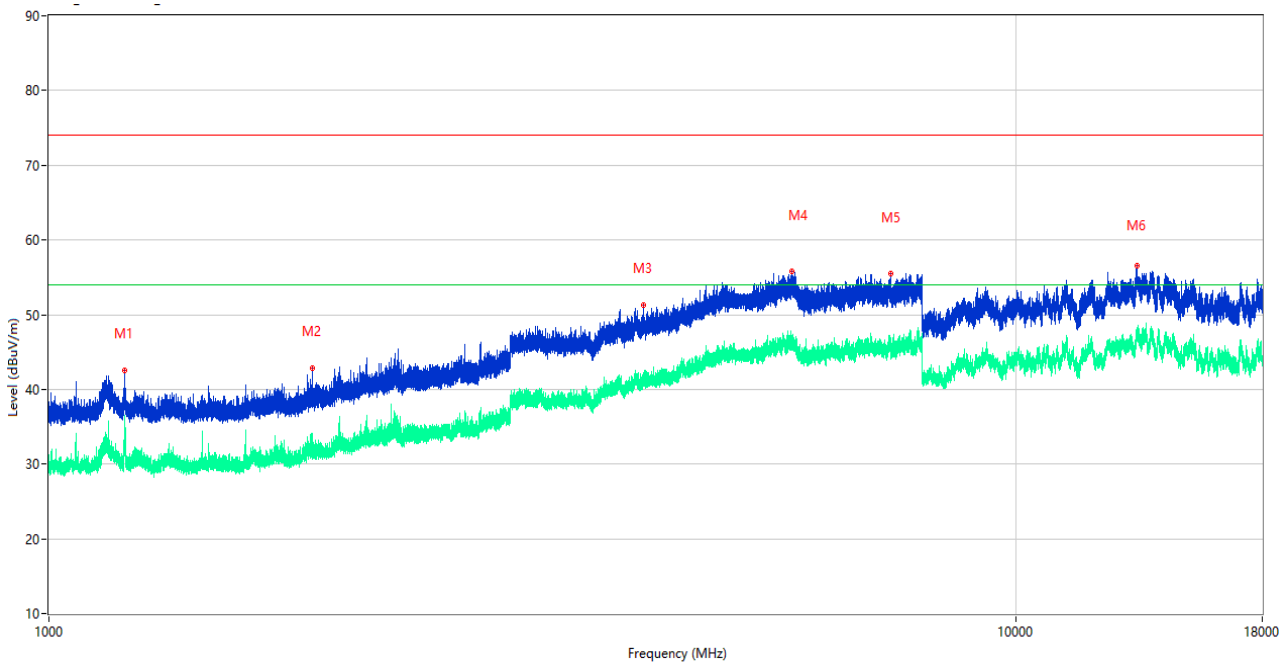
Equipment Information						
Equipment Name	Supplier	Model	Serial No.	Cal. Date	Cal. Due	Use
Frequency Below 1 GHz						
EMI Receiver	Keysight	N9038A	MY55330120	2023.09.05	2024.09.04	☒
Amplifier (30-1GHz)	COM-MV	ZT30-1000M	B2017119081	2022.12.07	2023.12.06	☒
Test Antenna-Bi-Log	SCHWARZBECK	VULB 9168	9168-00867	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	/		☒

11) 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	1198.900	47.29	-16.24	74.0	26.71	Peak	221.00	100	Vertical	Pass
1**	1198.900	39.62	-16.24	54.0	14.38	AV	221.00	100	Vertical	Pass
2	1738.800	46.41	-15.83	74.0	27.59	Peak	164.00	100	Vertical	Pass
2**	1738.800	34.91	-15.83	54.0	19.09	AV	164.00	100	Vertical	Pass
3	2659.900	49.97	-8.51	74.0	24.03	Peak	173.00	100	Vertical	Pass
3**	2659.900	40.35	-8.51	54.0	13.65	AV	173.00	100	Vertical	Pass
4	4073.000	51.07	-1.10	74.0	22.93	Peak	41.00	100	Vertical	Pass
4**	4073.000	41.66	-1.10	54.0	12.34	AV	41.00	100	Vertical	Pass
5	5752.250	56.77	3.34	74.0	17.23	Peak	225.00	100	Vertical	Pass
5**	5752.250	46.61	3.34	54.0	7.39	AV	225.00	100	Vertical	Pass
6	7924.750	56.26	3.00	74.0	17.74	Peak	4.00	100	Vertical	Pass
6**	7924.750	46.91	3.00	54.0	7.09	AV	4.00	100	Vertical	Pass

12) 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	1198.100	42.47	-16.21	74.0	31.53	Peak	96.00	100	Horizontal	Pass
1**	1198.100	31.88	-16.21	54.0	22.12	AV	96.00	100	Horizontal	Pass
2	1871.200	42.81	-14.89	74.0	31.19	Peak	256.00	100	Horizontal	Pass
2**	1871.200	31.93	-14.89	54.0	22.07	AV	256.00	100	Horizontal	Pass
3	4120.750	51.27	-1.64	74.0	22.73	Peak	62.00	100	Horizontal	Pass
3**	4120.750	40.91	-1.64	54.0	13.09	AV	62.00	100	Horizontal	Pass
4	5872.500	55.88	3.95	74.0	18.12	Peak	53.00	100	Horizontal	Pass
4**	5872.500	46.04	3.95	54.0	7.96	AV	53.00	100	Horizontal	Pass
5	7422.750	55.51	2.95	74.0	18.49	Peak	44.00	100	Horizontal	Pass
5**	7422.750	46.09	2.95	54.0	7.91	AV	44.00	100	Horizontal	Pass
6	13365.500	56.52	5.13	74.0	17.48	Peak	119.00	100	Horizontal	Pass
6**	13365.500	47.31	5.13	54.0	6.69	AV	119.00	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	☒
Spectrum Analyzer	ROHDE & SCHWARZ	FSV40	101544	2023.01.03	2024.01.02	☒
Amplifier (1-12GHz)	Advanced Microwave	WLA652A	1740103	2022.12.07	2023.12.06	☒
Amplifier （0.8-21GHz）	Mini-Circuits	ZVA-213-S+	225321316	2022.12.07	2023.12.06	☒
Amplifier (18-40GHz)	COM-MV	KA LNA18-40G-01	18050001	2022.12.07	2023.12.06	☒
Test Antenna-Horn	SCHWARZBECK	BBHA 9120D	01917	2022.06.09	2025.06.08	☒
Test Antenna-Horn	A-INFOMW	LB-180400KF	J211060273	2021.07.02	2024.07.01	☒
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	/		☒

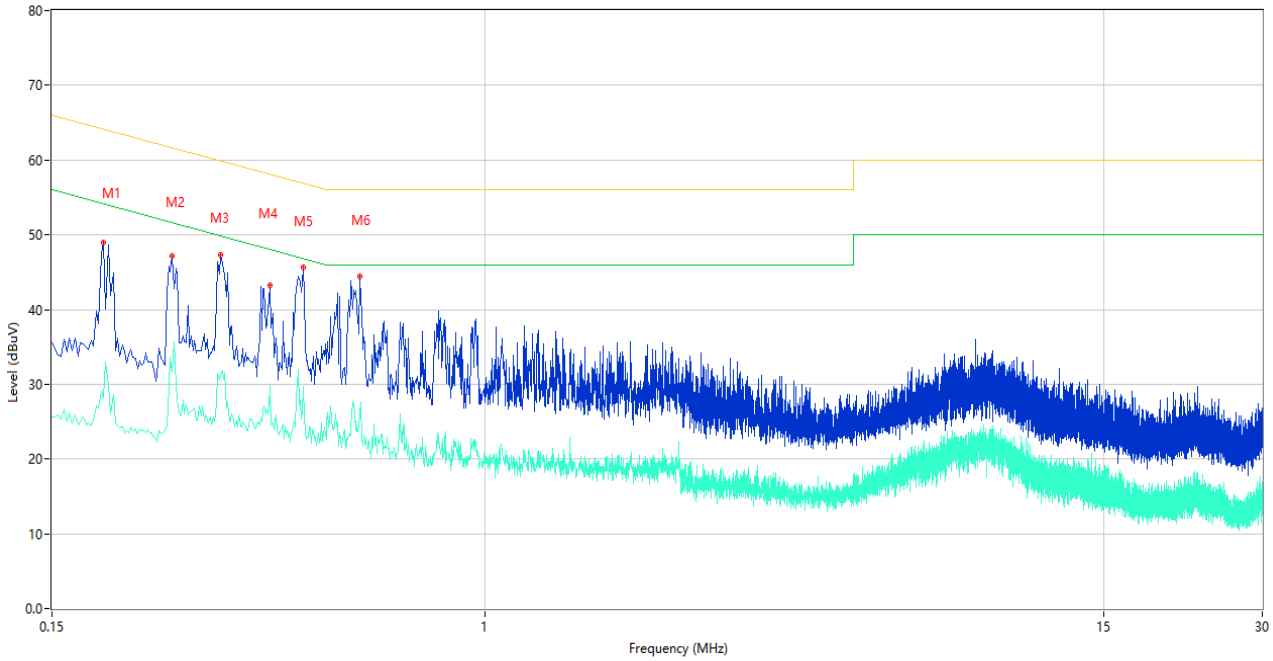
A.2 Conducted Emission, AC Ports

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 (120 VAC, 60 Hz) shown here.

Sample No.	S16	Temperature	25.3℃
Humidity	44%RH	Pressure	101kPa
Test Engineer	Yang Yang	Test Date	2023.11.28

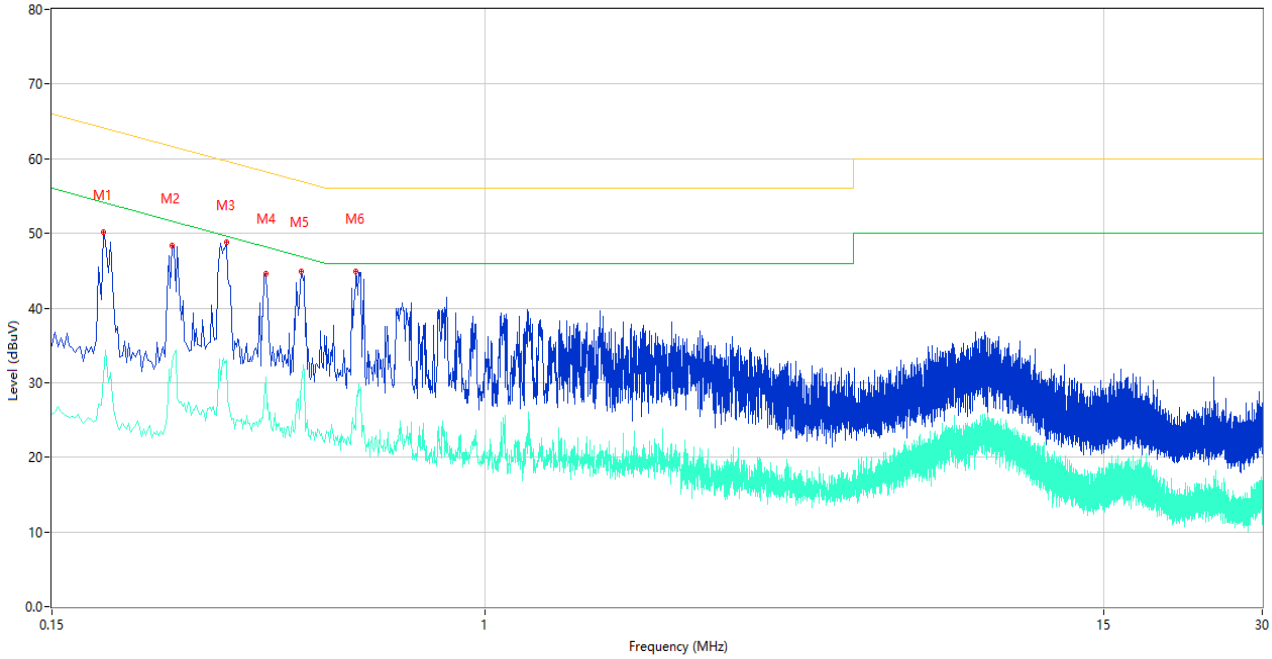
Test Mode 2

1) AC Ports - L Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.188	48.89	9.43	64.12	15.23	Peak	L	Pass
1**	0.188	28.17	9.43	54.12	25.95	AV	L	Pass
2	0.254	47.12	9.43	61.63	14.51	Peak	L	Pass
2**	0.254	31.71	9.43	51.63	19.92	AV	L	Pass
3	0.314	47.31	9.40	59.86	12.55	Peak	L	Pass
3**	0.314	31.13	9.40	49.86	18.73	AV	L	Pass
4	0.390	43.27	9.88	58.06	14.79	Peak	L	Pass
4**	0.390	29.85	9.88	48.06	18.21	AV	L	Pass
5	0.450	45.72	9.93	56.88	11.16	Peak	L	Pass
5**	0.450	29.74	9.93	46.88	17.14	AV	L	Pass
6	0.578	44.39	9.92	56.00	11.61	Peak	L	Pass
6**	0.578	25.99	9.92	46.00	20.01	AV	L	Pass

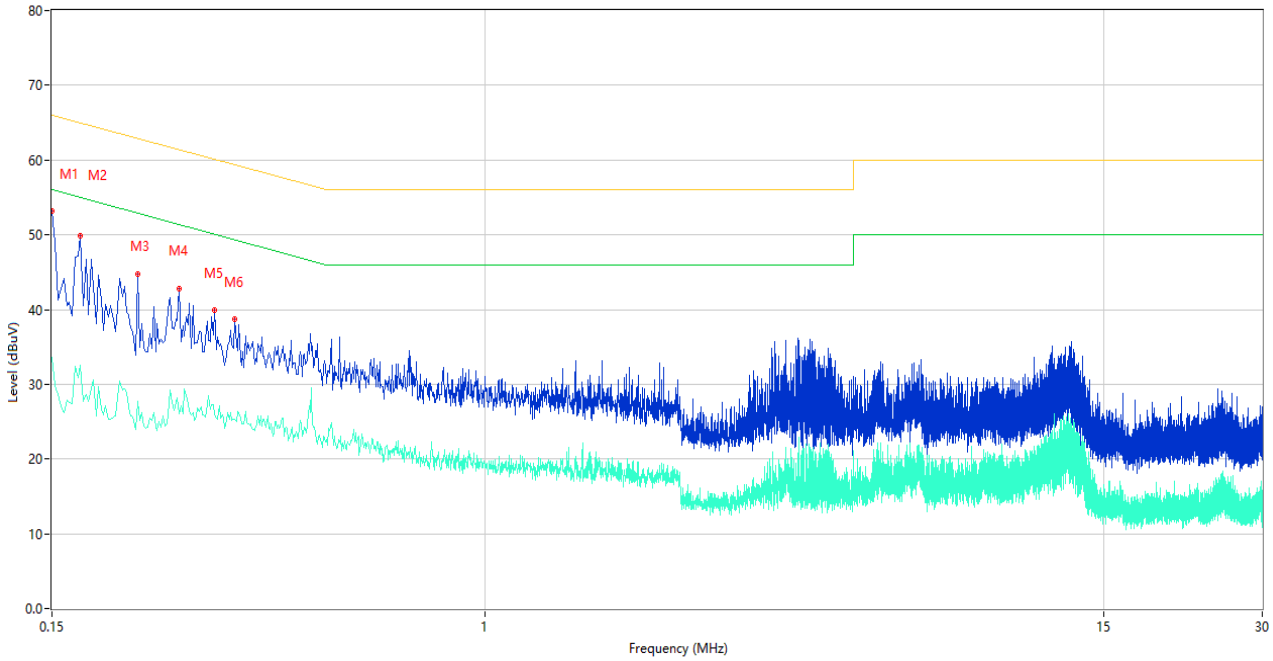
2) AC Ports - N Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.188	50.11	9.43	64.12	14.01	Peak	N	Pass
1**	0.188	30.93	9.43	54.12	23.19	AV	N	Pass
2	0.254	48.30	9.43	61.63	13.33	Peak	N	Pass
2**	0.254	32.65	9.43	51.63	18.98	AV	N	Pass
3	0.322	48.81	9.39	59.66	10.85	Peak	N	Pass
3**	0.322	32.94	9.39	49.66	16.72	AV	N	Pass
4	0.382	44.57	9.77	58.24	13.67	Peak	N	Pass
4**	0.382	30.77	9.77	48.24	17.47	AV	N	Pass
5	0.446	44.94	9.94	56.95	12.01	Peak	N	Pass
5**	0.446	30.40	9.94	46.95	16.55	AV	N	Pass
6	0.568	44.86	9.88	56.00	11.14	Peak	N	Pass
6**	0.568	25.05	9.88	46.00	20.95	AV	N	Pass

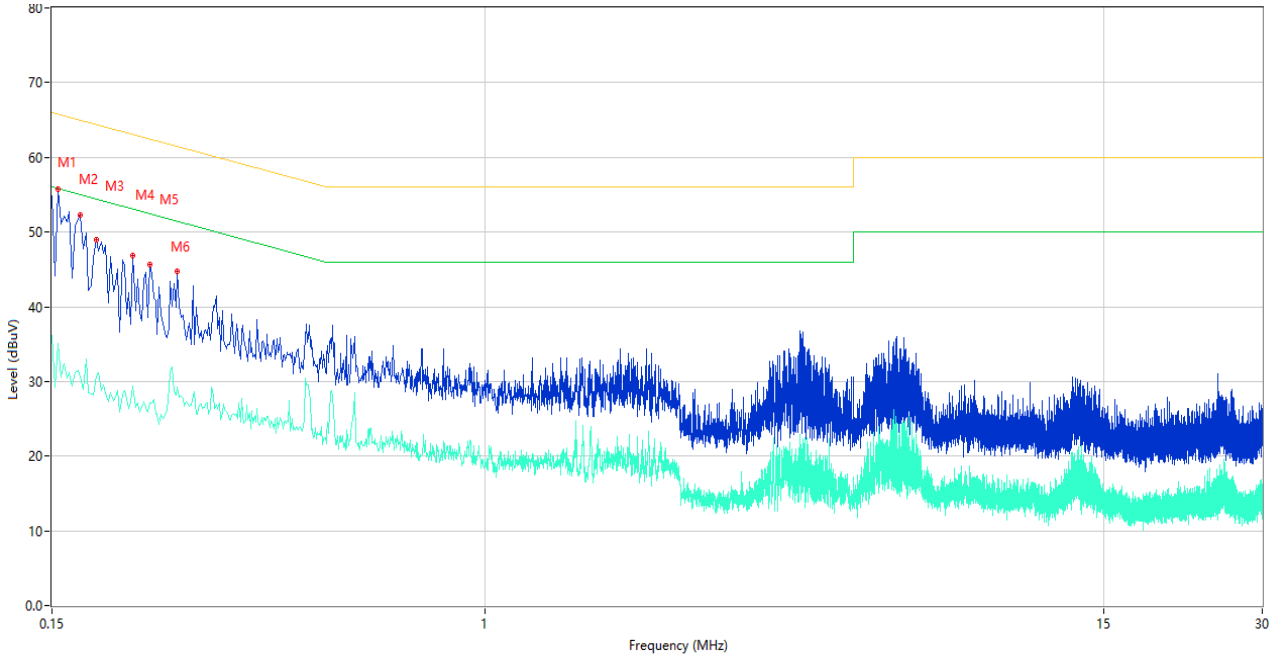
Test Mode 4

3) AC Ports - L Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.150	53.19	9.47	66.00	12.81	Peak	L	Pass
1**	0.150	33.58	9.47	56.00	22.42	AV	L	Pass
2	0.170	49.82	9.45	64.96	15.14	Peak	L	Pass
2**	0.170	32.55	9.45	54.96	22.41	AV	L	Pass
3	0.218	44.72	9.42	62.89	18.17	Peak	L	Pass
3**	0.218	27.72	9.42	52.89	25.17	AV	L	Pass
4	0.262	42.86	9.43	61.37	18.51	Peak	L	Pass
4**	0.262	26.13	9.43	51.37	25.24	AV	L	Pass
5	0.306	39.86	9.42	60.08	20.22	Peak	L	Pass
5**	0.306	25.99	9.42	50.08	24.09	AV	L	Pass
6	0.334	38.71	9.36	59.35	20.64	Peak	L	Pass
6**	0.334	25.26	9.36	49.35	24.09	AV	L	Pass

4) AC Ports - N Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.154	55.73	9.47	65.78	10.05	Peak	N	Pass
1**	0.154	35.07	9.47	55.78	20.71	AV	N	Pass
2	0.170	52.28	9.45	64.96	12.68	Peak	N	Pass
2**	0.170	30.65	9.45	54.96	24.31	AV	N	Pass
3	0.182	48.90	9.44	64.39	15.49	Peak	N	Pass
3**	0.182	30.66	9.44	54.39	23.73	AV	N	Pass
4	0.214	46.80	9.42	63.05	16.25	Peak	N	Pass
4**	0.214	29.39	9.42	53.05	23.66	AV	N	Pass
5	0.230	45.58	9.43	62.45	16.87	Peak	N	Pass
5**	0.230	27.05	9.43	52.45	25.40	AV	N	Pass
6	0.260	44.70	9.43	61.43	16.73	Peak	N	Pass
6**	0.260	29.21	9.43	51.43	22.22	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	SCHWARZBECK	NSLK 8127	8127-687	2023.05.16	2024.05.15	☒
ISN	TESEQ	ISN T800	34449	2023.11.10	2024.11.09	☐
ISN	TESEQ	ISN T8-Cat6	53561	2023.04.23	2024.04.22	☐
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-SZ23B0377-AE-1.PDF”.

ANNEX C EUT EXTERNAL PHOTOS

Please refer the document “BL-SZ23B0377-AW.PDF”.

ANNEX D EUT INTERNAL PHOTOS

Please refer the document “BL-SZ23B0377-AI.PDF”.

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--END OF REPORT--