

TEST REPORT

Applicant: Cavli Inc.
Address: 99 South Almaden Blvd., Suite 600, San Jose, CA
95113 United States
Equipment Type: LTE MODEM/MODULE
Model Name: C16QS-NA (refer to section 2.4)
Brand Name: CAVLI WIRELESS
FCC ID: 2BB64C16QSNA
ISED Number: 31113-C16QSNA
47 CFR Part 15 Subpart B
Test Standard: ICES-003 (Issue 7, October 15, 2020)
ANSI C63.4-2014
Sample Arrival Date: Aug. 07, 2023
Test Date: Aug. 10, 2023
Date of Issue: Sep. 19, 2023

ISSUED BY:

Shenzhen BALUN Technology Co., Ltd.

Tested by: Xin Liao

Checked by: Xia Long

Approved by: Liao Jianming
(Technical Director)

Xin Liao

Xia Long

Jianming Liao

Revision History		
Version	Issue Date	Revisions Content
<u>Rev. 01</u>	<u>Sep. 19, 2023</u>	<u>Initial Issue</u>

TABLE OF CONTENTS

1 GENERAL INFORMATION.....	3
1.1 Test Laboratory	3
1.2 Test Location.....	3
2 PRODUCT INFORMATION	4
2.1 Applicant Information.....	4
2.2 Manufacturer Information	4
2.3 General Description for Equipment under Test (EUT).....	4
2.4 Ancillary Equipment.....	4
2.5 Technical Information	4
3 SUMMARY OF TEST RESULTS	5
3.1 Test Standards.....	5
3.2 Verdict.....	5
3.3 Test Uncertainty	5
4 GENERAL TEST CONFIGURATIONS.....	6
4.1 Test Configurations	6
4.2 Test Setups.....	7
5 TEST ITEMS.....	9
5.1 Emission Tests.....	9
ANNEX A TEST RESULTS.....	14
A.1 Radiated Emission	14
A.2 Conducted Emission, AC Ports	22
ANNEX B TEST SETUP PHOTOS	25
ANNEX C EUT EXTERNAL PHOTOS	25
ANNEX D EUT INTERNAL PHOTOS	25

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	<input checked="" type="checkbox"/> Block B, 1/F, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China
	<input type="checkbox"/> 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	Cavli Inc.
Address	99 South Almaden Blvd., Suite 600, San Jose, CA 95113 United States

2.2 Manufacturer Information

Manufacturer	Cavli Inc.
Address	99 South Almaden Blvd., Suite 600, San Jose, CA 95113 United States

2.3 General Description for Equipment under Test (EUT)

EUT Name	LTE MODEM/MODULE		
Model Name Under Test	C16QS-NA		
Series Model Name	C16QS-NA-GNAN, C16QS-NA-GNAH, C16QS-NA-S00N, C16QS-NA-S00H		
Description of Model name differentiation	Sub-Variants	GNSS	Internal eSim
	C16QS-NA-S00N	No	No
	C16QS-NA-S00H	No	Yes
	C16QS-NA-GNAN	Yes	No
	C16QS-NA-GNAH	Yes	Yes
(this information provided by the customer)			
Hardware Version	C16QS v3.2		
Software Version	V1.2.5		
Dimensions (Approx.)	N/A		
Weight (Approx.)	N/A		

2.4 Ancillary Equipment

Note: Not Applicable.

2.5 Technical Information

Network and Wireless connectivity	4G Network FDD LTE Band 2/5/12/13/66
Classification of equipment	Class B

The requirement for the following technical information of the EUT was tested in this report:

The highest internal frequency of EUT	1.8 GHz
---------------------------------------	---------

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)-10m	4.8 dB
Radiated emissions (30 MHz-1 GHz)-3m	4.8 dB
Radiated emissions (1 GHz-18 GHz)-3m	4.9 dB

4 GENERAL TEST CONFIGURATIONS

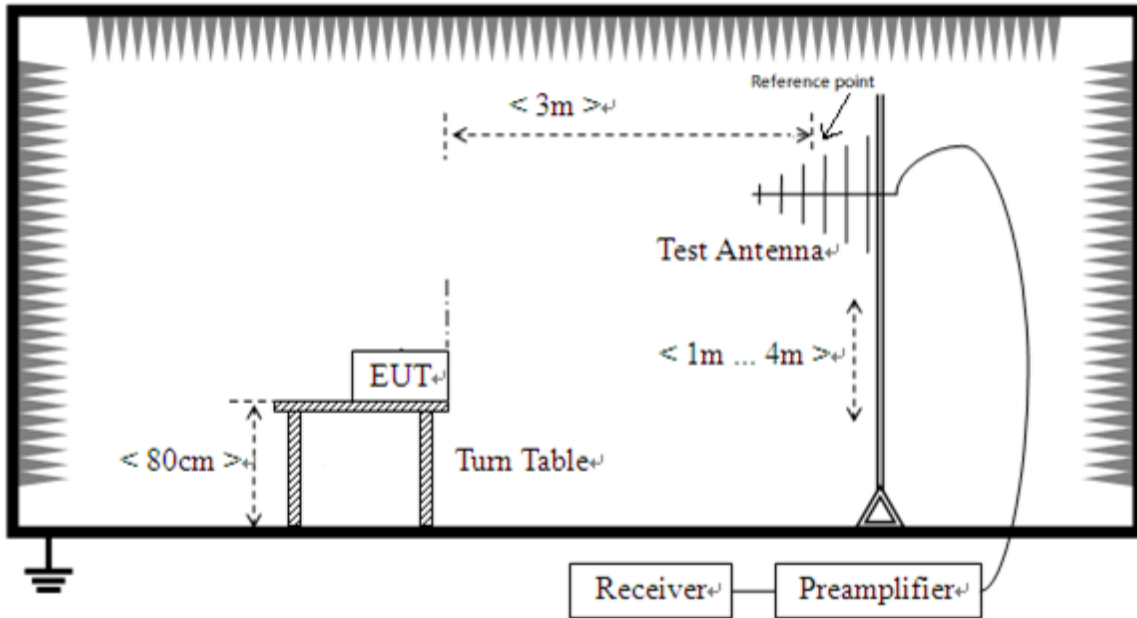
4.1 Test Configurations

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

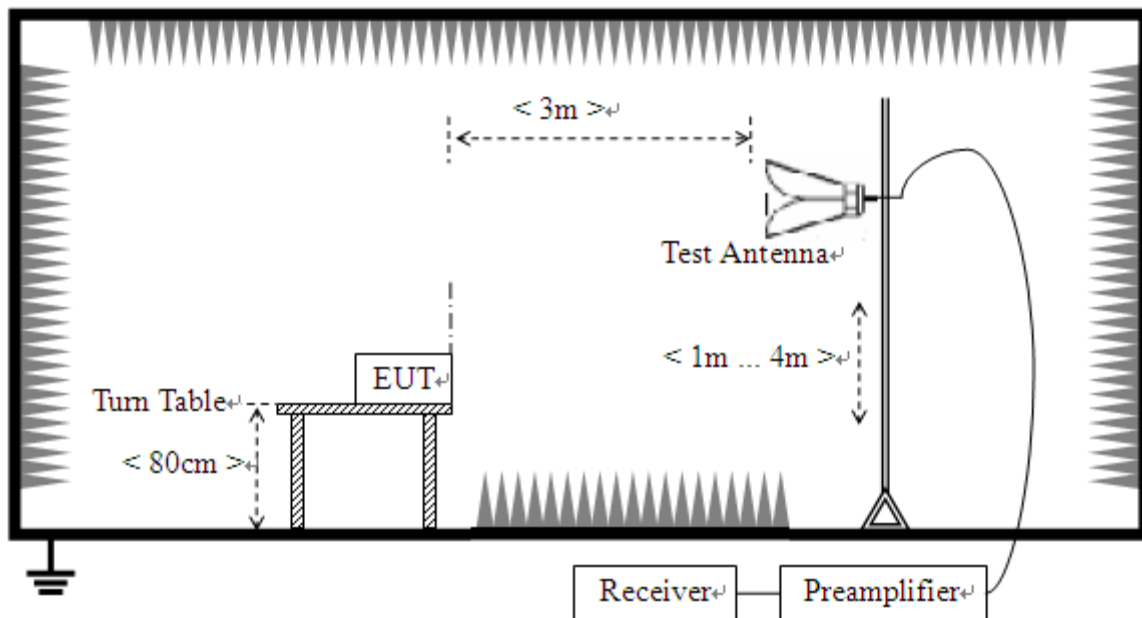
Test Mode Configuration	Description
Mode 1	<u>The Normal Work Test Mode</u> EUT + Adapter + USB Cable + Battery + Antenna 1 + Antenna 2

4.2 Test Setups

Test Setup 1

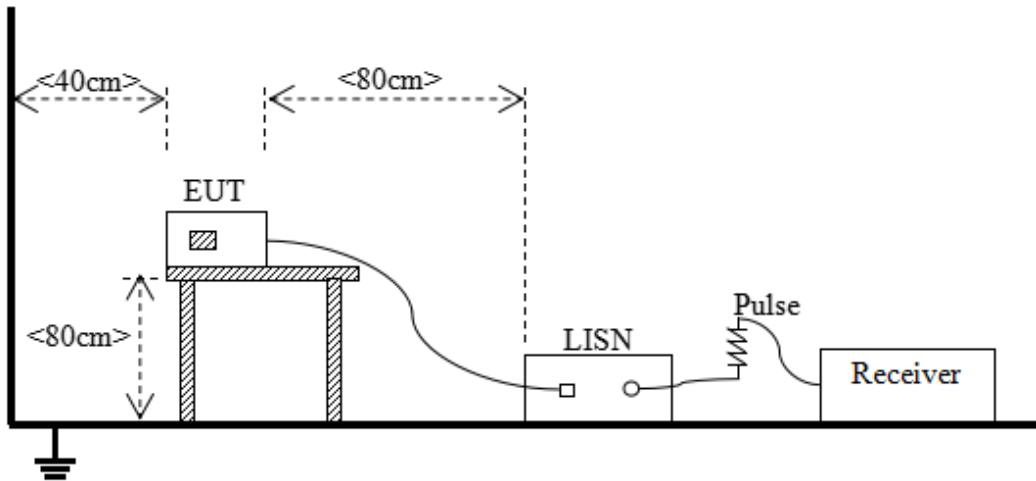


Radiated Emission (30 MHz-1 GHz)



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 ($\mu\text{V/m}$)	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*log [Field Strength ($\mu\text{V/m}$)].
- 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 ($\mu\text{V/m}$)	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)
$F_X \leq 108$ MHz	1 GHz
108 MHz $\leq F_X \leq 500$ MHz	2 GHz
500 MHz $\leq F_X \leq 1$ GHz	5 GHz
$F_X \geq 1$ 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) Quasi-peak (dB μ V/m)	Class A (10 m) Quasi-peak (dB μ V/m)	Class B (3 m) Quasi-peak (dB μ V/m)	Class B (10m) Quasi-peak (dB μ V/m)
30 - 88	50.0	40.0	40.0	30.0
88 - 216	54.0	43.5	43.5	33.1
216 - 230	56.9	46.4	46.0	35.6
230 - 960	57.0	47.0	47.0	37.0
960 - 1000	60.0	49.5	54.0	43.5

Note: The more stringent limit applies at transition frequencies.

Frequency range (GHz)	Class A (3 m) Average (dB μ V/m)	Class A (3 m) Peak (dB μ V/m)	Class B (3 m) Average (dB μ V/m)	Class B (3 m) Peak (dB μ V/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)
$F_X \leq 108$ MHz	1GHz
108 MHz $\leq F_X \leq 500$ MHz	2GHz
500 MHz $\leq F_X \leq 1$ GHz	5GHz
$F_X \geq 1$ GHz	5 * F_X

Highest internal frequency (F_X)	Highest measurement frequency (F_M)
	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 4.2 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 $f \geq 1$ GHz, 100 kHz for $f < 1$ GHz

VBW \geq RBW

Sweep = auto

Detector function = peak for $f < 1$ GHz, peak & RMS Average for $f \geq 1$ 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/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 (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.
- 3) The limit using ANSI C63.4.

5.1.2.2 Test Setup

Refer to 4.2 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 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

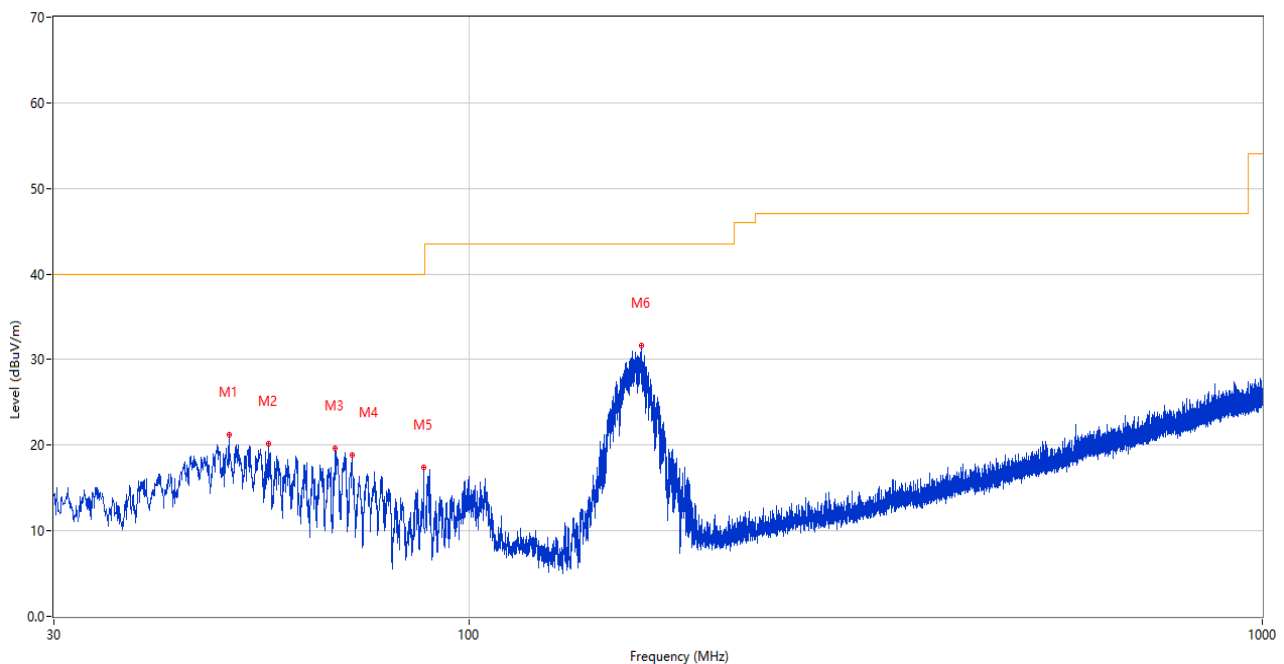
Note 1: For the test data above 1 GHz, according the ANSI C63.4-2014, where limits are specified for both average and peak (or quasi-peak) detector functions, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement.

Sample No.	N.A	Temperature	24.3°C
Humidity	52%RH	Pressure	101kPa
Test Engineer	Gong Baihua	Test Date	2023.08.10

Test Data and Plots

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

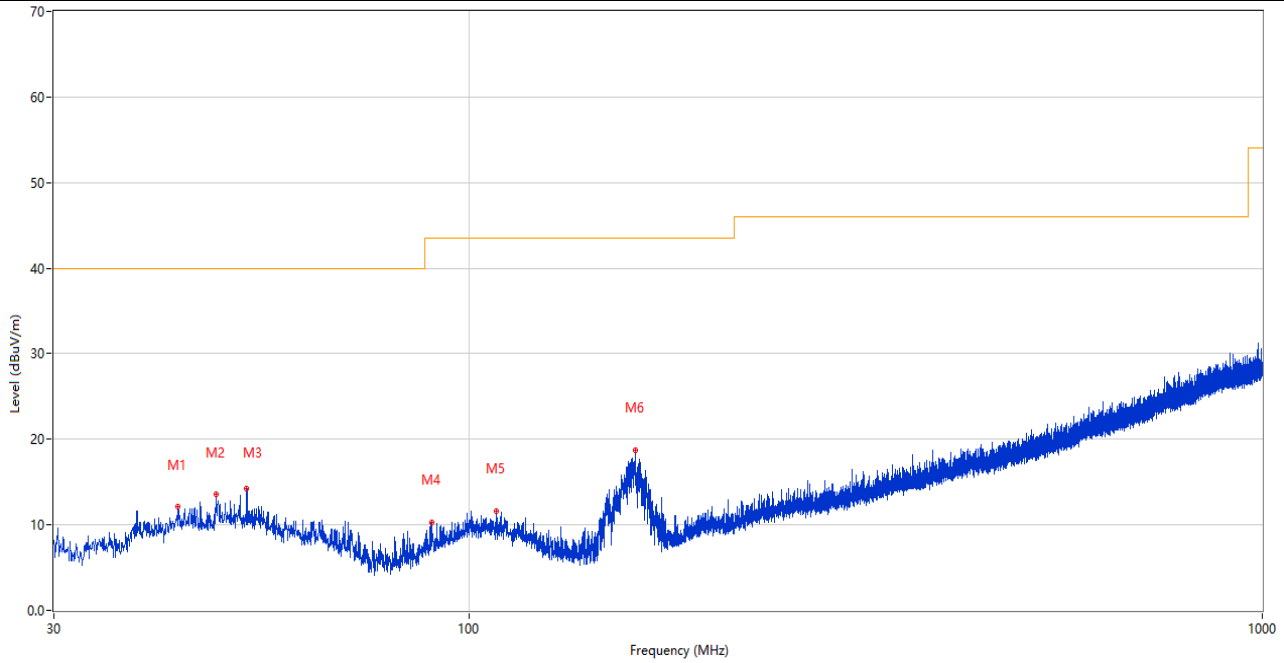
Test Site: 3M-2 Work Mode: The Normal Work Test Mode
 110V + Adapter + USB Cable-
 Remark1: A08 + Antenna-A05 + Antenna- Remark2: N.A
 A06



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	49.837	21.23	-25.57	40.0	18.77	Peak	268.00	100	Vertical	Pass
2	55.850	20.22	-25.98	40.0	19.78	Peak	273.00	100	Vertical	Pass
3	67.879	19.59	-28.47	40.0	20.41	Peak	21.00	100	Vertical	Pass
4	71.225	18.90	-29.84	40.0	21.10	Peak	306.00	100	Vertical	Pass
5	87.763	17.39	-29.20	40.0	22.61	Peak	134.00	100	Vertical	Pass
6	164.878	31.66	-29.32	43.5	11.84	Peak	286.00	100	Vertical	Pass

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

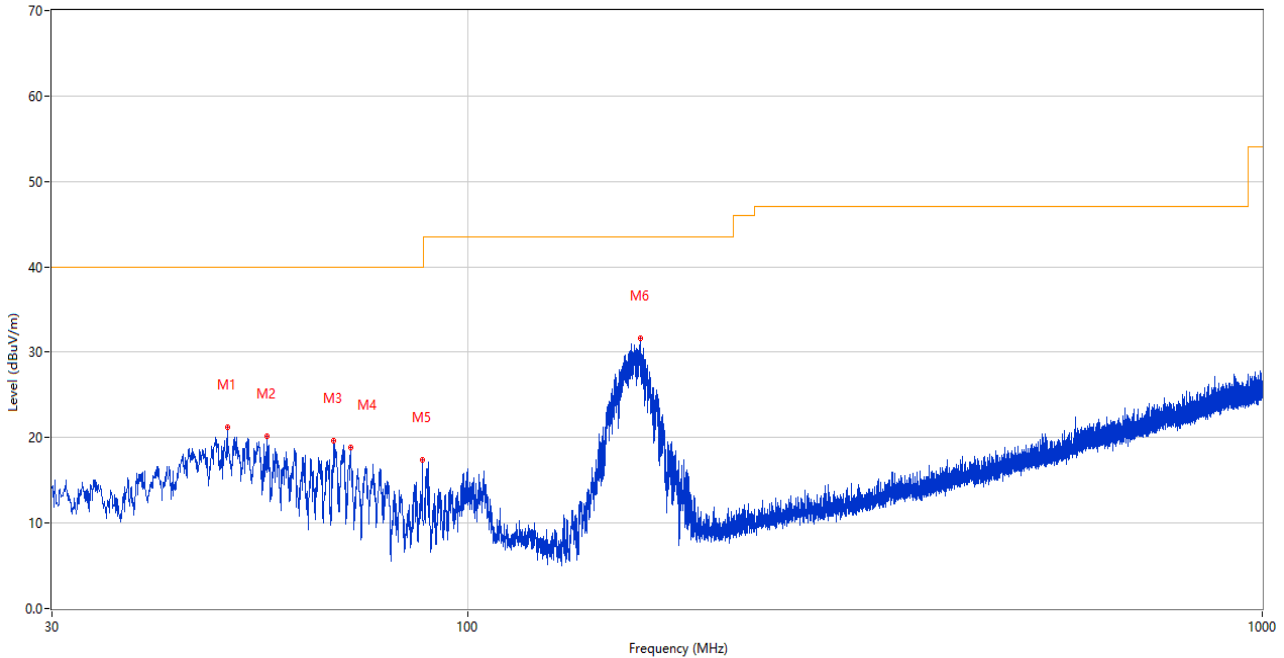
Test Site:	3M-2	Work Mode:	The Normal Work Test Mode
Remark1:	110V + Adapter + USB Cable- A08 + Antenna-A05 + Antenna- A06	Remark2:	N.A



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	43.047	12.07	-25.80	40.0	27.93	Peak	154.00	100	Horizontal	Pass
2	47.993	13.51	-25.43	40.0	26.49	Peak	327.00	100	Horizontal	Pass
3	52.504	14.26	-25.47	40.0	25.74	Peak	284.00	100	Horizontal	Pass
4	89.849	10.30	-28.57	43.5	33.20	Peak	95.00	100	Horizontal	Pass
5	108.182	11.65	-26.59	43.5	31.85	Peak	191.00	200	Horizontal	Pass
6	162.308	18.72	-29.49	43.5	24.78	Peak	240.00	200	Horizontal	Pass

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

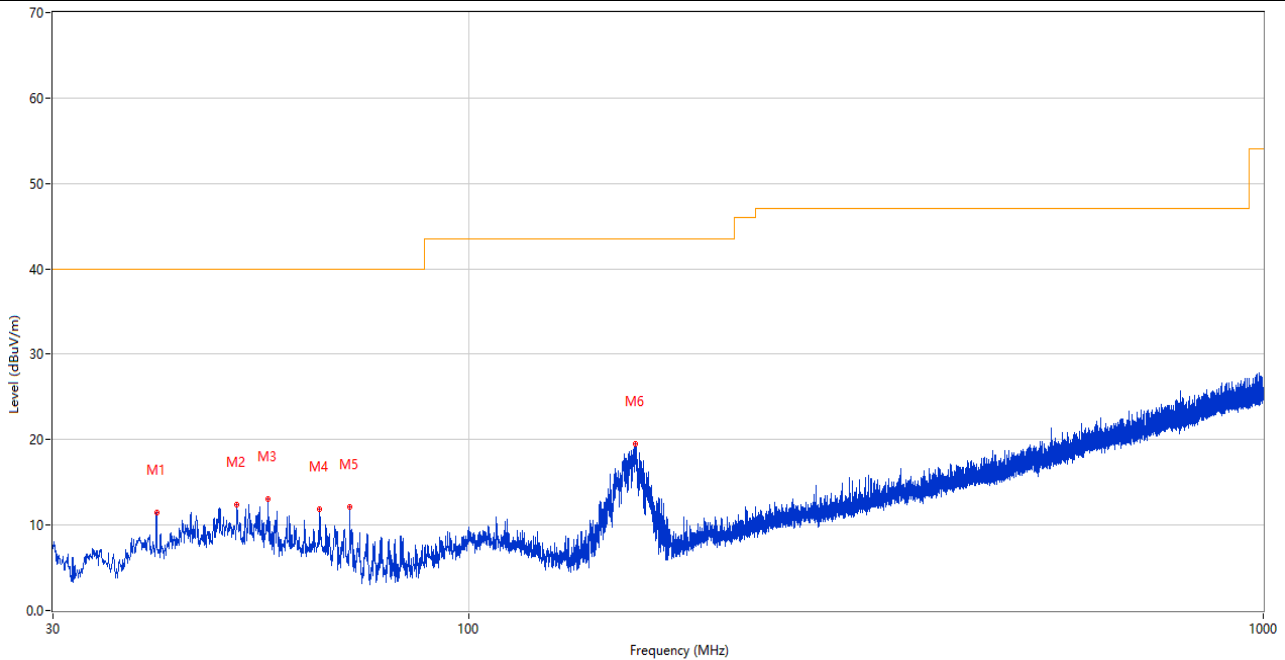
Test Site: 3M-2 Work Mode: The Normal Work Test Mode
 110V + Adapter + USB Cable-
 Remark1: A08 + Antenna-A05 + Antenna- Remark2: N.A
 A06



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	49.837	21.23	-25.57	40.0	18.77	Peak	268.00	100	Vertical	Pass
2	55.850	20.22	-25.98	40.0	19.78	Peak	273.00	100	Vertical	Pass
3	67.879	19.59	-28.47	40.0	20.41	Peak	21.00	100	Vertical	Pass
4	71.225	18.90	-29.84	40.0	21.10	Peak	306.00	100	Vertical	Pass
5	87.763	17.39	-29.20	40.0	22.61	Peak	134.00	100	Vertical	Pass
6	164.878	31.66	-29.32	43.5	11.84	Peak	286.00	100	Vertical	Pass

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

Test Site:	3M-2	Work Mode:	The Normal Work Test Mode
Remark1:	110V + Adapter + USB Cable- A08 + Antenna-A05 + Antenna- A06	Remark2:	N.A



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	40.525	11.47	-26.55	40.0	28.53	Peak	244.00	100	Horizontal	Pass
2	51.097	12.37	-25.47	40.0	27.63	Peak	42.00	100	Horizontal	Pass
3	55.947	13.08	-25.98	40.0	26.92	Peak	327.00	100	Horizontal	Pass
4	65.017	11.86	-27.54	40.0	28.14	Peak	329.00	200	Horizontal	Pass
5	70.885	12.11	-29.75	40.0	27.89	Peak	350.00	100	Horizontal	Pass
6	162.017	19.53	-29.50	43.5	23.97	Peak	237.00	100	Horizontal	Pass

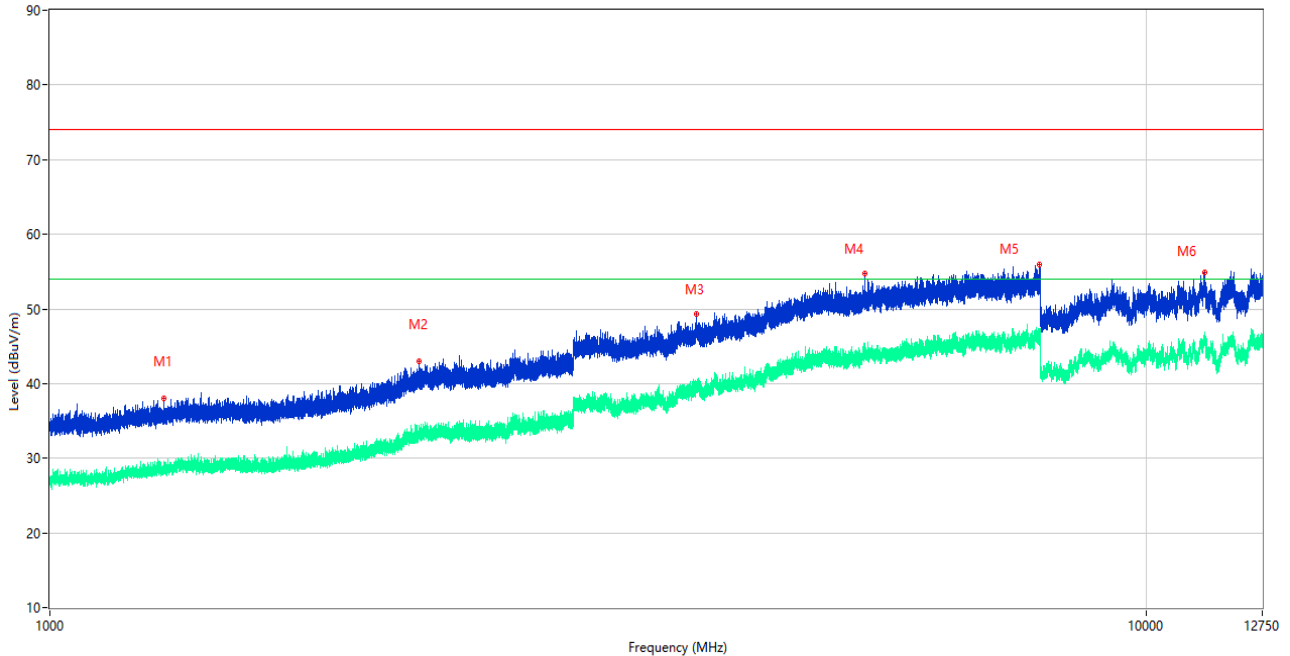
Equipment Information						
Equipment Name	Supplier	Model	Serial No.	Cal. Date	Cal. Due	Use
Frequency Below 1 GHz						
EMI Receiver	Keysight	N9038A	MY55330120	2022.09.09	2023.09.08	<input checked="" type="checkbox"/>
Amplifier (30-1GHz)	COM-MV	ZT30-1000M	B2017119081	2022.12.07	2023.12.06	<input checked="" type="checkbox"/>
Test Antenna-Bi-Log	SCHWARZB ECK	VULB 9168	9168-00867	2022.04.12	2025.04.11	<input checked="" type="checkbox"/>
Anechoic Chamber (#2)	YiHeng	9m*6m*6m	142	2021.08.19	2024.08.18	<input checked="" type="checkbox"/>
Description	Supplier	Name	Version	/		Use
Test Software	BALUN	BL410-E	V22.930	/		<input checked="" type="checkbox"/>

The equipment listed in the table below are supported unit provided by the laboratory for achieving EUT functions or monitor EUT functions during the testing process. The supported units are validated by the laboratory before testing.

Supported Unit	Supplier	Model	Serial No.	Description
adapter	N/A	N/A	N/A	N/A
USB Cable	N/A	N/A	N/A	N/A
PCB board	N/A	N/A	N/A	N/A
Antenna 1	N/A	N/A	N/A	N/A
Antenna 2	N/A	N/A	N/A	N/A

5) Test Antenna Vertical, 1 GHz – 6 GHz

Test Site: 3M-2 Work Mode: The Normal Work Test Mode
 110V + Adapter + USB Cable-
 Remark1: A08 + Antenna-A05 + Remark2: N.A
 Antenna-A06

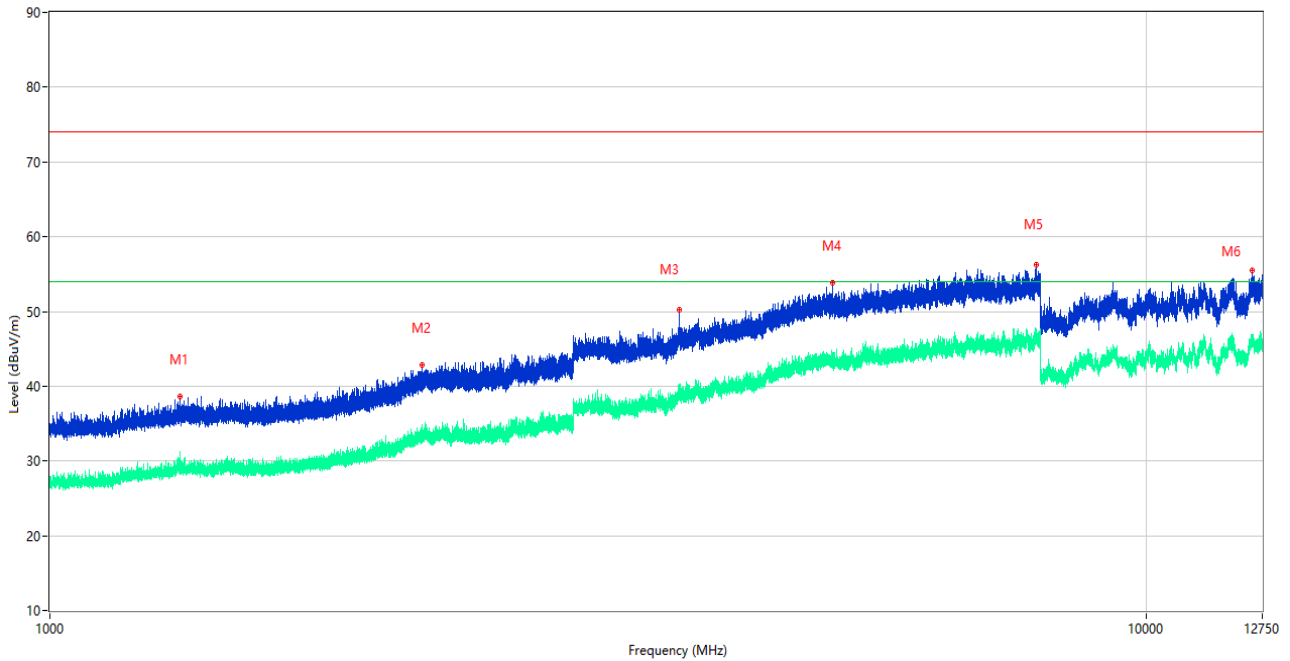


No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1269.900	38.00	-17.01	74.0	36.00	Peak	114.00	100	Vertical	Pass
1**	1269.900	28.44	-17.01	54.0	25.56	AV	114.00	100	Vertical	Pass
2	2169.500	42.93	-12.29	74.0	31.07	Peak	360.00	100	Vertical	Pass
2**	2169.500	32.82	-12.29	54.0	21.18	AV	360.00	100	Vertical	Pass
3	3883.500	49.25	-3.09	74.0	24.75	Peak	130.00	100	Vertical	Pass
3**	3883.500	40.25	-3.09	54.0	13.75	AV	130.00	100	Vertical	Pass
4	5535.250	54.72	0.94	74.0	19.28	Peak	339.00	100	Vertical	Pass
4**	5535.250	43.44	0.94	54.0	10.56	AV	339.00	100	Vertical	Pass
5	7987.500	55.96	2.28	74.0	18.04	Peak	45.00	100	Vertical	Pass
5**	7987.500	45.80	2.28	54.0	8.20	AV	45.00	100	Vertical	Pass
6	11297.000	54.84	2.36	74.0	19.16	Peak	169.00	100	Vertical	Pass
6**	11297.000	46.13	2.36	54.0	7.87	AV	169.00	100	Vertical	Pass

Note: The RE-H test method for ICES-003 references FCC PART 15B, so test data is shared.

6) Test Antenna Horizontal, 1 GHz – 6 GHz

Test Site: 3M-2 Work Mode: The Normal Work Test Mode
 110V + Adapter + USB Cable-
 Remark1: A08 + Antenna-A05 + Remark2: N.A
 Antenna-A06



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1313.100	38.59	-16.29	74.0	35.41	Peak	194.00	100	Horizontal	Pass
1**	1313.100	28.99	-16.29	54.0	25.01	AV	194.00	100	Horizontal	Pass
2	2185.900	42.79	-12.31	74.0	31.21	Peak	358.00	100	Horizontal	Pass
2**	2185.900	33.52	-12.31	54.0	20.48	AV	358.00	100	Horizontal	Pass
3	3750.750	50.20	-2.75	74.0	23.80	Peak	35.00	100	Horizontal	Pass
3**	3750.750	39.77	-2.75	54.0	14.23	AV	35.00	100	Horizontal	Pass
4	5170.750	53.84	-0.01	74.0	20.16	Peak	45.00	100	Horizontal	Pass
4**	5170.750	43.30	-0.01	54.0	10.70	AV	45.00	100	Horizontal	Pass
5	7928.000	56.27	3.06	74.0	17.73	Peak	63.00	100	Horizontal	Pass
5**	7928.000	46.57	3.06	54.0	7.43	AV	63.00	100	Horizontal	Pass
6	12472.500	55.56	2.92	74.0	18.44	Peak	135.00	100	Horizontal	Pass
6**	12472.500	45.79	2.92	54.0	8.21	AV	135.00	100	Horizontal	Pass

Note: The RE-H test method for ICES-003 references FCC PART 15B, so test data is shared.

Equipment Information						
Equipment Name	Supplier	Model	Serial No.	Cal. Date	Cal. Due	Use
Frequency Above 1 GHz						
EMI Receiver	Keysight	N9038A	MY55330120	2022.09.09	2023.09.08	<input checked="" type="checkbox"/>
Amplifier (1-12GHz)	Advanced Microwave	WLA652A	1740103	2022.12.07	2023.12.06	<input checked="" type="checkbox"/>
Amplifier (0.8-21GHz)	Mini-Circuits	ZVA-213-S+	225321316	2022.12.07	2023.12.06	<input checked="" type="checkbox"/>
Test Antenna- Horn	SCHWARZB ECK	BBHA 9120D	01917	2022.06.09	2025.06.08	<input checked="" type="checkbox"/>
Description	Supplier	Name	Version	/		Use
Test Software	BALUN	BL410-E	V22.930	/		<input checked="" type="checkbox"/>

The equipment listed in the table below are supported unit provided by the laboratory for achieving EUT functions or monitor EUT functions during the testing process. The supported units are validated by the laboratory before testing.

Supported Unit	Supplier	Model	Serial No.	Description
adapter	N/A	N/A	N/A	N/A
USB Cable	N/A	N/A	N/A	N/A
PCB board	N/A	N/A	N/A	N/A
Antenna 1	N/A	N/A	N/A	N/A
Antenna 2	N/A	N/A	N/A	N/A

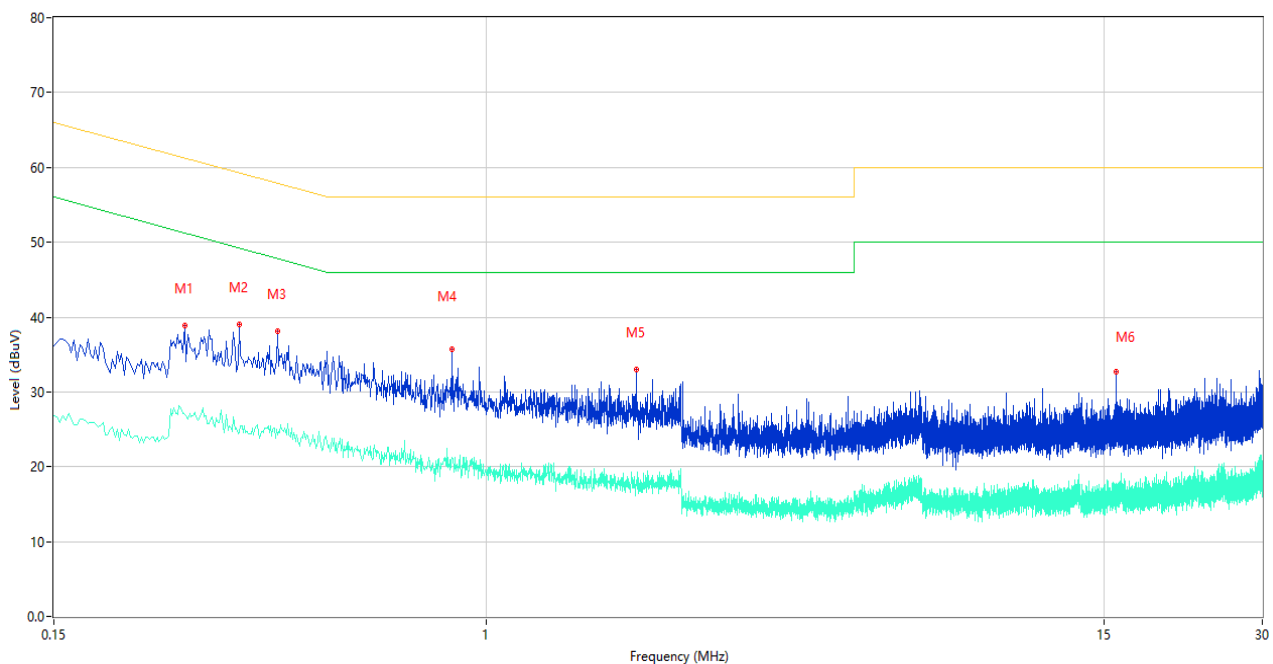
A.2 Conducted Emission, AC Ports

Sample No.	N.A	Temperature	24.3°C
Humidity	52%RH	Pressure	101kPa
Test Engineer	Yang Yang	Test Date	2023.08.10

Test Data and Plots

1) AC Ports - L Phase

Test Site: N/A Work Mode: The Normal Work Test Mode
 110V + Adapter + USB Cable-
 Remark1: A08 + Antenna-A05 + Remark2: N.A
 Antenna-A06

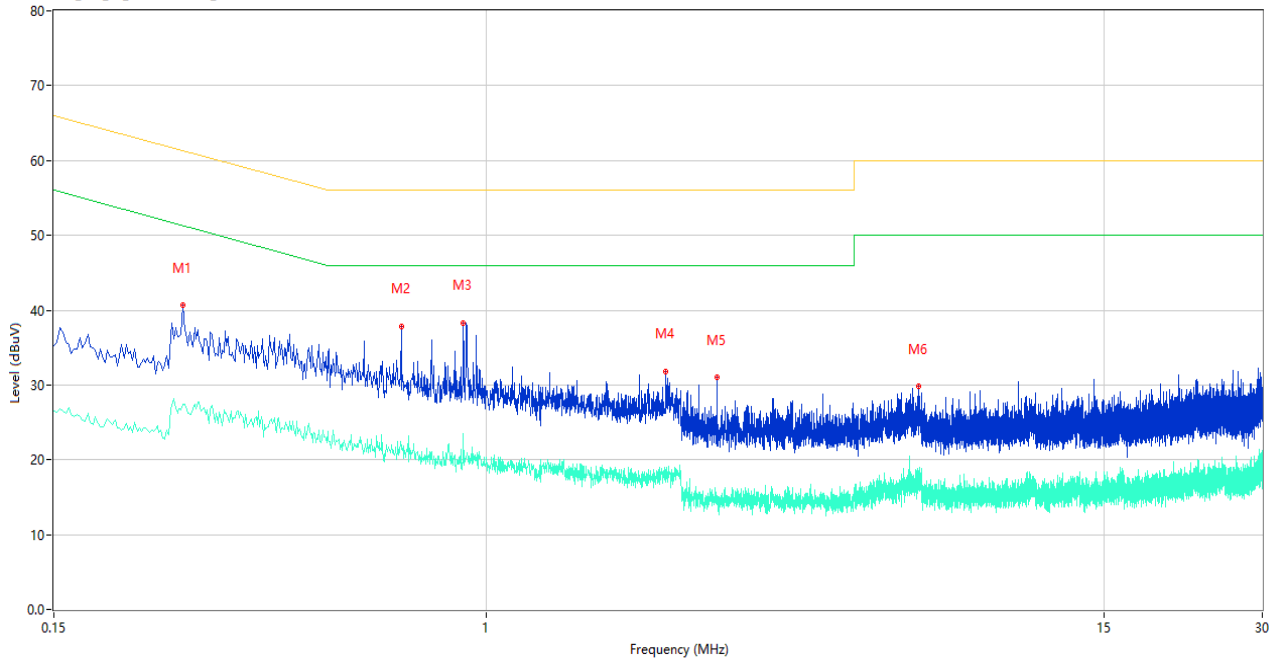


No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.266	38.88	9.79	61.24	22.36	Peak	L	Pass
1**	0.266	26.97	9.79	51.24	24.27	AV	L	Pass
2	0.338	38.97	9.73	59.25	20.28	Peak	L	Pass
2**	0.338	24.50	9.73	49.25	24.75	AV	L	Pass
3	0.400	38.16	10.38	57.85	19.69	Peak	L	Pass
3**	0.400	24.19	10.38	47.85	23.66	AV	L	Pass
4	0.860	35.66	10.23	56.00	20.34	Peak	L	Pass
4**	0.860	21.23	10.23	46.00	24.77	AV	L	Pass
5	1.926	33.00	9.96	56.00	23.00	Peak	L	Pass
5**	1.926	18.28	9.96	46.00	27.72	AV	L	Pass
6	15.840	32.71	10.43	60.00	27.29	Peak	L	Pass
6**	15.840	17.80	10.43	50.00	32.20	AV	L	Pass

2) AC Ports - N Phase

Test Site: N/A Work Mode: The Normal Work Test Mode
 110V + Adapter + USB Cable-
 Remark1: A08 + Antenna-A05 + Remark2: N.A
 Antenna-A06

CE Test case_FCC_CE_FCC PART 15B_Class B



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.264	40.62	9.79	61.30	20.68	Peak	N	Pass
1**	0.264	27.35	9.79	51.30	23.95	AV	N	Pass
2	0.688	37.88	10.38	56.00	18.12	Peak	N	Pass
2**	0.688	21.78	10.38	46.00	24.22	AV	N	Pass
3	0.904	38.33	9.84	56.00	17.67	Peak	N	Pass
3**	0.904	23.50	9.84	46.00	22.50	AV	N	Pass
4	2.194	31.84	10.24	56.00	24.16	Peak	N	Pass
4**	2.194	18.65	10.24	46.00	27.35	AV	N	Pass
5	2.750	31.02	9.94	56.00	24.98	Peak	N	Pass
5**	2.750	14.54	9.94	46.00	31.46	AV	N	Pass
6	6.662	29.76	10.38	60.00	30.24	Peak	N	Pass
6**	6.662	16.07	10.38	50.00	33.93	AV	N	Pass

Equipment Information						
Equipment Name	Supplier	Model	Serial No.	Cal. Date	Cal. Due	Use
EMI Receiver	KEYSIGHT	N9010B	MY57110309	2022.09.09	2023.09.08	<input checked="" type="checkbox"/>
LISN	SCHWARZB ECK	NSLK 8127	8127-687	2023.05.16	2024.05.15	<input checked="" type="checkbox"/>
ISN	TESEQ	ISN T800	34449	2022.11.11	2023.11.10	<input type="checkbox"/>
ISN	TESEQ	ISN T8-Cat6	53561	2023.04.23	2024.04.22	<input type="checkbox"/>
Description	Supplier	Name	Version	/		Use
Test Software	BALUN	BL410-E	V22.930	/		<input checked="" type="checkbox"/>

The equipment listed in the table below are supported unit provided by the laboratory for achieving EUT functions or monitor EUT functions during the testing process. The supported units are validated by the laboratory before testing.

Supported Unit	Supplier	Model	Serial No.	Description
adapter	N/A	N/A	N/A	N/A
USB Cable	N/A	N/A	N/A	N/A
PCB board	N/A	N/A	N/A	N/A
Antenna 1	N/A	N/A	N/A	N/A
Antenna 2	N/A	N/A	N/A	N/A

ANNEX B TEST SETUP PHOTOS

Please refer the document “BL-SZ2380347-AE.PDF”.

ANNEX C EUT EXTERNAL PHOTOS

Please refer the document “BL-SZ2380347-AW.PDF”.

ANNEX D EUT INTERNAL PHOTOS

Please refer the document “BL-SZ2380347-AI.PDF”.

Statement

1. The laboratory guarantees the scientificity, accuracy and impartiality of the test, and is responsible for all the information in the report, except the information provided by the customer. The customer is responsible for the impact of the information provided on the validity of the results.
2. The report without China inspection body and laboratory Mandatory Approval (CMA) mark has no effect of proving to the society.
3. For the report with CNAS mark or A2LA mark, the items marked with "☆" are not within the accredited scope.
4. This report is invalid if it is altered, without the signature of the testing and approval personnel, or without the "inspection and testing dedicated stamp" or test report stamp.
5. The test data and results are only valid for the tested samples provided by the customer.
6. This report shall not be partially reproduced without the written permission of the laboratory.
7. Any objection shall be raised to the laboratory within 30 days after receiving the report.

--END OF REPORT--