CIXI MINGYE COMMUNICATION AND ELECTRONIC CO.,LTD.

RF TEST REPORT

Report Type:
FCC Part 15C RF report

Model:
AvA1704J-4AC1Q2UC
AvA1704J-1Q2UC，
AvA1704J-1H1Q1R2UC，
AsA1704J-4AC1Q2UC，
AsA1704J-1Q2UC，
AsA1704J-1H1Q1R2UC

REPORT NUMBER:
220301543SHA-001

ISSUE DATE:
June 23, 2022

DOCUMENT CONTROL NUMBER:
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TEST REPORT

Report no.: 220301543SHA-001

Applicant	:	**CIXI MINGYE COMMUNICATION AND ELECTRONIC CO.,LTD. West Industrial District,Guanhaiwei Town,CIXI CITY Zhejiang Province 315315**
Manufacturer	:	**CIXI MINGYE COMMUNICATION AND ELECTRONIC CO.,LTD. West Industrial District,Guanhaiwei Town,CIXI CITY Zhejiang Province 315315**
Manufacturer Site	:	**CIXI MINGYE COMMUNICATION AND ELECTRONIC CO.,LTD. West Industrial District,Guanhaiwei Town,CIXI CITY Zhejiang Province 315315**
Type/Model:	:	AvA1704J-4AC1Q2UC AvA1704J-1Q2UC， AvA1704J-1H1Q1R2UC， AsA1704J-4AC1Q2UC， AsA1704J-1Q2UC， AsA1704J-1H1Q1R2UC
FCC ID	:	2A2N8-171Q2UC

SUMMARY:

The equipment complies with the requirements according to the following standard(s) or Specification:
47CFR Part 15 (2019): Radio Frequency Devices (Subpart C) **ANSI C63.10 (2013):** American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices

PREPARED BY:	**REVIEWED BY:**
Project Engineer Damon Ding	Reviewer Eric Li

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TEST REPORT

Content

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TEST REPORT

Revision History

Report No.	Version	Description	Issued Date
220301543SHA-001	Rev. 01	Initial issue of report	June 23, 2022

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Measurement result summary

TEST ITEM	FCC REFERANCE	RESULT
Radiated emissions	15.209	Pass
Conducted emissions	15.207	Pass

Notes: 1: NA =Not Applicable

2: Determination of the test conclusion is based on IEC Guide 115 in consideration of measurement uncertainty.

3: Additions, Deviations and Exclusions from Standards: None.

TEST REPORT

1 GENERAL INFORMATION

1.1 Description of Equipment Under Test (EUT)

Product name:	Socket Outlet
Type/Model:	AvA1704J-4AC1Q2UC AvA1704J-1Q2UC, AvA1704J-1H1Q1R2UC, AsA1704J-4AC1Q2UC, AsA1704J-1Q2UC, AsA1704J-1H1Q1R2UC
Description of EUT:	The EUT is a Scoket Outlet with wireless charging function. it has six models. The main type isAvA1704J-4AC1Q2UC, with 4 socket outlets,with four type A interfaces and two type C interfaces ,with wireless charger,with glass lid and with CBE .The difference between the main type with other types is the size of outlets,with or without two type A interfaces and two type C interfaces ,with or without HDMI,RJ45 extension cord . we test AA10704J-4AC1Q2UC as representative and list the worst results in this report.
Rating:	AC 125V, 15A
Category of EUT:	Class B
EUT type:	☒ Table top ☐ Floor standing
Software Version:	/
Hardware Version:	/
Sample received date:	June 1, 2022
Date of test:	June 1, 2022~ June 23, 2022

1.2 Technical Specification

Frequency Range:	111kHz – 200kHz
Modulation:	FSK
Antenna:	Coil antenna

TEST REPORT

1.3 Description of Test Facility

Name:	Intertek Testing Services Shanghai
Address:	Building 86, No. 1198 Qinzhou Road (North), Shanghai 200233, P.R. China
Telephone:	86 21 61278200
Telefax:	86 21 54262353

The test facility is recognized, certified, or accredited by these organizations:	CNAS Accreditation Lab Registration No. CNAS L0139
	FCC Accredited Lab Designation Number: CN1175
	IC Registration Lab CAB identifier.: CN0051
	VCCI Registration Lab Registration No.: R-14243, G-10845, C-14723, T-12252
	A2LA Accreditation Lab Certificate Number: 3309.02

2 TEST SPECIFICATIONS

2.1 Standards or specification

47CFR Part 15 (2019)
ANSI C63.10 (2013)

2.2 Mode of operation during the test

Within this test report, EUT was tested under all available operation modes and tested under its rating voltage and frequency. Other voltage and frequency are specified if used.

2.3 Test software list

Test Items	Software	Manufacturer	Version
Conducted emission	SKET Auto EMC Test Software	Keleto	V3.0
Radiated emission	SKET Auto EMC Test Software	Keleto	V3.0

2.4 Test peripherals list

Item No.	Name	Brand and Model	Description
1	Wireless load	EESON	100%/50%/0% power level
2	Power Adapter	A138A-120150U-US3	Input:100-240VAC/50-60Hz Output: 5V-3A/9V-2A/12V-1.5A

2.5 Test environment condition:

Test items	Temperature	Humidity
Radiated emission	25°C	54% RH
Power line conducted emission	24°C	54% RH

TEST REPORT

2.6 Instrument list

Conducted Emission					
Used	Equipment	Manufacturer	Type	Internal no.	Due date
☑	Test Receiver	R&S	ESCS 30	EC 2107	2022-07-14
☑	A.M.N.	R&S	ESH2-Z5	EC 3119	2022-12-06
☑	Shielding room	Zhongyu	-	EC 2838	2023-01-05
Radiated Emission					
Used	Equipment	Manufacturer	Type	Internal no.	Due date
☑	Test Receiver	R&S	ESIB 26	EC 3045	2022-09-11
☑	Bilog Antenna	TESEQ	CBL 6112D	EC 4206	2023-05-28
☐	Pre-amplifier	R&S	AFS42-00101800-25-S-42	EC5262	2023-06-08
☐	Horn antenna	R&S	HF 906	EC 3049	2022-11-16
☐	Horn antenna	ETS	3117	EC 4792-1	2023-01-07
☑	Active loop antenna	Schwarzbeck	FMZB1519	EC 5345	2023-03-05
☑	Semi-anechoic chamber	Albatross project	-	EC 3048	2023-09-13
Additional instrument					
Used	Equipment	Manufacturer	Type	Internal no.	Due date
☑	Therom-Hygrograph	ZJ1-2A	S.M.I.F.	EC 3783	2023-03-02
☑	Pressure meter	YM3	Shanghai Mengde	EC 4620	2023-09-0

2.7 Measurement uncertainty

The measurement uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

Measurement	Frequency	Expanded Uncertainty (k=2)
Conducted emission at mains ports	9kHz ~ 150kHz	3.52 dB
	150kHz ~ 30MHz	3.19 dB
Radiated Emissions up to 1 GHz	30MHz ~ 1GHz	4.90 dB
Radiated Emissions above 1 GHz	1GHz ~ 6GHz	5.02 dB
	6GHz ~ 18GHz	5.28 dB

3 Radiated emissions

Test result: **Pass**

3.1 Limit

Frequencies (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 ~ 0.490	2400/F(kHz)	300
0.490 ~ 1.705	24000/F(kHz)	30
1.705 ~ 30.0	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

3.2 Measurement Procedure

For Radiated emission below 30MHz:

a) The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meters chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.
b) The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
c) Both X and Y axes of the antenna are set to make the measurement.
d) For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
e) The test-receiver system was set to Quasi-Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9kHz at frequency below 30MHz.

For Radiated emission above 30MHz:

a) The EUT was placed on the top of a rotating table 0.8 meters (for 30MHz ~ 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meters chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.

b) The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c) The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

TEST REPORT

d) For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e) The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.

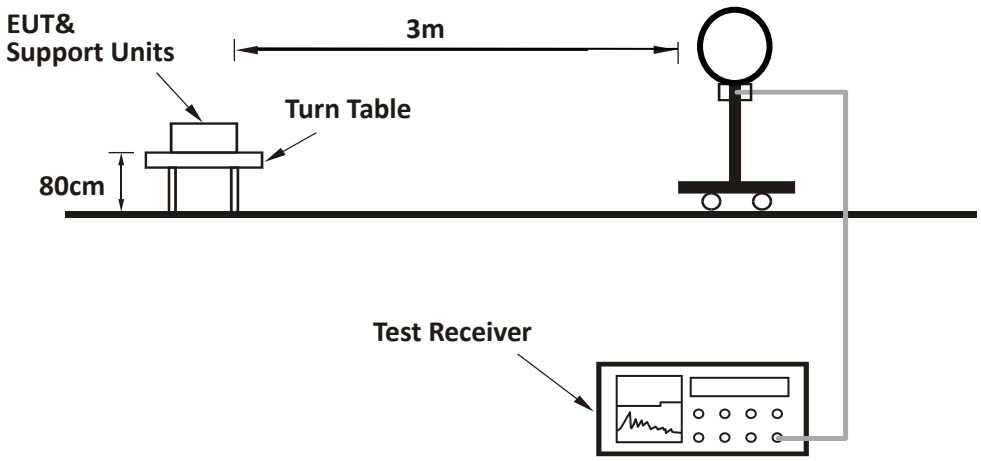
f) The test-receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Note:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. All modes of operation were evaluated and the worst-case emissions were reported

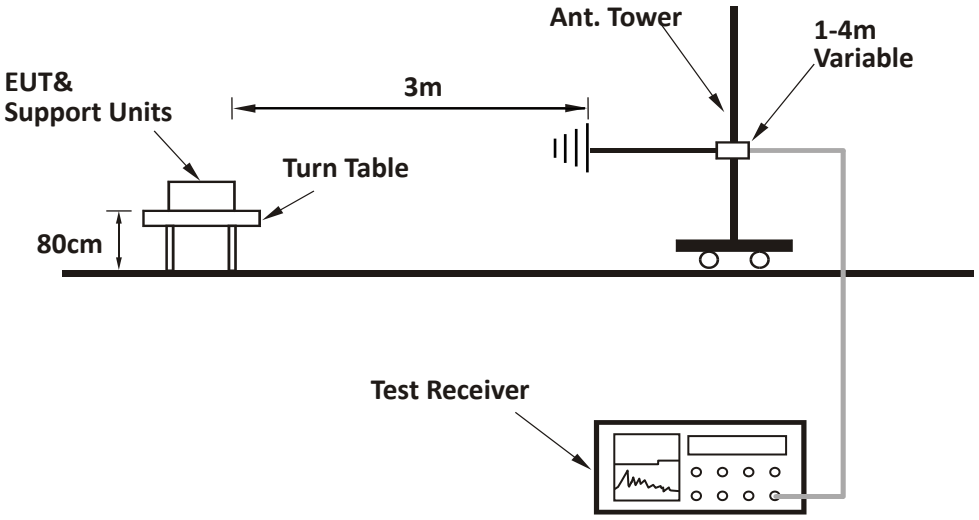
3.3 Test Configuration

For Radiated emission below 30MHz:

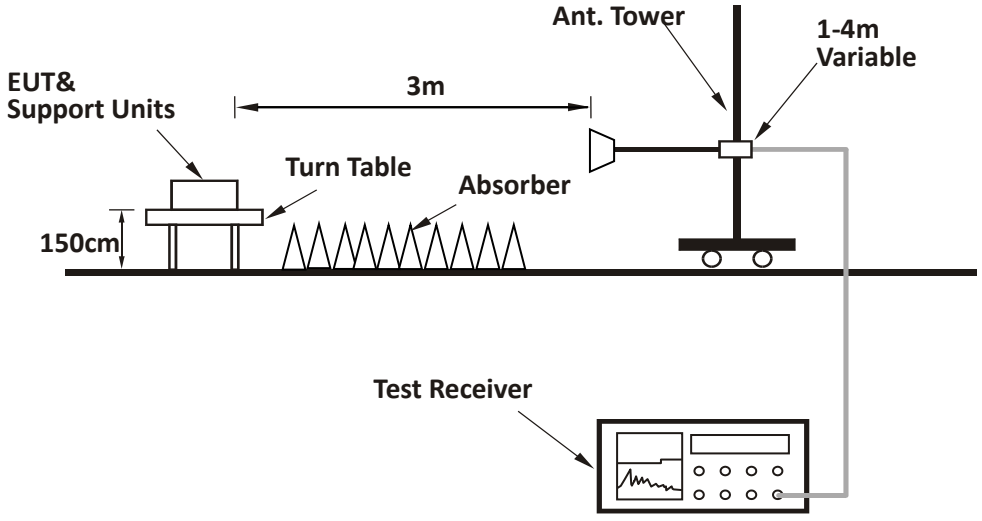


TEST REPORT

For Radiated emission 30MHz to 1GHz:



For Radiated emission above 1GHz:



3.4 Test Results of Radiated Emissions

EUT was tested with empty load, half load and full load, the full load is the worst case and we listed the results in the report.

Below 30MHz:

Test Data:

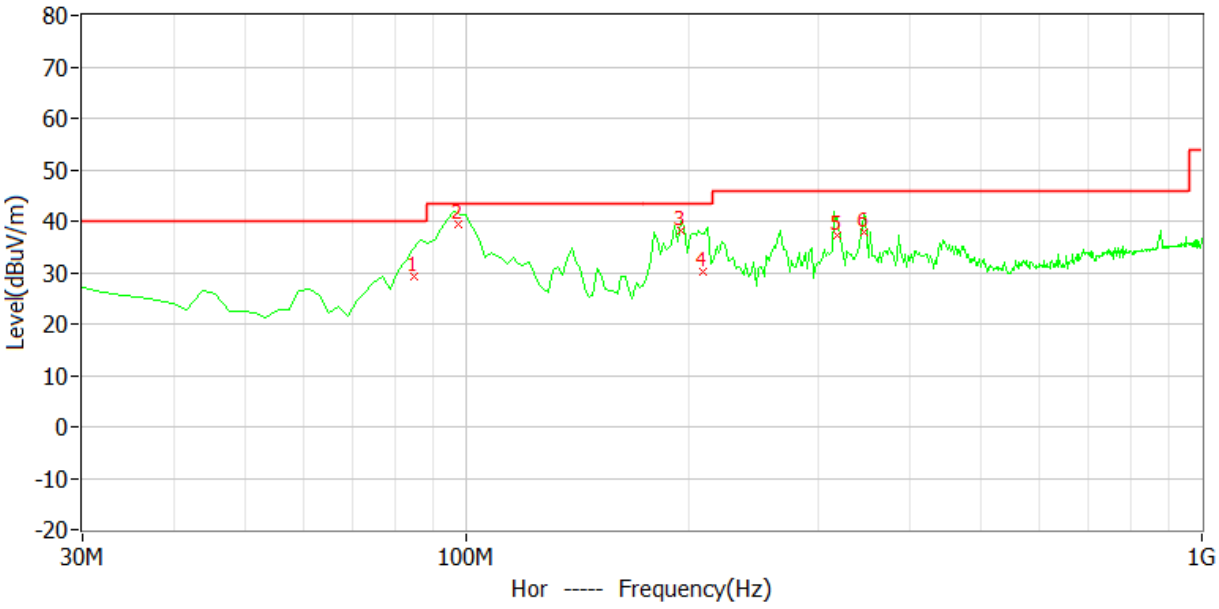
Antenna Polarization	Frequency (MHz)	Limit (dBuV/m)	Level (dBuV/m)	Delta	Factor (dB/m)	Detector	Remark
X	0.139	104.7	71.7	33.1	20.2	PK	Fundamental
X	0.329	97.2	60.9	36.4	20.1	PK	Spurious
X	0.628	71.6	49.4	22.3	20.1	PK	Spurious
X	1.167	66.3	37.7	28.6	20.3	PK	Spurious
X	1.646	63.3	36.1	27.2	20.4	PK	Spurious
X	7.209	69.5	33.2	36.3	20.3	PK	Spurious
Y	0.139	104.7	59.9	44.8	20.2	PK	Fundamental
Y	0.329	97.2	62.1	35.2	20.1	PK	Spurious
Y	0.628	71.6	47.3	24.3	20.1	PK	Spurious
Y	0.927	68.3	36.4	31.9	20.3	PK	Spurious
Y	1.287	65.4	34.4	31.0	20.4	PK	Spurious
Y	7.508	69.5	45.6	23.9	20.3	PK	Spurious
Z	0.139	104.7	68.2	36.6	20.2	PK	Fundamental
Z	0.329	97.2	61.2	36.0	20.1	PK	Spurious
Z	0.568	72.5	47.3	25.3	20.0	PK	Spurious
Z	0.808	69.5	41.3	28.1	20.2	PK	Spurious
Z	1.586	63.6	34.3	29.3	20.4	PK	Spurious
Z	3.380	69.5	29.8	39.7	20.4	PK	Spurious

TEST REPORT

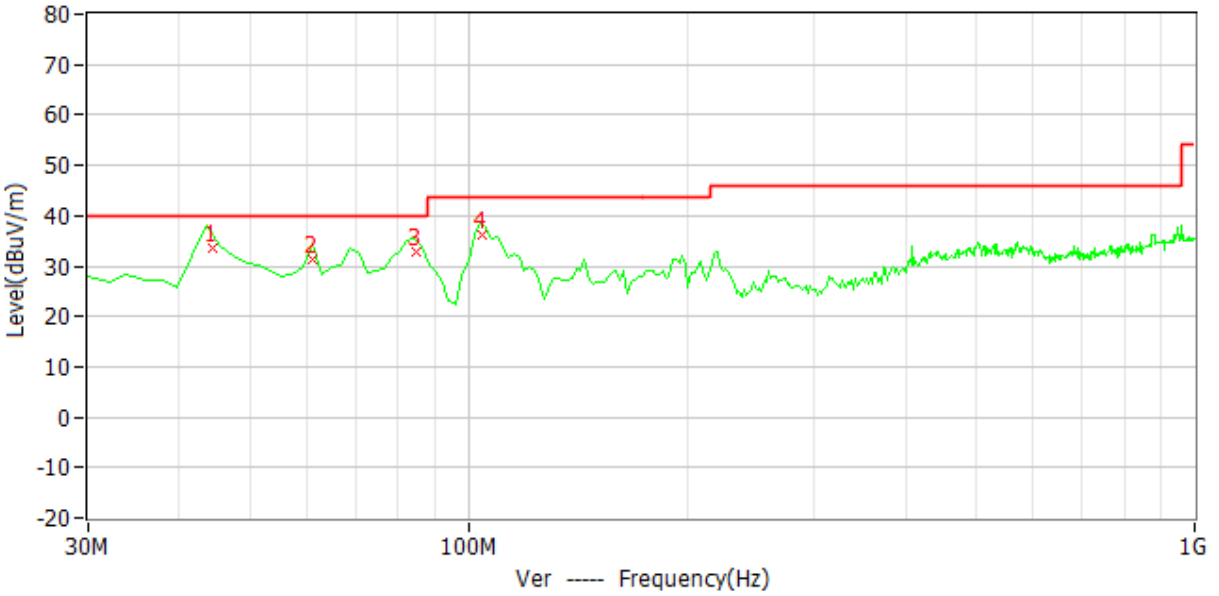
30MHz to 1000MHz:

Test Curve:

Horizontal



Vertical



TEST REPORT

Test Data:

Frequency (MHz)	Limit (dBuV/m)	Level (dBuV/m)	Delta	Factor (dB/m)	Detector	Polar
84.873	40.0	29.3	10.7	15.0	QP	Hor
97.553	43.5	39.5	4.0	17.7	QP	Hor
195.601	43.5	38.3	5.2	16.9	QP	Hor
209.757	43.5	30.1	13.4	17.1	QP	Hor
319.608	46.0	37.1	8.9	21.3	QP	Hor
347.765	46.0	37.7	8.3	22.0	QP	Hor
44.546	40.0	33.6	6.4	17.6	QP	Ver
61.106	40.0	31.2	8.8	13.4	QP	Ver
84.916	40.0	32.7	7.3	15.0	QP	Ver
104.464	43.5	36.3	7.2	18.5	QP	Ver
197.174	43.5	32.0	11.5	16.9	PK	Ver
220.501	46.0	32.9	13.1	17.3	PK	Ver

Remark: 1. Factor = Antenna Factor + Cable Loss (+ Amplifier, for higher than 1GHz), the value was added to Original Receiver Reading by the software automatically.
2. Level = Original Receiver Reading + Factor
3. Delta = Limit - Level
4. If the PK Level is lower than AV limit, the AV test can be elided.

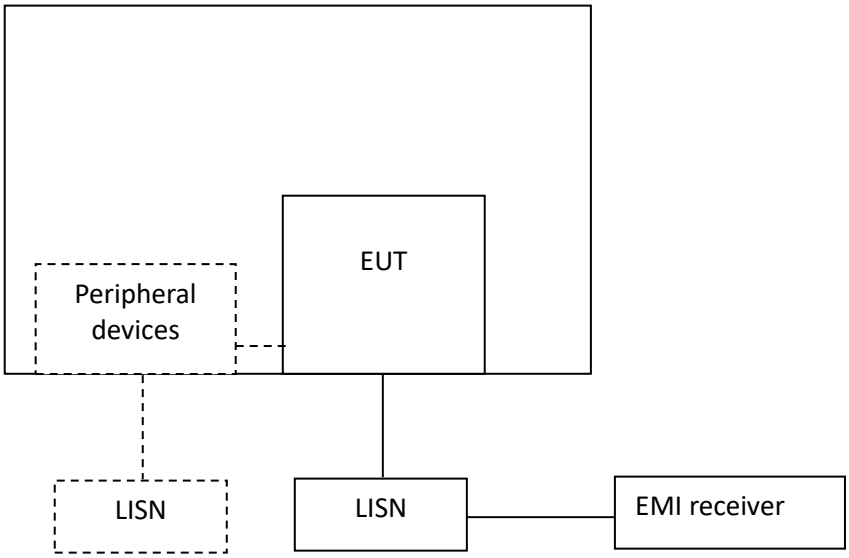
4 Conducted emissions

Test result: **Pass**

4.1 Limit

Frequency of Emission (MHz)	Conducted Emissions Limit (dBuV)	
	QP	AV
0.15-0.5	66 to 56*	56 to 46 *
0.5-5	56	46
5-30	60	50
* Decreases with the logarithm of the frequency.		

4.2 Test Configuration



TEST REPORT

4.3 Measurement Procedure

Measured levels of ac power-line conducted emission shall be the emission voltages from the voltage probe, where permitted, or across the 50 Ω LISN port (to which the EUT is connected), where permitted, terminated into a 50 Ω measuring instrument. All emission voltage and current measurements shall be made on each current-carrying conductor at the plug end of the EUT power cord by the use of mating plugs and receptacles on the LISN, if used. Equipment shall be tested with power cords that are normally supplied or recommended by the manufacturer and that have electrical and shielding characteristics that are the same as those cords normally supplied or recommended by the manufacturer. For those measurements using a LISN, the 50 Ω measuring port is terminated by a measuring instrument having 50 Ω input impedance. All other ports are terminated in 50 Ω loads.

Tabletop devices shall be placed on a platform of nominal size 1 m by 1.5 m, raised 80 cm above the reference ground plane. The vertical conducting plane or wall of an RF-shielded (screened) room shall be located 40 cm to the rear of the EUT. Floor-standing devices shall be placed either directly on the reference ground-plane or on insulating material as described in ANSI C63.4. All other surfaces of tabletop or floor-standing EUTs shall be at least 80 cm from any other grounded conducting surface, including the case or cases of one or more LISNs.

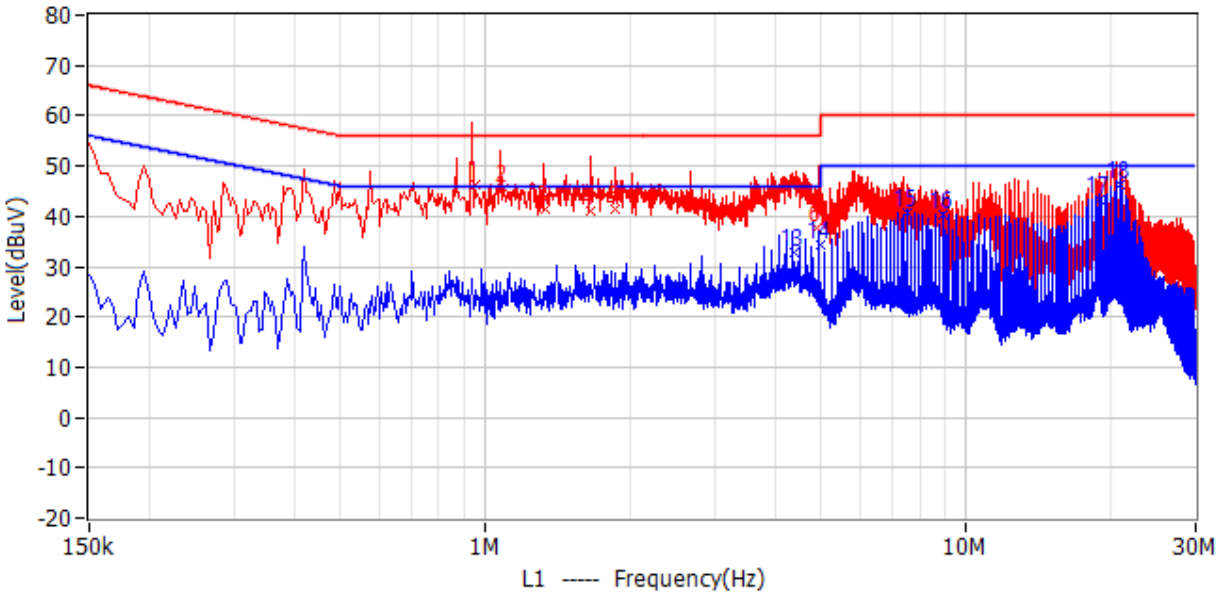
The bandwidth of the test receiver is set at 9 kHz.

TEST REPORT

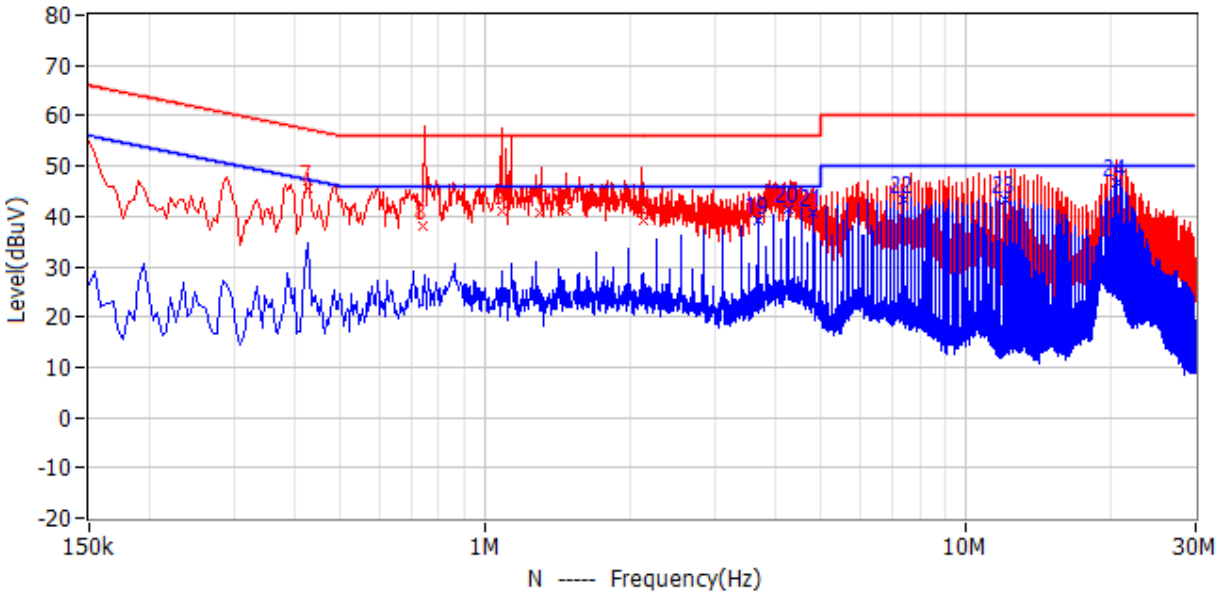
4.4 Test Results of Conducted Emissions

Test Curve:

L Line



N Line



TEST REPORT

Test Data:

No.	Frequency	Limit dBuV	Level dBuV	Delta dB	Reading dBuV	Factor dB	Detector	Phase
1	951.000kHz	56.0	46.2	-9.8	39.6	6.6	QP	L1
2	1.091MHz	56.0	45.7	-10.3	39.1	6.6	QP	L1
3	1.334MHz	56.0	41.6	-14.4	35.0	6.6	QP	L1
4	1.649MHz	56.0	41.0	-15.0	34.5	6.5	QP	L1
5	1.860MHz	56.0	41.3	-14.7	34.8	6.5	QP	L1
6	4.871MHz	56.0	37.8	-18.2	31.4	6.4	QP	L1
7	429.000kHz	57.3	45.7	-11.6	39.4	6.3	QP	N
8	739.500kHz	56.0	38.2	-17.8	31.7	6.5	QP	N
9	1.082MHz	56.0	41.1	-14.9	34.5	6.6	QP	N
10	1.293MHz	56.0	40.6	-15.4	34.0	6.6	QP	N
11	1.473MHz	56.0	41.0	-15.0	34.5	6.5	QP	N
12	2.139MHz	56.0	39.1	-16.9	32.7	6.4	QP	N
13	4.398MHz	46.0	32.8	-13.2	26.4	6.4	CAV	L1
14	4.965MHz	46.0	34.4	-11.6	28.0	6.4	CAV	L1
15	7.517MHz	50.0	40.6	-9.4	33.8	6.8	CAV	L1
16	8.939MHz	50.0	40.3	-9.7	33.4	6.9	CAV	L1
17	18.866MHz	50.0	43.3	-6.7	36.0	7.3	CAV	L1
18	20.855MHz	50.0	46.2	-3.8	38.8	7.4	CAV	L1
19	3.687MHz	46.0	39.3	-6.7	32.9	6.4	CAV	N
20	4.254MHz	46.0	41.3	-4.7	34.9	6.4	CAV	N
21	4.821MHz	46.0	40.8	-5.2	34.3	6.5	CAV	N
22	7.377MHz	50.0	43.2	-6.8	36.4	6.8	CAV	N
23	12.053MHz	50.0	43.4	-6.6	36.6	6.8	CAV	N
24	20.562MHz	50.0	46.5	-3.5	39.2	7.3	CAV	N

Remark: 1. Factor = LISN Factor + Cable Loss, the value was added to Original Receiver Reading by the software automatically.

2. Level = Reading + Factor

3. Delta = Limit - Level

4. If the PK Level is lower than AV limit, the AV test can be elided.

********** END **********