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Report Template Version: V05
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TEST REPORT

Report No.:	CQASZ20240400601E
Applicant:	Shandong Youxin Electronic Technology Co., Ltd.
Address of Applicant:	Room101 Building 15 Yellow River Science and Technology Industrial Park Changjiang 8 Road,Binzhou City, Shandong Province,China
Equipment Under Test (EUT):	
EUT Name:	Gallium nitride fast charge adapter
Model No.:	JW011-010, JW011-020, JW011-030, JW012-010, JW012-020, JW012-030, JW013-010, JW012-020, JW012-030, JW013-010, JW013-020, JW013-030, JW014-010, JW014-020, JW014-030, JW015-010, JW015-020, JW015-030, JW016-010, JW016-020, JW016-030, JW017-010, JW017-020, JW017-030, JW018-010, JW018-020, JW018-030, JW019-010, JW019-020, JW019-030, JW020-010, JW020-020, JW020-030, JW021, JW022, JW023, JW024, JW025
Test Model No.:	JW011-010
Brand Name:	GaNFC
FCC ID:	2BFN8JW011-010
Standards:	47 CFR Part 15, Subpart B, Class B
Date of Receipt:	2024-4-2
Date of Test:	2024-4-2 to 2024-4-8
Date of Issue:	2024-4-12
Test Result:	**PASS***

***In the configuration tested, the EUT complied with the standards specified above.**

Tested By: _____
(Joe Wang)

Reviewed By: _____
(Timo Lei)

Approved By: _____
(Alex Wang)

The test report is effective only with both signature and specialized stamp, The result(s) shown in this report refer only to the sample(s) tested. Without written approval of CQA, this report can't be reproduced except in full.

1 Version

Revision History of Report

Report No.	Version	Description	Issue Date
CQASZ20240400601E	Rev.01	Initial report	2024-4-12

2 Test Summary

Test Item	Test Requirement	Test method	Result
Radiated Emission	47 CFR Part 15B	ANSI C63.4-2014	PASS
Conducted Emission (150KHz to 30MHz)	47 CFR Part 15B	ANSI C63.4-2014	PASS

Highest frequency generated or used in the device or on which the device operates or tunes (MHz)	Upper frequency of measurement Range (MHz)
Below 1.705	30
1.705 to 108	1000
108 to 500	2000
500 to 1000	5000
Above 1000	5th harmonic of the highest frequency or 40GHz, whichever is lower

Remark:

The tested sample(s) and the sample information are provided by the client.

The highest frequency of the internal sources of the EUT is below 108 MHz.

3 Contents

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4 General Information

4.1 Client Information

Applicant:	Shandong Youxin Electronic Technology Co., Ltd.
Address of Applicant:	Room101 Building 15 Yellow River Science and Technology Industrial Park Changjiang 8 Road,Binzhou City, Shandong Province,China
Manufacturer:	Shandong Youxin Electronic Technology Co., Ltd.
Address of Manufacturer:	Room101 Building 15 Yellow River Science and Technology Industrial Park Changjiang 8 Road,Binzhou City, Shandong Province,China
Factory:	Shandong Youxin Electronic Technology Co., Ltd.
Address of Factory:	Room101 Building 15 Yellow River Science and Technology Industrial Park Changjiang 8 Road,Binzhou City, Shandong Province,China

4.2 General Description of EUT

Product Name:	Gallium nitride fast charge adapter
Model No.:	JW011-010, JW011-020, JW011-030, JW012-010, JW012-020, JW012-030, JW013-010, JW012-020, JW012-030, JW013-010, JW013-020, JW013-030, JW014-010, JW014-020, JW014-030, JW015-010, JW015-020, JW015-030, JW016-010, JW016-020, JW016-030, JW017-010, JW017-020, JW017-030, JW018-010, JW018-020, JW018-030, JW019-010, JW019-020, JW019-030, JW020-010, JW020-020, JW020-030, JW021, JW022, JW023, JW024, JW025
Test Model No.:	JW011-010
Brand Name:	GaNFC
Power Supply:	100V-240V~50/60Hz 0.5A
Test Mode:	
Mode a:	Keep the EUT at Type-C Output: DC 5V, 3A
Mode b:	Keep the EUT at Type-C Output: DC 9V, 2.22A
Mode c:	Keep the EUT at Type-C Output: DC 12V, 1.67A 20W MAX

Note:
Model No.:
JW011-010, JW011-020, JW011-030, JW012-010, JW012-020, JW012-030, JW013-010, JW012-020, JW012-030, JW013-010, JW013-020, JW013-030, JW014-010, JW014-020, JW014-030, JW015-010, JW015-020, JW015-030, JW016-010, JW016-020, JW016-030, JW017-010, JW017-020, JW017-030, JW018-010, JW018-020, JW018-030, JW019-010, JW019-020, JW019-030, JW020-010, JW020-020, JW020-030, JW021, JW022, JW023, JW024, JW025.
Their electrical circuit design, layout, components used and internal wiring are identical,
Only the model names are different.

4.3 Test Environment and Mode

Operating Environment:	
Radiated Emission	
Temperature:	25.5 °C
Humidity:	53 % RH
Atmospheric Pressure:	1009 mbar
Conducted Emission	
Temperature:	24.3 °C
Humidity:	54 % RH
Atmospheric Pressure:	1009 mbar

4.4 Description of Support Units

The EUT has been tested with associated equipment below.

1）support equipment

Description	Manufacturer	Model No.	Certification	Supplied by
Resistor	/	/	/	CQA

2) Cable

Cable No.	Description	Manufacturer	Cable Type/Length	Supplied by
/	/	/	/	/

4.5 Test Location

All tests were performed at:

Shenzhen Huaxia Testing Technology Co., Ltd.

1F., Block A of Tongsheng Technology Building, Huahui Road, Dalang Street, Longhua District, Shenzhen, China

4.6 Deviation from Standards

None.

4.7 Abnormalities from Standard Conditions

None.

4.8 Other Information Requested by the Customer

None.

4.9 Measurement Uncertainty (95% confidence levels, k=2)

No.	Item	Measurement Uncertainty
1	Conduction emission	3.74dB (9kHz to 150kHz)
		3.34dB (150kHz to 30MHz)
2	Radiated emission	5.12dB (Below 1GHz)
		4.60dB (Above 1GHz)
3	Temperature	0.8°C
4	Humidity	2.0%

5 Equipment List

Conducted Emissions (150kHz-30MHz)					
Equipment	**Manufacturer**	**Model No**	**Inventory No.**	**Cal Date**	**Cal Due Date**
EMI Test Receiver	R&S	ESR7	CQA-005	2023/09/08	2024/09/07
LISN	R&S	ENV216	CQA-003	2023/09/08	2024/09/07
Coaxial cable (9KHz~300MHz)	CQA	N/A	C021	2023/09/08	2024/09/07

Radiated Emissions					
Equipment	**Manufacturer**	**Model No**	**Inventory No.**	**Cal Date**	**Cal Due Date**
Loop antenna	SCHWARZBECK	FMZB 1516	CQA-060	2021/09/16	2024/09/15
Horn Antenna	R&S	BBHA 9170	CQA-088	2021/09/16	2024/09/15
Horn Antenna	R&S	HF906	CQA-012	2021/09/16	2024/09/15
Bilog Antenna	R&S	HL562	CQA-011	2021/09/16	2024/09/15
EMI Test Receiver	R&S	ESR7	CQA-005	2023/09/08	2024/09/07
Spectrum analyzer	R&S	FSU26	CQA-038	2023/09/08	2024/09/07
Preamplifier	MITEQ	AMF-6D-02001800-29-20P	CQA-036	2023/09/08	2024/09/07
Coaxial cable (1GHz~40GHz)	CQA	N/A	C007	2023/09/08	2024/09/07
Coaxial cable (9KHz~1GHz)	CQA	N/A	C013	2023/09/08	2024/09/07

Test Software:

Test Site	Manufacturer	Software brand
Radiated Emissions test software	Audix	e3
Conducted Emissions test software	Audix	e3

6 Test results and Measurement Data

6.1 Conducted Emissions

Test Requirement: 47 CFR Part 15B

Test Method: ANSI C63.4

Test frequency range: 150kHz to 30MHz

Limit:

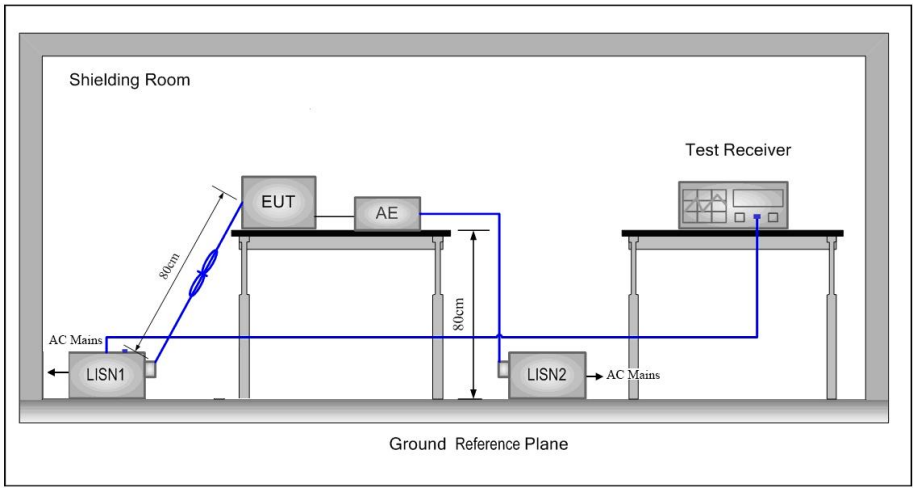
Frequency range (MHz)	Limit (dBμV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

* Decreases with the logarithm of the frequency.

Test Procedure:

1) The mains terminal disturbance voltage test was conducted in a shielded room.
2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50Ω/50μH + 5Ω linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.
3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane,
4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2.
5) In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4 on conducted measurement.

Test Setup:



Instruments Used: Refer to section 5 for details

Test Mode: Mode a, Mode b, Mode c

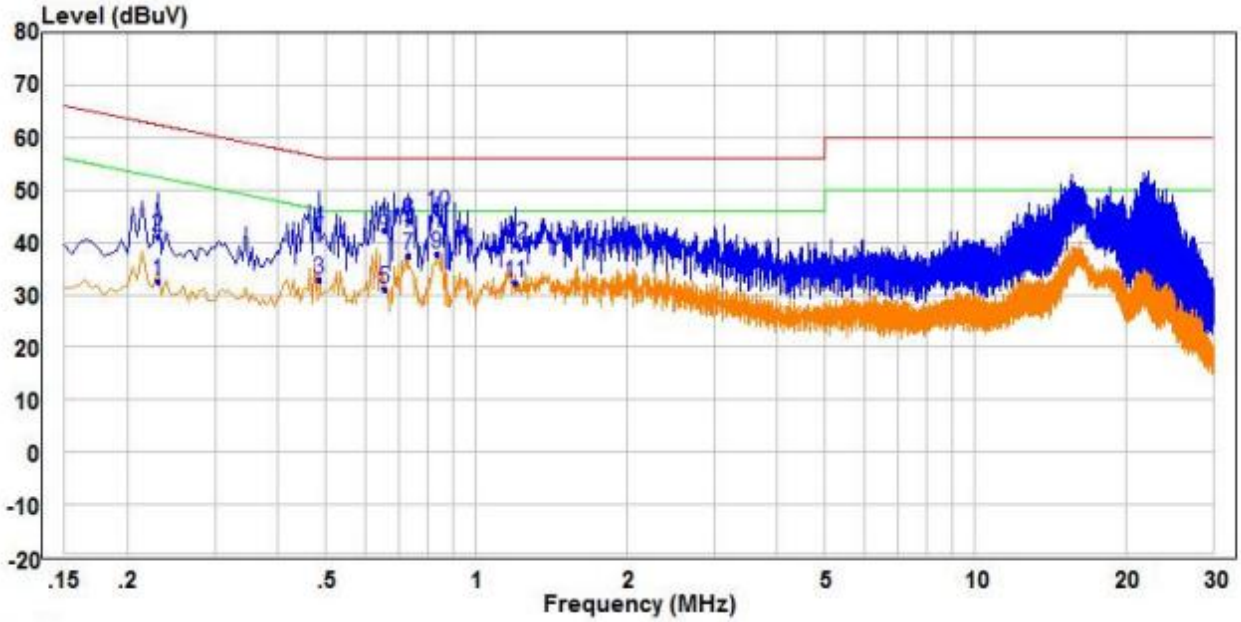
Test Status: Pretest the EUT at different test mode and found the mode c which is worst case, the test worst case mode is recorded in the report.

Test Results: Pass

Measurement Data

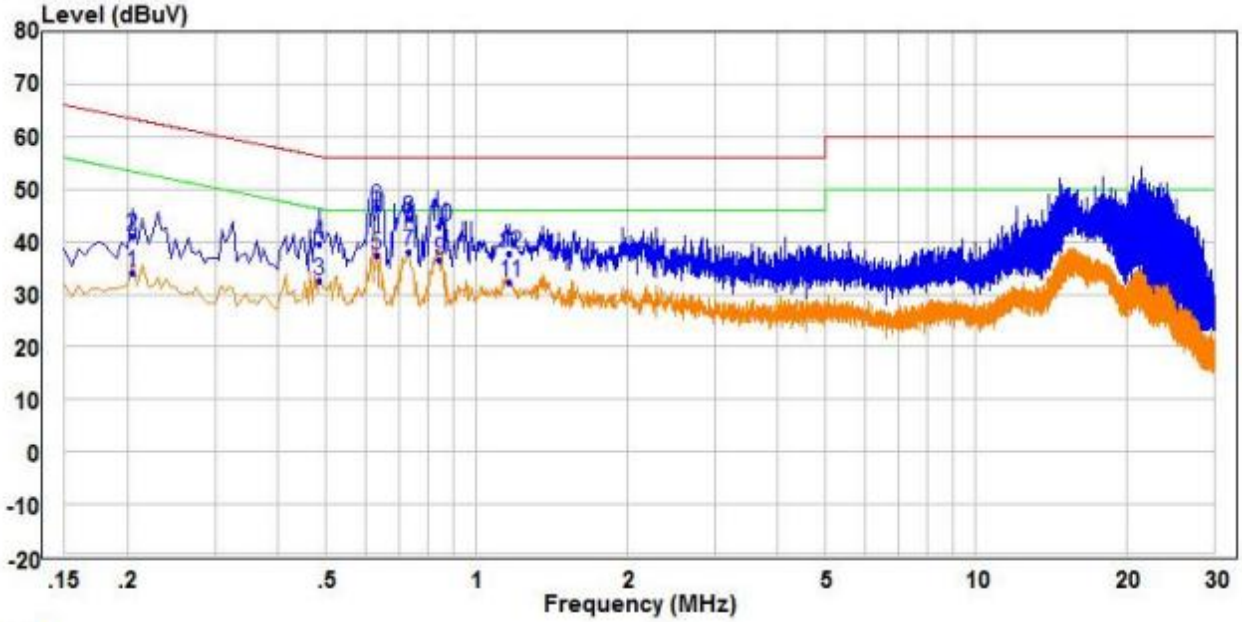
An initial pre-scan was performed on the live and neutral lines with peak detector.
Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected.

Live Line:



	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark	Pol/Phase
	MHz	dBuV	dB	dBuV	dBuV	dB		
1	0.230	23.02	9.57	32.59	52.45	-19.86	Average	Line
2	0.230	31.54	9.57	41.11	62.45	-21.34	QP	Line
3	0.485	23.07	9.69	32.76	46.25	-13.49	Average	Line
4	0.485	32.95	9.69	42.64	56.25	-13.61	QP	Line
5	0.655	21.12	9.86	30.98	46.00	-15.02	Average	Line
6	0.655	32.41	9.86	42.27	56.00	-13.73	QP	Line
7	0.730	27.50	9.88	37.38	46.00	-8.62	Average	Line
8	0.730	34.35	9.88	44.23	56.00	-11.77	QP	Line
9 PP	0.835	27.91	9.81	37.72	46.00	-8.28	Average	Line
10 QP	0.835	35.97	9.81	45.78	56.00	-10.22	QP	Line
11	1.195	22.04	10.20	32.24	46.00	-13.76	Average	Line
12	1.195	29.41	10.20	39.61	56.00	-16.39	QP	Line

Neutral Line:



		Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark	Pol/Phase
		MHz	dBuV	dB	dBuV	dBuV	dB		
1		0.205	24.43	9.60	34.03	53.41	-19.38	Average	Neutral
2		0.205	31.62	9.60	41.22	63.41	-22.19	QP	Neutral
3		0.485	23.01	9.69	32.70	46.25	-13.55	Average	Neutral
4		0.485	29.97	9.69	39.66	56.25	-16.59	QP	Neutral
5		0.630	27.58	9.83	37.41	46.00	-8.59	Average	Neutral
6	QP	0.630	36.73	9.83	46.56	56.00	-9.44	QP	Neutral
7	PP	0.730	28.33	9.88	38.21	46.00	-7.79	Average	Neutral
8		0.730	34.46	9.88	44.34	56.00	-11.66	QP	Neutral
9		0.845	26.78	9.80	36.58	46.00	-9.42	Average	Neutral
10		0.845	33.19	9.80	42.99	56.00	-13.01	QP	Neutral
11		1.165	22.55	9.71	32.26	46.00	-13.74	Average	Neutral
12		1.165	27.98	9.71	37.69	56.00	-18.31	QP	Neutral

Notes:

1. The following Quasi-Peak and Average measurements were performed on the EUT:

2. Final Test Level =Receiver Reading + LISN Factor + Cable Loss.

6.2 Radiated Emission

Test Requirement: 47 CFR Part 15B

Test Method: ANSI C63.4

Test site: Measurement Distance: 3m (Semi-Anechoic Chamber)

Receiver setup:

Frequency	Detector	RBW	VBW	Remark
30MHz-1GHz	Quasi-peak	100kHz	300kHz	Quasi-peak Value

Limit:

Frequency	Limit (dBμV/m @3m)	Remark
30MHz-88MHz	40.0	Quasi-peak Value
88MHz-216MHz	43.5	Quasi-peak Value
216MHz-960MHz	46.0	Quasi-peak Value
960MHz-1GHz	54.0	Quasi-peak Value

Test Procedure:

Below 1GHz test procedure as below:

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic camber. 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 antenna height 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.
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 rota table table was turned from 0 degrees to 360 degrees to find the maximum reading.
e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

Test Setup:

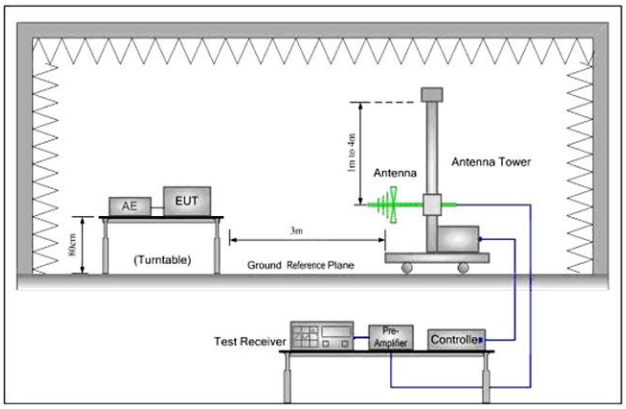


Figure 1. 30MHz to 1GHz

Instruments Used: Refer to section 5 for details

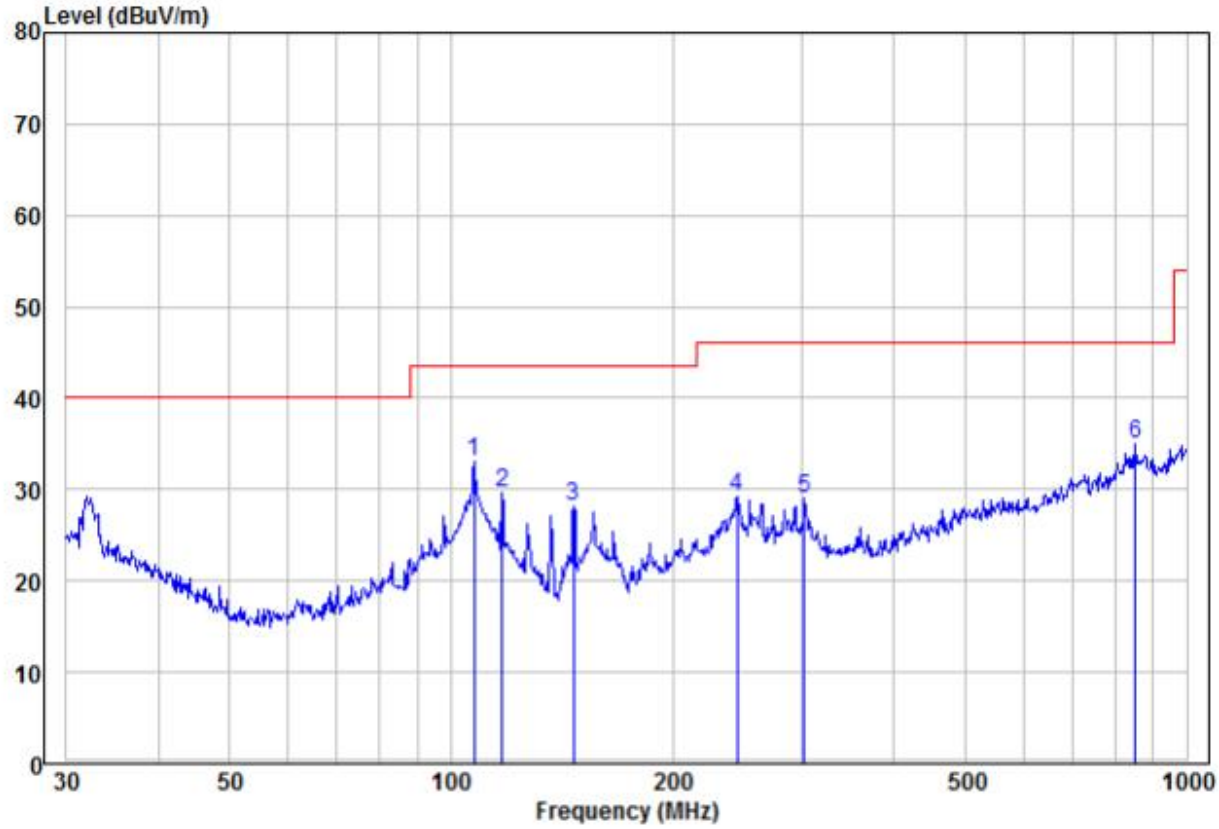
Test Mode: Mode a, Mode b, Mode c

Test Status: Pretest the EUT at different test mode and found the mode c which is worst case, the test worst case mode is recorded in the report.

Test Results: Pass

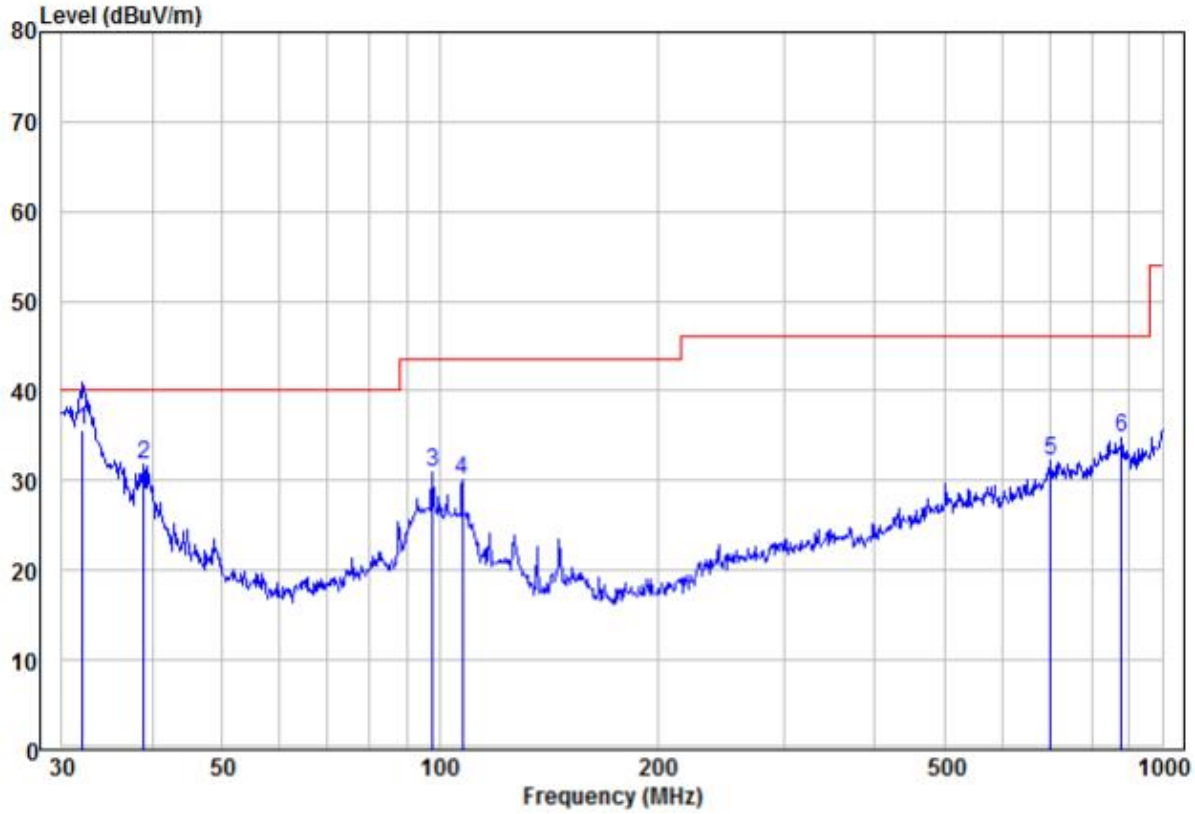
Below 1GHz

Horizontal



	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark	Pol/Phase
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
1 pp	107.51	22.86	10.29	33.15	43.50	-10.35	Peak	HORIZONTAL
2	117.36	19.20	10.56	29.76	43.50	-13.74	Peak	HORIZONTAL
3	146.89	19.75	8.34	28.09	43.50	-15.41	Peak	HORIZONTAL
4	245.09	17.21	11.93	29.14	46.00	-16.86	Peak	HORIZONTAL
5	302.48	15.21	13.79	29.00	46.00	-17.00	Peak	HORIZONTAL
6	851.04	10.86	24.04	34.90	46.00	-11.10	Peak	HORIZONTAL

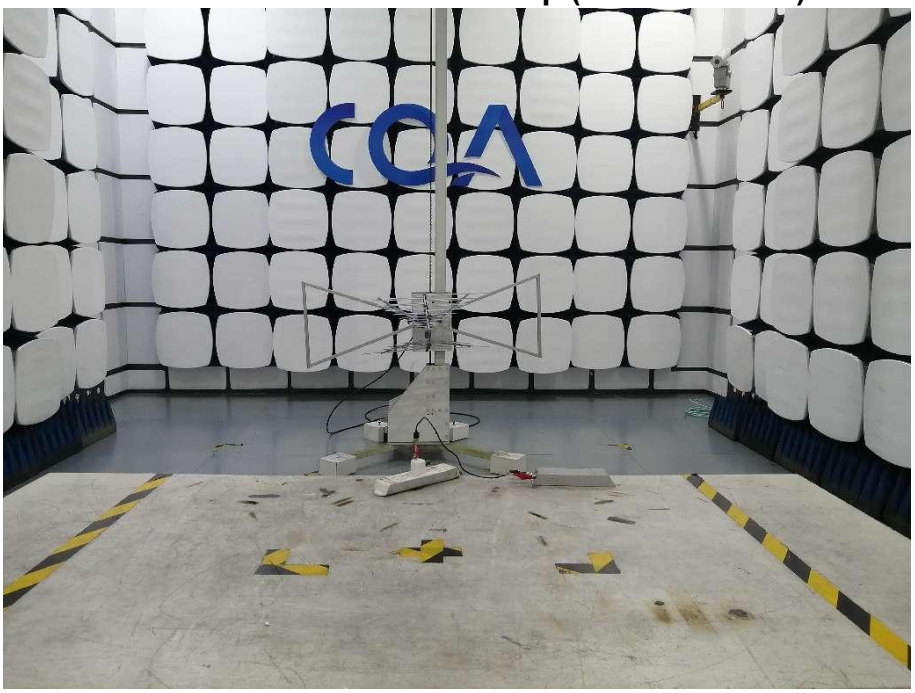
Vertical

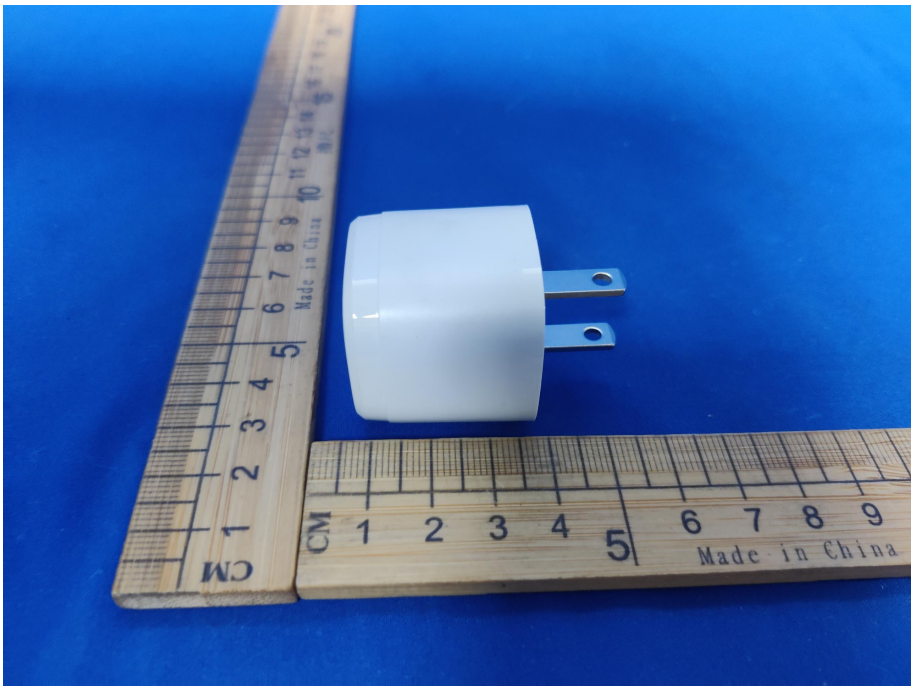
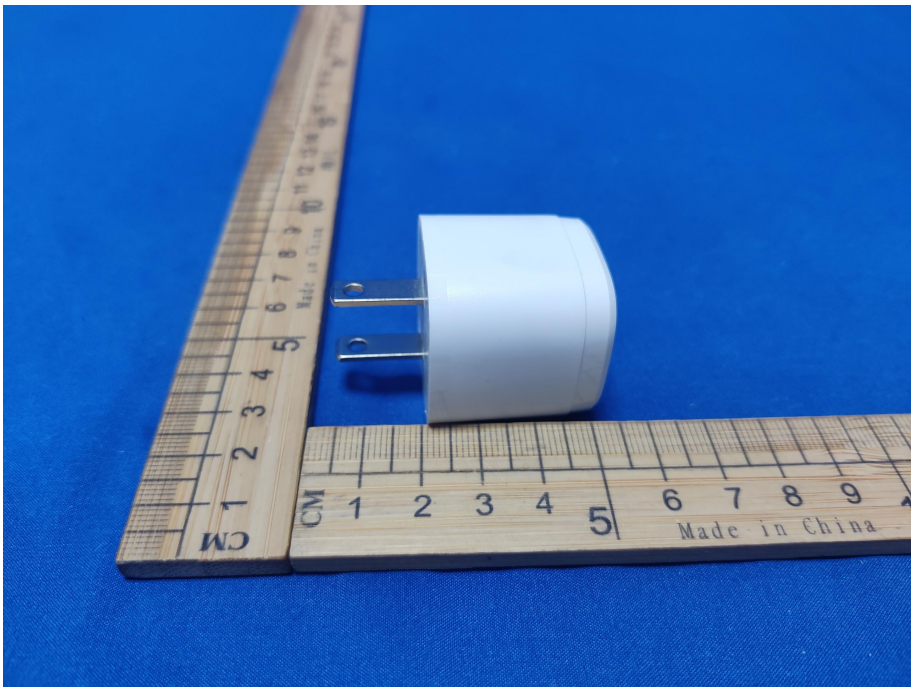


	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark	Pol/Phase
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
1 pp	32.07	20.29	15.38	35.67	40.00	-4.33	QP	VERTICAL
2 pk	38.89	18.52	13.20	31.72	40.00	-8.28	Peak	VERTICAL
3	97.80	20.39	10.51	30.90	43.50	-12.60	Peak	VERTICAL
4	107.51	19.81	10.29	30.10	43.50	-13.40	Peak	VERTICAL
5	701.76	11.05	21.10	32.15	46.00	-13.85	Peak	VERTICAL
6	878.32	10.95	23.93	34.88	46.00	-11.12	Peak	VERTICAL

APPENDIX 1 PHOTOGRAPHS OF TEST SETUP

Radiated emission Test Setup (30MHz～1GHz)



Conducted Emissions Test Setup

APPENDIX 2 PHOTOGRAPHS OF EUT