

RGBlink Science & Technology Co.,Ltd**FCC REPORT**

Applicant	RGBlink Science & Technology Co.,Ltd
Address	Room 601A, No. 37-3 Banshang community, Building 3, Xinke Plaza, Torch Hi-Tech Industrial Development Zone, Xiamen, China
Product Name	Video Mixer
Trademark	
Model Number	mini-mx
Additional Models	mini-max, min-pro, mini-pro 2022, mini 2022, mini-ultra, mini-mx delta, mini-mx titan, mini-mx atlas, mini-mx apollo, mini-mx orion
Test Laboratory	Shenzhen Circle Testing Certification Co., Ltd.
Address	101, 302, Building 1, Donglongxing Technology Park, Huaning Road, Longhua District, Shenzhen, Guangdong, China
Test Date	Aug. 26, 2023 - Aug. 31, 2023
Date of Report	Aug. 31, 2023
Report Number	CTC025G08121FR

TABLE OF CONTENTS

TEST REPORT DECLARATION	3
1. GENERAL INFORMATION	4
1.1. Report information	4
1.2. Measurement Uncertainty	4
2. PRODUCT DESCRIPTION	4
2.1. EUT Description	4
2.2. Block Diagram of EUT Configuration	5
2.3. Operating Condition of EUT	5
2.4. Test Conditions	5
3. TEST EQUIPMENT USED	5
3.1. For Conducted Emission Test	5
3.2. For Radiated Emission Measurement	5
4. POWER LINE CONDUCTED EMISSION TEST	6
4.1. Block Diagram of Test Setup	6
4.2. Test Standard	6
4.3. Power Line Conducted Emission Limit	6
4.4. EUT Configuration on Test	6
5. RADIATED EMISSION TEST	7
5.1. Semi-Anechoic Chamber Setup Diagram	7
5.2. Test Standard	7
5.3. Radiated Emission Limit	7
5.4. EUT Configuration on Test	7
5.5. Operating Condition of EUT	8
5.6. Test Procedure	8
5.7. Test Results	8
APPENDIX I: CONDUCTED EMISSION TEST DATA	9
APPENDIX II: RADIATED EMISSION TEST DATA	11
APPENDIX III: EUT AND TEST SETUP PHOTO	13

TEST REPORT DECLARATION

Applicant	RGBlink Science & Technology Co.,Ltd
Address	Room 601A, No. 37-3 Banshang community, Building 3, Xinke Plaza, Torch Hi-Tech Industrial Development Zone, Xiamen, China
EUT Description	Video Mixer
Model Number	See page 1. (Note: The series products have the same circuit diagram, PCB layout and functionality. The differences are the model name and appearance, so we select mini-mx to test.)

Test Standards:

FCC Part 15:2021

The EUT described above is tested by US to determine the maximum emissions from the EUT, the maximum emission levels are compared to the FCC Part 15 limits. The measurement results are contained in this test report. and Shenzhen Circle Testing Certification Co., Ltd. is assumed of full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT is to be technically compliant with the FCC requirements. This report applies to above tested sample only and shall not be reproduced in part without written approval of Shenzhen Circle Testing Certification Co., Ltd..

Tested by :

Kara

Test Engineer

Approved & Authorized Signer :

Dan

Manager



1. GENERAL INFORMATION

1.1. Report information

- 1.1.1. This report is not a certificate of quality; it only applies to the sample of the specific product/equipment given at the time of its testing. The results are not used to indicate or imply that they are application to the similar items. In addition, such results must not be used to indicate or imply that CTC approves recommends or endorses the manufacture, supplier or use of such product/equipment, or that CTC in any way guarantees the later performance of the product/equipment.
- 1.1.2. The sample/s mentioned in this report is/are supplied by Applicant, CTC therefore assumes no responsibility for the accuracy of information on the brand name, model number, origin of manufacture or any information supplied.
- 1.1.3. Additional copies of the report are available to the Applicant at an additional fee. No third part can obtain a copy of this report through CTC, unless the applicant has authorized CTC in writing to do so.

1.2. Measurement Uncertainty

(95% confidence levels, $k=2$)

Measurement Uncertainty levels

Test	Parameters	Expanded uncertainty (U _{lab})	Expanded uncertainty (U _{cispr})
Conducted Emission	Level accuracy (9kHz to 150kHz)	3.50 dB	3.8 dB
	(150kHz to 30MHz)	3.20 dB	3.4 dB
Radiated Emission (3m SAC)	Level accuracy (30MHz to 1000MHz)	4.52 dB	6.3 dB
	Level accuracy (above 1000MHz)	4.66 dB	N/A

2. PRODUCT DESCRIPTION

2.1. EUT Description

EUT Description	Video Mixer
Applicant	RGBlink Science & Technology Co.,Ltd
Address	Room 601A, No. 37-3 Banshang community, Building 3, Xinke Plaza, Torch Hi-Tech Industrial Development Zone, Xiamen, China
Manufacturer	RGBlink Science & Technology Co.,Ltd
Address	Room 601A, No. 37-3 Banshang community, Building 3, Xinke Plaza, Torch Hi-Tech Industrial Development Zone, Xiamen, China

Model Number	mini-mx
Rating(s)	Adapter Input: 100-240 VAC, 50/60Hz, 18W Output: 12VDC

2.2. Block Diagram of EUT Configuration



2.3. Operating Condition of EUT

Test mode 1: White Light, maximum brightness (It's the worst case)
Test mode 2: Colour bars with moving picture element
Test mode 3: Scroll H characters

2.4. Test Conditions

Temperature: 22-26°C
Relative Humidity: 55-60%

3. TEST EQUIPMENT USED

3.1. For Conducted Emission Test

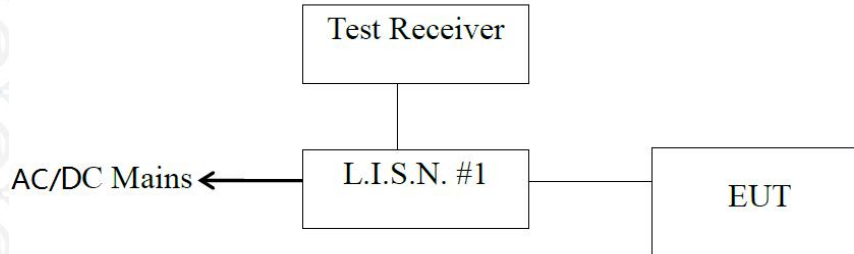
Equipment	Manufacturer	Model No.	Serial No.	Calibration Until
Test Receiver	Rohde & Schwarz	ESR3	CTC(A)087	2024-07-14
Coaxial Cable	CTC	10B	CTC(A)159	2024-07-14
L.I.S.N.	Rohde & Schwarz	ENV 216	CTC(A)089	2023-07-14

3.2. For Radiated Emission Measurement

Equipment	Manufacturer	Model No.	Serial No.	Calibration Until
Test Receiver	Rohde & Schwarz	ESPI7	CTC(A)155	2024-03-04
Test Receiver	Rohde & Schwarz	ESR3	CTC(A)087	2024-07-14
Broadband Trilog Antenna	Schwarzbeck	VULB9162	CTC(A)088	2024-03-29
OPT H64 Preamplifier	HP	8447F	CTC(A)164	2024-03-04
Cable	CTC	3C	CTC(A)140	2024-07-14
Cable	CTC	3B	CTC(A)139	2024-07-14
Cable	CTC	3D	CTC(A)141	2024-07-14
Cable	CTC	10A	CTC(A)138	2024-07-14
Horn Antenna	Schwarzbeck	BBHA9120D	CTC(A)161	2024-03-07
Broadband Preamplifier	Schwarzbeck	BBV9718	CTC(A)162	2024-03-04

4. POWER LINE CONDUCTED EMISSION TEST

4.1. Block Diagram of Test Setup



4.2. Test Standard

FCC Part 15 Class A

4.3. Power Line Conducted Emission Limit

Frequency	Limits dB(uV)	
MHz	Quasi-peak Level	Average Level
0.15-0.50	79	66
0.50-30	73	60

Notes: 1.*Decreasing linearly with logarithm of frequency.

2.The lower limit shall apply at the transition frequencies.

4.4. EUT Configuration on Test

The following equipment are installed on conducted emission test to meet FCC Part 15 Class A requirement and operating in a manner, which tends to maximize its emission characteristics in a normal application.

4.5. Operating Condition of EUT

4.5.1.Setup the EUT and simulators as shown in Section 4.1.

4.5.2.Turn on the power of all equipment.

4.5.3.Let the EUT work in test modes (ON) and test it.

4.6. Test Procedure

The EUT is put on the ground and connected to the AC mains through a Artificial Mains Network (AMN). This provided 50ohm-coupling impedance for the tested equipment. Both sides of AC line are checked to find out the maximum conducted emission levels according to the FCC regulations during conducted emission test.

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

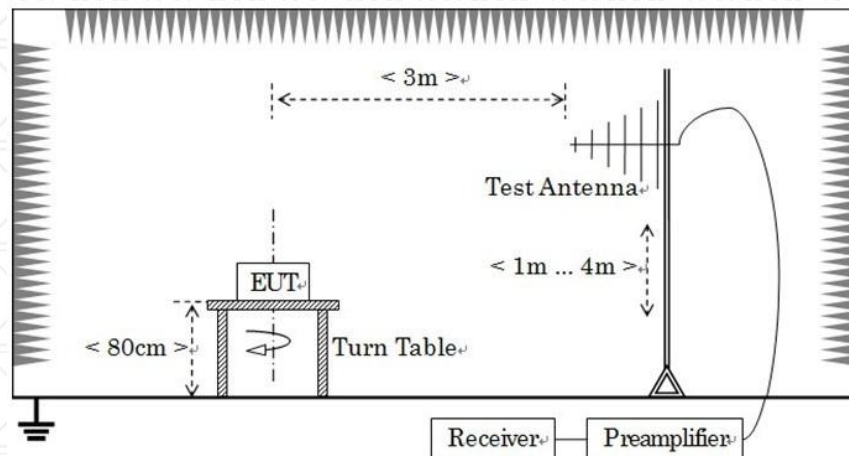
The frequency range from 150 kHz to 30 MHz is investigated. and all the scanning waveform is put in **Appendix I**.

4.7. Test Result

PASS.

5. RADIATED EMISSION TEST

5.1. Semi-Anechoic Chamber Setup Diagram



5.2. Test Standard

FCC Part 15:2021

5.3. Radiated Emission Limit

All emanations from a Class A computing devices or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified below:

FREQUENCY (MHz)	DISTANCE (Meters)	FIELD STRENGTHS LIMITS (dBuV/m)
30-88	3	50.0
88-216	3	53.5
216-960	3	56.0
960-1000	3	60.0

Note:(1) The tighter limit shall apply at the edge between two frequency bands.

(2) Distance refers to the distance in meters between the measuring instruments antenna and the closed point of any part of the EUT.

5.4. EUT Configuration on Test

The following equipment are installed on Radiated Emission Measurement to meet the Commission requirements and operating regulations in a manner which tends to maximize Its emission characteristics in normal application.

5.5. Operating Condition of EUT

- (1) Setup the EUT as shown on Section 4.1.
- (2) Turn on the power of all equipment.
- (3) Let the EUT work in test mode (ON) and measure it.

5.6. Test Procedure

The EUT is placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT is set 3 meters away from the receiving antenna which is mounted on an antenna tower. The antenna can move up and down between 1 to 4 meters to find out the maximum emission level. Broadband antenna (calibrated by dipole antenna) are used as a receiving antenna. Both horizontal and vertical polarization of the antenna are set on test. The bandwidth setting on the test receiver is 120 kHz. The EUT is tested in Semi-Anechoic Chamber. and all the scanning waveform is put in **Appendix II.**

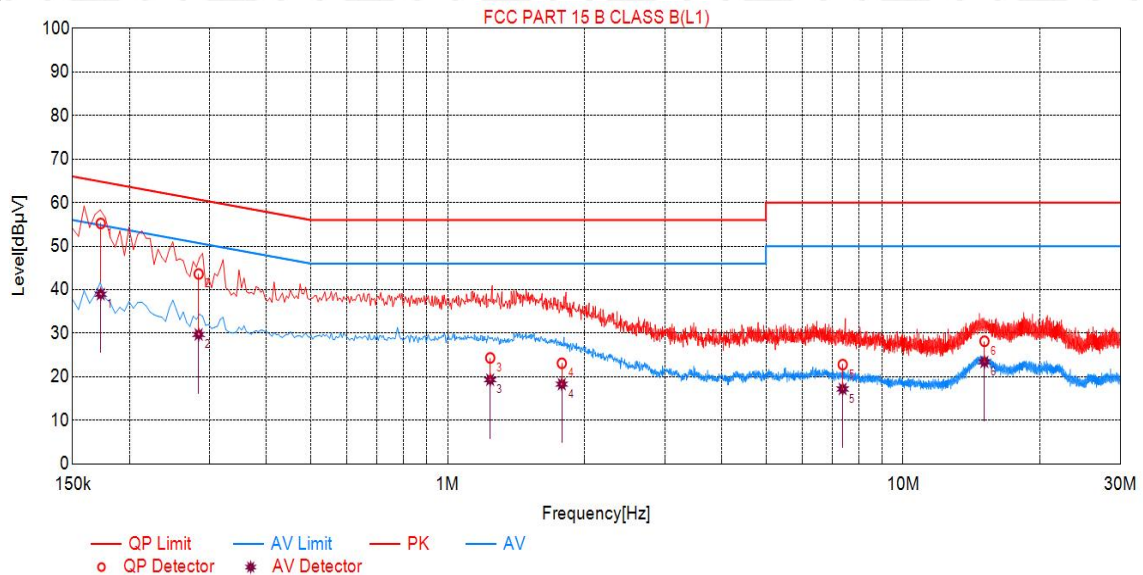
5.7. Test Results

PASS.

APPENDIX I: Conducted Emission Test Data

Operation Mode : White Light, maximum brightness
Phase : L (150kHz - 30MHz)

Test Graph

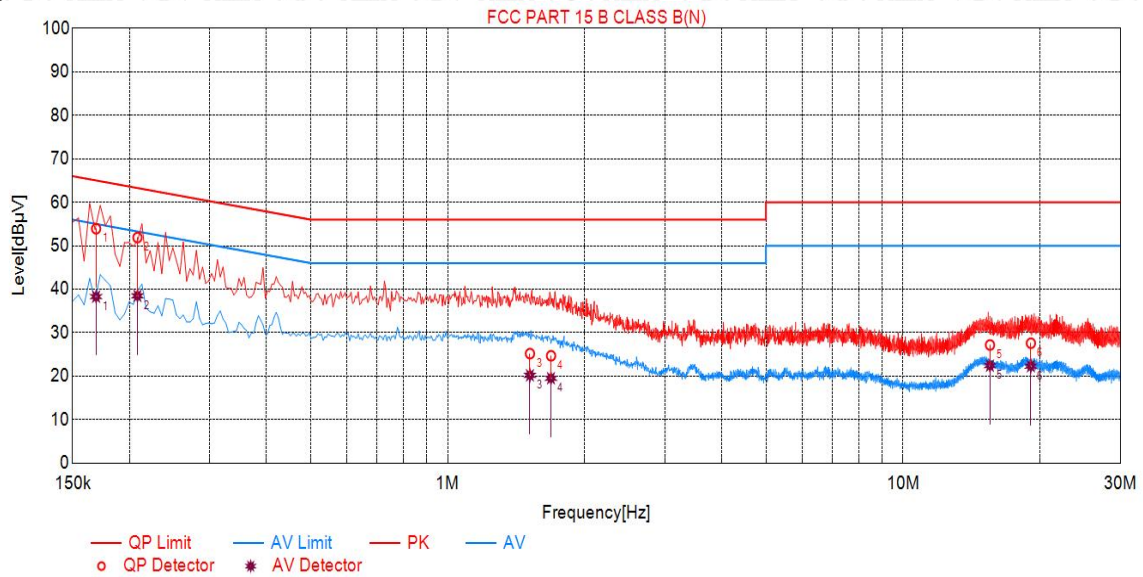


Final Data List

NO.	Freq. [MHz]	QP Value [dBμV]	QP Limit [dBμV]	QP Margin [dB]	AV Value [dBμV]	AV Limit [dBμV]	AV Margin [dB]	Verdict
1	0.1729	55.22	64.82	9.60	38.96	54.82	15.86	PASS
2	0.2837	43.61	60.71	17.10	29.72	50.71	20.99	PASS
3	1.2396	24.34	56.00	31.66	19.33	46.00	26.67	PASS
4	1.7807	23.10	56.00	32.90	18.30	46.00	27.70	PASS
5	7.3714	22.80	60.00	37.20	17.20	50.00	32.80	PASS
6	15.0959	28.16	60.00	31.84	23.41	50.00	26.59	PASS

Operation Mode : White Light, maximum brightness
Phase : N (150kHz - 30MHz)

Test Graph



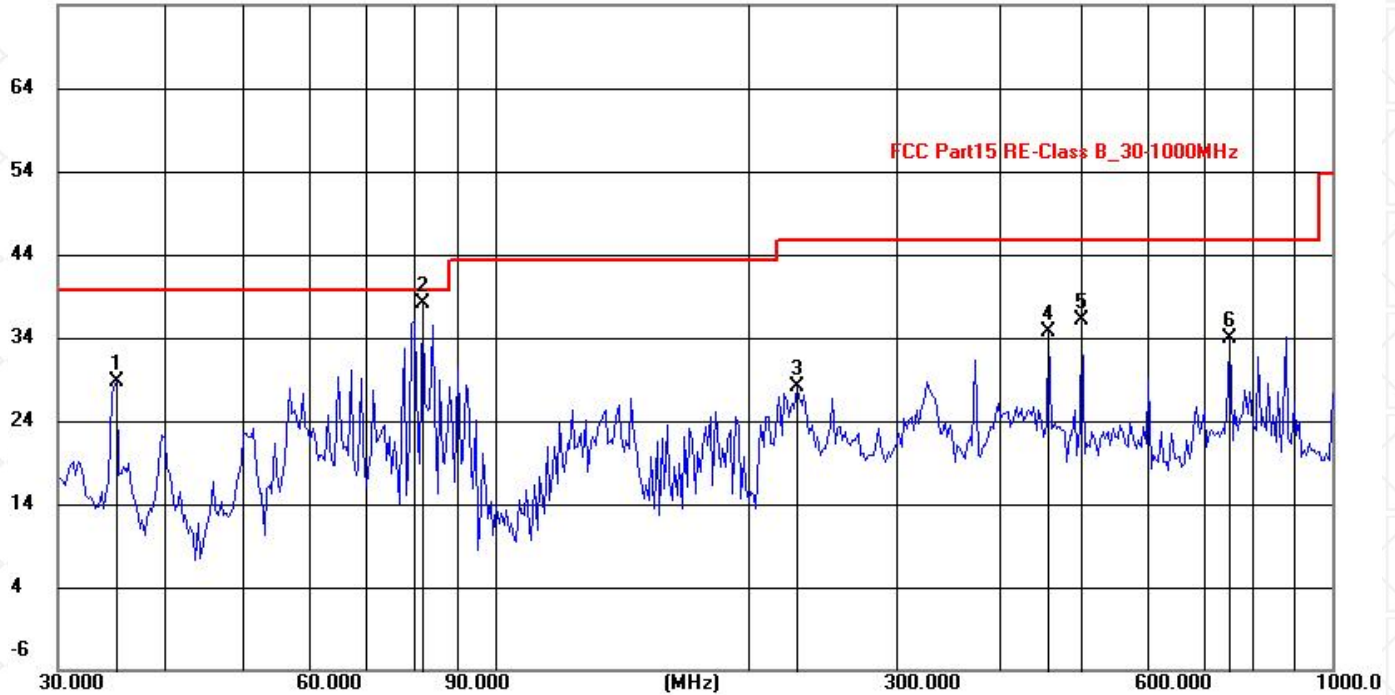
Final Data List

NO.	Freq. [MHz]	QP Value [dBμV]	QP Limit [dBμV]	QP Margin [dB]	AV Value [dBμV]	AV Limit [dBμV]	AV Margin [dB]	Verdict
1	0.1689	53.92	65.01	11.09	38.29	55.01	16.72	PASS
2	0.2082	51.89	63.28	11.39	38.47	53.28	14.81	PASS
3	1.5156	25.18	56.00	30.82	20.19	46.00	25.81	PASS
4	1.6859	24.69	56.00	31.31	19.52	46.00	26.48	PASS
5	15.5237	27.17	60.00	32.83	22.41	50.00	27.59	PASS
6	19.0938	27.57	60.00	32.43	22.29	50.00	27.71	PASS

APPENDIX II: Radiated Emission Test data

Polarization : Horizontal
Operation Mode : White Light, maximum brightness

Test Graph
74.3 dBuV/m

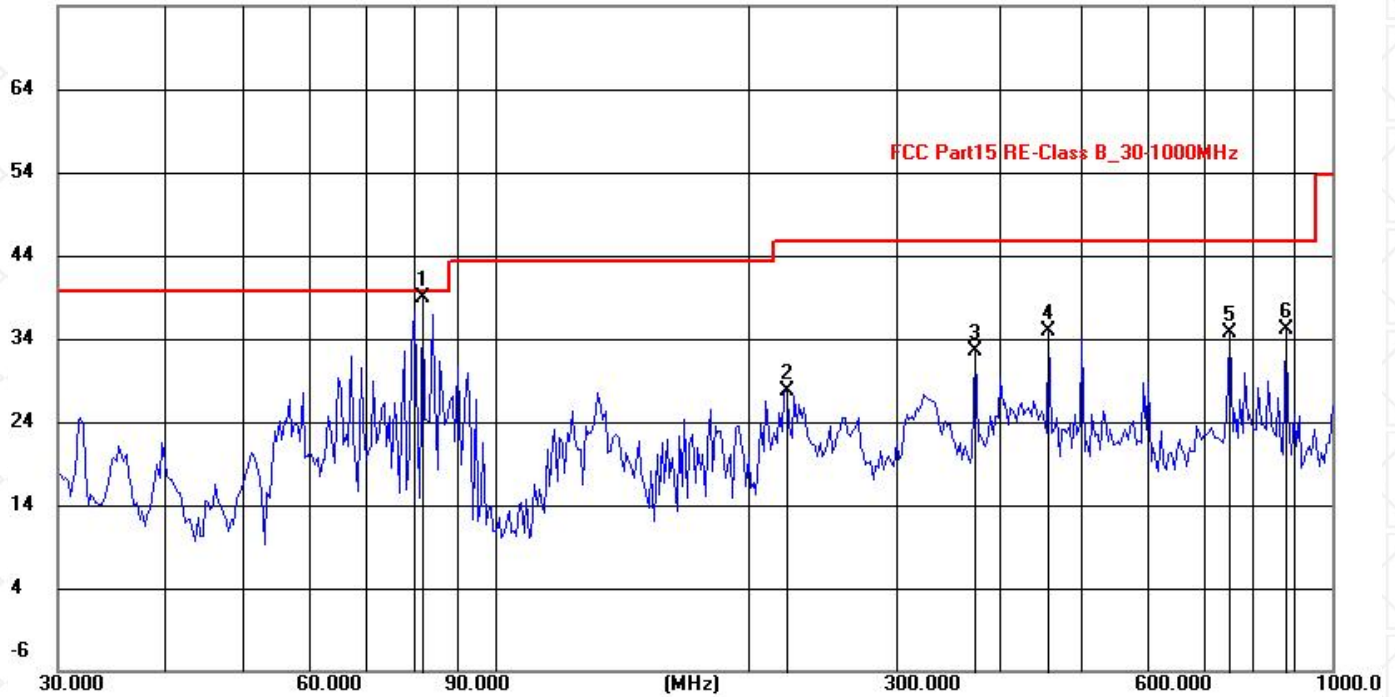


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)	Remark
1	35.2512	38.41	-9.41	29.00	40.00	-11.00	peak		180	
2 *	81.7833	54.72	-16.26	38.46	40.00	-1.54	peak		180	
3	229.2931	42.42	-13.99	28.43	46.00	-17.57	peak		180	
4	459.1144	43.28	-8.38	34.90	46.00	-11.10	peak		180	
5	502.9395	44.02	-7.71	36.31	46.00	-9.69	peak		180	
6	755.3873	38.52	-4.37	34.15	46.00	-11.85	peak		180	

Polarization : Vertical
Operation Mode : White Light, maximum brightness

Test Graph

74.3 dBuV/m



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)	Remark
1 *	81.7833	55.37	-16.26	39.11	40.00	-0.89	peak	180		
2	222.9502	42.40	-14.31	28.09	46.00	-17.91	peak	180		
3	374.6226	42.82	-10.02	32.80	46.00	-13.20	peak	180		
4	459.1144	43.57	-8.38	35.19	46.00	-10.81	peak	180		
5	755.3873	39.38	-4.37	35.01	46.00	-10.99	peak	180		
6	881.4067	38.91	-3.58	35.33	46.00	-10.67	peak	180		

APPENDIX III: EUT and Test Setup Photo



Figure 1: EUT Front-Side



Figure 2: EUT Back-Side



Figure 3: Conducted Emission Test Setup

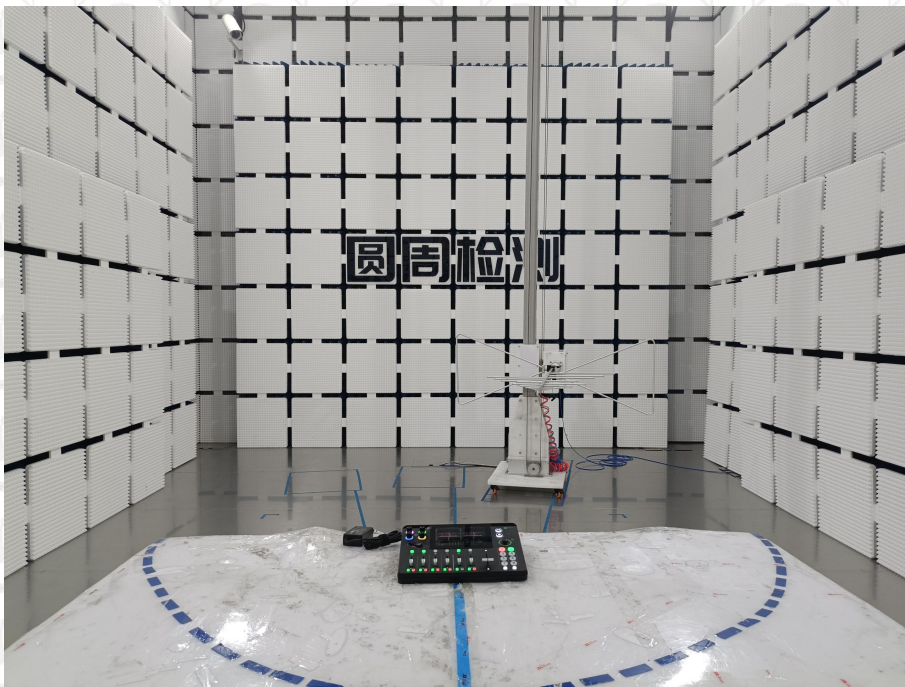


Figure 4: Radiated Emission Test Setup

*** REPORT END ***