



APPLICATION FOR EMC DIRECTIVE

On Behalf of

Shenzhen Haishirui Technology Co., Ltd

T02detector

Trade Name: N/A

Model: T02

Prepared For : **Shenzhen Haishirui Technology Co., Ltd**
130, Building T01, South China City, Hehua Community, Pinghu Street,
Longgang District, Shenzhen

Prepared By : **BSL Testing Co.,Ltd.**
1/F, Building B, Xinshidai GR Park,Shiyan Street, Bao'an District,
Shenzhen,Guangdong, 518052, People' s Republic of China
Tel: +86-755- 26649703

Date of Test : May 13, 2024-May 16, 2024

Date of Report : May 16, 2024

Report Number : BSL24080038P01-R01

TABLE OF CONTENTS

TEST REPORT DECLARATION	3
1. GENERAL INFORMATION	4
1.1. Report information	4
1.2. Measurement Uncertainty	4
1.3. Test Uncertainty	4
2. PRODUCT DESCRIPTION	5
2.1. EUT Description	5
2.2. Test Conditions	5
2.3. Support Equipment List	5
3. TEST RESULTS SUMMARY	6
4. TEST EQUIPMENT USED	7
4.1. For Conducted Emission Test	7
4.2. For Radiated Emission Measurement	7
5. CONDUCTED EMISSION TEST	8
5.1. Block Diagram of Test Setup	8
5.2. Test Standard	8
5.3. Conducted Emission Limit (Class B)	8
5.4. EUT Configuration on Test	8
5.5. Operating Condition of EUT	8
5.6. Test Procedure	9
5.7. Test Result	9
6. RADIATED EMISSION MEASUREMENT	10
6.1. Block Diagram of EUT Configuration	10
6.2. Test Standard	11
6.3. Radiated Emission Limit (Class B)	11
6.4. EUT Configuration on Test	11
6.5. Operating Condition of EUT	11
6.6. Test Procedure	11
6.7. Test Result	11
APPENDIX I Test Curves	
APPENDIX II (Photos of the EUT)	

TEST REPORT DECLARATION

Applicant	:	Shenzhen Haishirui Technology Co., Ltd
Address	:	130, Building T01, South China City, Hehua Community, Pinghu Street, Longgang District, Shenzhen
EUT Description	:	T02detector
Manufacturer	:	Shenzhen Haishirui Technology Co., Ltd
Address	:	130, Building T01, South China City, Hehua Community, Pinghu Street, Longgang District, Shenzhen
Model Number	:	T02
FCC ID	:	2BGC8-T02

Test Standards:

FCC Part 15, Subpart B, Class B(sDoC), ANSI C 63.4-2014

The EUT described above is tested by US to determine the maximum emission levels emanating from the EUT, the maximum emission levels are compared to the FCC Part 15 Subpart Class B limits. The measurement results are contained in this test report, and BSL Testing 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 BSL Testing Co., Ltd.

Judy chen

Prepared by :

Judy Chen/Assistant

Approved & Authorized Signer :

Vivian Jiang

Vivian Jiang / 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 BSL approves recommends or endorses the manufacture, supplier or use of such product/equipment, or that BSL 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, BSL 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 BSL, unless the applicant has authorized BSL in writing to do so.

1.2. Measurement Uncertainty

Available upon request.

1.3. Test Uncertainty

Conducted Emission Uncertainty = $\pm 2.66\text{dB}$
Radiated Emission Uncertainty = $\pm 4.26\text{dB}$

2. PRODUCT DESCRIPTION

2.1. EUT Description

Description	:	T02detector
Applicant	:	Shenzhen Haishirui Technology Co., Ltd 130, Building T01, South China City, Hehua Community, Pinghu Street, Longgang District, Shenzhen
Manufacturer	:	Shenzhen Haishirui Technology Co., Ltd 130, Building T01, South China City, Hehua Community, Pinghu Street, Longgang District, Shenzhen
Model Number	:	T02

2.2. Test Conditions

Temperature: 23~25°C

Relative Humidity: 55~63 %

2.3. Support Equipment List

No.	Equipment	Model No.	Serial No.	FCC ID	Trade Name	Data Cable	Power Cord
1	--	--	--	--	--	--	--

3. TEST RESULTS SUMMARY

Table 1 Test Results Summary

Test Items	Test Results
Conducted disturbance	Pass
Radiated disturbance	Pass

4. TEST EQUIPMENT USED

4.1. For Conducted Emission Test

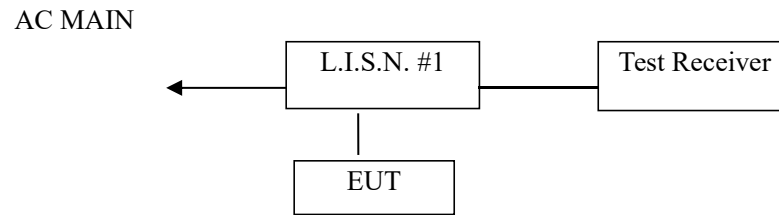
Item	Equipment	Manufacturer	Model No.	Serial No.	Calibration time	Recalibration time
1.	Test Receiver	Rohde & Schwarz	ESPI3	101396	Oct.27, 23	Oct.26, 24
2.	L.I.S.N.	Rohde & Schwarz	ENV216	102723	Oct.27, 23	Oct.26, 24
3.	loop antenna	DAZE	ZN30401	19036	Oct.27, 23	Oct.26, 24
4.	Wet and dry thermometer	M&G	ARC92569	N/A	Oct.27, 23	Oct.26, 24
5.	Shielding room	SKET	202108230 1	N/A	Aug.23,21	Aug.22,24

4.2. For Radiated Emission Measurement

Item	Equipment	Manufacturer	Model No.	Serial No.	Calibration time	Recalibration time
1.	Test Receiver	Rohde&Schwarz	ESC17(9kHz-7G Hz)	100336	Oct.27, 23	Oct.26, 24
2.	Broadband antenna	Schwarzbeck	VULB9168	01222	Oct.27, 23	Oct.26, 24
3.	Horn antenna	Schwarzbeck	BBHA9120D	02476	Oct.27, 23	Oct.26, 24
4.	Preamplifier	Schwarzbeck	BBV9745	00250	Oct.27, 23	Oct.26, 24
5.	Preamplifier	N/A	TRLA-01018G44 0B	21081001	Oct.27, 23	Oct.26, 24
6.	3M method semi anechoic chamber	SKET	9m*6m*6m	202108230 4	Oct.14,21	Oct.13,24
7.	Pointer hygrometer	M&G	ARC92570	N/A	Oct.27, 23	Oct.26, 24

5. CONDUCTED EMISSION TEST

5.1. Block Diagram of Test Setup



(EUT: T02detector)

5.2. Test Standard

FCC Part 15, Subpart B, Class B

5.3. Conducted Emission Limit (Class B)

Frequency MHz	Limits dB(μ V)	
	Quasi-peak Level	Average Level
0.15 ~ 0.50	66 ~ 56*	56 ~ 46*
0.50 ~ 5.00	56	46
5.00 ~ 30.00	60	50

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

5.4. EUT Configuration on Test

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

5.4.1. EUT Information

Model Number: T02

5.5. Operating Condition of EUT

5.5.1. Setup the EUT and simulators as shown in Section 5.1.

5.5.2. Turn on the power of all equipments.

5.5.3. Let the EUT work in test modes (EUT Working) and test it.

5.6. Test Procedure

The EUT is put on a table of non-conducting material that is 80cm high. The vertical conducting wall of shielding is located 40cm to the rear of the EUT. The power line of the EUT is connected to the AC mains through a Artificial Mains Network (A.M.N.). A EMI test receiver (R&S Test Receiver ESCS30) is used to test the emissions form both sides of AC line. The bandwidth of EMI test receiver is set at 9kHz.

The bandwidth of the test receiver (R&S Test Receiver ESHS30) is set at 10KHz. All the test results are listed in Section 5.7

5.7. Test Result

PASS

6. RADIATED EMISSION MEASUREMENT

6.1. Block Diagram of EUT Configuration

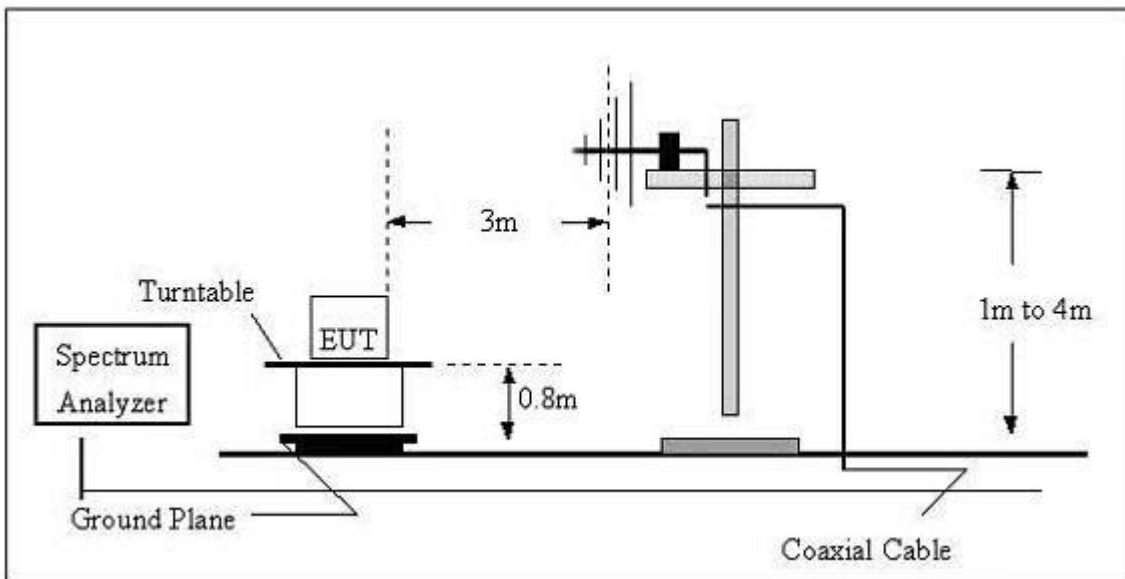
6.1.1. Block Diagram of connection between the EUT and the simulators



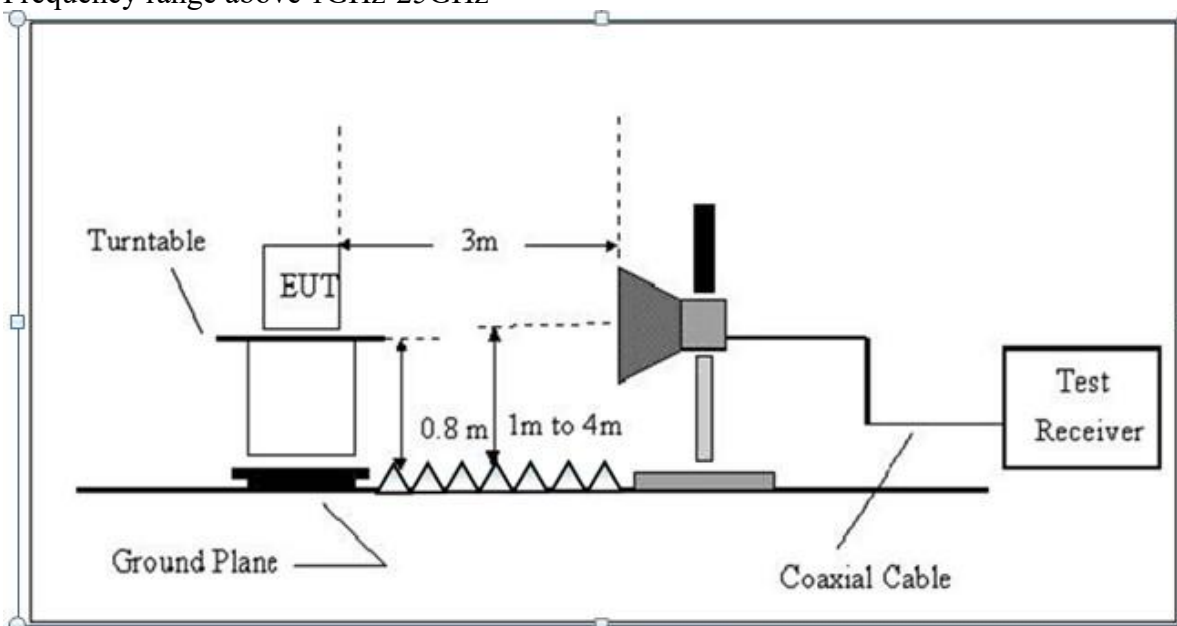
(EUT: T02detector)

6.1.2. Anechoic Chamber Test Setup Diagram

Frequency range 30MHz – 1000MHz



Frequency range above 1GHz-25GHz



6.2. Test Standard

FCC Part 15, Subpart B, Class B

6.3. Radiated Emission Limit (Class B)

Frequency (MHz)	Distance (Meters)	Radiated (dB μ V/m)	Radiated (μ V/m)
0.009-0.49	3	$20\log(2400/F(\text{KHz}))+40\log(300/3)$	$2400/F(\text{KHz})$
0.49-1.705	3	$20\log(24000/F(\text{KHz}))+40\log(30/3)$	$24000/F(\text{KHz})$
1.705-30	3	$20\log(30)+40\log(30/3)$	30
30-88	3	40.0	100
88-216	3	43.5	150
216-960	3	46.0	200
Above 960	3	54.0	500

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

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

6.4. 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.

6.5. Operating Condition of EUT

6.5.1. Setup the EUT as shown on Section 6.1.2

6.5.2. Turn on the power of all equipments.

6.5.3. Let the EUT work in test mode (EUT working) and measure it.

6.6. 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 a 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 measurement.

The bandwidth setting on the test receiver (R&S TEST RECEIVER ESCIS28A) is 120 KHz. The EUT is tested in Anechoic Chamber. The frequency range from 30MHz to 1000 MHz is checked. All the test results are listed in Section 6.7. and all the scanning waveform are attached within **Appendix I**

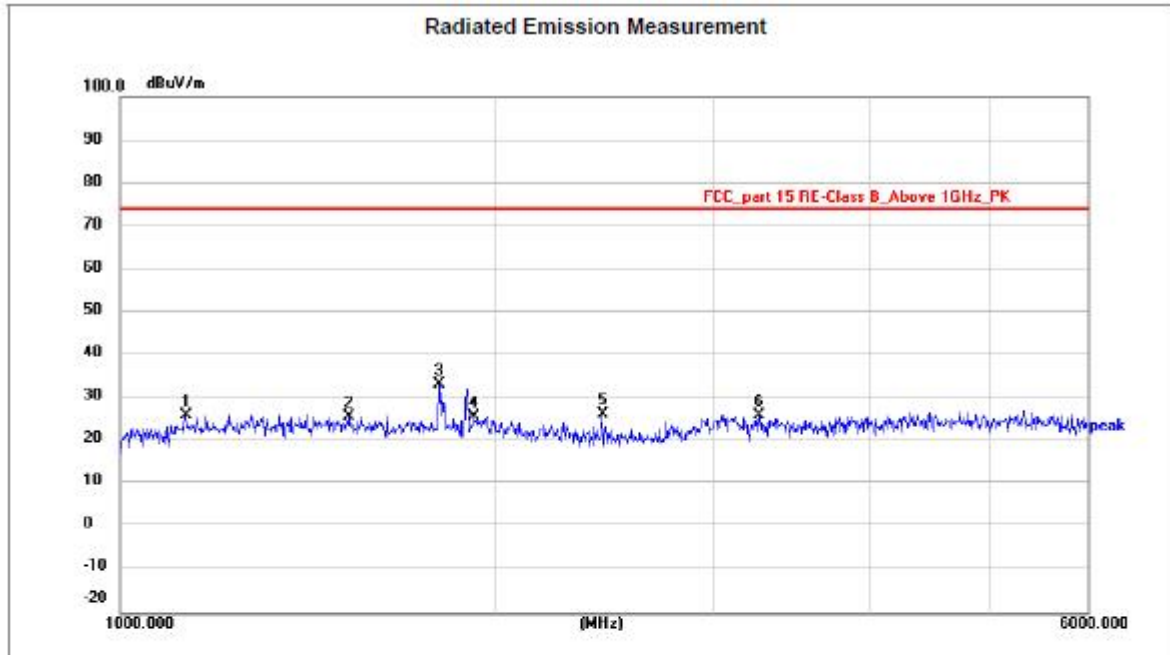
6.7. Test Result

PASS

Test Mode: operating

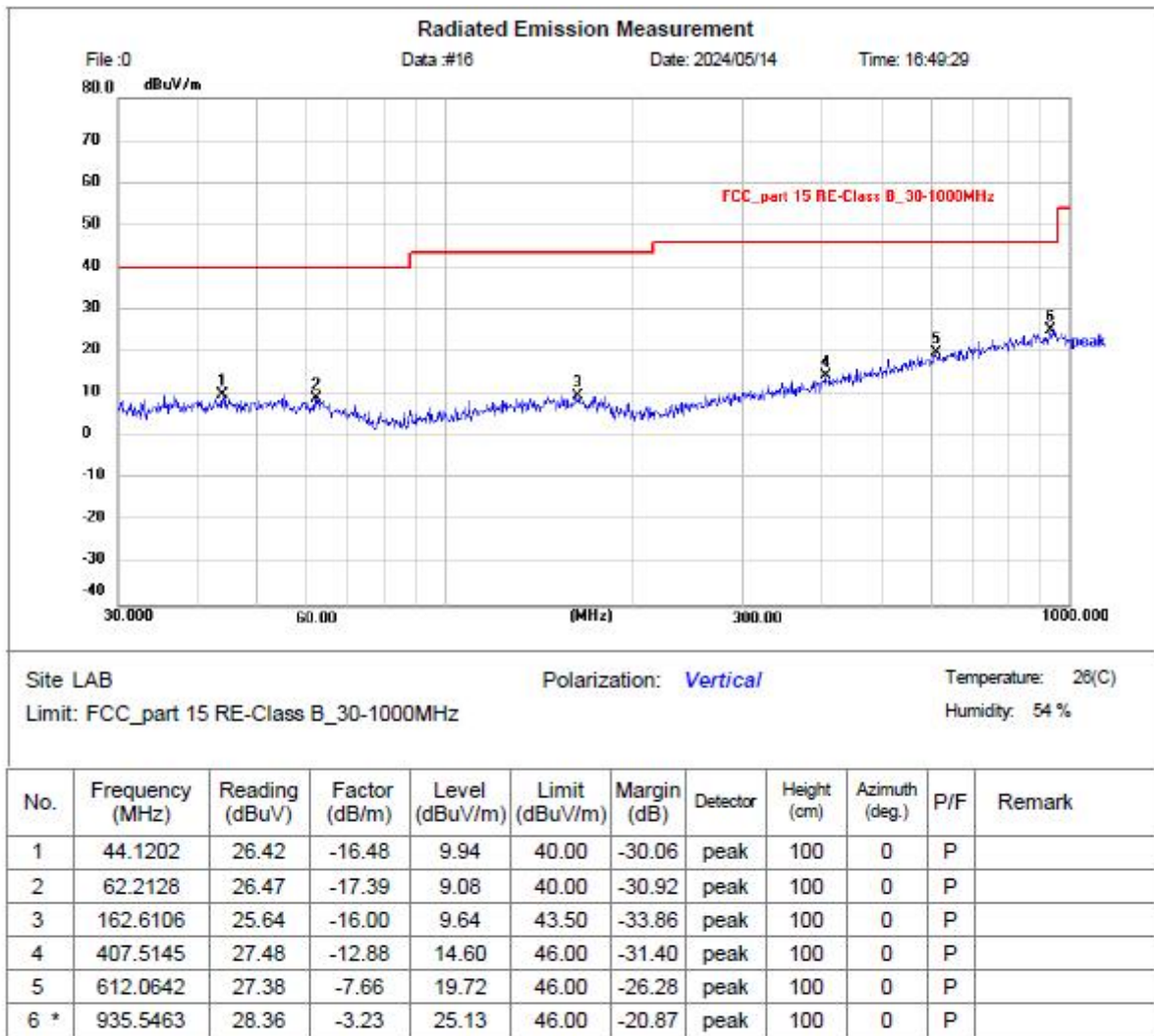
APPENDIX I

Above 1GHz

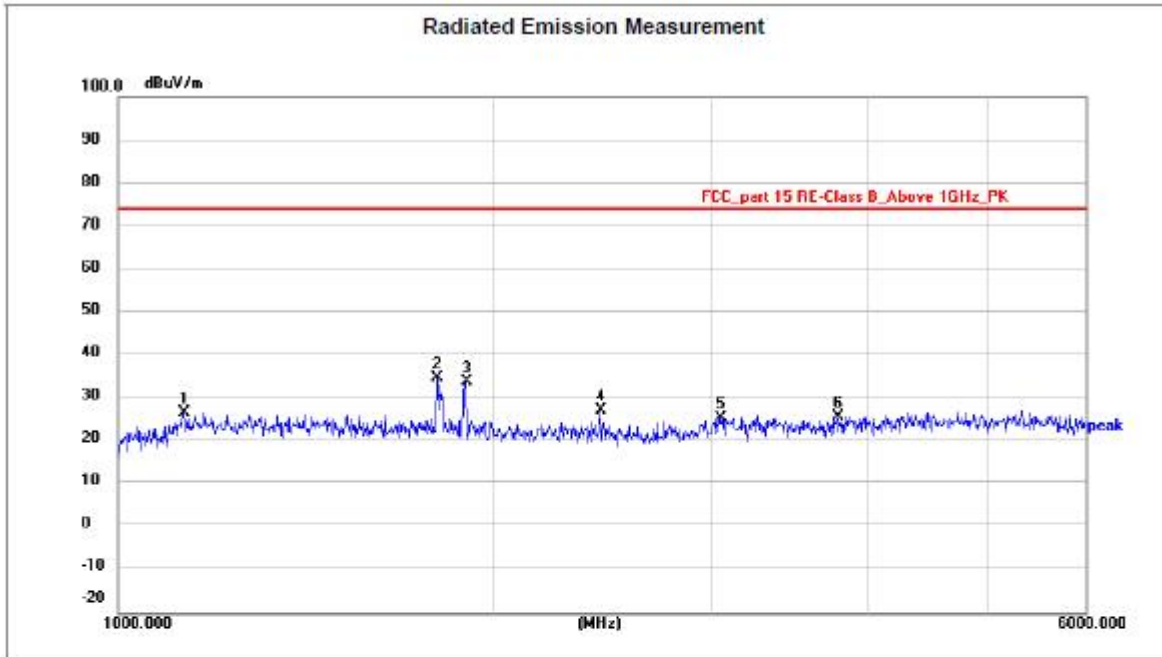


Site LAB Polarization: *Horizontal* Temperature: 26(C)
 Limit: FCC_part 15 RE-Class B_Above 1GHz_PK Humidity: 54 %

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	1127.551	26.06	0.00	26.06	74.00	-47.94	peak	100	360	P	
2	1526.313	25.65	0.00	25.65	74.00	-48.35	peak	100	360	P	
3 *	1806.300	33.37	0.00	33.37	74.00	-40.63	peak	100	360	P	
4	1926.652	25.89	0.00	25.89	74.00	-48.11	peak	100	360	P	
5	2440.728	26.35	0.00	26.35	74.00	-47.65	peak	100	360	P	
6	3262.720	26.17	0.00	26.17	74.00	-47.83	peak	100	360	P	



Above 1GHz



Site LAB

Polarization: *Vertical*

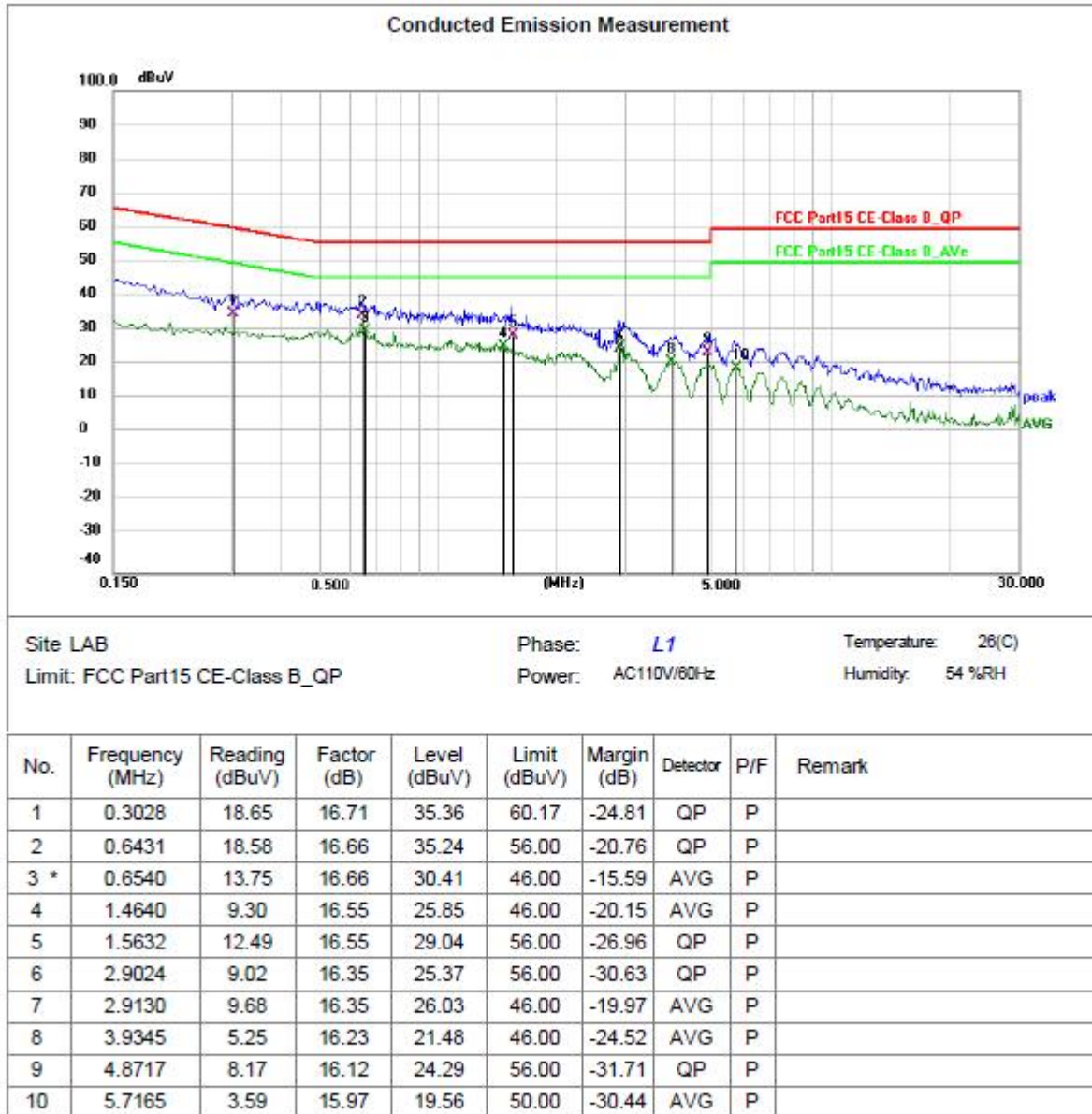
Temperature: 26(C)

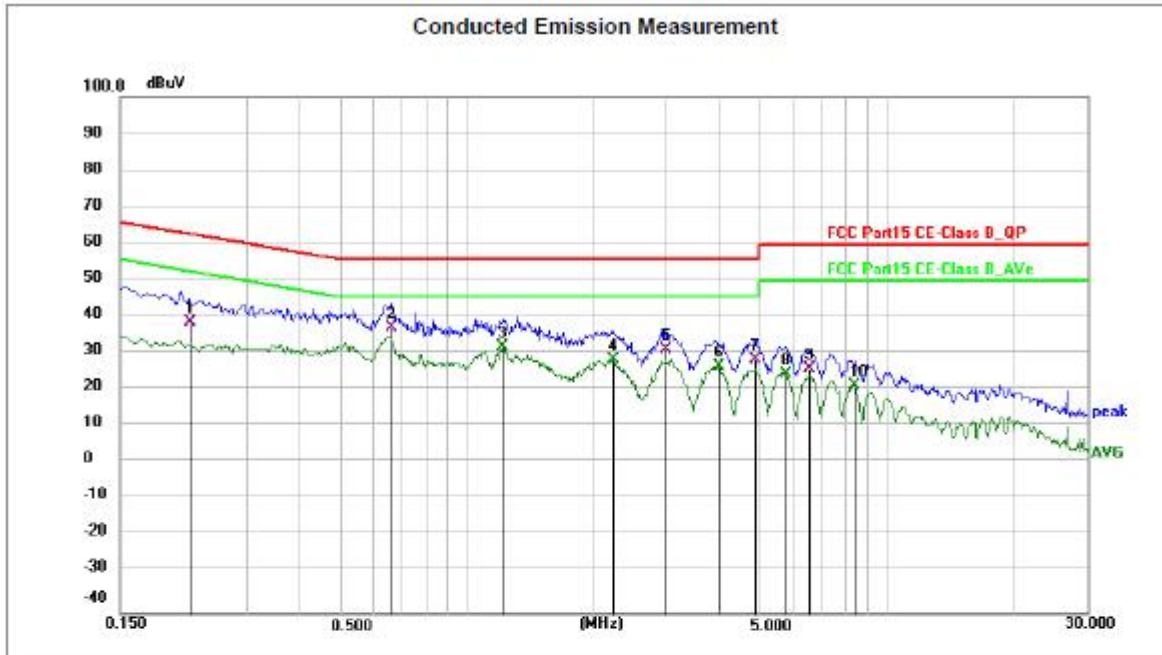
Limit: FCC_part 15 RE-Class B_Above 1GHz_PK

Humidity: 54 %

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	1127.551	26.56	0.00	26.56	74.00	-47.44	peak	100	360	P	
2 *	1806.300	34.87	0.00	34.87	74.00	-39.13	peak	100	360	P	
3	1902.639	33.97	0.00	33.97	74.00	-40.03	peak	100	360	P	
4	2440.728	27.35	0.00	27.35	74.00	-46.65	peak	100	360	P	
5	3047.966	25.51	0.00	25.51	74.00	-48.49	peak	100	360	P	
6	3792.665	25.84	0.00	25.84	74.00	-48.16	peak	100	360	P	

APPENDIX II





Site LAB Phase: N Temperature: 26(C)
 Limit: FCC Part15 CE-Class B_QP Power: AC110V/60Hz Humidity: 54 %RH

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.2194	21.57	17.53	39.10	62.84	-23.74	QP	P	
2	0.6641	20.12	17.51	37.63	56.00	-18.37	QP	P	
3 *	1.2210	14.63	17.50	32.13	46.00	-13.87	AVG	P	
4	2.2425	11.23	17.46	28.69	46.00	-17.31	AVG	P	
5	2.9633	14.25	17.43	31.68	56.00	-24.32	QP	P	
6	3.9975	9.55	17.42	26.97	46.00	-19.03	AVG	P	
7	4.8674	11.53	17.41	28.94	56.00	-27.06	QP	P	
8	5.7750	7.55	17.26	24.81	50.00	-25.19	AVG	P	
9	6.5441	9.05	17.12	26.17	60.00	-33.83	QP	P	
10	8.3310	4.85	16.79	21.64	50.00	-28.36	AVG	P	

APPENDIX III

Photo 1 Radiated Emission Test



Photo 2 Radiated Emission Test (Above 1G)

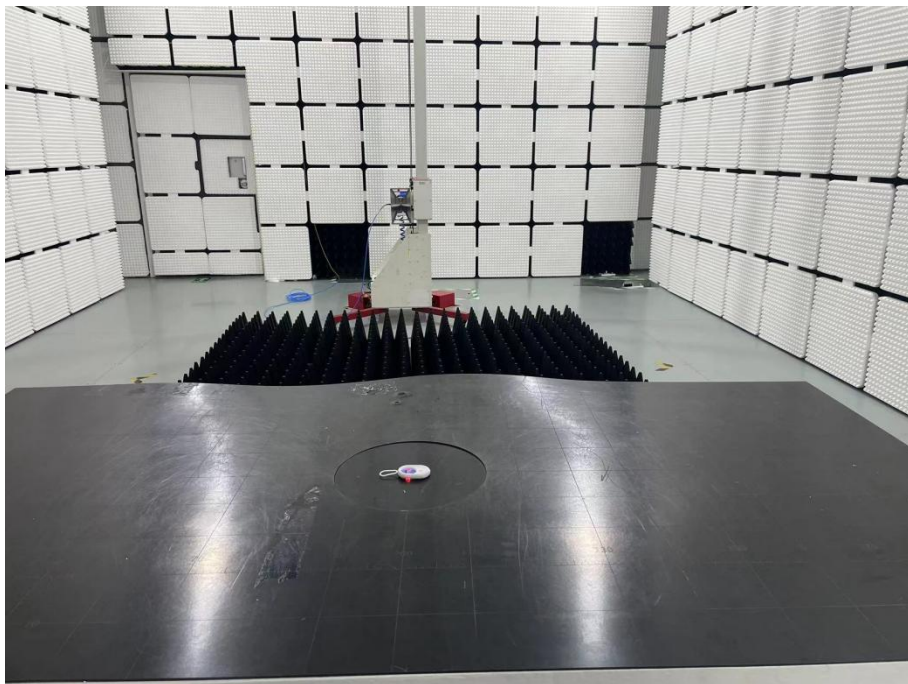


Photo 3 Conducted Disturbance Test



Photo 4 General Appearance of the EUT



Photo 5 General Appearance of the EUT



Photo 6 General Appearance of the EUT



Photo 7 General Appearance of the EUT



Photo 8 General Appearance of the EUT



Photo 9 General Appearance of the EUT

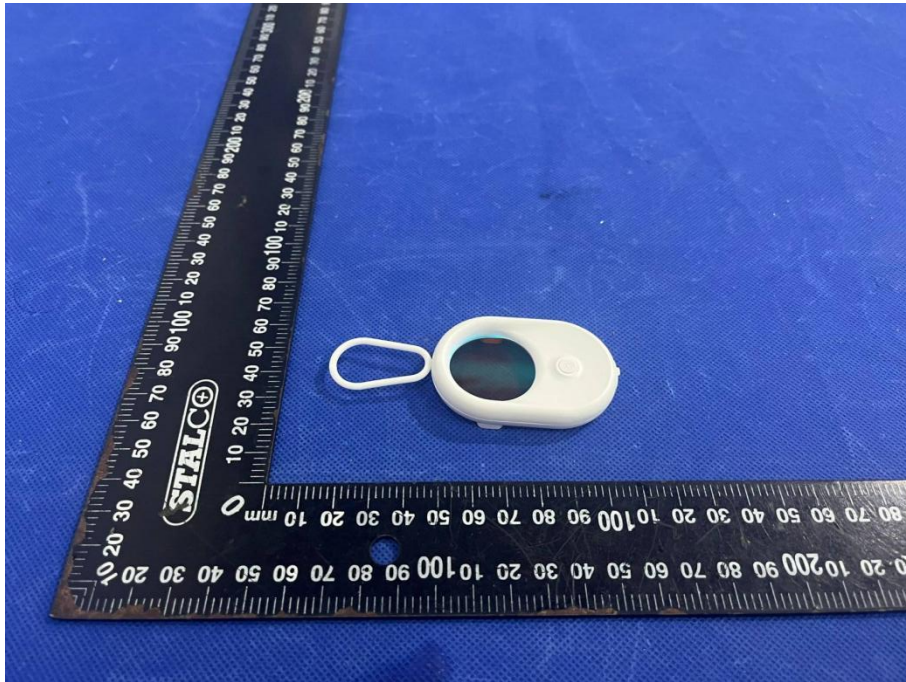


Photo 10 General Appearance of the EUT



Photo 11 General Appearance of the EUT

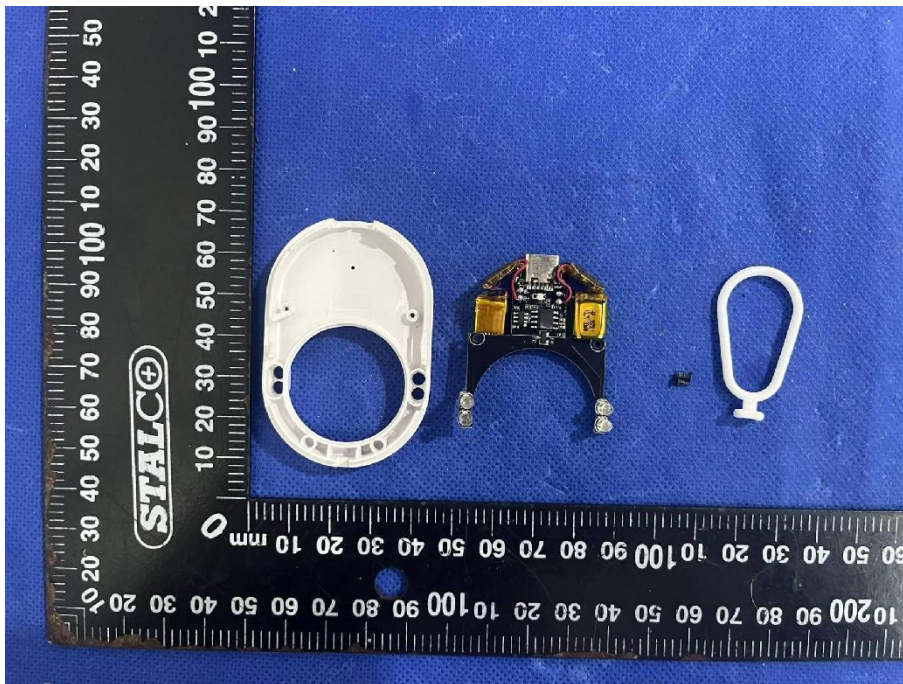


Photo 12 General Appearance of the EUT

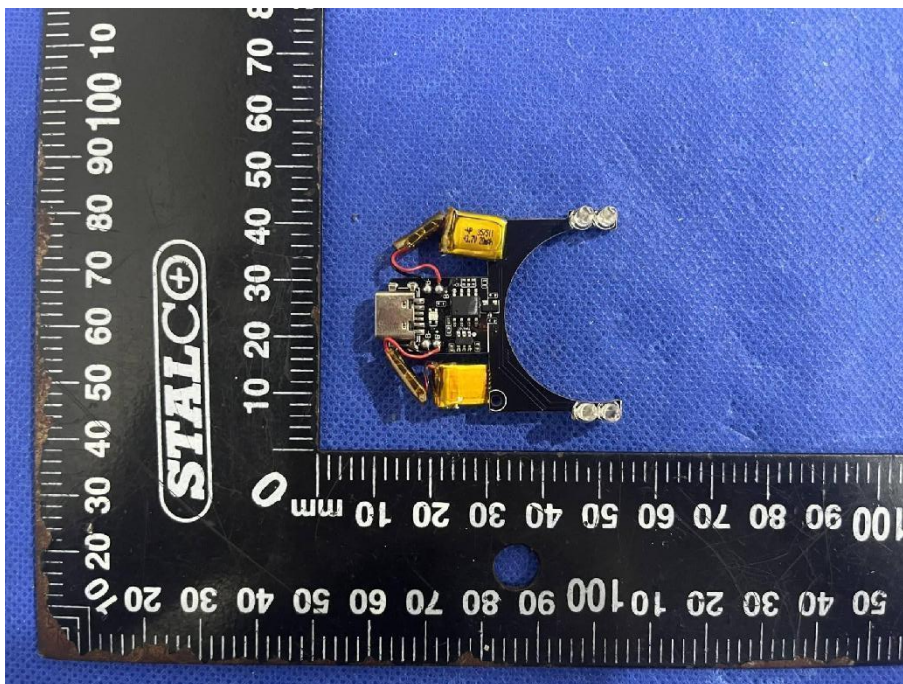


Photo 13 General Appearance of the EUT



****END OF REPORT****