TEST REPORT

47 CFR FCC Part 15 Subpart B (Class B)
Radio Frequency Devices – Unintentional Radiators – Limits and methods of measurement
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

Report Reference No.....:	**UTT202405011F**
Compiled by (position+printed name+signature)..:	File administrators Jowin Huang
Supervised by (position+printed name+signature)..:	Test Engineer Bill Wu
Approved by (position+printed name + signature).:	Manager Aiden Zhang
Date of issue.....:	May 28, 2024
Testing Laboratory Name.....:	**Dongguan UTT Service Co., Ltd.**
Address.....:	Room 107, Building 2, No.3, Mu Lun The second road of entrepreneurship , Changping Town, Dongguan City, Guangdong
Applicant's name.....:	**K-Star Plastic Mold (shenzhen) co,LTD**
Address.....:	DONG WANG YANG INDUSTARL ESTATE, HUANGTIANSHEQU, HANGCHENGJIEDAO, BAOAN, SHENZHEN, CHINA
Test specification:	
Standard.....:	47 CFR FCC Part 15 Subpart B (Class B) ANSI C63.4: 2014
TRF Originator.....:	Dongguan UTT Service Co., Ltd.
Master TRF.....:	Dated 2021-12

Product name.....:	Aromatherapy diffuser
Trade Mark.....:	N/A
Manufacturer.....:	K-Star Plastic Mold (shenzhen) co,LTD
Model/Type reference.....:	DONG WANG YANG INDUSTARL ESTATE, HUANGTIANSHEQU, HANGCHENGJIEDAO, BAOAN, SHENZHEN, CHINA
Model different:	KS2401x;KS2402x;KS2403x (The x is for appearance only, and the color is different)
Ratings.....:	5V⎓ 1.0A
Result.....:	**Pass**

TEST REPORT

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Address	:	DONG WANG YANG INDUSTARL ESTATE, HUANGTIANSHEQU, HANGCHENGJIEDAO, BAOAN, SHENZHEN, CHINA

Test Result	**Pass**

The test report merely corresponds to the test sample.
It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

Contents

1. TEST STANDARDS

The tests were performed according to following standards:

47 CFR FCC Part 15 Subpart B (Class B) Radio Frequency Devices – Unintentional Radiators – Limits and methods of measurement
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.

2. SUMMARY

2.1. General Remarks

Date of receipt of test sample	:	May 21, 2024
Testing commenced on	:	May 21, 2024
Testing concluded on	:	May 28, 2024

2.2. Equipment Under Test

Power supply system utilised

Power supply voltage	:	○	120V / 60 Hz	○	230V / 50Hz
		○	12 V DC	●	5.0 V DC
		○	Other		

Adapter information

Adapter	
Description	/
Model	/
Ratings	/
Manufacturer	/

2.3. Short description of the Equipment under Test (EUT)

The EUT is Portable projector.

2.4. EUT operation mode

Operation mode	
Mode 1	On
Remark: we tested all the mode and recorded the worst data in report	

2.5. EUT configuration

The following peripheral devices and interface cables were connected during the measurement:

● - supplied by the manufacturer

○ - Supplied by the lab

○	/	M/N:	/
	/	Manufacturer:	/

3. TEST ENVIRONMENT

3.1. Address of the test laboratory

Dongguan UTT Service Co., Ltd.
Room 107, Building 2, No.3, Mu Lun The second road of entrepreneurship , Changping Town, Dongguan City, Guangdong.

3.2. Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature: 15-35 ° C

Humidity: 30-60 %

Atmospheric pressure: 950-1050mbar

3.3. Test Description

Emission Measurement		
Radiated Emission	47 CFR FCC Part 15 Subpart B Class B ANSI C63.4 2014	PASS
Conducted Disturbance	47 CFR FCC Part 15 Subpart B Class B ANSI C63.4 2014	PASS

Remark: N/A means “not applicable”.
The measurement uncertainty is not included in the test result.

3.4. Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16 - 4 “Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements” and is documented in the **UTT Service Co., Ltd.** quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for UTT laboratory is reported:

Test	Range	Measurement Uncertainty	Notes
Radiated Emission	30~1000MHz	4.24dB	(1)
Conducted Disturbance	0.15~30MHz	3.12dB	(1)

(1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

3.5. Equipments Used during the Test

Radiated Emission					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	ULTRA-BROADBAND ANTENNA	Schwarzbeck	VULB9163	000976	2023/9/16
2	EMI Test Receiver	Rohde&Schwarz	ESCI	101102	2023/9/16
3	Pre-Amplifier	Schwarzbeck	BBV 9743	#202	2023/9/16

Conducted Disturbance					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	EMI Test Receiver	ROHDE & SCHWARZ	ESCI	101102	2023/9/16
2	Artificial Mains	ROHDE & SCHWARZ	ESH2-Z5	893606/008	2023/9/16
3	Pulse Limiter	Agilent	11947A	3107A04120	2023/9/16

The calibration interval was one year.

4. TEST CONDITIONS AND RESULTS

4.1. Radiated Emission

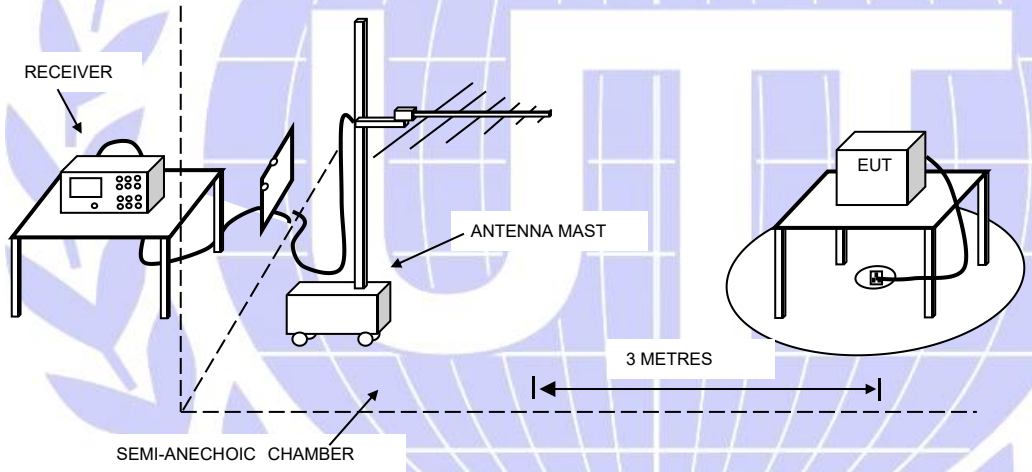
4.1.1. LIMITS OF DISTURBANCE (Class B)

Frequency (MHz)	Distance (Meters)	Field Strengths Limits (dBμV/m)
30 ~ 88	3	40
88~216	3	43.5
216 ~ 960	3	46
960-1000	3	54

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

(2) Distance refers to the distance in meters between the test instrument antenna and the closest point of any part of the E.U.T.

4.1.2. TEST CONFIGURATION



4.1.3. TEST PROCEDURE

EUT is tested in Semi-Anechoic Chamber. EUT is placed on a nonmetal table which is 0.8 meter above a grounded turntable. The turntable can rotate 360 degrees to determine the azimuth of the maximum emission level. EUT is set 3 meters away from the center of receiving antenna. The antenna can move up and down from 1 to 4 meter to find out the maximum emission level. Both horizontal and vertical polarizations of the antenna are set on the test.

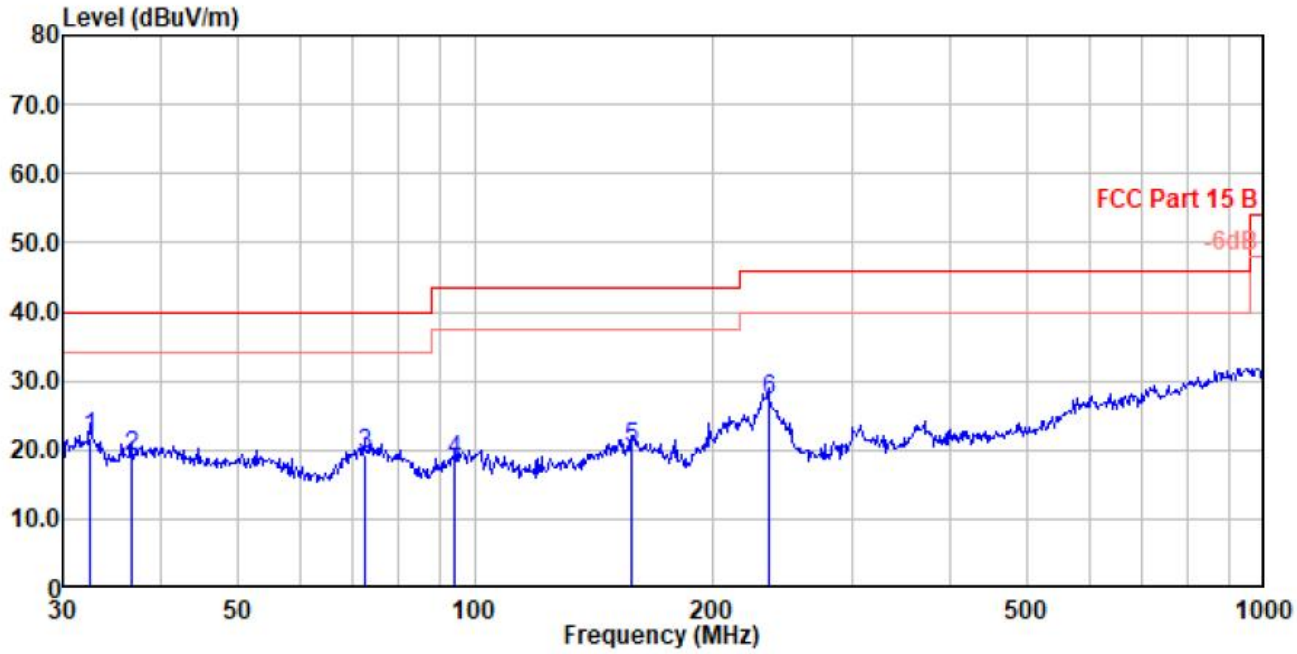
4.1.4. CLIMATIC CONDITIONS

- ambient temperature : 24 ℃
- relative humidity: 48%
- atmospheric pressure: 960 mbar

4.1.5. TEST RESULTS

Remark: 1.The EUT has been tested all modes, the worst mode has been recorded.
2. The highest frequency of the internal sources of the EUT is less than 108 MHz, the measurement shall only be made up to 1GHz.

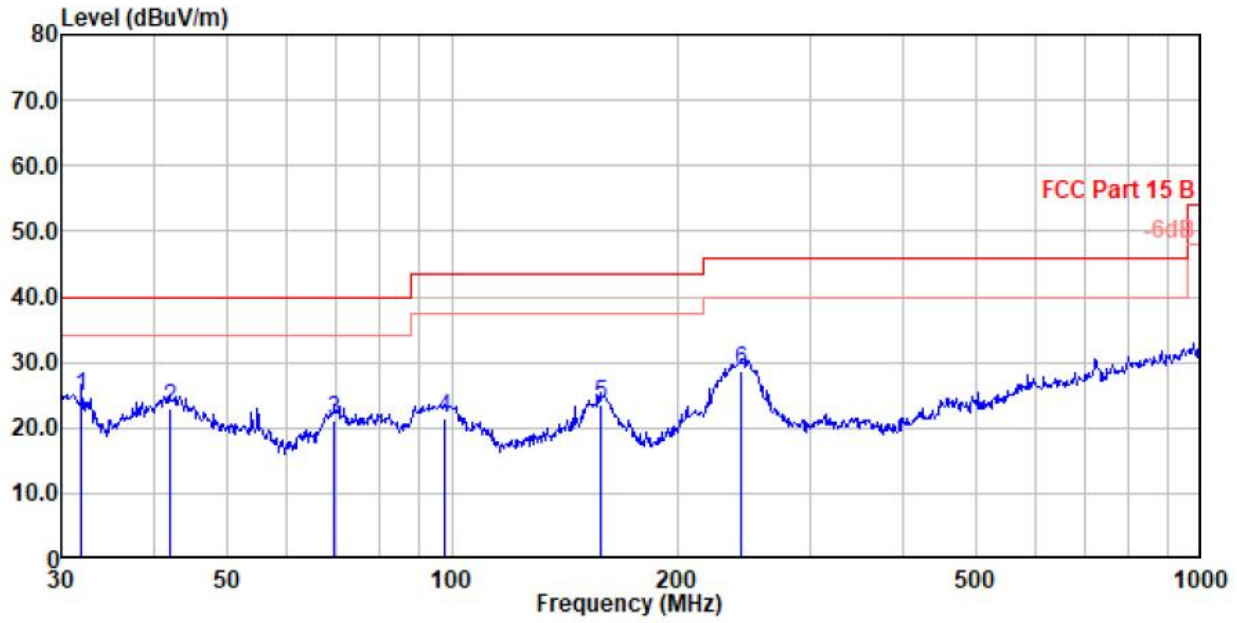
Test mode:	Model 1	Polarization	Horizontal



	Freq	Cable Loss	Factor	Level	Read Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dBuV/m	dBuV	dBuV/m	dB	
1	32.520	3.34	15.68	21.84	6.16	40.00	-18.16	QP
2	36.637	3.32	16.07	19.03	2.96	40.00	-20.97	QP
3	72.338	3.82	13.94	19.33	5.39	40.00	-20.67	QP
4	94.098	3.33	12.04	18.30	6.26	43.50	-25.20	QP
5	158.112	1.50	14.27	20.14	5.87	43.50	-23.36	QP
6	234.991	2.70	12.63	27.11	14.48	46.00	-18.89	QP

Note: Result = Reading +Factor Over Limit = Result - Limit

Test mode:	Model 1	Polarization	Vertical



	Freq	Cable Loss	Factor	Level	Read Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dBuV/m	dBuV	dBuV/m	dB	
1	31.955	3.34	15.64	24.67	9.03	40.00	-15.33	QP
2	41.860	2.83	15.98	22.98	7.00	40.00	-17.02	QP
3	69.600	3.13	13.80	21.12	7.32	40.00	-18.88	QP
4	97.798	3.34	12.30	21.44	9.14	43.50	-22.06	QP
5	158.112	1.50	14.27	23.40	9.13	43.50	-20.10	QP
6	243.377	2.73	13.27	28.54	15.27	46.00	-17.46	QP

Note: Result = Reading +Factor Over Limit = Result - Limit

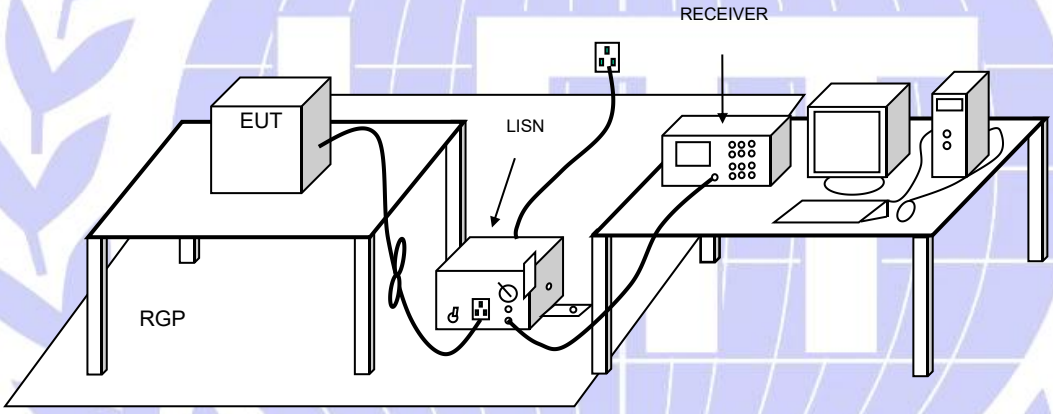
4.2. Conducted disturbance

4.2.1. LIMITS OF DISTURBANCE (Class B)

Frequency Range (MHz)	Limits (dBuV)	
	Quasi-Peak	Average
0.150～0.500	66~56	56~46
0.500～5.000	56	46
5.000~30.000	60	50

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

4.2.2. TEST CONFIGURATION



4.2.3. TEST PROCEDURE

EUT is placed on a nonmetal table which is 0.8 meter (or 0.1 meter for floor-stood equipments) above the grounded reference plane. Connect the power line of the EUT to the LISN. Voltage of the power supply is varied over a range of 0.9 to 1.1 times of the rated voltage in order to check whether the level of disturbance varies considerably with the supply voltage at the selected frequency about 160KHz. Perform an initial measurement on each line with peak detector to identify the frequencies where the maximum disturbances may occur. Then measure and record the maximum disturbances with quasi-peak and average detector.

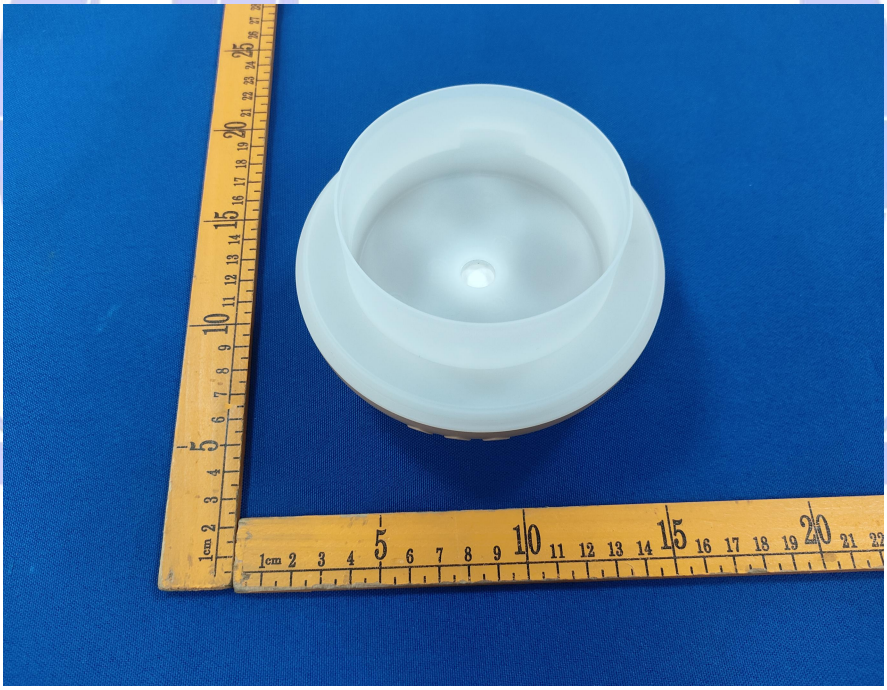
4.2.4. CLIMATIC CONDITIONS

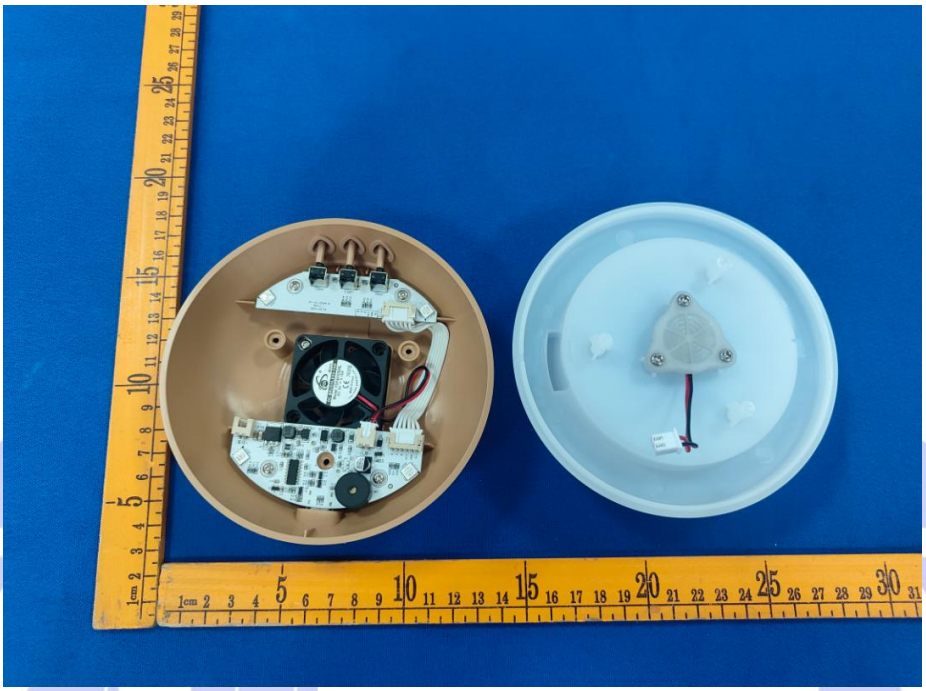
- ambient temperature : 25 ℃
- relative humidity: 52%
- atmospheric pressure: 960 mbar

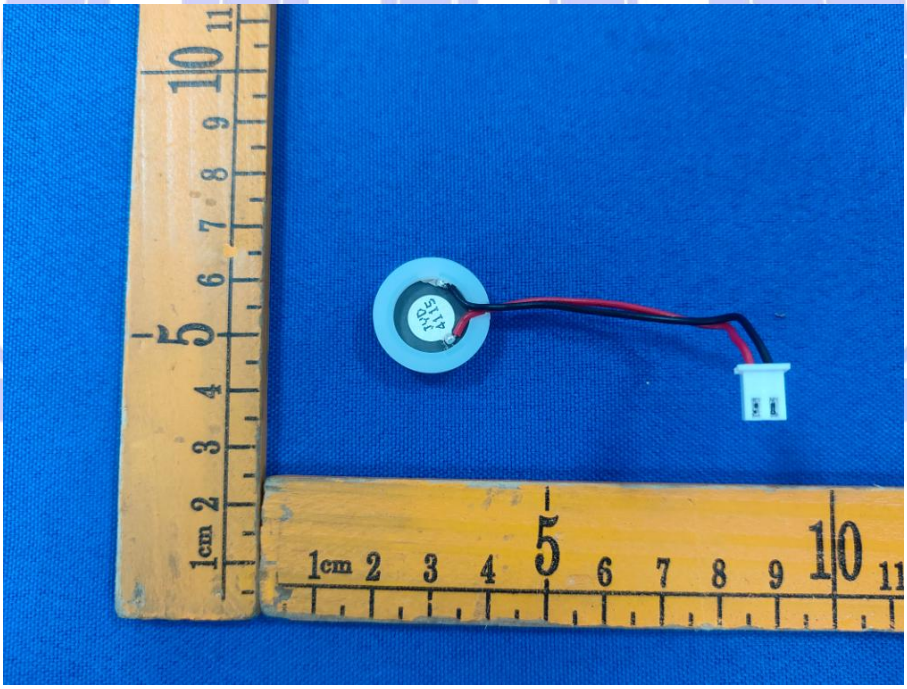
4.2.5. TEST RESULTS

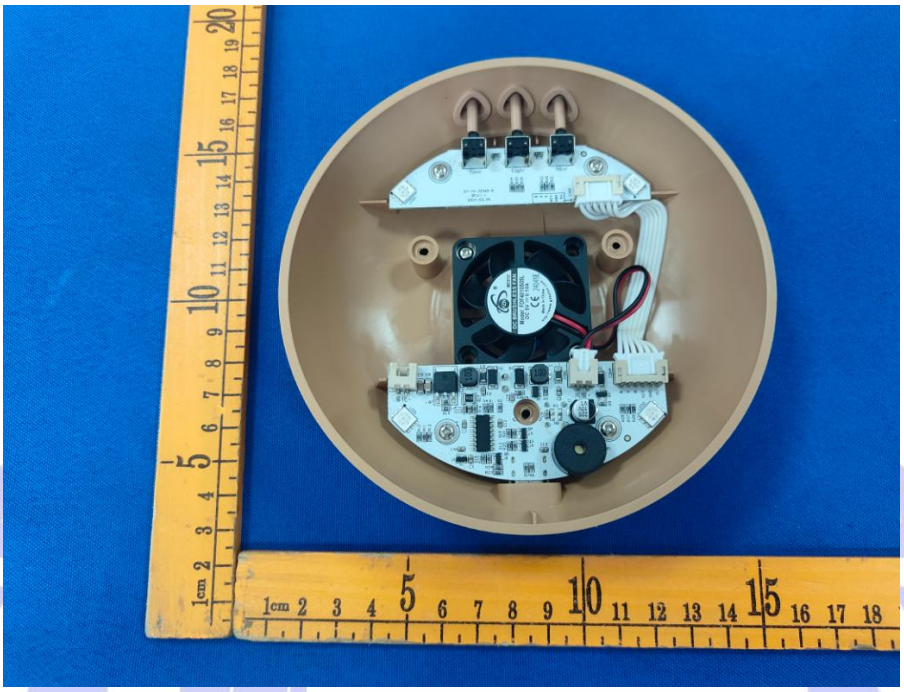
N/A

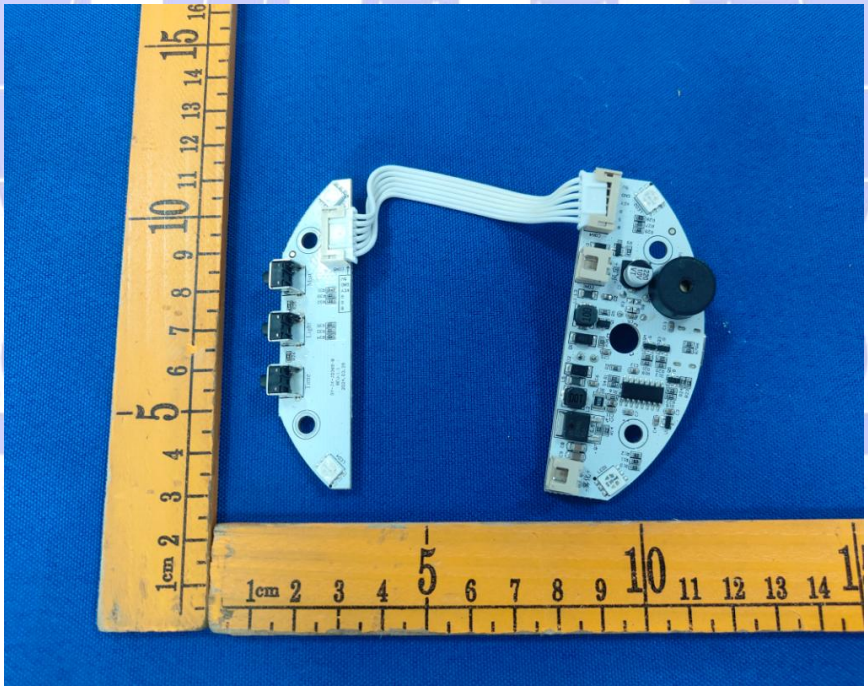
5. External and Internal Photos of the EUT

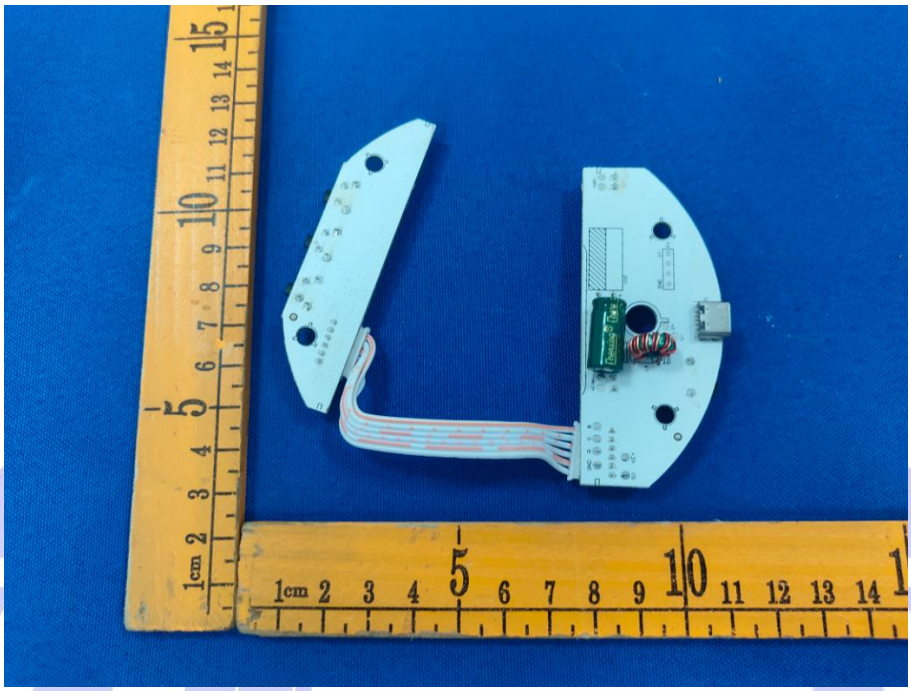


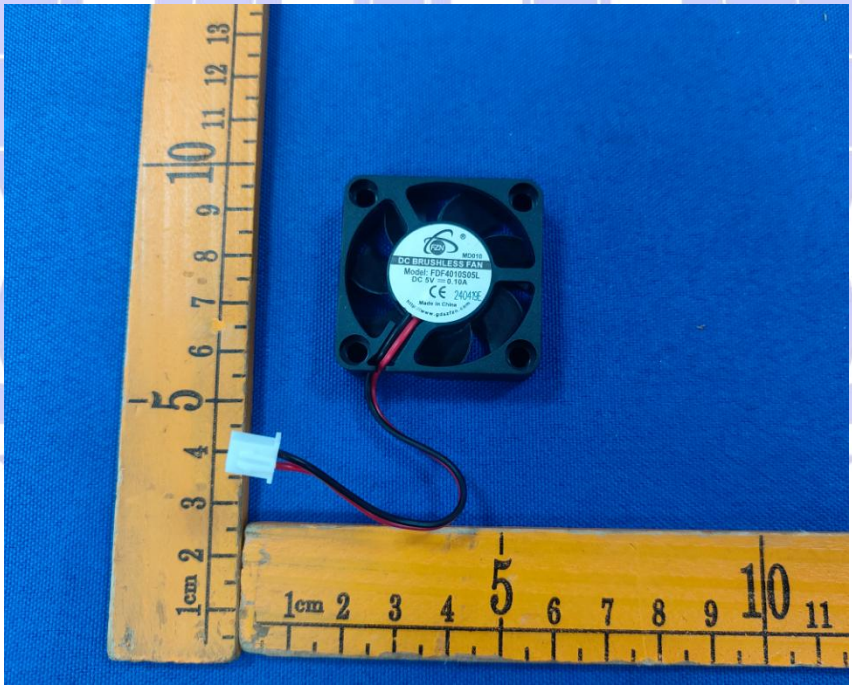












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