
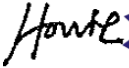



EMC TEST REPORT

Radio Frequency Devices - Unintentional Radiators

Test Report No.:	TCT220712E036	
Date of issue	Jul. 19, 2022	
Testing laboratory.....:	SHENZHEN TONGCE TESTING LAB	
Testing location/ address.....:	2101 & 2201, Zhenchang Factory Renshan Industrial Zone, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, 518103, People's Republic of China	
Applicant's name	Smart Team Holdings Limited	
Address.....:	Flat E, 6/F., China Fen Hin Building, 5 Cheung Yue Street, Cheung Sha Wan, Kowloon, Hong Kong	
Manufacturer's name	ShenZhen XinJunMeng Energy Technology Co. Ltd.	
Address.....:	201, Building B2b, Yingzhan Science and Technology Park, Longtian Subdistrict, Pingshan District, Shenzhen City	
Standard(s)	FCC 47 CFR Part 15 Subpart B	
Test item description.....:	Phototherapy LED Comb	
Trade Mark.....:	N/A	
Model/Type reference	2103	
Rating(s)	Input: DC 5 V, 1 A Power: 5 W Battery: DC 3.7 V, 1500mAh	
Date of receipt of test item.....:	Jul. 12, 2022	
Date (s) of performance of test:	Jul. 12, 2022 ~ Jul. 19, 2022	
Tested by (+signature).....:	Kyle ZHOU	
Check by (+signature)	Howie LYU	
Approved by (+signature)	Tomsin	



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Table of Contents

1. General Product Information	3
1.1. EUT description	3
1.2. Model(s) list	3
2. Test Information	4
2.1. EUT operation mode(s)	4
2.2. Special accessories and auxiliary equipment	4
2.3. Configuration of system under test	4
2.4. General test conditions	5
3. Test Result Summary	6
4. List of Test Equipment	7
5. Test Conditions and Results	8
5.1. Disturbance voltage at mains terminals	8
5.2. Radiated emission	11
6. Test set-up photo	14
7. Photo of the EUT	15

1. General Product Information

1.1.EUT description

Test item description	Phototherapy LED Comb
Model/Type reference	2103
Rating(s)	Input: DC 5 V, 1 A Power: 5 W Battery: DC 3.7 V, 1500mAh
Highest internal frequency F_x	<input checked="" type="checkbox"/> $F_x \leq 108$ MHz <input type="checkbox"/> 108 MHz $< F_x \leq 500$ MHz <input type="checkbox"/> 500 MHz $< F_x \leq 1$ GHz <input type="checkbox"/> $F_x > 1$ GHz
DC Line	<input type="checkbox"/> Shielded <input checked="" type="checkbox"/> Unshielded, <input checked="" type="checkbox"/> Detachable <input type="checkbox"/> Un-detachable <input type="checkbox"/> No applicable <input checked="" type="checkbox"/> Length: 0.38 m

1.2.Model(s) list

None.

2. Test Information

2.1.EUT operation mode(s)

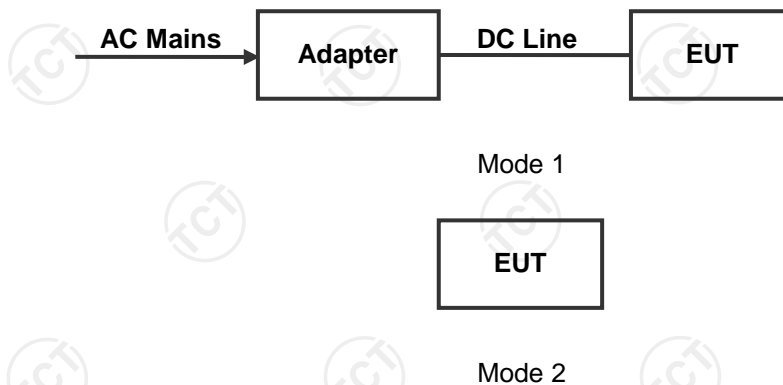
Mode #	Operating mode description	Test voltage
1	Charging	DC 5 V (Adapter Input AC 120 V/ 60 Hz)
2	Working	DC 3.7 V

Test worst operating mode	
Radiated emission	Mode 1
Remark: The worst measurement data and graphical presentation show in this report.	

2.2.Special accessories and auxiliary equipment

Product Type	Manufacturer	Model No.	Serial No.
Adapter	SAMSUNG	ETA0U82CBC	RT10206CS/AE

2.3.Configuration of system under test



(EUT: Phototherapy LED Comb)

2.4. General test conditions

Environmental reference conditions

The climatic conditions during the tests are within the limits specified by the manufacturer for the operation of the EUT and the test equipment.

The climatic conditions during the tests were within the following limits:

Temperature	Humidity	Atmospheric pressure
15 °C – 35 °C	30 % - 60 %	86 kPa – 106 kPa

If explicitly required in the basic standard or applied product standard the climatic values are recorded and documented separately in this test report.

Measurement uncertainties

Test Item	Uncertainty
Uncertainty for Disturbance voltage at the mains terminals	3.10 dB
Uncertainty for Radiated emission (30 MHz to 1 GHz)	4.56 dB
Uncertainty for Radiated emission (above 1 GHz)	4.22 dB

The overall measurement uncertainty of a measurement is defined as the range of which can be supposed that it contains the true value with a specified probability.

This probability is 95 % for the generally specified measurement uncertainty (so-called expanded measurement uncertainty).

The limits for emission measurements and the Test levels for immunity tests in the applied standards were defined taking into consideration the accuracy limits for measurement and testing equipment required by the Basic standards.

All measurement and test results of the EMC laboratory of SHENZHEN TONGCE TESTING LAB fulfil the requirements for measurement uncertainties according to the standards applied.

Decision rule for statement(s) of conformity is based on accuracy method specified in Clause 4.4.3 in IEC Guide 115:2021.

3. Test Result Summary

FCC 47 CFR Part 15 Subpart B	
Requirement – Test case	Verdict
Classification Class (<input type="checkbox"/> A <input checked="" type="checkbox"/> B)	—
Disturbance voltage at the mains terminals	Pass
Radiated emission	Pass
Remark:---	

Test case verdicts	
- Test case does not apply to the test object	N/A
- Test object does meet the requirement.....	P (Pass)
- Test object does not meet the requirement	F (Fail)

4. List of Test Equipment

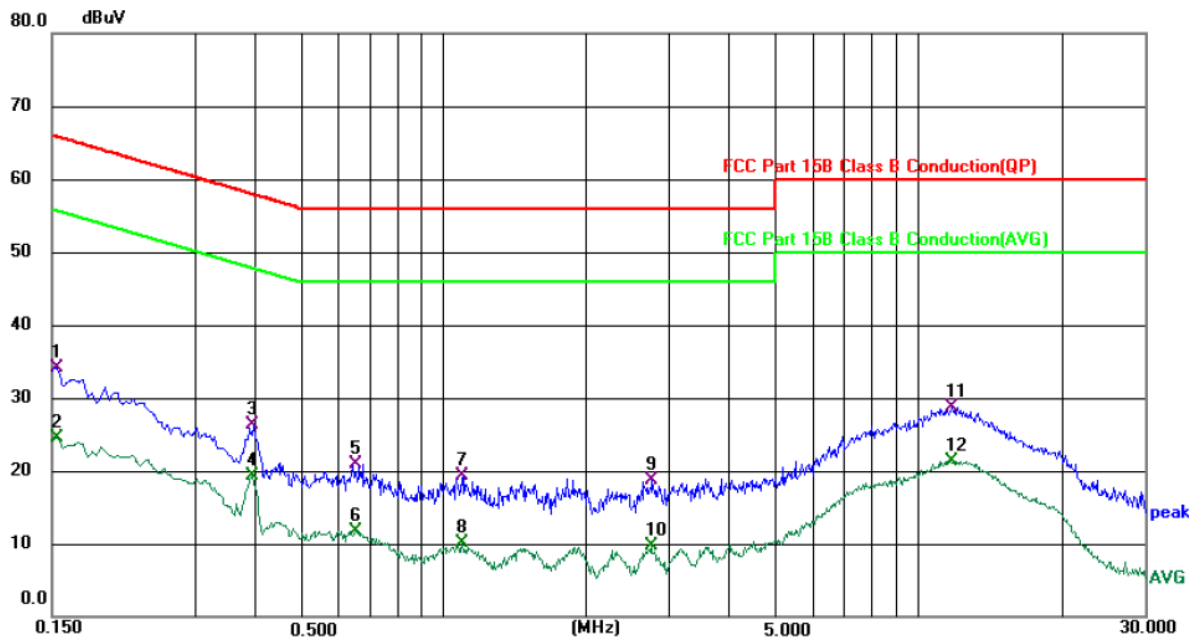
Equipment	Manufacturer	Model No.	Serial No.	Cal. Due
Disturbance voltage at mains terminals				
EMI Test Receiver	R&S	ESCI3	100898	2023/07/04
Line Impedance Stabilisation Network(LISN)	Schwarzbeck	NSLK 8126	8126453	2023/02/24
Attenuator	N/A	10dB	164080	2023/07/04
844 Shielded room	SKET	8m*4m*4m	CR4	2023/03/02
Test software	EZ EMC	EMEC-3A1	/	/
Radiated emission (30 MHz to 1 GHz)				
Broadband Antenna	Schwarzbeck	VULB 9168	01197	2023/03/06
EMI Test Receiver	R&S	ESCI7	100529	2023/02/24
Test software	EZ EMC	FA-03A2 RE+	/	/
3m Anechoic Chamber	SKET	9m*6m*6m	SA01	2023/01/25
Radiated emission (above 1 GHz)				
Horn Antenna	Schwarzbeck	BBHA 9120 D	02372	2023/03/06
Horn Antenna	Schwarzbeck	BBHA 9170	00956	2023/04/10
Signal Analyzer	R&S	FSQ40	200061	2023/07/04
Pre-amplifier	SKET	LNPA_0118G-45	SK2021012102	2023/02/24
Pre-amplifier	SKET	LNPA_1840G-50	SK20210920350 0	2023/02/24
3m Anechoic Chamber	SKET	9m*6m*6m	SA03	2023/01/25
Test software	EZ EMC	FA-03A2 RE+	/	/

5. Test Conditions and Results

5.1. Disturbance voltage at mains terminals

Test requirement	FCC 47 CFR Part 15 Subpart B		
Basic standard	ANSI C63.4: 2014		
Test frequency range.:	150 kHz to 30 MHz		
Limits.....:	Limits for Class A		
	Frequency (MHz)	dBμV Quasi-peak	dBμV Average
	0.15 to 0.5	79	66
	0.5 to 30	73	60
	Limits for Class B		
	Frequency (MHz)	dBμV Quasi-peak	dBμV Average
	0.15 to 0.5	66 to 56	56 to 46
	0.5 to 5	56	46
	5 to 30	60	50
	Test method.....:	The AMN placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane. This distance was between the closest points of the AMN and the EUT. All other units of the EUT and associated equipment were at least 0.8 m from the AMN. All power was connected to the system through Artificial Mains Network (AMN).	
Ambient temperature.:	26.8 °C		
Relative humidity	40 %		
Test location	2101 & 2201, Zhenchang Factory Renshan Industrial Zone, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, 518103, People's Republic of China		
Test model(s)	2103		
EUT operation mode.:	Mode 1		
Test results	Pass		
Remark.....:	/		

Measurement data and Graphical presentation of the result



Site 844 Shielding Room

Phase: **L1**

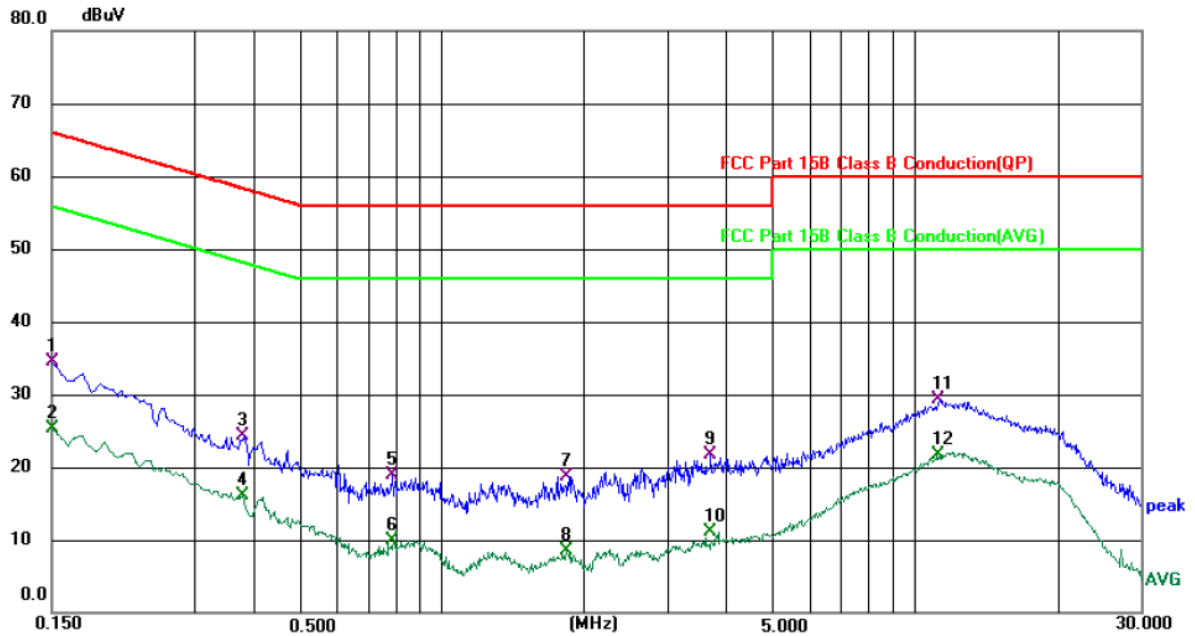
Temperature: 26.8 (°C)

Humidity: 40 %

Limit: FCC Part 15B Class B Conduction(QP)

Power: DC 5 V(Adapter Input AC 120 V/60 Hz)

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.1539	23.63	10.57	34.20	65.79	-31.59	QP	
2		0.1539	14.03	10.57	24.60	55.79	-31.19	AVG	
3		0.3940	16.10	10.24	26.34	57.98	-31.64	QP	
4		0.3940	8.99	10.24	19.23	47.98	-28.75	AVG	
5		0.6540	10.78	10.14	20.92	56.00	-35.08	QP	
6		0.6540	1.59	10.14	11.73	46.00	-34.27	AVG	
7		1.0940	9.08	10.13	19.21	56.00	-36.79	QP	
8		1.0940	-0.12	10.13	10.01	46.00	-35.99	AVG	
9		2.7380	8.58	10.08	18.66	56.00	-37.34	QP	
10		2.7380	-0.41	10.08	9.67	46.00	-36.33	AVG	
11		11.7500	18.47	10.27	28.74	60.00	-31.26	QP	
12	*	11.7500	11.05	10.27	21.32	50.00	-28.68	AVG	



Site 844 Shielding Room Phase: *N* Temperature: 26.8 (°C) Humidity: 40 %

Limit: FCC Part 15B Class B Conduction(QP) Power: DC 5 V(Adapter Input AC 120 V/60 Hz)

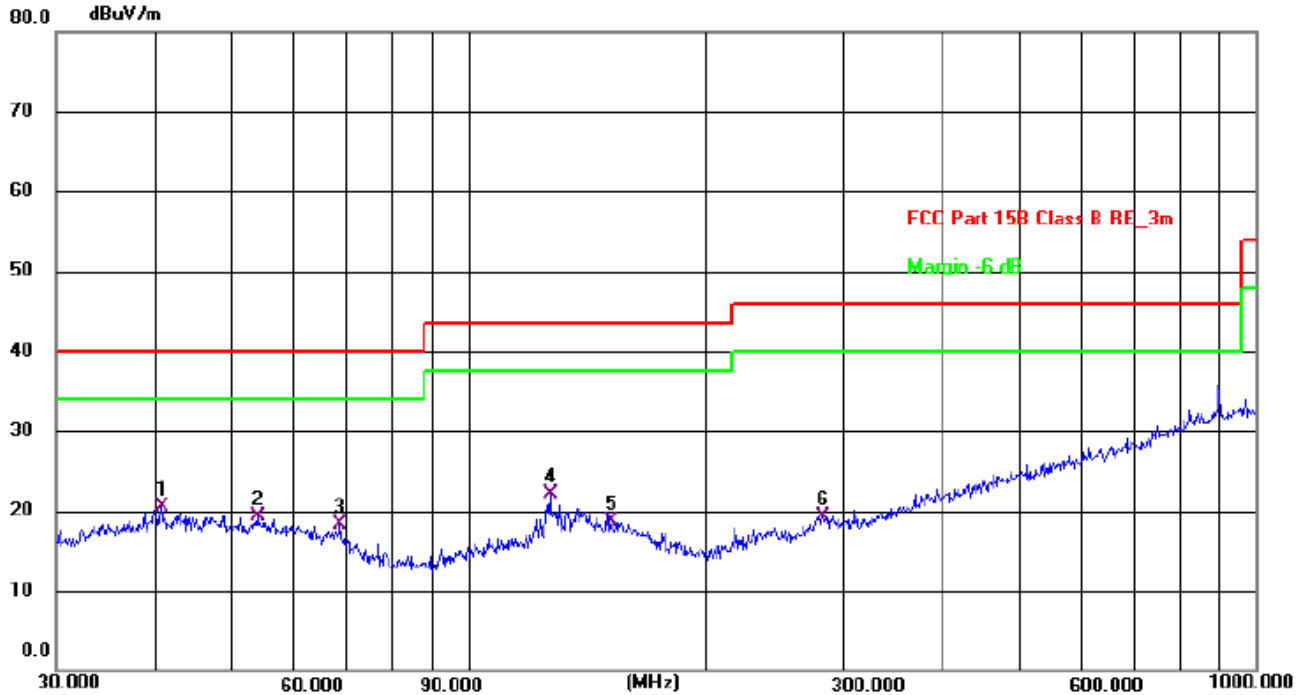
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.1500	24.02	10.48	34.50	66.00	-31.50	QP	
2		0.1500	14.87	10.48	25.35	56.00	-30.65	AVG	
3		0.3780	13.98	10.25	24.23	58.32	-34.09	QP	
4		0.3780	5.78	10.25	16.03	48.32	-32.29	AVG	
5		0.7900	8.70	10.14	18.84	56.00	-37.16	QP	
6		0.7900	-0.28	10.14	9.86	46.00	-36.14	AVG	
7		1.8300	8.57	10.16	18.73	56.00	-37.27	QP	
8		1.8300	-1.69	10.16	8.47	46.00	-37.53	AVG	
9		3.7179	11.44	10.19	21.63	56.00	-34.37	QP	
10		3.7179	0.85	10.19	11.04	46.00	-34.96	AVG	
11		11.1739	18.87	10.36	29.23	60.00	-30.77	QP	
12	*	11.1739	11.37	10.36	21.73	50.00	-28.27	AVG	



5.2. Radiated emission

Test requirement	FCC 47 CFR Part 15 Subpart B				
Basic standard	ANSI C63.4: 2014				
Test frequency range.:	30 MHz to 40 GHz				
Limits.....	Frequency (MHz)	3 m measurement distance			
		Quasi-peak (dB μ V/m)			
		Class A		Class B	
	30 to 88	49		40	
	88 to 216	53.5		43.5	
	216 to 960	56.4		46	
	960 to 1000	59.5		54	
	Frequency (MHz)	3 m measurement distance			
		Class A		Class B	
		Peak (dB μ V/m)	Average (dB μ V/m)	Peak (dB μ V/m)	Average (dB μ V/m)
Above 1000		79.5	59.5	74	54
Test method.....	Measurements were made in a 3-meter semi-anechoic chamber that complies to CISPR 16. Preliminary (peak) measurements were performed at an antenna to EUT separation distance of 3 meters with the receive antenna located at 1 to 4-meter height in both horizontal and vertical polarities. Final measurements (quasi-peak) were then performed by rotating the EUT 360° and adjusting the receive antenna height from 1 to 4-meters. All frequencies were investigated in both horizontal and vertical antenna polarity, where applicable.				
Ambient temperature.:	25.7 °C				
Relative humidity	54 %				
Test location	2101 & 2201, Zhenchang Factory Renshan Industrial Zone, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, 518103, People's Republic of China				
Test model(s)	2103				
EUT operation mode..:	Mode 1				
Test results	Pass				
Remark.....	/				

Measurement data and Graphical presentation of the result



Site #2 3m Anechoic Chamber

Polarization: *Horizontal*

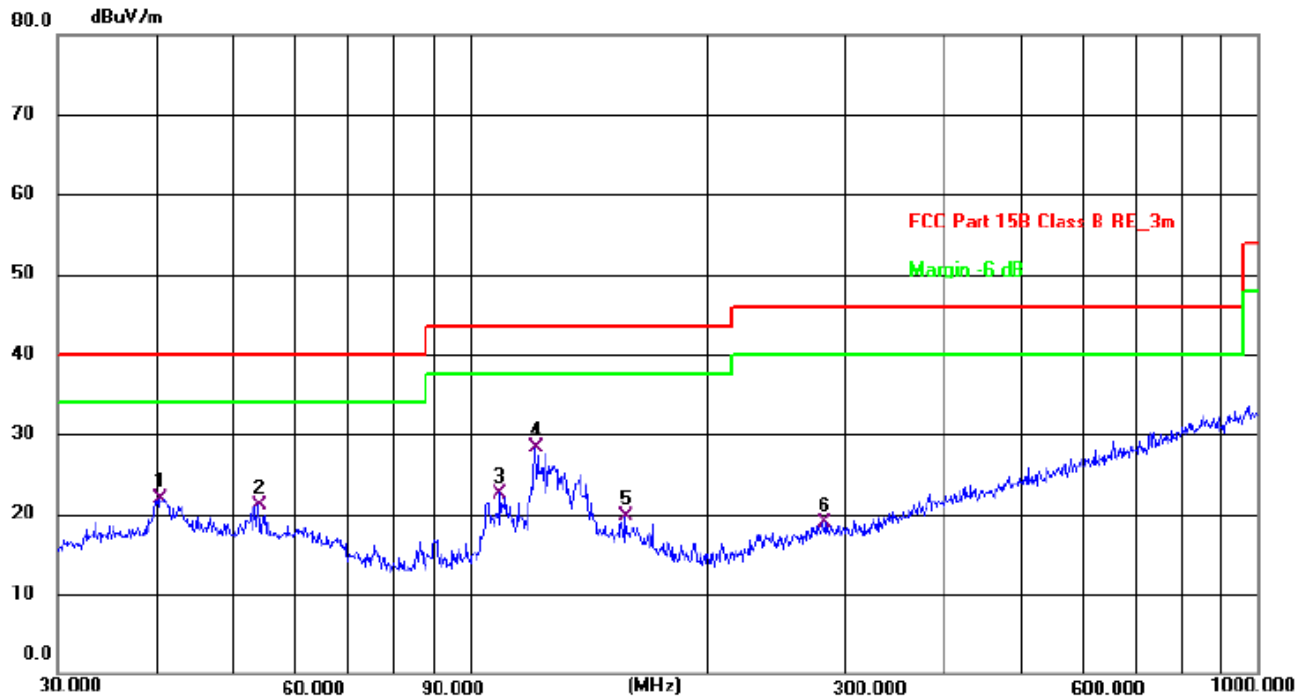
Temperature: 25.7(C)

Humidity: 54 %

Limit: FCC Part 15B Class B RE_3m

Power: DC 5 V(Adapter Input AC 120 V/60 Hz)

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1 *	40.7016	6.58	14.01	20.59	40.00	-19.41	QP	P	
2	54.0710	5.82	13.51	19.33	40.00	-20.67	QP	P	
3	68.8721	6.97	11.31	18.28	40.00	-21.72	QP	P	
4	127.2176	9.66	12.43	22.09	43.50	-21.41	QP	P	
5	152.1297	5.40	13.35	18.75	43.50	-24.75	QP	P	
6	281.9945	5.16	14.10	19.26	46.00	-26.74	QP	P	



Site #2 3m Anechoic Chamber

Polarization: **Vertical**

Temperature: 25.7(C)

Humidity: 54 %

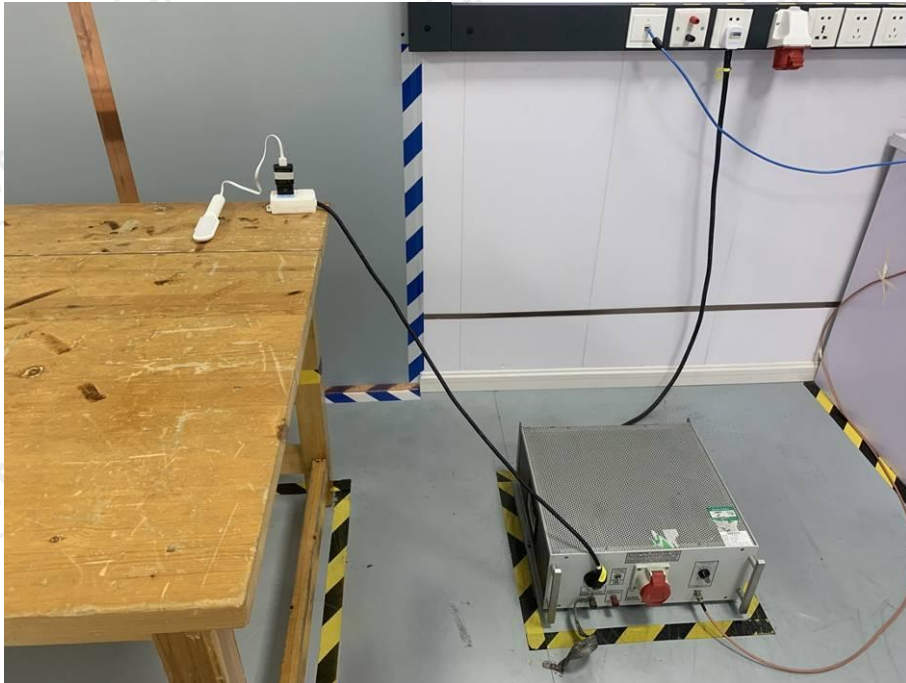
Limit: FCC Part 15B Class B RE_3m

Power: DC 5 V(Adapter Input AC 120 V/60 Hz)

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	40.4172	7.92	14.02	21.94	40.00	-18.06	QP	P	
2	53.8818	7.62	13.53	21.15	40.00	-18.85	QP	P	
3	109.4116	11.45	11.15	22.60	43.50	-20.90	QP	P	
4 *	121.1231	16.17	12.05	28.22	43.50	-15.28	QP	P	
5	157.5588	6.21	13.40	19.61	43.50	-23.89	QP	P	
6	281.0075	4.74	14.12	18.86	46.00	-27.14	QP	P	

6. Test set-up photo

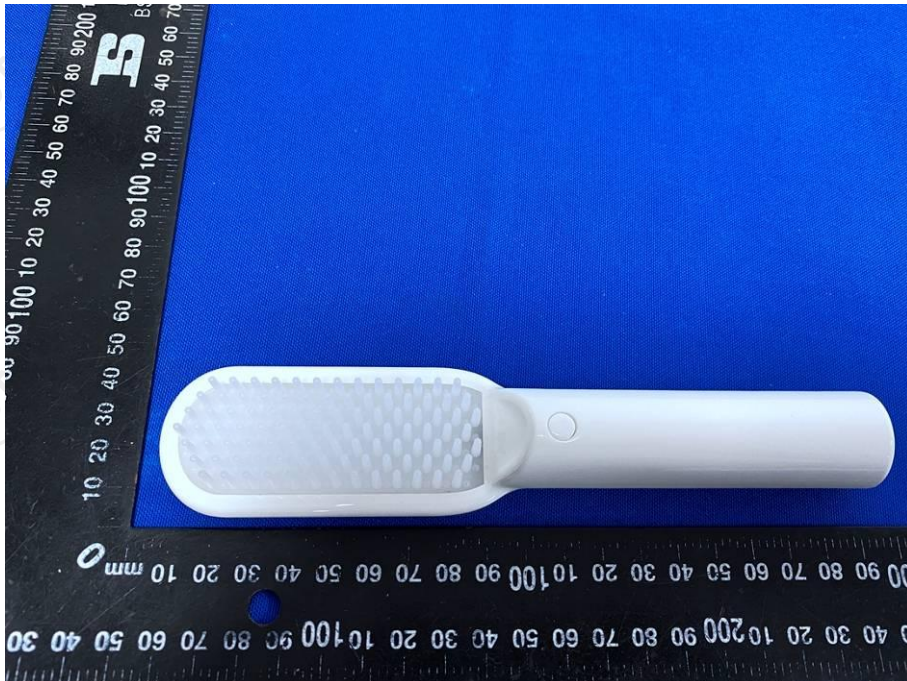
Disturbance voltage at the mains terminals Test View

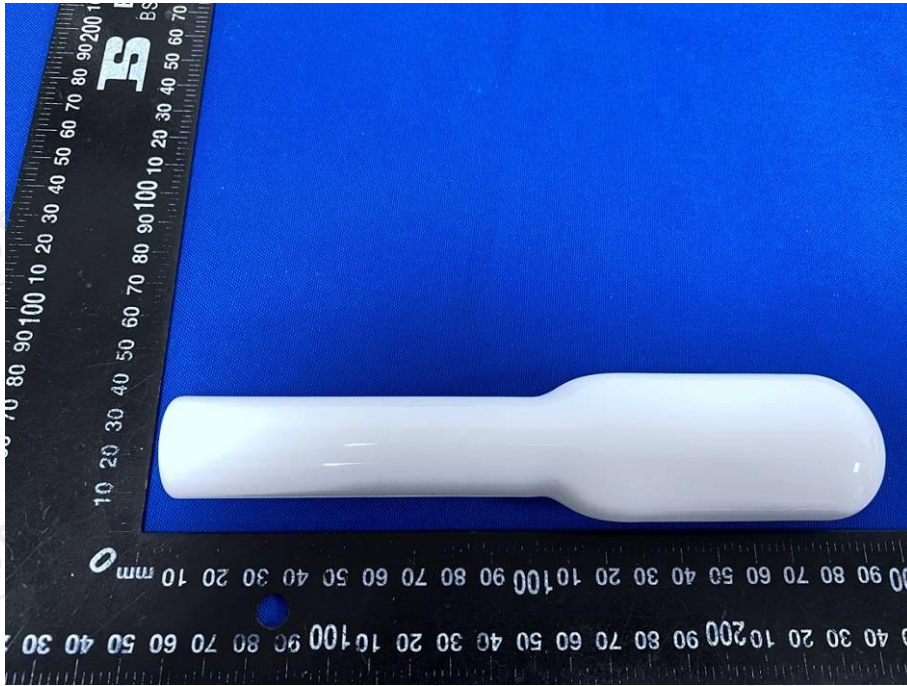


Radiated emission (30 MHz to 1 GHz) Test View

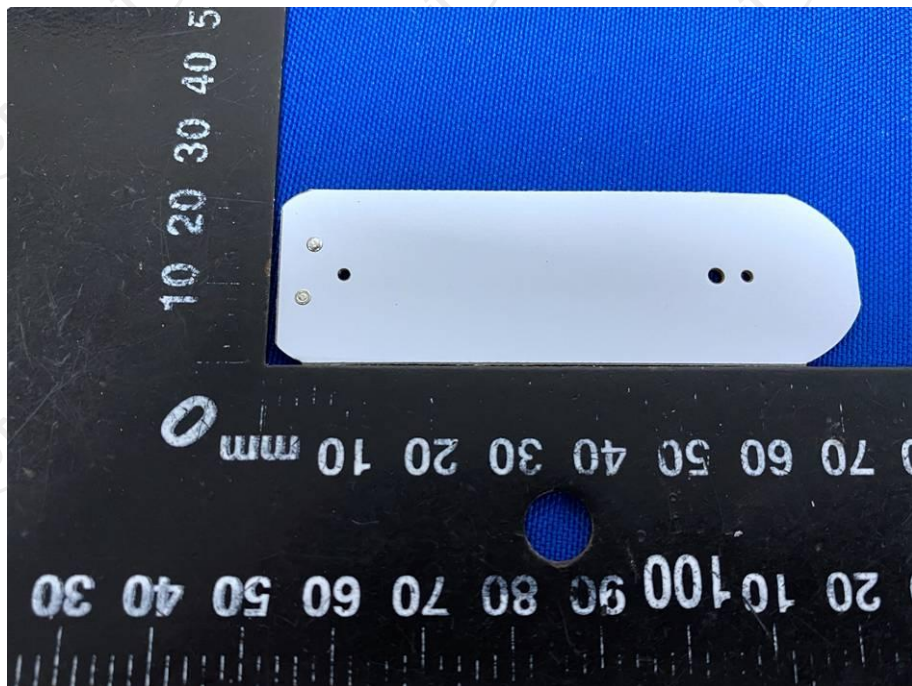
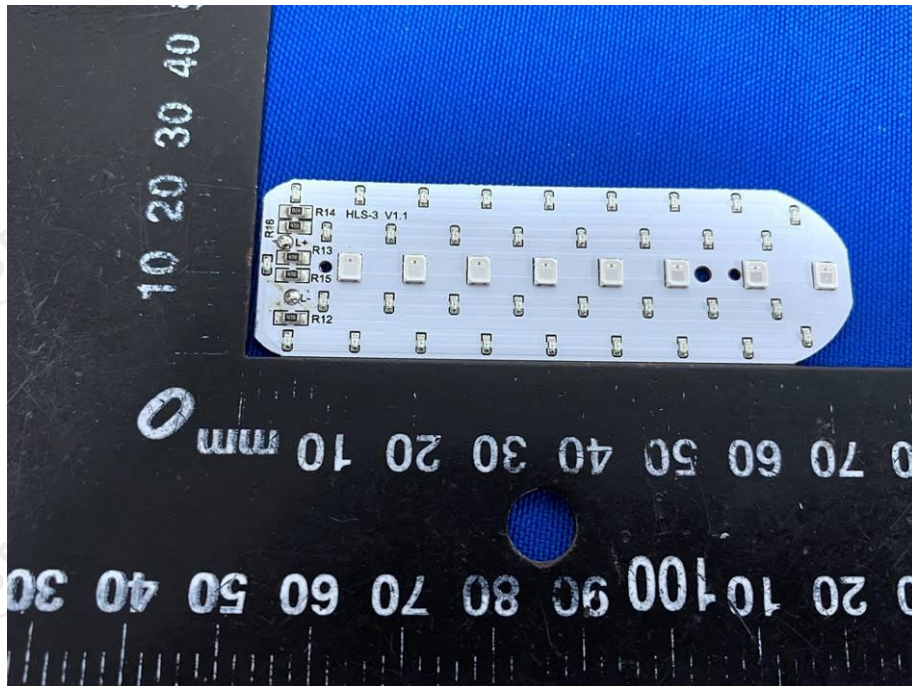


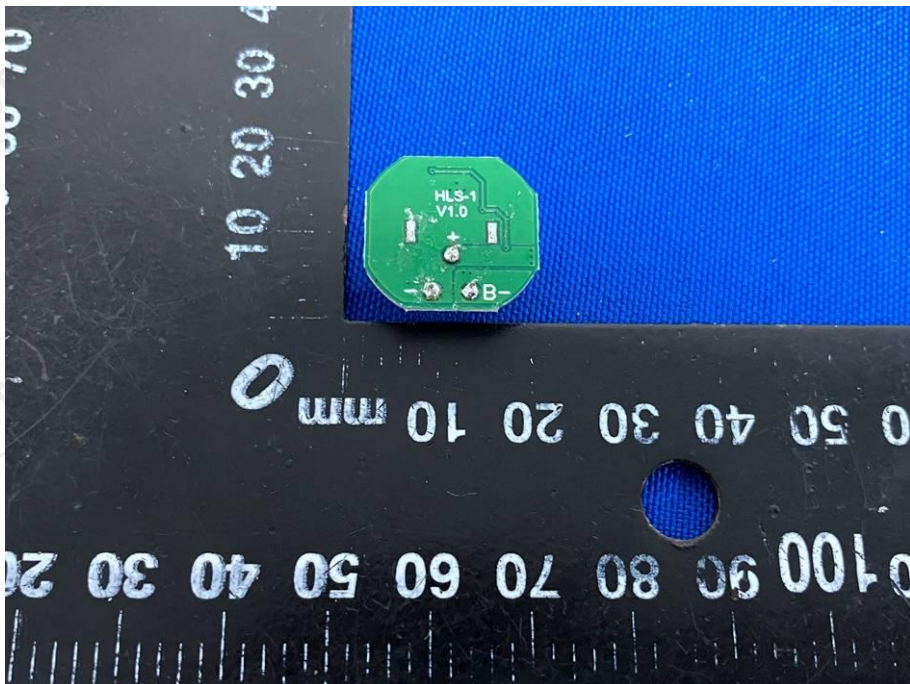
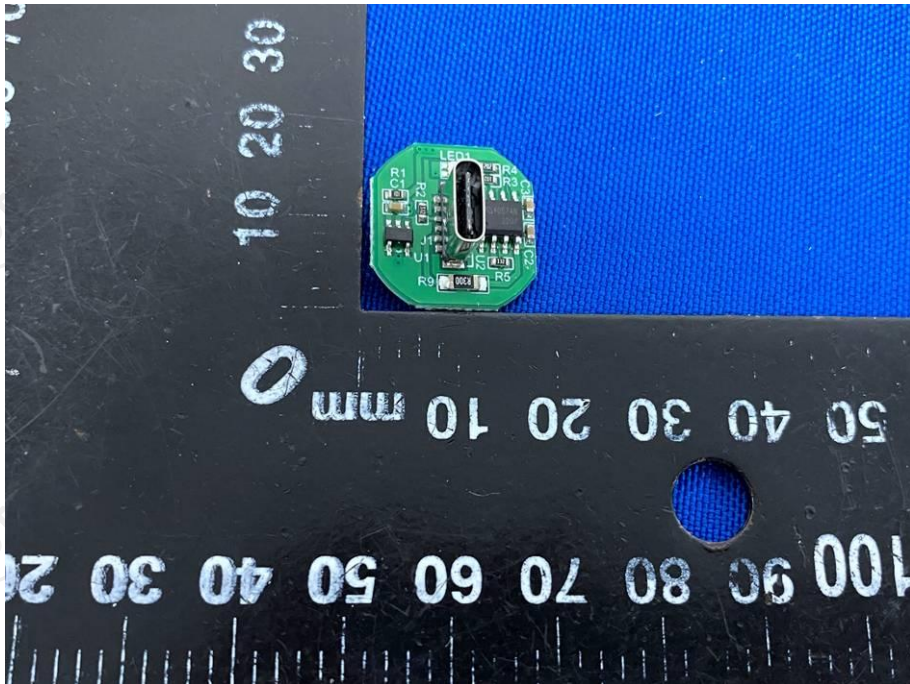
7. Photo of the EUT

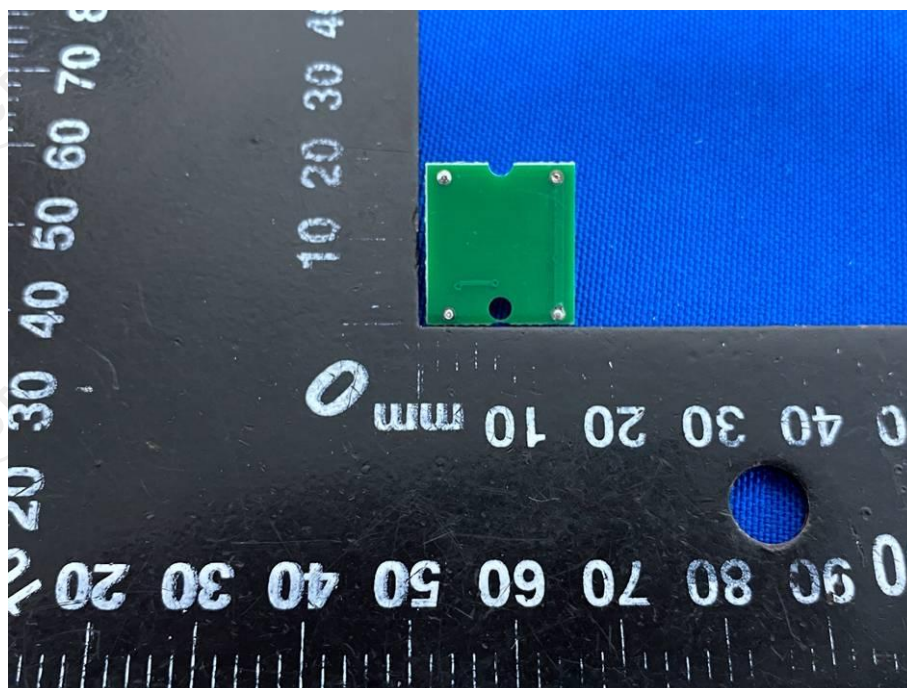
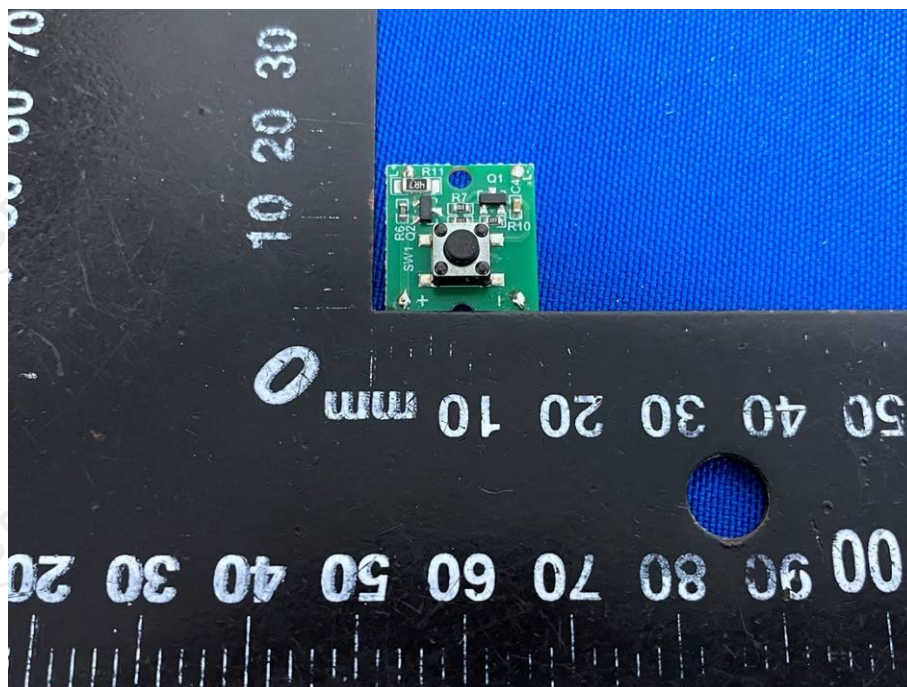


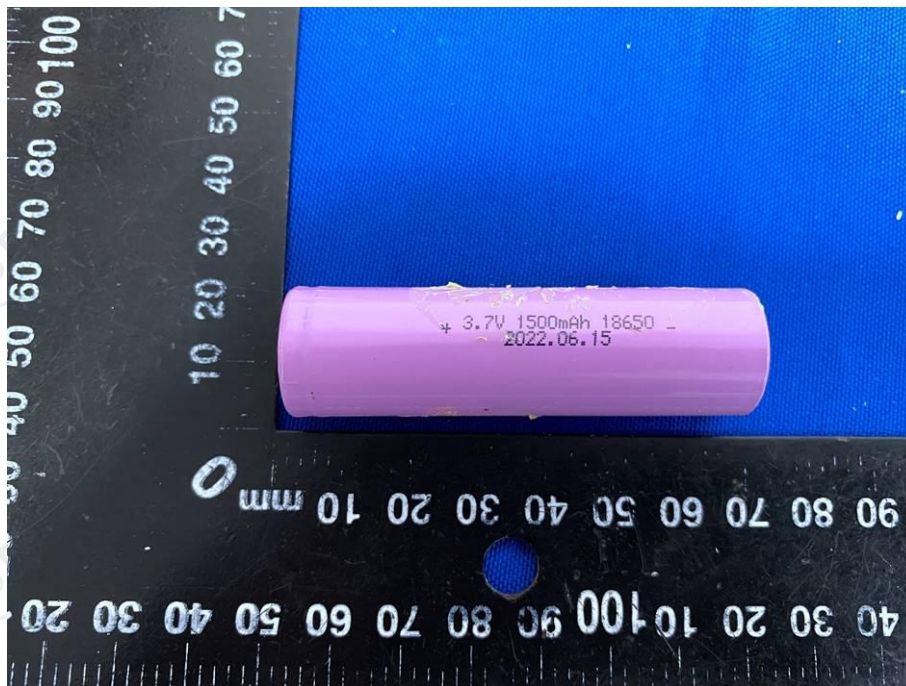












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