

EMC Test Report

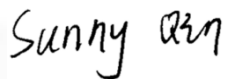
For

Applicant name: Shiny Industrial Co.,Ltd
Address: 4F,Juneng Technology Park,Buwei Blvd 23,Shigu Community ,Tangxia Town,Dongguan 523729, China
EUT name: Audio Greeting Card
Brand name: N/A
Model number: Audio Greeting Card
Series model number: Greeting card, Recordable card, Sound and/or light card, Pop up card

Issued By

Company name: BTF Testing Lab (Shenzhen) Co., Ltd.
Address: F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China
Report number: BTF241025E00601
Test standards: FCC CFR Title 47 Part 15 Subpart B
Test conclusion: Pass
Date of sample receipt: 2024-10-25
Test date: 2024-10-26 to 2024-10-29
Date of issue: 2024-10-29

Prepared by:



Sunny Qin / Project engineer

Approved by:



Ryan.C / EMC Manager

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Revision History		
Version	Issue date	Revisions content
R_V0	2024-10-29	Original
<i>Note:</i> <i>Once the revision has been made, then previous versions reports are invalid.</i>		

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1 Introduction

1.1 Laboratory Location

Test location:	BTF Testing Lab (Shenzhen) Co., Ltd.
Address:	F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China
Description:	All measurement facilities used to collect the measurement data are located at F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China
Phone number:	+86-0755-23146130
Fax number:	+86-0755-23146130

1.2 Laboratory Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **FCC - Designation No.: CN1330**
BTF Testing Lab (Shenzhen) Co., Ltd. has been accredited as a testing laboratory by FCC (Federal Communications Commission). The test firm Registration No. is 518915.
- **ISED – CAB identifier.: CN0135**
The 3m Semi-anechoic chamber of BTF Testing Lab (Shenzhen) Co., Ltd. has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 27844.
- **CNAS - Registration No.: CNAS L17568**
BTF Testing Lab (Shenzhen) Co., Ltd. is accredited to ISO/IEC 17025:2017 General Requirements for the Competence of Testing and Calibration laboratories for the competence of testing. The Registration No. is CNAS L17568.
- **A2LA - Registration No.: 6660.01**
BTF Testing Lab (Shenzhen) Co., Ltd. is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories.

1.3 Announcement

- (1) The test report reference to the report template version v0.
- (2) The test report is invalid if not marked with the signatures of the persons responsible for preparing, reviewing and approving the test report.
- (3) The test report is invalid if there is any evidence and/or falsification.
- (4) This document may not be altered or revised in any way unless done so by BTF and all revisions are duly noted in the revisions section.
- (5) Content of the test report, in part or in full, cannot be used for publicity and/or promotional purposes without prior written approval from the laboratory.
- (6) The laboratory is only responsible for the data released by the laboratory, except for the part provided by the applicant.

2 Product Information

2.1 Application Information

Company name:	Shiny Industrial Co.,Ltd
Address:	4F,Juneng Technology Park,Buwei Blvd 23,Shigu Community ,Tangxia Town,Dongguan 523729, China

2.2 Manufacturer Information

Company name:	Dongguan Hengsheng Creative Technology Co., Ltd
Address:	4F,Juneng Technology Park,Buwei Blvd 23,Shigu Community ,Tangxia Town,Dongguan 523729, China

2.3 Factory Information

Company name:	Dongguan Hengsheng Creative Technology Co., Ltd
Address:	4F,Juneng Technology Park,Buwei Blvd 23,Shigu Community ,Tangxia Town,Dongguan 523729, China

2.4 General Description of Equipment under Test (EUT)

EUT name:	Audio Greeting Card
Under test model name:	Audio Greeting Card
Series model name:	Greeting card, Recordable card, Sound and/or light card, Pop up card
Description of model name differentiation:	Only the model name is different.
Power supply:	DC 4.5V

3 Test Information

3.1 Test Standards

Identity	Document Title
FCC CFR Title 47 Part 15 Subpart B	Unintentional Radiators
ANSI C63.4a-2017	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

3.2 Summary of Test

Clauses	Test Items	Result
§ 15.107	Conducted emission	N/A
§ 15.109	Radiated emission	Pass

Remark:

Pass: Meet the requirements.

N/A: Not applicable, the device is powered by battery.

3.3 Uncertainty of Test

Measurement	Value
Conducted Emission for LISN (9kHz ~ 150kHz)	±2.97 dB
Conducted Emission for LISN (150kHz ~ 30MHz)	±2.45 dB
Radiated Emission (30MHz ~ 1GHz)	±4.80 dB
Radiated Emission (1GHz ~ 18GHz)	±5.25 dB

The following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

3.4 Additions to, deviations, or exclusions from the method

None

3.5 Test Auxiliary Equipment

The EUT was tested as an independent device.

3.6 Test Equipment List

Radiated Emission Test					
Test Equipment	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
EMI Receiver	Rohde & Schwarz	ESCI7	101032	2023/11/16	2024/11/15
Signal Analyzer	Rohde & Schwarz	FSQ40	100010	2023/11/16	2024/11/15
Log periodic antenna	Schwarzbeck	VULB 9168	01328	2023/11/13	2024/11/12
Preamplifier (30MHz ~ 1GHz)	Schwarzbeck	BBV9744	00246	2023/11/13	2024/11/12
Horn Antenna	Schwarzbeck	BBHA9120D	2597	2023/11/13	2024/11/12
Preamplifier (1GHz ~ 18GHz)	Schwarzbeck	BBV9718D	00008	2023/11/13	2024/11/12
Test Software	Frad	EZ EMC	Version: FA-03A2 RE+		

Conducted Emission Test					
Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
EMI Receiver	Rohde & Schwarz	ESCI3	101422	2023/11/16	2024/11/15
V-LISN	Schwarzbeck	NSLK 8127	01073	2023/11/16	2024/11/15
Coaxial Switcher	Schwarzbeck	CX210	CX210	2023/11/16	2024/11/15
Pulse Limiter	Schwarzbeck	VTSD 9561-F	00953	2023/11/16	2024/11/15
Test Software	Frad	EZ EMC	Version: EMC-CON 3A1.1+		

4 Test Configuration

4.1 Environment Condition

Selected values during tests			
Temperature	Test voltage	Relative humidity	Ambient pressure
20°C to 25°C	DC 4.5V	30% to 60%	100 kPa to 102 kPa

4.2 Test mode

TM 1:	Normal working		
Test items		Test mode	Test By
Conducted Emission		N/A	N/A
Radiated Emission		TM 1	Colin Wu

5 Test Items

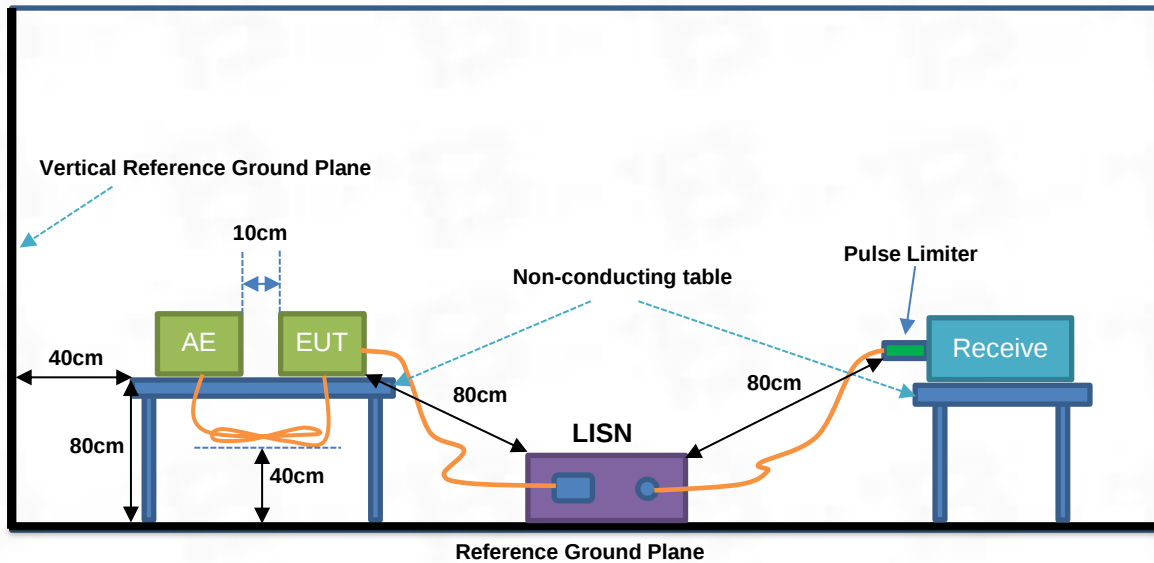
5.1 Conducted Emission

5.1.1 Limit

Frequency range (MHz)	Class A		Class B	
	Quasi-peak (dB μ V)	Average (dB μ V)	Quasi-peak (dB μ V)	Average (dB μ V)
0.15 - 0.50	79	66	66-56*	56-46*
0.50 - 5	73	60	56	46
5 - 30			60	50

* Decreases with the logarithm of the frequency.

5.1.2 Test Setup



5.1.3 Test Procedures

The EUT is connected to the power mains through a LISN which provides 50 Ω /50 μ H of coupling impedance for the measuring instrument. The test frequency range is from 150 kHz to 30 MHz. The maximum conducted interference is searched using Peak (PK), Quasi-peak (QP) and Average (AV) detectors; the emission levels that are more than the AV and QP limits, and that have narrow margins from the AV and QP limits will be re-measured with AV and QP detectors. Tests for both L phase and N phase lines of the power mains connected to the EUT are performed.

5.1.4 Test Result

Not applicable, this device is powered by battery.

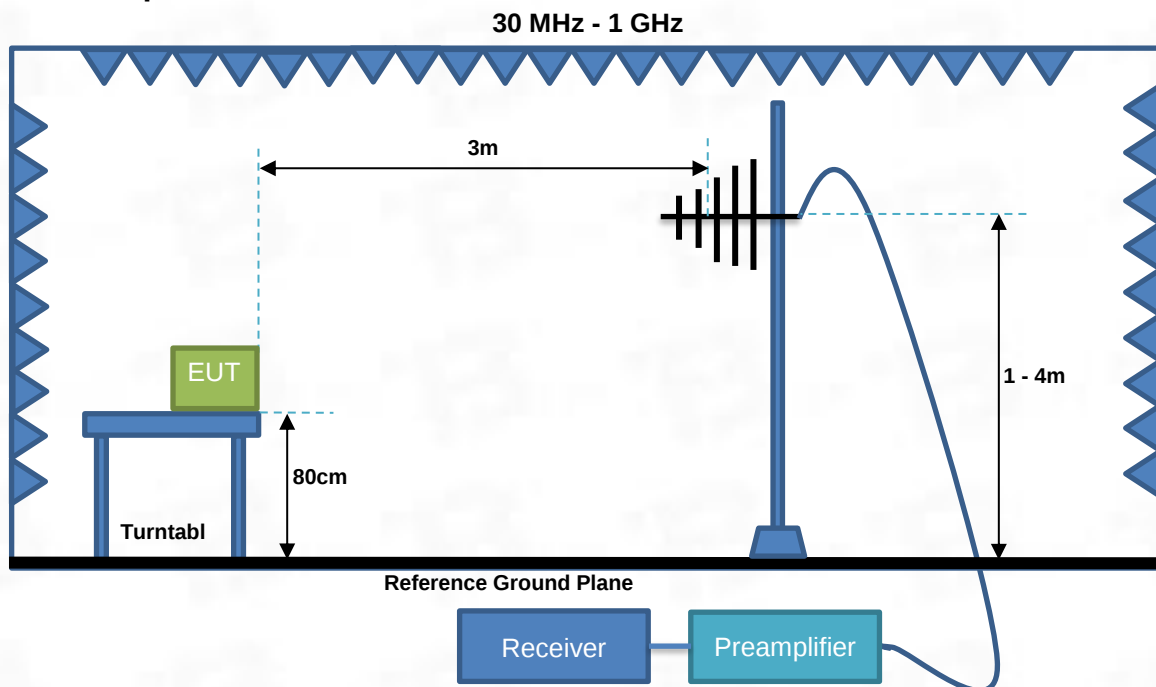
5.2 Radiation Emission

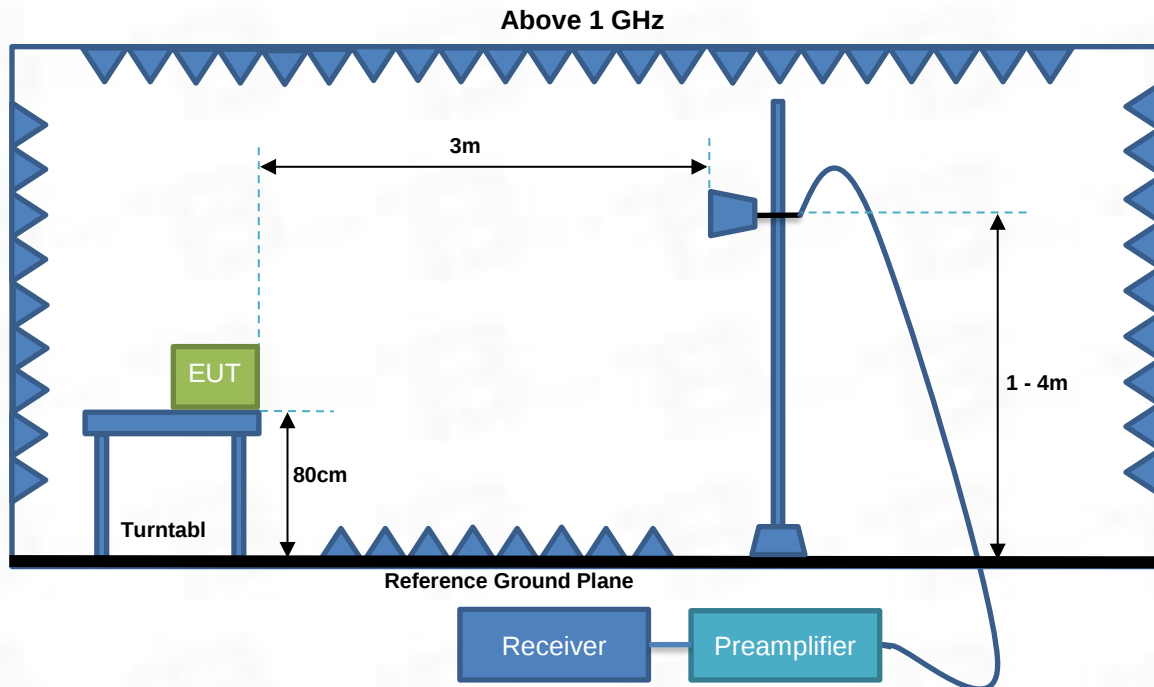
5.2.1 Limit

Frequency range (MHz)	Class A Distance At 3 m	Class B Distance At 3 m
	Quasi-Peak Limit (dB μ V/m)	Quasi-Peak Limit (dB μ V/m)
30 - 88	49.0	40.0
88 - 216	53.5	43.5
216 - 960	56.0	46.0
960 - 1000	60.0	54.0

Frequency range (MHz)	Class A Distance At 3 m		Class B Distance At 3 m	
	Peak Limit (dB μ V/m)	Average Limit (dB μ V/m)	Peak Limit (dB μ V/m)	Average Limit (dB μ V/m)
Above 1000	80	60	74	54

5.2.2 Test Setup



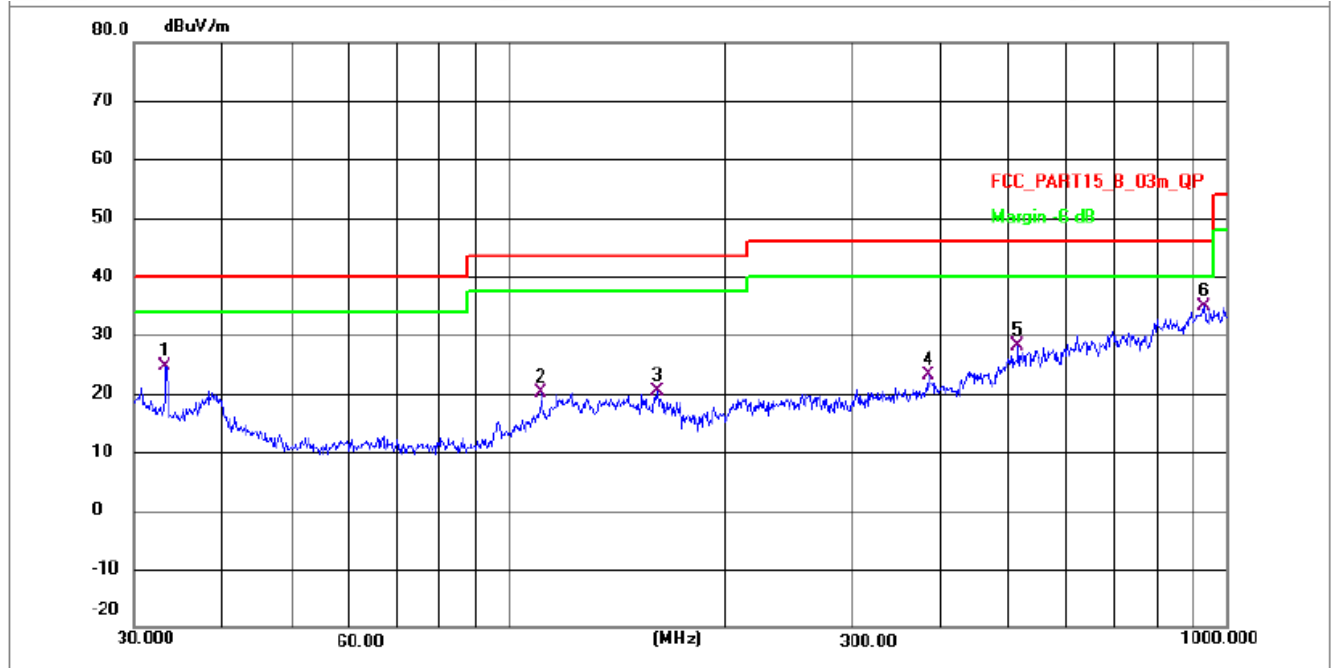


5.2.3 Test Procedures

1. The EUT was placed on the tabletop of a rotating table 0.8 m the ground at a 3 m semi anechoic chamber. The measurement distance from the EUT to the receiving antenna is 3 m.
2. EUT works in each mode of operation that needs to be tested. The highest signal levels relative to the limit shall be determined by rotating the EUT from 0° to 360° and with varying the measurement antenna height between 1 m and 4 m in vertical and horizontal polarizations.
3. Open the test software to control the test antenna and test turntable. Perform the test, save the test results, and export the test data.

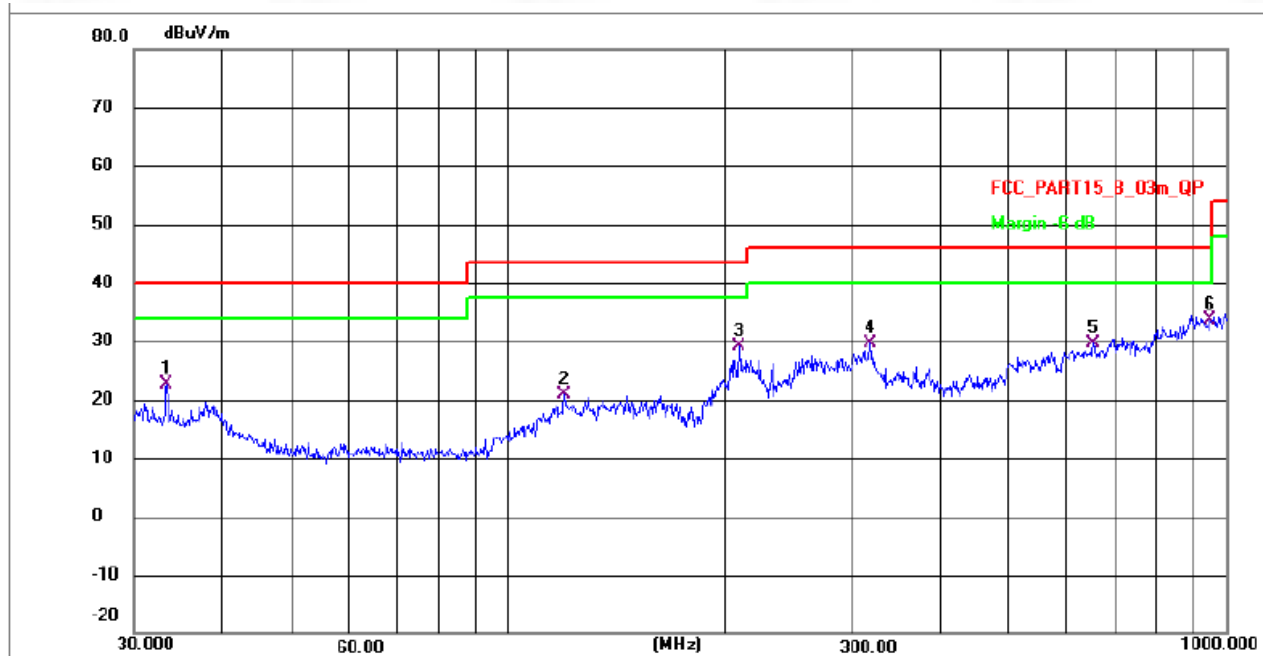
5.2.4 Test Result

Test antenna polarization: Vertical (30 MHz to 1 GHz)



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	33.2694	34.38	-9.68	24.70	40.00	-15.30	QP	P
2	111.1517	42.48	-22.37	20.11	43.50	-23.39	QP	P
3	161.4740	42.16	-21.90	20.26	43.50	-23.24	QP	P
4	385.2804	43.13	-19.94	23.19	46.00	-22.81	QP	P
5	513.6331	47.01	-18.90	28.11	46.00	-17.89	QP	P
6 *	930.6384	50.85	-16.03	34.82	46.00	-11.18	QP	P

Test antenna polarization: Horizontal (30 MHz to 1 GHz)



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	33.3863	32.37	-9.68	22.69	40.00	-17.31	QP	P
2	119.4360	43.06	-22.29	20.77	43.50	-22.73	QP	P
3	209.6802	50.65	-21.44	29.21	43.50	-14.29	QP	P
4	318.8170	50.14	-20.47	29.67	46.00	-16.33	QP	P
5	651.9417	47.58	-17.95	29.63	46.00	-16.37	QP	P
6 *	945.4400	49.66	-15.94	33.72	46.00	-12.28	QP	P

Test antenna polarization: Vertical (Above 1 GHz) and Horizontal (Above 1 GHz)

The highest frequency generated or used in the EUT is below 108MHz, hence the upper frequency of this test is 1GHz.

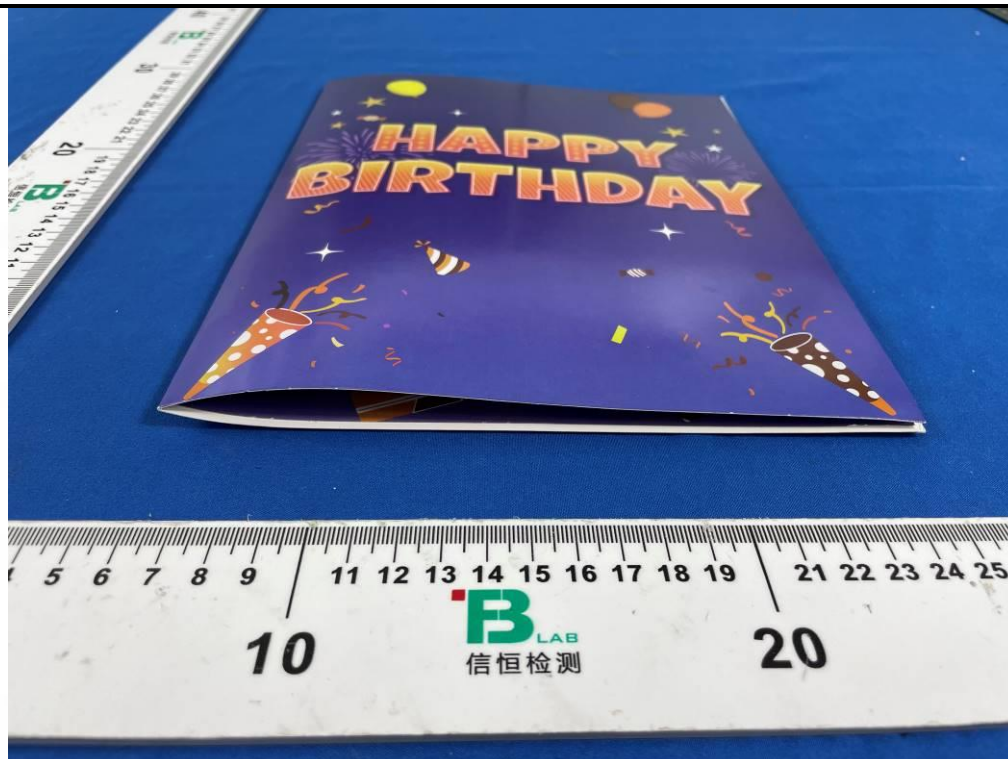
6 Test Setup Photos

Radiated Emission Test

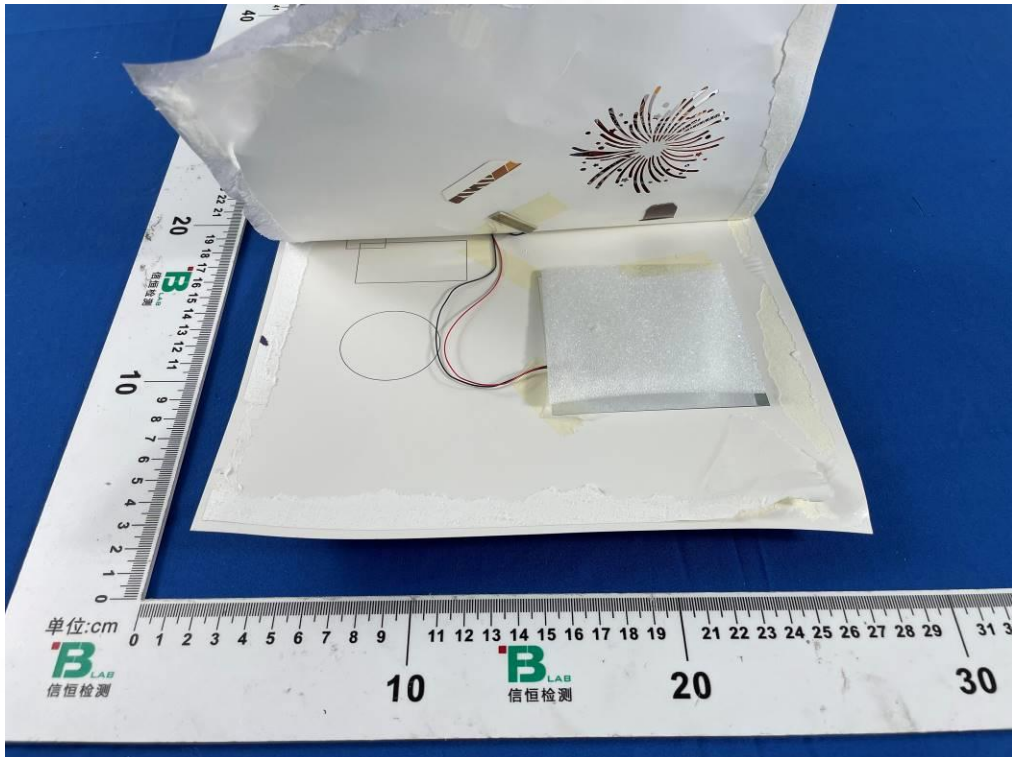
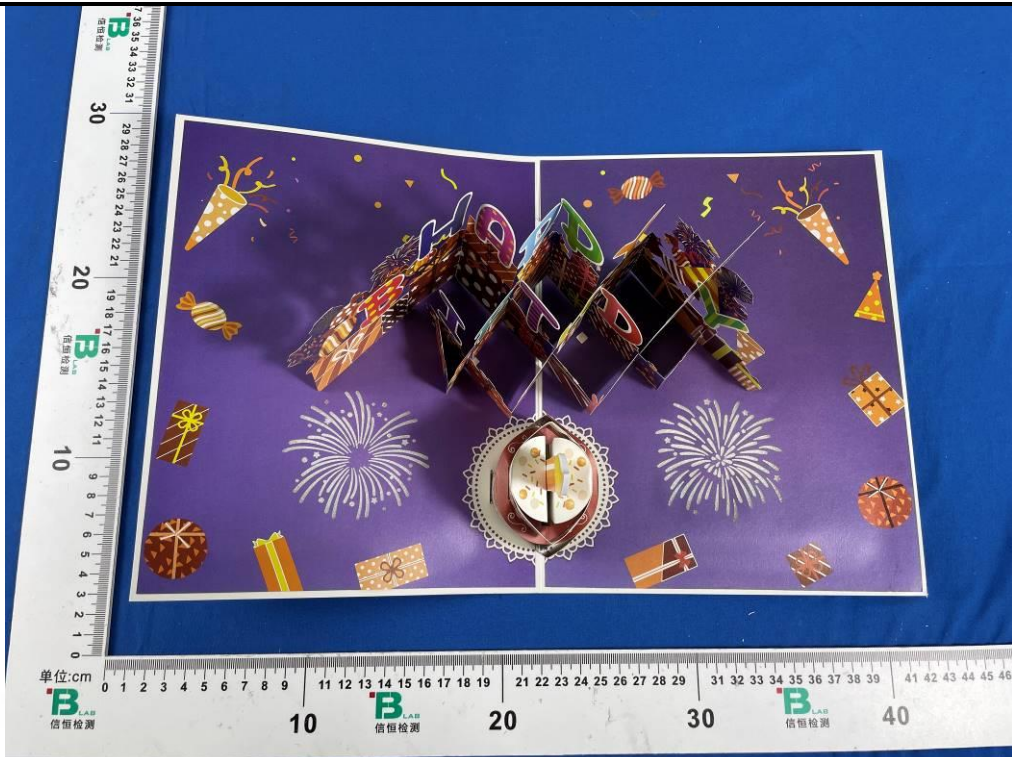


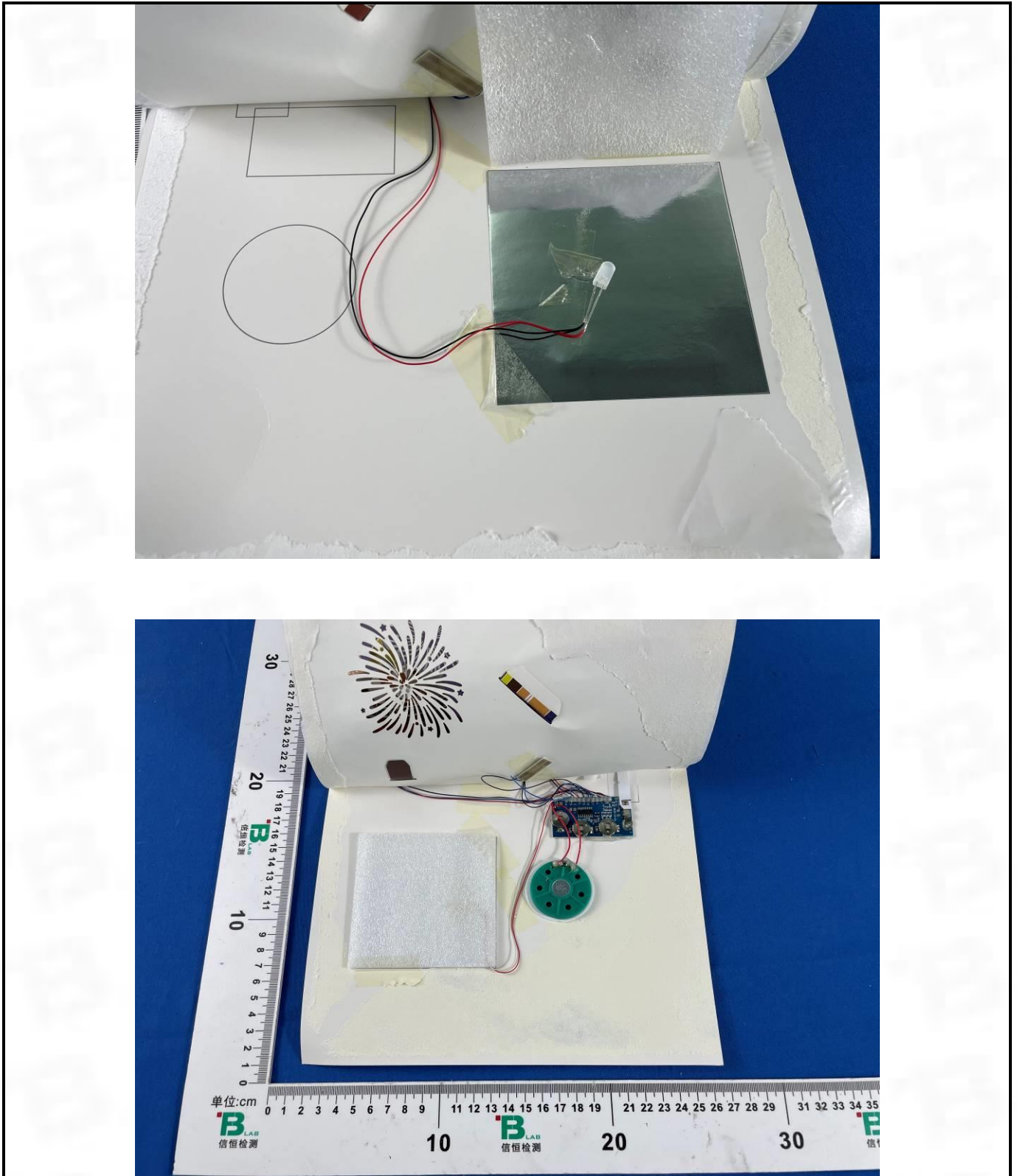
7 EUT Constructional Details (EUT Photos)

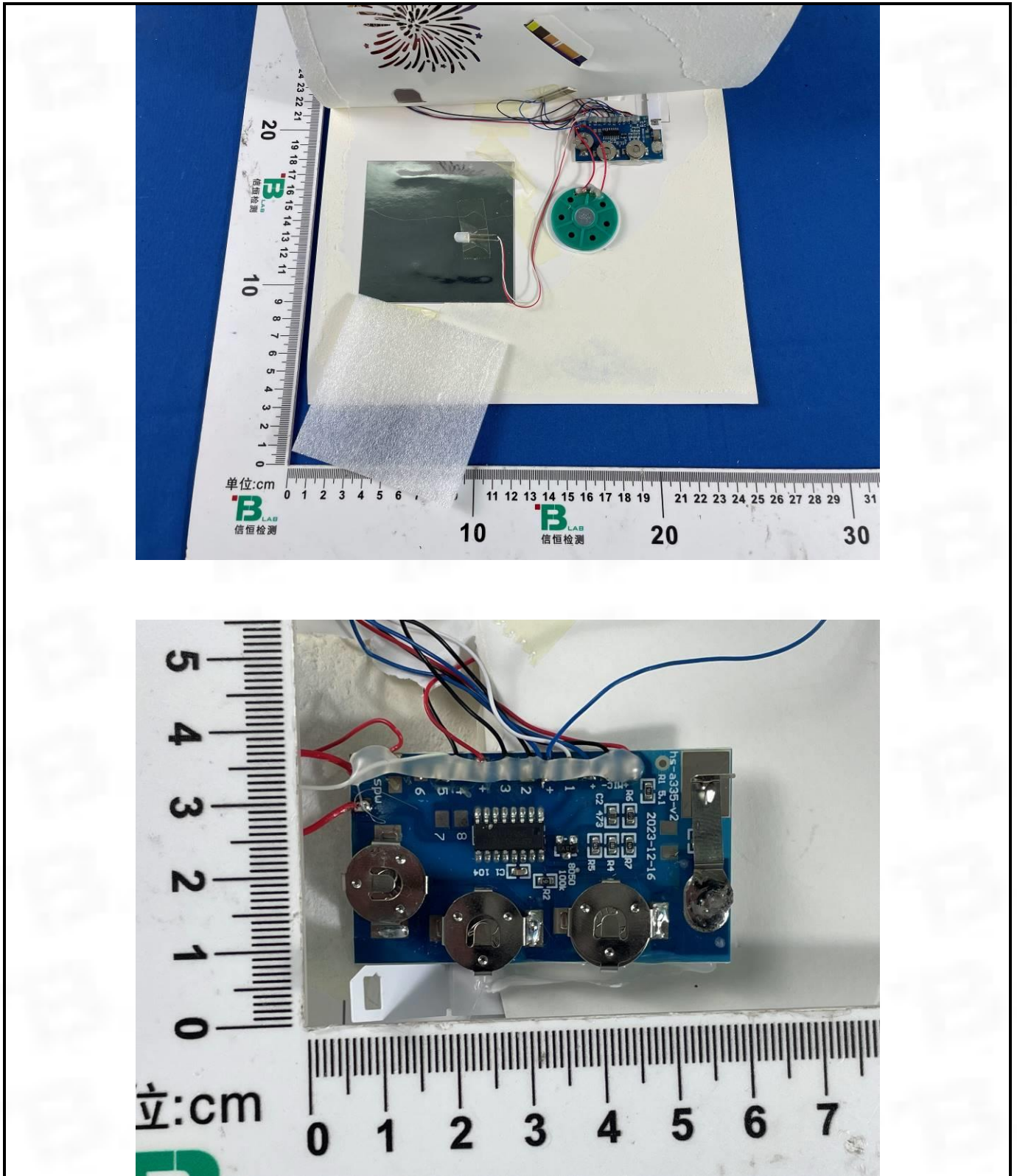


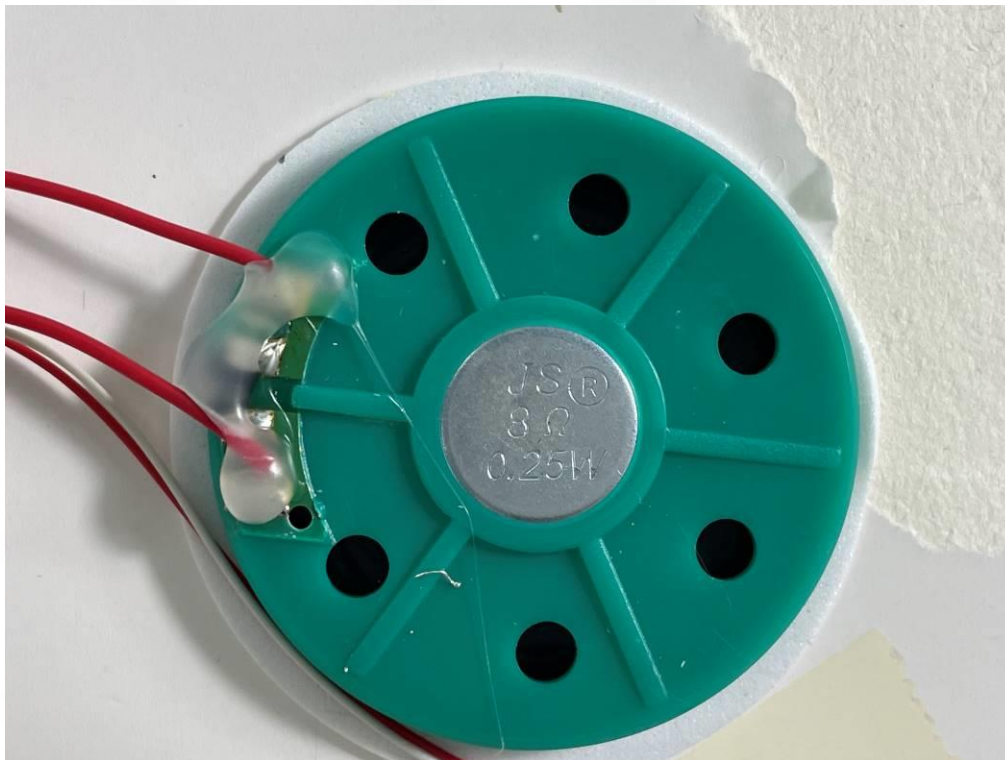
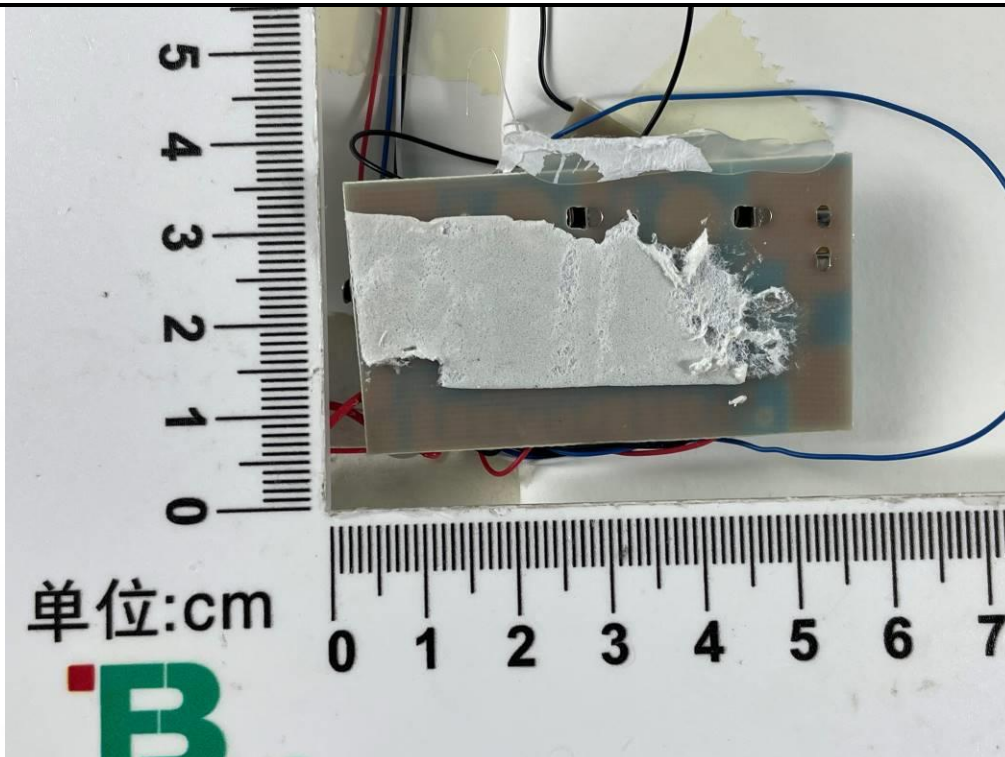














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