



SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.

SHEM-TRF-001 Rev. 02 Sep01, 2023

Report No.: SHEM241100716401

Page: 1 of 23

TEST REPORT

Application No.: SHEM2411007164HS
Applicant: Pet Gravity (Hangzhou) Technology Co., Ltd.
Address of Applicant: No.17-1 Chuxin Road, Gongshu District, Hangzhou, China
Manufacturer: Pet Gravity (Hangzhou) Technology Co., Ltd.
Address of Manufacturer: No.17-1 Chuxin Road, Gongshu District, Hangzhou, China
Factory: Pet Gravity (Hangzhou) Technology Co., Ltd.
Address of Factory: No.17-1 Chuxin Road, Gongshu District, Hangzhou, China
Equipment Under Test (EUT):
EUT Name: Flapping Wings Duck
Model No.: PG-CT071
Trade Mark: Petgravity
Standard(s) : EN IEC 55014-1: 2021
EN IEC 55014-2: 2021
Date of Receipt: 2024-11-11
Date of Test: 2024-11-12 to 2024-11-15
Date of Issue: 2024-11-19

Test Result:

Pass*

* In the configuration tested, the EUT complied with the standards specified above.

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Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.



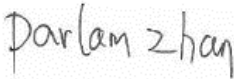
SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.

SHEM-TRF-001 Rev. 02 Sep01, 2023

Report No.: SHEM241100716401

Page: 2 of 23

Revision Record			
Version	Description	Date	Remark
00	Original	2024-11-19	/

Authorized for issue by:				
Tested By				
		Leo Xu / Project Engineer		
Approved By				
		Parlam Zhan / Reviewer		

2 Test Summary

Emission Part				
Item	Standard	Method	Requirement	Result
Radiated Emissions (30MHz-1GHz)	EN IEC 55014-1: 2021	CISPR 16-2-3	Table 9	Pass

Immunity Part				
Item	Standard	Method	Requirement	Result
Electrostatic Discharge	EN IEC 55014-2: 2021	EN 61000-4-2:2009	4kV Contact Discharge, 8kV Air Discharge	Pass
Radiated Immunity (80MHz-1GHz)		EN IEC 61000-4-3: 2020	3V/m, 80%, 1kHz Amp. Mod.	Pass



SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.

SHEM-TRF-001 Rev. 02 Sep01, 2023

Report No.: SHEM241100716401

Page: 4 of 23

3 Contents

	Page
1 COVER PAGE	1
2 TEST SUMMARY	3
3 CONTENTS	4
4 GENERAL INFORMATION	5
4.1 DETAILS OF E.U.T.	5
4.2 DESCRIPTION OF SUPPORT UNITS	5
4.3 MEASUREMENT UNCERTAINTY & DECISION RULE	5
4.4 TEST LOCATION	6
4.5 DEVIATION FROM STANDARDS	6
4.6 ABNORMALITIES FROM STANDARD CONDITIONS	6
4.7 MONITORING OF EUT FOR ALL IMMUNITY TEST	6
5 EQUIPMENT LIST	7
6 EMISSION TEST RESULTS	8
6.1 RADIATED EMISSIONS (30MHZ-1GHZ)	8
6.1.1 <i>E.U.T. Operation</i>	8
6.1.2 <i>Test Mode Description</i>	8
6.1.3 <i>Test Setup Diagram</i>	8
6.1.4 <i>Measurement Procedure and Data</i>	9
7 IMMUNITY TEST RESULTS	13
7.1 ELECTROSTATIC DISCHARGE	14
7.1.1 <i>Test Setup Diagram</i>	14
7.1.2 <i>E.U.T. Operation</i>	14
7.1.3 <i>Test Mode Description</i>	14
7.1.4 <i>Test Condition and Results:</i>	15
7.2 RADIATED IMMUNITY (80MHZ-1GHZ)	16
7.2.1 <i>Test Setup Diagram</i>	16
7.2.2 <i>E.U.T. Operation</i>	16
7.2.3 <i>Test Mode Description</i>	16
7.2.4 <i>Test Condition and Results:</i>	16
8 TEST SETUP PHOTO	17
9 EUT CONSTRUCTIONAL DETAILS (EUT PHOTOS)	20

4 General Information

4.1 Details of E.U.T.

Power supply:	For USB Port: DC 5V For EUT: DC 3.7V Sample No.: SHEM2411007164HS-M1
Test voltage:	DC 5V (For power bank supplied by laboratory) & DC 3.7V
Maximum Clock Frequency:	<15MHz

4.2 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
Power Bank (Supplied by laboratory)	XIAOMI	NDY-02-AN	/

4.3 Measurement Uncertainty & Decision Rule

Measurement Uncertainty:

Test Item	Freq. Range	Measurement Uncertainty	
		U_{LAB}	U_{CISPR}
Radiated Emission	30~1000MHz	4.6dB	6.3dB
Conducted Emission	0.15~30MHz	2.8dB	3.4dB
Disturbance Power	30~300MHz	2.6dB	4.5dB

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

Decision Rule:

- CISPR 16-4-2 for emission measurements is as below described.

Pass means the test result passed the test standard requirement, please find the detailed decision rule in the report relative section.

U_{LAB} less than U_{CISPR} , therefore:

- compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;
- non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.

4.4 Test Location

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. E&E Lab

588 West Jindu Road, Xinqiao, Songjiang, 201612 Shanghai, China

Tel: +86 21 6191 5666

Fax: +86 21 6191 5678

Sub-contracted at:

Ningbo Drotek Testing Service Co., Ltd.

Building 18 and 2 / F North of R&D Center, No. 518, Xinmei Road, High-tech Zone, Ningbo City, Zhejiang Province, R.P. China

Note:

1. SGS is not responsible for wrong test results due to incorrect information (e.g. max. clock frequency, highest internal frequency, antenna gain, cable loss, etc) is provided by the applicant. (if applicable).
2. SGS is not responsible for the authenticity, integrity and the validity of the conclusion based on results of the data provided by applicant. (if applicable).
3. Sample source: sent by customer.

4.5 Deviation from standards

None

4.6 Abnormalities from Standard Conditions

None

4.7 Monitoring of EUT for All Immunity Test

Visual: Working status of EUT.



SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.

SHEM-TRF-001 Rev. 02 Sep01, 2023

Report No.: SHEM241100716401

Page: 7 of 23

5 Equipment List

Radiated Emission						
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal.Due
1	EMI Test Receiver	ROHDE & SCHWARZ	ESU8	100372	2024.07.05	2025.07.04
2	BroadBand Antenna	ROHDE & SCHWARZ	VULB 9168	01423	2024.07.09	2025.07.08
3	preamplifier	SchwarzBec k /Germany	BBV 9745	00280	2024.07.05	2025.07.04
4	Horn Antenna	SchwarzBec k /Germany	BBHA 9120 D	02668	2024.07.09	2025.07.08
5	preamplifier	RF system/UK	TRLA-010180G40B	22021601	2024.07.05	2025.07.04
6	Cable	H&S/Swiss	CBL-RE-18	/	2024.07.05	2025.07.04
7	Cable	H&S/Swiss	CBL-RE-18	/	2024.07.05	2025.07.04

Electrostatic Discharge						
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal.Due
1	ESD Simulator	Teseq/German y	NSG 437	1765	2024.07.09	2025.07.08

RF Field Strength Susceptibility						
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal.Due
1	Radiated Immunity Automated Test System RF Transfer Switch	RFLEAD/Chin a	RFSU_DC06 G-3C	NBZT001-E-47	2024.03.29	2025.03.28
2	logarithmic broadband periodic antenna	SKET/Germa ny	STLP9129 PLUS	NBZT001-E-50	2024.04.03	2025.04.02
3	Cable	RFLEAD/Chin a	RC_DC06G-N-S	NBZT001-E-53	2024.03.29	2025.03.28
4	Homogeneous domain calibration rack	SKET/China	/	NBZT001-E-54	2024.03.29	2025.03.28
5	Signal Generator	Agilent/USA	N5181A	NBZT001-E-55	2024.03.29	2025.03.28
6	Power Amplifier	RFLEAD/Chin a	LDPA80M1G 500	NBZT001-E-57	2024.03.29	2025.03.28
7	Power Amplifier	RFLEAD/Chin a	LDPA1G6G2 00	NBZT001-E-58	2024.03.29	2025.03.28

6 Emission Test Results

6.1 Radiated Emissions (30MHz-1GHz)

Test Requirement: EN IEC 55014-1: 2021

Test Method: CISPR 16-2-3

Limit:

Test Distance: 10m

30MHz-230MHz 30 dB(μ V/m) quasi-peak

230MHz-1GHz 37 dB(μ V/m) quasi-peak

Detector: Peak for pre-scan (120kHz resolution bandwidth) 30M to 1000MHz

Test Distance: 3m

30MHz-230MHz 40 dB(μ V/m) quasi-peak

230MHz-1GHz 47 dB(μ V/m) quasi-peak

Detector: Peak for pre-scan (120kHz resolution bandwidth) 30M to 1000MHz

6.1.1 E.U.T. Operation

Operating Environment:

Temperature: 24 °C

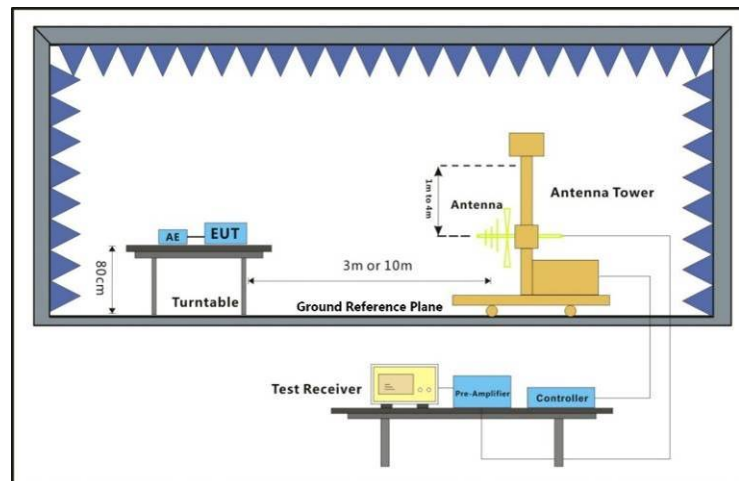
Humidity: 50 % RH

Atmospheric Pressure: 1010 mbar

6.1.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Keep the EUT running continuously
Final test	01	Keep the EUT charging continuously

6.1.3 Test Setup Diagram



6.1.4 Measurement Procedure and Data

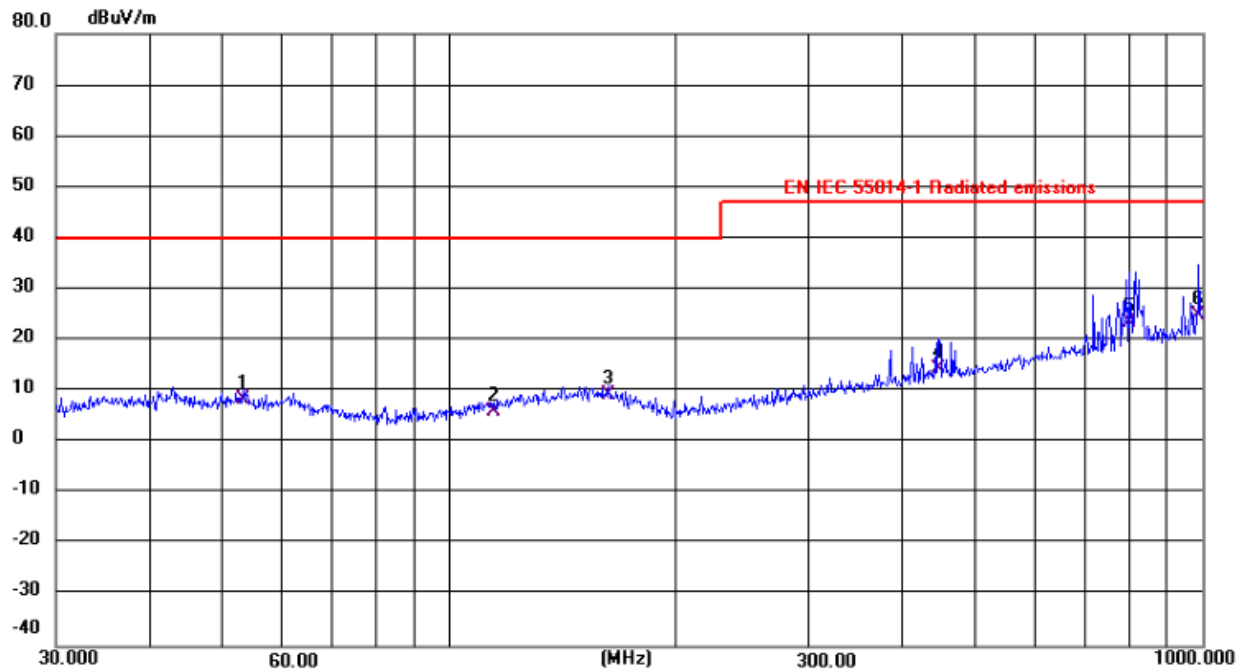
Frequency Range: 30MHz to 1GHz

An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Quasi-peak measurements were conducted based on the peak sweep graph. The EUT was measured by BiConiLog antenna with 2 orthogonal polarities.

The red line show in graphic is the limit in standard used in this section.

Level=Read Level + Antenna Factor + Cable Loss - Preamp Factor

Test Mode: 00; Polarity: Horizontal



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	53.1313	24.11	-15.67	8.44	40.00	-31.56	QP	100	135	P	
2	114.5146	23.16	-17.04	6.12	40.00	-33.88	QP	200	226	P	
3	162.6106	23.89	-14.68	9.21	40.00	-30.79	QP	100	238	P	
4	446.4141	26.58	-12.22	14.36	47.00	-32.64	QP	200	34	P	
5	798.9797	30.32	-6.85	23.47	47.00	-23.53	QP	100	229	P	
6 *	989.5355	29.67	-4.71	24.96	47.00	-22.04	QP	100	303	P	

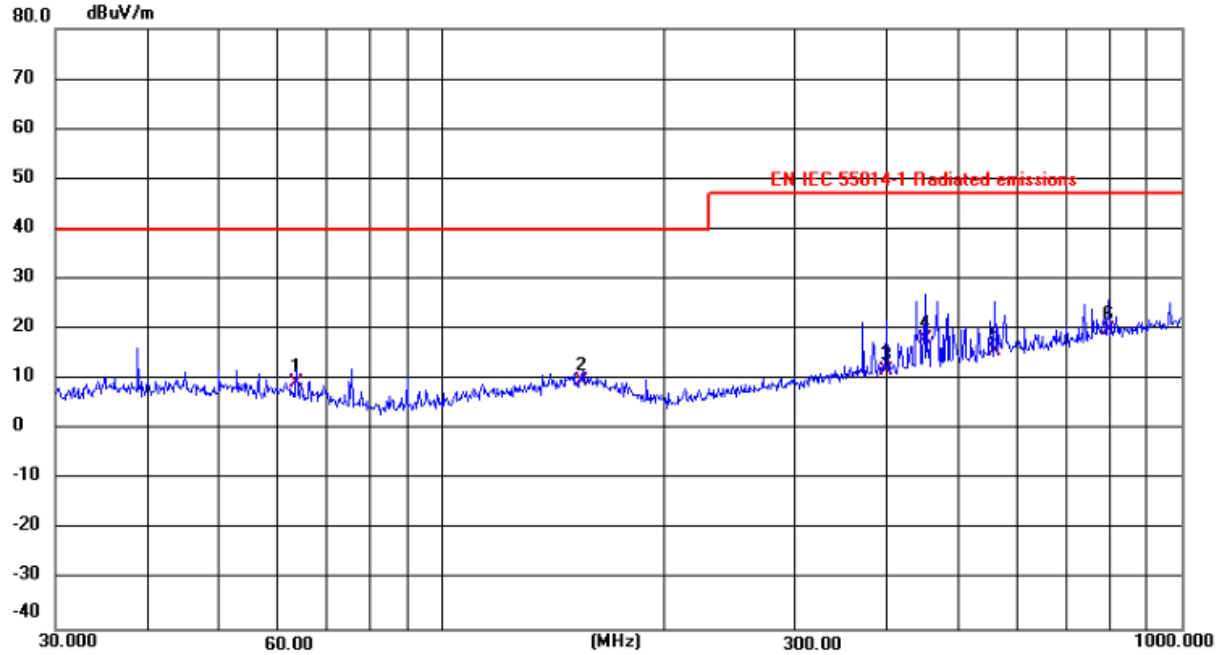
SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.

SHEM-TRF-001 Rev. 02 Sep01, 2023

Report No.: SHEM241100716401

Page: 10 of 23

Test Mode: 00; Polarity: Vertical



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	63.5356	26.13	-16.73	9.40	40.00	-30.60	QP	100	114	P	
2	154.8204	24.16	-14.48	9.68	40.00	-30.32	QP	100	62	P	
3	399.0302	25.36	-13.46	11.90	47.00	-35.10	QP	100	335	P	
4	451.1350	30.19	-12.13	18.06	47.00	-28.94	QP	100	172	P	
5	558.7301	26.04	-10.53	15.51	47.00	-31.49	QP	100	52	P	
6 *	796.1830	26.68	-6.90	19.78	47.00	-27.22	QP	100	226	P	

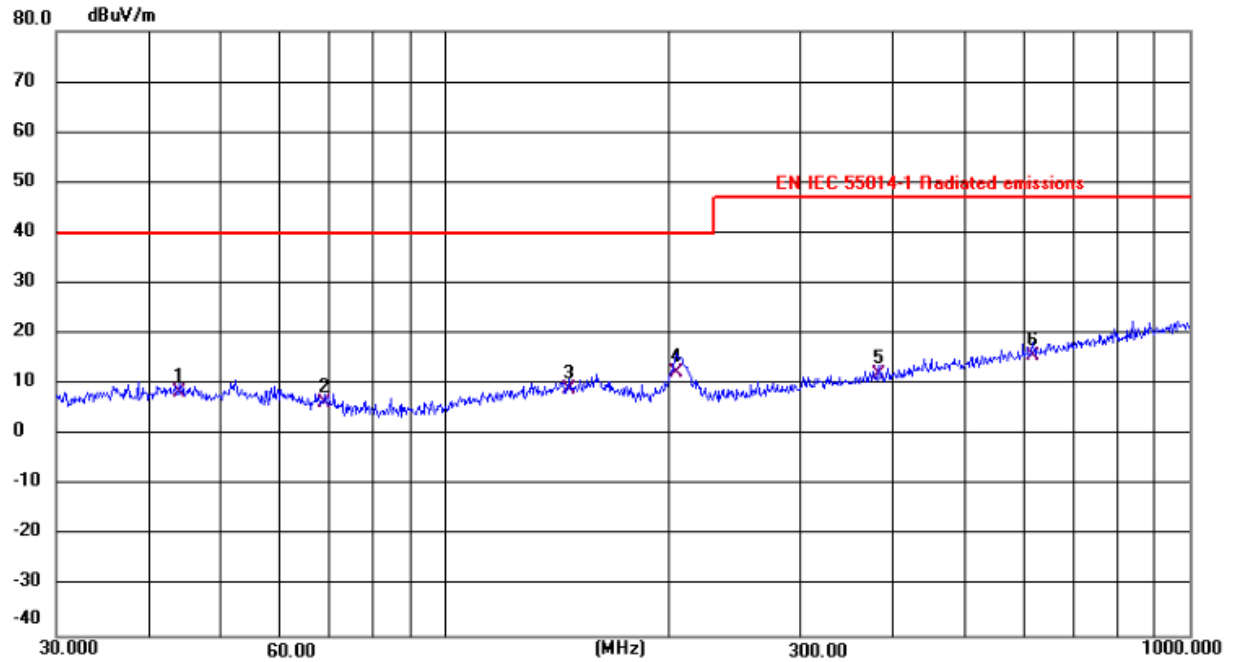
SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.

SHEM-TRF-001 Rev. 02 Sep01, 2023

Report No.: SHEM241100716401

Page: 11 of 23

Test Mode: 01; Polarity: Horizontal



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	43.9658	23.52	-15.21	8.31	40.00	-31.69	QP	100	114	P	
2	68.8721	23.98	-17.60	6.38	40.00	-33.62	QP	200	292	P	
3	146.3735	23.92	-14.75	9.17	40.00	-30.83	QP	100	26	P	
4 *	204.2377	30.81	-18.54	12.27	40.00	-27.73	QP	200	231	P	
5	382.5879	25.67	-13.72	11.95	47.00	-35.05	QP	100	22	P	
6	616.3718	25.19	-9.49	15.70	47.00	-31.30	QP	100	52	P	

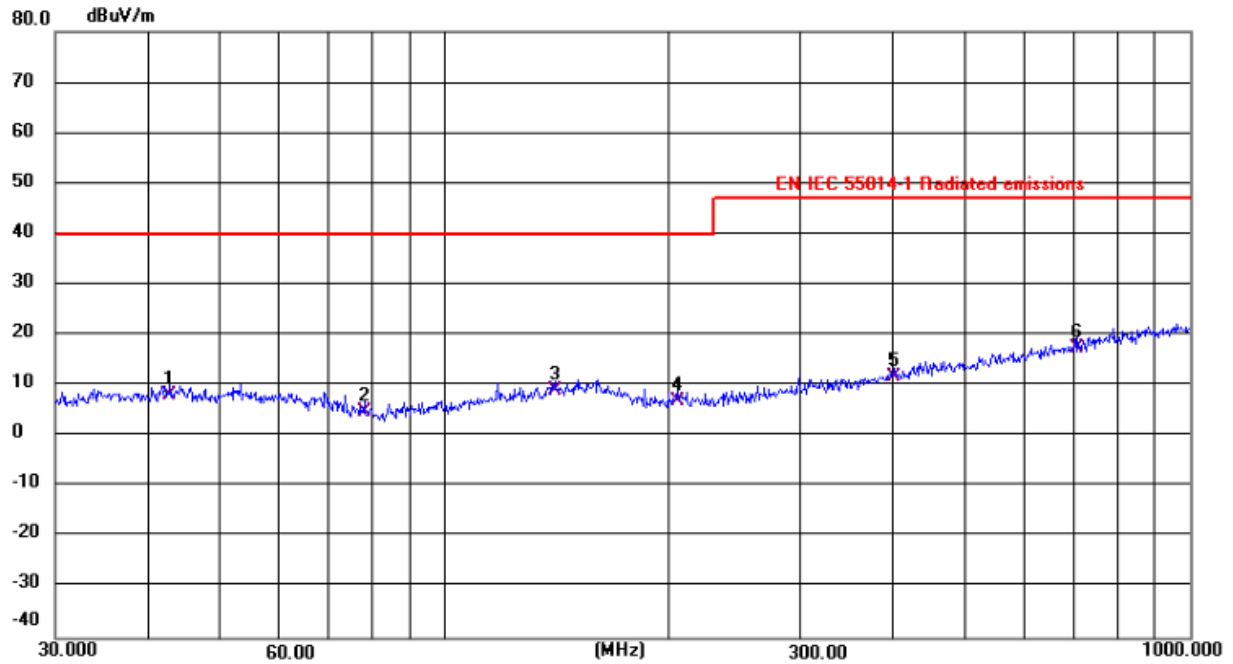
SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.

SHEM-TRF-001 Rev. 02 Sep01, 2023

Report No.: SHEM241100716401

Page: 12 of 23

Test Mode: 01; Polarity: Vertical



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	42.7495	23.43	-15.17	8.26	40.00	-31.74	QP	100	228	P	
2	77.8653	24.08	-19.08	5.00	40.00	-35.00	QP	100	244	P	
3	140.3420	24.03	-15.11	8.92	40.00	-31.08	QP	100	236	P	
4	204.9551	25.45	-18.50	6.95	40.00	-33.05	QP	100	63	P	
5	400.4318	25.08	-13.42	11.66	47.00	-35.34	QP	100	332	P	
6 *	704.2261	25.73	-8.32	17.41	47.00	-29.59	QP	100	95	P	

7 Immunity Test Results

Performance Criteria Description

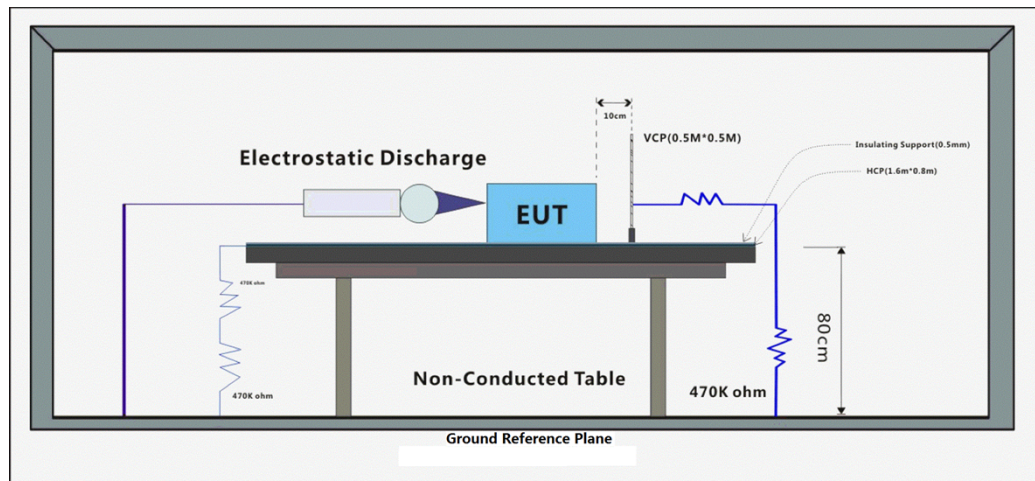
- Criterion A:** The apparatus shall continue to operate as intended during the test. No degradation of performance or loss of function is allowed below a performance level (or permissible loss of performance) specified by the manufacturer, when the apparatus is used as intended. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and from what the user may reasonably expect from the apparatus if used as intended.
- Criterion B:** The apparatus shall continue to operate as intended after the test. No degradation of performance or loss of function is allowed below a performance level (or permissible loss of performance) specified by the manufacturer, when the apparatus is used as intended. During the test, degradation of performance is allowed, however. No change of actual operating state or stored data is allowed. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation and from what the user may reasonably expect from the apparatus if used as intended.
- Criterion C:** Temporary loss of function is allowed, provided the function is self recoverable or can be restored by the operation of the controls, or by any operation specified in the instructions for use.

7.1 Electrostatic Discharge

Test Requirement: EN IEC 55014-2: 2021

Test Method: EN 61000-4-2:2009

7.1.1 Test Setup Diagram



7.1.2 E.U.T. Operation

Operating Environment:

Temperature: 20 °C

Humidity: 48 % RH

Atmospheric Pressure: 1010 mbar

7.1.3 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Keep the EUT running continuously.
Final test	01	Keep the EUT charging continuously .



SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.

SHEM-TRF-001 Rev. 02 Sep01, 2023

Report No.: SHEM241100716401

Page: 15 of 23

7.1.4 Test Condition and Results:

Performance Criterion: B

Discharge Impedance: 330 Ω / 150 pF

Discharge Voltage: Air Discharge: 8 kV; Contact Discharge: 4 kV; VCP/HCP: 4 kV.

Polarity: Positive & Negative

Number of Discharge: Minimum 10 times at each test point

Discharge Mode: Single Discharge

Discharge Period: 1 second minimum

Test Point 1: All insulated enclosure & seams.

Test Point 2: All accessible metal parts of the enclosure.

Test Point 3: All sides.

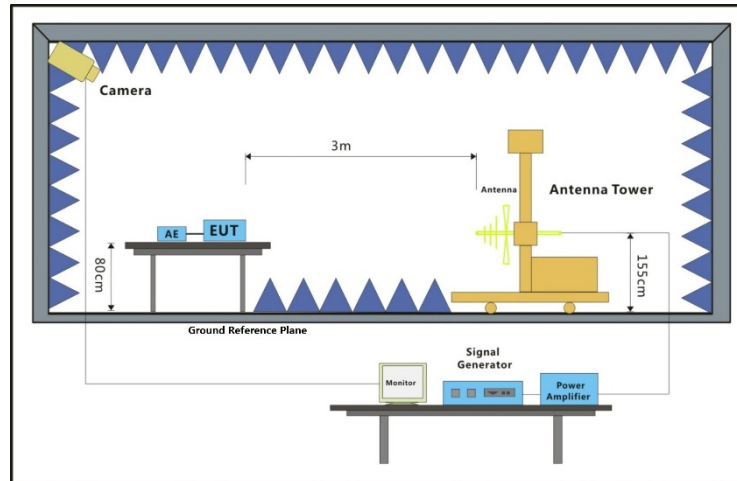
Discharge type	Level (kV)	Polarity	Test Point	Result / Observations
Air Discharge	8	+	1	A
Air Discharge	8	-	1	A
Contact Discharge	4	+	2	N/A
Contact Discharge	4	-	2	N/A
Horizontal Coupling	4	+	3	A
Horizontal Coupling	4	-	3	A
Vertical Coupling	4	+	3	A
Vertical Coupling	4	-	3	A
A: No degradation in the performance of the EUT was observed				

7.2 Radiated Immunity (80MHz-1GHz)

Test Requirement: EN IEC 55014-2: 2021

Test Method: EN IEC 61000-4-3: 2020

7.2.1 Test Setup Diagram



7.2.2 E.U.T. Operation

Operating Environment:

Temperature: 21 °C

Humidity: 52 % RH

Atmospheric Pressure: 1010 mbar

7.2.3 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Keep the EUT running continuously
Final test	01	Keep the EUT charging continuously

7.2.4 Test Condition and Results:

Performance Criterion: A

Frequency Range: 80MHz to 1GHz

Antenna Polarisation: Vertical and Horizontal

Modulation 1kHz, 80% Amp. Mod, 1% increment

Frequency	Level (V/m)	EUT Face	Dwell time	Result / Observations
80MHz-1GHz	3	Front	3s	A
80MHz-1GHz	3	Back	3s	A
80MHz-1GHz	3	Left	3s	A
80MHz-1GHz	3	Right	3s	A
80MHz-1GHz	3	Top	3s	A
80MHz-1GHz	3	Bottom	3s	A

A: No degradation in the performance of the EUT was observed

8 Test Setup Photo

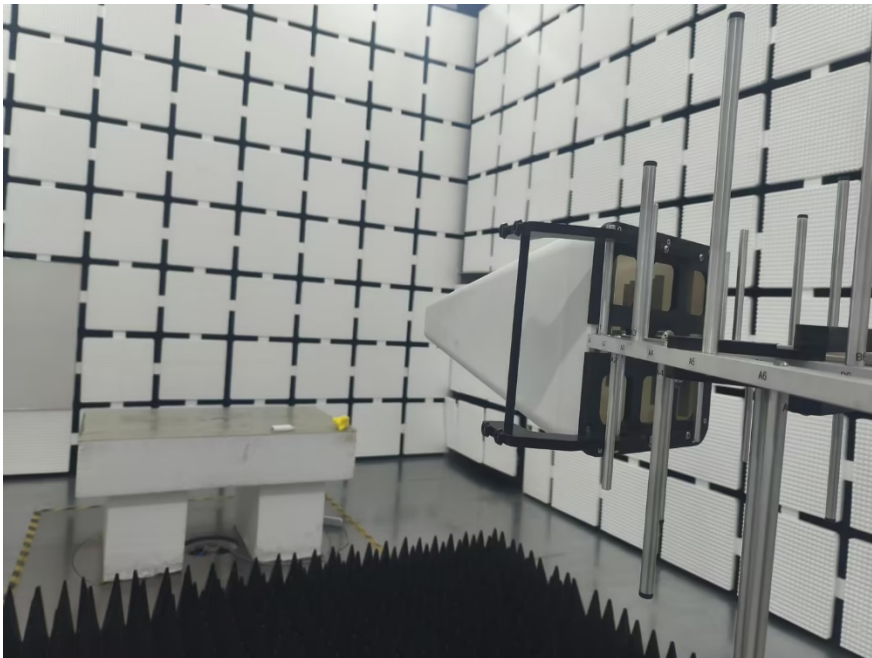
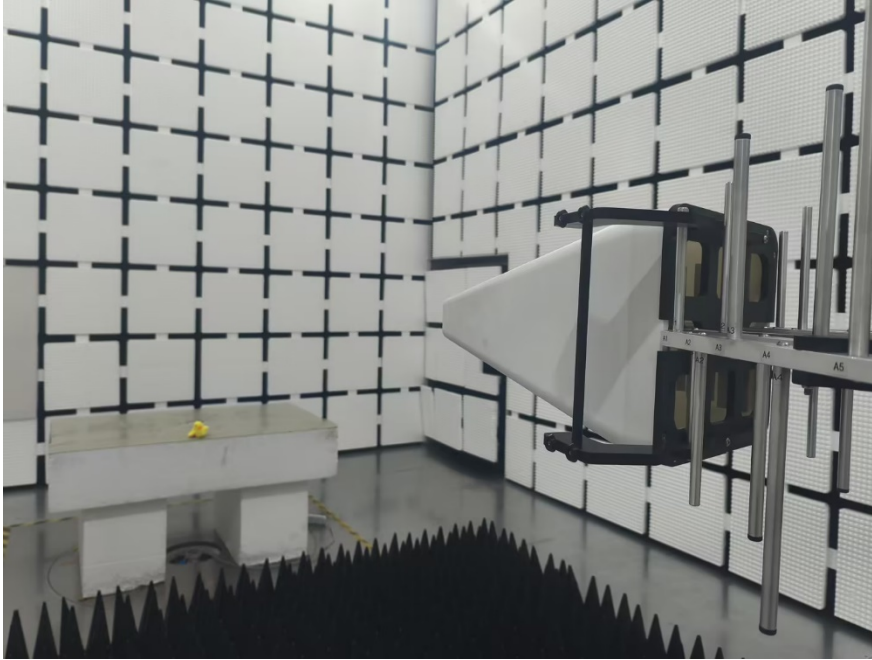
Radiated Emissions (30MHz-1GHz)



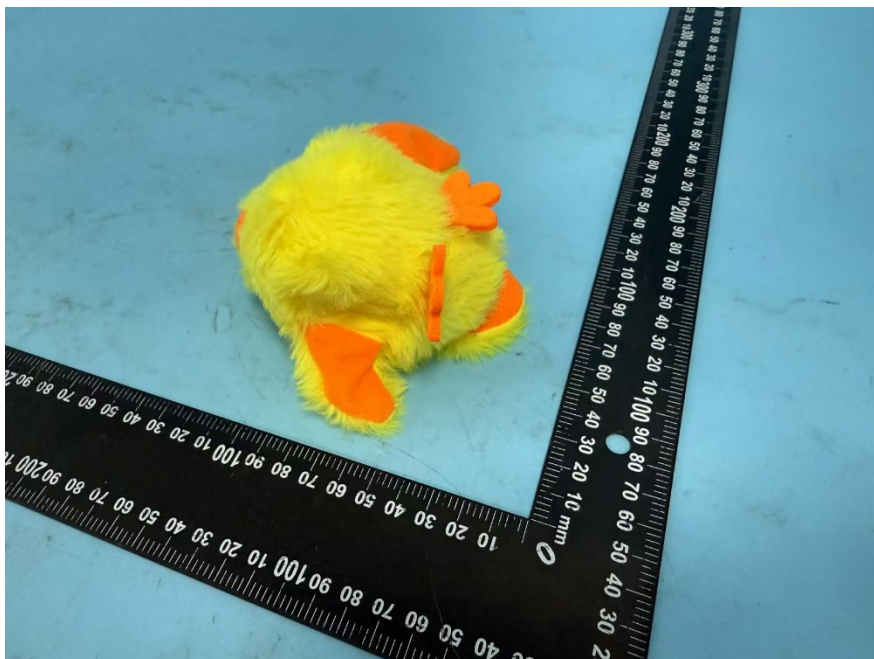
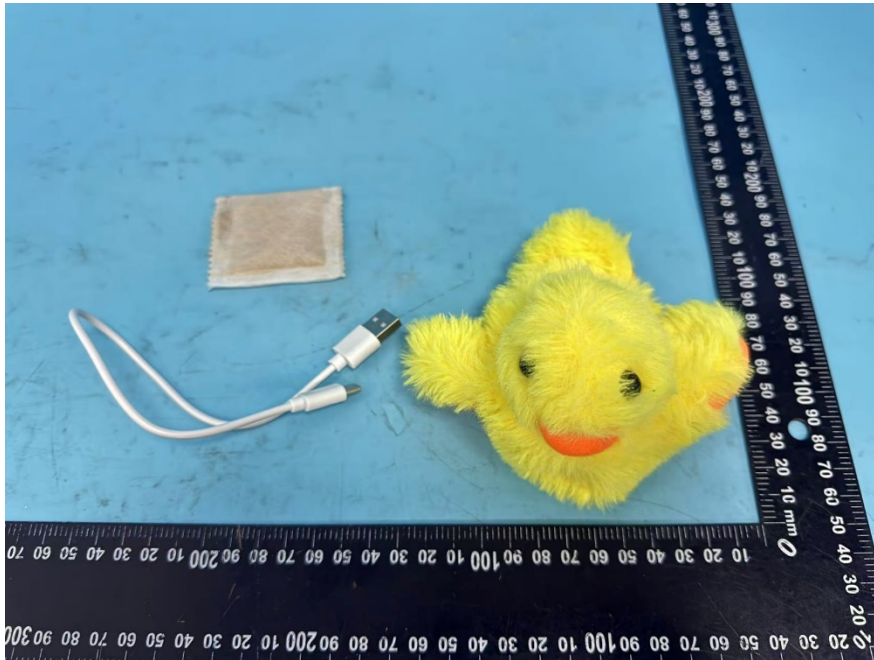
Electrostatic Discharge

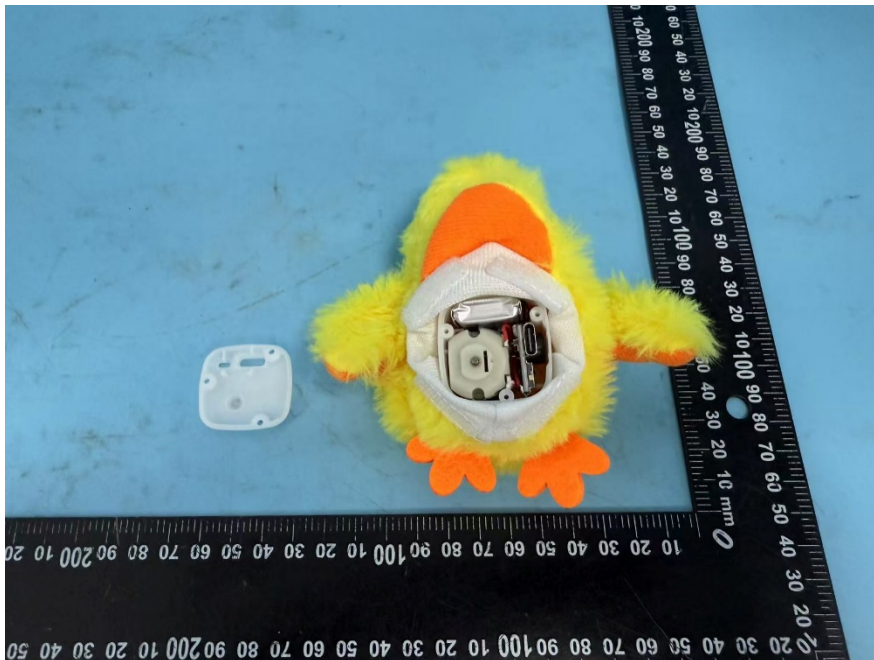


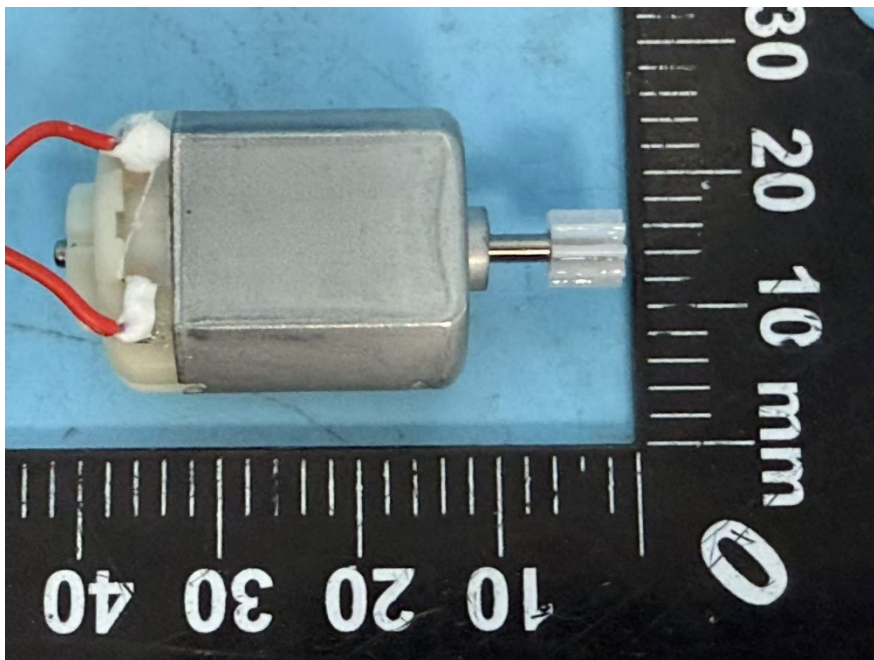
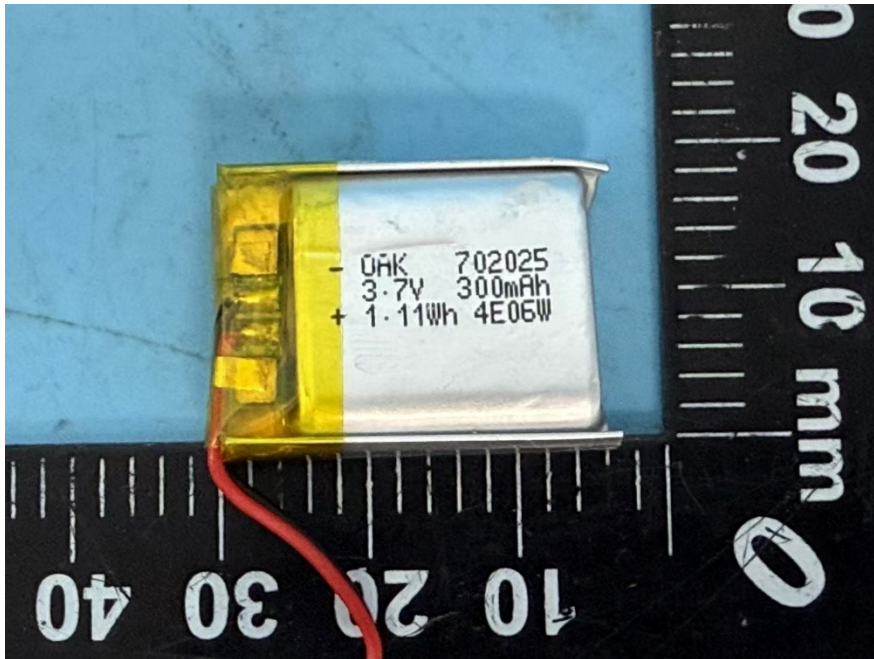
Radiated Immunity (80MHz-1GHz)

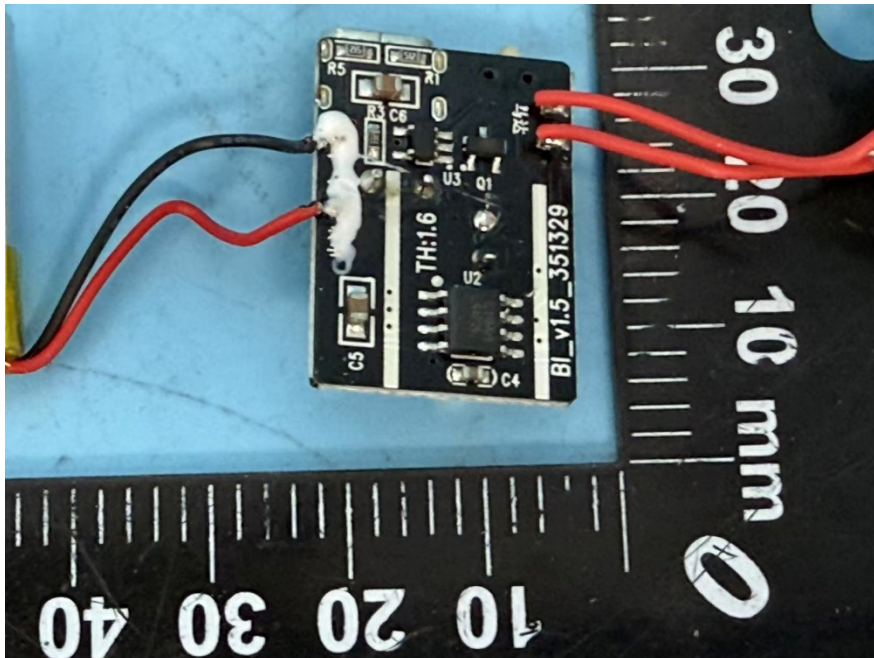
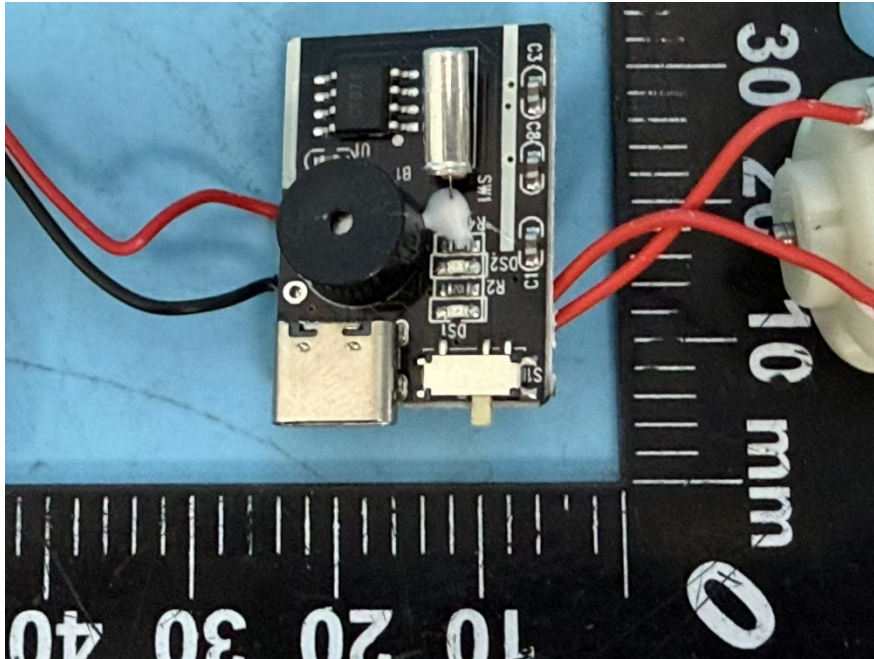


9 EUT Constructional Details (EUT Photos)









- End of the Report -