



中国认可
国际互认
检测
TESTING
CNAS L7472

EMC TEST REPORT

Applicant	:	Paul Stricker SA Paul Stricker CZ s.r.o Reda a.s.
Address of Applicant	:	N.I. Murtede, It5 - 3060-372 Murtede – Portugal Hviezdoslavova 55d, 627 00 Brno - Czech Republic
Manufacturer	:	Ninghai Rongshen Appliance Company Ltd
Address of Manufacturer	:	No.19, Daoke no.3 Rd, Taoyuan street, China
Equipment under Test	:	flashlight
Model No.	:	98147
Test Standard(s)	:	EN IEC 55015:2019+A11:2020 EN IEC 61547:2023
Report No.	:	A2503227-C01-R01
Issue Date	:	2025/03/31
Issued By	:	Shenzhen Alpha Product Testing Co., Ltd. Building i, No.2, Lixin Road, Fuyong Street, Bao'an District, 518103, Shenzhen City, Guangdong Province, P.R. China.

Table of Contents

1.	Summary of Test Results	6
2.	General Test Information.....	7
2.1.	Description of EUT	7
2.2.	Primary function of EUT	7
2.3.	Port of EUT.....	7
2.4.	Accessories of EUT	7
2.5.	Test mode description	8
2.6.	Decision of final test mode	8
2.7.	Deviations of test standard.....	8
2.8.	Test environment conditions	8
2.9.	Test laboratory	8
2.10.	Measurement uncertainty.....	9
3.	Conducted disturbance at mains terminals	10
3.1.	Test equipment.....	10
3.2.	Block diagram of test setup	10
3.3.	Limits	10
3.4.	Assistant equipment used for test	10
3.5.	Test procedure	11
3.6.	Test result.....	11
3.7.	Test data	12
3.8.	Test photo	14
4.	Radiated emissions test (9 kHz-30 MHz)	15
4.1.	Test equipment.....	15
4.2.	Block diagram of test setup	15
4.3.	Limits	15
4.4.	Assistant equipment used for test	15
4.5.	Test procedure	16
4.6.	Test result.....	16
4.7.	Test data	17
4.8.	Test photo	20
5.	Radiated emissions test (30 MHz-1000MHz).....	21
5.1.	Test equipment.....	21
5.2.	Block diagram of test setup	21
5.3.	Limits	23
5.4.	Assistant equipment used for test	23
5.5.	Test procedure	23

5.6.	Test result.....	23
5.7.	Test data	24
5.8.	Test photo	26
6.	Electrostatic Discharge Test.....	27
6.1.	Test equipment.....	27
6.2.	Block diagram of test setup	27
6.3.	Test levels and performance criterion	27
6.4.	Assistant equipment used for test	28
6.5.	Test procedure	28
6.6.	Test result.....	28
6.7.	ESD test points.....	29
6.8.	Test photo	29
7.	Continuous Radio Frequency Disturbances Test.....	30
7.1.	Test equipment.....	30
7.2.	Block diagram of test setup	30
7.3.	Test levels and performance criterion	30
7.4.	Assistant equipment used for test	31
7.5.	Test procedure	31
7.6.	Test result.....	31
7.7.	Test photo	32

Test Report Declare

Applicant	:	Paul Stricker SA Paul Stricker CZ s.r.o Reda a.s.
Address	:	N.I. Murtede, It5 - 3060-372 Murtede – Portugal Hviezdoslavova 55d, 627 00 Brno - Czech Republic
Manufacturer	:	Ninghai Rongshen Appliance Company Ltd
Address	:	No.19, Daoke no.3 Rd, Taoyuan street, China
Equipment under Test	:	flashlight
Model No.	:	98147
Trade Mark	:	/

Test Standard Used:

EN IEC 55015:2019+A11:2020

EN IEC 61547:2023

We Declare:

The equipment described above is tested by Shenzhen Alpha Product Testing Co., Ltd. and in the configuration tested the equipment complied with the standards specified above. The test results are contained in this test report and Shenzhen Alpha Product Testing Co., Ltd. is assumed of full responsibility for the accuracy and completeness of these tests.

Report No.:	A2503227-C01-R01		
Date of Receipt:	2025/03/24	Date of Test:	2025/03/24-2025/03/24

Prepared By:

Lily Wang/Engineer**Approved By:**

Jack Xu/EMC Manager

Note: This report applies to above tested sample only. This report shall not be reproduced in parts without written approval of Shenzhen Alpha Product Testing Co., Ltd.

Revision History

Rev.	Revisions	Issue Date	Revised By
V0	Initial issue	2025/03/31	Lily Wang

1. Summary of Test Results

EMISSION (EMI)			
Description of Test Item	Standard	Result	Memo
Conducted disturbance at mains terminals	EN IEC 55015:2019+A11:2020	PASS	/
Radiated emissions test (9 kHz-30 MHz)	EN IEC 55015:2019+A11:2020	PASS	/
Radiated emissions test (30 MHz-1000MHz)	EN IEC 55015:2019+A11:2020	PASS	/
IMMUNITY (EMS)			
Description of Test Item	Standard	Result	Memo
Electrostatic Discharge Test	EN IEC 61547:2023, IEC 61000-4-2:2008	PASS	/
Continuous Radio Frequency Disturbances Test	EN IEC 61547:2023, IEC 61000-4-3:2020	PASS	/

Note 1: N/A or / is an abbreviation for Not Applicable, and means this item is not applicable for this device or no need to test according to standard.

Note 2: For the EMI measurements have made the EUT operated in a mode producing the highest emission level, and attempted to vary the configuration of the EUT radiated the highest emission. For the EMS measurements have made the EUT operated in the most sensitive mode.

2. General Test Information

2.1. Description of EUT

EUT* Name	:	flashlight
Model Number	:	98147
Difference of model number	:	/
EUT Function Description	:	Please reference user manual of this device
Power Supply	:	DC 3.7V From Battery, DC 5V From Adapter
EUT Class (Only For EMI)	:	/
Maximum Work Frequency	:	Less than 30MHz
Sample Number	:	A2503227-S0001

Note 1: EUT is the abbreviation of equipment under test.

Note 2: “☐” means to be chosen or applicable; “☐” means don't to be chosen or not applicable; This note applies to entire report.

Note 3: Equipment meeting Class A requirements may not offer adequate protection to broadcast services within a residential environment; The Class B requirements for equipment are intended to offer adequate protection to broadcast services within the residential environment. Equipment compliant with the class A requirements should have a warning notice in the user manual stating that it could cause radio interference. For example, Warning: Operation of this equipment in a residential environment could cause radio interference.

Note 4: The accessories of this product are only power cables, and the length of other signal cables and control cables used during the test is less than 3 meters.

2.2. Primary function of EUT

Function	Description
<input type="checkbox"/> Lighting	N/A

2.3. Port of EUT

Port	Description
<input type="checkbox"/> Type-c	Charging

2.4. Accessories of EUT

Accessories	Manufacturer	Model number	Description
/	/	/	/

2.5. Test mode description

Mode 1	Lighting (Max)	DC 3.7V From Battery
Mode 2	Lighting (Min)	DC 3.7V From Battery
Mode 3	Lighting (Flicker)	DC 3.7V From Battery
Mode 4	Charging	DC 5V From Adapter

2.6. Decision of final test mode

According pre-test, the worst test modes were reported as below.

Emission	Conducted disturbance at mains terminals	Mode 4: Charging
	Radiated emissions test (9 kHz-30 MHz)	Mode 1: Lighting (Max)
	Radiated emissions test (30 MHz-1000MHz)	Mode 1: Lighting (Max)
Immunity	Electrostatic Discharge Test	Mode 4: Charging
	Continuous Radio Frequency Disturbances Test	Mode 4: Charging

2.7. Deviations of test standard

No deviation.

2.8. Test environment conditions

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

Temperature range:	20-25°C
Humidity range:	40-75%
Pressure range:	86-106 kPa

Note: The specific temperature and humidity information of each test item refers to the temperature and humidity record in the corresponding test data.

2.9. Test laboratory

Shenzhen Alpha Product Testing Co., Ltd.

Add.: Building i, No.2, Lixin Road, Fuyong Street, Bao'an District, 518103, Shenzhen City, Guangdong Province, P.R. China.

Tel.: 4008-3008-95, Website: <http://www.a-lab.cn>, Email: service@a-lab.cn

2.10. Measurement uncertainty

Test Item	Uncertainty
Uncertainty in conducted measurements	1.63dB
Uncertainty for radiation emission test(30 MHz-1 GHz)	3.74 dB (Distance: 3m Polarize: V)
	3.76 dB (Distance: 3m Polarize: H)
Uncertainty for radiation disturbance test (1 GHz to 18 GHz)	3.77 dB (Distance: 3m Polarize: V)
	3.80 dB (Distance: 3m Polarize: H)
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.	

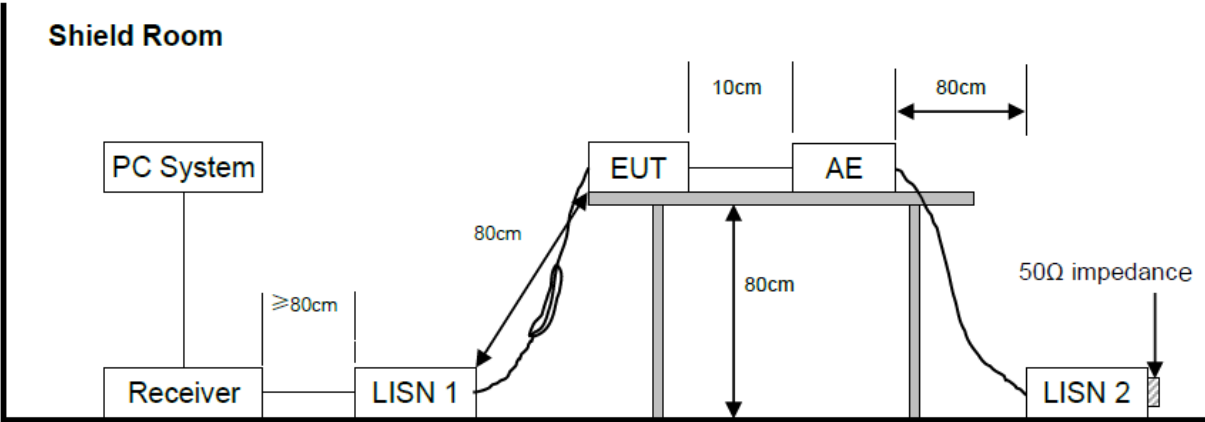
3. Conducted disturbance at mains terminals

3.1. Test equipment

Equipment	Manufacturer	Model No.	Equipment No.	Cal Due To
Test Receiver	ROHDE&SCHW ARZ	ESCI	Aa-EE005	2025/08/07
Absorbing Clamp	Liithi	MDS-21	Aa-EE006	2025/08/07
N50(f-m) 6dB Fixed Attenuator	ROHDE&SCHW ARZ	A0835	Aa-EE007	2025/08/07

3.2. Block diagram of test setup

For table-top equipment



3.3. Limits

Frequency	At mains terminals (dB□V)	
	Quasi-peak Level	Average Level
9 kHz~50 kHz	110	--
50 kHz~150 kHz	90 ~ 80*	--
150 kHz~0.5 MHz	66 ~ 56*	56 ~ 46*
0.5 MHz~5.0 MHz	56	46
5.0 MHz~30 MHz	60	50

Note 1: Decreasing linearly with logarithm of frequency.

Note 2: The lower limit shall apply at the transition frequencies.

3.4. Assistant equipment used for test

Assistant equipment	Manufacturer	Model number	Description
AC Adapter	Shenzhen HUONIU Technology Co., Ltd.	HNFCQC3024UU	/

3.5. Test procedure

- (1) The EUT placement requires reference to the test block diagram and is placed on a non-metallic table.
- (2) Setup the EUT and assistant equipment as shown above block diagram and equipment list.
- (3) The EUT's power was connected to the power mains through a line impedance stabilization network (L.I.S.N). Which this provided a 50-ohm coupling impedance for the EUT (Please refer to the block diagram of the test setup and photographs). Both sides of power line were checked for maximum conducted disturbance. In order to find the maximum emission, the relative positions of equipment and all of the interface cables were changed according to EN IEC 55015 on conducted disturbance emission test.
- (4) The bandwidth of test receiver is set at 200 Hz for 9 kHz to 150 kHz measure and 10 kHz for 150 kHz to 30 MHz measure.
- (5) The frequency range from 9 kHz to 30 MHz is checked.

3.6. Test result

PASS. (See below detailed test result)

Note 1: All emissions not reported below are too low against the prescribed limits.

Note 2: "----" means Peak detection; "----" means Average detection.

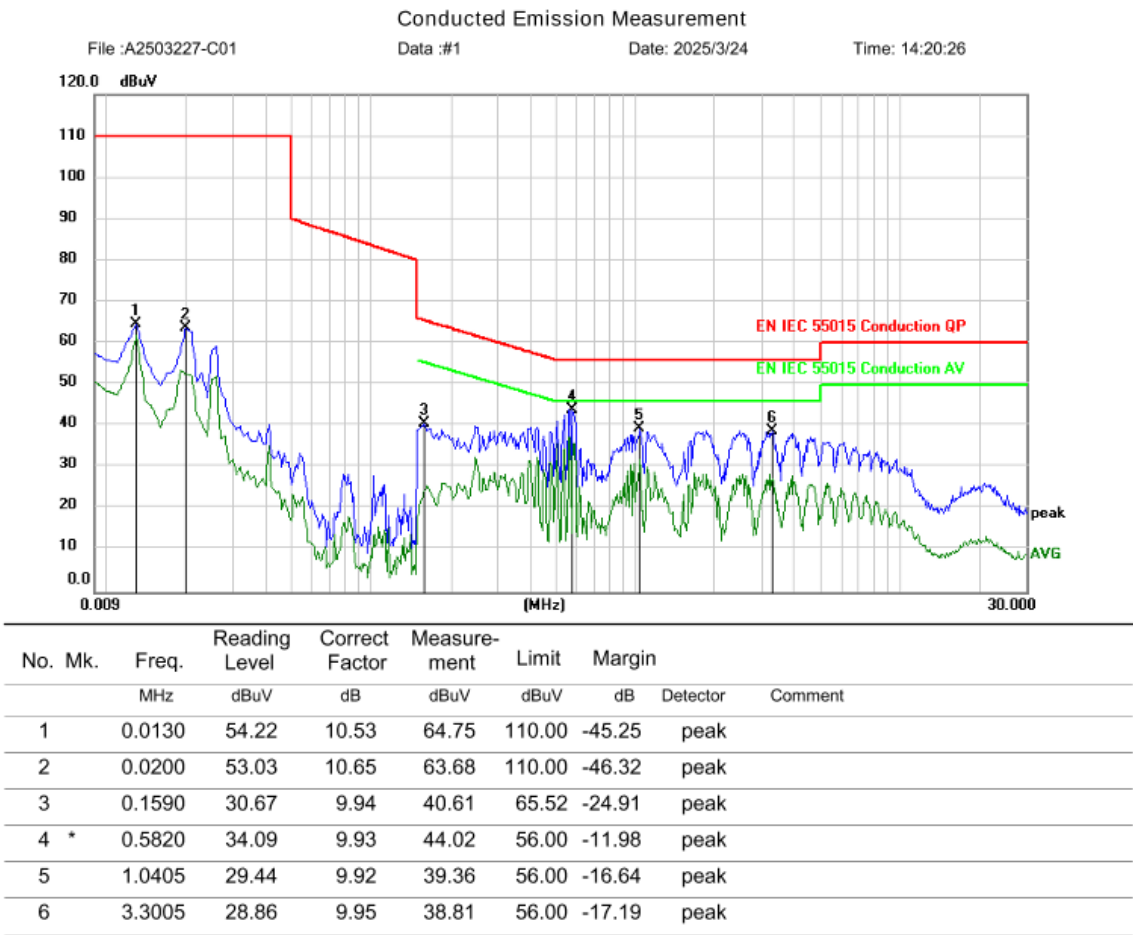
3.7. Test data

Lily Wang



深圳阿尔法商品检验有限公司
Shenzhen Alpha Product Testing Co.,Ltd.
地址: ALPHA 广东省深圳市宝安区福永街道立新路 2 号 i 栋
TEL: 4008-3008-95

Site LAB	Phase: L1	Temperature: 23.7
Limit: EN IEC 55015 Conduction QP	Power: DC 5V From Adapter	Humidity: 55 %
EUT/Task No : A2503227-C01		
M/N/Sample No: A2503227-S0001		
Mode : Mode 4		
Note:		
Engineer Signature:		



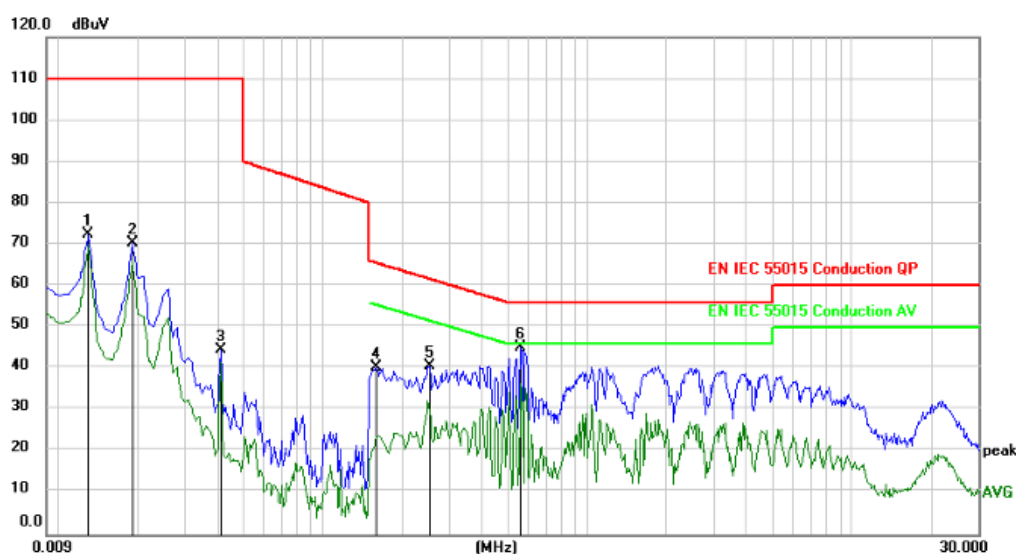
*:Maximum data x:Over limit !:over margin <Reference Only
Note: Measurement=Reading Level+Correc Factor. Factor=(LISN or ISN or PLC or Current Probe)Factor+Cable



Lily Wang

Engineer Signature:

Time: 14:22:05



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	
		MHz	dBuV	dB	dBuV	dB	Detector	Comment
1		0.0130	61.82	10.53	72.35	110.00	-37.65	peak
2		0.0190	59.74	10.63	70.37	110.00	-39.63	peak
3		0.0410	34.44	10.18	44.62	110.00	-65.38	peak
4		0.1590	30.40	9.94	40.34	65.52	-25.18	peak
5		0.2535	30.59	9.97	40.56	61.64	-21.08	peak
6	*	0.5595	35.20	9.94	45.14	56.00	-10.86	peak

Reference Only

Note: Measurement=Reading Level+Correc Factor. Factor=(LISN or ISN or PLC or Current Probe)Factor+Cable

3.8. Test photo

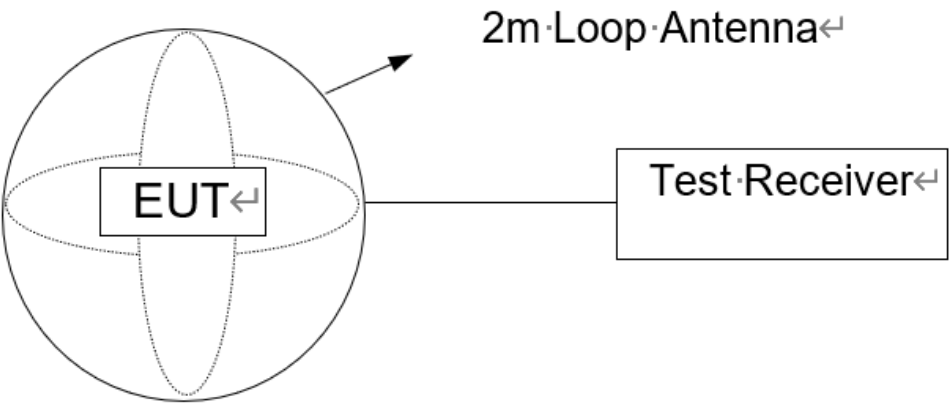
	/
/	

4. Radiated emissions test (9 kHz-30 MHz)

4.1. Test equipment

Equipment	Manufacturer	Model No.	Equipment No.	Cal Due To
TRIPLE-LOOP ANTENNA	EVERFINE	LLA-2	Aa-EE008	2025/08/07
Test Receiver	ROHDE&SCHWARZ	ESPI	Aa-EE002	2025/08/07

4.2. Block diagram of test setup



4.3. Limits

Frequency	Limits for loop diameter (dBμA)
	2m
9 kHz~70 kHz	88
70 kHz~150 kHz	88 ~ 58*
150 kHz~2.2 MHz	58 ~ 26*
2.2 MHz~3.0 MHz	58
3.0 MHz~30 MHz	22

Notes:
1. * Decreasing linearly with logarithm of frequency.
2. The lower limit shall apply at the transition frequencies.

4.4. Assistant equipment used for test

Assistant equipment	Manufacturer	Model number	Description
AC Adapter	Shenzhen HUONIU Technology Co., Ltd.	HNFCQC3024UU	/

4.5. Test procedure

The EUT was placed on a wood table in the center of a loop antenna. The induced current in the loop antenna is measured by means of a current probe and the test receiver. A three-field component was checked by means of a coaxial switch.

The frequency range from 9 kHz to 30 MHz was checked. The receiver was measured with the quasi-peak detector. For frequency band 9 kHz to 150 kHz.

The bandwidth of the field strength meter (R&S test receiver ESCI) is set at 200Hz for frequency 9 kHz to 150 kHz and 10 kHz for frequency 150 kHz to 30 MHz.

4.6. Test result

PASS. (See below detailed test result)

Note 1: All emissions not reported below are too low against the prescribed limits.

Note 2: “----” means Peak detection; “-----” means Average detection.

4.7. Test data



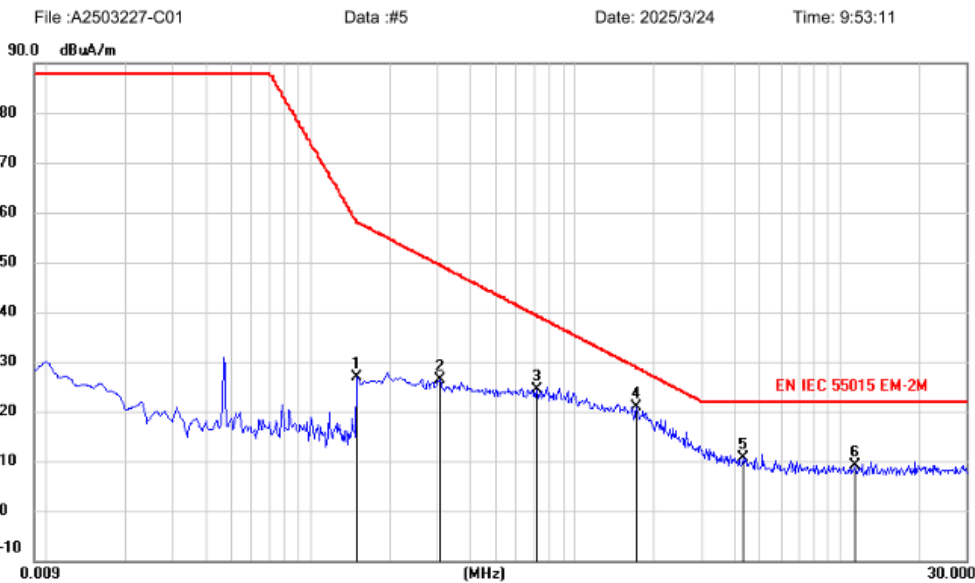
深圳阿尔法商品检验有限公司
SHENZHEN ALPHA PRODUCT TESTING CO.,LTD.

深圳阿尔法商品检验有限公司
Shenzhen Alpha Product Testing Co.,Ltd.
地址: ALPHA 广东省深圳市宝安区福永街道立新路 2 号 i 栋
TEL: 4008-3008-95

Lily Wang

Site LAB 966 Chamber 2	Polarization: X	Temperature: 22.5
Limit: EN IEC 55015 EM-2M	Power: DC 3.7V From Battery	Humidity: 57 %
EUT/Task No : A2503227-C01	Distance: 3m	
M/N/Sample No: A2503227-S0001		
Mode : Mode1		
Note:		
Engineer Signature:		

Radiated Emission Measurement



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Antenna Height	Table Degree	
		MHz	dBuA/m	dB	dBuA/m	dBuA/m	dB	cm	degree	Comment
1		0.1500	26.85	0.00	26.85	58.00	-31.15	peak		
2		0.3075	26.28	0.00	26.28	49.37	-23.09	peak		
3		0.7170	24.38	0.00	24.38	39.20	-14.82	peak		
4	*	1.7005	20.74	0.08	20.82	28.82	-8.00	peak		
5		4.3405	10.46	0.14	10.60	22.00	-11.40	peak		
6		11.4005	8.92	0.24	9.16	22.00	-12.84	peak		

Note: 1. *:Maximum data; x:Over limit; !:over margin.
2.Measurement=Reading Level+Correct Factor; Correct Factor=Antenna Factor+Cable Loss.



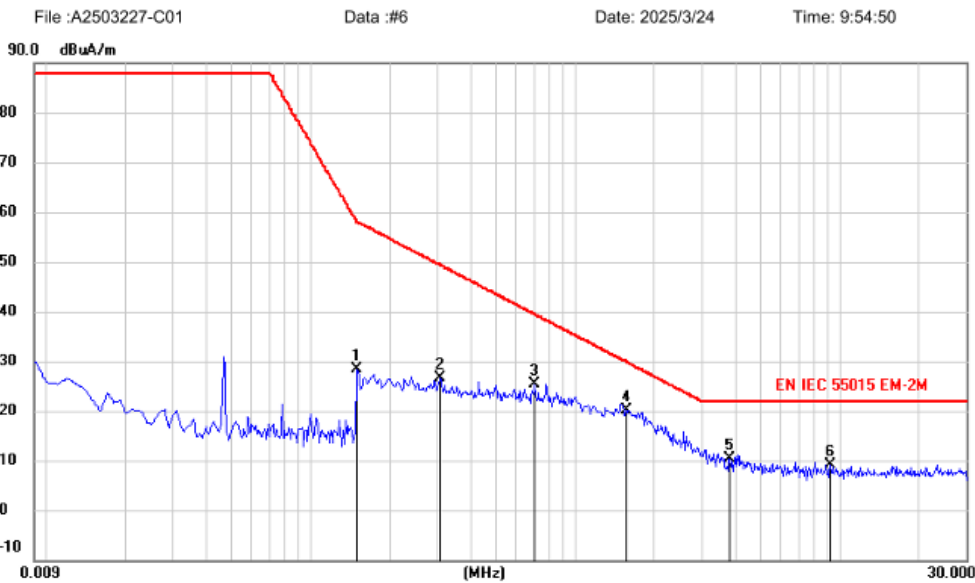
深圳阿尔法商品检验有限公司
SHENZHEN ALPHA PRODUCT TESTING CO.,LTD.

深圳阿尔法商品检验有限公司
Shenzhen Alpha Product Testing Co.,Ltd.
地址: ALPHA 广东省深圳市宝安区福永街道立新路 2 号 i 栋
TEL: 4008-3008-95

Site LAB 966 Chamber 2	Polarization: Y	Temperature: 22.5
Limit: EN IEC 55015 EM-2M	Power: DC 3.7V From Battery	Humidity: 57 %
EUT/Task No : A2503227-C01	Distance: 3m	
M/N/Sample No: A2503227-S0001		
Mode : Mode1		
Note:		
Engineer Signature:		

Lily Wang

Radiated Emission Measurement



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Antenna Height	Table Degree	
		MHz	dBuA/m	dB	dBuA/m	dBuA/m	dB	cm	degree	Comment
1		0.1500	28.29	0.00	28.29	58.00	-29.71	peak		
2		0.3075	26.65	0.00	26.65	49.37	-22.72	peak		
3		0.7035	25.44	0.00	25.44	39.43	-13.99	peak		
4	*	1.5605	20.16	0.08	20.24	29.85	-9.61	peak		
5		3.8405	10.33	0.13	10.46	22.00	-11.54	peak		
6		9.2405	8.98	0.22	9.20	22.00	-12.80	peak		

Note: 1. *:Maximum data; x:Over limit; !:over margin.
2.Measurement=Reading Level+Correct Factor; Correct Factor=Antenna Factor+Cable Loss.



深圳阿尔法商品检验有限公司
SHENZHEN ALPHA PRODUCT TESTING CO.,LTD.

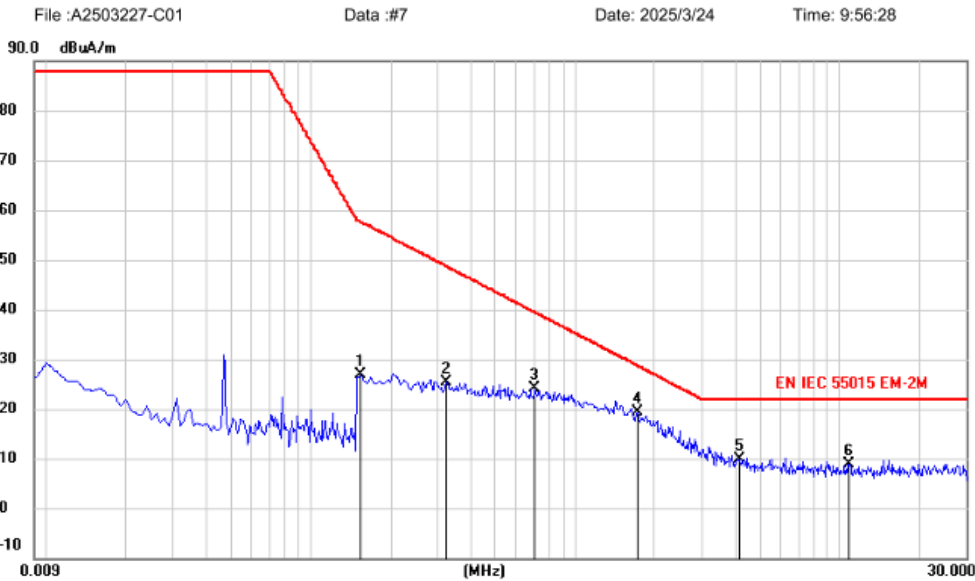
深圳阿尔法商品检验有限公司
Shenzhen Alpha Product Testing Co.,Ltd.
地址: ALPHA 广东省深圳市宝安区福永街道立新路 2 号 i 栋
TEL: 4008-3008-95

Site LAB 966 Chamber 2
Limit: EN IEC 55015 EM-2M
EUT/Task No : A2503227-C01
M/N/Sample No: A2503227-S0001
Mode : Mode1
Note:
Engineer Signature:

Polarization: Z
Power: DC 3.7V From Battery
Distance: 3m
Temperature: 22.5
Humidity: 57 %

Lily Wang


Radiated Emission Measurement



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Antenna Height	Table Degree	
		MHz	dBuA/m	dB	dBuA/m	dBuA/m	dB	cm	degree	Comment
1		0.1545	26.87	0.00	26.87	57.64	-30.77	peak		
2		0.3255	25.45	0.00	25.45	48.69	-23.24	peak		
3		0.7035	24.12	0.00	24.12	39.43	-15.31	peak		
4	*	1.7205	19.39	0.08	19.47	28.68	-9.21	peak		
5		4.2005	9.85	0.14	9.99	22.00	-12.01	peak		
6		10.8605	8.77	0.23	9.00	22.00	-13.00	peak		

Note: 1. *:Maximum data; x:Over limit; !:over margin.
2.Measurement=Reading Level+Correct Factor; Correct Factor=Antenna Factor+Cable Loss.

4.8. Test photo

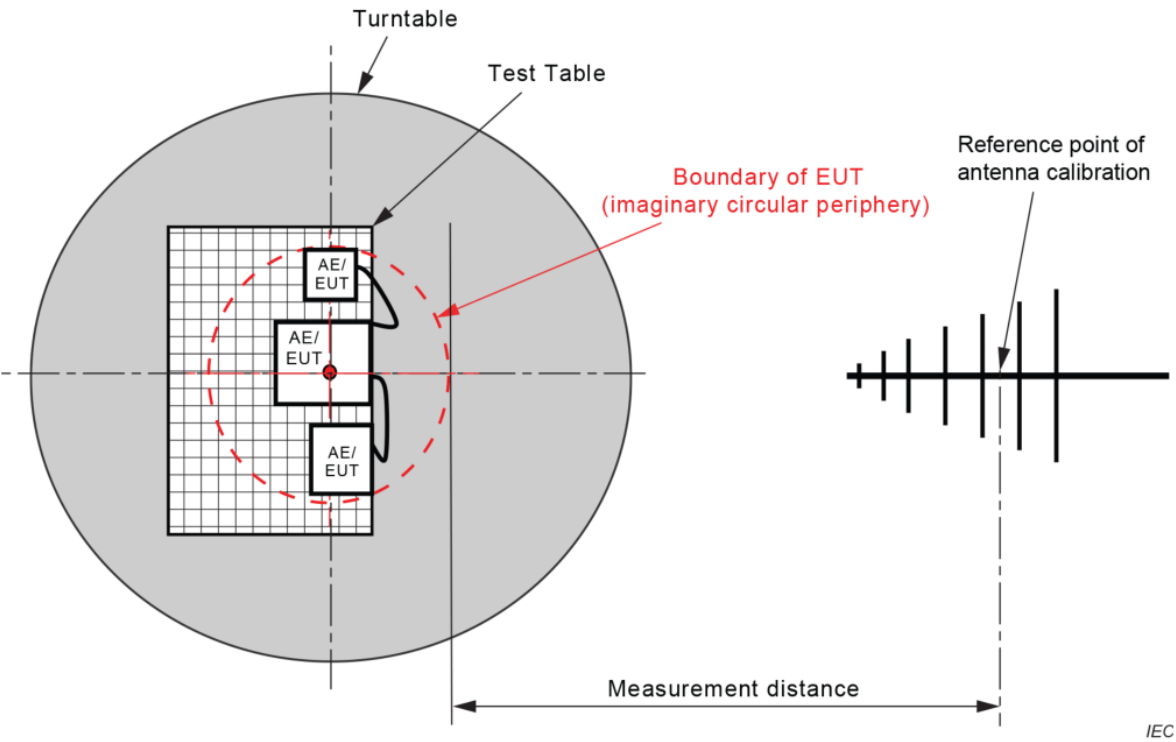
	/
/	/

5. Radiated emissions test (30 MHz-1000MHz)

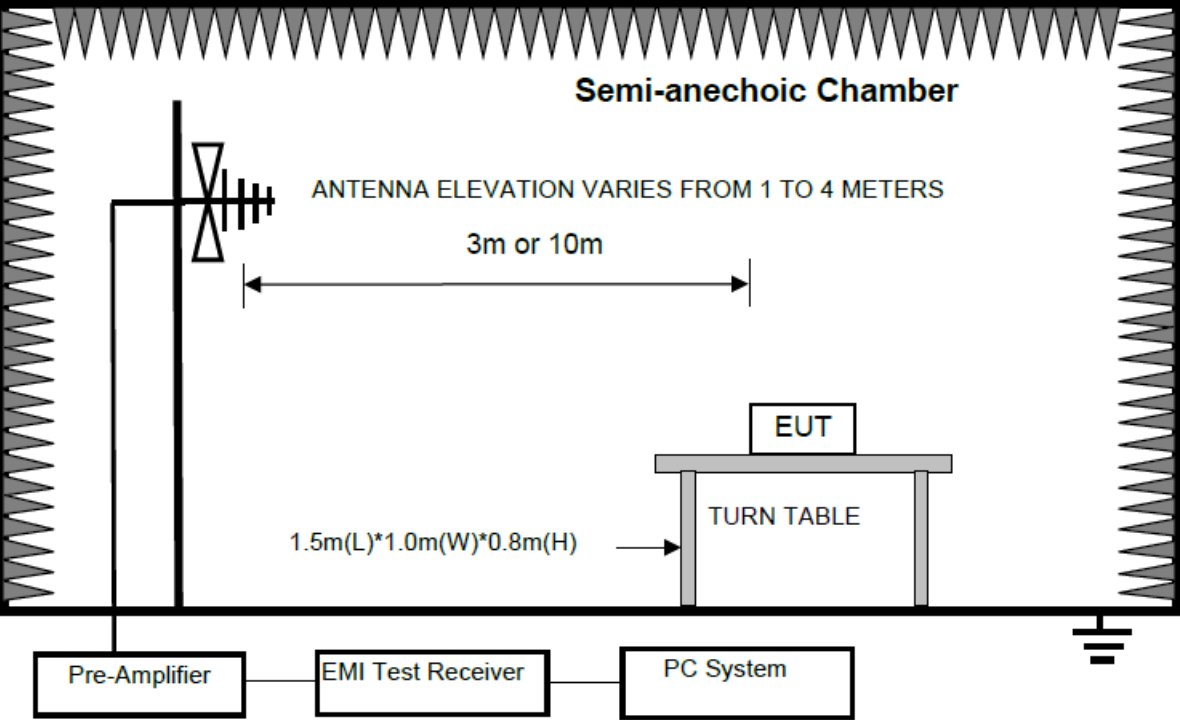
5.1. Test equipment

Equipment	Manufacturer	Model No.	Equipment No.	Cal Due To
Bilog Antenna	SCHWARZBEC K	VULB 9168	Aa-EE001	2025/08/27
Test Receiver	ROHDE&SCHW ARZ	ESR	Aa-EE048	2025/08/07
Horn Antenna	SCHWARZBEC K	BBHA 9120 D	Aa-EE076	2025/08/18
Horn Antenna	SCHWARZBEC K	BBHA 9170	Aa-EE077	2025/08/18
RF Cable	Resenberger	Cable 1	Aa-EE052	2025/08/07
Spectrum analyzer	ROHDE&SCHW ARZ	FSU	Aa-EE075	2025/08/07
Spectrum analyzer	ROHDE&SCHW ARZ	FSV40-N	Aa-EE081	2025/08/07
Amplifier	SKET	LNPA_0118G-45	Aa-EE087	2025/08/07
Preamplifier	SKET	LNPA_1840-50	Aa-EE079	2025/08/07

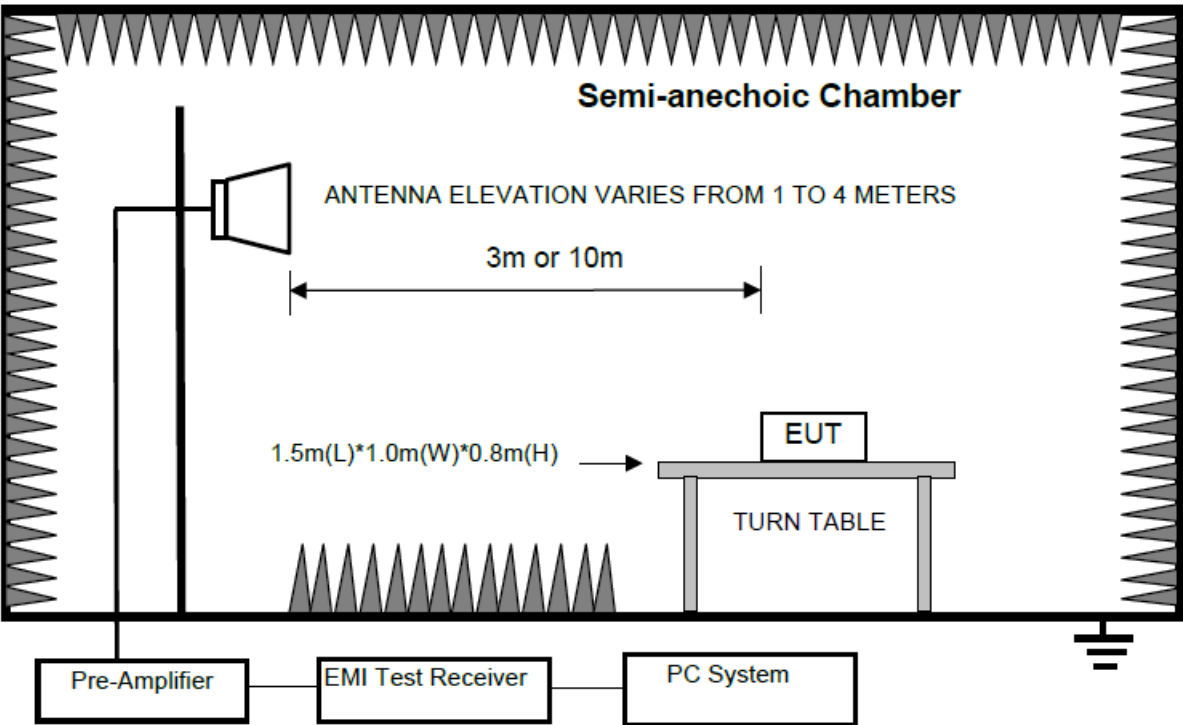
5.2. Block diagram of test setup



Below 1 GHz
For table-top equipment



Above 1 GHz
For table-top equipment



5.3. Limits

Frequency	Field Strengths Limits at 10m measuring distance dB(μ V)/m	Field Strengths Limits at 3m measuring distance dB(μ V)/m
30 MHz to 230 MHz	30	40
230 MHz to 1000 MHz	37	47

Note:
 (1) The smaller limit shall apply at the cross point between two frequency bands.
 (2) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.

5.4. Assistant equipment used for test

Assistant equipment	Manufacturer	Model number	Description
AC Adapter	Shenzhen HUONIU Technology Co., Ltd.	HNFCQC3024UU	/

5.5. Test procedure

The EUT was placed on a non-metallic table (Refer to the 'Block diagram of test setup'). above the ground plane inside an anechoic chamber.

Setup the EUT and assistant equipment as shown above block diagram and equipment list.

Test antenna was located 3m from the EUT on an adjustable mast. A pre-scan was first performed in order to find prominent radiated emissions. For final emissions measurements at each frequency of interest, the EUT were rotated and the antenna height was varied between 1m and 4m in order to maximize the emission. Measurements in both horizontal and vertical polarities were made and the data was recorded. In order to find the maximum emission, the relative positions of equipment and all of the interface cables were changed according to EN IEC 55015 on radiated emission test.

The bandwidth setting of the test receiver is 120 kHz.

The frequency range from 30 MHz to 300 MHz was pre-scanned with a peak detector and all final readings of measurement from Test Receiver are Quasi-Peak values.

5.6. Test result

PASS. (See below detailed test result)

Note 1: All emissions not reported below are too low against the prescribed limits.

Note 2: "----" means Peak detection; "----" means Average detection.

5.7. Test data



深圳阿尔法商品检验有限公司

SHENZHEN ALPHA PRODUCT TESTING CO.,LTD.

深圳阿尔法商品检验有限公司

Shenzhen Alpha Product Testing Co.,Ltd.

地址: ALPHA 广东省深圳市宝安区福永街道立新路 2 号 i 栋

TEL: 4008-3008-95

Site LAB 966 Chamber 1

Limit: EN IEC 55015 Radiation

EUT/Task No : A2503227-C01

M/N/Sample No: A2503227-S0001

Mode : Mode1

Note:

Engineer Signature:

Polarization: Vertical

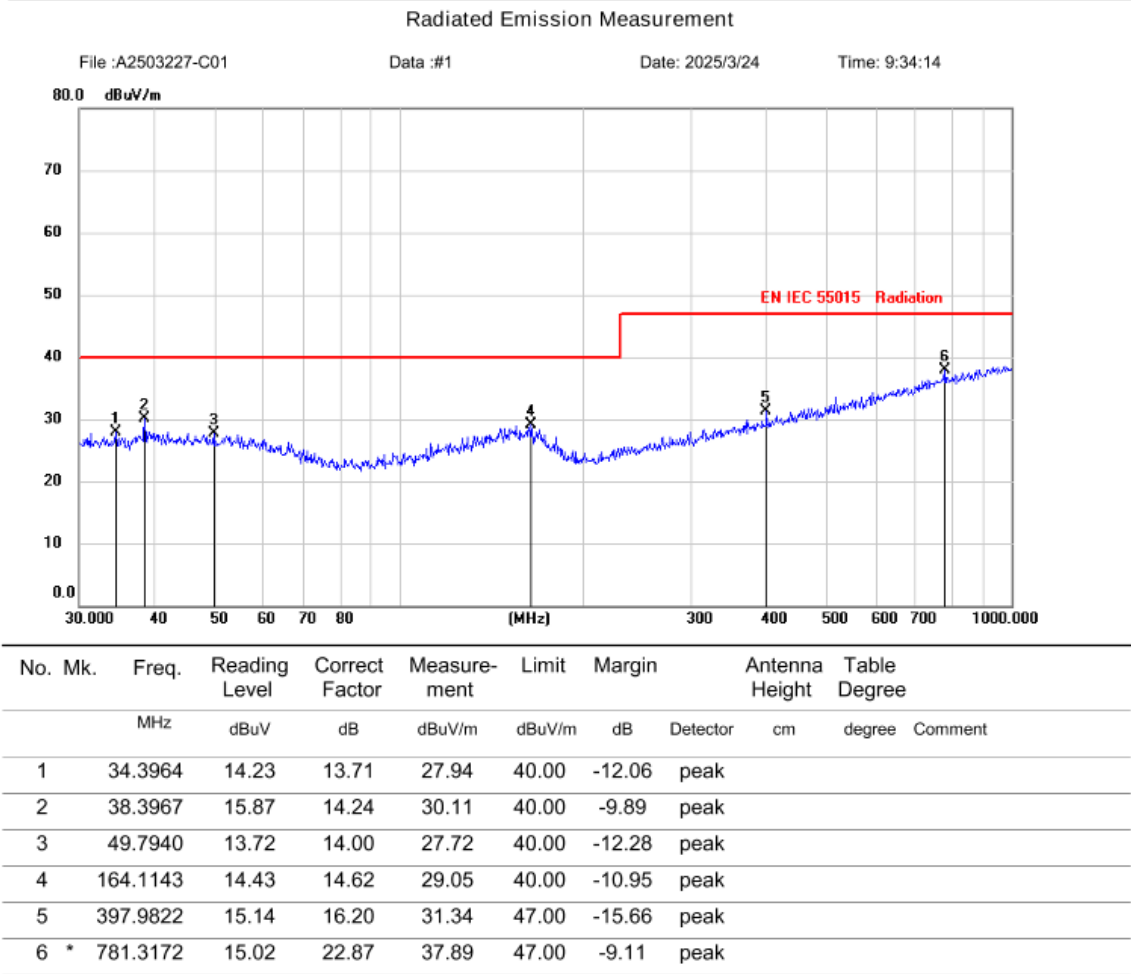
Power: DC 3.7V From Battery

Distance: 3m

Temperature: 22.5

Humidity: 57 %

Lily Wang



Note: 1. *:Maximum data; x:Over limit; !:over margin.
2.Measurement=Reading Level+Correct Factor; Correct Factor=Antenna Factor+Cable Loss.



深圳阿尔法商品检验有限公司
SHENZHEN ALPHA PRODUCT TESTING CO.,LTD.

深圳阿尔法商品检验有限公司
Shenzhen Alpha Product Testing Co.,Ltd.
地址: ALPHA 广东省深圳市宝安区福永街道立新路 2 号 i 栋
TEL: 4008-3008-95

Site LAB 966 Chamber 1

Limit: EN IEC 55015 Radiation

EUT/Task No : A2503227-C01

M/N/Sample No: A2503227-S0001

Mode : Mode1

Note:

Engineer Signature:

Polarization: Horizontal

Power: DC 3.7V From Battery

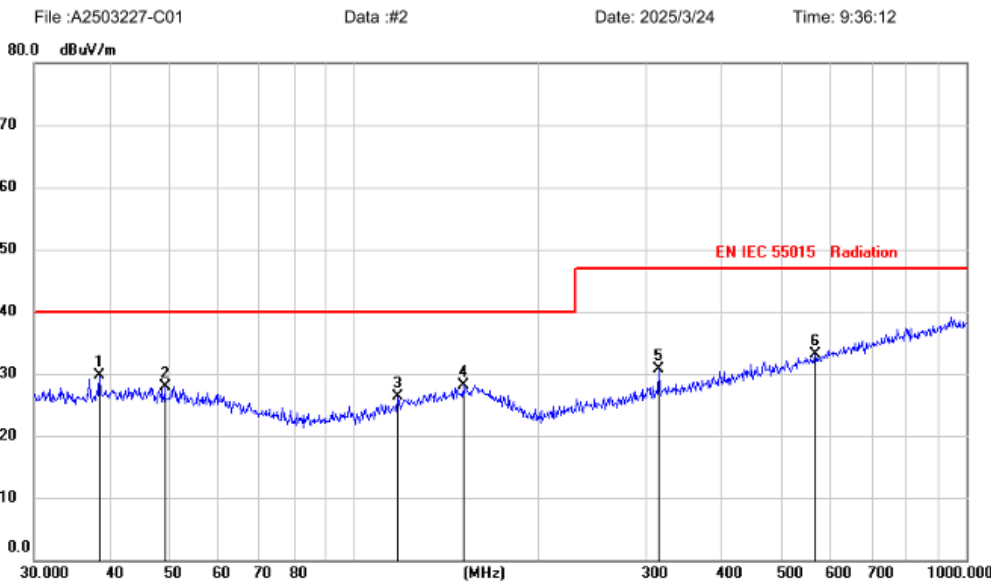
Distance: 3m

Temperature: 22.5

Humidity: 57 %

Lily Wong

Radiated Emission Measurement



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1	*	38.4304	15.37	14.26	29.63	40.00	-10.37	peak		
2		49.1651	13.92	13.99	27.91	40.00	-12.09	peak		
3		117.9792	13.58	12.75	26.33	40.00	-13.67	peak		
4		150.9342	13.12	14.99	28.11	40.00	-11.89	peak		
5		314.9281	16.23	14.47	30.70	47.00	-16.30	peak		
6		567.1191	13.58	19.56	33.14	47.00	-13.86	peak		

Note:1. *:Maximum data; x:Over limit; !:over margin.
2.Measurement=Reading Level+Correct Factor; Correct Factor=Antenna Factor+Cable Loss.

5.8. Test photo

	/
/	/

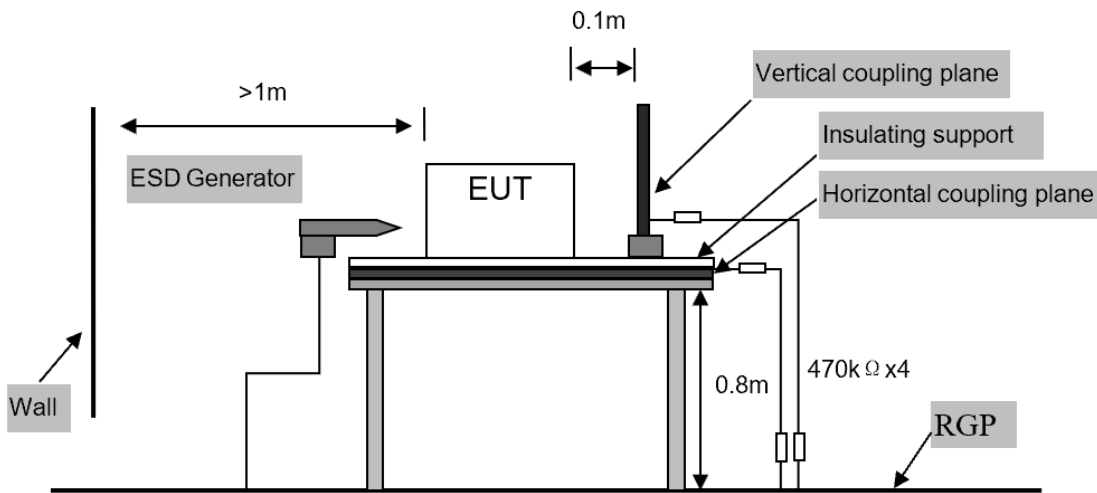
6. Electrostatic Discharge Test

6.1. Test equipment

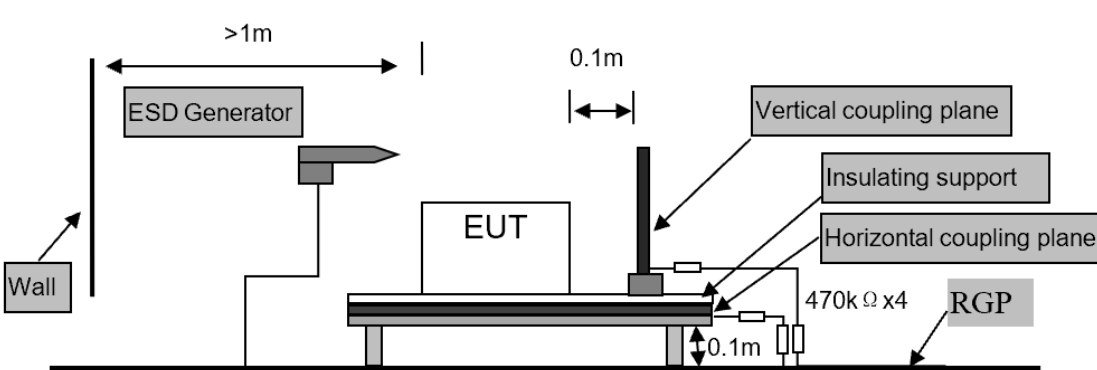
Equipment	Manufacturer	Model No.	Equipment No.	Cal. Due to
ESD Tester	HAEFELY	PESD1610	Aa-EE009	2025/08/12
ESD Tester	3ctest	EDS 30V	Aa-EE113	2026/03/06

6.2. Block diagram of test setup

Table-top equipment



Floor-standing equipment



6.3. Test levels and performance criterion

Test Level		Performance Criteria
Air Discharge	±2kV, ±4kV and ±8kV	B
Contact Discharge	±4kV	
Performance criteria B description: During the test, degradation of performance is allowed. However, no change of operating state or stored data is allowed to persist after the test. After the		

test, the EUT shall continue to operate as intended without operator intervention. No degradation of performance or loss of function is allowed, after the application of the phenomena below a performance level specified by the manufacturer, when the EUT is used as intended.

6.4. Assistant equipment used for test

Assistant equipment	Manufacturer	Model number	Description
AC Adapter	Shenzhen HUONIU Technology Co., Ltd.	HNFCQC3024UU	/

6.5. Test procedure

Air Discharge:

The test was applied on non-conductive surfaces of EUT. The round discharge tip of the discharge electrode was approached as fast as possible to touch the EUT. After each discharge, the discharge electrode was removed from the EUT. The generator was re-triggered for a new single discharge and repeated 20 times for each pre-selected test point. This procedure was repeated until all the air discharge completed.

Contact Discharge:

All the procedure was same as air discharge. Except that the generator was re-triggered for a new single discharge. The tip of the discharge electrode was touching the EUT before the discharge switch was operated.

Indirect discharge for horizontal coupling plane:

At least 20 single discharges were applied to the horizontal coupling plane, at points on each side of the EUT. The discharge electrode positions vertically at a distance of 0.1m from the EUT and with the discharge electrode touching the coupling plane.

Indirect discharge for vertical coupling plane:

At least 20 single discharges were applied to the center of one vertical edge of the coupling plane. The coupling plane, of dimensions 0.5m X 0.5m, was placed parallel to, and positioned at a distance of 0.1m from the EUT. Discharges were applied to the coupling plane, with this plane in sufficient different positions that the four faces of the EUT are completely illuminated.

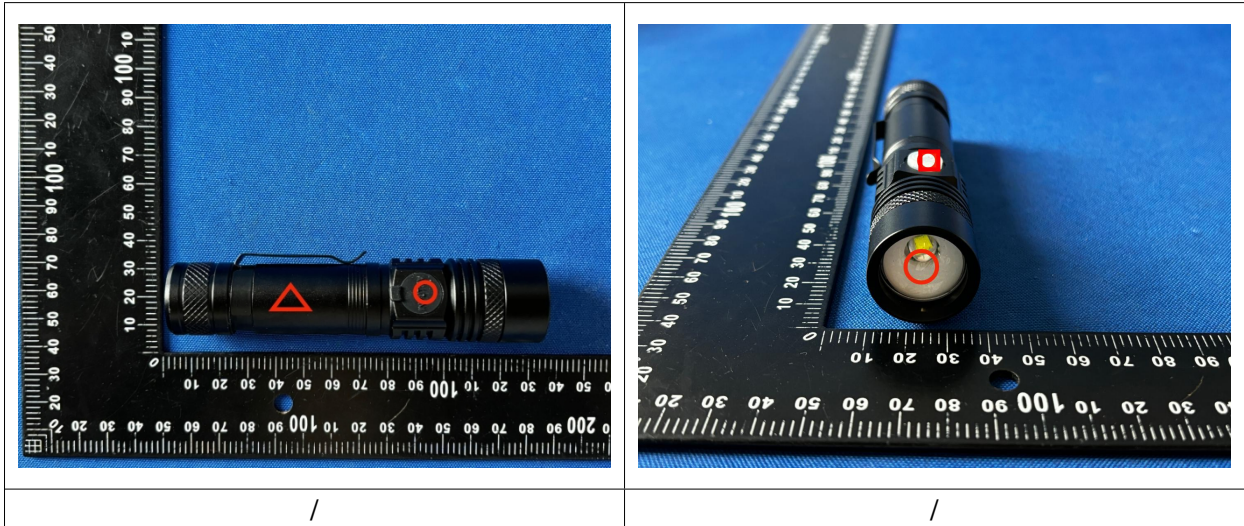
6.6. Test result

Test Site: ESD Laboratory	Test Date: 2025/03/24--2025/03/24
Condition: 23.1°C, 56%, 101.6kPa	Test Engineer: Lily Wang
Memo: /	

EUT Name: flashlight			EUT Model: 98147		
Sample No.: A2503227-S0001			Test Mode: Charging		
Power supply: DC 5V From Adapter			Memo:/		
Measure parameters: 20 times at each point for contact discharge; 20 times at each point for air discharge. 1 second interval for each discharge.					
Type of discharge	Test level	Test point	Required	Observation	Result
Contact to EUT	±4kV	△	B	A	Pass
Contact to coupling planes	±4kV	Coupling planes	B	A	Pass
Air	±2 kV /±4 kV /±8kV	○	B	A	Pass
Observation description: A: Normal performance within limits specified by the manufacturer requestor or purchaser.					

B: Temporary loss of function or degradation of performance which ceases after the disturbance ceases, and from which the equipment under test recovers its normal performance, without operator intervention.
Note: "▲"---contact discharge, "●"---air discharge.

6.7. ESD test points



6.8. Test photo

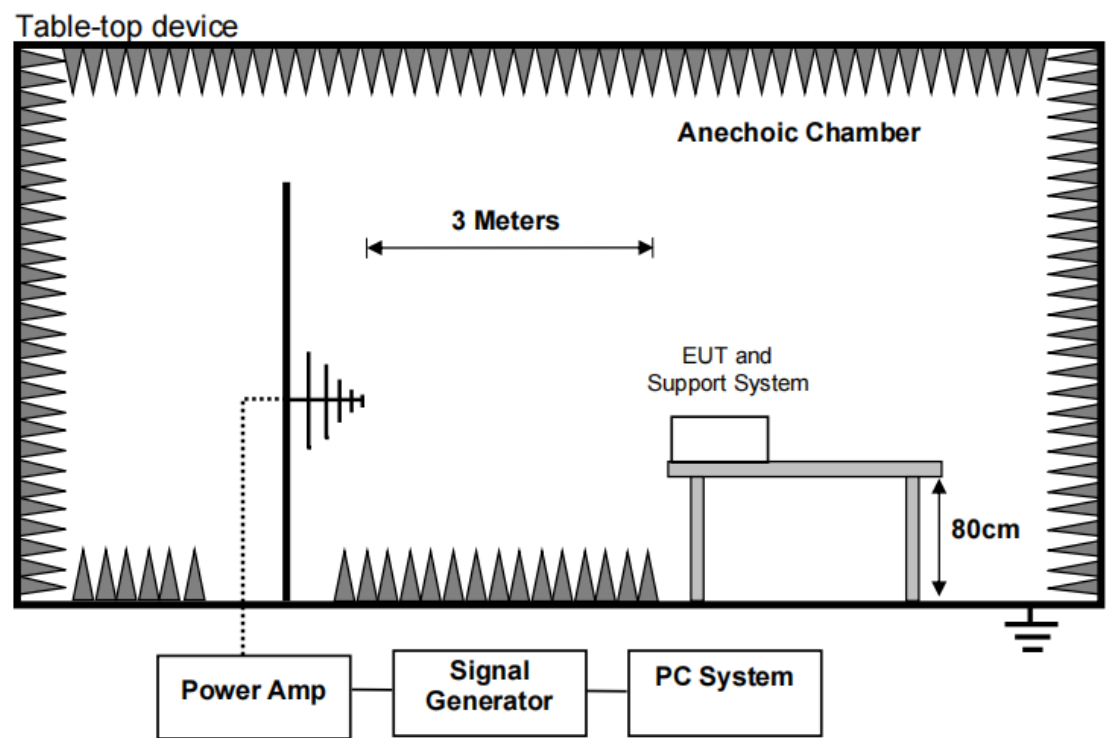


7. Continuous Radio Frequency Disturbances Test

7.1. Test equipment

Equipment	Manufacturer	Model No.	Equipment No.	Cal. Due to
Vector Signal Generator	Agilent	E4438C	Aa-EE041	2025/08/07
Amplifier	Agilent	8449B	Aa-EE044	2025/08/07
Vector Signal Generator	Agilent	E4438C	Aa-EE041	2025/08/07
Power meter	Agilent	E4419B	Aa-EE045	2025/08/07
Power Sensor	Agilent	E9300A	Aa-EE046	2025/08/07
Power Sensor	Agilent	E9304A	Aa-EE047	2025/08/07
RF power Amplifier	OPHIR	5225R	Aa-EE065	2025/08/07
RF power Amplifier	OPHIR	5273R	Aa-EE066	2025/08/07
Isotropic Electric Field Probe	narda	EP-601	Aa-EE067	2025/08/10
Antenna	SCHWARZBEC K	STLP9128E- special	Aa-EE068	/

7.2. Block diagram of test setup



7.3. Test levels and performance criterion

Swept frequency test		Performance Criteria
Frequency (MHz)	80 to 1000	A
Field Strength	3V/m rms voltage level of the unmodulated signal	
Modulation	AM modulated to a depth of 80% by a sine wave of □1 kHz	

Step Size	1% increments
Dwell time	1 Sec.
Performance criteria A description for other devices: During and after the test the EUT shall continue to operate as intended without operator intervention. No degradation of performance or loss of function is allowed below a minimum performance level specified by the manufacturer when the EUT is used as intended.	

7.4. Assistant equipment used for test

Assistant equipment	Manufacturer	Model number	Description
AC Adapter	Shenzhen HUONIU Technology Co., Ltd.	HNFCQC3024UU	/

7.5. Test procedure

The field sensor is placed on the EUT table (Ground clearance height reference "block diagram of test setup") which is 3 meters away from the transmitting antenna. Through the signal generator, power amplifier and transmitting antenna to produce a uniformity field strength around the EUT table from frequency range specified and records the signal generator's output level at the same time for whole measured frequency range. Then, put EUT and its simulators on the EUT turn table and keep them 3 meters away from the transmitting antenna which is mounted on an antenna tower and fixes at 1 meter height above the ground. Using the recorded signal generator's output level to measure the EUT from frequency range specified and both horizontal & vertical polarization of antenna must be set and measured. Each of the four sides of EUT must be faced this transmitting antenna and measures individually.

7.6. Test result

Test Site: Chamber 1#(RE/RS)	Test Date: 2025/03/24--2025/03/24
Condition: 23.1°C,56%,101.6kPa	Test Engineer: Lily Wang
Memo: /	

EUT Name: flashlight	EUT Model: 98147
Sample No.: A2503227-S0001	Test Mode: Charging
Power supply: DC 5V From Adapter	Memo:/

Swept test: 80MHz to 1GHz, Steps: 1%, Dwell time 1s, 1kHz 80% AM modulation

Test frequency	Level	EUT position	Antenna polarization	Required	Observation	Result
80MHz to 1000MHz	3V/m	Front	H	A	A	Pass
			V	A	A	Pass
		Left	H	A	A	Pass
			V	A	A	Pass
		Rear	H	A	A	Pass
			V	A	A	Pass
		Right	H	A	A	Pass
			V	A	A	Pass

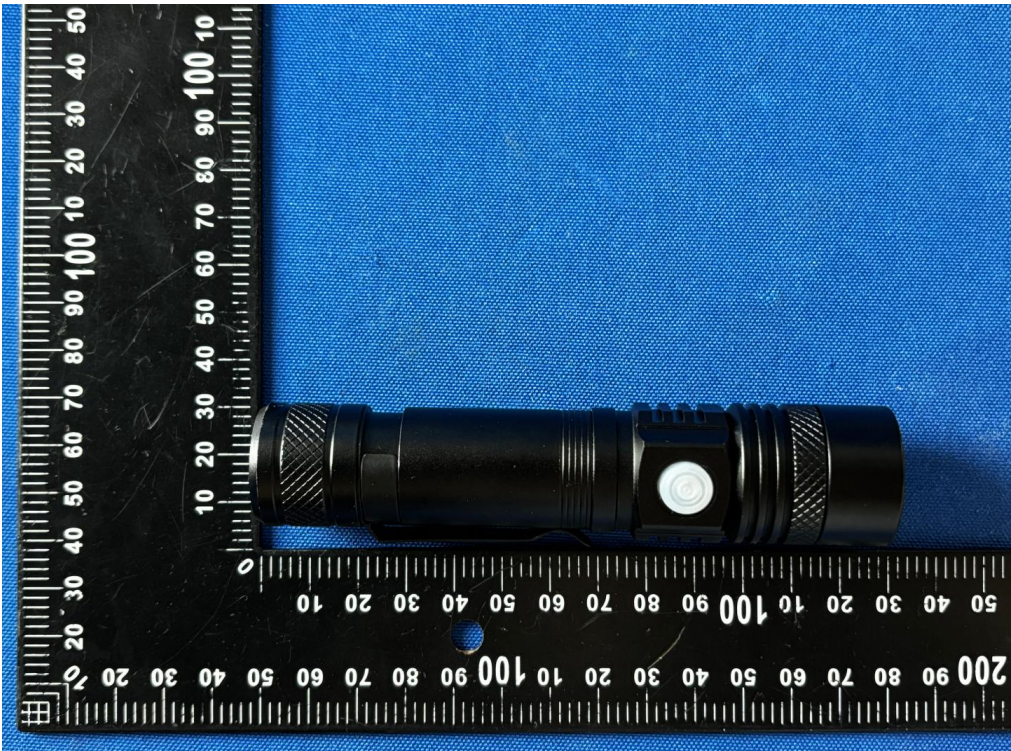
Observation description:

A: Normal performance within limits specified by the manufacturer requestor or purchaser.

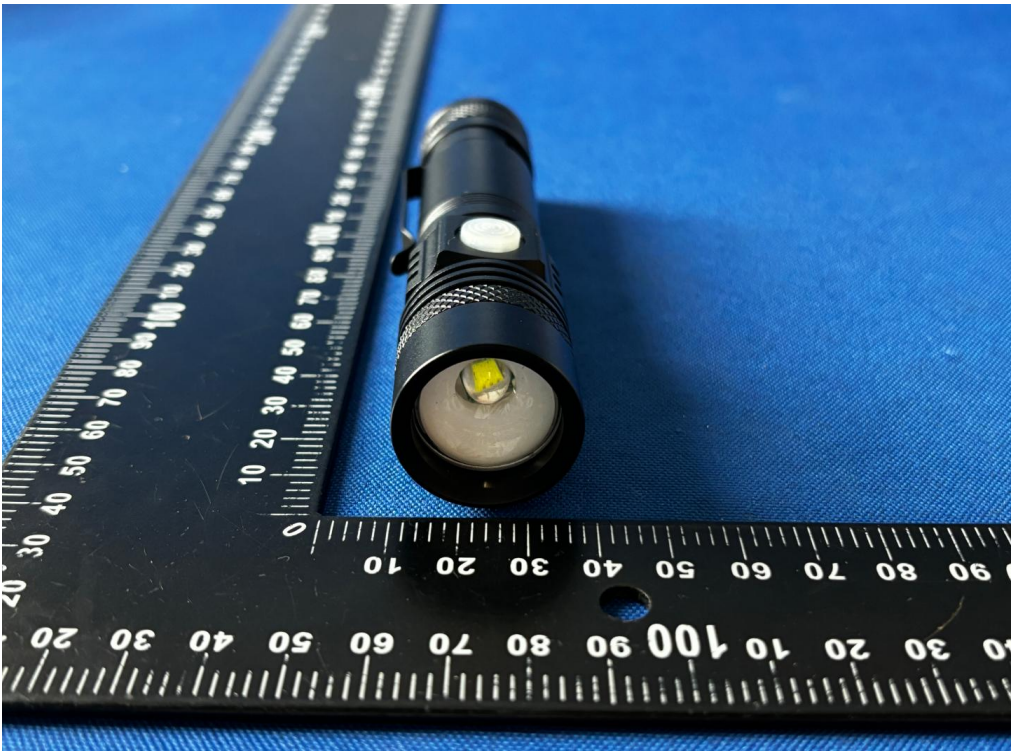
7.7. Test photo

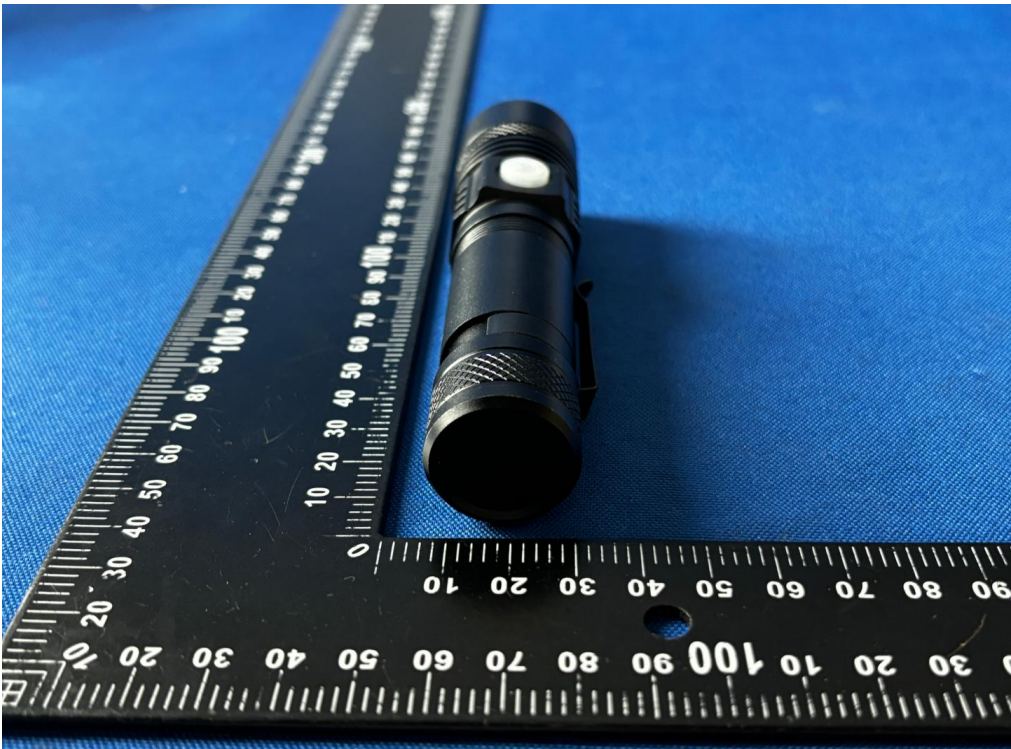
	/	
/		

Appendix I : Photos of the EUT

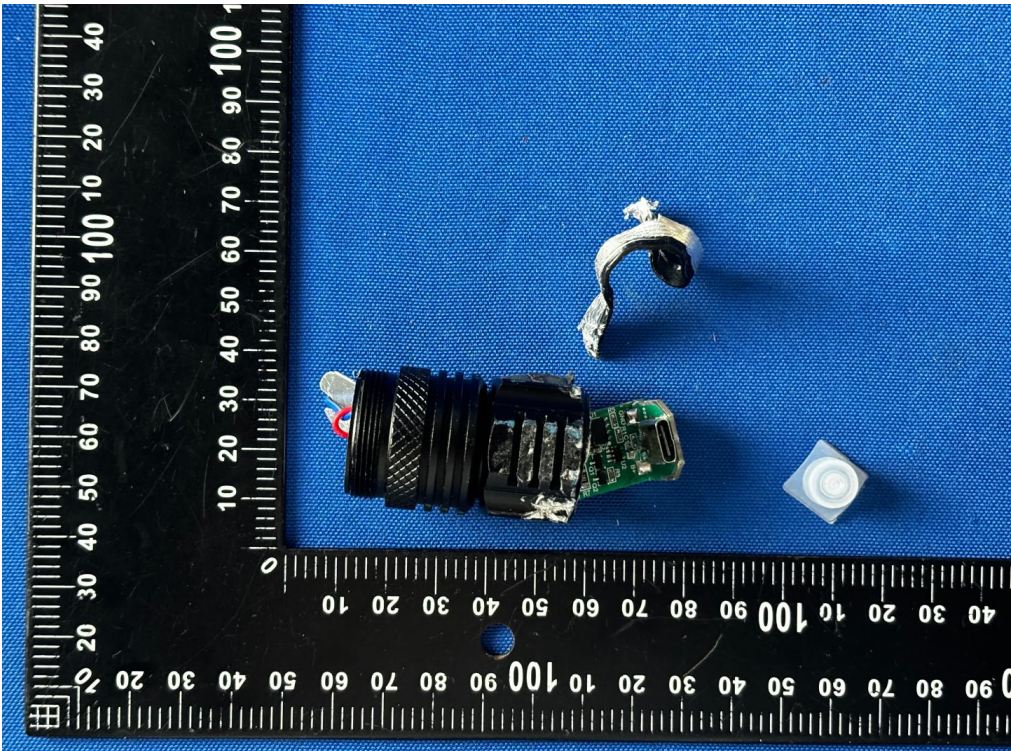


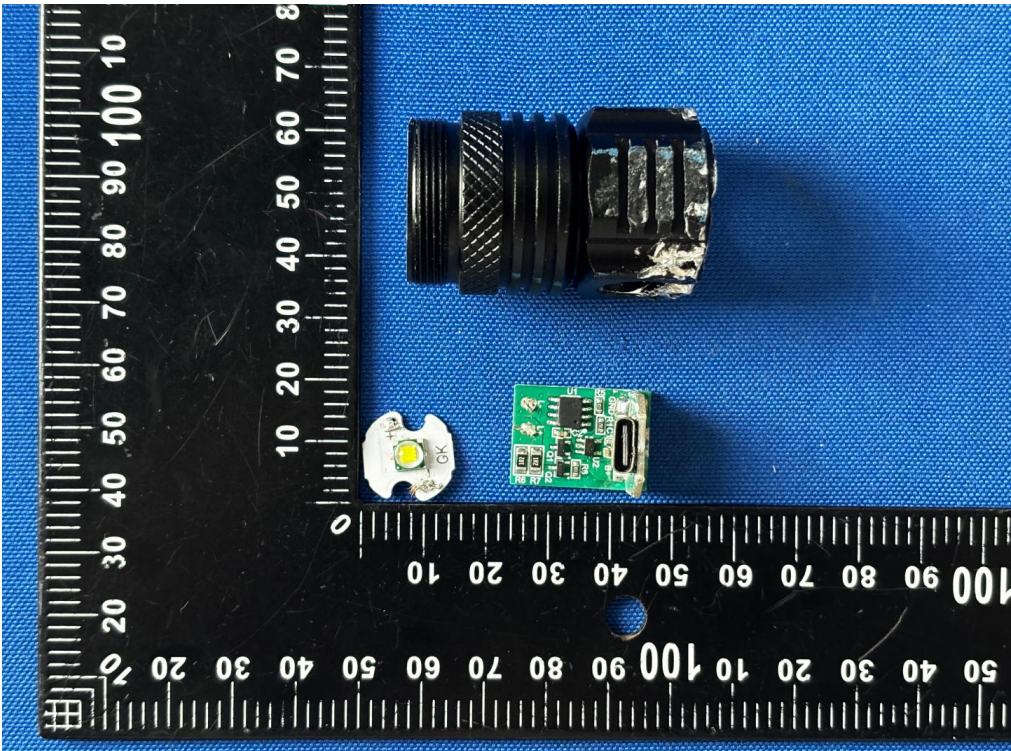
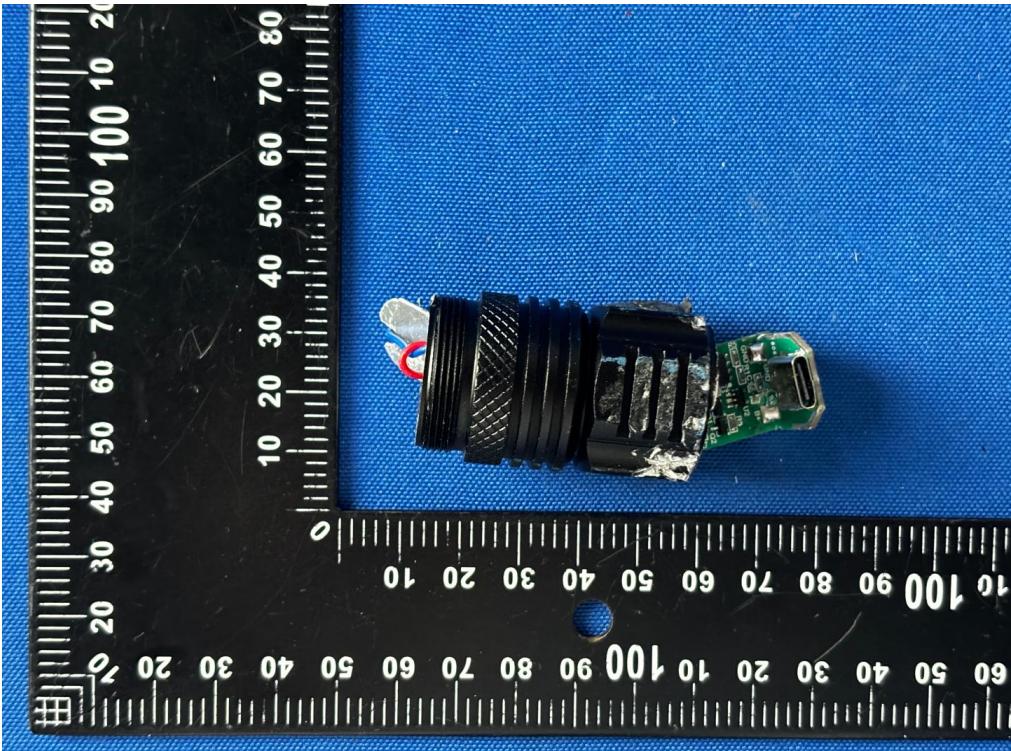


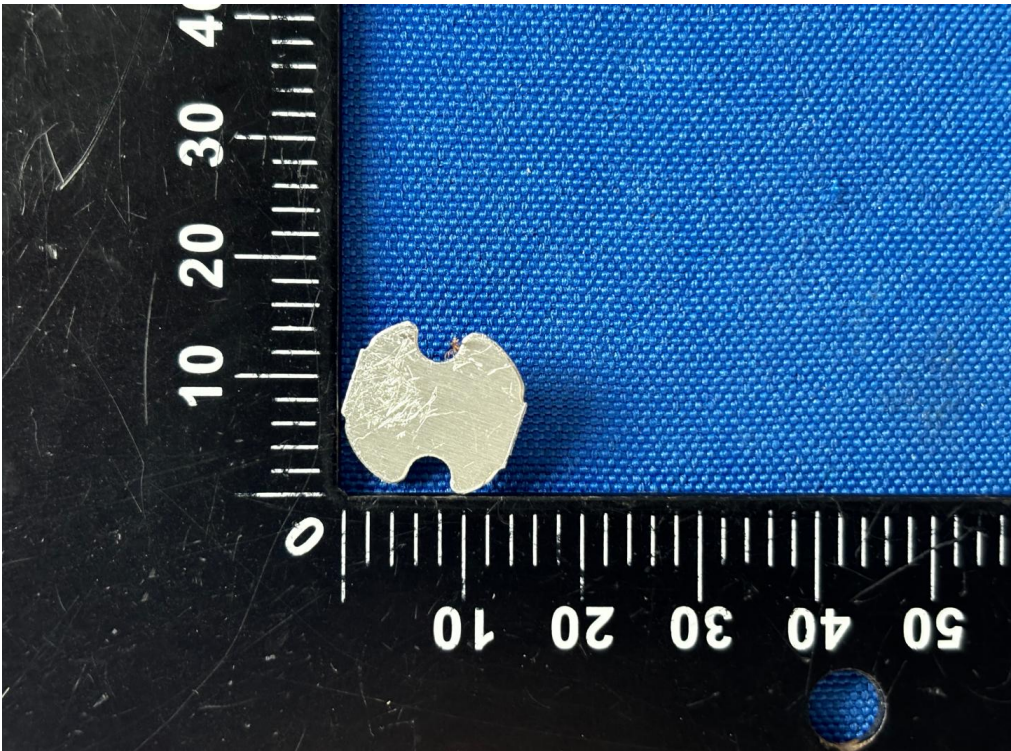
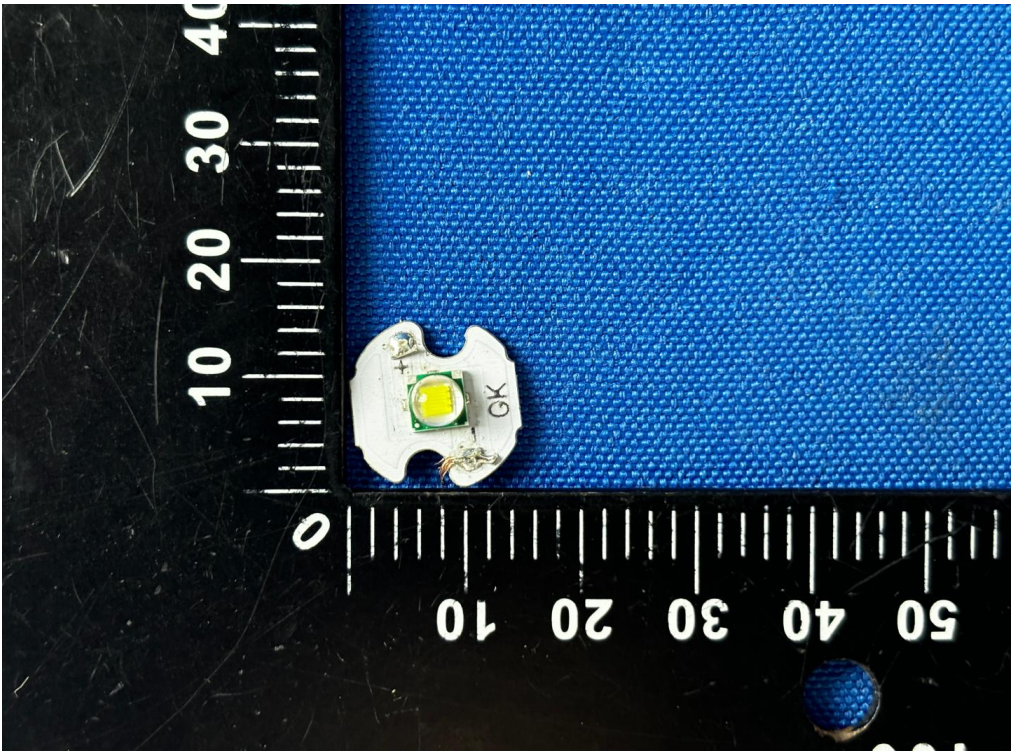


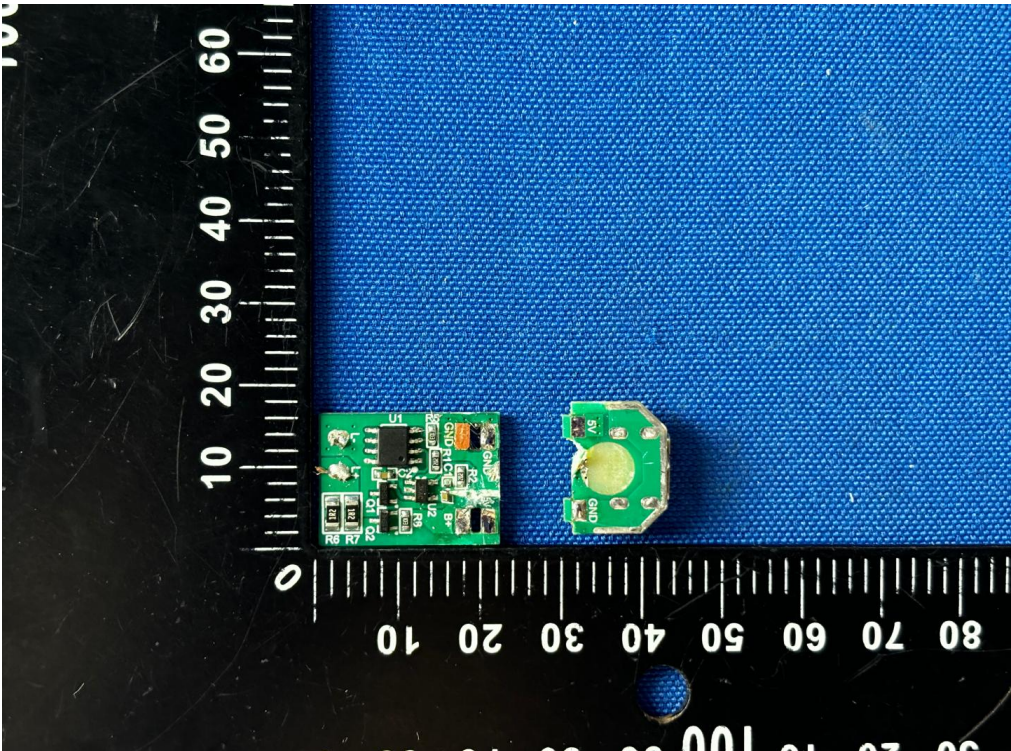
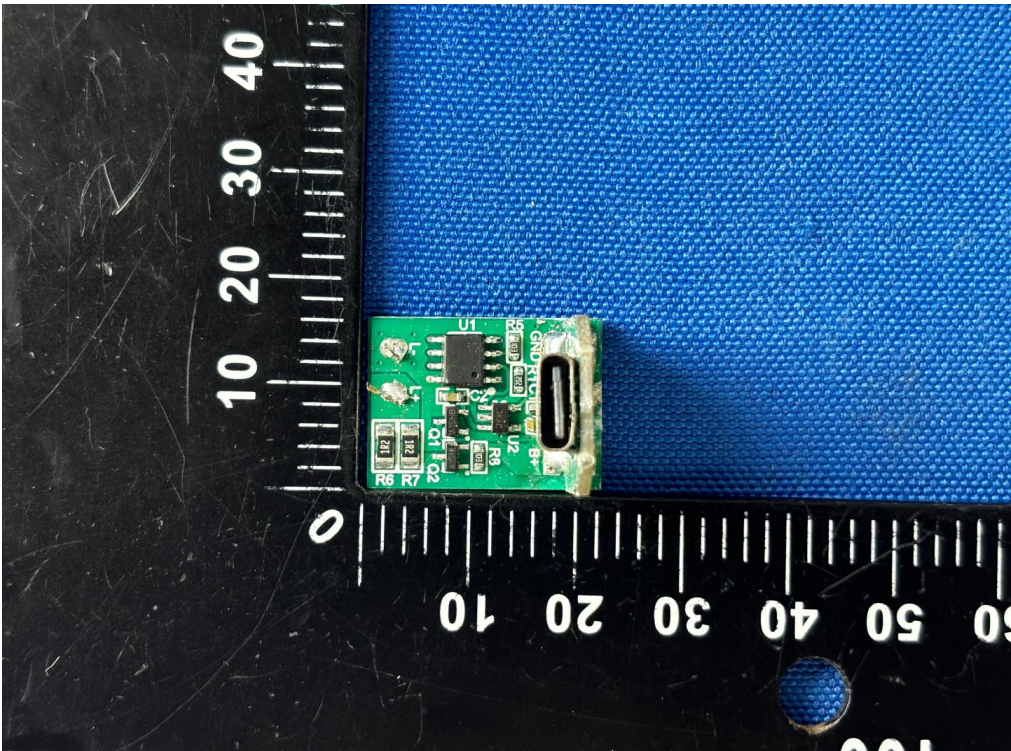


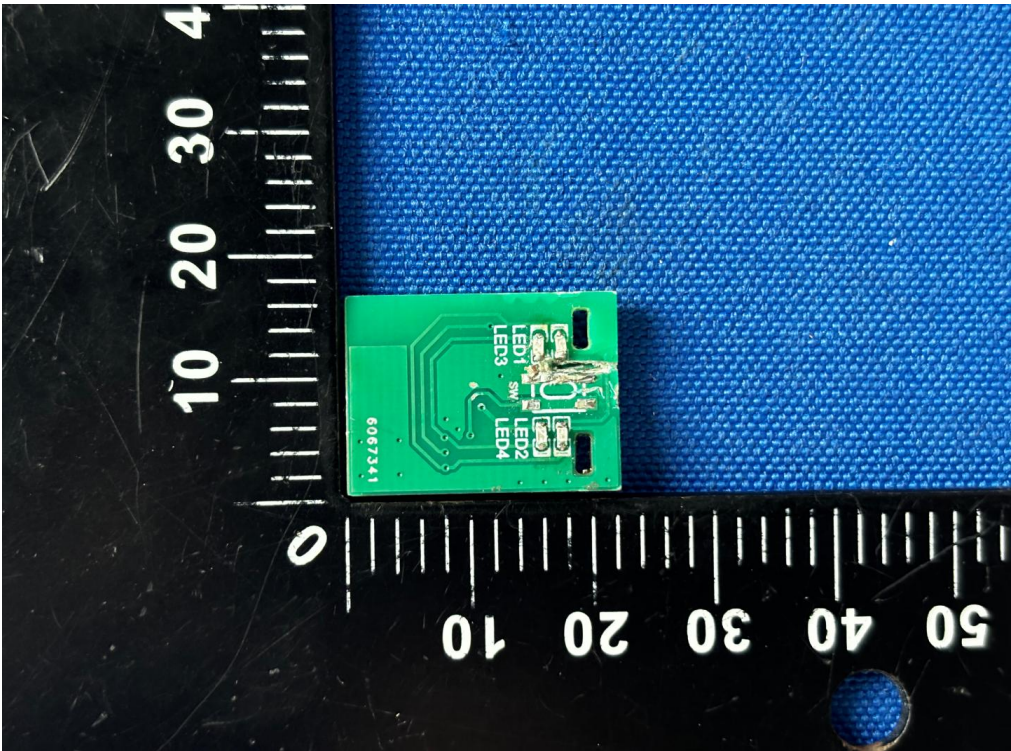
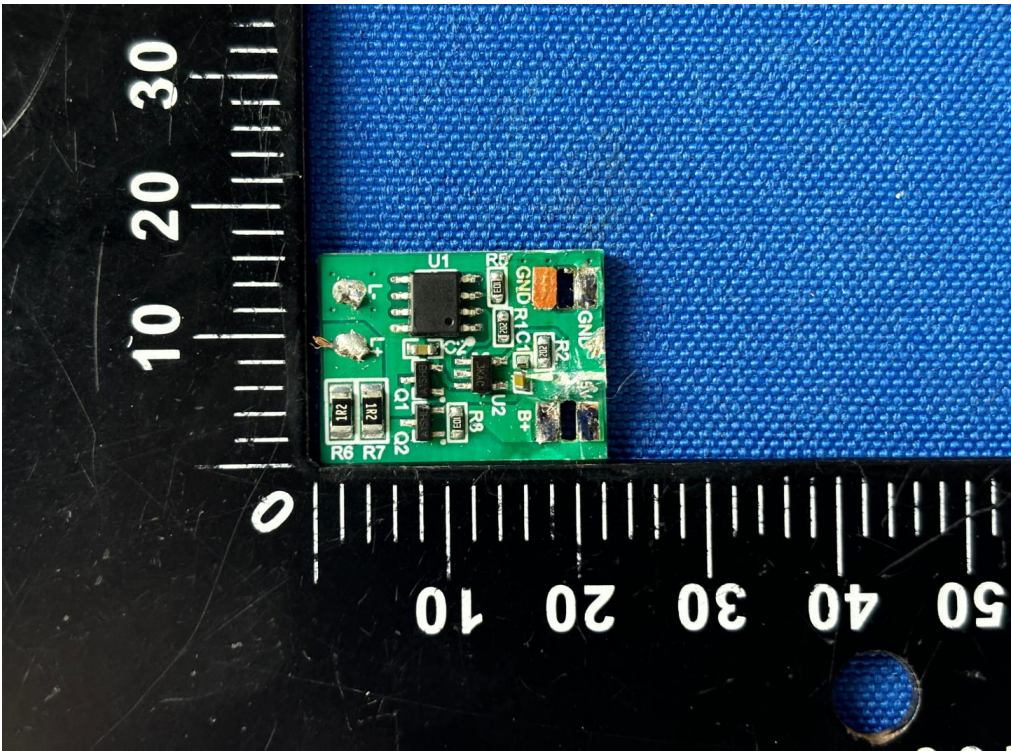


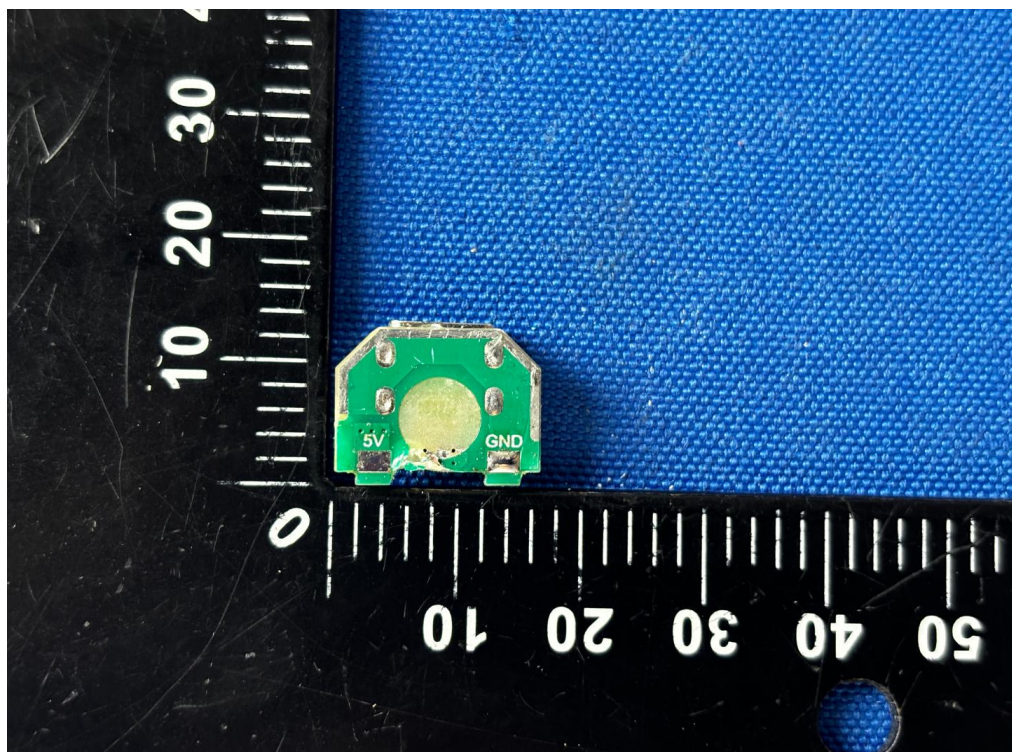
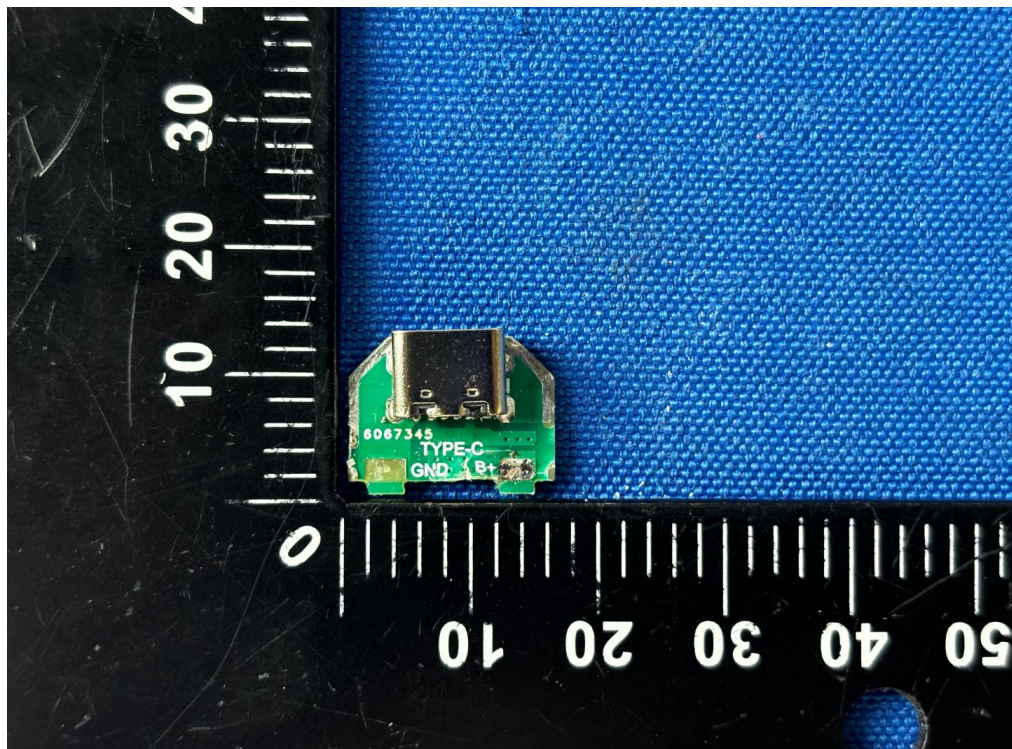












-----End Report-----