EMC TEST REPORT

For

Ningbo Borden Electric Co., Ltd

S5 PIR Solar Garden Light

Test Model: S5-1600LM

Additional Models : please refer to Model list

Prepared for	:	Ningbo Borden Electric Co., Ltd
Address	:	No.133 Xingning North Road TaoYuan Industrial Zone, Ninghai County, Ningbo, Zhejiang, China
Prepared by	:	Ningbo LCS Standard Technology Service Co., Ltd.
Address	:	Room 101-106, 202-206, Building 037, No. 166, Jinghua Road, Meixu Street, Ningbo High-tech Zone, Yinzhou District, Ningbo City, Zhejiang Province, China
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Mail	:	webmaster@LCS-cert.com
Date of receipt of test sample	:	October 10, 2022
Number of tested samples	:	1
Serial number	:	Prototype
Date of Test	:	October 10, 2022 - October 12, 2022
Date of Report	:	October 12, 2022

EMC TEST REPORT

EN IEC 55015:2019+A11:2020

Emission - Electrical lighting and similar equipment

EN 61547:2009

Equipment for general lighting purposes - EMC immunity requirements

Report Reference No.....:	**LCSE101022002E**
Date of Issue.....:	October 12, 2022
Testing Laboratory Name.....:	**Ningbo LCS Standard Technology Service Co., Ltd.**
Address.....:	Room 101-106, 202-206, Building 037, No. 166, Jinghua Road, Meixu Street, Ningbo High-tech Zone, Yinzhou District, Ningbo City, Zhejiang Province, China
Testing Procedure.....:	Full application of Harmonised standards ☒ Partial application of Harmonised standards ☐ Other standard testing method ☐
Applicant's Name.....:	**Ningbo Borden Electric Co., Ltd**
Address.....:	No.133 Xingning North Road TaoYuan Industrial Zone, Ninghai County, Ningbo, Zhejiang, China .
Test Specification:	
Standard.....:	EN IEC 55015:2019+A11:2020 EN IEC 61000-3-2:2019+A1:2021 EN 61000-3-3:2013+A1:2019+A2:2021 EN 61547:2009
Test Report Form No.....:	LCSEMC-2.3
TRF Originator.....:	Ningbo LCS Standard Technology Service Co., Ltd.
Master TRF.....:	Dated 2019-03

Equipment Under Test.....:	**S5 PIR Solar Garden Light**
Trademark.....:	N/A
Test Model/Type.....:	S5-1600LM
Rating.....:	DC 3.7V
Results .....:	**PASS**

Compiled by:	**Supervised by:**	**Approved by:**
Feng Liang / Engineer	Dawson Yu / Technique Director	Lh Li / Manager

EMC - TEST REPORT

Test Report No.....:	**LCSE101022002E**

Applicant.....:	**Ningbo Borden Electric Co., Ltd**
Address.....:	No.133 Xingning North Road TaoYuan Industrial Zone, Ninghai County, Ningbo, Zhejiang, China
Telephone.....:	/
Fax.....:	/
Manufacturer.....:	**Ningbo Amlife Machinery Co., Ltd**
Address.....:	No.24 Fangshan Road Qiaotouhu Industrial Zone Ninghai County, Ningbo, Zhejiang, China
Telephone.....:	/
Fax.....:	/
Factory.....:	**Ningbo Amlife Machinery Co., Ltd**
Address.....:	No.24 Fangshan Road Qiaotouhu Industrial Zone Ninghai County, Ningbo, Zhejiang, China
Telephone.....:	/
Fax.....:	/

The applicant and manufacturer information, product name, model, trademark and other information in this report are all provided by the applicant, and this laboratory is not responsible for verifying its authenticity.

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.

ENVIRONMENTAL CONDITIONS

The climatic conditions during the test are within the limits specified by the manufacturer for the operation of the EUT and the test equipment. the climatic conditions during the test were in the following Limits:

Ambient temperature	15℃ - 30℃
Relative Humidity air	30% - 60%
Atmospheric pressure	86 kPa - 106 kPa

Climate values will be recorded and recorded separately if specifically required in the base standard or application product/product series standard.

POSSIBLE TEST CASE VERDICTS

Test cases does not apply to test object	N/A
Test object does meet requirement	P(Pass) / PASS
Test object does not meet requirement	F(Fail) / FAIL
Not measured	N/M

DEFINITION OF SYMBOLS USED IN THIS TEST REPORT

☒ Indicate that the conditions, standards or equipment listed is applicable to this report / test / EUT.
☐ Indicate that the conditions, standards or equipment listed is not applicable to this report / test / EUT.

REVISION HISTORY

Revision	Issue Date	Revision Content	Revised by
000	October 12, 2022	Initial Issue	-

Remark:
000) : “---”

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1. GENERAL INFORMATION

1.1. GENERAL DESCRIPTION OF THE ITEM(S)

Equipment Under Test	S5 PIR Solar Garden Light
Test Model/Type	S5-1600LM
Additional Models/Type	See Model list
Description of Model difference	-
Rating	DC 3.7V
Mounting position	☒ Table top equipment ☐ Wall /Ceiling mounted equipment ☐ Floor standing equipment ☐ Hand-held equipment ☐ Other
Non-restricted ELV lamps	☐ Yes ☒ No

Information of the Equipment Under Test(EUT)
The EUT is general luminaires which intended for residential use. the product contains electronic control circuits,and no component susceptible to magnetic fields.for more information refer to client's DoC letter.

Model	Rating
S5-500LM, S5-850LM	DC 3.7V
- All models use the same circuit and PCB layout, except the parameter of secondary circuit components for different output ratings. - This report after information review and verification, the model "S5-1600LM" were chosen as the representative model to perform all the tests.	

1.2. OPERATING MODE(S) USED OF TESTS

During the tests, the following operating mode(s) has(have) been used.

Operating Mode	Operating Mode description	Used for testing	
		Emission	Immunity
1	Lighting on mode	☒	☒
2	Maximum light	☐	☐
3	Minimum light	☐	☐
4	Full load	☐	☐

1.3. SUPPORT / AUXILIARY EQUIPMENT FOR THE EUT

EUT has been tested using the following auxiliary equipment :

Auxeq	Model/Type	Manufacturer	Supplied by
--			

1.4. DESCRIPTION OF TEST FACILITY

Test Location 1	Ningbo LCS Standard Technology Service Co., Ltd. Room 101-106, 202-206, Building 037, No. 166, Jinghua Road, Meixu Street, Ningbo High-tech Zone, Yinzhou District, Ningbo City, Zhejiang Province, China. CMA Registration Number is 191121112621. CNAS Registration Number is L13445
Test Location 2	Shenzhen LCS Compliance Testing Laboratory Ltd. 101, 201 Building A and 301 Building C, Juji Industrial Park, Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, Guangdong, China. CMA Registration Number is 201819013358. CNAS Registration Number is L4595.
Date of receipt of test item	October 10, 2022
Date(s) of performance of test	October 10, 2022 - October 12, 2022

Note: Radio-Frequency Electromagnetic Field (RS) Test Subcontract to Shenzhen LCS Compliance Testing Laboratory Ltd for Testing.

2. 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 LCS 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.

Measurement	Uncertainty (U_{lab})	Uncertainty (U_{cispr})
Conducted disturbance (9kHz - 150kHz)	± 2.63 dB	± 3.8 dB
Conducted disturbance (150kHz - 30MHz)	± 2.35 dB	± 3.4 dB
Magnetic field disturbance (9kHz - 150kHz)	± 3.60 dB	-
Magnetic field disturbance (150kHz - 30MHz)		
Radiated disturbance (9kHz - 30MHz)	± 3.68 dB	-
Radiated disturbance (30MHz - 200MHz)	± 3.48 dB	± 5.3 dB
Radiated disturbance (200MHz - 1GHz)	± 3.48 dB	± 5.3 dB
Harmonic current	± 0.510%	-
Voltage fluctuations & Flicker	± 0.510%	-

Supplementary information:

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor of k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

3. MEASURING DEVICES AND TEST EQUIPMENT

RADIATED DISTURBANCE (9KHz - 30MHz)						
Item	Test equipment	Manufacturer	Model No.	Serial No.	Cal Date	Due Date
1	Large Loop Antenna	DAZE	ZN304401	17029	2022-05-30	2023-05-29
2	EMI Test Receiver	R&S	ESR 3	102519	2022-05-30	2023-05-29
3	EMI Test Software	AUDIX	E3	N/A	/	/
4	shielded room	MAORUI	843	160218835	2021-04-12	2024-04-11

RADIATED DISTURBANCE (30MHz - 1GHz)						
Item	Test equipment	Manufacturer	Model No.	Serial No.	Cal Date	Due Date
1	EMI Test Software	AUDIX	E3	N/A	/	/
2	3m Semi Anechoic Chamber	MAORUI	9m*6m*6	160218849	2021-04-12	2024-04-11
3	By-log Antenna	SCHWARZBECK	VULB9168	9168-988	2022-05-30	2025-05-29
4	Horn Antenna	SCHWARZBECK	BBHA9120D	9120D-2049	2021-05-31	2024-05-30
5	EMI Test Receiver	R&S	ESRP	101372	2022-05-30	2023-05-29
6	AMPLIFIER	SCHWARZBECK	BBV9745	136	2022-05-30	2023-05-29
7	RF Cable	Hubber Suhner	CBL-RE	/	/	/
8	AMPLIFIER	SCHWARZBECK	BBV9718C	21	2022-05-30	2023-05-29

HARMONIC CURRENT & FLICKER						
Item	Test equipment	Manufacturer	Model No.	Serial No.	Cal Date	Due Date
1	Harmonic current and voltage scintillation measurement system	Li	AC2000A	311355	2022-05-30	2023-05-29

ELECTROSTATIC DISCHARGE						
Item	Test equipment	Manufacturer	Model No.	Serial No.	Cal Date	Due Date
1	ESD Simulator	SCHLODER	SESD216	102318	2022-05-26	2023-05-25

RADIO-FREQUENCY ELECTROMAGNETIC FIELDS						
Item	Test equipment	Manufacturer	Model No.	Serial No.	Cal Date	Due Date
1	MXG Vector Signal Generator	Agilent	E4438C	MY42081396 (6G)	2022-06-16	2023-06-15
2	RF POWER AMPLIFIER	OPHIR	5225R	1052	2022-06-16	2023-06-15
3	RF POWER AMPLIFIER	OPHIR	5273F	1019	2022-06-16	2023-06-15
4	Stacked Broadband Log Periodic Antenna	SCHWARZBECK	STLP 9128	9128ES-145	NCR	NCR
5	Stacked Mikrowellen Log.-Per Antenna	SCHWARZBECK	STLP 9149	9149-484	NCR	NCR
6	RS Electric field probe	narda	EP601	611WX80208	2022-06-16	2023-06-15
Note: NCR means no calibration requirement						

4. VERDICT SUMMARY SECTION

This chapter present an overview of the standards and results. Refer the next chapter for details of measured test results and applied test levels.

4.1. STANDARD(S)

EN IEC 55015:2019+A11:2020 - Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment.

EN 61547:2009 - Equipment for general lighting purposes — EMC immunity requirements.

EN IEC 61000-3-2:2019+A1:2021 - Electromagnetic compatibility (EMC) Part 3-2: Limits for harmonic current emissions (equipment input current ≤16 A per phase).

EN 61000-3-3:2013+A1:2019+A2:2021 - Electromagnetic compatibility (EMC)Part 3-3: Limits for voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current ≤16 A per phase and not subject to conditional connection.

4.2. OVERVIEW OF RESULTS

EMISSION TESTS - EN IEC 55015, EN IEC 61000-3-2, EN 61000-3-3		
Requirement - Test case	**Limit**	**Verdict**
Conducted Disturbance - electric power supply	Table 1, Table 4	N/A
Conducted Disturbance - wired network ports at other than power supply	Table 2, Table 3	N/A
Conducted Disturbance - local wired ports at other than electrical power supply interface of ELV lamp	Table 5, Table 6	N/A
Assessment of the enclosure port	---	---
Radiated Disturbance in the frequency range 9 kHz to 30 MHz	Table 8, Table 9	PASS
Radiated Disturbance in the frequency range 30 MHz to 1 GHz	Table 10	PASS
Harmonic Current	Clause 7	N/A
Voltage Fluctuations and Flicker [2]	Clause 5	N/A
IMMUNITY TESTS - EN 61547		
Requirement - Test case	**Basic Standard(s)**	**Verdict**
Electrostatic Discharge	EN 61000-4-2	PASS
Radio-Frequency Electromagnetic Fields	EN 61000-4-3	PASS
Electrical Fast Transient / Burst	EN 61000-4-4	N/A
Surge	EN 61000-4-5	N/A
Injected Currents (Radio-Frequency Common Mode)	EN 61000-4-6	N/A
Power Frequency Magnetic Field [1]	EN 61000-4-8	N/A
Voltage Dips and Short Interruptions	EN 61000-4-11	N/A

Supplementary information:

1) Only need to be applied to equipment containing components susceptible to magnetic fields.

2) According to EN 61000-3-3:2013+A1:2019+A2:2021 Clause A.2, Incandescent lamp luminaires with ratings less than or equal to 1000W and discharge and LED lamp luminaires with ratings less than or equal to 600W, are deemed to comply with the standard and are not required to be tested.

5. EMISSION TESTS

5.1. RADIATED DISTURBANCE (9KHz - 30MHz)

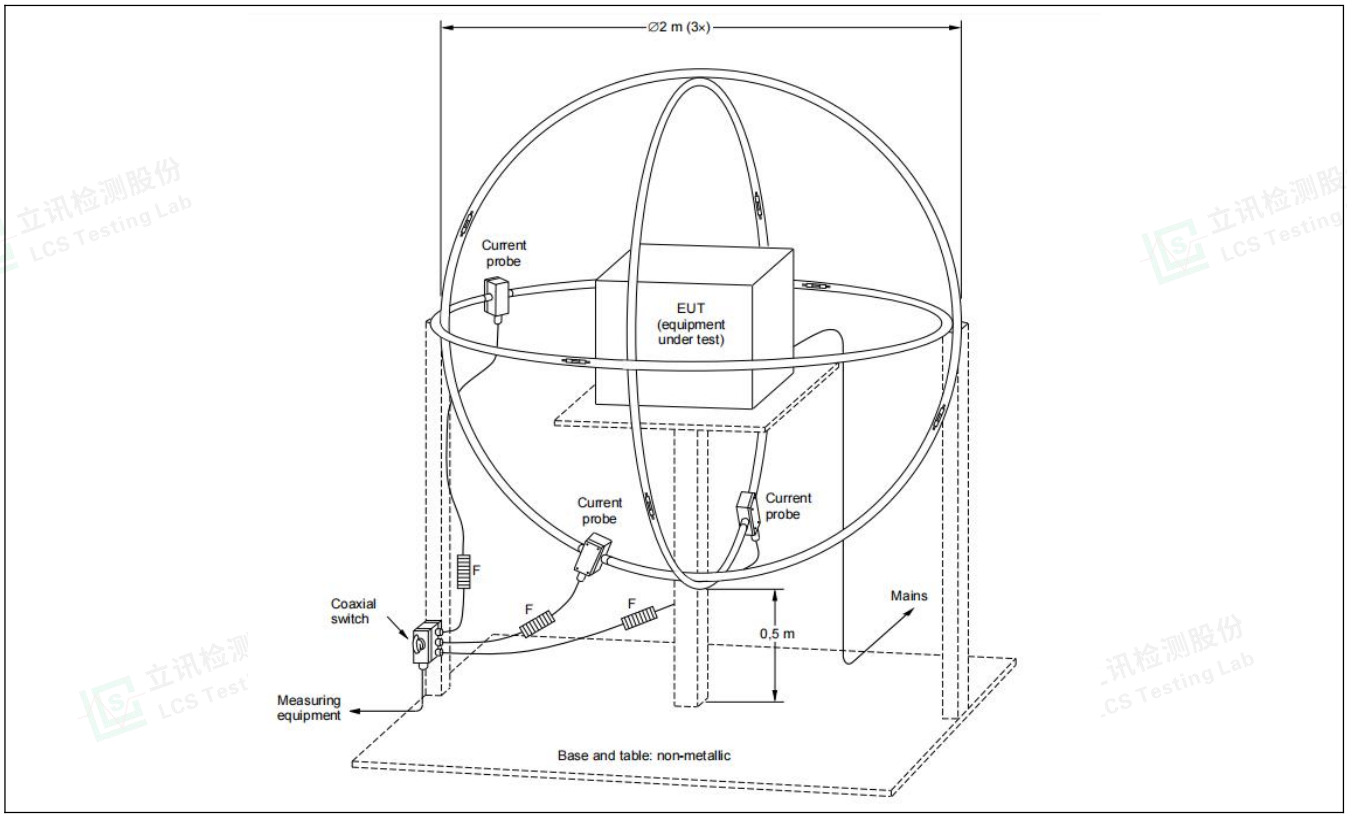
Standard	EN IEC 55015:2019+A11:2020
Basic Standard(s)	EN 55016-2-3
Test method	Large Loop Antenna (LLA)

LLAS Radiated disturbance limits (2m)

Frequency range [MHz]	Limit: Quasi-peak [dB(μA)]	IF BW
0,009 - 0,07	88	200 Hz
0,07 - 0,15	88 - 58	200 Hz
0,15 - 3,0	58 - 22	9 kHz
3,0 - 30	22	9 kHz

1) At the transition frequency the lower limit applies.
2) Decreasing linearly with logarithm of the frequency.

Test configuration



Test Procedure Description

The EUT is 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. Three field components are checked by means of a coaxial switch.

Test Results refer to Annex A.1

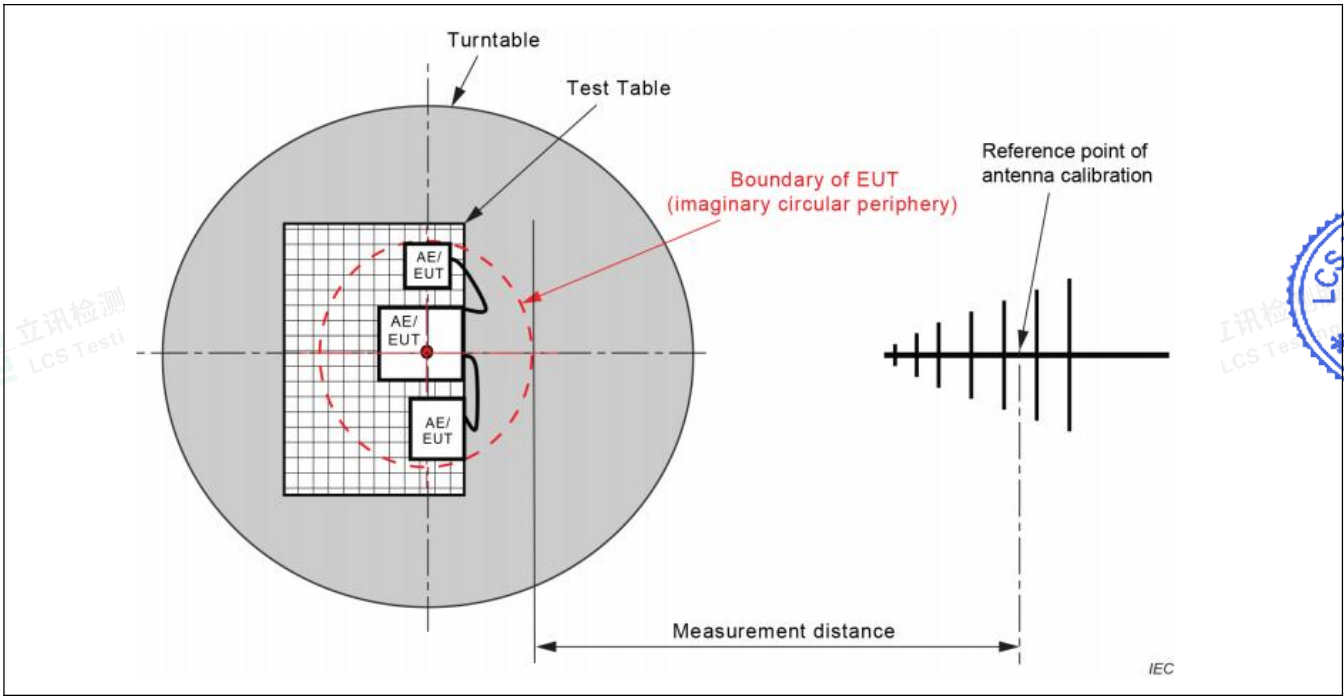
5.2. RADIATED DISTURBANCE (30MHz - 1GHz)

Standard	EN IEC 55015:2019+A11:2020
Basic Standard(s)	EN 55016-2-3
Test method	Semi Anechoic Chamber (SAC)

SAC Radiated disturbance limit

Frequency range [MHz]	Limit: Quasi-peak [dB(μV/m)]		IF BW
	3 m distance	10 m distance	
30 - 230	40	30	120 KHz
230 - 1000	47	37	120 KHz
1) At the transition frequency, the lower limit applies. 2) Distance refers to the distance in meters between the measuring instrument antenna geometric center and the closed point of any part of the EUT.			

Test configuration



Test Procedure Description

The radiated disturbance test was conducted in a 3m Semi Anechoic Chamber and conforming to CISPR 16-2-3. the EUT is placed on a turntable, which is 0.8 meter high above the ground. the turntable can rotate 360 degrees to determine the position of the maximum emission level. the EUT is set 3 meters away from the receiving antenna, which is mounted on an antenna tower. the antenna can be moved up and down from 1 to 4 meters to find out the maximum emission level. Log-periodic Antenna (calibrated by Dipole antenna) is used as a receiving antenna. both horizontal and vertical polarization of the antenna is set on test.

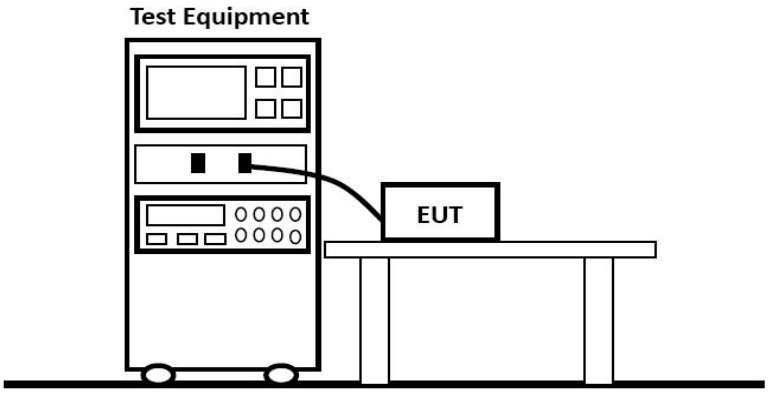
Test Results refer to Annex A.2

5.3. HARMONIC CURRENT

Standard		EN IEC 61000-3-2:2019+A1:2021
Exlusions (For these categories of equipment, limits are not specified in the EN IEC 61000-3-2)	☒	Systems with nominal voltages less than 220VAC (line-to-neutral)
	☐	Lighting equipment with rated power < 5 W
	☐	Equipment with rated power of ≤ 75 W (other than lighting equipment)
	☐	Professional equipment with a total rated power >1kW
	☐	Symmetrically controlled heating elements with rated power ≤ 200 W
	☐	Independent dimmers for incandescent lamps with rated power ≤ 1kW

Classification				
☐	Class A	All equipment not specified as belonging to Class B, C or D		
☐	Class B	Portable tools		
☐	Class C	☐	Lighting equipment with active input power > 25W	
		☐	Lighting equipment with active input power ≥ 5W and ≤ 25W	
			☐	Table 3, column 2 (Power-related limits)
			☐	3rd harmonic ≤ 86%, 5th harmonic ≤ 61% and waveform conditions
			☐	THD ≤ 70%, Harmonic:3rd ≤ 35%, 5th ≤ 25%, 7th ≤ 30%, 9th and 11th ≤ 20%, 2nd ≤ 5%
☐	Class D	Personal computers, television receivers,refrigerators and freezers having one or more variable-speed drives to control compressor		

Test configuration



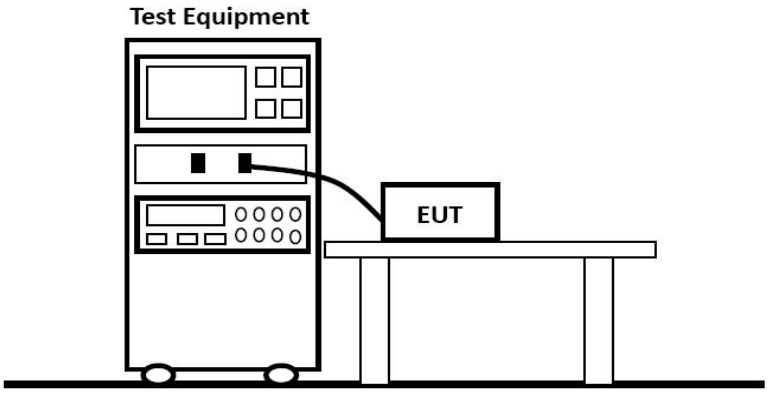
5.4. VOLTAGE FLUCTUATIONS & FLICKER

Standard	EN 61000-3-3:2013+A1:2019+A2:2021

Limit

P_{st} (Short term flicker)	☐	≤ 1	☒	Not applicable
P_{lt} (Long-term flicker)	☐	≤ 0,65	☒	Not applicable
T_{max} (Accumulated time)	☐	≤ 500 ms	☒	Not applicable
d_c (Relative voltage change)	☐	≤ 3.3%	☒	Not applicable
d_{max} (Max.voltage change)	☐	≤ 4%	☐	≤ 6%
	☐	≤ 7%	☒	Not applicable

Test configuration



6. IMMUNITY TESTS

6.1. PERFORMANCE CRITERIA

Standard	EN 61547:2009

The performance of lighting equipment shall be assessed by monitoring:

- the luminous intensity of the luminaire or of the lamp(s).
- the functioning of the control in the case of equipment which includes a regulating control or concerns the regulating control itself.
- the functioning of the starting device, if any.

Performance criterion A: during the test, no change of the luminous intensity shall be observed and the regulating control, if any, shall operate during the test as intended.

Performance criterion B: during the test, the luminous intensity may change to any value. after the test, the luminous intensity shall be restored to its initial value within 1 min. regulating controls need not function during the test, but after the test, the mode of the control shall be the same as before the test provided that during the test no mode changing commands were given.

Performance criterion C: during and after the test, any change of the luminous intensity is allowed and the lamp(s) may be extinguished. after the test, within 30 min, all functions shall return to normal, if necessary by temporary interruption of the mains supply and / or operating the regulating control.

Electronic lighting equipment		Tests and performance criteria							
		5.2 (ESD)	5.3 (RS)	5.4 (PFMF)	5.5 (EFT)	5.6 (CS)	5.7 (Surge)	5.8 (Dips)	5.9 (Interruption)
☐	Self-ballasted lamps	B	A	B	B	A	C	C	B
☐	Independent auxiliaries	B	A	B	B	A	C	C	B[1]
☒	Luminaire including active electronic components	B	A	B	B	A	C	C	B[1]
☐	Luminaire for emergency lighting	B[2]	A	B	B[2]	A	B[2]	See[3]	See[3]

Supplementary information:

1) For ballasts where the lamp is not able to restart within 1 min, due to the physical constraints of the lamp, performance criterion C applies.

2) Luminaires for emergency lighting shall be tested in both the normal and emergency mode of operation.

3) These tests do not apply as they are covered by the test in IEC 60598-2-22.

4) For emergency luminaires designed to operate in high-risk task areas, after the test, the luminous intensity shall be restored to its initial value within 0,5 s.

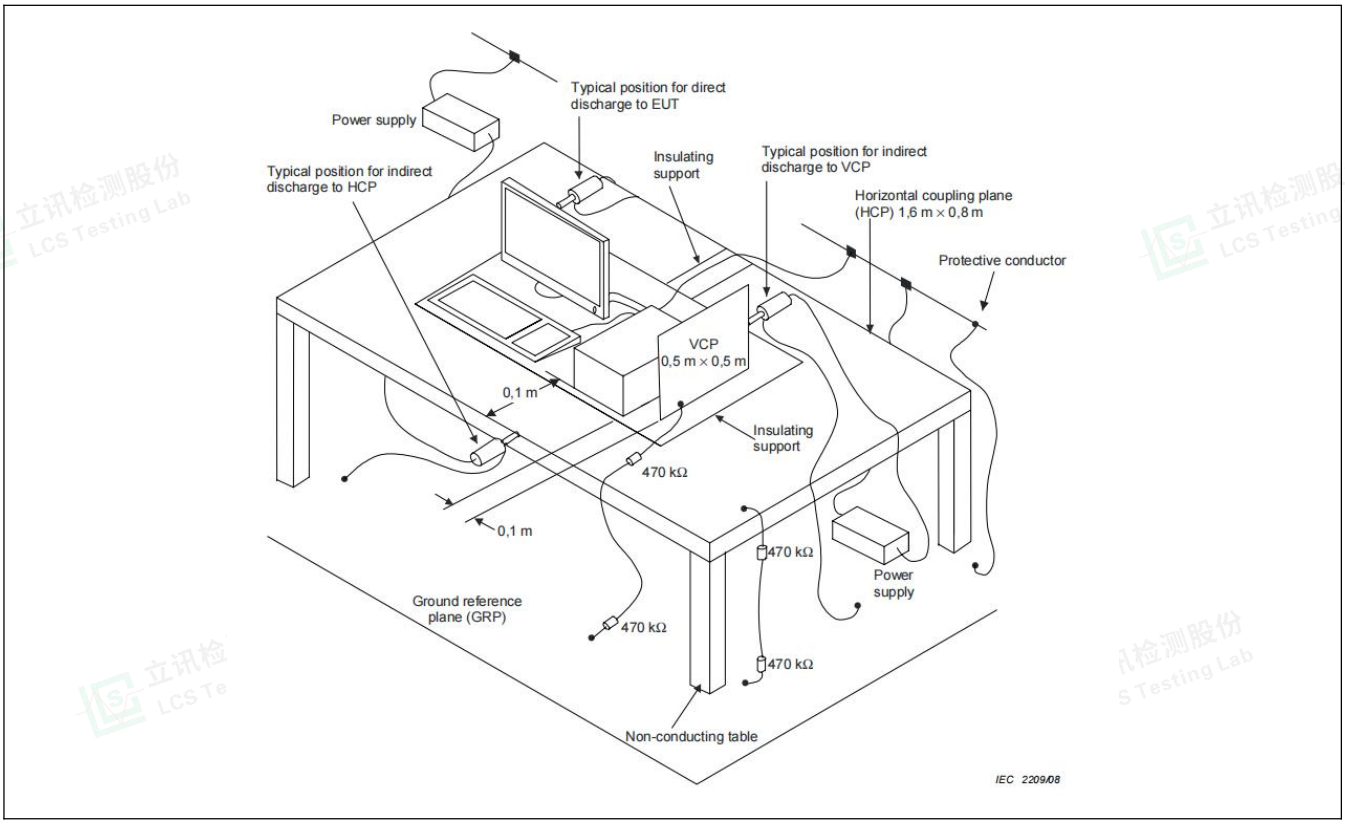
6.2. ELECTROSTATIC DISCHARGE

Electrostatic discharge (ESD) is the result of accumulated static electricity from a person or object, for example, walking on a synthetic carpet. ESD can indirectly affect the operation of equipment or damage its electronic components through direct discharge or coupling. both effects were simulated during the test. contact discharge is the preferred test method. twenty discharges (10 with positive and 10 with negative polarity) shall be applied on each accessible metallic part of the enclosure (terminals are excluded). air discharges shall be used where contact discharges cannot be applied. discharges shall be applied on the horizontal or vertical coupling planes.

Requirements

Standard	EN 61547:2009							
Basic standard	EN 61000-4-2							
Port under test	Enclosure							
Contact discharge	☒	± 2 kV	☒	± 4 kV	☐	±8 kV	☐	±15 kV
Air discharge	☒	± 2 kV	☒	± 4 kV	☒	±8 kV	☐	±15 kV
Number of discharges	≥ 10 per polarity with ≥ 1 sec interval							

Test configuration



Test Results refer to Annex A.3

6.3. RADIO-FREQUENCY ELECTROMAGNETIC FIELDS

During the test it is verified if the EUT has sufficient immunity against radiated electromagnetic fields.

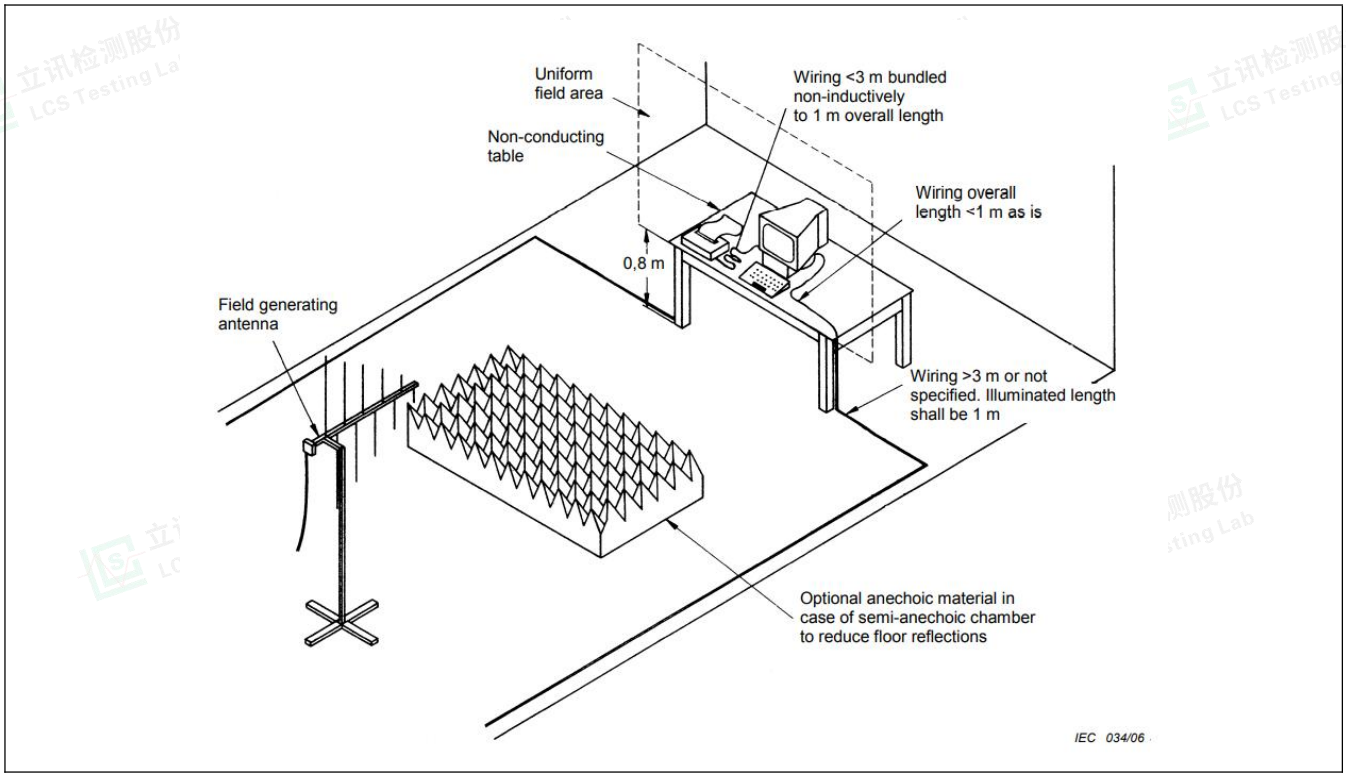
The test was carried out in a half-wave anechoic chamber with absorbent material attached to a reflective ground plate, Before the test, the test field strength needs to be calibrated. during the calibration, the corresponding relationship between the target field strength and the forward power applied to the transmitting antenna is established.during the test, except for EUT, the indoor layout is consistent with the calibration.

The EUT and its simulators are placed on a turn table which is 0,8 meter above ground. EUT is set 3 meter away from the transmitting antenna which is mounted on an antenna tower. both horizontal and vertical polarization of the antenna are set on test. each of the four sides of EUT must be faced this transmitting antenna and measured individually. in order to judge the EUT performance, a CCD camera is used to monitor EUT screen.

Requirements

Standard	EN 61547:2009			
Basic standard	EN 61000-4-3			
Port under test	Enclosure			
Frequency range	Test level	Modulation	Dwell time	Step size
80 - 1000 MHz	3 V/m	1 kHz, 80 % AM	≥ 0,5 s	≤ 1%

Test configuration

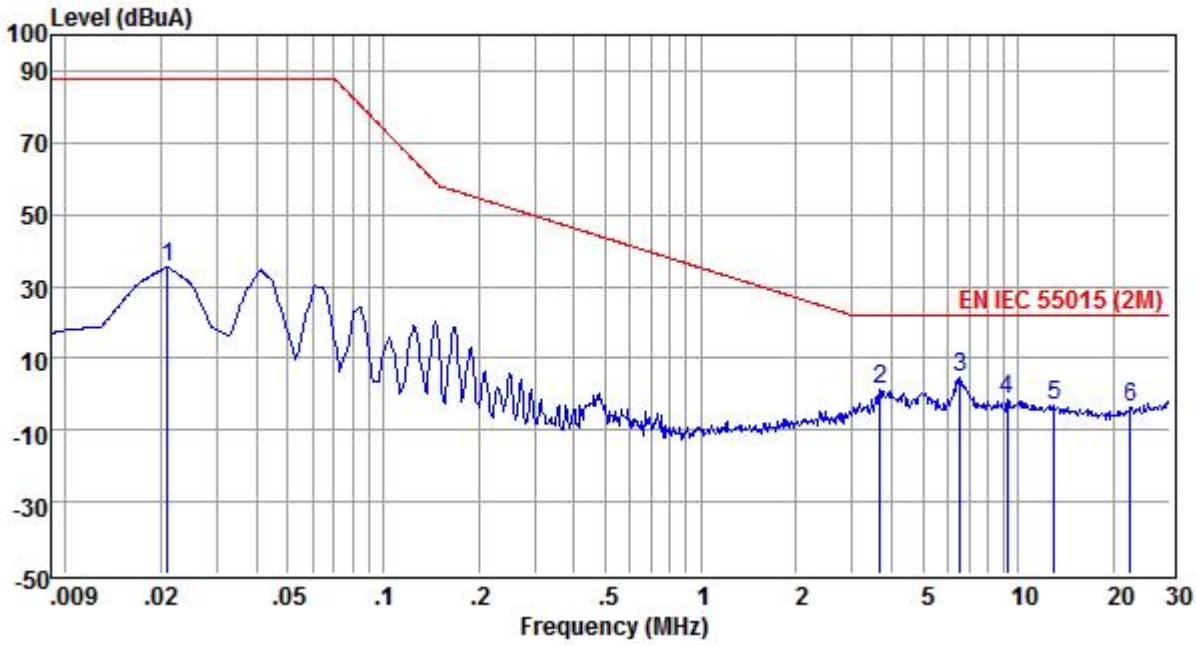


Test Results refer to Annex A.3

ANNEX A - TEST RESULTS

A.1. RADIATED DISTURBANCE TEST RESULTS (9kHz - 30MHz)

Environmental Conditions	22.9℃, 51% RH
Model	S5-1600LM
Operating mode	Mode 1 (worst case)
Test voltage	DC 3.7V
Test engineer	FENG LIANG
Pol	X

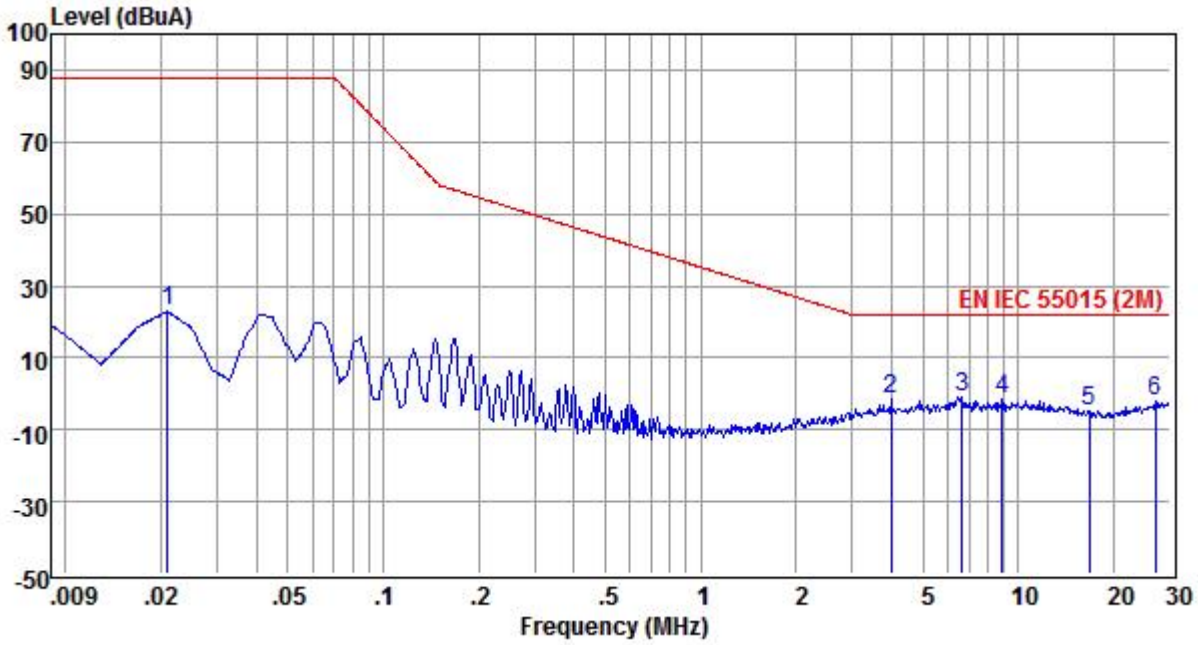


Pol: X

	Freq	Reading	LisnFac	CabLos	Measured	Limit	Over	Remark
	MHz	dBpW	dB	dB	dBpW	dBpW	dB	
1	0.02	36.91	0.00	-1.39	35.52	88.00	-52.48	QP
2	3.67	-1.17	0.00	2.49	1.32	22.00	-20.68	QP
3	6.58	2.79	0.00	1.63	4.42	22.00	-17.58	QP
4	9.25	-2.68	0.00	1.11	-1.57	22.00	-23.57	QP
5	13.01	-6.11	0.00	3.09	-3.02	22.00	-25.02	QP
6	22.59	-6.19	0.00	2.29	-3.90	22.00	-25.90	QP

Remarks: 1. Measured = Reading + Lisn Factor +Cable Loss.
2. The emission levels that are 20dB below the official limit are not reported.

Environmental Conditions	22.9℃, 51% RH
Model	S5-1600LM
Operating mode	Mode 1 (worst case)
Test voltage	DC 3.7V
Test engineer	FENG LIANG
Pol	Y

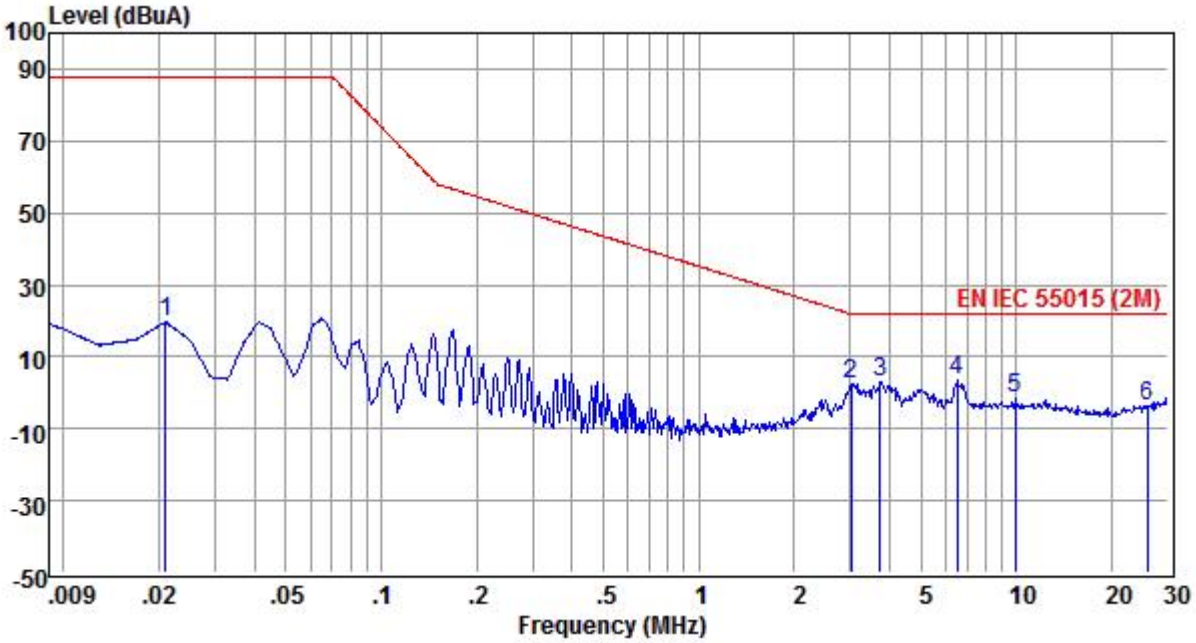


Pol: Y

	Freq	Reading	LisnFac	CabLos	Measured	Limit	Over	Remark
	MHz	dBpW	dB	dB	dBpW	dBpW	dB	
1	0.02	25.84	0.00	-2.89	22.95	88.00	-65.05	QP
2	3.98	-2.32	0.00	0.90	-1.42	22.00	-23.42	QP
3	6.64	-0.68	0.00	-0.19	-0.87	22.00	-22.87	QP
4	8.89	-1.69	0.00	0.39	-1.30	22.00	-23.30	QP
5	16.73	-7.31	0.00	2.39	-4.92	22.00	-26.92	QP
6	27.00	-1.05	0.00	-1.01	-2.06	22.00	-24.06	QP

Remarks: 1. Measured = Reading + Lisn Factor +Cable Loss.
2. The emission levels that are 20dB below the official limit are not reported.

Environmental Conditions	22.9℃, 51% RH
Model	S5-1600LM
Operating mode	Mode 1 (worst case)
Test voltage	DC 3.7V
Test engineer	FENG LIANG
Pol	Z



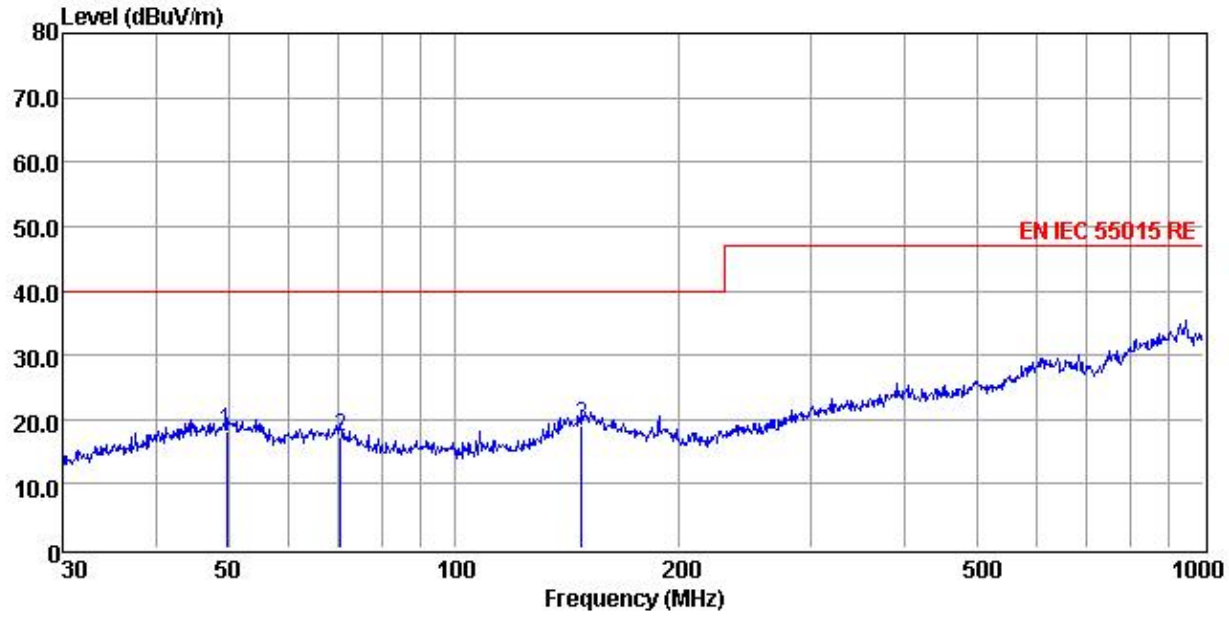
Pol: Z

	Freq	Reading	LisnFac	CabLos	Measured	Limit	Over	Remark
	MHz	dBpW	dB	dB	dBpW	dBpW	dB	
1	0.02	24.15	0.00	-4.39	19.76	88.00	-68.24	QP
2	3.02	2.85	0.00	-0.24	2.61	22.00	-19.39	QP
3	3.73	3.60	0.00	-0.51	3.09	22.00	-18.91	QP
4	6.53	4.81	0.00	-1.37	3.44	22.00	-18.56	QP
5	9.95	-0.59	0.00	-0.91	-1.50	22.00	-23.50	QP
6	25.92	-2.85	0.00	-0.77	-3.62	22.00	-25.62	QP

Remarks: 1. Measured = Reading + Lisn Factor +Cable Loss.
2. The emission levels that are 20dB below the official limit are not reported.

A.2. RADIATED DISTURBANCE TEST RESULTS (30MHz - 1GHz)

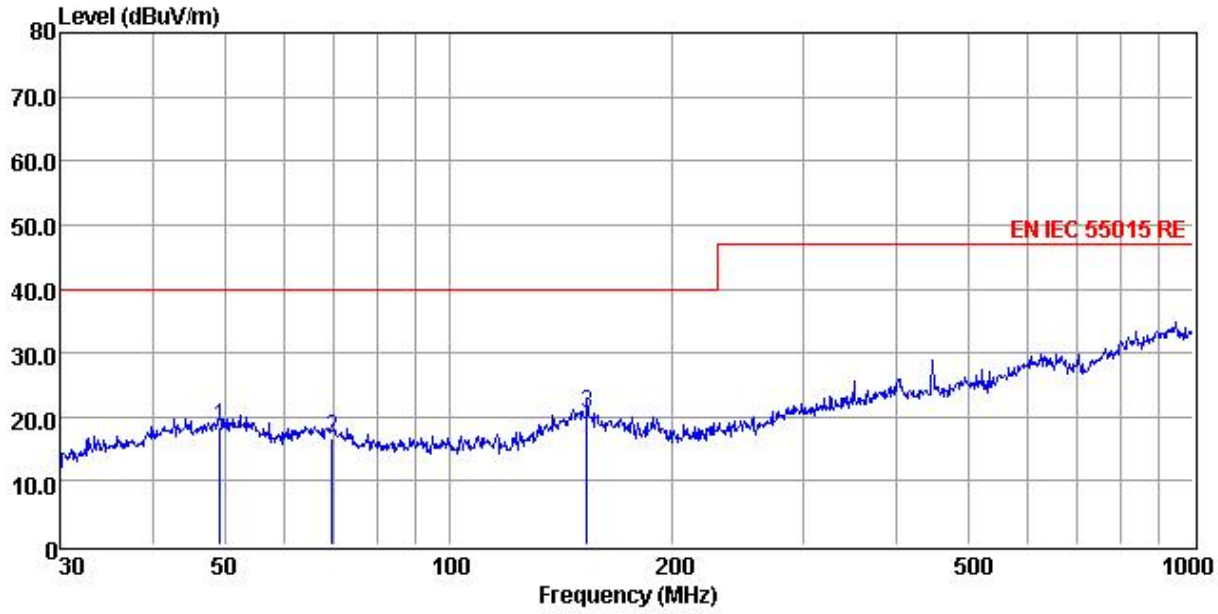
Environmental Conditions	22.4℃, 50% RH
Model	S5-1600LM
Operating mode	Mode 1 (worst case)
Test voltage	DC 3.7V
Test engineer	FENG LIANG
Pol	Vertical



Site : 3m chamber
Condition : EN IEC 55015 RE 3m VULB9168 NB VERTICAL

	Freq	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB/m	dB	dBuV/m	dBuV/m	dB	
1	49.71	32.63	2.41	13.43	30.32	18.15	40.00	-21.85	QP
2	70.58	33.15	2.72	11.85	30.40	17.32	40.00	-22.68	QP
3	147.92	32.07	3.52	14.01	30.59	19.01	40.00	-20.99	QP

Environmental Conditions	22.4℃, 50% RH
Model	S5-1600LM
Operating mode	Mode 1 (worst case)
Test voltage	DC 3.7V
Test engineer	FENG LIANG
Pol	Horizontal



Site : 3m chamber
Condition : EN IEC 55015 RE 3m VULB9168 NB HORIZONTAL

	Freq	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB/m	dB	dBuV/m	dBuV/m	dB	
1	49.19	33.16	2.40	13.30	30.32	18.54	40.00	-21.46	QP
2	69.60	32.20	2.70	12.09	30.39	16.60	40.00	-23.40	QP
3	153.20	33.87	3.58	13.76	30.60	20.61	40.00	-19.39	QP

A.3. IMMUNITY TEST RESULTS

ELECTROSTATIC DISCHARGE IMMUNITY TEST RESULTS					
Standard	☒ EN 61547:2009		☒ EN 61000-4-2		
EUT	S5 PIR Solar Garden Light		Temperature	20.8℃	
M/N	S5-1600LM		Humidity	50%	
Test Mode	MODE 1		Pressure	-	
Input voltage	DC 3.7V		Test Results	Pass	
Test engineer	FENG LIANG				
Discharge Mode	Test Points	Test Valtage (kV) & polarity	Number of discharges/polarity	Discharge interval (s)	Performance Criteria
Contact Discharge	-	± 2&4	10	1	B
Air Discharge	-	± 2&4&8	10	1	B
VCP	-	± 4	10	1	B
HCP	-	± 4	10	1	B
Note :					

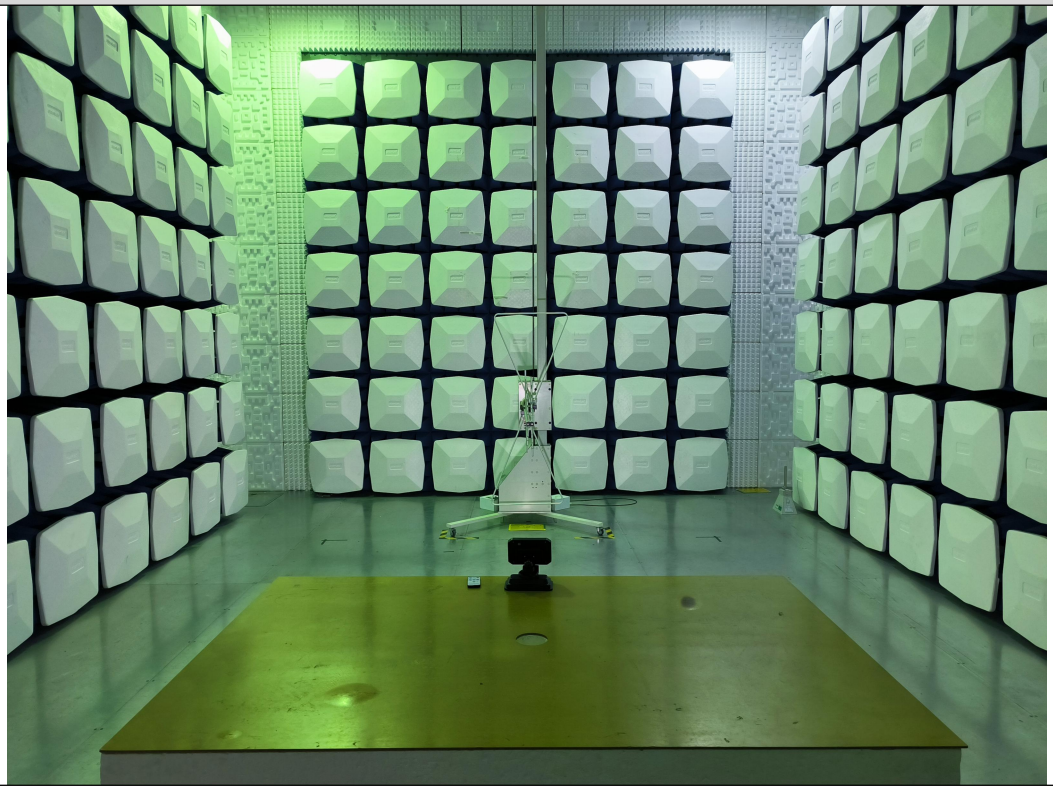
RADIO-FREQUENCY ELECTROMAGNETIC FIELD IMMUNITY TEST RESULTS				
Standard	☒ EN 61547:2009		☒ EN 61000-4-3	
EUT	S5 PIR Solar Garden Light		Temperature	21.0℃
M/N	S5-1600LM		Humidity	52%
Test Mode	MODE 1		Pressure	-
Input voltage	DC 3.7V		Test engineer	BARON WEN
Modulation	1 kHz, 80 % AM		Test Results	Pass
Steps	1%			
Angle of EUT	Antenna polarization	Frequency Range	Test Level	Performance Criteria
0°	Vertical Horizontal	80 - 1000 MHz	3 V/m	A
90°	Vertical Horizontal	80 - 1000 MHz	3 V/m	A
180°	Vertical Horizontal	80 - 1000 MHz	3 V/m	A
270°	Vertical Horizontal	80 - 1000 MHz	3 V/m	A

Note :

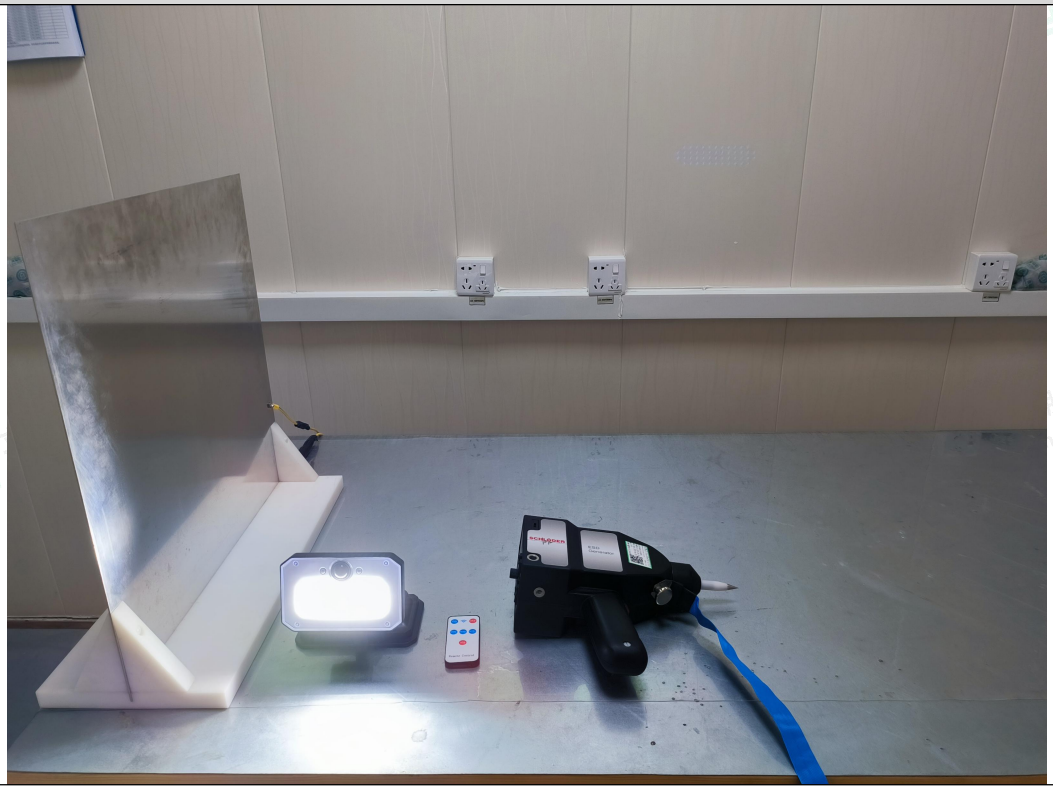
ANNEX B - TEST PHOTOS

B.1. Radiated Disturbance (9kHz - 30MHz)

B.2. Radiated Disturbance (30MHz to 1GHz)



B.3. Electrostatic Discharge



ANNEX C - EXTERNAL AND INTERNAL PHOTOS OF THE EUT

The photographs show the equipment under test.

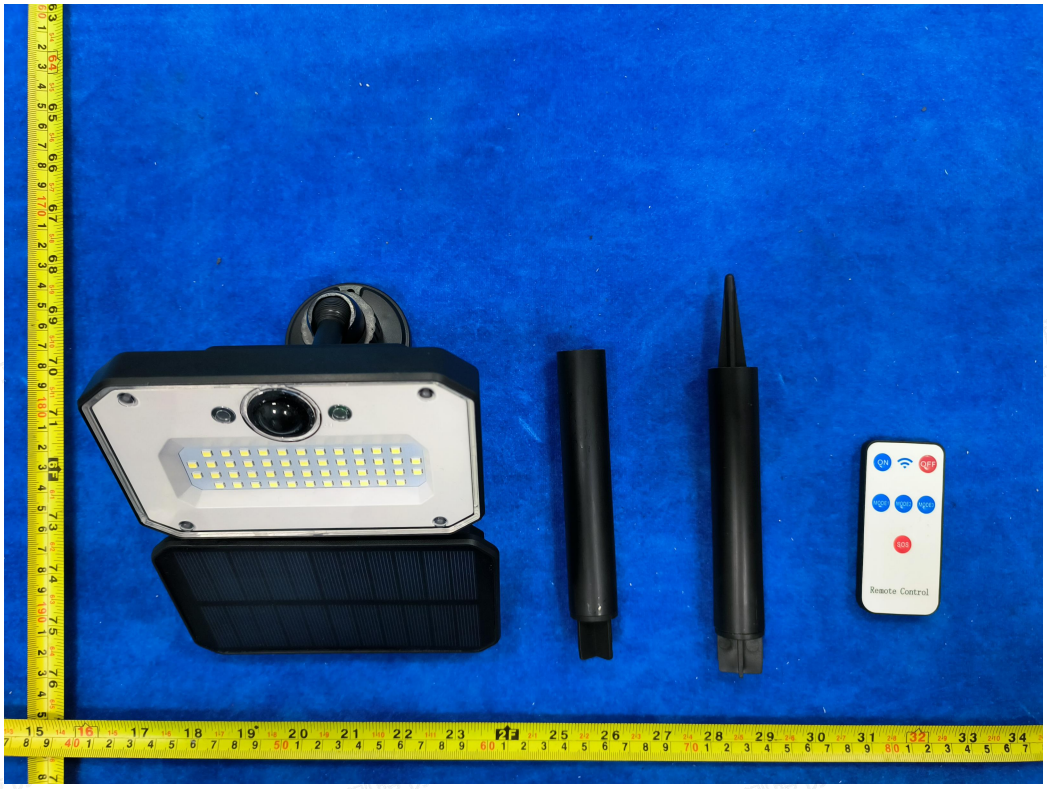


Figure. 1（S5-1600LM）

Figure. 2（S5-1600LM）

Figure. 3（S5-1600LM）

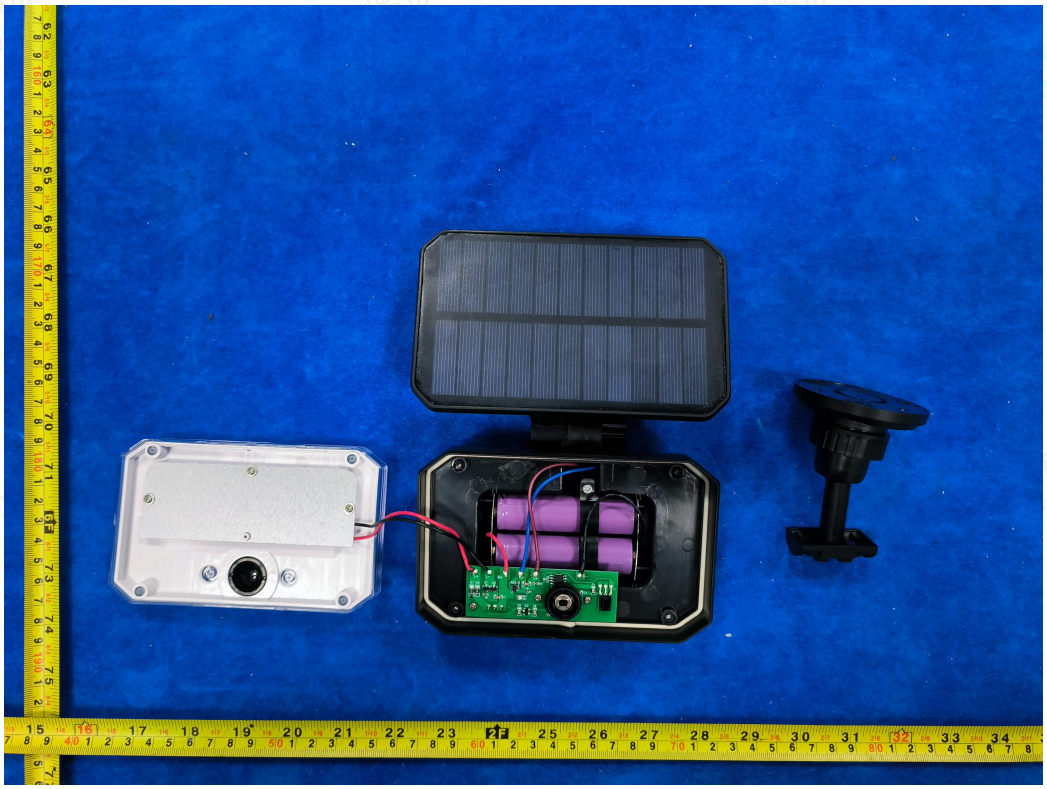


Figure. 4（S5-1600LM）

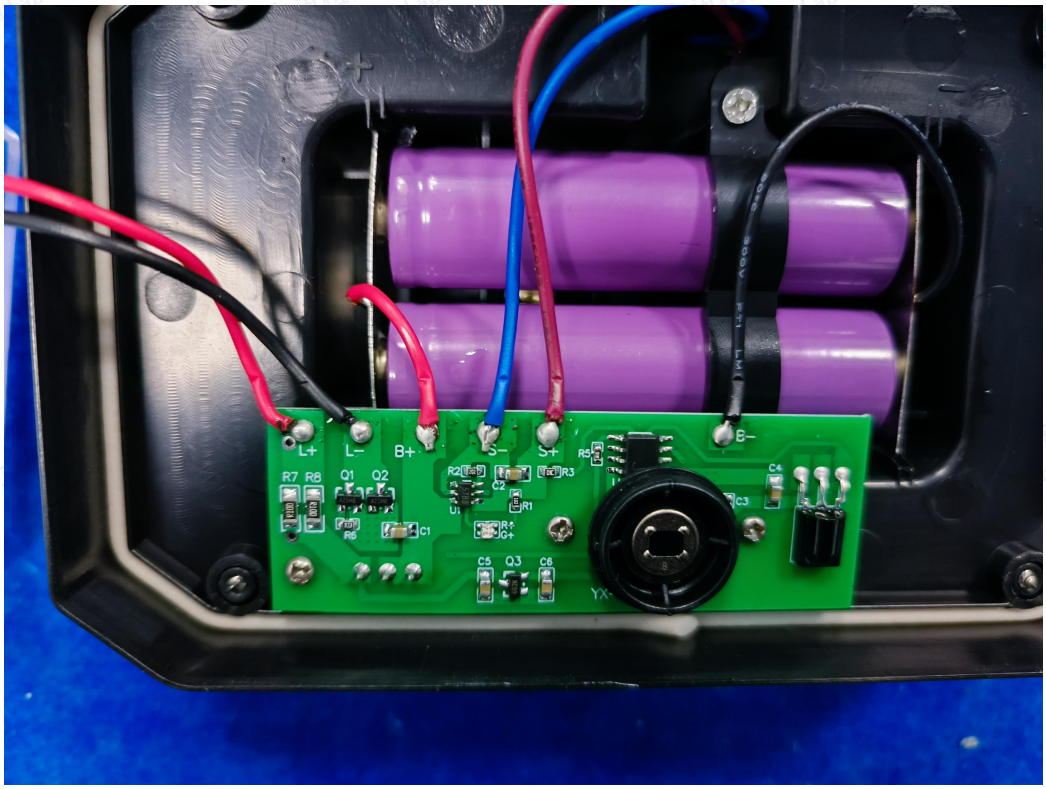


Figure. 5（S5-1600LM）

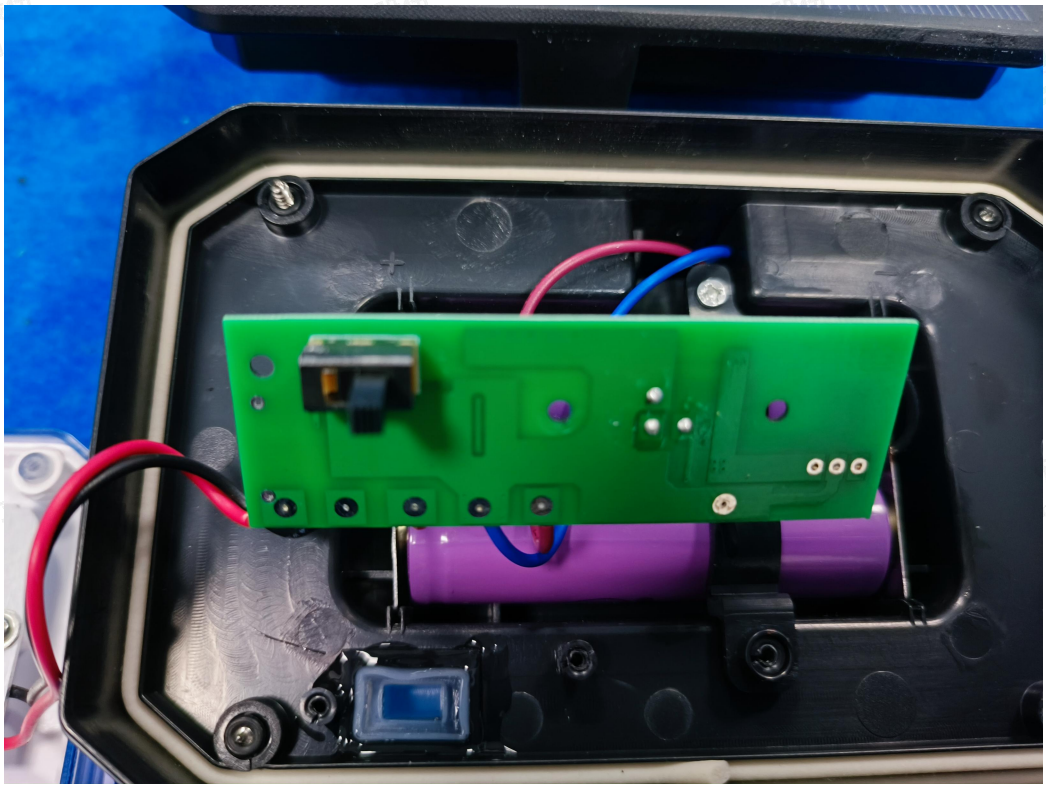


Figure. 6（S5-1600LM）

Figure. 7（S5-1600LM）

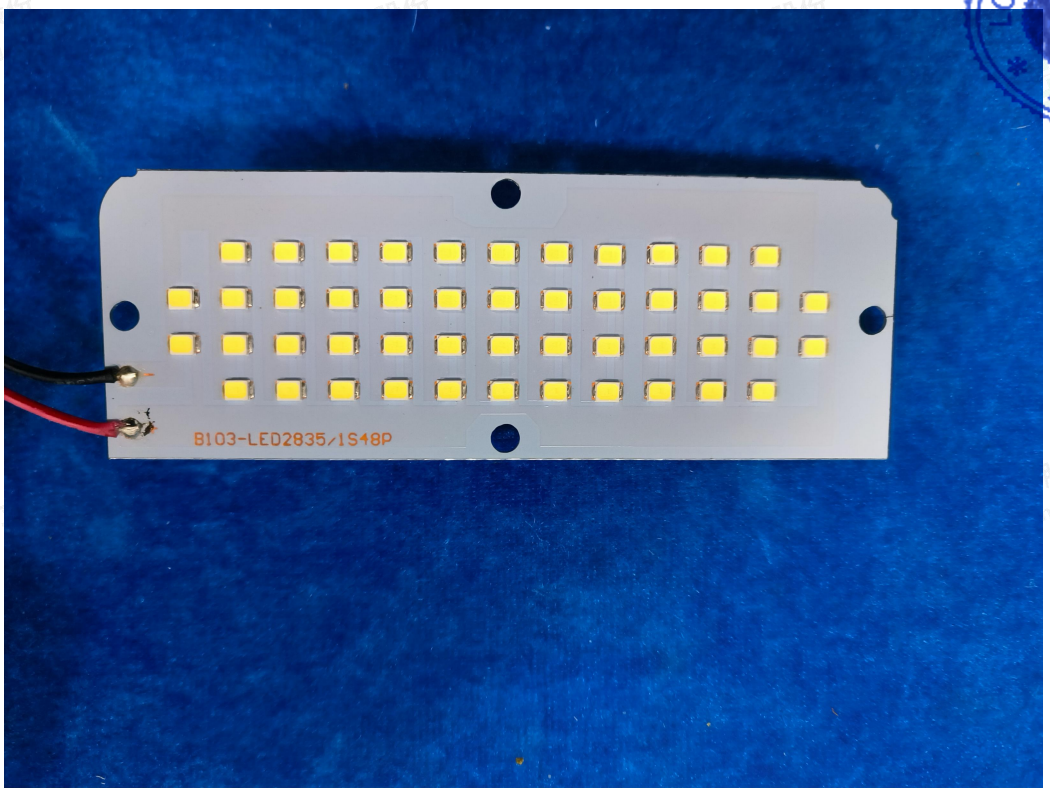


Figure. 8（S5-1600LM）

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