



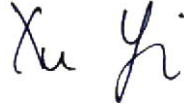
TEST REPORT N°:PTY-ESH-P23090664B

EMC TEST REPORT

Applicant :	Taizhou Pretty Appliances Co.,LTD
Address :	No.3 Xiang Zhang Road, Linhai, Zhejiang, China
Manufacturer :	Taizhou Pretty Appliances Co.,LTD
Address :	No.3 Xiang Zhang Road, Linhai, Zhejiang, China
Factory :	Taizhou Pretty Appliances Co.,LTD
Address :	No.3 Xiang Zhang Road, Linhai, Zhejiang, China
This document includes : 49 pages	

Product :	Solar light	
Model name :	detail see in model list	
Trade mark :	---	
Rated voltage :	Powered by battery	
Rated input power :	---	
Protection class :	III	
Tests realised :	---	
Test date :	---	
Standards used (date) :	EN IEC 55015:2019+A11:2020/ BS EN IEC 55015:2019+A11:2020 EN 61547:2009/BS EN 61547:2009	
Clauses examined :	All Clauses Relevant.	

CONCLUSION :The sample does satisfy the clauses examined .

Test done by:	Approved by:
Name : Bob He 	Name : Yi Xu 
Date : Oct.09, 2023	Date : Oct.09, 2023

This report is governed by, and incorporates by reference, the Conditions of Testing as posted at the date of issuance of this report at <http://www.bureauveritas.com/home/about-us/our-business/cps/about-us/terms-conditions/> and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. Statements of conformity are based on simple acceptance criteria without taking measurement uncertainty into account, unless otherwise requested in writing. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.

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TEST REPORT N°:PTY-ESH-P23090664B
Release control record

Report No.	Description	Date Issued
PTY-ESH-P23090664B	Original release	2023-10-09



TEST REPORT N°:PTY-ESH-P23090664B

1 Summary of test results

No.	Item	Result
Emission part:		
1	Continuous disturbances	NA
2	Radiated disturbance (0.009 to 30 MHz)	PASS
3	Radiated disturbance (30 to 1000 MHz)	PASS
4	---	---
5	---	---
Immunity part:		
6	Electrostatic discharges	PASS
7	RF electromagnetic fields	PASS
8	Fast transients	NA
9	Surges	NA
10	Injected currents	NA
11	PF Magnetic fields	NA
12	Voltage dips and short interruptions	NA



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2 General information of laboratory

2.1 Test facility

☒ **Laboratory name:** LCIE China Company Limited

Testing location: Building C, No. 829, Xinzhuan Road, Shanghai, P.R.China (201612)

2.2 Measurement uncertainty

Where relevant, 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.

This lab's measurement uncertainty U_{Lab}, is low than UC_{ispr}, Table 1 – Values of UC_{ispr} of CISPR 16-4-2, therefore compliance is deemed to occur if no measured disturbance exceeds the disturbance limit.

Measurement		Value
Disturbance voltage		2.58 dB
Disturbance voltage at wired network port		2.60 dB
Disturbance power		3.10 dB
Radiated disturbance	30 MHz-1GHz	3.22 dB
	Above 1GHz	2.89 dB



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3 General product information

3.1 Specification of product

Operating modes: ☒ Mode A: The apparatus was worked continuously.
☐ Mode B:
☐ Mode C:

Types of port: ☐ wired network port:
☐ local wired port:
☒ enclosure port

Special comments: The new models are identical with original models except the appearance. This report is updated report based on history report PTY-ESH-P2002492B-A2. After evaluation, no necessary test need. So we did not perform any test, all test results can refer to history report PTY-ESH-P2002492B-A2

Rating label: N/A

Model list:

Factory code	Client Code	Photo
P20S012	10000229137	



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PRT2021G-246A	576899	
P22G329A	601645	
P22G305A	601650	
P22G327	601965	



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TEST REPORT N°:PTY-ESH-P23090664B

G2017234	404682	
P2022S007ANTHRA	10000259259	
P2022S007AQUA	10000259260	



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TEST REPORT N°:PTY-ESH-P23090664B

P2022S007CURRY	10000259332	
867-125V00BK	PRT20221001	
867-126V00BK	PRT20221002	



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867-128V00BU	PRT20221003	
867-129V00GY	PRT20221004	
867-129V01GG	PRT20221005	



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867-129V01GY	PRT20221006	
867-130V00SD	PRT20221007	



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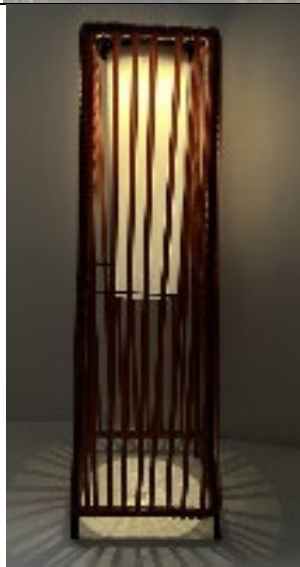
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867-130V01SD	PRT20221008	
10000271926	P2022S007 NOIR	
10000271927	P2022S007	



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10000271928	P2022S007	
10000271962	P22G1240	
867-150V00SD	P23S001	 P235015 01



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TEST REPORT N°:PTY-ESH-P23090664B

867-151V00GY	P23S002	
867-152V00YL	P23S003	
867-153V00YL	P23S004	



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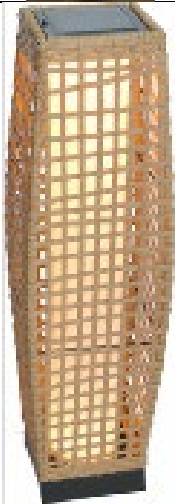
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867-154V00BK	P23S005	
867-154V00BN	P23S006	
867-154V00GY	P23S007	



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867-154V00SD	P23S008	
615763	G2023510	
615791	G2023512B	



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TEST REPORT N°:PTY-ESH-P23090664B

980211	P23S015.02	
980212	P23S015.01	
980213	P23S027.01	



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TEST REPORT N°:PTY-ESH-P23090664B

980214	P23S028.01	
544447	P19S131	
404682	G2017234	
866-006BN	P23S010	



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TEST REPORT N°:PTY-ESH-P23090664B

866-066BK	P23S011	
JH-P23C0629	P23S012	
JH-P23C0630	P23S013	



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3.2 Description of auxiliary equipment and associated equipment

N/A

3.3 Operation conditions

The EUT operating and testing at below conditions:

Ambient conditions:	Temperature	:	21-24 °C
	Relative humidity	:	48-55 %
	Atmospheric pressure	:	101 kPa



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3.4 Photograph of sample

Refer to Appendix A

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4 Test instruments

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI test receiver	Rohde & Schwarz	ESR7	E1R1005	Mar.02,2023	Mar.01,2024
Trilog Broadband Antenna(30MHz-1GHz)	Schwarzbeck	VULB9168	E1A1001	Mar.11, 2023	Mar.10, 2025
Pre-Amplifier(0.1MHz~1300MHz)	Agilent	8447D	E1A2001	Mar.02,2023	Mar.01,2024
ESD simulator and gun	Noiseken	ESS-2002EX TC-815R	E1ES016	Nov.7,2022	Nov.6,2023
Signal Generator	Anritsu	MG3692B	E1S9006	Jun.21,2023	Jun.20,2024
Power Amplifier	AMETEK	80RF 1000-175	E1P4004	Mar.02,2023	Mar.01,2024
Power meter	BOONTON	4232A/51011	E1P5001	Mar.02,2023	Mar.01,2024



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5 Test procedure and results for emission

5.1 Continuous disturbances

5.1.1 Test condition

Applicable Standard:	EN IEC 55015:2019+A11:2020	
Applied limit class:	☐	Table 1 (Disturbance voltage); wired network ports; electric power supply interface
	☐	Table 2 (Disturbance voltage); wired network ports; interfaces other than power supply
	☐	Table 3 (Disturbance current); wired network ports; interfaces other than power supply
	☐	Table 4 (Disturbance voltage); local wired ports; electrical power supply interface of non-restricted ELV lamps
	☐	Table 5 (Disturbance voltage); local wired ports; interface other than electrical power supply interface of ELV lamp
	☐	Table 6 (Disturbance current); local wired ports; interface other than electrical power supply interface of ELV lamp
	☐	Other: --
Test setup description:	☐	Setup Type A (40 cm distance to vertical ground plane, 80 cm over ground plane)
	☐	Setup Type B (40 cm distance to horizontal ground plane)
	☐	Floor standing equipment setup (10 cm over ground plane)
	☐	Other: --
Test method applied:	☐	Artificial mains network
	☐	Voltage probe
	☐	Current probe
	☐	AAN
	☐	Other: --
Remark:	The EUT power by battery	



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Limits of wired network ports		
Disturbance voltage limits at the electric power supply interface		
Frequency range (MHz)	Quasi-peak (dBμV)	Average (dBμV)
0.009-0.05	110	--
0.05-0.15	Decreasing linearly with logarithm of frequency from: 90-80	--
0.15-0.5	Decreasing linearly with logarithm of frequency from:	
	66-56	56-46
0.5-5	56*	46*
5-30	60	50
* For lighting equipment incorporating exclusively electrodeless lamps, the limit in the frequency range of 2.2 MHz to 3 MHz is 73 dBμV quasi-peak and 63 dBμV average.		
Disturbance voltage limits at wired network interfaces other than power supply		
Frequency range (MHz)	Quasi-peak (dBμV)	Average (dBμV)
0.15-0.5	Decreasing linearly with logarithm of frequency from:	
	84-74	74-64
0.5-30	74	64
Disturbance current limits at wired network interfaces other than power supply		
Frequency range (MHz)	Quasi-peak (dBμA)	Average (dBμA)
0.15-0.5	Decreasing linearly with logarithm of frequency from:	
	40-30	30-20
0.5-30	30	20



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Limits of local wired ports		
Disturbance voltage limits at the electrical power supply interface of non-restricted ELV lamps		
Frequency range (MHz)	Quasi-peak (dBμV)	Average (dBμV)
0.009-0.05	136	--
0.05-0.15	Decreasing linearly with logarithm of frequency from: 116-106	--
0.15-0.5	Decreasing linearly with logarithm of frequency from:	
	92-82	82-72
0.5-5	82	72
5-30	86	76
Disturbance voltage limits at local wired ports other than electrical power supply interface of ELV lamp		
Frequency range (MHz)	Quasi-peak (dBμV)	Average (dBμV)
0.15-0.5	80	70
0.5-30	74	64
Disturbance current limits at local wired ports other than electrical power supply interface of ELV lamp		
Frequency range (MHz)	Quasi-peak (dBμA)	Average (dBμA)
0.15-0.5	Decreasing linearly with logarithm of frequency from:	
	40-30	30-20
0.5-30	30	20

5.1.2 Test results

N/A



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5.2 Radiated emission (0.009 to 30 MHz)

5.2.1 Test condition

Applicable Standard:	EN IEC 55015:2019+A11:2020	
Applied limit class:	☒	Table 8; 2 m for equipment length not exceeding 1.6m
	☐	Table 8; 3 m for equipment length between 1.6 m and 2.6 m
	☐	Table 8; 4 m for equipment length between 2.6 m and 3.6 m
	☐	Table 9; Loop antenna radiated disturbance limit 0.009-30 MHz for equipment with a dimension > 1.6 m
Test set up description:	☒	Equipment placed in the centre of the LLAS
	☐	Equipment on a table 80 cm height
	☐	Equipment on the floor (isolated from ground plane)
	☐	Other: --
Test method applied:	☒	Large loop antenna: Diameter 2 m
	☐	Small loop antenna with measurement distance [m]:
	☐	Other: --
Remark:	---	

Limits	
LLAS radiated disturbance limits (2 m)	
Frequency range (MHz)	Quasi-peak (dBμA)
0.009-0.07	88
0.07-0.15	Decreasing linearly with logarithm of frequency from: 88-58
0.15-3	Decreasing linearly with logarithm of frequency from: 58-22
3-30	22
Loop antenna radiated disturbance limits	
Frequency range (MHz)	Quasi-peak (dBμA/m)
0.009-0.07	69
0.070-0.15	Decreasing linearly with logarithm of frequency from: 69-39
0.15-4	Decreasing linearly with logarithm of frequency from: 39-3
4-30	3

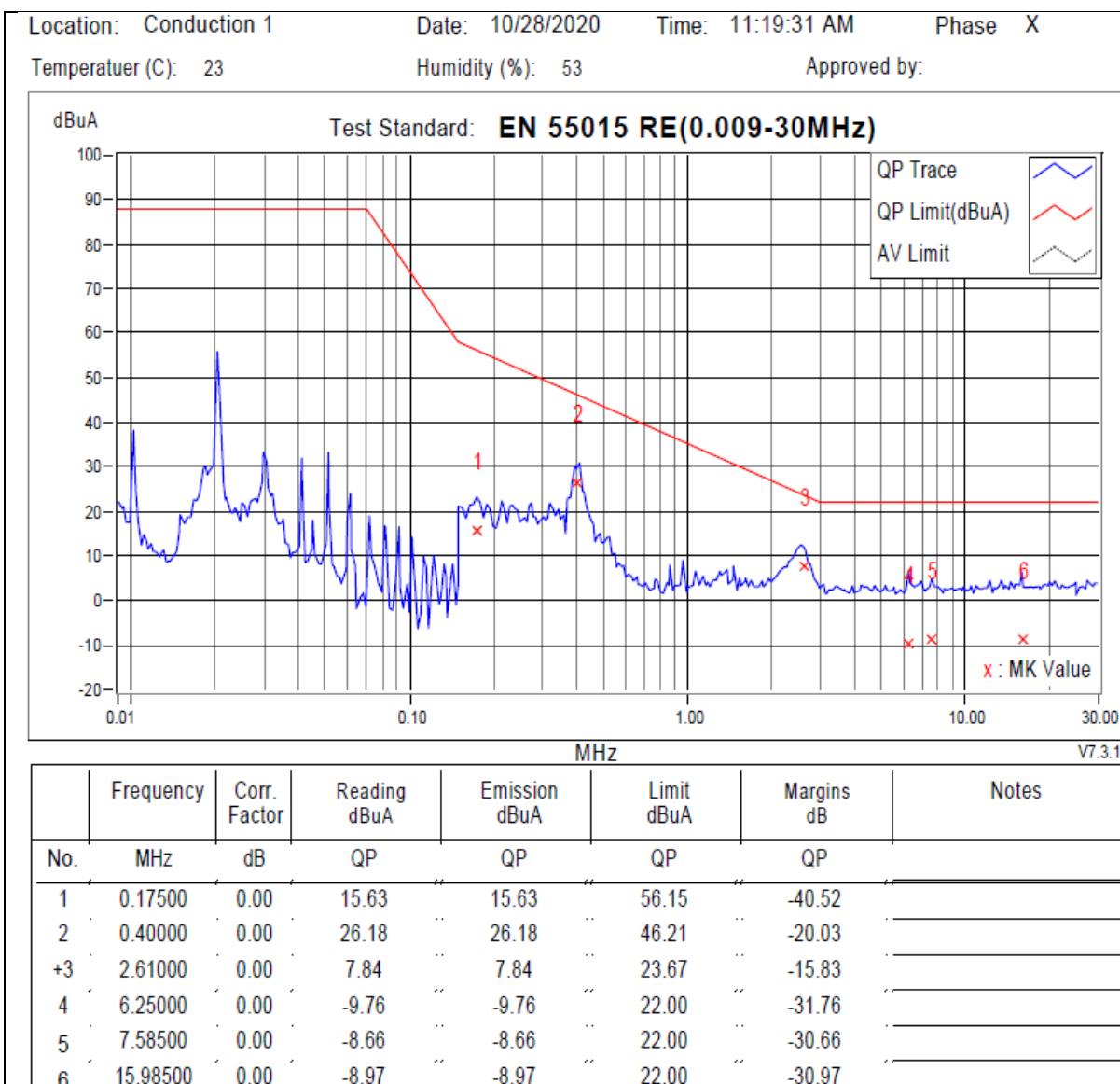


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5.2.2 Test results

Model:	10000229137
Test mode:	Mode A
Test voltage:	Power by battery

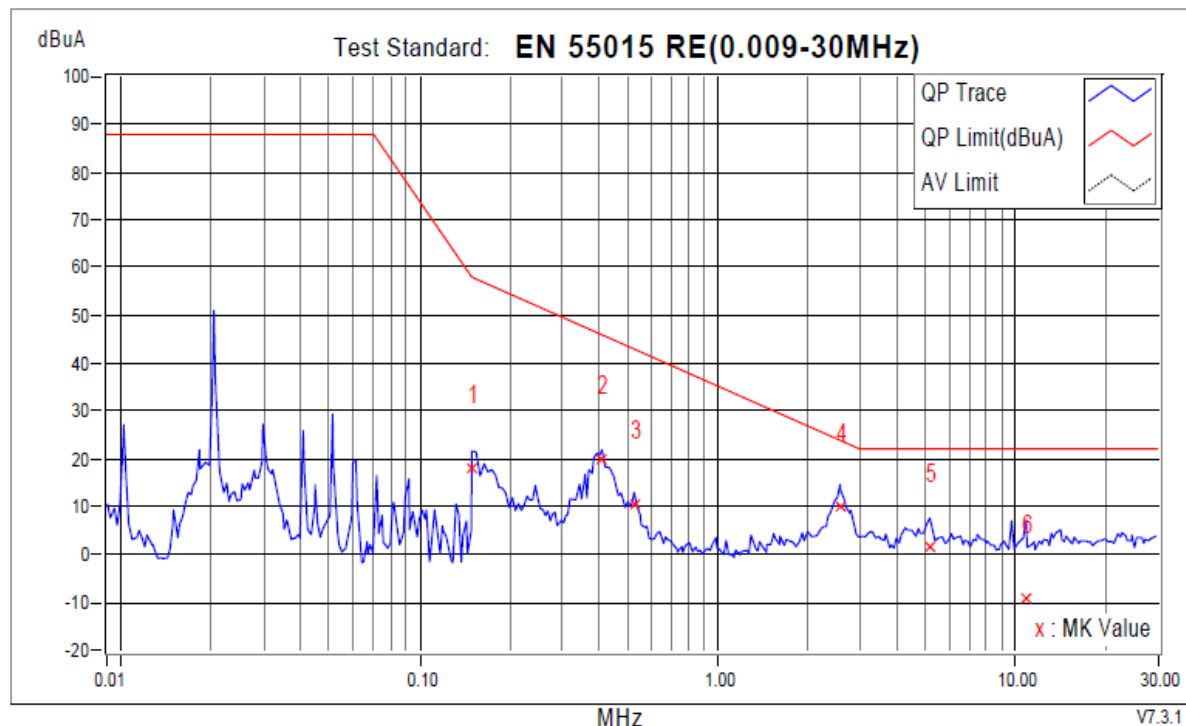




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TEST REPORT N°:PTY-ESH-P23090664B

Location: Conduction 1 Date: 10/28/2020 Time: 11:25:16 AM Phase Y
Temperatuer (C): 23 Humidity (%): 53 Approved by:



	Frequency	Corr. Factor	Reading dBuA	Emission dBuA	Limit dBuA	Margins dB	Notes
No.	MHz	dB	QP	QP	QP	QP	
1	0.15000	0.00	17.85	17.85	58.00	-40.15	
2	0.41000	0.00	19.70	19.70	45.92	-26.22	
3	0.52500	0.00	10.50	10.50	42.95	-32.45	
+4	2.57500	0.00	9.98	9.98	23.84	-13.86	
5	5.16000	0.00	1.34	1.34	22.00	-20.66	
6	10.86000	0.00	-9.27	-9.27	22.00	-31.27	



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TEST REPORT N°:PTY-ESH-P23090664B

Location: Conduction 1

Date: 10/28/2020

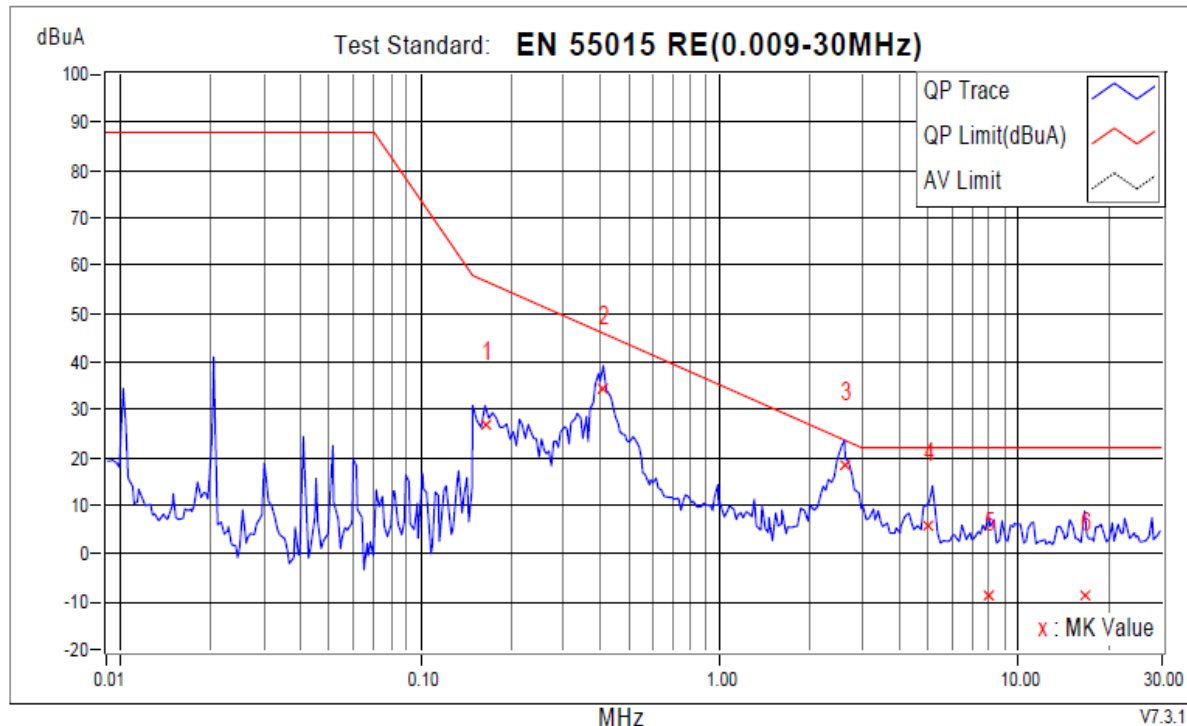
Time: 11:31:47 AM

Phase Z

Temperature (C): 23

Humidity (%): 53

Approved by:



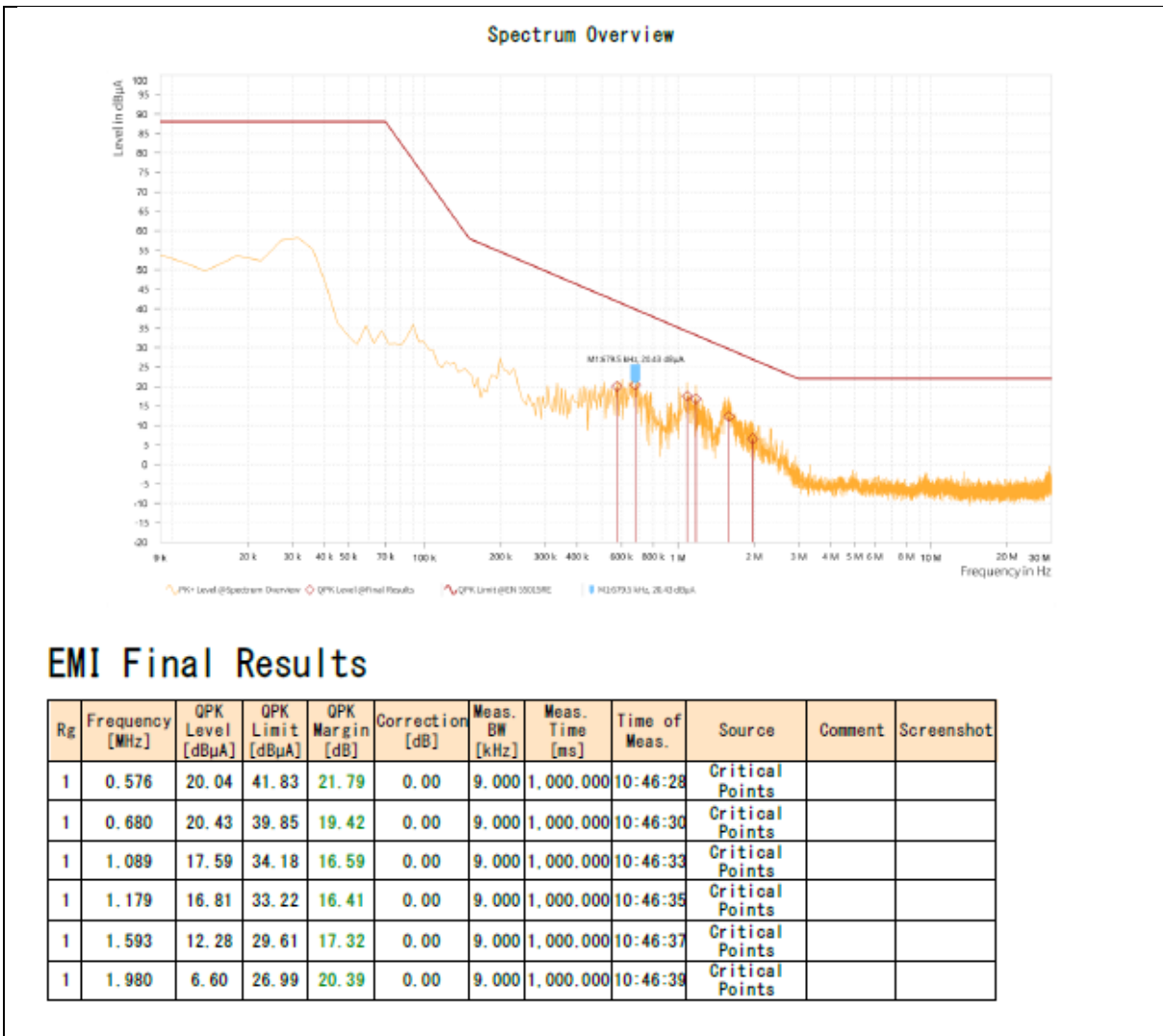
MHz							
No.	Frequency	Corr. Factor	Reading dBuA	Emission dBuA	Limit dBuA	Margins dB	Notes
	MHz	dB	QP	QP	QP	QP	
1	0.16500	0.00	26.91	26.91	56.85	-29.94	
2	0.41000	0.00	34.55	34.55	45.92	-11.37	
+3	2.62000	0.00	18.45	18.45	23.63	-5.18	
4	5.01500	0.00	5.87	5.87	22.00	-16.13	
5	7.93500	0.00	-8.61	-8.61	22.00	-30.61	
6	16.60000	0.00	-8.63	-8.63	22.00	-30.63	



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Model:	601650
Test mode:	Mode A
Test voltage:	Power by battery

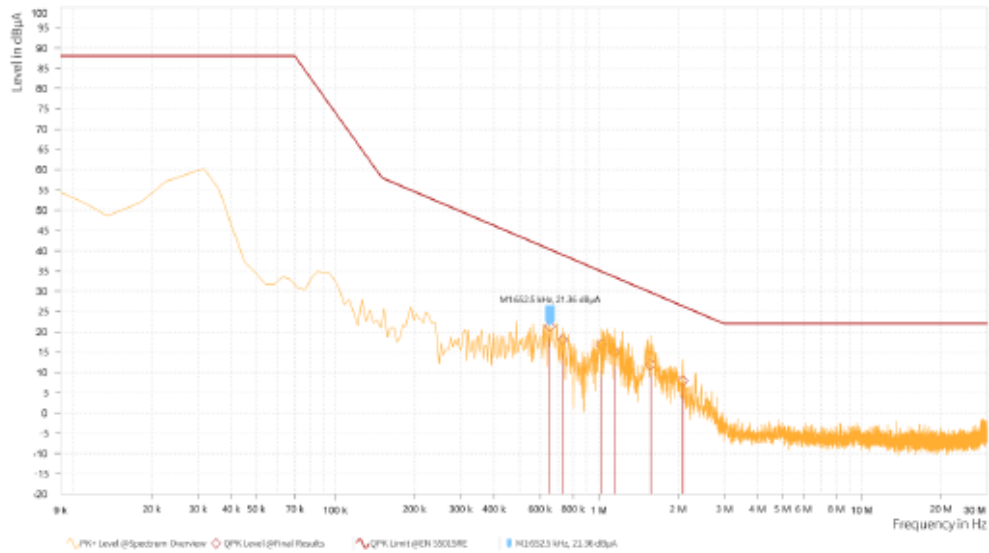




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TEST REPORT N°:PTY-ESH-P23090664B

Spectrum Overview



EMI Final Results

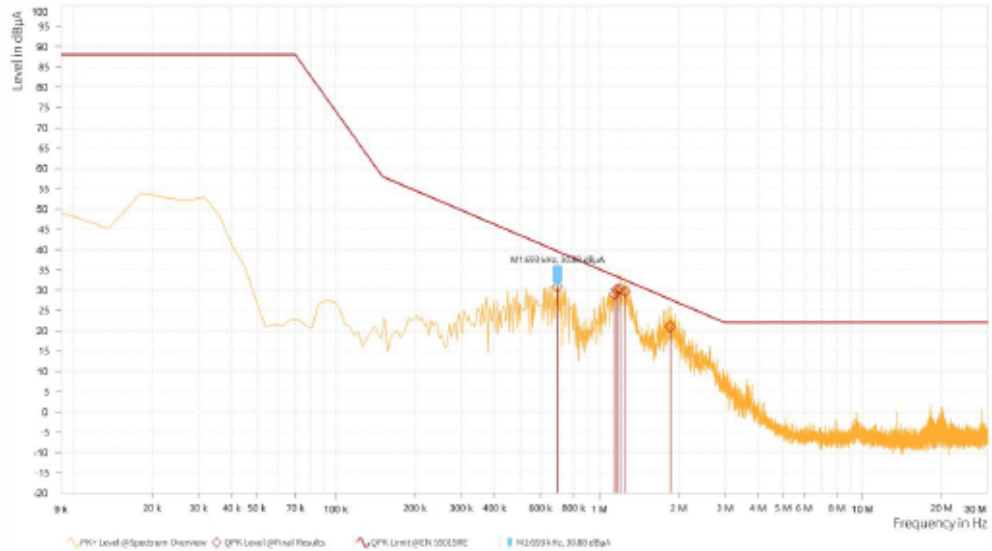
Rg	Frequency [MHz]	QPK Level [dBµA]	QPK Limit [dBµA]	QPK Margin [dB]	Correction [dB]	Meas. BW [kHz]	Meas. Time [ms]	Time of Meas.	Source	Comment	Screenshot
1	0.653	21.36	40.33	18.97	0.00	9.000	1,000.000	10:49:59	Critical Points		
1	0.729	18.08	39.00	20.92	0.00	9.000	1,000.000	10:50:01	Critical Points		
1	1.026	16.82	34.89	18.08	0.00	9.000	1,000.000	10:50:03	Critical Points		
1	1.152	14.88	33.50	18.62	0.00	9.000	1,000.000	10:50:05	Critical Points		
1	1.575	11.93	29.74	17.82	0.00	9.000	1,000.000	10:50:07	Critical Points		
1	2.088	7.90	26.36	18.45	0.00	9.000	1,000.000	10:50:10	Critical Points		



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TEST REPORT N°:PTY-ESH-P23090664B

Spectrum Overview



EMI Final Results

Rg	Frequency [MHz]	QPK Level [dBµA]	QPK Limit [dBµA]	QPK Margin [dB]	Correction [dB]	Meas. BW [kHz]	Meas. Time [ms]	Time of Meas.	Source	Comment	Screenshot
1	0.693	30.88	39.61	8.73	0.00	9.000	1,000,000	13:18:47	Critical Points		
1	1.143	28.92	33.60	4.67	0.00	9.000	1,000,000	13:18:23	Critical Points		
1	1.166	30.22	33.36	3.14	0.00	9.000	1,000,000	13:18:25	Critical Points		
1	1.202	30.37	33.00	2.63	0.00	9.000	1,000,000	13:18:27	Critical Points		
1	1.256	29.68	32.47	2.79	0.00	9.000	1,000,000	13:18:29	Critical Points		
1	1.863	20.93	27.73	6.80	0.00	9.000	1,000,000	13:18:53	Critical Points		



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5.3 Radiated emission (30 to 1000 MHz)

5.3.1 Test condition

Applicable Standard:	EN IEC 55015:2019+A11:2020	
Applied limit class:	☒	Table 10; Radiated disturbance limits
	☐	Other: --
Test set up description:	☒	Equipment on a table of 80 cm height
	☐	Equipment on the floor (isolated from ground plane)
	☐	Equipment located approximately in the middle of the validated test volume (FAR)
	☐	Equipment on a 10 cm support over the ground plane according CDNE-Method
	☐	Other:--
Supplementary test set-up description for SAC :	Measurements were made in semi-anechoic chamber that complies to CISPR 16. The EUT was rotated 360° about its azimuth with the receive antenna located at various heights in horizontal and vertical polarities. Final measurements with quasi-peak detector for below 1GHz were then performed by rotating the EUT 360° and adjusting the receive antenna height from 1 to 4 m. All frequencies were investigated in both horizontal and vertical antenna polarity, where applicable.	
Test method applied:	☒	OATS or SAC with measurement distance [m]: 3 m
	☐	FAR CISPR 16-2-3 with measurement distance [m]: 3 m
	☐	TEM waveguide
	☐	CDN(E)
Remark:	--	

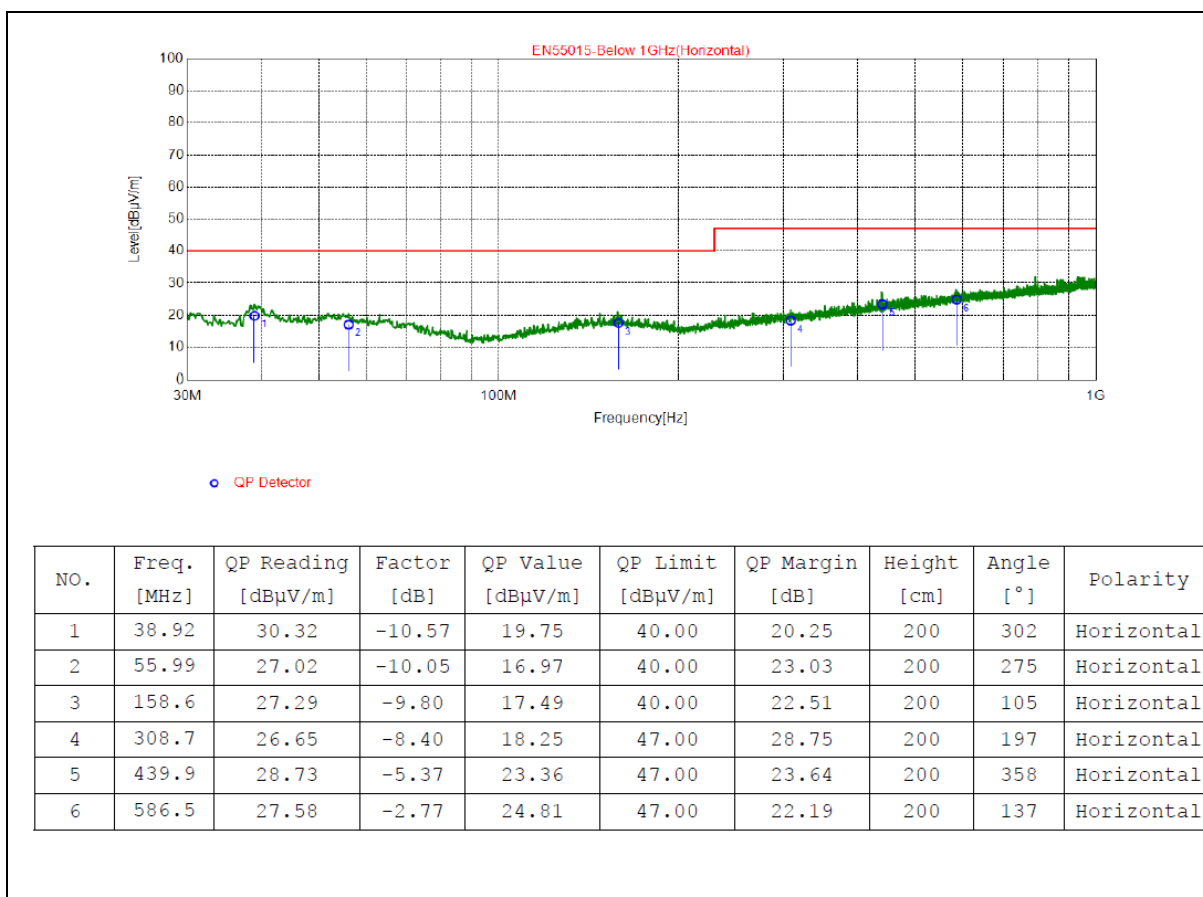
Limits for SAC-3 m distance	
Frequency range (MHz)	Quasi-peak (dBμV/m)
30-230	40
230-1000	47



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5.3.2 Test results

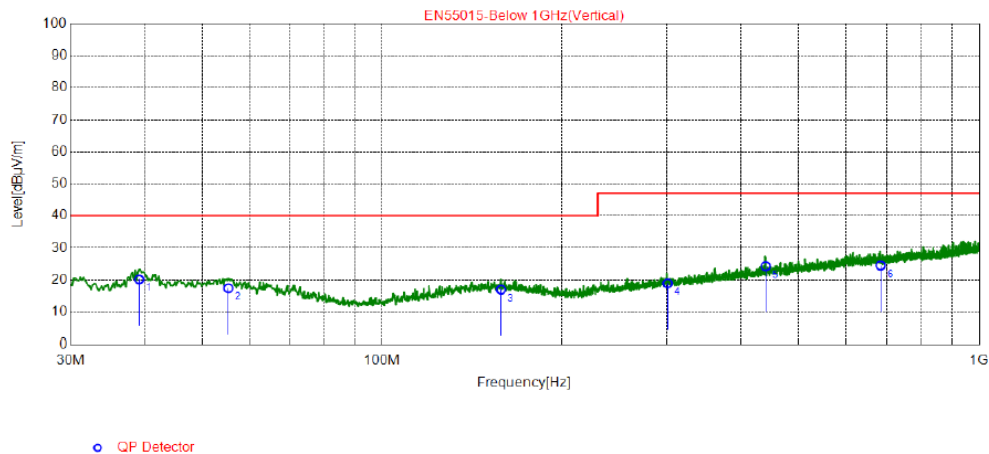
Model:	10000229137
Test mode:	Mode A
Test voltage:	Power by battery





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NO.	Freq. [MHz]	QP Reading [dBμV/m]	Factor [dB]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]	Height [cm]	Angle [°]	Polarity
1	39.11	30.65	-10.54	20.11	40.00	19.89	100	245	Vertical
2	55.22	27.35	-10.00	17.35	40.00	22.65	100	40	Vertical
3	158.2	26.74	-9.81	16.93	40.00	23.07	100	176	Vertical
4	301.2	27.47	-8.59	18.88	47.00	28.12	100	204	Vertical
5	439.9	29.6	-5.37	24.23	47.00	22.77	100	295	Vertical
6	682.6	26.18	-1.73	24.45	47.00	22.55	100	17	Vertical

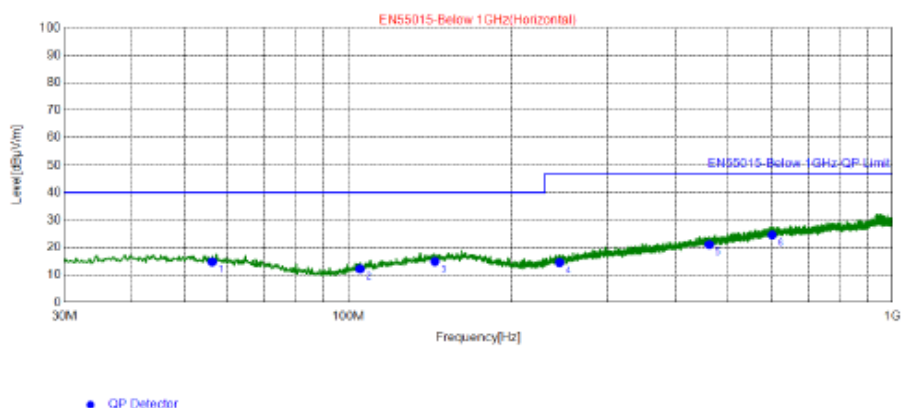


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Model:	601650
Test mode:	Mode A
Test voltage:	Power by battery

Test Graph



Final Data List

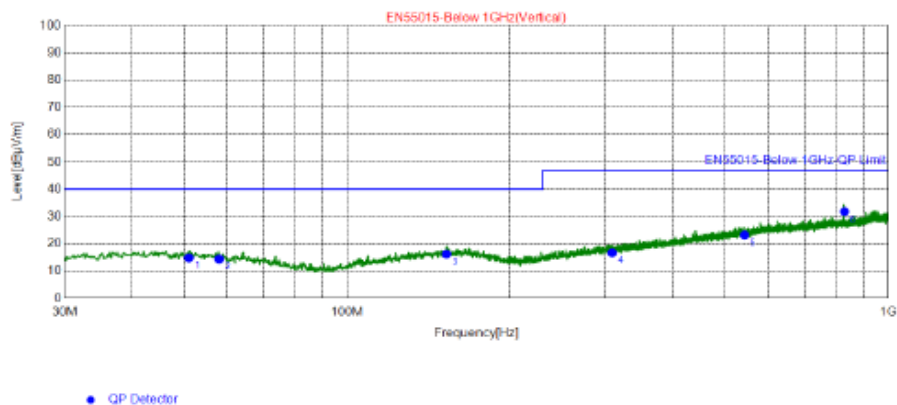
NO.	Freq. [MHz]	QP Reading [dB µV/m]	Factor [dB]	QP Value [dB µV/m]	QP Limit [dB µV/m]	QP Margin [dB]	Height [cm]	Angle [°]	Polarity
1	56.19	25.68	-10.82	14.86	40.00	25.14	100	210	Horizontal
2	105.0	25.67	-13.41	12.26	40.00	27.74	200	99	Horizontal
3	144.2	24.83	-9.86	14.97	40.00	25.03	200	142	Horizontal
4	244.7	24.78	-10.16	14.62	47.00	32.38	200	32	Horizontal
5	461.2	25.37	-4.25	21.12	47.00	25.88	100	88	Horizontal
6	601.5	25.78	-1.20	24.58	47.00	22.42	100	68	Horizontal



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Test Graph



Final Data List

NO.	Freq. [MHz]	QP Reading [dB µV/m]	Factor [dB]	QP Value [dB µV/m]	QP Limit [dB µV/m]	QP Margin [dB]	Height [cm]	Angle [°]	Polarity
1	50.95	25.28	-10.40	14.88	40.00	25.12	100	137	Vertical
2	57.93	25.45	-10.99	14.46	40.00	25.54	100	185	Vertical
3	152.6	25.78	-9.51	16.27	40.00	23.73	200	223	Vertical
4	308.9	24.48	-7.74	16.74	47.00	30.26	100	360	Vertical
5	542.7	25.82	-2.62	23.20	47.00	23.80	200	348	Vertical
6	831.2	30.28	1.57	31.85	47.00	15.15	100	145	Vertical



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6 Test condition and results for immunity

6.1 General information

Performance criteria as defined by the standard EN 61547:2009	
Criterion	Description from standard
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.
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.
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. Additional requirement for lighting equipment incorporating a starting device: After the test, the lighting equipment is switched off. After half an hour, it is switched on again. The lighting equipment shall start and operate as intended.
Other:	--
Remark:	---



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6.2 Electrostatic discharge immunity test (ESD)

6.2.1 Test condition

Basic standard:	IEC 61000-4-2:2008 / EN 61000-4-2:2009	
Test set up:	☒	Table-top equipment
	☐	Floor standing equipment
	☐	Wall or ceiling mounted equipment (Treated as table top)
Supplementary test set up description:	Measurements were made on a ground plane that extends 0.5 m minimum beyond all sides of the system under test and the minimum distance between the equipment under test and any laboratory walls or any other metallic surfaces shall be at least 1 m. Air discharges were applied to non-metallic parts of the system. Contact discharges were applied to all accessible metallic parts. Discharges were also applied to the Horizontal and Vertical Coupling Planes, where applicable.	
Discharge impedance:	330 ohm / 150 pF	
Size of horizontal coupling plate:	1.6 x 0.8 m	
Size of vertical coupling plate:	0.5 x 0.5 m	
Number of discharges for each test point:	10	
Discharge interval:	1 s	
Performance criterion:	☒	B
Remark:	---	



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6.2.2 Test results

Operating mode:	Mode A			
Ambient temperature:	23.1 °C			
Relative humidity:	101.1 %			
Supplementary information:	--			
Location of discharge	Test level (kV)	Polarity	Type	Observations
Vertical coupling plate	2, 4	+	Contact discharge	Note 1
Vertical coupling plate	2, 4	-	Contact discharge	Note 1
Horizontal coupling plate	2, 4	+	Contact discharge	Note 1
Horizontal coupling plate	2, 4	-	Contact discharge	Note 1
Points on conductive surface as indicated in the picture below	2, 4	+	Contact discharge	Note 1
Points on conductive surface as indicated in the picture below	2, 4	-	Contact discharge	Note 1
Points on non-conductive surface as indicated in the picture below	2, 4, 8	+	Air discharge	Note 1
Points on non-conductive surface as indicated in the picture below	2, 4, 8	-	Air discharge	Note 1
Note 1: EUT worked as intended during and after test.				



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6.3 Radiated, Radio-frequency, Electromagnetic field immunity test (RS)

6.3.1 Test condition

Basic standard:	IEC 61000-4-3:2020 / EN IEC 61000-4-3:2020	
Test setup:	☒	Equipment on the table (0.8 m height)
	☐	Equipment standing on floor (0.05 m to 0.15 m height)
	☐	Other: --
Supplementary test set up description:	Measurements were made in a semi or full anechoic chamber or TEM or reverberation chamber and the indicated field strength was pre-calibrated prior to placement of the system under test. For semi or full anechoic chamber the tests were performed in both the horizontal and vertical polarities, where applicable. The antenna was placed between 1 and 3 m from the product under test.	
Antenna height:	1.5 m	
Distance antenna to EUT:	3 m	
Modulation:	80 % AM with 1 kHz	
Dwell time:	3 s	
Step size:	1%	
Applied testing method:	IEC 61000-4-3 Radiated Field with Antenna	
Performance criterion:	A	
Remark:	--	



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6.3.2 Test results

Operating mode:		Mode A			
Supplementary information:		--			
Frequency range	Test level (V/m)	Polarization	Azimuth	Modulation	Observations
80 MHz – 1000 MHz	3	Horizontal/ Vertical	0°	AM 1 kHz, 80 %	Note 1
			90°		
			180°		
			270°		
Note 1: EUT worked as intended during and after test.					



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6.4 Electrical fast transient/Burst immunity test (EFT)

6.4.1 Test condition

Basic standard:	IEC 61000-4-4:2012 / EN 61000-4-4:2012	
Test setup:	☐	Equipment on the table (0.1 ± 0.01) m above ground plane
	☐	Equipment standing on floor at (0.1 ± 0.05) m above ground plane
	☐	Artificial hand applied
Supplementary test set up description:	The ground reference plane shall project beyond the EUT by at least 0.1 m on all sides. The minimum distance between the EUT and all other conductive structures (including the generator, AE and the walls of a shielded room), except the ground reference plane, shall be more than 0.5 m. All cables to the EUT shall be placed on the insulation support 0.1 m above the ground reference plane. Cables not subject to test shall be routed as far as possible from the cable under test to minimize the coupling between the cables. Either a direct coupling network or a capacitive clamp shall be used for the application of the test voltages.	
Test time:	1 min	
Repetition frequency:	5 kHz	
Impulse wave shape:	5/50 ns	
Burst duration:	15 ms for 5kHz repetition frequency	
Burst period:	300 ms	
Performance criterion:	B	
Remark:	The EUT power by battery	

6.4.2 Test results

N/A



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6.5 Surges

6.5.1 Test condition

Basic Standard:	IEC 61000-4-5:2014+A1:2017 / EN 61000-4-5:2014+A1:2017
Test set up description:	Floor standing equipment set-up (10 cm over ground plane)
Supplementary test set up description:	Tests were conducted with the product connected to a Coupling/Decoupling Network (CDN)
Wave-Shape:	1.2/50 μ s open circuit voltage, 8/20 μ s short circuit current
Repetition rate:	60 s
Number of pulses for each coupling:	5 positive and 5 negative
Performance criterion:	C (Except luminaire for emergency lighting) B (Luminaire for emergency lighting)
Remark:	The EUT power by battery

6.5.2 Test results

N/A



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6.6 Immunity to conducted disturbances induced by RF fields (CS)

6.6.1 Test condition

Basic Standard:	IEC 61000-4-6:2013 / EN 61000-4-6:2014	
Test setup:	☒	Equipment located (0,1 ± 0,05) m above ground plane
	☐	Elevated ground plane.
	☐	Artificial hand applied.
Supplementary test set up description:	Measurements were made on a ground plane that extends 0.5 m minimum beyond all sides of the system under test. The EUT was located 0.1 m above the reference ground plane and any associated cables attached to the EUT were located between 30 - 50mm above the ground plane. The indicated field was pre-calibrated prior to placement of the system under test.	
Modulation:	80 % AM with 1 kHz	
Dwell time:	3 s	
Step size:	1%	
Performance criterion:	A	
Remark:	The EUT power by battery	

6.6.2 Test results

N/A



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6.7 Power frequency magnetic field

6.7.1 Test condition

Basic standard:	IEC 61000-4-8:2009 / EN IEC 61000-4-8:2010	
Test setup:	☒	Single Coil. Dimensions: 1 x 1 m
	☐	Single Coil. Dimensions: 1 x 2.6 m
	☐	0,1 m above metal surface
	☐	Homogeneous field (Helmholtz coil). Dimensions:
Supplementary test set up description:	All cables shall be exposed to the magnetic field for 1 m of their length.	
Performance criterion:	A	
Remark:	According to the manufacturers information there are no magnetic sensitive components in the product.	

6.7.2 Test results

N/A



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6.8 Voltage dips and short interruptions

6.8.1 Test condition

Basic Standard:	IEC 61000-4-11:2020 / EN IEC 61000-4-11:2020
Test set up description:	Floor standing equipment set-up (10 cm over ground plane)
Supplementary test set up description:	Testing was performed with the product connected directly to a generator capable of simulating the voltage drops.
Repetition rate:	10 s
Number of dips or interruptions:	3
Performance criterion:	C for Voltage dips B for Voltage short interruptions (For ballasts/luminaires where the lamp is not able to restart within 1 min, due to the physical constraints of the lamp, performance criterion C applies.)
Remark:	The EUT power by battery

6.8.2 Test results

N/A



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7 Conclusion

The apparatus Solar light and model detail see in model list is in compliance with the requirements of the standards EN IEC 55015:2019+A11:2020, EN 61547:2009/BS EN 61547:2009,



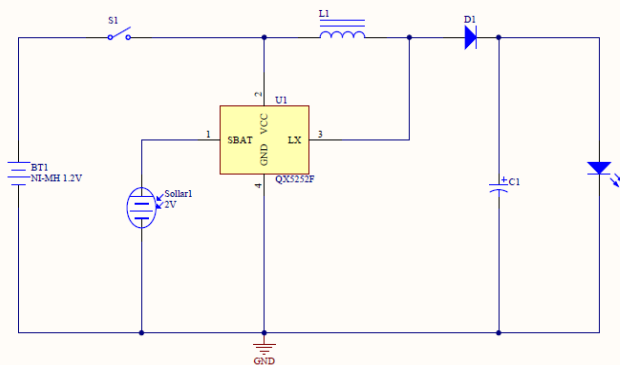
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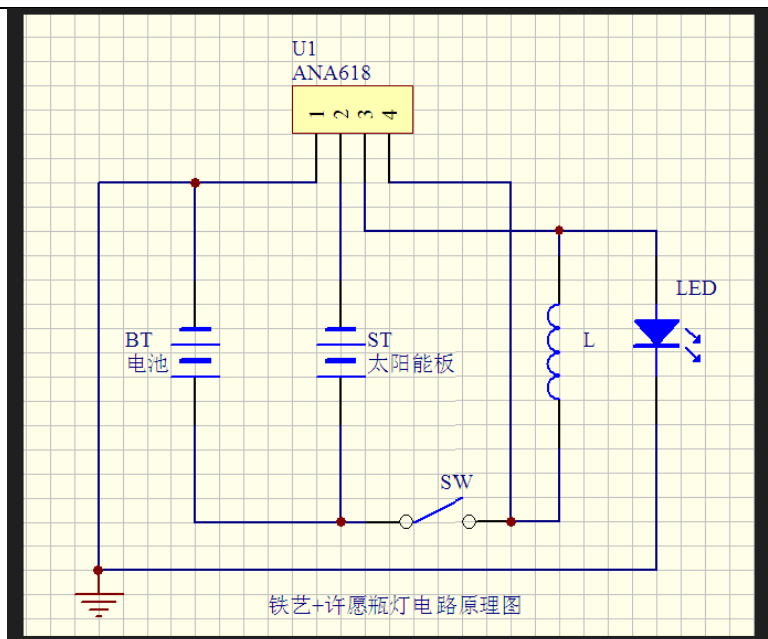
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Appendix A: Photograph of circuit diagram



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