EMC REPORT

Prepared For :	**GUANGDONG CHAOZHOU GUANGLI ELECTRONIC FACTORY** Add: WOSHI INDUSTRIAL PARK, QIAODONG, XIANGQIAO, CHAOZHOU, GUANGDONG, CHINA
Product Name:	Night light
Model :	GL-090, GL-091, GL-092, GL-095, GL-088, GL-089, GL-082, GL-083, GL-084, GL-085, GL-087
Trade Mark :	GUANGLI®
Prepared By :	Shenzhen SIT Testing Technology Co., Ltd. Add: Room 401, A2 Building, The 2nd Industrial Zone of ZhuAo, GuShu Village, XiXiang Town, BaoAn District, ShenZhen, Guangdong, China
Test Date:	December 14, 2021 to December 22, 2021
Date of Report :	December 22, 2021
Report No.:	SIT211213580101ER

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TABLE OF CONTENT

Description

Test Report Description Page

1. GENERAL INFORMATION....4

1.1. Description of Device (EUT)....4
1.2. Test Standards....5
1.3. Test Methodology....5
1.4. Test Facility....5

2. MEASURING DEVICE AND TEST EQUIPMENT....6

2.1. For Power Line Conducted Emission....6
2.2. For Radiated Emission Measurement....6
2.3. For Harmonic Current / Flicker Measurement....6
2.4. For Electrostatic Discharge Immunity Test....6
2.5. For RF Strength Susceptibility Test....6
2.6. For Electrical Fast Transient /Burst Immunity Test....7
2.7. For Surge Immunity Test....7
2.8. For Injected Current Susceptibility Test....7
2.9. For Magnetic Field Immunity Test....7
2.10. For Voltage Dips and Interruptions Test....7

3. POWER LINE CONDUCTED EMISSION MEASUREMENT....8

3.1. Block Diagram of Test Setup....8
3.2. Measuring Standard....8
3.3. EUT Configuration on Measurement....8
3.4. Test Procedure....8

4. RADIATED EMISSION MEASUREMENT....11

4.1. Block Diagram of Test....11
4.2. Measuring Standard....11
4.3. EUT Configuration on Test....11
4.4. Test Procedure....12

5. MAGNETIC EMISSION DISTURBANCES....15

6. HARMONIC CURRENT EMISSION MEASUREMENT....19

6.1Block Diagram of Test Setup....19
6.2 Measuring Standard....19
6.3 Description of test Equipment....19

7. VOLTAGE FLUCTUATION AND FLICKER EASUREMENT....20

7.1Block Diagram of Test Setup....20
7.2Measuring Standard....20

8. ELECTROSTATIC DISCHARGE IMMUNITY TEST....21

8.1 Block Diagram of Test Setup....21
8.2 Test Standard....21
8.3 Severity Levels and Performance Criterion....21
8.4 Test Procedure....22

9. RF FIELD STRENGTH SUSCEPTIBILITY TEST....24

9.1Block Diagram of Test....24
9.2 Test Standard....24
9.3Severity Levels and Performance Criterion....25
9.4Test Procedure....25

10. ELECTRICAL FAST TRANSIENT/BURST IMMUNITY TEST....27

10.1 Block Diagram of Test Setup....27
10.2 Test Standard....27
10.3 Severity Levels and Performance Criterion....27
10.4Test Procedure....28

11. SURGE IMMUNITY TEST....30

11.1 Block Diagram of Test Setup....30
11.2 Test Standard....30
11.3 Severity Levels and Performance Criterion....30
11.4Test Procedure....31

12. INJECTED CURRENTS SUSCEPTIBILITY TEST....33

12.1 Block Diagram of Test Setup....33
12.2 Test Standard....33
12.3 Severity Levels and Performance Criterion....33
12.4Test Procedure....34

13. MAGNETIC FIELD SUSCEPTIBILITY TEST....36

13.1 Block Diagram of Test....36
13.2 Test Standard....36
13.3 Severity Levels and Performance Criterion....36
13.4Test Procedure....36

14. VOLTAGE DIPS AND INTERRUPTIONS TEST....38

14.1 Block Diagram of Test Setup....38
14.2 Test Standard....38
14.3 Severity Levels and Performance Criterion....39
14.4Test Procedure....39

15. PHOTOGRAPH....41

15.1 Photo of Radiated Emission....41

16. PHOTOGRAPHS OF EUT....42

1. GENERAL INFORMATION

1.1.Description of Device (EUT)

EUT	:	Night light
Trade Name	:	GUANGLI
Model	:	GL-090
Additional model	:	GL-091, GL-092, GL-095, GL-088, GL-089, GL-082, GL-083, GL-084, GL-085, GL-087
Test Voltage	:	AC 230V
Rating	:	Input: 220-240V~, 50/60Hz, 15W
Applicant	:	GUANGDONG CHAOZHOU GUANGLI ELECTRONIC FACTORY
Address	:	WOSHI INDUSTRIAL PARK, QIAODONG, XIANGQIAO, CHAOZHOU, GUANGDONG, CHINA
Manufacturer	:	GUANGDONG CHAOZHOU GUANGLI ELECTRONIC FACTORY
Address	:	WOSHI INDUSTRIAL PARK, QIAODONG, XIANGQIAO, CHAOZHOU, GUANGDONG, CHINA
Test Standards	:	EN 55015:2019+A11:2020 EN 62493:2015 EN 61547:2009 EN 61000-3-2:2019+A1:2021 EN 61000-3-3:2013+A1:2019
Test Result	:	PASS
Prepared by	:	Debe Yu
Reviewer	:	Jessica
Approved & Authorized Signer	:	Kevin Sun

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1.2.Test Standards

√ Indicates that the test is applicable
× Indicates that the test is not applicable

Standard	Test Items	Status
EN 55015:2019+A11:2020	Disturbance Voltage at The Mains Terminals (150KHz To 30MHz)	√
	Radiated Disturbances (30MHz To 300MHz)	√
	Magnetic Emission (9KHz To 30MHz)	√
EN 62493:2015	Induced current density	√
EN 61000-3-2:2019+A1:2021	Harmonic Current	√
EN 61000-3-3:2013 +A1:2019	Voltage Fluctuations	√
EN 61000-4-2:2009	Electrostatic discharge Immunity	√
EN 61000-4-3:2020	Radiated Susceptibility (80MHz to 1GHz)	√
EN 61000-4-4:2012	Electrostatic Fast Transient/Burst Immunity	√
EN 61000-4-5:2014 +A1:2017	Surge Immunity	√
EN 61000-4-6:2014+AC:2015	Conducted Susceptibility (150KHz to 80MHz)	√
EN 61000-4-8:2010	Power Frequency Magnetic Field Immunity (50/60Hz)	√
EN 61000-4-11:2004+ A1:2017	Voltage Dips Short Interruptions Immunity Tests	√

1.3. Test Methodology

All measurements contained in this report were conducted with CISPR 16-1, radio disturbance and immunity measuring apparatus, and CISPR16-2, Method of measurement of disturbances and immunity.
All measurement required was performed at laboratory of Shenzhen SIT Testing Technology Co., Ltd., at Room 401, A2 Building, The 2nd Industrial Zone of ZhuAo, GuShu Village, XiXiang Town, BaoAn District, ShenZhen, Guangdong, China

1.4. Test Facility

The facility also complies with the radiated and AC line conducted test site criteria set forth in CISPR 16-1, CISPR16-2.

2. MEASURING DEVICE AND TEST EQUIPMENT

2.1.For Power Line Conducted Emission

Item	Equipment	Manufacturer	Model No.	Factory Number	Last Cal.
1.	Test Receiver	Rohde & Schwarz	ESPI TEST RECEIVER	ID:1164.6607K03-102109-MH	Mar. 14, 2021
2.	L.I.S.N	Rohde & Schwarz	ESH3-Z5.831.5518.52	9561-G071	Mar. 14, 2021
3.	50ΩCoaxial Switch	Anritsu	MP59B	M20531	N/A
4.	Pulse Limiter	SCHWARZ BECK	VTSD 9561-F Pulse limiter 10dB Ateennator	561-G071	Mar. 14, 2021
5.	Cable	SCHWARZ BECK	N/A	N/A	Mar. 14, 2021

2.2.For Radiated Emission Measurement

Item	Equipment	Manufacturer	Model No.	Factory Number	Last Cal.
1.	Test Receiver	Rohde & Schwarz	ESPI TEST RECEIVER	ID:1164.6607K03-102109-MH	Mar. 14, 2021
2.	Bilog Antenna	Sunol Sciences	Model JB6 Antenna	A090414	Mar. 14, 2021
3.	50ΩCoaxial Switch	Anritsu	MP59B	M20531	N/A
4.	control	Positioning Controller	Model MF-7802	MF780208362	Mar. 14, 2021
5.	Cable	SCHWARZ BECK	N/A	N/A	Mar. 14, 2021
6.	Cable	SCHWARZ BECK	N/A	N/A	Mar. 14, 2021

2.3.For Harmonic Current / Flicker Measurement

Item	Equipment	Manufacturer	Model No.	Factory Number	Last Cal.
1.	Coupling decoupling network	SCHAFFNER	M016	20812	Mar. 14, 2021
2.	PC	N/A	P2L97	N/A	Mar. 14, 2021

2.4. For Electrostatic Discharge Immunity Test

Item	Equipment	Manufacturer	Model No.	Factory Number	Last Cal.
1.	ESD Tester	Prima	ESD61002A	144305	Mar. 14, 2021

2.5. For RF Strength Susceptibility Test

Item	Equipment	Manufacturer	Model No.	Factory Number	Last Cal.
1.	Signal Generator	HP	8648A	3625U00573	Mar. 14, 2021

2.	Amplifier	AR	500A100	17034	NCR
3.	Amplifier	AR	100W/1000M1	17028	NCR
4.	Isotropic Field Monitor	AR	FM2000	16829	NCR
5.	Isotropic Field Probe	AR	FP2000	16755	Mar. 14, 2021
6.	Biconic Antenna	EMCO	3108	9507-2534	NCR
7.	Log-periodic Antenna	AR	AT1080	16812	NCR
8.	PC	N/A	486DX2	N/A	N/A

2.6. For Electrical Fast Transient /Burst Immunity Test

Item	Equipment	Manufacturer	Model No.	Factory Number	Last Cal.
1.	Burst Tester	HTEC	HEFT 51	144303	Mar. 14, 2021
2.	Coupling CLamp	HTEC	IP-4A	147147	Mar. 14, 2021

2.7. For Surge Immunity Test

Item	Equipment	Manufacturer	Model No.	Factory Number	Last Cal.
1.	Surge Tester	HTEC	HCWG	144302	Mar. 14, 2021

2.8. For Injected Current Susceptibility Test

Item	Equipment	Manufacturer	Model No.	Factory Number	Last Cal.
1.	Simulator	EMTEST	CWS500C	0900-12	Mar. 14, 2021
2.	CDN	EMTEST	CDN-M2	5100100100	Mar. 14, 2021
3.	CDN	EMTEST	CDN-M3	0900-11	Mar. 14, 2021
4.	Injection CLamp	EMTEST	F-2031-23MM	368	Mar. 14, 2021
5.	Attenuator	EMTEST	ATT6	0010222A	Mar. 14, 2021

2.9. For Magnetic Field Immunity Test

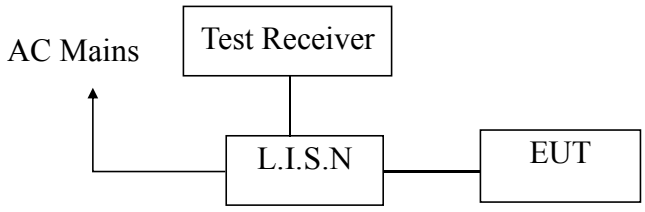
Item	Equipment	Manufacturer	Model No.	Factory Number	Last Cal.
1.	Magnetic Field Tester	HTEC	HPFM T	144301	Mar. 14, 2021

2.10. For Voltage Dips and Interruptions Test

Item	Equipment	Manufacturer	Model No.	Factory Number	Last Cal.
1.	Dips Tester	HTEC	HPFS	144304	Mar. 14, 2021

3. POWER LINE CONDUCTED EMISSION MEASUREMENT

3.1.Block Diagram of Test Setup



(EUT:Night light)

3.2.Measuring Standard

EN 55015:2019+A11:2020

Power Line Conducted Emission Limits

Frequency (MHz)	Limit (dBμV)	
	Quasi-Peak Level	Average Level
0.009 ~ 0.05	110	-
0.05 ~ 0.15	90.0~80.0*	-
0.15 ~ 0.50	66.0 ~ 56.0 *	56.0 ~ 46.0 *
0.50 ~ 5.00	56.0	46.0
5.00 ~ 30.00	60.0	50.0

3.3.EUT Configuration on Measurement

The following equipments are installed on Conducted Emission Measurement to meet EN 55015 requirements and operating in a manner which tends to maximize its emission characteristics in a normal application.

3.4.Test Procedure

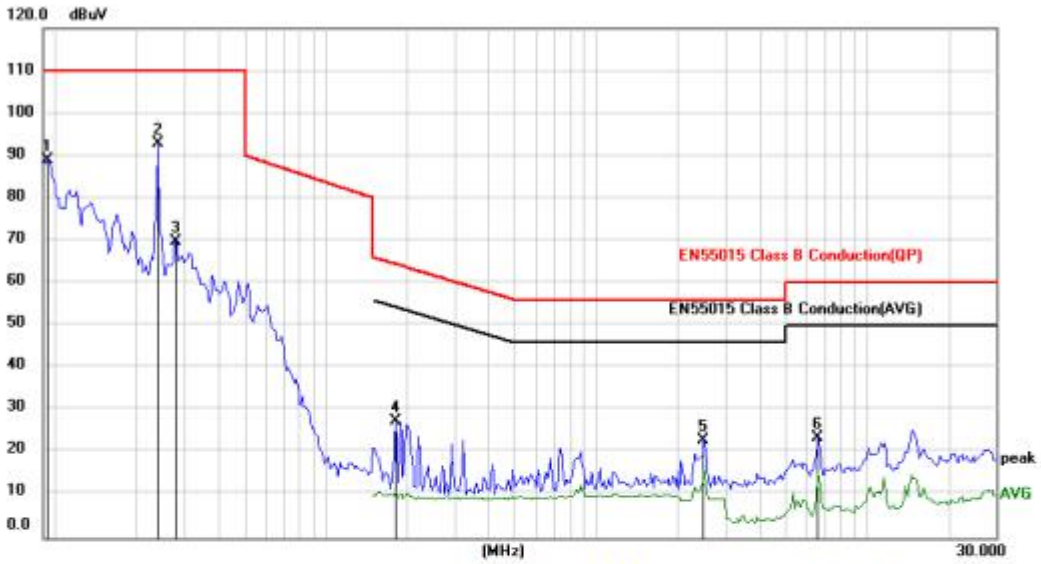
The EUT is put on the plane 0.8m high above the ground by insulating support and connected to the AC mains through Line Impedance Stability Network (L.I.S.N). This provided a 50ohm coupling impedance for the tested equipments. Both sides of AC line are investigated to find out the maximum conducted emission according to the EN 55015 regulations during conducted emission measurement.

The bandwidth of the field strength meter (R&S Test Receiver ESCS30) is set at 9KHz in 150KHz~30MHz and 200Hz in 9KHz~150KHz.

The frequency range from 9kHz to 30MHz is investigated .

Conduction Uncertainty: Uc = ± 2.72 dB

Conducted Emission Measurement



Phase: L1 Temperature:

Limit: EN55015 Class B Conduction(QP) Power: Humidity: %

EUT: Night light

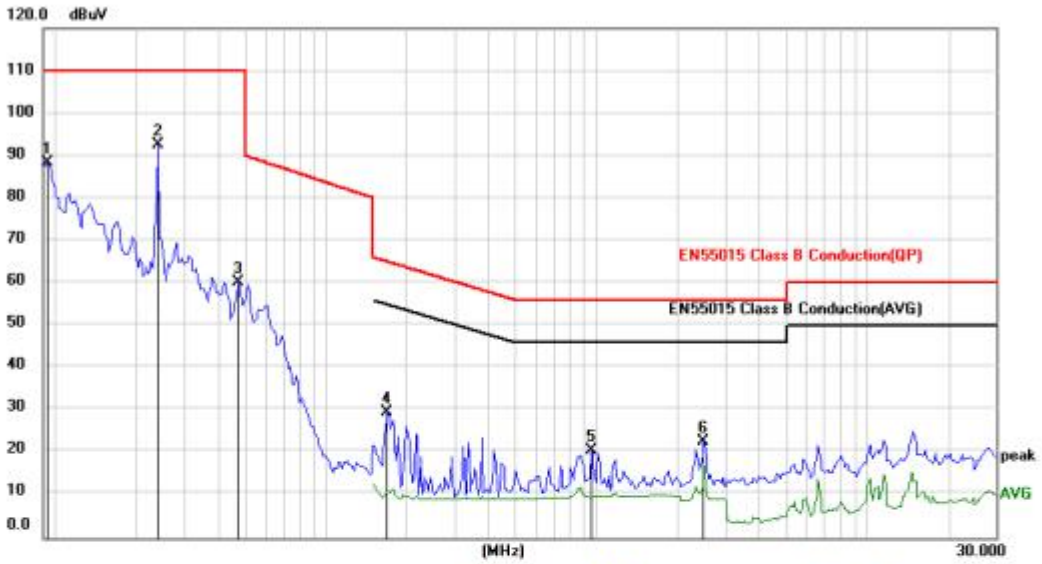
M/N: GL-090

Mode:

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.0093	77.71	11.20	88.91	110.00	-21.09	peak	
2	*	0.0240	82.05	10.86	92.91	110.00	-17.09	peak	
3		0.0278	59.05	10.76	69.81	110.00	-40.19	peak	
4		0.1812	17.01	10.39	27.40	64.43	-37.03	peak	
5		2.5056	12.12	10.83	22.95	56.00	-33.05	peak	
6		6.6270	12.18	11.36	23.54	60.00	-36.46	peak	

Conducted Emission Measurement



Phase: N Temperature:

Limit: EN55015 Class B Conduction(QP) Power: Humidity: %

EUT: Night light

M/N: GL-090

Mode:

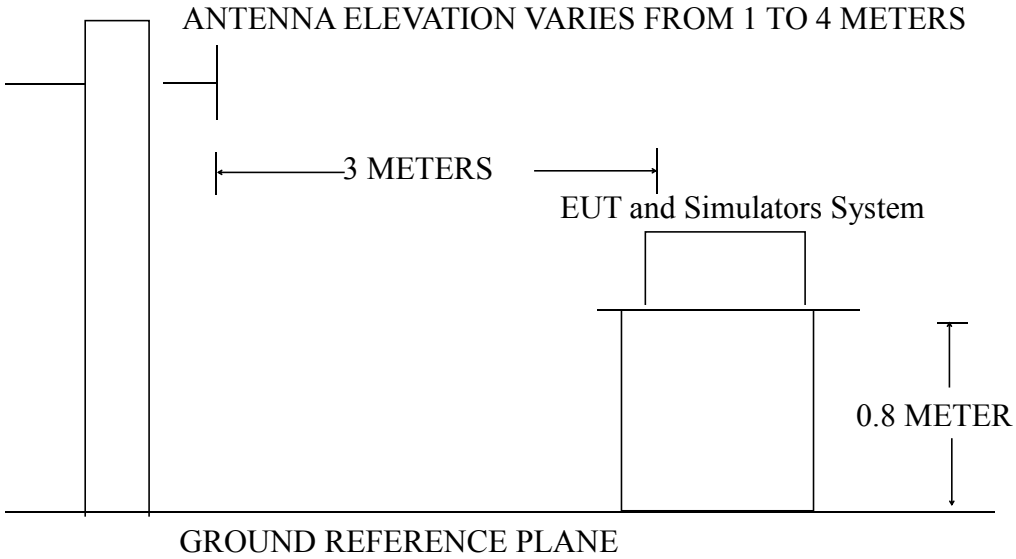
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.0094	77.59	10.70	88.29	110.00	-21.71	peak	
2	*	0.0240	81.97	10.43	92.40	110.00	-17.60	peak	
3		0.0477	49.82	10.23	60.05	110.00	-49.95	peak	
4		0.1695	19.35	10.24	29.59	64.98	-35.39	peak	
5		0.9612	9.75	10.78	20.53	56.00	-35.47	peak	
6		2.5016	11.71	10.83	22.54	56.00	-33.46	peak	

4. RADIATED EMISSION MEASUREMENT

4.1.Block Diagram of Test

4.1.1.Block diagram of test setup (In chamber)



(EUT:Night light)

4.2.Measuring Standard

EN 55015:2019+A11:2020
Radiated Emission Limits
Including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified below:

FREQUENCY (MHz)	DISTANCE (Meters)	FIELD STRENGTHS LIMIT (dBμV/m)
30 ~ 230	3	40
230 ~ 300	3	47

Note: (1) The smaller limit shall apply at the combination point between two frequency bands.
(2) Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the EUT.

4.3.EUT Configuration on Test

The EN 55015 regulations test method must be used to find the maximum emission during radiated emission measurement.

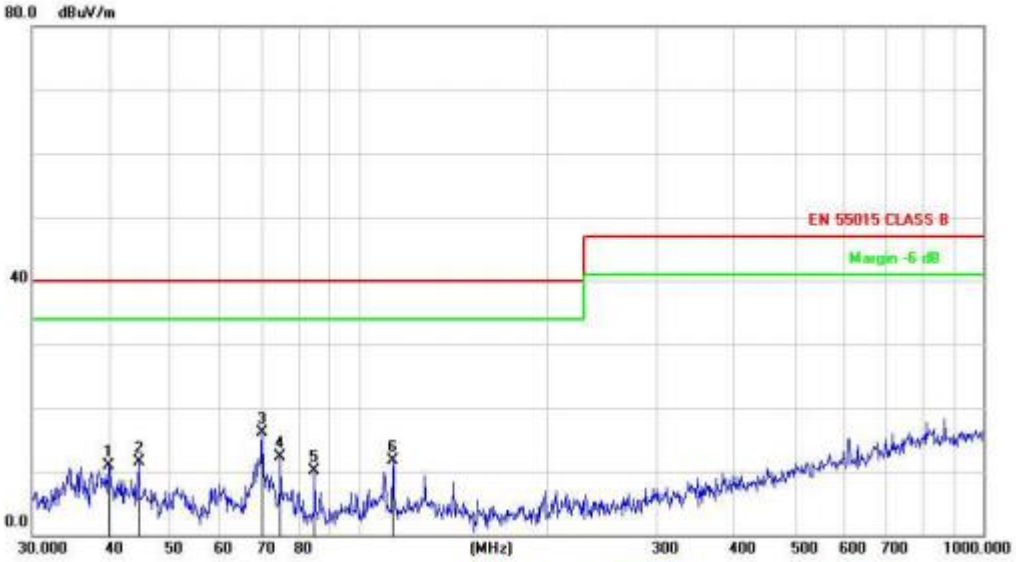
4.4. Test Procedure

The EUT is placed on a turn table which is 0.8 meter high above the ground. The turn table 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 a antenna tower. The antenna can be moved up and down from 1 to 4 meters to find out the maximum emission level. Bilog antenna (calibrated by Dipole Antenna) is used as a receiving antenna. Both horizontal and vertical polarization of the antenna are set on test.

The bandwidth of the Receiver (ESCS30) is set at 120kHz.
The frequency range from 30MHz to 300MHz is investigated.

Radiation Uncertainty: Ur = ± 3.84 dB

Radiated Emission Measurement



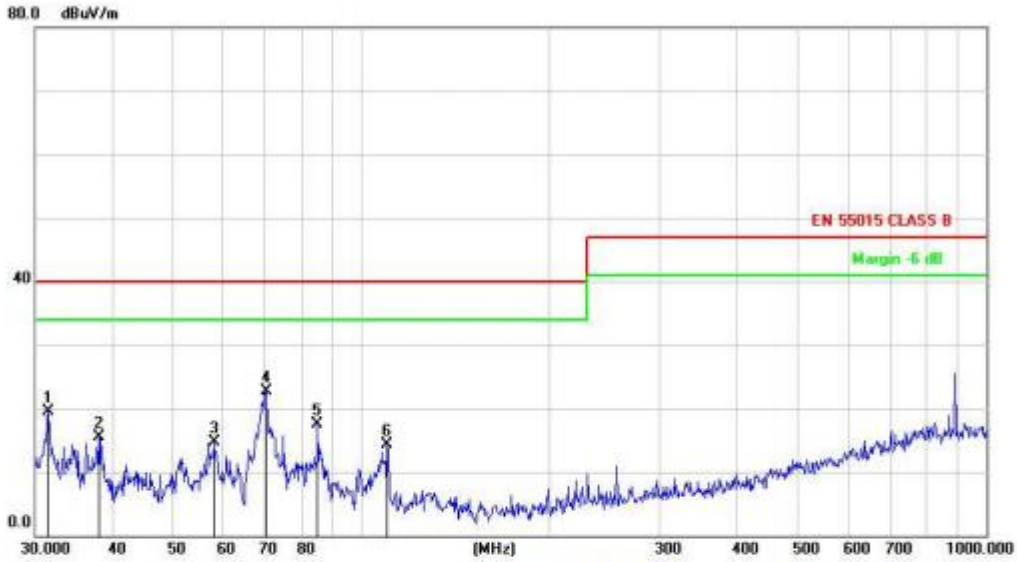
Limit: EN 55015 CLASS B
EUT: Night light
M/N: GL-090
Mode:
Note:

Polarization: *Horizontal*
Power:
Distance: 3m

Temperature:
Humidity: %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector	cm	degree	Comment
1		39.8542	28.94	-17.99	10.95	40.00	-29.05	peak			
2		44.4308	29.41	-17.89	11.52	40.00	-28.48	peak			
3	*	70.0903	36.07	-19.94	16.13	40.00	-23.87	peak			
4		74.9191	32.72	-20.36	12.36	40.00	-27.64	peak			
5		84.9995	31.10	-21.06	10.04	40.00	-29.96	peak			
6		113.3163	31.72	-20.11	11.61	40.00	-28.39	peak			

Radiated Emission Measurement



Limit: EN 55015 CLASS B
EUT: Night light
M/N: GL-090
Mode:
Note:

Polarization: *Vertical*
Power:
Distance: 3m

Temperature:
Humidity: %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector	cm	degree	Comment
1		31.5095	38.03	-18.50	19.53	40.00	-20.47	peak			
2		37.9450	33.64	-18.10	15.54	40.00	-24.46	peak			
3		57.9993	33.47	-18.69	14.78	40.00	-25.22	peak			
4	*	70.3365	42.58	-19.96	22.62	40.00	-17.38	peak			
5		84.9995	38.64	-21.06	17.58	40.00	-22.42	peak			
6		109.7960	34.49	-20.22	14.27	40.00	-25.73	peak			

5. MAGNETIC EMISSION DISTURBANCES

5.1 Measurement Uncertainty

The quasi-peak limits of the magnetic component of the radiated disturbance field strength in the frequency range 9 kHz to 30 MHz, measured as a current in 2 m, 3 m or 4 m loop antennas around the Lighting equipment, are given in table 3.

The limits for the 2 m loop diameter apply to equipment not exceeding a length of 1,6 m,those for the 3 m loop diameter for equipment having a length in between 1,6 m and 2,6 m and those for the 4 m loop diameter for equipment having a length in between 2,6 m and 3,6 m.

5.2 Limit of Magnetic Emission Disturbances

Table 3a – Radiated disturbance limits in the frequency range 9 kHz to 30 MHz

Frequency range MHz	Limits for loop diameter dB(µA)[a]		
	2 m	3 m	4 m
9 kHz to 70 kHz	88	81	75
70 kHz to 150 kHz	88 to 58[b]	81 to 51[b]	75 to 45[b]
150 kHz to 3,0 MHz	58 to 22[b]	51 to 15[b]	45 to 9[b]
3,0 MHz to 30 MHz	22	15 to 16[c]	9 to 12[c]

[a] At the transition frequency, the lower limit applies.

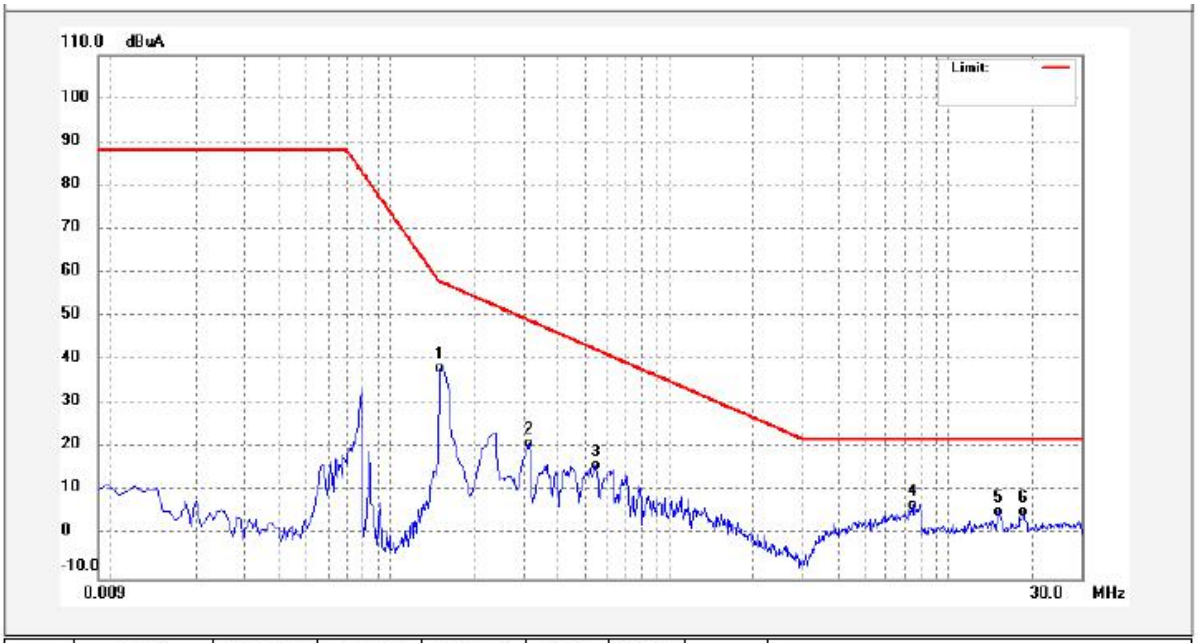
[b] Decreasing linearly with the logarithm of the frequency. For electrodeless lamps and luminaires, the limit in the frequency range of 2,2 MHz to 3,0 MHz is 58 dB(µA) for 2 m, 51 dB(µA) for 3 m and 45 dB(µA) for 4 m loop diameter.

[c] Increasing linearly with the logarithm of the frequency.

NOTE In Japan, the limits for frequencies 9 kHz to 150 kHz do not apply.

Magnetic Emission Test Data

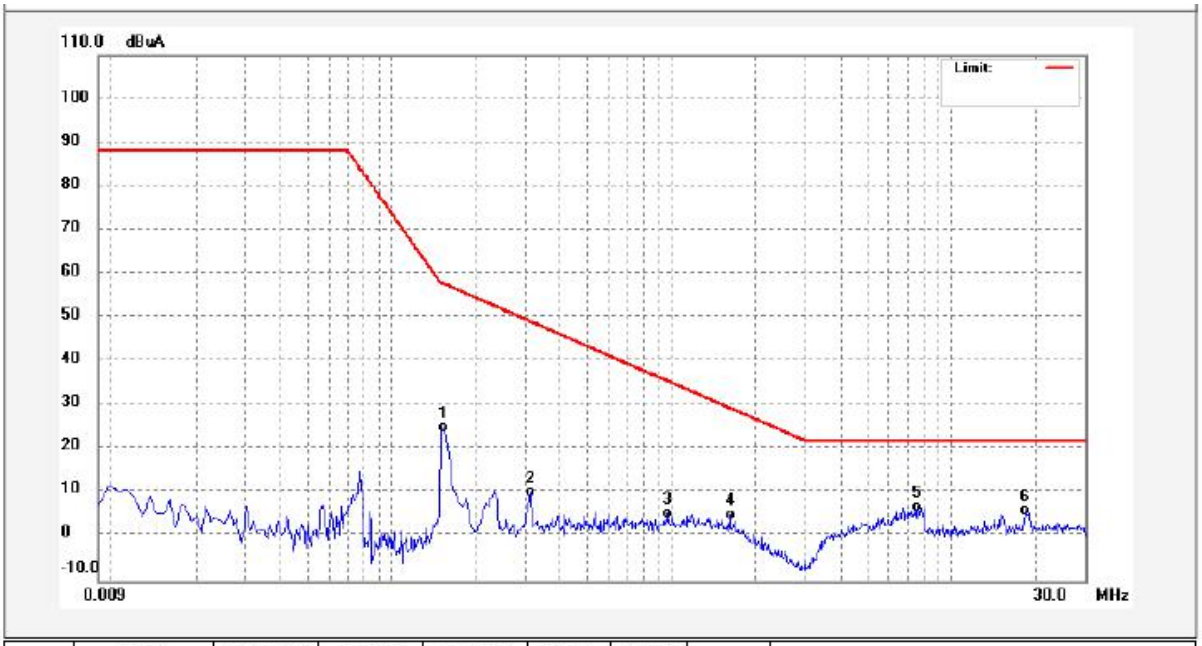
EUT :	Night light	Temperature:	20℃
M/N :	GL-090	Humidity :	50%
Test Voltage :	AC 230V	Test Mode :	On
Test Engineer :	Debe Yu	Comment :	Loop X



No.	Freq. (MHz)	Reading (dBuA)	Factor (dB)	Result (dBuA)	Limit dBuA	Margin (dB)	Detector	Remark
1	0.1505	24.86	13.33	38.19	57.95	-19.76	QP	
2	0.3146	2.15	19.02	21.17	49.09	-27.92	QP	
3	0.5466	-6.72	22.67	15.95	42.46	-26.51	QP	
4	7.4946	-19.00	26.00	7.00	22.00	-15.00	QP	
5	15.0586	-20.32	25.71	5.39	22.00	-16.61	QP	
6	18.5906	-20.35	25.72	5.37	22.00	-16.63	QP	

Magnetic Emission Test Data

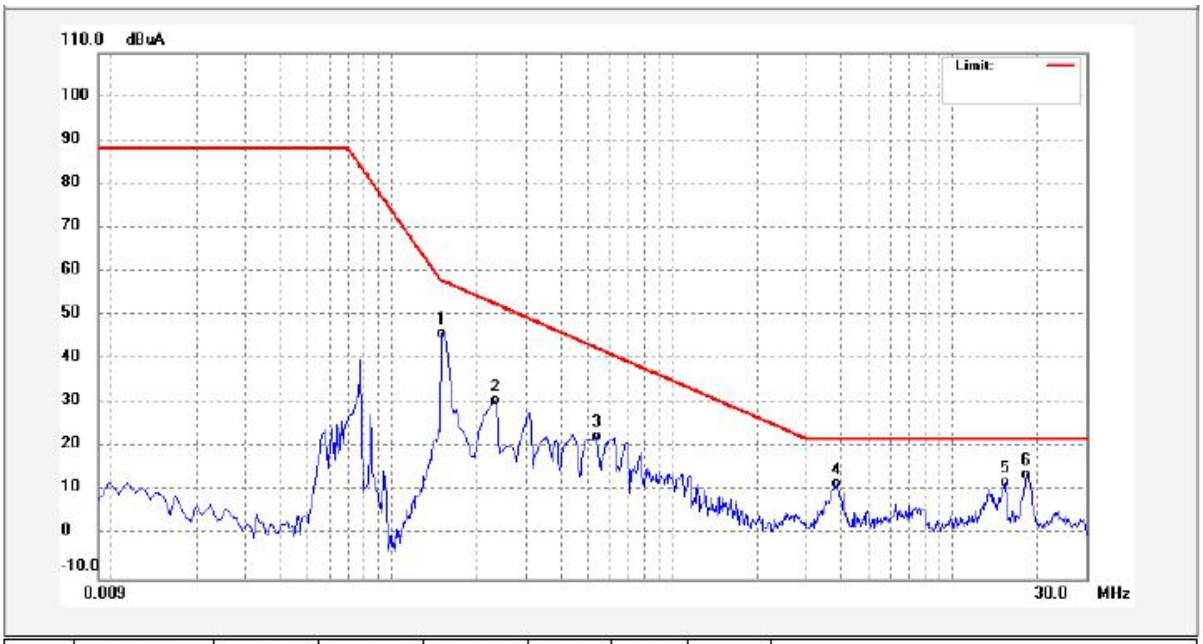
EUT :	Night light	Temperature:	20℃
M/N :	GL-090	Humidity :	50%
Test Voltage :	AC 230V	Test Mode :	On
Test Engineer :	Debe Yu	Comment :	Loop Y



No.	Freq. (MHz)	Reading (dBuA)	Factor (dB)	Result (dBuA)	Limit dBuA	Margin (dB)	Detector	Remark
1	0.1546	11.23	13.57	24.80	57.63	-32.83	QP	
2	0.3146	-8.91	19.02	10.11	49.09	-38.98	QP	
3	0.9706	-19.41	24.96	5.55	35.56	-30.01	QP	
4	1.6186	-20.40	25.50	5.10	29.41	-24.31	QP	
5	7.5586	-19.05	26.00	6.95	22.00	-15.05	QP	
6	18.2906	-19.53	25.72	6.19	22.00	-15.81	QP	

Magnetic Emission Test Data

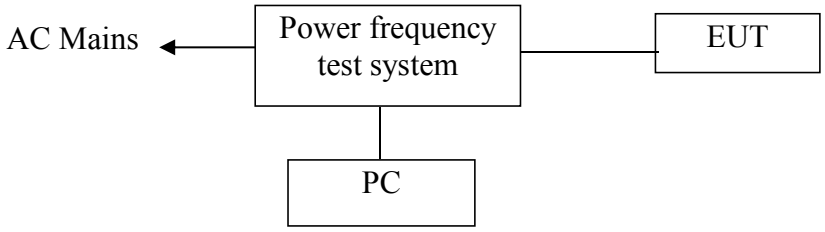
EUT :	Night light	Temperature:	20℃
M/N :	GL-090	Humidity :	50%
Test Voltage :	AC 230V	Test Mode :	On
Test Engineer :	Debe Yu	Comment :	Loop Z



No.	Freq. (MHz)	Reading (dBuA)	Factor (dB)	Result (dBuA)	Limit dBuA	Margin (dB)	Detector	Remark
1	0.1505	32.53	13.33	45.86	57.95	-12.09	QP	
2	0.2346	13.64	17.06	30.70	52.62	-21.92	QP	
3	0.5386	-0.17	22.58	22.41	42.63	-20.22	QP	
4	3.8546	-14.58	26.22	11.64	22.00	-10.36	QP	
5	15.4266	-13.53	25.71	12.18	22.00	-9.82	QP	
6	18.2906	-11.85	25.72	13.87	22.00	-8.13	QP	

6. HARMONIC CURRENT EMISSION MEASUREMENT

6.1Block Diagram of Test Setup



(EUT:Night light)

6.2 Measuring Standard

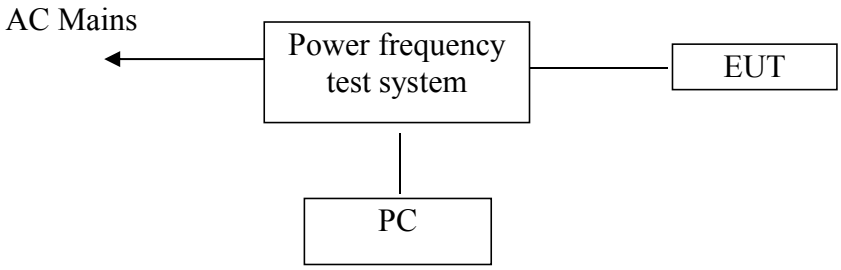
EN 61000-3-2: 2014+A1:2019

6.3 Description of test Equipment

N/A

7. VOLTAGE FLUCTUATION AND FLICKER EASUREMENT

7.1 Block Diagram of Test Setup



(EUT:Night light)

7.2 Measuring Standard

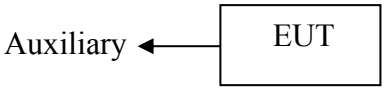
EN 61000-3-3:2013+A1:2019

	EUT values	Limit	Result
Pst	0.012	1.00	PASS
dc [%]	0.003	3.30	PASS
Dmax [%]	0.004	4.00	PASS
dt [s]	0.000	0.50	PASS

8. ELECTROSTATIC DISCHARGE IMMUNITY TEST

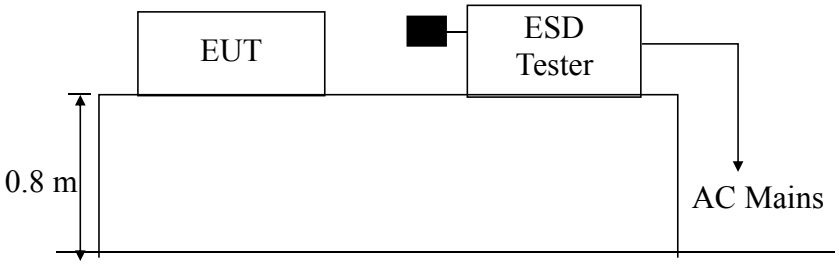
8.1 Block Diagram of Test Setup

8.1.1 Block Diagram of the EUT and the simulators



(EUT:Night light)

8.1.2 Block diagram of ESD test setup



(EUT:Night light)

8.2 Test Standard

EN 61547:2009 (EN 61000-4-2: 2009)
Severity Level: 3 / Air Discharge: ±8KV Level: 2 / Contact Discharge: ±4KV)

8.3 Severity Levels and Performance Criterion

8.3.1 Severity level

Level	Test Voltage Contact Discharge (KV)	Test Voltage Air Discharge (KV)
1.	±2	±2
2.	±4	±4
3.	±6	±8
4.	±8	±15
X	Special	Special

8.3.2Performance criterion: **B**

Electrostatic Discharger Test Results

Standard	☐ IEC 61000-4-2 ☑ EN 61000-4-2		
Applicant	GUANGDONG CHAOZHOU GUANGLI ELECTRONIC FACTORY		
EUT	Night light	**Temperature**	24℃
M/N	GL-090	**Humidity**	53%
Criterion	B	**Pressure**	1021mbar
Test Mode	Normal	**Test Date**	2021/12/21
Test Engineer	Debe Yu		

Air Discharge						
Test Points	**Test Levels**			**Results**		
	±2KV	**±4KV**	**±8KV**	**Passed**	**Fail**	**Performance Criterion**
Front	☒	☒	☒	☒	☐	☐ **A** ☒ **B**
Back	☒	☒	☒	☒	☐	☐ **A** ☒ **B**
Left	☒	☒	☒	☒	☐	☐ **A** ☒ **B**
Right	☒	☒	☒	☒	☐	☐ **A** ☒ **B**
Top	☒	☒	☒	☒	☐	☐ **A** ☒ **B**
Bottom	☒	☒	☒	☒	☐	☐ **A** ☒ **B**
Contact Discharge						

8.4 Test Procedure

8.4.1 Air Discharge:

This test is done on a non-conductive surface. The round discharge tip of the discharge electrode shall be approached as fast as possible to touch the EUT. After each discharge, the discharge electrode shall be removed from the EUT. The generator is then re-triggered for a new single discharge and repeated 10 times for each pre-selected test point. This procedure shall be repeated until all the air discharge completed.

8.4.2Contact Discharge:

All the procedure shall be same as Section 7.4.1. except that the tip of the discharge electrode shall touch the EUT before the discharge switch is operated.

8.4.3Indirect discharge for horizontal coupling plane

At least 10 single discharges (in the most sensitive polarity) shall be applied at the front edge of each HCP opposite the center point of each unit (if applicable) of the EUT and 0.1m from the front of the EUT. The long axis of the discharge electrode shall be in the plane of the HCP and perpendicular to its front edge during the discharge.

8.4.4Indirect discharge for vertical coupling plane

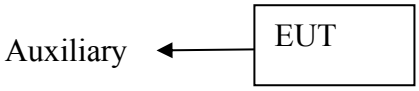
At least 10 single discharge (in the most sensitive polarity) shall be applied to the center of one vertical edge of the coupling plane. The coupling plane, of dimensions 0.5m X 0.5m, is placed parallel to, and positioned at a distance of 0.1m from the EUT. Discharges shall be applied to the coupling plane, with this plane in sufficient different positions that the four faces of the EUT are completely illuminated.

Test Points	Test Levels		Results		
	± 2 kV	±4 kV	Passed	Fail	Performance Criterion
Front	☒	☒	☒	☐	☐ A ☒ B
Back	☒	☒	☒	☐	☐ A ☒ B
Left	☒	☒	☒	☐	☐ A ☒ B
Right	☒	☒	☒	☐	☐ A ☒ B
Top	☒	☒	☒	☐	☐ A ☒ B
Bottom	☒	☒	☒	☐	☐ A ☒ B
Discharge To Horizontal Coupling Plane					
Side of EUT	**Test Levels**		**Results**		
	± 2 kV	± 4 kV	Passed	Fail	Performance Criterion
Front	☒	☒	☒	☐	☐ A ☒ B
Back	☒	☒	☒	☐	☐ A ☒ B
Left	☒	☒	☒	☐	☐ A ☒ B
Right	☒	☒	☒	☐	☐ A ☒ B
Discharge To Vertical Coupling Plane					
Side of EUT	**Test Levels**		**Results**		
	± 2 kV	± 4 kV	Passed	Fail	Performance Criterion
Front	☒	☒	☒	☐	☐ A ☒ B
Back	☒	☒	☒	☐	☐ A ☒ B
Left	☒	☒	☒	☐	☐ A ☒ B
Right	☒	☒	☒	☐	☐ A ☒ B

9. RF FIELD STRENGTH SUSCEPTIBILITY TEST

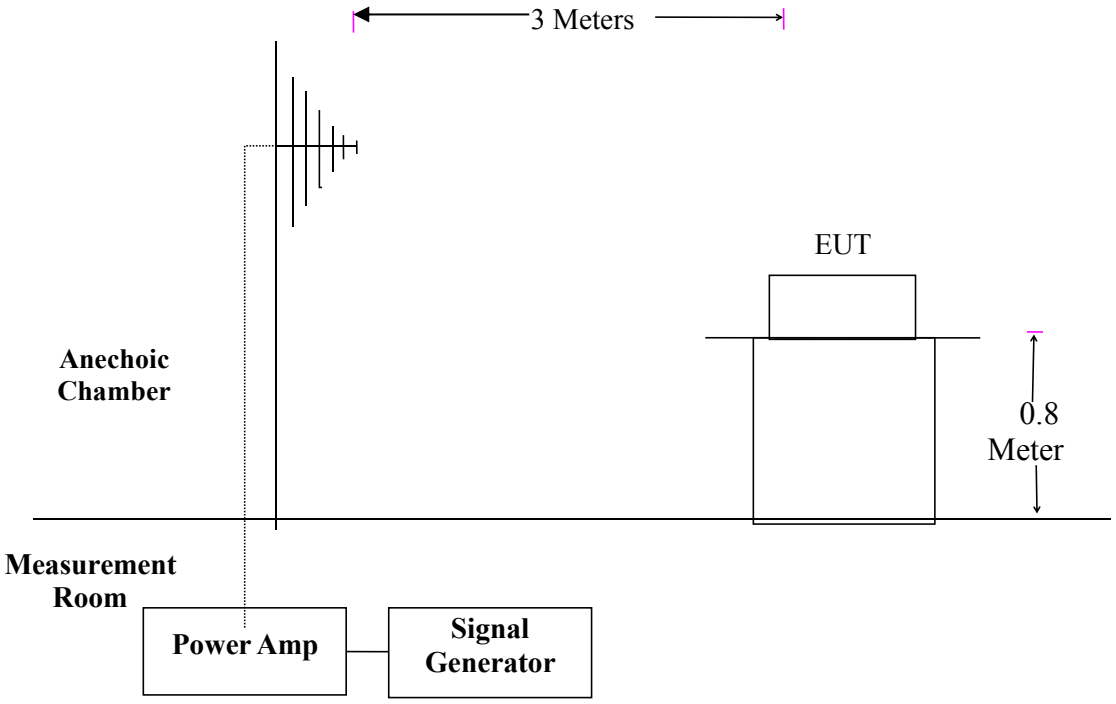
9.1Block Diagram of Test

9.1.1Block diagram of connection between the EUT and Load



(EUT:Night light)

9.1.2Block diagram of RS test setup



(EUT: Night light)

9.2 Test Standard

EN 61547:2009(EN 61000-4-3: 2006 (Severity Level: 2, 3V / m))

9.3 Severity Levels and Performance Criterion

9.3.1 Severity Levels

Level	Field Strength V/m
1.	1
2.	3
3.	10
X	Special

9.3.2 Performance Criterion : **A**

9.4 Test Procedure

The EUT are placed on a table which is 0.8 meter high above the ground. The EUT is set 3 meters 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 the EUT must be faced this transmitting antenna and measured individually.
In order to judge the EUT performance, a CCD camera is used to monitor its screen.
All the scanning conditions are as following:

Condition of Test	Remark
1. Fielded Strength	3V/m (Severity Level 2)
2. Radiated Signal	Modulated
3. Scanning Frequency	80-1000MHz
4. Sweep time of radiated	0.0015 Decade/s
2. Dwell Time	1 Sec.

RF Field Strength Susceptibility Test Results

EUT	Night light	Temperature :	22℃
M/N	GL-090	Humidity :	50 %
Test Voltage	AC 230V	Test Mode :	On
Field Strength	3 V/m	Test Date :	2021/12/21
Test Engineer:	Debe Yu	Frequency Range:	80 MHz to1000 MHz
Modulation:	☐None	☐ Pulse	☑AM 1KHz 80%

	Frequency Rang 1: 80~ 1000MHz			Frequency Rang 2:		
Steps	1	/	%	#	/	%
	Horizontal	Vertical		Horizontal	Vertical	
Front	PASS	PASS				
Right	PASS	PASS				
Rear	PASS	PASS				
Left	PASS	PASS				

Test Equipment **:**

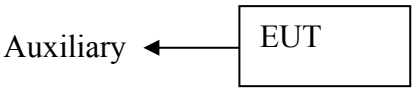
1. Signal Generator : 2031 (MARCONI)
2. Power Amplifier : 500A100 & 100W/1000M1 (A&R)
3. Power Antenna : 3108 (EMCO) & AT1080 (A&R)
4. Field Monitor : FM2000 (A&R)

Note: Note: (The Criterion)
A:Normal performance within the specification limits;
B:Temporary degradation or less of function or performance which is self-recoverable;
C:Temporary degradation or loss of function or performance which requires operator intervention or system reset;

10. ELECTRICAL FAST TRANSIENT/BURST IMMUNITY TEST

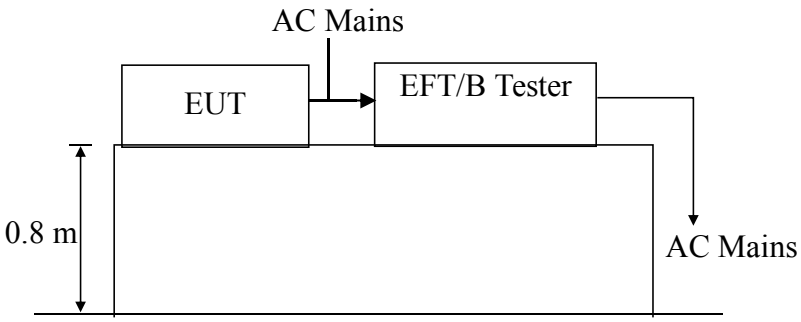
10.1 Block Diagram of Test Setup

10.1.1.Block Diagram of the EUT



(EUT:Night light)

10.1.2.EFT Test Setup



(EUT:Night light)

10.2 Test Standard

EN 61547:2009 (EN 61000-4-4:2012, Severity Level, Level 2**:** 1KV)

10.3 Severity Levels and Performance Criterion

10.3.1 Severity level

Open Circuit Output Test Voltage ±10%		
Level	On Power Supply Lines	On I/O (Input/Output) Signal data and control lines
1.	0.5 KV	0.25 KV
2.	1 KV	0.5 KV
3.	2 KV	1 KV
4.	4 KV	2 KV
X	Special	Special

10.3.2 Performance criterion **: B**

10.4Test Procedure

The EUT is put on the table which is 0.8 meter high above the ground. This reference ground plane shall project beyond the EUT by at least 0.1m on all sides and the minimum distance between EUT and all other conductive structure, except the ground plane beneath the EUT, shall be more than 0.5m.

10.4.1 For input and output AC power ports:

The EUT is connected to the power mains by using a coupling device which couples the EFT interference signal to AC power lines. Both polarities of the test voltage should be applied during compliance test and the duration of the test is 2 mins.

10.4.2 For signal lines and control lines ports:

No I/O ports. It's unnecessary to test.

10.4.3 For DC output line ports:

It's unnecessary to test.

Electrical Fast Transient/Burst Test Results

EUT :	Night light	Temperature:	20℃
M/N :	GL-090	Humidity :	50%
Test Voltage :	AC 230V	Test Mode :	On
Test Engineer :	Debe Yu	Test Date :	2021/12/21
Line: ☼AC Mains ☼ Signal line ❍DC line		Coupling : ☼ Direct ❍Capacitive	
Test Time : 120s			

Line	Test Voltage	Result
L	±2KV	Pass
N	±2KV	Pass
L、N	±2KV	Pass

Test Equipment:Burst Tester Model : HEFT 51

Note: (The Criterion)

A:Normal performance within the specification limits;

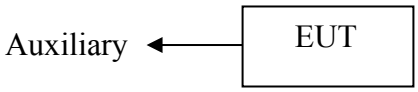
B:Temporary degradation or less of function or performance which is self-recoverable;

C:Temporary degradation or loss of function or performance which requires operator intervention or system reset;

11. SURGE IMMUNITY TEST

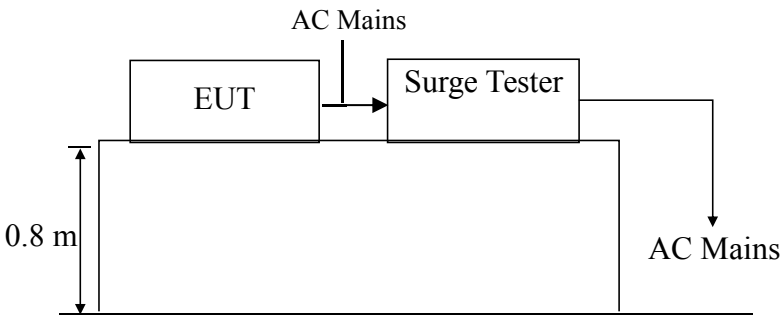
11.1 Block Diagram of Test Setup

11.1.1 Block Diagram of the EUT



(EUT:Night light)

11.1.2. Surge Test Setup



(EUT:Night light)

11.2 Test Standard

EN 61547:2009 (EN 61000-4-5: 2014+A1:2017)Severity Level**:** Line to Line: Level 2, 1.0KV

11.3 Severity Levels and Performance Criterion

11.3.1.Severity level

Severity Level	Open-Circuit Test Voltage KV
1	0.5
2	1.0
3	2.0
4	4.0
*	Special

11.3.2 Performance criterion **: C**

11.4 Test Procedure

1) Set up the EUT and test generator as shown on Section 11.1.2.
2) For line to line coupling mode, provide a 1.0 KV 1.2/50us voltage surge (at open-circuit condition) and 8/20us current surge to EUT selected points.
3) At least 5 positive and 5 negative (polarity) tests with a maximum 1/min repetition rate are conducted during test.
4) Different phase angles are done individually.
5) Record the EUT operating situation during compliance test and decide the EUT immunity criterion for above each test.

Surge Immunity Test Result

EUT :	Night light			Temperature:	20℃
M/N :	GL-090			Humidity :	50%
Test Voltage :	AC 230V			Test Mode :	On
Test Engineer :	Debe Yu			Test Date :	2021/12/21
Location	Voltage (KV)	230V			
	Phase	+	-	+	-
L、N	0°				
	90°	Pass			
	180°				
	270°		Pass		
L、PE	0°				
	90°				
	180°				
	270°				
N、PE	0°				
	90°				
	180°				
	270°				

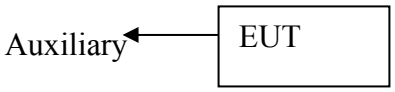
Test Equipment :Surge Tester Model: HCWG

Note: (The Criterion)
A:Normal performance within the specification limits;
B:Temporary degradation or less of function or performance which is self-recoverable;
C:Temporary degradation or loss of function or performance which requires operator intervention or system reset;

12. INJECTED CURRENTS SUSCEPTIBILITY TEST

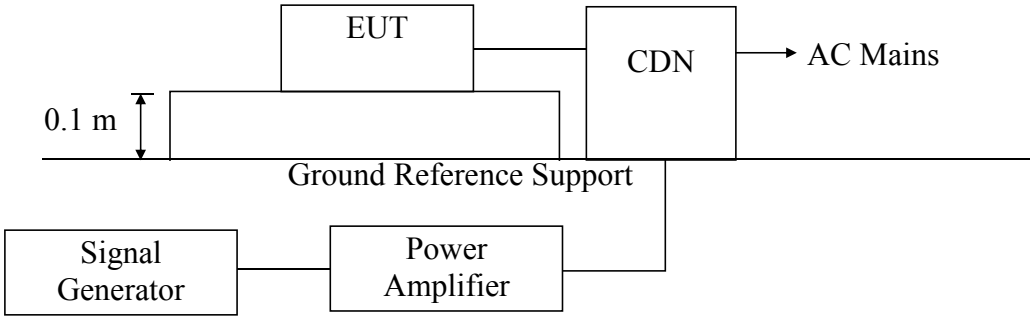
12.1 Block Diagram of Test Setup

12.1.1 Block Diagram of the EUT



(EUT:Night light)

12.1.2 Block Diagram of Test Setup



(EUT:Night light)

12.2 Test Standard

EN 61547:2009 (EN 61000-4-6: 2014, Severity Level: Level 2, 3V (rms), (0.15MHz ~ 80MHz)

12.3 Severity Levels and Performance Criterion

12.3.1 Severity level

Level	Field Strength V
1	1
2	3
3	10
X	Special

12.3.2 Performance criterion: **A**

12.4Test Procedure

1) Set up the EUT, CDN and test generators as shown on Section 11.1.2.
2) Let the EUT work in test mode and measure it.
3) The EUT are placed on an insulating support 0.1m high above a ground reference plane. CDN (coupling and decoupling device) is placed on the ground plane about 0.3m from EUT. Cables between CDN and EUT are as short as possible, and their height above the ground reference plane shall be between 30 and 50 mm (where possible).
4) The disturbance signal described below is injected to EUT through CDN.
5) The EUT operates within its operational mode(s) under intended climatic conditions after power on.
6) The frequency range is swept from 150KHz to80MHz using 3V signal level, and with the disturbance signal 80% amplitude modulated with a 1KHz sine wave.
7) The rate of sweep shall not exceed $1.5*10^{-3}$decades/s. Where the frequency is swept incrementally, the step size shall not exceed 1% of the start and thereafter 1% of the preceding frequency value.
8) Recording the EUT operating situation during compliance testing and decide the EUT immunity criterion.

Injected Currents Susceptibility Test Results

EUT :	Night light	Temperature:	20℃
M/N :	GL-090	Humidity :	50%
Test Voltage :	AC 230V	Test Mode :	On
Test Engineer :	Debe Yu	Test Date :	2021/12/21

Frequency Range (MHz)	Injected Position	Strength (Unmodulated)	Result
0.15~80	DC Mains	230V	Pass

Frequency Range (MHz)	Injected Position	Strength (Unmodulated)	Result

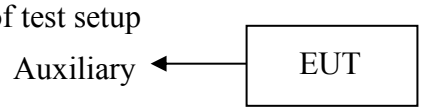
Test Equipment :Injected Currents Tester Model: CWS500C
Injection CLamp Model: F-2031-23MM
CDN Model: CDN-M2, CDN-M3

Note: (The Criterion)
A:Normal performance within the specification limits;
B:Temporary degradation or less of function or performance which is self-recoverable;
C:Temporary degradation or loss of function or performance which requires operator intervention or system reset;

13. MAGNETIC FIELD SUSCEPTIBILITY TEST

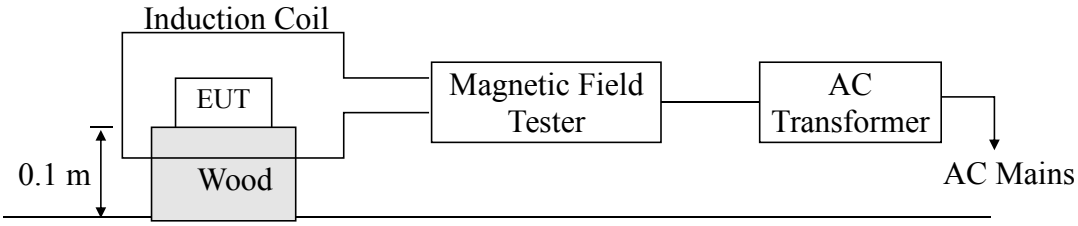
13.1 Block Diagram of Test

13.1.1 Block diagram of test setup



(EUT:Night light)

13.1.2 Magnetic field test setup



Ground Reference Support

13.2 Test Standard

EN 61547:2009 (EN 61000-4-8: 2010, Severity Level: Level 1, 1A / m)

13.3 Severity Levels and Performance Criterion

13.3.1 Severity Levels

Level	Field Strength A/m
1	1
2	3
3	10
4	30
5	100
X	Special

13.3.2 Performance Criterion : **A**

13.4Test Procedure

The EUT is placed in the middle of a induction coil (1*1m), under which is a 1*1*0.1m (high) table, this small table is also placed on a larger table,0.8 m above the ground. Both horizontal and vertical polarization of the induction coil are set on test, so that each side of the EUT is affected by the magnetic field. Also can reach the same aim by change the position of the EUT.

Magnetic Field Immunity Test Result

EUT :	Night light	Temperature:	20℃
M/N :	GL-090	Humidity :	50%
Test Voltage :	AC 230V	Test Mode :	On
Test Engineer :	Debe Yu	Test Date :	2021/12/21

Test Level (A/M)	Testing Duration	Coil Orientation	Result
3	5 mins	X	Pass
3	5 mins	Y	Pass
3	5 mins	Z	Pass
Test Level (A/M)	Testing Duration	Coil Orientation	Result

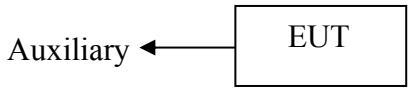
Test Equipment :Magnetic Field Tester Model: HPFM T

Note: (The Criterion)
A:Normal performance within the specification limits;
B:Temporary degradation or less of function or performance which is self-recoverable;
C:Temporary degradation or loss of function or performance which requires operator intervention or system reset;

14. VOLTAGE DIPS AND INTERRUPTIONS TEST

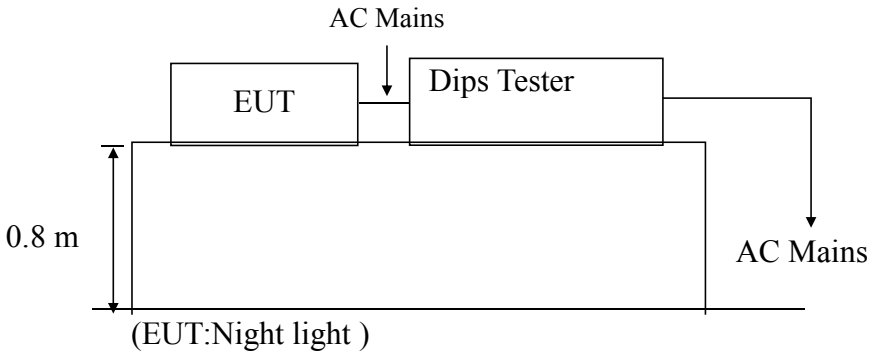
14.1 Block Diagram of Test Setup

14.1.1 Block Diagram of the EUT



(EUT:Night light)

14.1.2 Dips Test Setup



14.2 Test Standard

EN 61547:2009 (EN 61000-4-11: 2004+A1:2017)

14.3 Severity Levels and Performance Criterion

14.3.1 Severity level

Test Level %UT	Voltage dip and short interruptions %UT	Duration (in period)
70	30	10
0	100	0.5

14.3.2 Performance criterion **: C&B**

14.4Test Procedure

1) Set up the EUT and test generator as shown on Section 13.1.2.
2) The interruptions is introduced at selected phase angles with specified duration.
3) Record any degradation of performance.

Voltage Dips And Interruptions Test Results

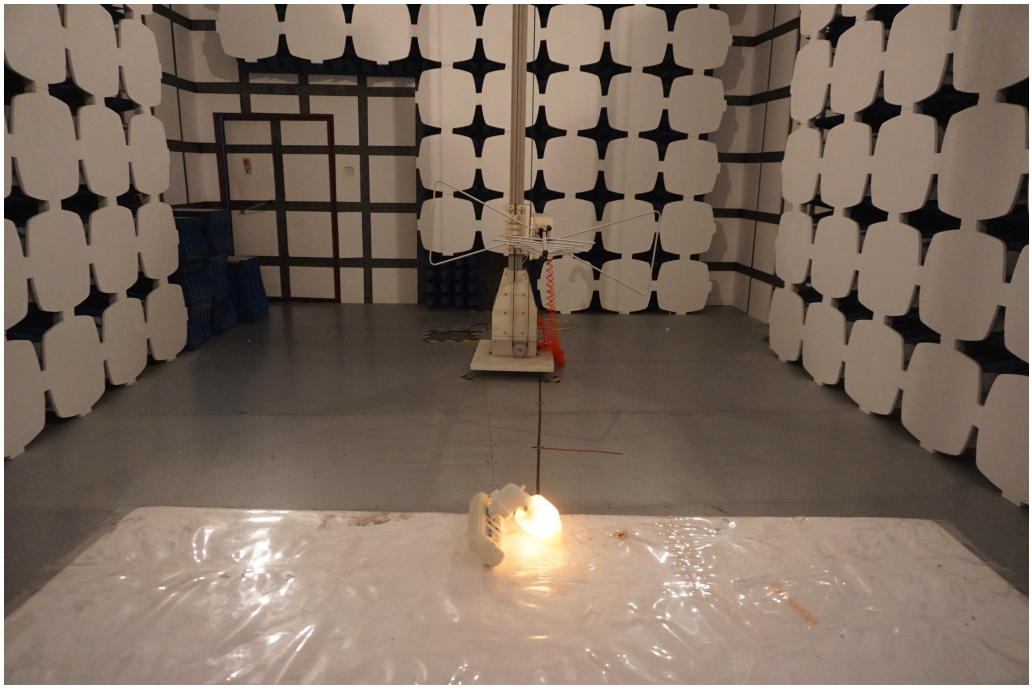
EUT :	Night light		Temperature:	20℃
M/N :	GL-090		Humidity :	50%
Test Voltage :	AC 230V		Test Mode :	On
Test Engineer :	Debe Yu		Test Date :	2021/12/21
Test Level % U_T	Voltage Dips & Short Interruptions % U_T	Duration (in periods)	Criterion	Result
0	100	0.5P	B	Pass
70	30	10P	C	Pass
Test Level % U_T	Voltage Dips & Short Interruptions % U_T	Duration (in periods)	Criterion	Result

Test Equipment : Voltage Dips And Interruptions Tester Model: HPFS

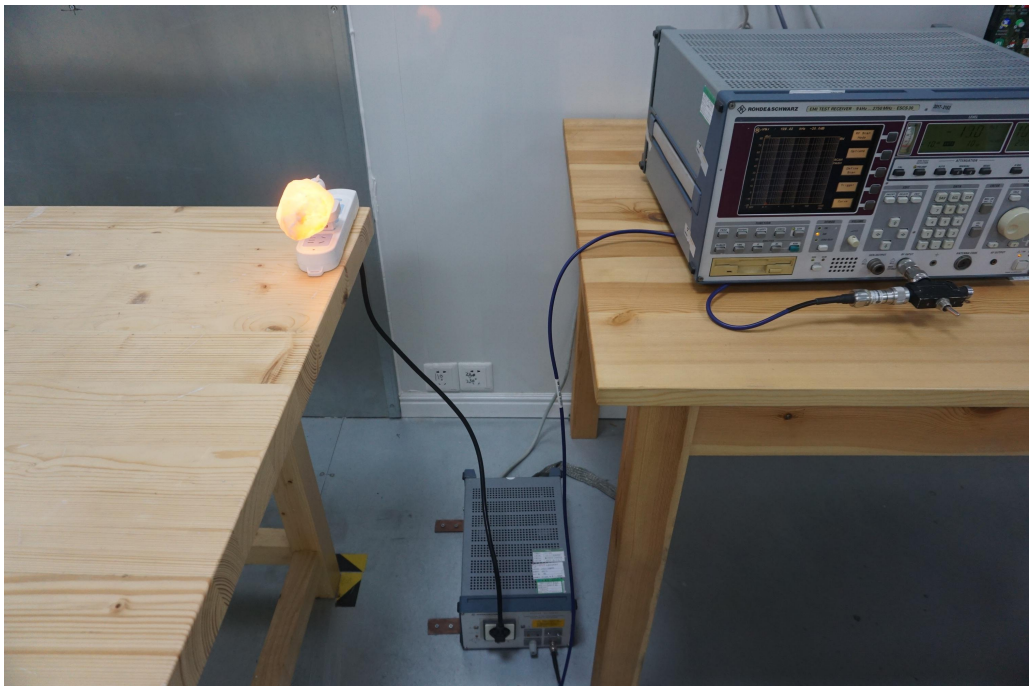
Note: (The Criterion)
A:Normal performance within the specification limits;
B:Temporary degradation or less of function or performance which is self-recoverable;
C:Temporary degradation or loss of function or performance which requires operator intervention or system reset;

15. PHOTOGRAPH

15.1 Photo of Radiated Emission



15.2 Photo of Conducted Emission



16. PHOTOGRAPHS OF EUT

Appearance photograph of EUT

Appearance photograph of EUT

Appearance photograph of additional model:GL-091

Appearance photograph of additional model:GL-091

**********THE END OF REPORT**********