Microtest
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Test Report

Report No.: MTi220615004-01E1

Date of issue: 2022-06-30

Applicant: LEXON

Product name: HORIZON HANGING L AMP

Model(s): LH77

Shenzhen Microtest Co., Ltd.
http://www.mtitest.com

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TEST RESULT CERTIFICATION	
Applicant's name :	**LEXON**
Address:	125 avenue des Champs-Élysées 75008 Paris FRANCE
Manufacturer's Name :	**LEXON**
Address:	125 avenue des Champs-Élysées 75008 Paris FRANCE
Factory:	**HERITEK ELECTRONIC MANUFACTORY CO., LIMITED**
Address:	7th floor, technology building of xifa C area, yintian Industrial zone, Xixiang street, Bao'an District, Shenzhen City, China
Product description	
Product name.....:	HORIZON HANGING L AMP
Trademark .....:	N/A
Model Name .....:	LH77
Serial Model.....	N/A
Standards.....:	EN IEC 55015:2019+A11:2020 EN 61547:2009 EN IEC 61000-3-2:2019+A1:2021 EN 61000-3-3:2013/A1:2019
Date of Test	
Date (s) of performance of tests… :	2022-06-23 ~ 2022-06-30
Test Result.....:	Pass
This device described above has been tested by Shenzhen Microtest Co., Ltd. and the test results show that the equipment under test (EUT) is in compliance with the EMC requirements. And it is applicable only to the tested sample identified in the report.	

Testing Engineer : Maleah Deng

(Maleah Deng)

Technical Manager : Leon Chen

(Leon Chen)

Tom Xue

Authorized Signatory : _____

(Tom Xue)

Summary of Test Result

Item	Description of Test	Result
EN 55015		
1	Conducted emission	Pass
2	Radiated emission	Pass
3	Magnetic Field Emission	Pass
EN 61547		
1	Electrostatic discharge immunity (ESD)	Pass
2	Radiated electromagnetic field immunity (RS)	Pass
3	Fast transients / burst immunity (EFT)	Pass
4	Surge immunity	Pass
5	Conducted disturbance immunity (CS)	Pass
6	Voltage interruptions & voltage Dips	Pass
EN 61000-3-2 & EN61000-3-3		
1	Harmonic current emission	N/A
2	Voltage fluctuations & flicker	Pass

Note: N/A mean not applicable.

1 General description

1.1 Feature of equipment under test (EUT)

Product name:	HORIZON HANGING L AMP
Model name:	LH77
Series Model：	N/A
Different of series model:	N/A
Power supply:	DC 5V 1A
Battery:	DC 3.7V 200mAh
Accessories information:	Cable: USB-A to USB-C cable 0.55m

1.2 Test mode

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Test mode	Description
Mode 1	Charging+ Lighting（Low）
Mode 2	Charging+ Lighting（High）

Note: The test modes were carried out for all operation modes. The final test mode of the EUT was the worst test mode for EMI, and its test data was showed.

1.3 Test conditions

During the measurement the environmental conditions were within the listed ranges:
- Temperature: 20ºC~30ºC
- Humidity: 30%~70%
- Atmospheric pressure: 98kPa~101kPa

1.4 EUT test setup

See photographs of the test setup in the report for the actual setup and connections between EUT and support equipment.

1.5 Ancillary equipment and line list

Equipment	Model	S/N	Manufacturer
Adapter	XY-PQ018E1	/	Dongguan Xu Yuan Electronic Technology Co., Ltd

1.6 Measurement Uncertainty

Measurement Uncertainty for a Level of Confidence of 95 %, U=2xUc(y)

Conducted disturbance (150kHz ~ 30MHz)	± 2.5 dB
Radiated disturbance (30MHz ~ 1GHz)	± 4.2 dB
Disturbance power (30MHz ~ 300MHz)	± 2.8 dB
Temperature	±1 degree
Humidity	± 5 %

1.7 Test software

Software name	Manufacturer	Model	Version
EMI Measurement Software	Farad	EZ-EMC	V1.1.4.2
Conducted immunity test system	Scholder	EN61000-4-6.exe	V1.3.0
Harmonics and flicker test system	TTI	HA-PC Link	V2.02
DIPS Test Firmware	Prima	DRP61011AG	V4.1.2
EFT Test Firmware	HTEC	HCOMPACT	V1.0.1
Surge Test Firmware	HTEC+	HCOMPACT	V1.0.1

2 Testing site

Test Site	Shenzhen Microtest Co., Ltd.
Test Site Location	101, No. 7, Zone 2, Xinxing Industrial Park, Fuhai Avenue, Xinhe Community, Fuhai Street, Bao' an District, Shenzhen, Guangdong, China.
Telephone:	(86-755)88850135
Fax:	(86-755)88850136
CNAS Registration No.:	CNAS L5868

3 List of test equipment

Radiation emission							
Item	Equipment name	Equipment No.	Manufacturer	Model	Serial No.	Calibration date	Due date
1	EMI Test Receiver	MTI-E043	Rohde&schwarz	ESPI7	101166	2022/05/05	2023/05/04
2	Broadband antenna	MTI-E044	schwarabeck	VULB9163	9163-1338	2021/05/30	2023/05/29
3	Horn antenna	MTI-E045	schwarabeck	BBHA9120D	9120D-2278	2021/05/30	2023/05/29
4	amplifier	MTI-E047	Hewlett-Packard	8447D	3113A06150	2022/05/05	2023/05/04
5	1GHz-26.5GHz Amplifier	MTI-E048	Agilent	8449B	3008A02400	2022/05/05	2023/05/04
Conduction emission							
Item	Equipment name	Equipment No.	Manufacturer	Model	Serial No.	Calibration date	Due date
1	Artificial power network	MTI-E023	Schwarzbeck	NSLK8127	NSLK8127#841	2022/05/05	2023/05/04
2	EMI Test Receiver	MTI-E021	Rohde&schwarz	ESCS30	100210	2022/05/05	2023/05/04
3	8-wire Impedance Stabilization Network	MTI-E026	Schwarzbeck	NTFM 8158	NTFM 8158 #199	2022/05/05	2023/05/04
4	Artificial power network	MTI-E025	Schwarzbeck	NSLK8127	8127183	2022/05/05	2023/05/04
Conduction immunity							
Item	Equipment name	Equipment No.	Manufacturer	Model	Serial No.	Calibration date	Due date
1	Conduction Immunity Signal Generator	MTI-E015	Schloder	CDG6000	126A1343/2015	2022/05/05	2023/05/04
2	Coupled decoupling network	MTI-E016	Schloder	M2/M3-16A	A2210332/2015	2022/05/05	2023/05/04
Voltage dips, short interruptions and voltage variations immunity							
Item	Equipment name	Equipment No.	Manufacturer	Model	Serial No.	Calibration date	Due date
1	Drop generator	MTI-E025	Prima	DRP61011AG	PR15056303	2022/05/05	2023/05/04

Power frequency magnetic field immunity							
Item	Equipment name	Equipment No.	Manufacturer	Model	Serial No.	Calibration date	Due date
1	power frequency magnetic field generator	MTI-E011	HTEC	HPFMF 100	153703	2022/05/05	2023/05/04

Electrostatic discharge immunity							
Item	Equipment name	Equipment No.	Manufacturer	Model	Serial No.	Calibration date	Due date
1	Electrical Discharge Simulator	MTi-E113	3CTEST	EDS 30V	ES0310 00420021	2022/05/05	2023/05/04

Surge immunity							
Item	Equipment name	Equipment No.	Manufacturer	Model	Serial No.	Calibration date	Due date
1	Surge Generator	MTI-E010	HTEC	HCWG 51	153702	2022/05/05	2023/05/04

Harmonic & flicker emissions							
Item	Equipment name	Equipment No.	Manufacturer	Model	Serial No.	Calibration date	Due date
1	AC power source	MTI-E023	shenzhen tongyuan	TY-8205	20150916809	2022/05/05	2023/05/04
2	Harmonic scintillation Analyzer	MTI-E013	Laplace	AC2000A	311216	2022/05/05	2023/05/04

Electrical Fast Transient/Burst immunity							
Item	Equipment name	Equipment No.	Manufacturer	Model	Serial No.	Calibration date	Due date
1	Electrical Fast Transient Generator	MTI-E009	HTEC	HEFT 51	153701	2022/05/05	2023/05/04

RS equipment						
Item	Equipment	Manufacturer	Model	Serial No.	Calibration Due	Due date
1	Power Amplifier	micotop	MPA-80-1000-250	MPA1903081	2022/05/05	2023/05/04
2	Power Amplifier	micotop	MPA-1000-6000-75	MPA1903082	2022/05/05	2023/05/04
3	MXG RF Signal Generator	Agilent	N5181A	MY47420567	2022/05/05	2023/05/04
4	Stacked Log. Per. Broadband Antenna	Schwarzbeck	STLP 9129	9129 113	2022/05/05	2023/05/04
5	Three-phase Frequency Conversion Power Supply	shenzhen tongyuan	TY-8330	2017101302651	2022/05/05	2023/05/04
6	DC Power Source	shenzhen tongyuan	TY-500V 100A	201710190325689	2022/05/05	2023/05/04
7	Gauss Meter	TRIAXIAL ELF	TES-1393	190200579	2022/05/05	2023/05/04

Note: the calibration interval of the above test instruments is 12 or 24 months and the calibrations are traceable to international system unit (SI).

4 EMC emission test

4.1 Conducted emission

4.1.1 Limits

Frequency (MHz)	At mains terminals (dBμV)	
	Quasi-peak	Average
0.009 - 0.05	110	/
0.05 - 0.15	90~80	/
0.15 - 0.5	66~56	56~46
0.5 - 5	56	46
5 - 30	60	50

4.1.2 Test procedures

The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.

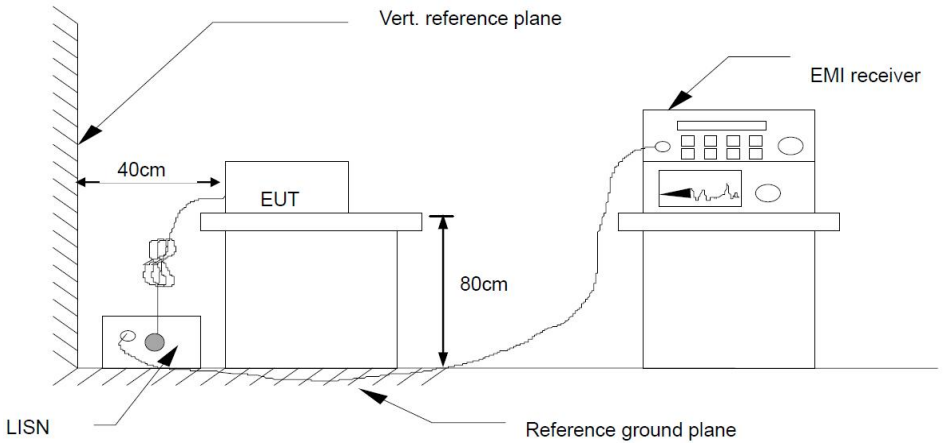
Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.

I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.

LISN is at least 80 cm from nearest part of EUT chassis.

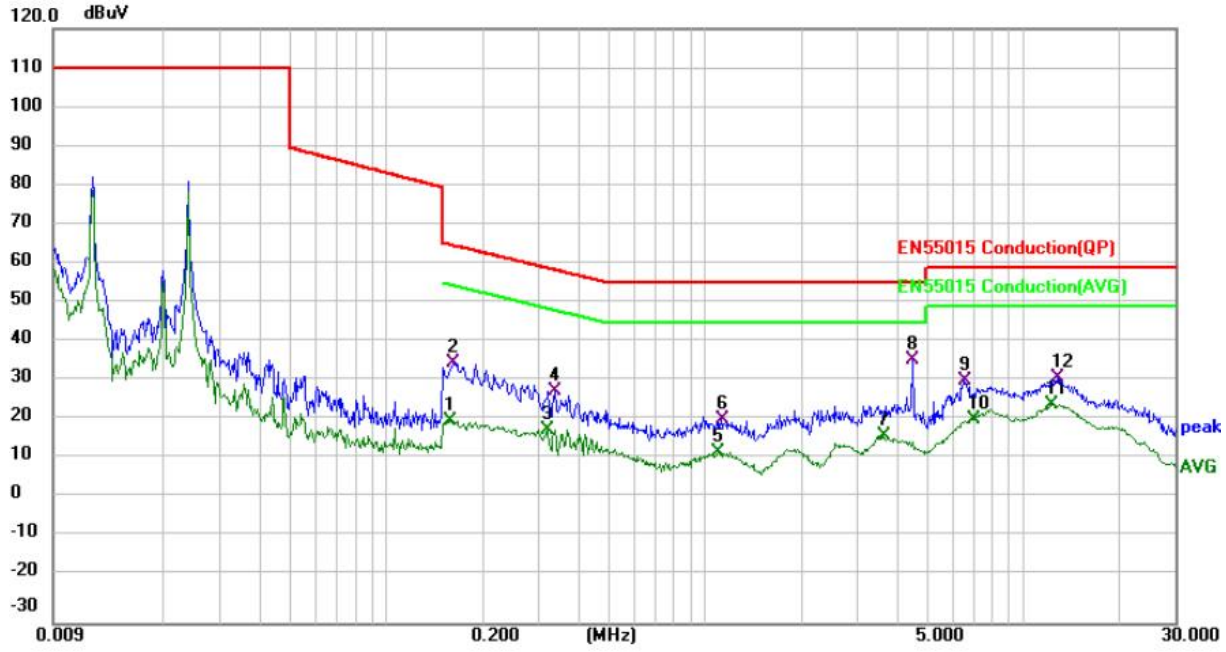
For the actual test configuration, please refer to the related Item – photographs of the test setup.

4.1.3 Test setup



4.1.4 Test result

EUT:	HORIZON HANGING L AMP	Model Name:	LH77
Pressure:	101kPa	Phase:	L
Test voltage:	Powered by AC/DC adapter AC 230V 50Hz	Test mode:	Mode 1



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		0.1580	10.15	10.99	21.14	55.57	-34.43	AVG
2		0.1620	24.82	10.99	35.81	65.36	-29.55	QP
3		0.3180	8.03	10.98	19.01	49.76	-30.75	AVG
4		0.3379	17.85	10.98	28.83	59.25	-30.42	QP
5		1.1060	-0.04	13.52	13.48	46.00	-32.52	AVG
6		1.1260	8.15	13.56	21.71	56.00	-34.29	QP
7		3.6220	6.08	11.42	17.50	46.00	-28.50	AVG
8	*	4.5300	25.27	11.46	36.73	56.00	-19.27	QP
9		6.5020	19.59	11.58	31.17	60.00	-28.83	QP
10		6.9900	10.14	11.61	21.75	50.00	-28.25	AVG
11		12.3900	13.65	11.65	25.30	50.00	-24.70	AVG
12		12.8700	20.31	11.65	31.96	60.00	-28.04	QP

EUT:	HORIZON HANGING L AMP	Model Name:	LH77
Pressure:	101kPa	Phase:	N
Test voltage:	Powered by AC/DC adapter AC 230V 50Hz	Test mode:	Mode 1

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		0.2100	10.20	10.91	21.11	53.21	-32.10	AVG
2		0.2140	24.69	10.91	35.60	63.05	-27.45	QP
3		0.8139	1.70	11.13	12.83	46.00	-33.17	AVG
4		0.8420	10.20	11.14	21.34	56.00	-34.66	QP
5		2.2460	8.59	15.90	24.49	56.00	-31.51	QP
6		2.3380	-2.61	16.06	13.45	46.00	-32.55	AVG
7		3.4740	6.77	11.37	18.14	46.00	-27.86	AVG
8		3.8660	14.12	11.37	25.49	56.00	-30.51	QP
9		6.5660	18.69	11.39	30.08	60.00	-29.92	QP
10		7.4260	11.29	11.42	22.71	50.00	-27.29	AVG
11		11.9580	22.38	11.61	33.99	60.00	-26.01	QP
12	*	12.2860	16.48	11.63	28.11	50.00	-21.89	AVG

4.2 Radiated emission

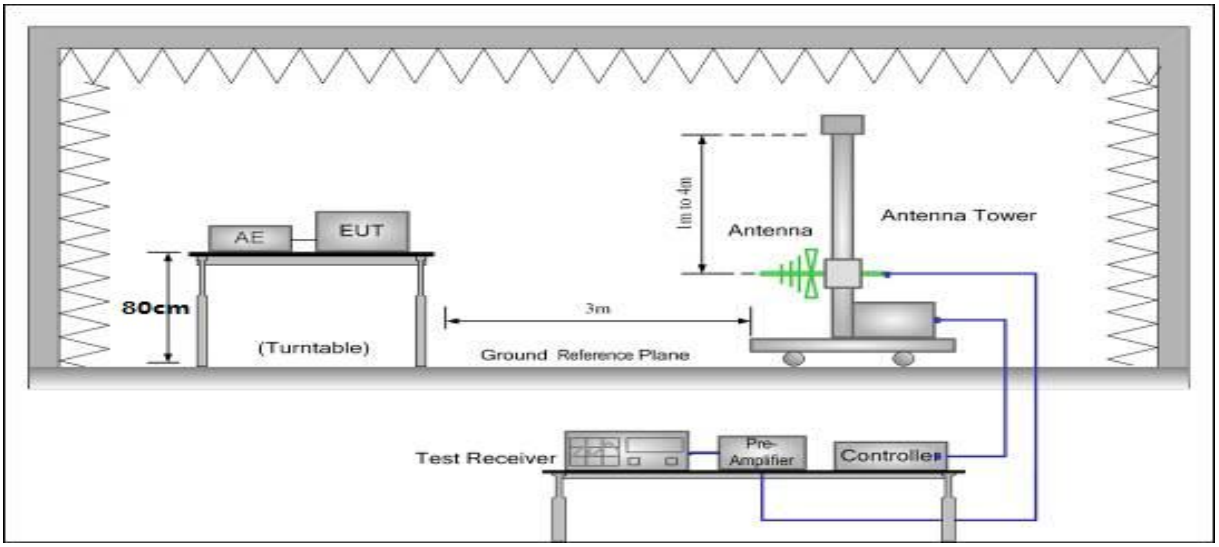
4.2.1 Limits

Frequency (MHz)	Class B (at 3m) dBμV/m
	Quasi-peak
30-230	40
230-1000	47

4.2.2 Test Procedures

The radiated emission tests were performed in the 3 meters.
The EUT was placed on the top of a rotating table 0.8 meters above the ground. The table was rotated 360 degrees to determine the position of the highest radiation.
The height of the test antenna shall vary between 1m to 4m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
If the peak mode measured value compliance with and lower than quasi peak mode limit, the EUT shall be deemed to meet QP limits and then no additional QP mode measurement performed.
If the peak mode measured value compliance with and lower than average mode limit, the EUT shall be deemed to meet average limits and then no additional average mode measurement performed.
For the actual test configuration, please refer to the related item – EUT test photos.

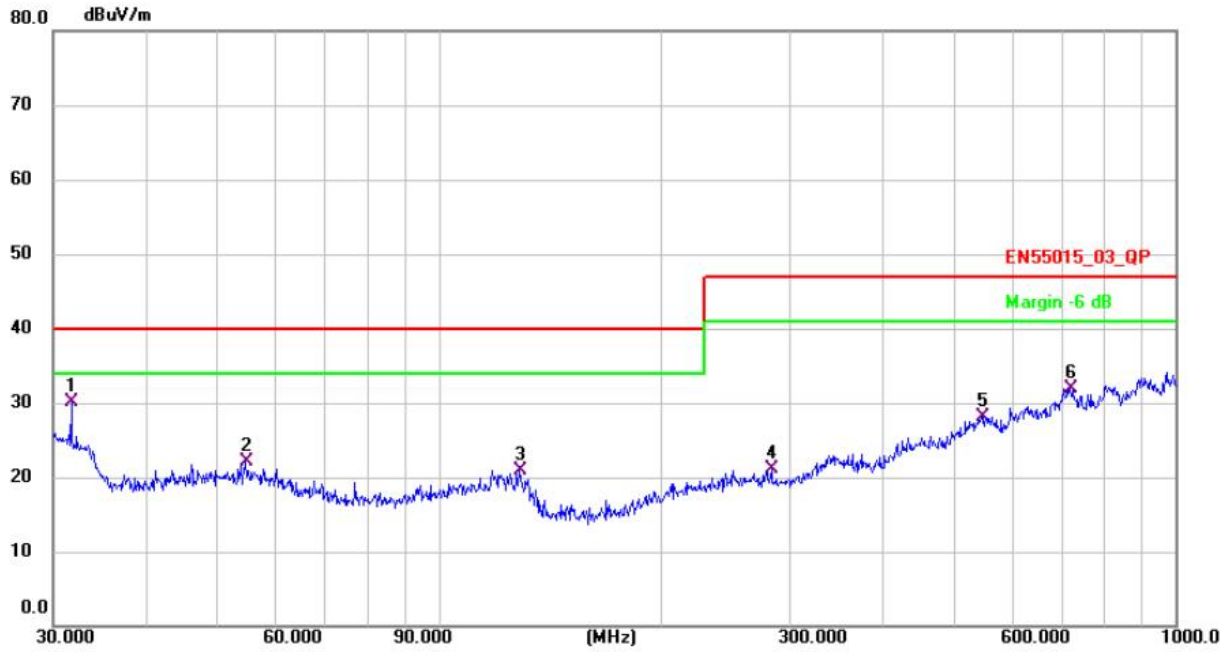
4.2.3 Test Setup



4.2.4 Test Result

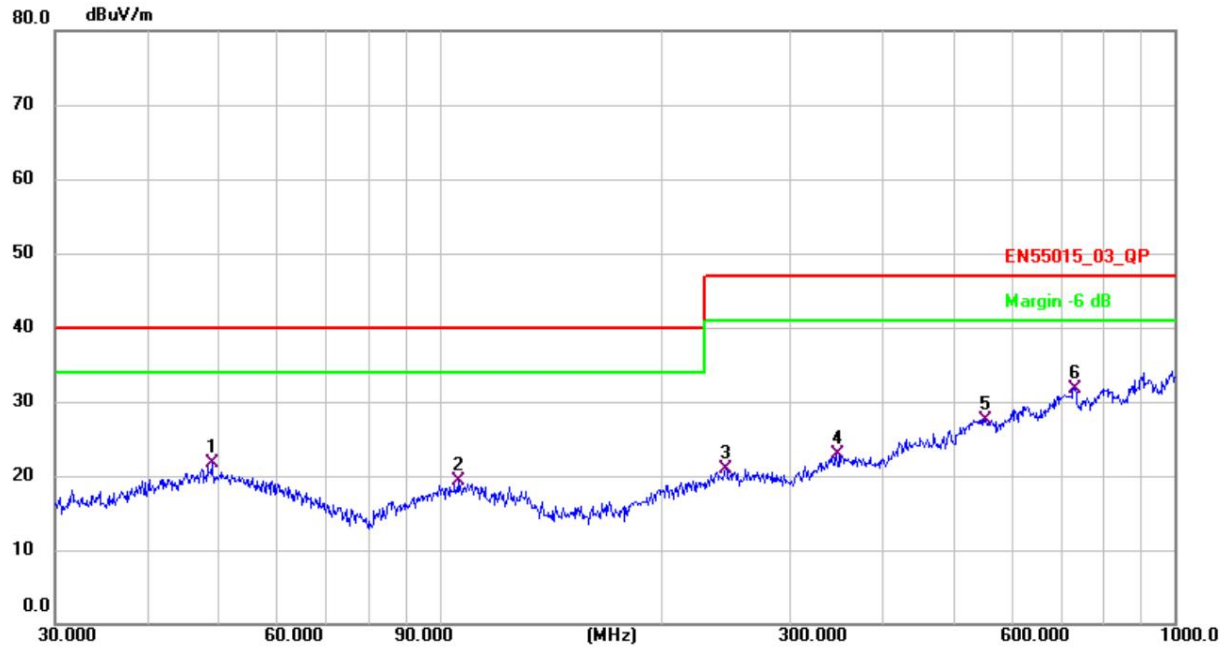
Formula:
Measurement Level (dBuV/m) = Reading Level (dBuV/m) + Correct Factor (dBuV/m)
Margin Level (dBuV/m) = Measurement Level (dBuV/m) – Limit Level (dBuV/m)

EUT:	HORIZON HANGING L AMP	Model Name:	LH77
Pressure:	101kPa	Test Line	Horizontal
Test voltage:	Powered by AC/DC adapter AC 230V 50Hz	Test mode:	Mode 1



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1	*	31.7313	39.57	-9.44	30.13	40.00	-9.87	QP
2		54.6429	28.64	-6.60	22.04	40.00	-17.96	QP
3		128.5630	30.36	-9.52	20.84	40.00	-19.16	QP
4		282.9852	25.56	-4.50	21.06	47.00	-25.94	QP
5		545.1826	26.74	1.43	28.17	47.00	-18.83	QP
6		719.1995	26.83	4.99	31.82	47.00	-15.18	QP

EUT:	HORIZON HANGING L AMP	Model Name:	LH77
Pressure:	101kPa	Test Line	Vertical
Test voltage:	Powered by AC/DC adapter AC 230V 50Hz	Test mode:	Mode 1



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		49.0145	27.63	-6.00	21.63	40.00	-18.37	QP
2		106.0126	26.17	-6.95	19.22	40.00	-20.78	QP
3		245.0900	26.20	-5.39	20.81	47.00	-26.19	QP
4		346.8092	26.42	-3.52	22.90	47.00	-24.10	QP
5		552.8832	26.05	1.54	27.59	47.00	-19.41	QP
6	*	729.3583	26.78	4.99	31.77	47.00	-15.23	QP

4.3 Magnetic Field Emission

4.3.1 Limits

Frequency (MHz)	Measurement distance 2m
	Quasi-Peak(dBμA)
0.009 ~ 0.07	88
0.07 ~ 0.15	88~58
0.15 ~ 3	58~22
3.0 ~ 30	22

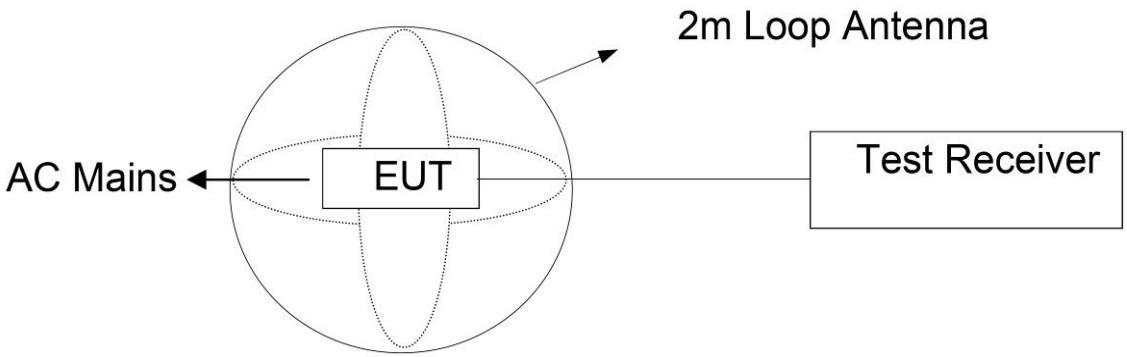
4.3.2 Test procedures

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.

The frequency range from 9 kHz to 30MHz is investigated. The receiver is measured with the quasi-peak detector. For frequency band 9 kHz to 150 kHz, the bandwidth of the field strength meter (test receiver) is set at 200Hz. For frequency band 150 kHz to 30MHz, the bandwidth is set at 9 kHz.

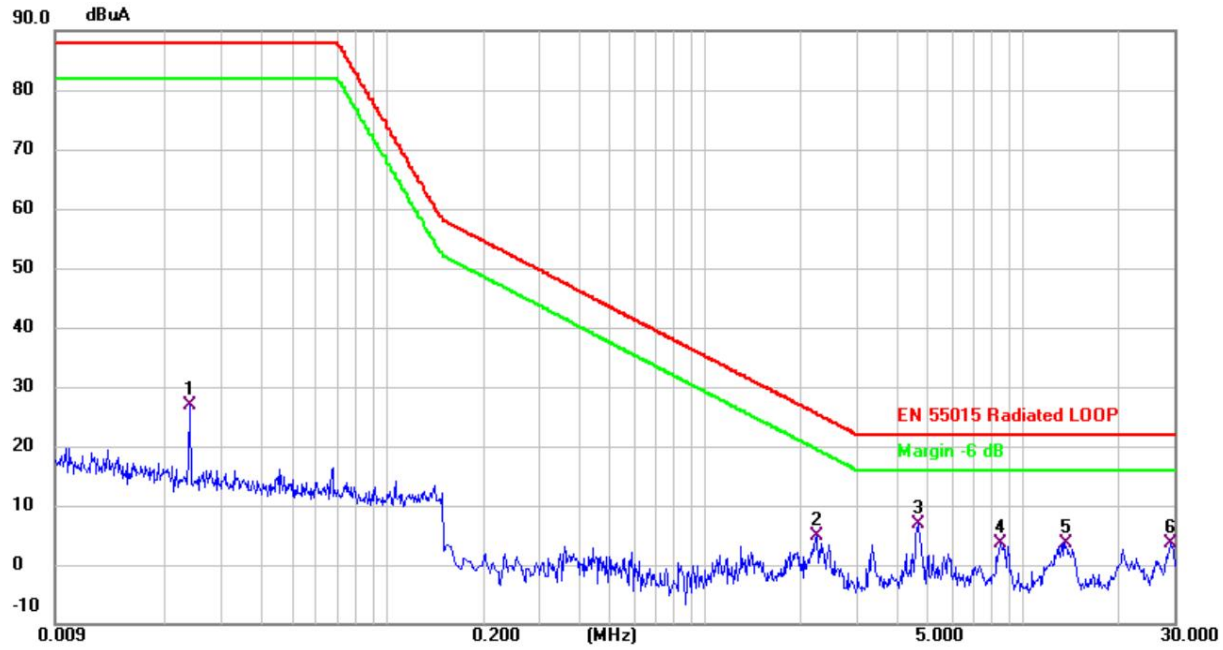
For the actual test configuration, please refer to the related item – EUT test photos.

4.3.3 Test setup



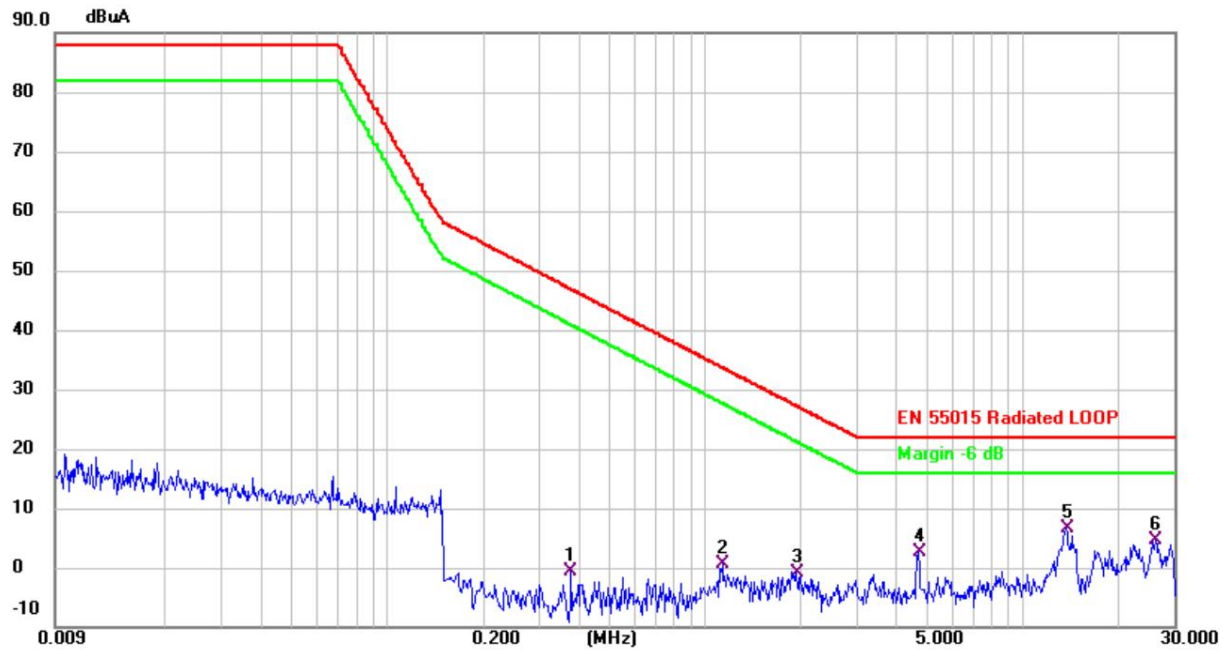
4.3.4 Test result

EUT:	HORIZON HANGING L AMP	Model Name:	LH77
Pressure:	101kPa	Polarization:	X Line
Test voltage:	Powered by AC/DC adapter AC 230V 50Hz	Test mode:	Mode 1



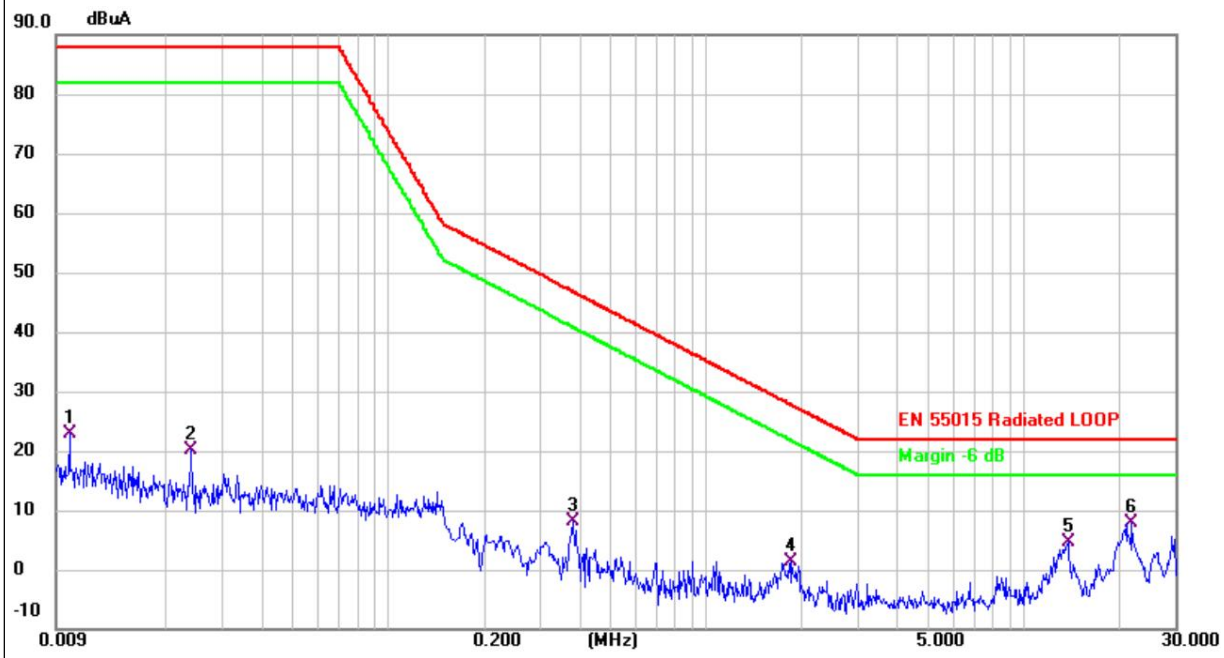
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		0.0240	25.97	0.87	26.84	88.00	-61.16	QP
2		2.2740	-0.69	5.51	4.82	25.33	-20.51	QP
3	*	4.7100	5.97	0.88	6.85	22.00	-15.15	QP
4		8.5500	2.87	0.80	3.67	22.00	-18.33	QP
5		13.5740	2.77	0.93	3.70	22.00	-18.30	QP
6		29.4860	2.75	0.79	3.54	22.00	-18.46	QP

EUT:	HORIZON HANGING L AMP	Model Name:	LH77
Pressure:	101kPa	Polarization:	Y Line
Test voltage:	Powered by AC/DC adapter AC 230V 50Hz	Test mode:	Mode 1



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		0.3780	-1.36	0.83	-0.53	46.89	-47.42	QP
2		1.1340	-2.71	3.27	0.56	33.69	-33.13	QP
3		1.9420	-5.80	4.86	-0.94	27.23	-28.17	QP
4		4.7020	1.84	0.88	2.72	22.00	-19.28	QP
5	*	13.7180	5.66	0.94	6.60	22.00	-15.40	QP
6		26.3180	3.58	0.94	4.52	22.00	-17.48	QP

EUT:	HORIZON HANGING L AMP	Model Name:	LH77
Pressure:	101kPa	Polarization:	Z Line
Test voltage:	Powered by AC/DC adapter AC 230V 50Hz	Test mode:	Mode 1



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		0.0100	22.00	0.86	22.86	88.00	-65.14	QP
2		0.0240	19.36	0.87	20.23	88.00	-67.77	QP
3		0.3820	7.20	0.83	8.03	46.77	-38.74	QP
4		1.8660	-3.44	4.72	1.28	27.71	-26.43	QP
5		13.8460	3.74	0.95	4.69	22.00	-17.31	QP
6	*	22.0419	6.65	1.14	7.79	22.00	-14.21	QP

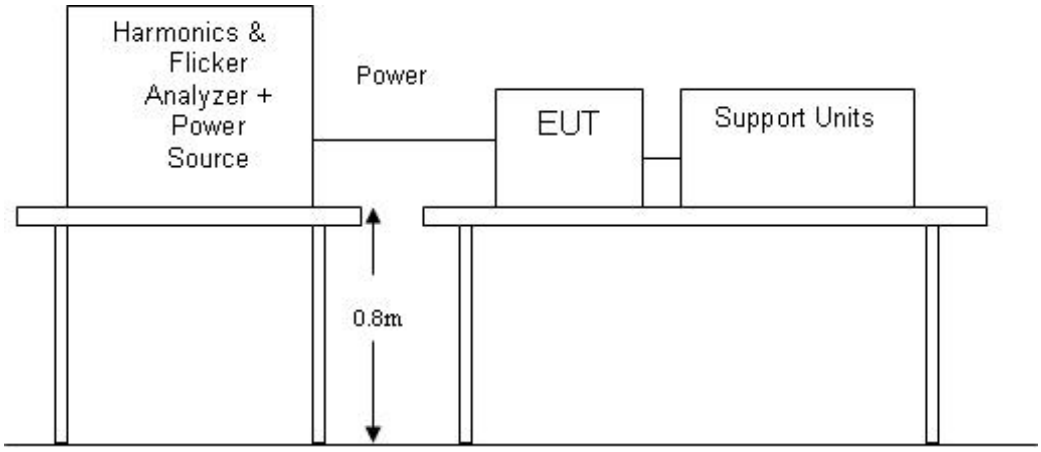
4.4 Harmonic current emission / Voltage fluctuations & flicker

4.4.1 Test Procedures

The EUT was installed and placed on a non-conductive table and operated to produce the maximum harmonic components under normal operating conditions for each successive harmonic component in turn.

The correspondent test program of test instrument to measure the current harmonics / voltage fluctuations & flicker emanated from EUT. The measure time shall be not less than the time necessary for the EUT to be exercised.

4.4.2 Test Setup



4.4.3 Test Result

EUT:	HORIZON HANGING L AMP	Model Name:	LH77
Pressure:	101kPa	Test mode:	Mode 1-2

Harmonic current emission:

There is no need for harmonics test to be performed on the EUT (rated power is less than 5W).

Voltage fluctuations & flicker:

	Pst	dc (%)	dmax (%)	d(t) > 3.3% (ms)
Limit	1.000	3.300	4.000	500
Reading	0.000	0.000	0.530	0.000

5 Immunity test

5.1 Performance criteria

5.1.1 A functional description of performance criteria, during or as a consequence of the immunity testing, shall be provided by the manufacturer and noted in the test report

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.

5.1.2 The performance criteria given hereafter apply to lighting equipment.

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.

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.

5.1.3 A change of luminous intensity may be checked by visual observation but, in case of doubt, the following applies.

The luminous intensity of a luminaire or of the lamp(s) shall be measured by means of a illuminance (lux) meter which is positioned in an axis perpendicular to the main plane of the luminaire or lamp(s), in its centre and at a distance for proper operation of the lux meter. The luminous intensity shall be deemed to be unchanged if the measured intensities do not deviate by more than 15 %.

Care shall be taken to ensure the ambient light level does not influence the measurement results.

Precautions to achieve reproducible results given in the relevant lamp performance standards shall be observed.

5.2 Electrostatic discharge immunity (ESD)

5.2.1 Test Procedures

The test generator necessary to perform direct and indirect application of discharges to the EUT in the following manner:

Contact discharge was applied to conductive surfaces and coupling planes of the EUT. During the test, it was performed with single discharges. For the single discharge time between successive single discharges was at least 1 second.

Vertical Coupling Plane (VCP):

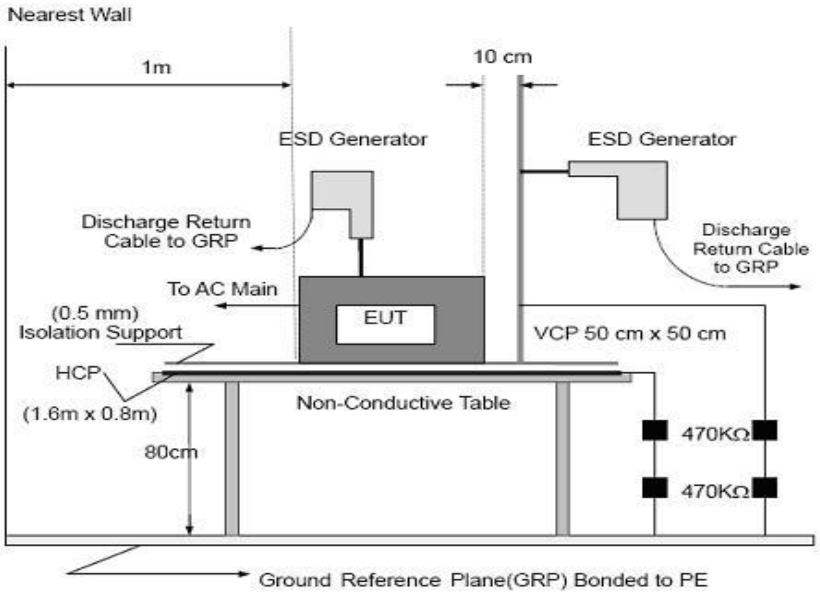
The coupling plane, of dimensions 0.5m x 0.5m, is placed parallel to, and positioned at a distance 0.1m from, the EUT, with the Discharge Electrode touching the coupling plane. The four faces of the EUT will be performed with electrostatic discharge.

Horizontal Coupling Plane (HCP):

The coupling plane is placed under to the EUT. The generator shall be positioned vertically at a distance of 0.1m from the EUT, with the Discharge Electrode touching the coupling plane. The four faces of the EUT will be performed with electrostatic discharge.

Air discharges at insulation surfaces of the EUT. It was at least ten single discharges with positive and negative at the same selected point. For the actual test configuration, please refer to the related Item –EUT Test Photos.

5.2.2 Test Setup



5.2.3 Test Result

EUT:	HORIZON HANGING L AMP	Model Name:	LH77
Pressure:	101kPa	Test mode:	Mode 1-2

Indirect discharge

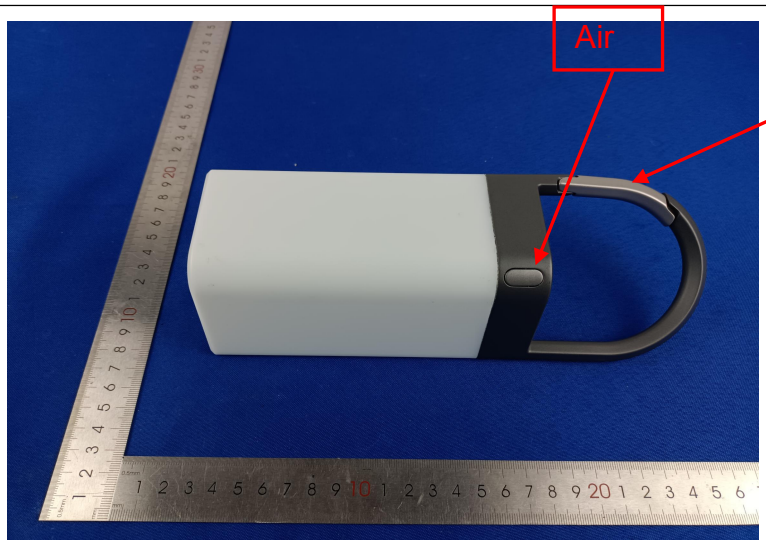
Test Point	Contact discharge level (kV)	Number and polarity	Criterion met	Criterion Required
1. VCP-Front side	☐..2 ☒..4 ☐..6 ☐..8	25 (+)	A	B
		25 (-)	A	
2.VCP-Rear side	☐..2 ☒..4 ☐..6 ☐..8	25 (+)	A	
		25 (-)	A	
3.VCP-Left side	☐..2 ☒..4 ☐..6 ☐..8	25 (+)	A	
		25 (-)	A	
4. VCP-Right side	☐..2 ☒..4 ☐..6 ☐..8	25 (+)	A	
		25 (-)	A	
5. HCP	☐..2 ☒..4 ☐..6 ☐..8	25 (+)	A	
		25 (-)	A	

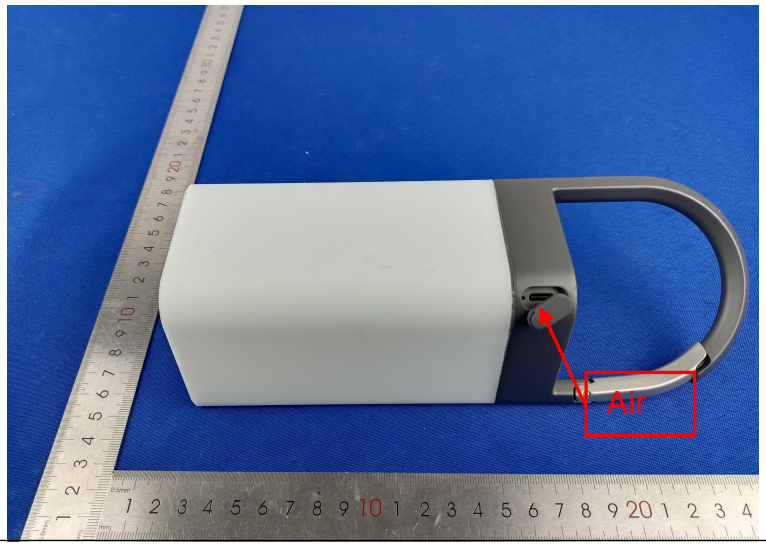
Result: Compliance.

Direct discharge

Test Point	Contact discharge level (kV)	Air discharge level (kV)	Number and polarity	Criterion met	Criterion Required
1. Each nonconductive location touchable by hand	☐..2 ☐..4 ☐..6 ☐..8	☒..2 ☒..4 ☐..6 ☒..8	25 (+)	A	B
			25 (-)	A	
2. Each conductive location touchable by hand	☒..2 ☒..4 ☐..6 ☐..8	☐..2 ☐..4 ☐..6 ☐..8	25 (+)	A	
			25 (-)	A	

Result: compliance.





Note: Air is air discharge and Con is contact discharge.

5.3 Radiated electromagnetic field immunity (RS)

5.3.1 Test Procedures

The EUT and support equipment, which are placed on a table that is 0.8 meter above ground and the testing was performed in a fully-anechoic chamber.

The testing distance from antenna to the EUT was 3 meters.

The other condition as following manner:

The field strength level was 3V/m.

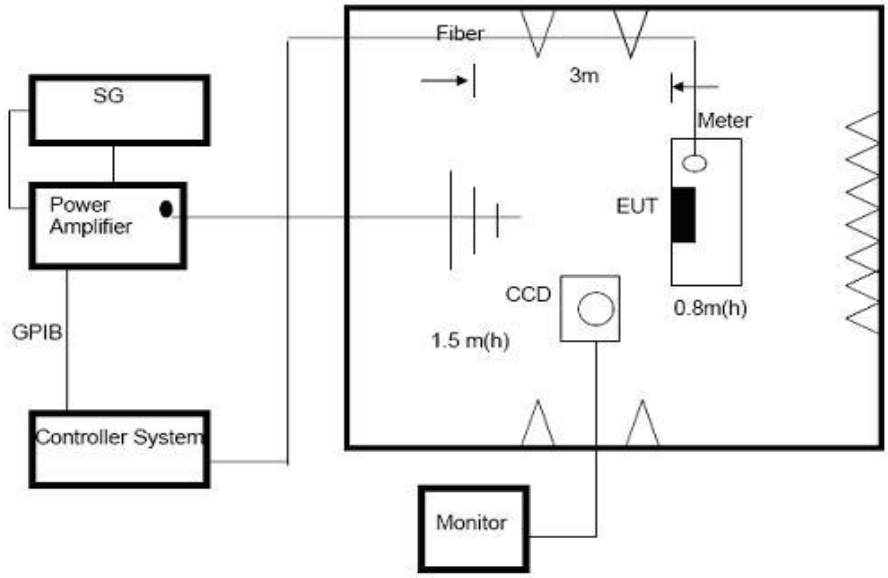
The frequency range is swept from 80 MHz to 1000 MHz with the signal 80%amplitude modulated with a 1kHz sine wave. The rate of sweep did not exceed 1.5x 10-3 decade/s. Where the frequency range is swept incrementally, the step size was 1% of fundamental.

The dwell time at each frequency shall be not less than the time necessary for the EUT to be able to respond.

The test was performed with the EUT exposed to both vertically and horizontally polarized fields on each of the four sides.

For the actual test configuration, please refer to the related Item –EUT Test Photos.

5.3.2 Test setup



5.3.3 Test Result

EUT:	HORIZON HANGING L AMP	Model Name:	LH77
Pressure:	101kPa	Test mode:	Mode 1-2

Frequency Range (MHz)	RF Field Position	R.F. Field Strength	Azimuth	Perform. Criteria	Results	Judgment
80~1000	H / V	3 V/m (rms) AM Modulated 1000Hz, 80%	Front	A	A	Pass
			Rear			
			Left			
			Right			

5.4 Fast transients / burst immunity (EFT)

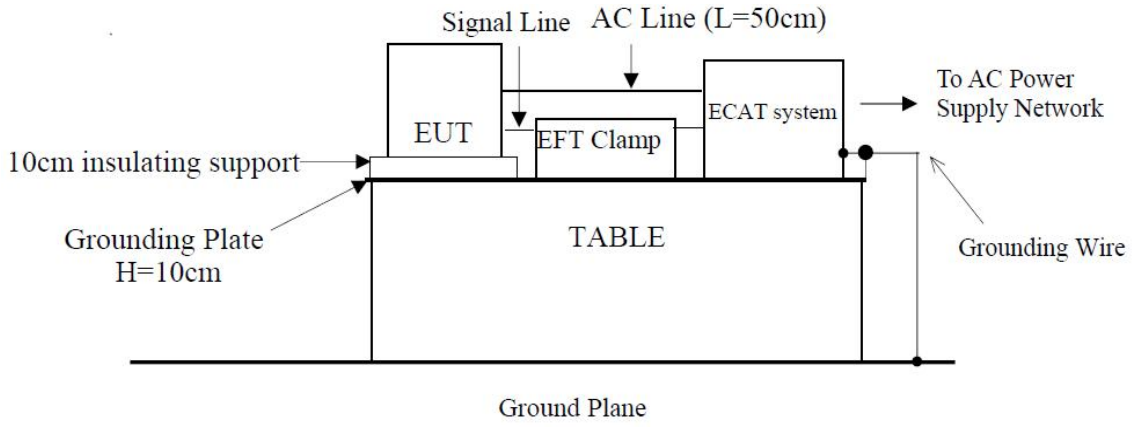
5.4.1 Test Procedures

The EUT and its simulators were placed on the ground reference plane and were insulated from it by a wood support 0.1m + 0.01m thick. The ground reference plane was 1m*1m metallic sheet with 0.65mm minimum thickness. This reference ground plane was 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 was more than 0.5m. All cables to the EUT was placed on the wood support, cables not subject to EFT/B was routed as far as possible from the cable under test to minimize the coupling between the cables.

For input and AC power ports:
The EUT was connected to the power mains by using a coupling device that couples the EFT interference signal to AC power lines. Both positive transients and negative transients of test voltage were applied during compliance test and the duration of the test can't less than 1min.

For signal lines and control lines ports**:**
Ports which are intended to be connected to telecommunication networks (e.g. public switched telecommunication networks, integrated services digital networks, local area networks and similar networks.)

5.4.2 Test Setup



5.4.3 Test Result

EUT:	HORIZON HANGING L AMP	Model Name:	LH77
Pressure:	101kPa	Test mode:	Mode 1-2

Port Type	Injected Line	Test Voltage	Criterion met	Criterion Required
AC Mains	L	±1kV	A	B
	N	±1kV	A	
	L+N	±1kV	A	
	PE	±2kV	N/A	
	L+PE	±2kV	N/A	
	N+PE	±2kV	N/A	
	L+N+PE	±2kV	N/A	
Note: +/- 1KV for AC mains port: +/- 0.5KV for analogue digital data ports and DC network power port.				

5.5 Surge immunity

5.5.1 Test Procedures

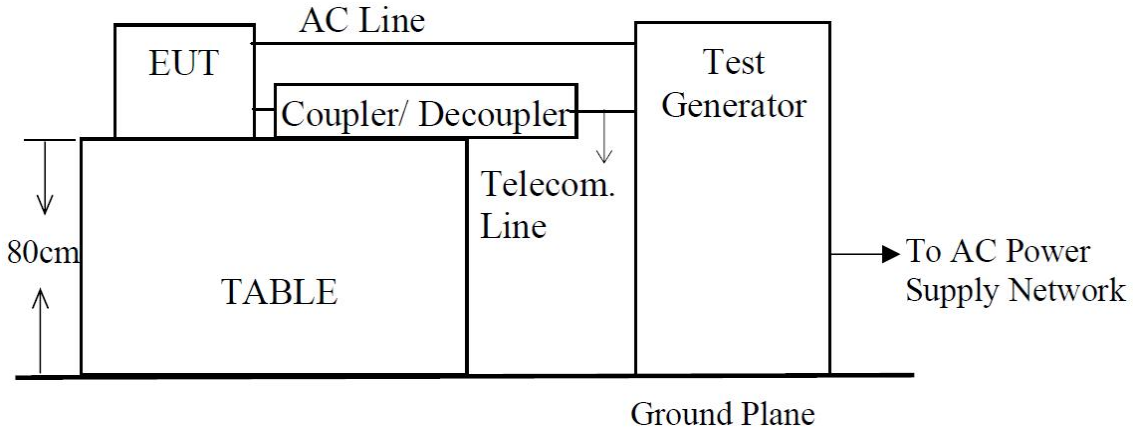
For line-to-line coupling mode, provide a 1kV 1.2/50us voltage surge (at open-circuit condition) and 8/20us current surge to EUT selected points, and for active line / neutral lines to ground are same except test level is 2kV.

At least 5 positive and 5 negative (polarity) tests with a maximum 1/min repetition rate are applied during test.

Different phase angles are done individually.

Record the EUT operating situation during compliance test and decide the EUT immunity criterion for above each test.

5.5.2 Test Setup



5.5.3 Test Result

EUT:	HORIZON HANGING L AMP	Model Name:	LH77
Pressure:	101kPa	Test mode:	Mode 1-2

Port Type	Injected Line	Test Voltage	Criterion met	Criterion Required
AC Mains	L – N	±0.5kV	A	B
	L – PE	±1kV, ±2kV	N/A	
	N – PE	±1kV, ±2kV	N/A	

5.6 Conducted disturbance immunity (CS)

5.6.1 Test Procedures

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).

The disturbance signal described below is injected to EUT through CDN.

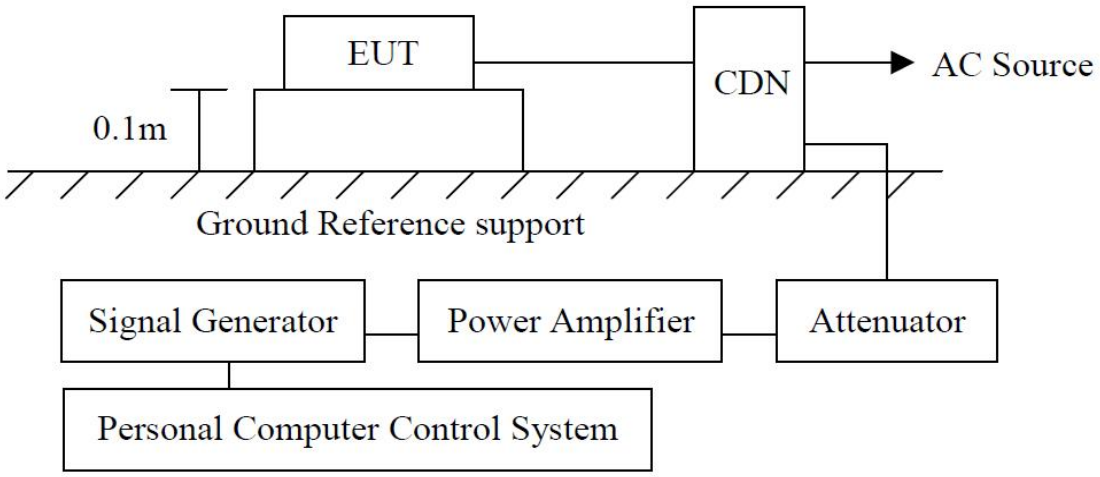
The EUT operates within its operational mode(s) under intended climatic conditions after power on.

The frequency range is swept from 0.150MHz to 80MHz using 3V signal level, and with the disturbance signal 80% amplitude modulated with a 1 kHz sine wave.

The rate of sweep shall not exceed 1.5*10-3decades/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.

Recording the EUT operating situation during compliance testing and decide the EUT immunity criterion.

5.6.2 Test Setup



5.6.3 Test Resul

EUT:	HORIZON HANGING L AMP	Model Name:	LH77
Pressure:	101kPa	Test mode:	Mode 1-2

Port Type	Frequency (MHz)	Test Voltage	Criterion met	Criterion Required
AC Mains	0.15 to 80	3 V (rms) AM Modulated 1000Hz, 80%	A	A

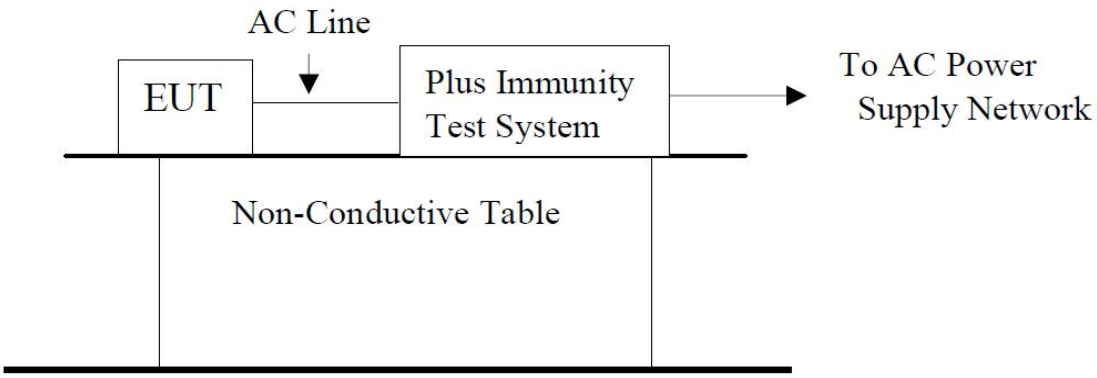
5.7 Voltage interruptions voltage Dips

5.7.1 Test procedures

The interruptions are introduced at selected phase angles with specified duration.

Record any degradation of performance

5.7.2 Test setup



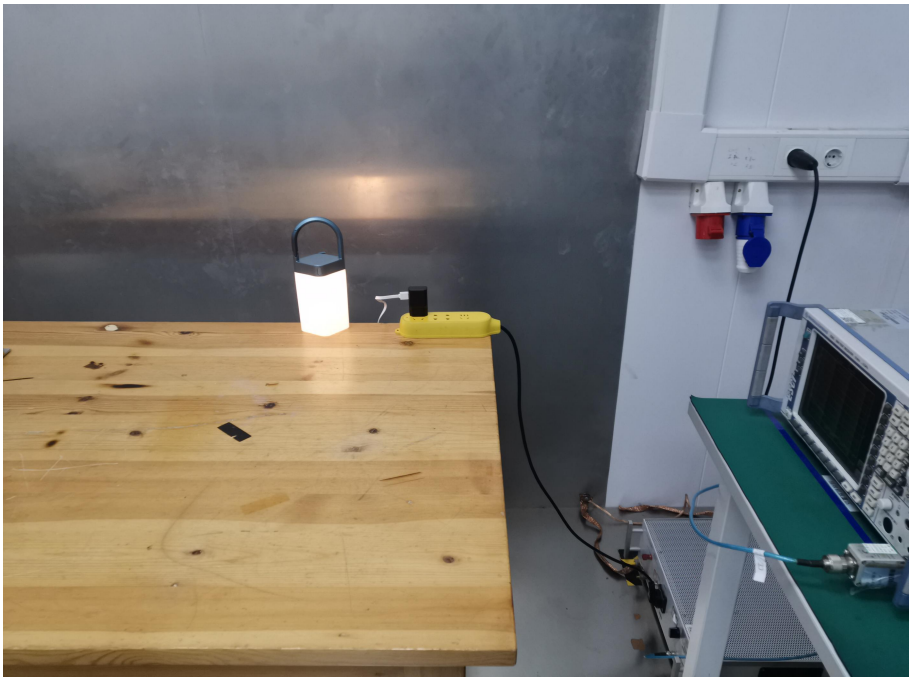
5.7.3 Test result

EUT:	HORIZON HANGING L AMP	Model Name:	LH77
Pressure:	101kPa	Test mode:	Mode 1-2

Test Level in %UT	Period	Criterion	Result
0%	0.5	B	A
70%	10	C	A

Photographs of the Test Setup

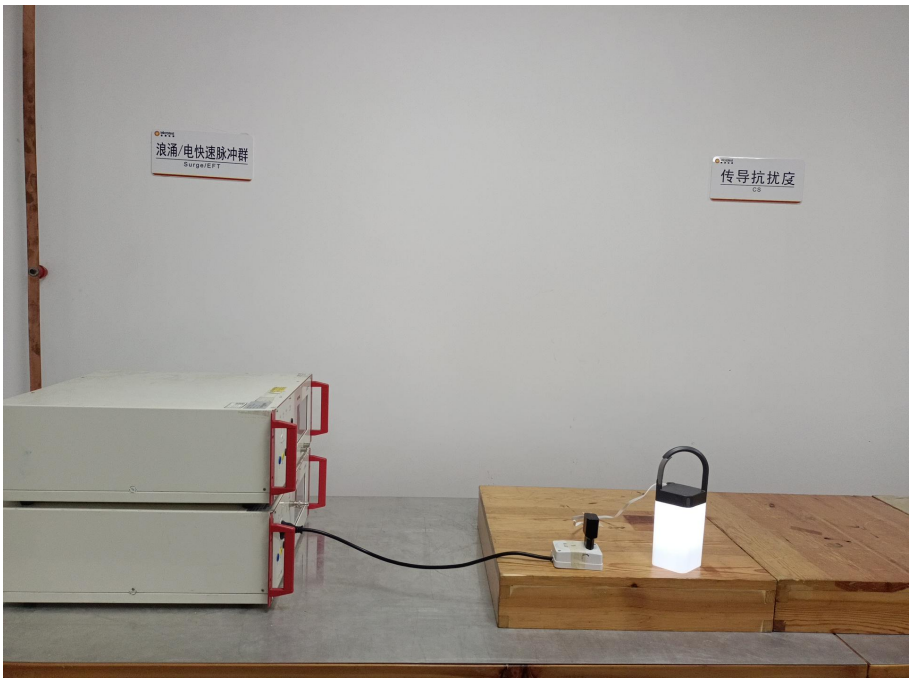
Radiated emission

Conducted emission


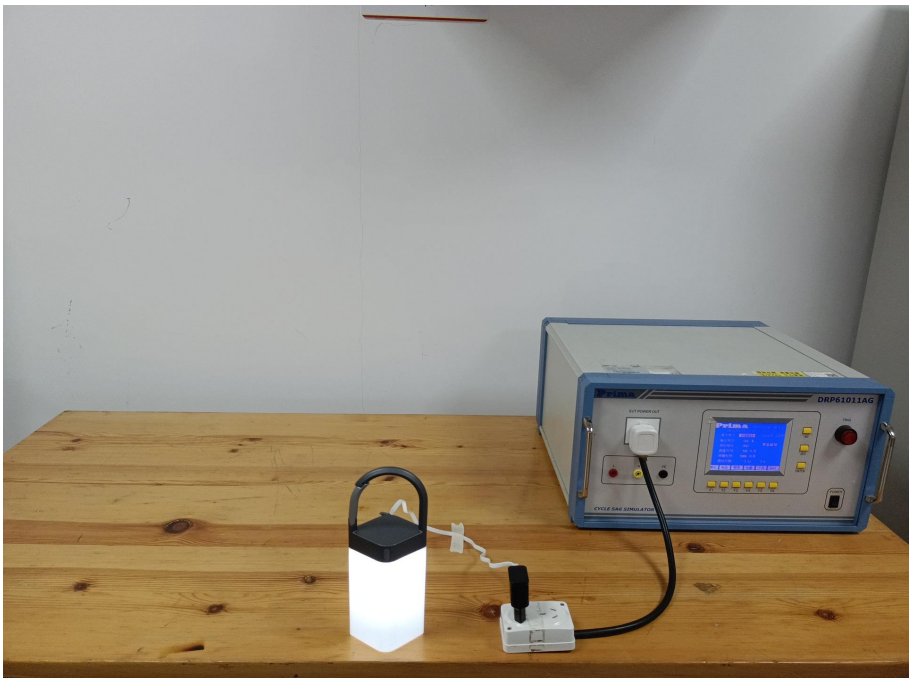
Magnetic Field Emission

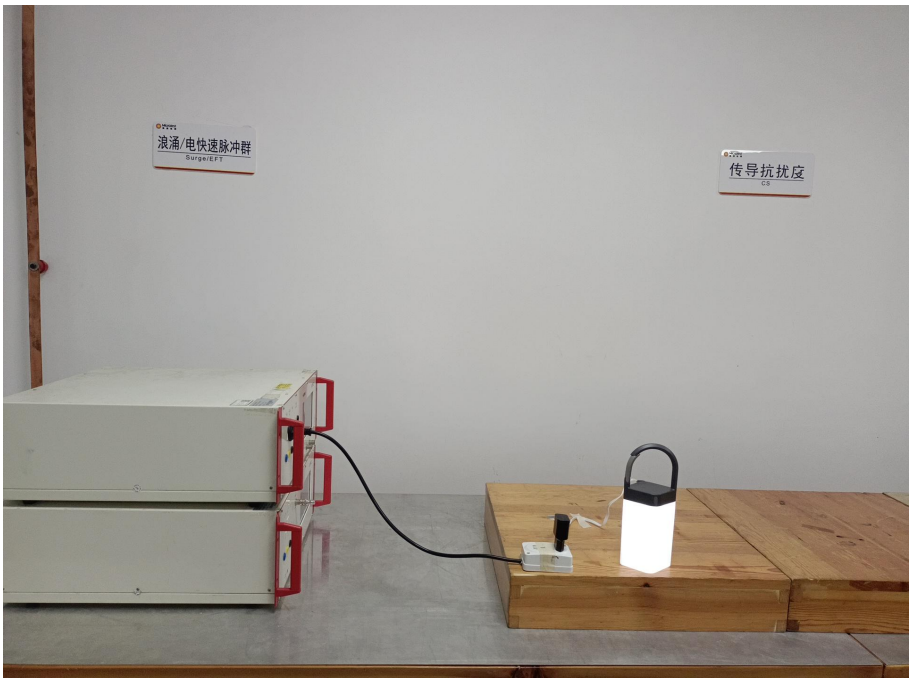
ESD


RS

EFT


CS

Dips


Surge

Flicker


Photographs of the EUT

See the Appendix 1- EUT Photos.

----END OF REPORT----