EMC
Measurement and Test Report

For

Dongguan Olight E-Commerce Technology Co., Ltd

4th Floor Building 4 Kegu Industrial Park No6 Zhongnan Road, Changan Town, Dongguan City ,Guangdong, China

Test Standards:	EN 55015:2013/A1:2015 EN 61547:2009
Product Description:	Flashlight
Tested Model:	Perun Mini
Report No.:	WTX20X05030648E
Tested Date:	May.25, 2020 to May.28, 2020
Issued Date:	May.29, 2020
Tested By:	Tayior Wu / Engineer
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1.GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant:	Dongguan Olight E-Commerce Technology Co., Ltd
Address of applicant:	4th Floor Building 4 Kegu Industrial Park No6 Zhongnan Road, Changan Town, Dongguan City , Guangdong, China
Manufacturer:	Dongguan Olight E-Commerce Technology Co., Ltd
Address of manufacturer:	4th Floor Building 4 Kegu Industrial Park No6 Zhongnan Road, Changan Town, Dongguan City , Guangdong, China

General Description of EUT	
Product Name:	Flashlight
Trade Name:	OLIGHT
Model No.:	Perun Mini
Adding Model(s):	/
Note: The test data is gathered from a production sample, provided by the manufacturer.	

Technical Characteristics of EUT	
Rated Voltage:	3.7V
Rated Current:	2.5A
Rated Power:	9.25W
Power Adaptor Model:	/

1.2 Test Standards

The tests were performed according to following standards:
EN 55015:2013/A1:2015 Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment

EN 61547:2009 Electromagnetic for general lighting purposes - EMC immunity requirements

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product maybe which result in lowering the emission/immunity should be checked to ensure compliance has been maintained.

1.3 Test Methodology

All measurements contained in this report were conducted with the standards EN 55015, EN 61000-3-2
EN 61000-3-3 and EN 61547 for general lighting purposes equipment, and all related testing and measurement techniques intentional standards.

1.4 EUT Setup and Operation Mode

The equipment under test (EUT) was configured to measure its highest possible emission/immunity level. The test modes were adapted according to the operation manual for use, more detailed description as follows:

Test Mode List:

Test Mode	Description	Remark	Power Supply Mode
TM1	charging	charging port is connected to the adapter	DC 5V(with adapter input AC 230V/50Hz)
TM2	discharge	/	DC 3.7V

EUT Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
USB cable	0.480	Unshielded	Without Core

Auxiliary Equipment List and Details

Description	Manufacturer	Model	Serial Number
adapter	/	ES518-U050150XYE	/

Special Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
/	/	/	/

1.5 Performance Criteria for EMS

All the test data has been collected, reduced, and analyzed within this report in accordance with Immunity requires the following as specific performance criteria:

A. The apparatus shall continue to operate as intended during and after the test. The manufacturer specifies some minimum performance level. The performance level may be specified by the manufacturer as a permissible loss of performance.

B. The apparatus shall continue to operate as intended after the test. This indicates that the EUT does not need to function at normal performance levels during the test, but must recover. Again some minimal performance is defined by the manufacturer. No change in operating state or loss of data is permitted.

C. Temporary loss of function is allowed. Operation of the EUT may stop as long as it is either automatically reset or can be manually restored by operation of the controls.

1.6 Test Equipment List and Details

Description	Manufacturer	Model	Serial No.	Cal.. Date	Due. Date
Spectrum Analyzer	Rohde & Schwarz	FSP	836079/035	2020-04-28	2021-04-27
EMI Test Receiver	Rohde & Schwarz	ESVB	825471/005	2020-04-28	2021-04-27
Amplifier	Agilent	8447F	3113A06717	2020-04-28	2021-04-27
Trilog Broadband Antenna	Schwarz beck	VULB9163	9163-333	2019-05-05	2021-05-04
Trilog Broadband Antenna	Schwarz beck	VULB9163(B)	9163-635	2019-05-05	2021-05-04
Horn Antenna	ETS	3117	00086197	2019-05-05	2021-05-04
EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2020-04-28	2021-04-27
EMI Test Receiver	Rohde & Schwarz	ESPI	101391	2020-04-28	2021-04-27
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2020-04-28	2021-04-27
AC LISN	Schwarz beck	NSLK8126	8126-224	2020-04-28	2021-04-27
DC LISN	Schwarz beck	NNBM8126D	279	2020-04-28	2021-04-27
DC LISN	Schwarz beck	NNBM8126D	280	2020-04-28	2021-04-27
8-WIRE LISN	Schwarz beck	8158	CAT3-8158-0059	2020-04-28	2021-04-27
8-WIRE LISN	Schwarz beck	8158	CAT5-8158-0117	2020-04-28	2021-04-27
Loop Antenna	EVERFINE	LLA-2	711001	2020-04-28	2021-04-27
VDH Test Head	AFJ	VDH 30	SC022Z	2020-04-28	2021-04-27
PMF Generator	LIONCEL	PMF-801C-C	0171101	2020-04-28	2021-04-27
PMF Antenna	LIONCEL	PMF-801C-A	0180302	2020-04-28	2021-04-27
Instantaneous PMF Generator Module	LIONCEL	PMF-801C-T	0171001	2020-04-28	2021-04-27
Digital Power Analyzer	California Instrument	CTS	72831	2020-04-28	2021-04-27
Power Source	California Instrument	5001IX-CTS-400	25965	2020-04-28	2021-04-27
ESD Generator	LIONCEL	ESD-203B	0170901	2020-04-28	2021-04-27
Amplifier	Agilent	8447D	2944A10179	2020-04-28	2021-04-27
Transient 2000	EMC PARTNER	TRA2000	863	2020-04-28	2021-04-27
Couple Clamp	EMC PARTNER	CN-EFT1000	513	2020-04-28	2021-04-27
CONDUCTED IMMUNITY TEST SYSTEM	FRANKONIA	CIT-10/75	126B1247/2013	2020-01-13	2021-01-12
Attenuator	EMTEST	MA-5100/6BF2	1009	2020-04-28	2021-04-27
CDN	Luthi	L-801M2/M3	2665	2020-04-28	2021-04-27
EM Injection Clamp	FCC	F-203I-23mm	91536	2019-05-31	2020-05-30
Signal Generator	HP	8688B	3438A00604	2020-04-28	2021-04-27
Power Meter	KEITHLEY	3500	1162591	2020-04-28	2021-04-27
Power Meter	KEITHLEY	3500	1121428	2020-04-28	2021-04-27
RF Power Amplifier	MicoTop	MPA-80-1000-250	MPA1906239	2020-04-28	2021-04-27
RF Power Amplifier	MicoTop	MPA-80-1000-100	MPA1906238	2020-04-28	2021-04-27

Antenna	SCHWARZBECK	STLP 9129	9129 114	N/A	N/A

2. SUMMARY OF TEST RESULTS

Standards	Description of Test Item	Result
EN 55015	Disturbance Voltages	Compliant
	Radiated Electromagnetic Disturbances (Frequency range 9kHz to 30MHz)	Compliant
	Radiated Electromagnetic Disturbances (Frequency range 30MHz to 300MHz)	Compliant
EN 61000-3-2	Harmonic Current Emission	N/A
EN 61000-3-3	Voltage Fluctuation And Flicker	N/A
EN 61547	Electrostatic Discharge Immunity in accordance with EN 61000-4-2	Compliant
	Radio-Frequency Electromagnetic Field Immunity in accordance with EN 61000-4-3	Compliant
	Electrical Fast Transient/Burst Immunity in accordance EN 61000-4-4	Compliant
	Surges Immunity in accordance with EN 61000-4-5	Compliant
	Injected Currents Immunity in accordance with EN 61000-4-6	Compliant
	Power-frequency Magnetic Field Immunity in accordance with EN 61000-4-8	Compliant
	Voltage Dips/Interruptions Immunity in accordance with EN 61000-4-11	N/A

3. Disturbance Voltages

3.1 Measurement Uncertainty

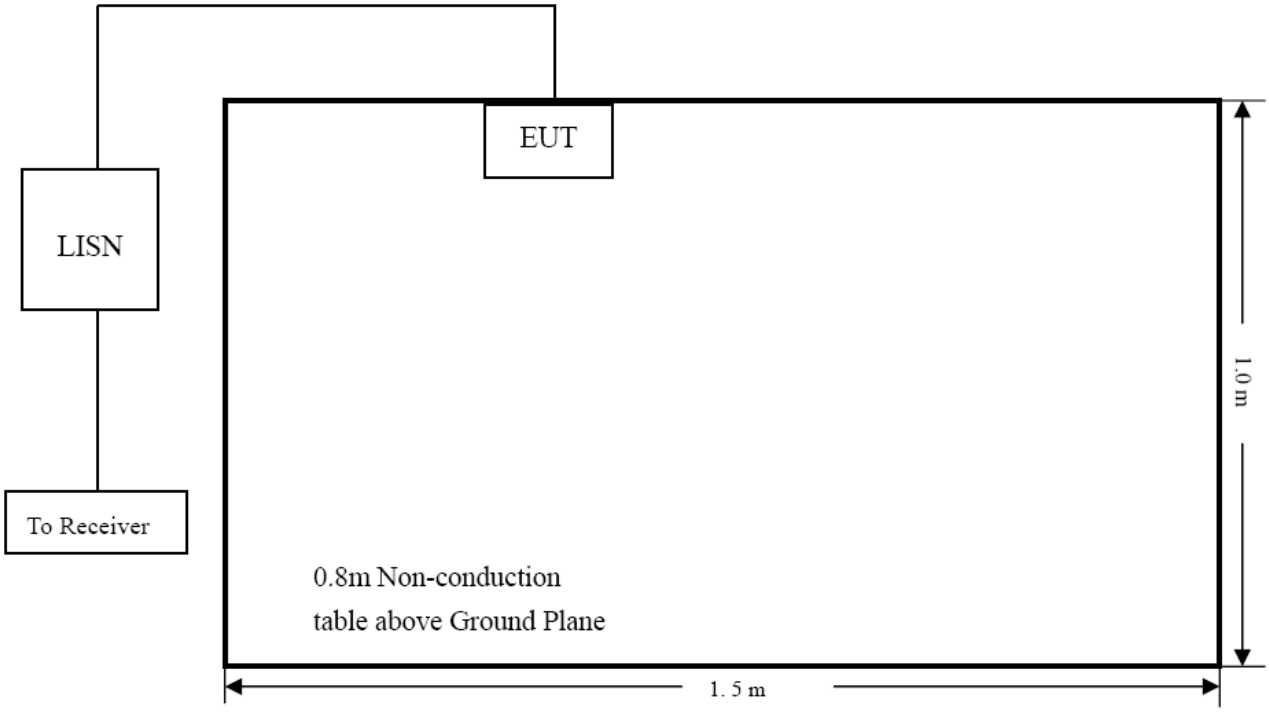
Base on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any conducted emissions measurement

Measurement uncertainty		
Parameter	Conditions	Uncertainty
Conducted Emissions	Conducted	9-150kHz ±3.74dB
		0.15-30MHz ±3.34dB

3.2 Test Procedure

Test is conducting under the description of EN 55015, According to Clause 5.3.2.2, 6 & 8.3.1.

3.3 Basic Test Setup Block Diagram



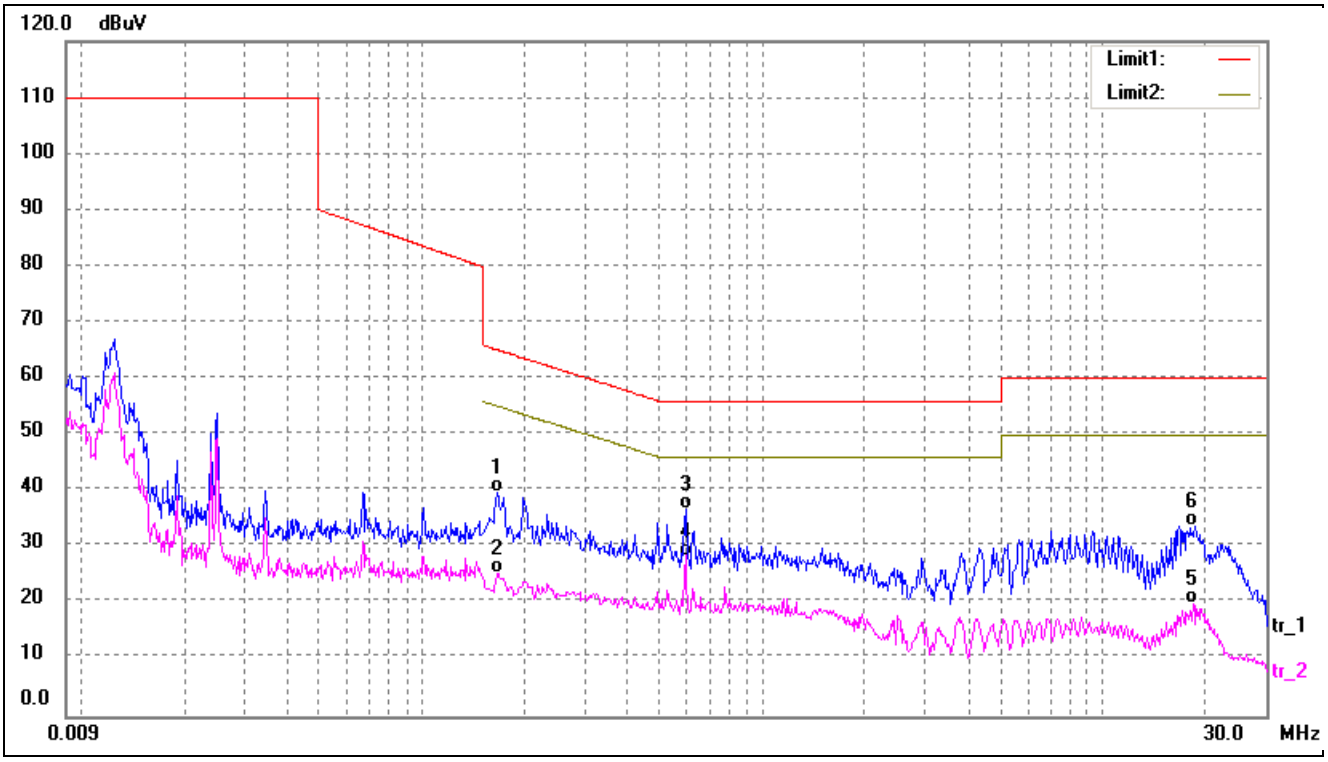
3.4 Environmental Conditions

Temperature:	22 ° C
Relative Humidity:	55 %
ATM Pressure:	1015 mbar

3.5 Summary of Test Results

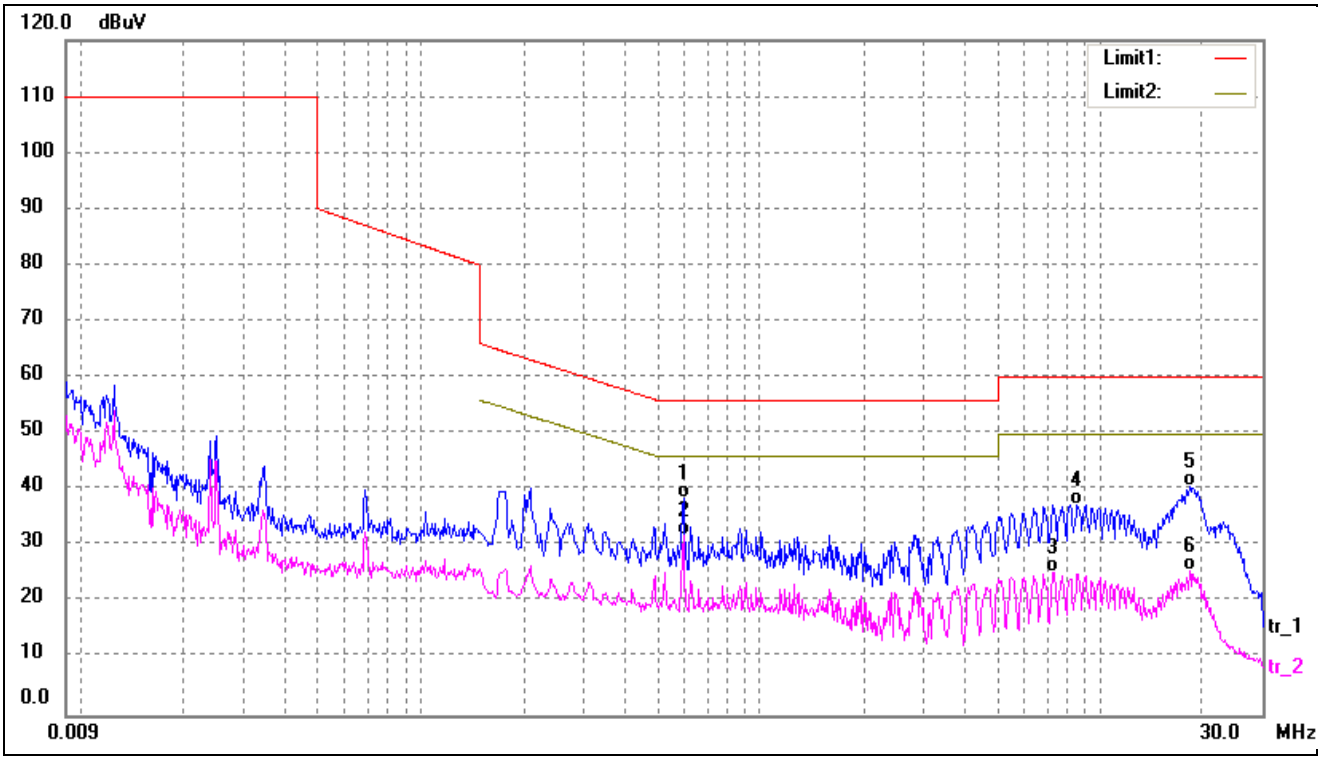
Look at the graphs and data below：

Test mode:	TM1	Polarity:	Line



No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB/m)	(dBuV)	(dBuV)	(dB)	
1	0.1660	29.93	9.95	39.88	65.15	-25.27	QP
2	0.1660	15.47	9.95	25.42	55.15	-29.73	AVG
3	0.5940	26.73	10.05	36.78	56.00	-19.22	QP
4*	0.5940	18.45	10.05	28.50	46.00	-17.50	AVG
5	18.3860	9.26	10.73	19.99	50.00	-30.01	AVG
6	18.6299	23.10	10.74	33.84	60.00	-26.16	QP

Test mode:	TM1	Polarity:	Neutral



No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB/m)	(dBuV)	(dBuV)	(dB)	
1	0.5940	28.47	10.05	38.52	56.00	-17.48	QP
2*	0.5940	21.95	10.05	32.00	46.00	-14.00	AVG
3	7.3140	14.81	10.53	25.34	50.00	-24.66	AVG
4	8.5700	26.71	10.54	37.25	60.00	-22.75	QP
5	18.4220	30.04	10.73	40.77	60.00	-19.23	QP
6	18.4220	15.00	10.73	25.73	50.00	-24.27	AVG

4. Radiated Electromagnetic Disturbances (9kHz to 30MHz)

4.1 Measurement Uncertainty

Base on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any radiation emissions measurement is ± 3.6 dB.

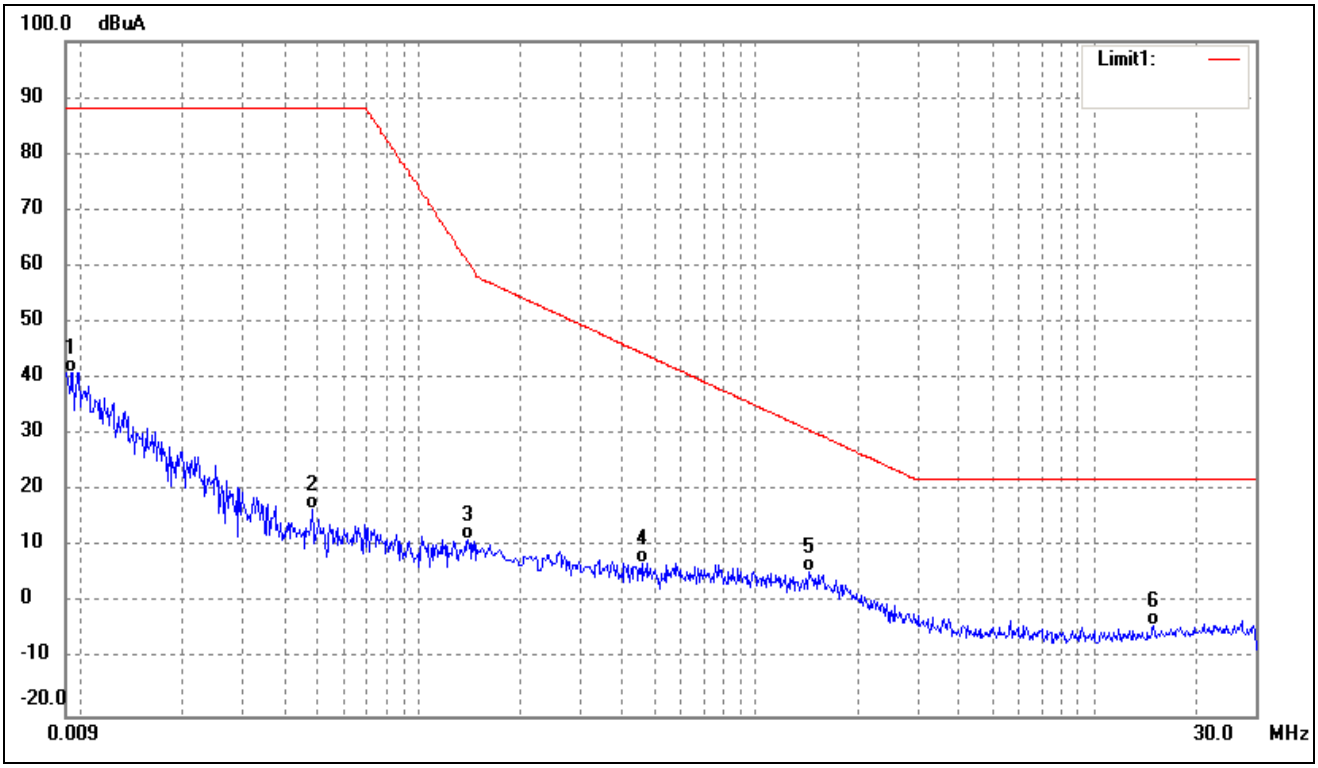
4.2 Test Procedure

Test is conducted under the description of EN 55015, According to Clause 4.4

4.3 Summary of Test Results

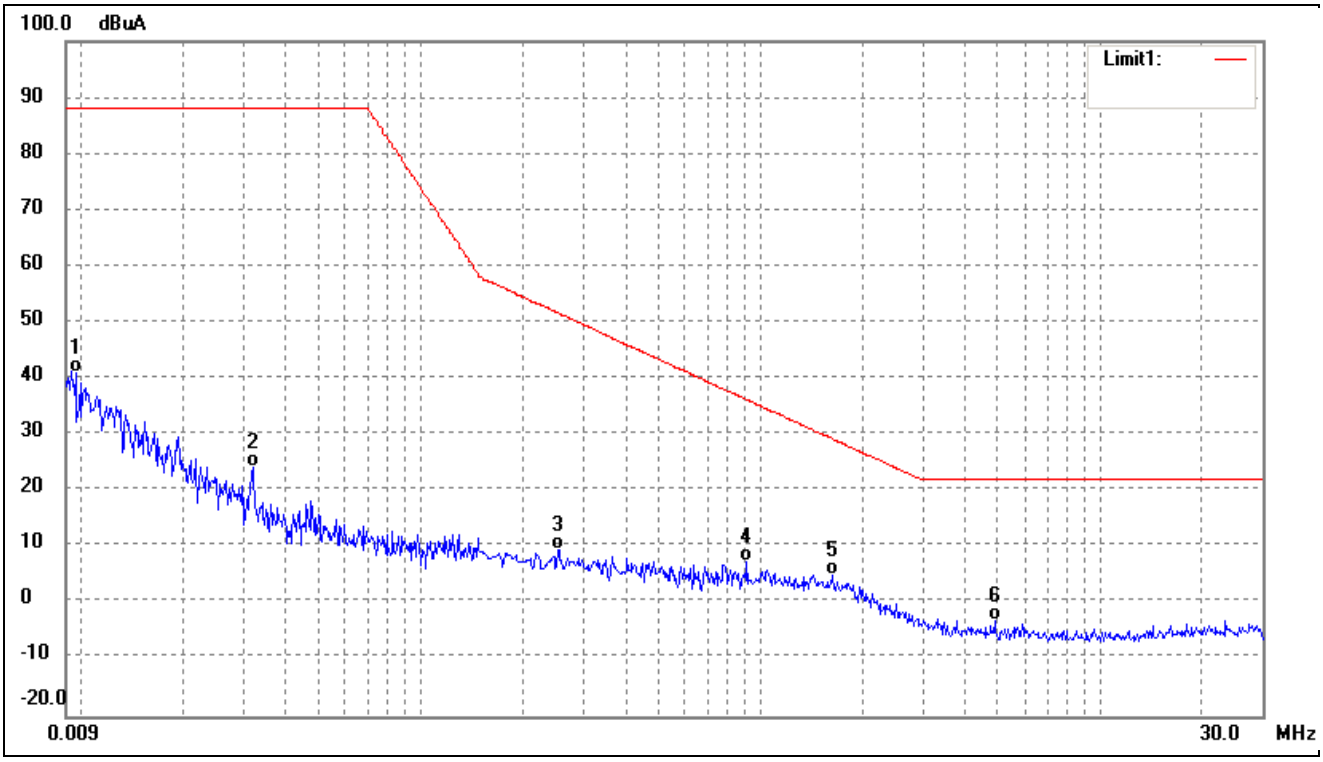
Look at the graphs and data below：

Test mode:	TM1	Polarity:	X



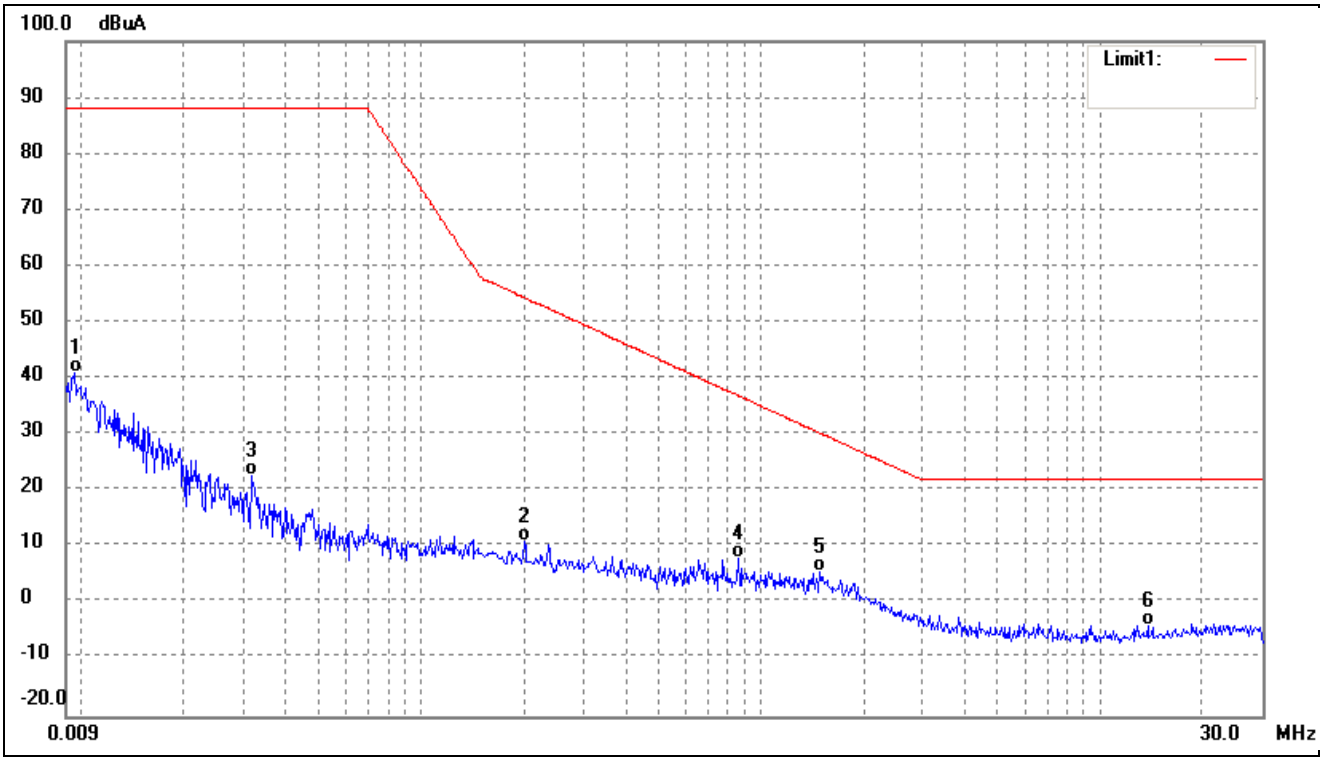
No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuA)	(dB/m)	(dBuA)	(dBuA)	(dB)	
1	0.0094	1.68	39.46	41.14	88.00	-46.86	QP
2	0.0486	-7.70	24.31	16.61	88.00	-71.39	QP
3	0.1406	-9.78	21.19	11.41	60.52	-49.11	QP
4	0.4580	-13.06	20.30	7.24	44.58	-37.34	QP
5*	1.4220	-14.76	20.27	5.51	30.97	-25.46	QP
6	14.9540	-24.79	20.76	-4.03	22.00	-26.03	QP

Test mode:	TM1	Polarity:	Y



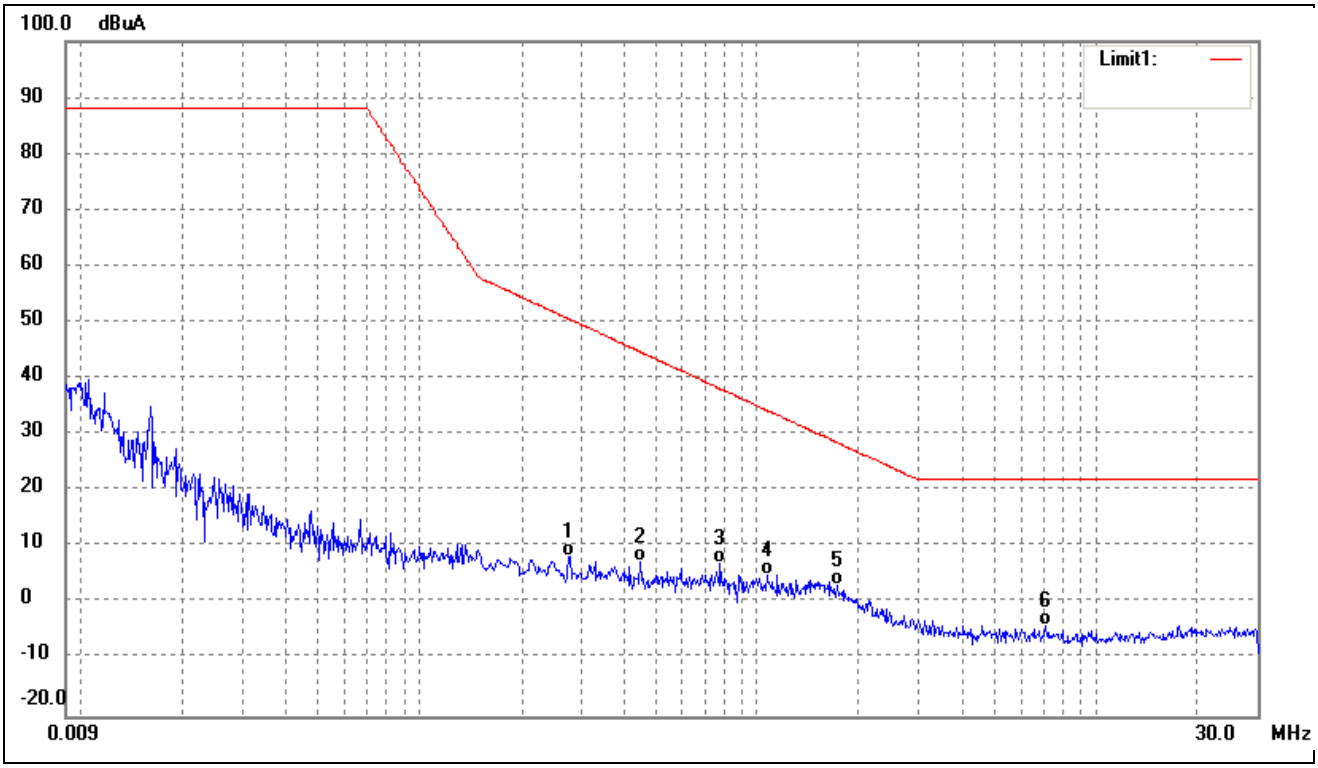
No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuA)	(dB/m)	(dBuA)	(dBuA)	(dB)	
1	0.0096	1.85	39.29	41.14	88.00	-46.86	QP
2	0.0320	-3.89	28.18	24.29	88.00	-63.71	QP
3	0.2540	-10.93	20.58	9.65	51.66	-42.01	QP
4	0.9100	-12.61	20.06	7.45	36.33	-28.88	QP
5*	1.6340	-15.46	20.38	4.92	29.30	-24.38	QP
6	4.9100	-23.87	20.71	-3.16	22.00	-25.16	QP

Test mode:	TM1	Polarity:	Z



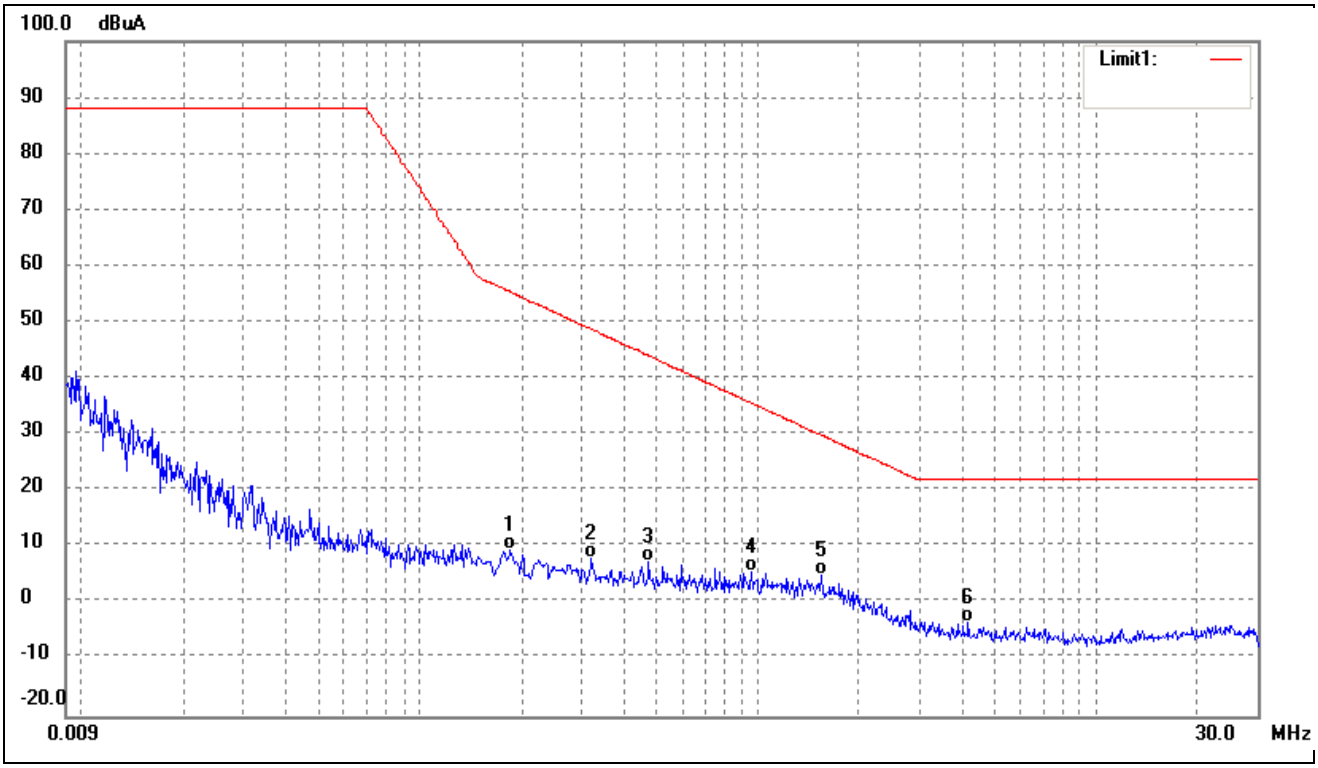
No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuA)	(dB/m)	(dBuA)	(dBuA)	(dB)	
1	0.0096	1.70	39.29	40.99	88.00	-47.01	QP
2	0.2020	-9.64	20.66	11.02	54.42	-43.40	QP
3	0.0319	-5.58	28.22	22.64	88.00	-65.36	QP
4	0.8660	-12.15	20.06	7.91	36.93	-29.02	QP
5*	1.5020	-14.65	20.31	5.66	30.31	-24.65	QP
6	13.8140	-24.46	20.64	-3.82	22.00	-25.82	QP

Test mode:	TM2	Polarity:	X



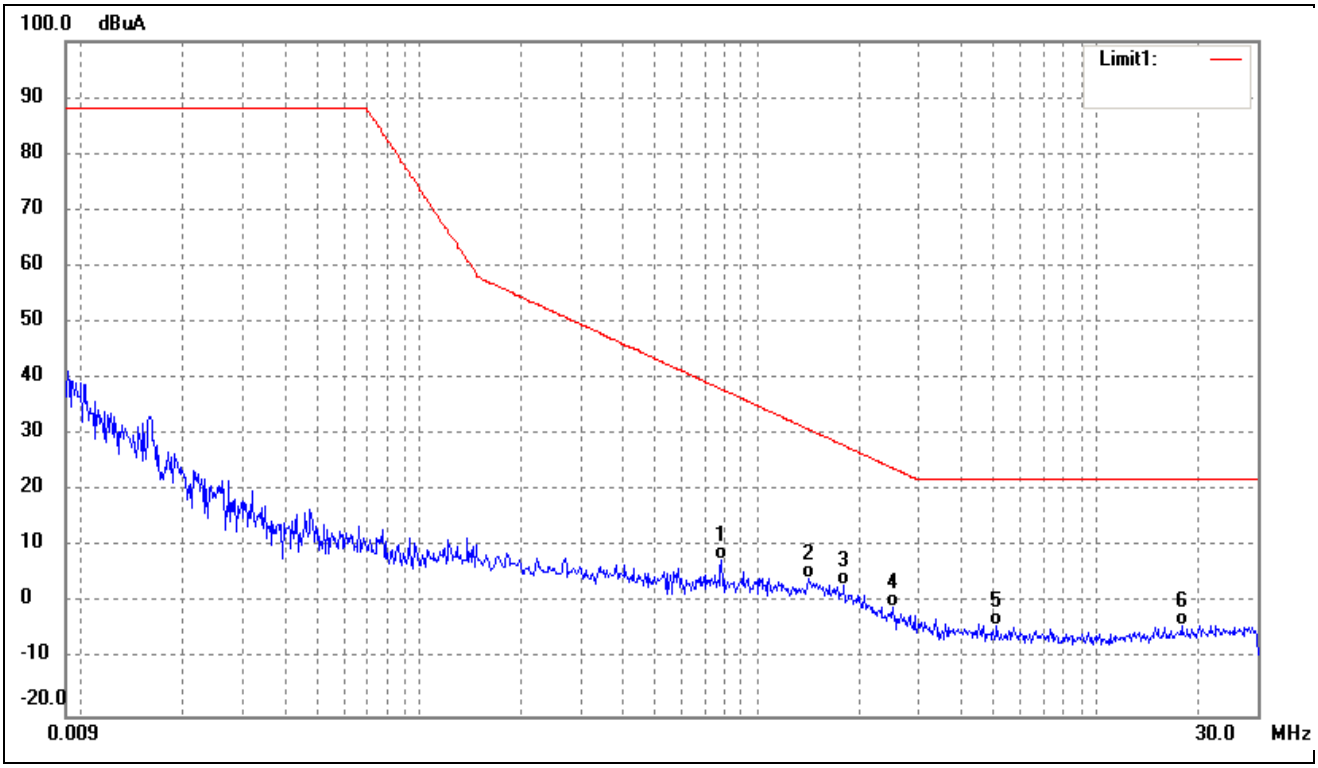
No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuA)	(dB/m)	(dBuA)	(dBuA)	(dB)	
1	0.2779	-12.09	20.54	8.45	50.58	-42.13	QP
2	0.4500	-12.88	20.31	7.43	44.79	-37.36	QP
3	0.7740	-13.04	20.07	7.03	38.28	-31.25	QP
4	1.0620	-14.97	20.09	5.12	34.48	-29.36	QP
5*	1.7220	-17.15	20.42	3.27	28.67	-25.40	QP
6	7.1300	-24.42	20.53	-3.89	22.00	-25.89	QP

Test mode:	TM2	Polarity:	Y



No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuA)	(dB/m)	(dBuA)	(dBuA)	(dB)	
1	0.1860	-11.35	20.79	9.44	55.41	-45.97	QP
2	0.3220	-12.28	20.48	8.20	48.82	-40.62	QP
3	0.4780	-12.86	20.28	7.42	44.07	-36.65	QP
4	0.9620	-14.33	20.06	5.73	35.67	-29.94	QP
5*	1.5460	-15.26	20.33	5.07	29.97	-24.90	QP
6	4.1860	-24.09	20.67	-3.42	22.00	-25.42	QP

Test mode:	TM2	Polarity:	Z



No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuA)	(dB/m)	(dBuA)	(dBuA)	(dB)	
1	0.7820	-12.40	20.07	7.67	38.16	-30.49	QP
2	1.4140	-15.96	20.27	4.31	31.04	-26.73	QP
3	1.7980	-17.25	20.46	3.21	28.15	-24.94	QP
4*	2.5100	-21.28	20.59	-0.69	24.14	-24.83	QP
5	5.0780	-24.54	20.71	-3.83	22.00	-25.83	QP
6	17.9940	-25.15	21.06	-4.09	22.00	-26.09	QP

5. Radiated Electromagnetic Disturbances (30MHz to 300MHz)

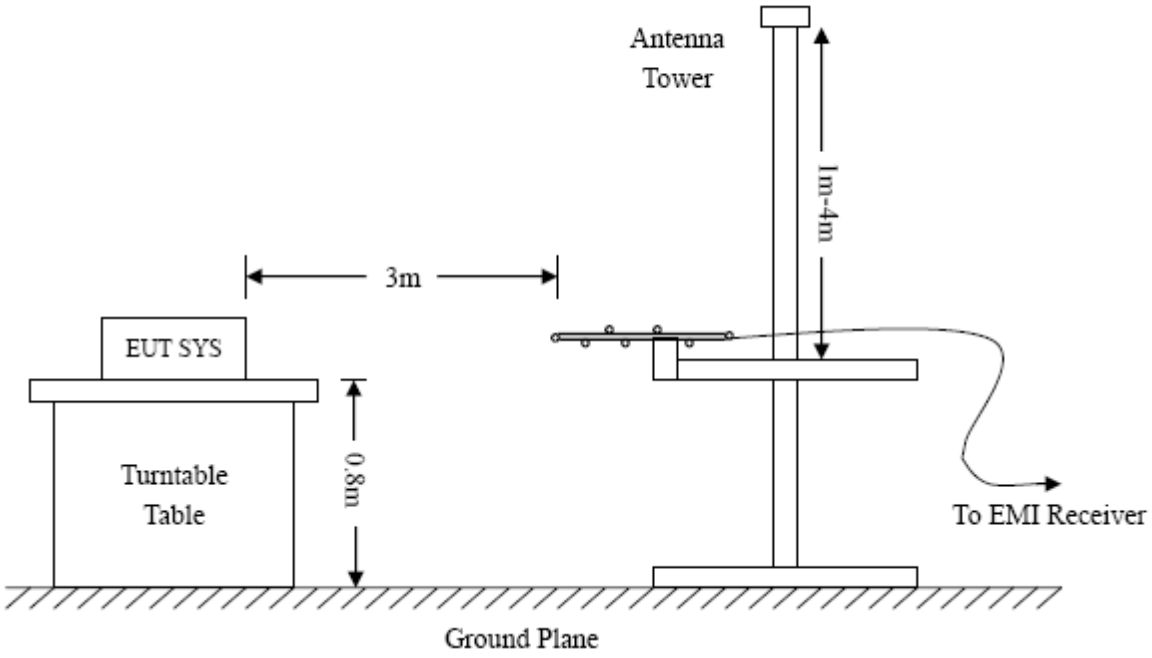
5.1 Measurement Uncertainty

Base on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any radiation emissions measurement

Measurement uncertainty		
Parameter	Conditions	Uncertainty
Radiated Emissions	Radiated	30-200MHz ±4.52dB
		0.2-1GHz ±5.56dB
		1-6GHz ±3.84dB
		6-18GHz ±3.92dB

5.2 Test Procedure

Test is conducting under the description of EN 55015 According to Clause 4.4.2.



5.3 Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and the Cable Factor, and subtracting the Amplifier Gain from the Amplitude reading. The basic equation is as follows:

Corr. Ampl. = Indicated Reading + Correct

Correct=Ant.Factor + Cable Loss - Ampl.Gain

The "**Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -6dBμV means the emission is 6dBμV below the maximum limit for a lighting device. The equation for margin calculation is as follows:

Margin = Corr. Ampl. – EN 55015 Limit

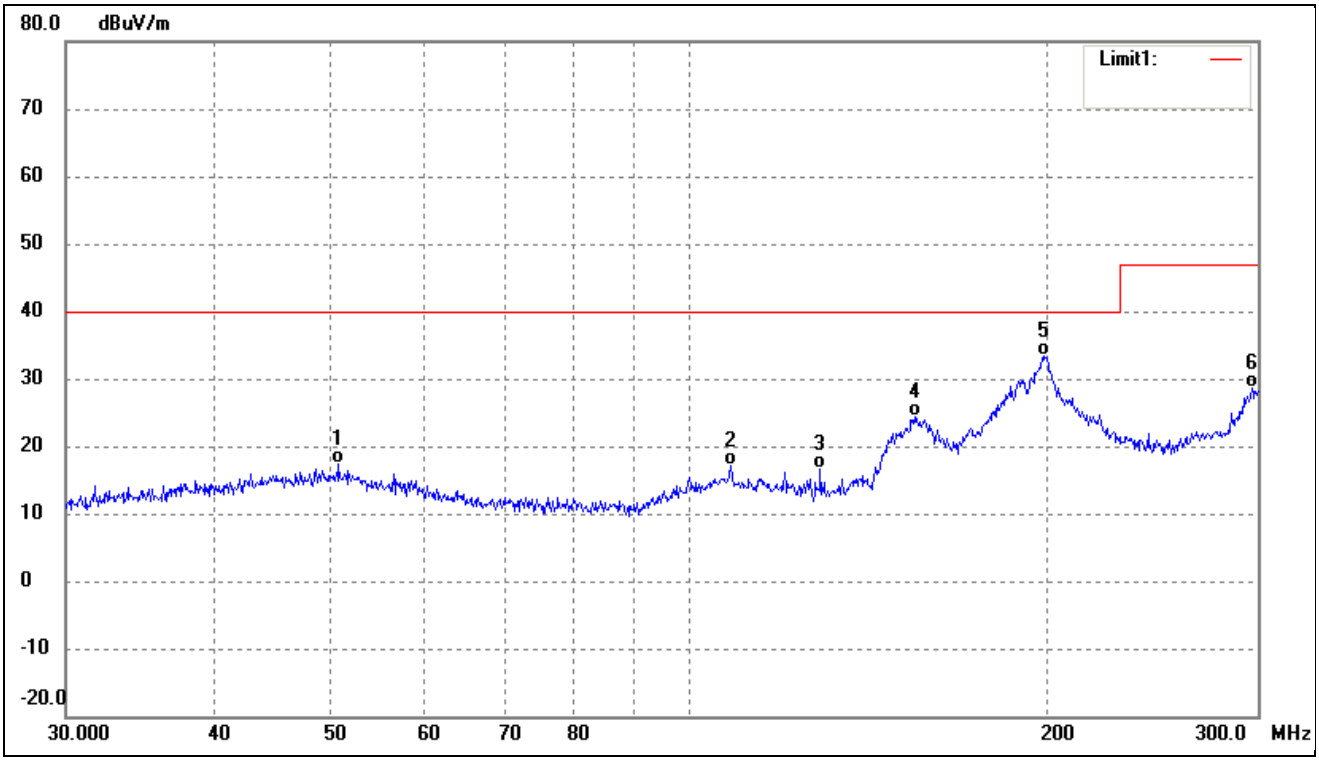
5.4 Environmental Conditions

Temperature:	23° C
Relative Humidity:	53%
ATM Pressure:	1011 mbar

5.5 Summary of Test Results

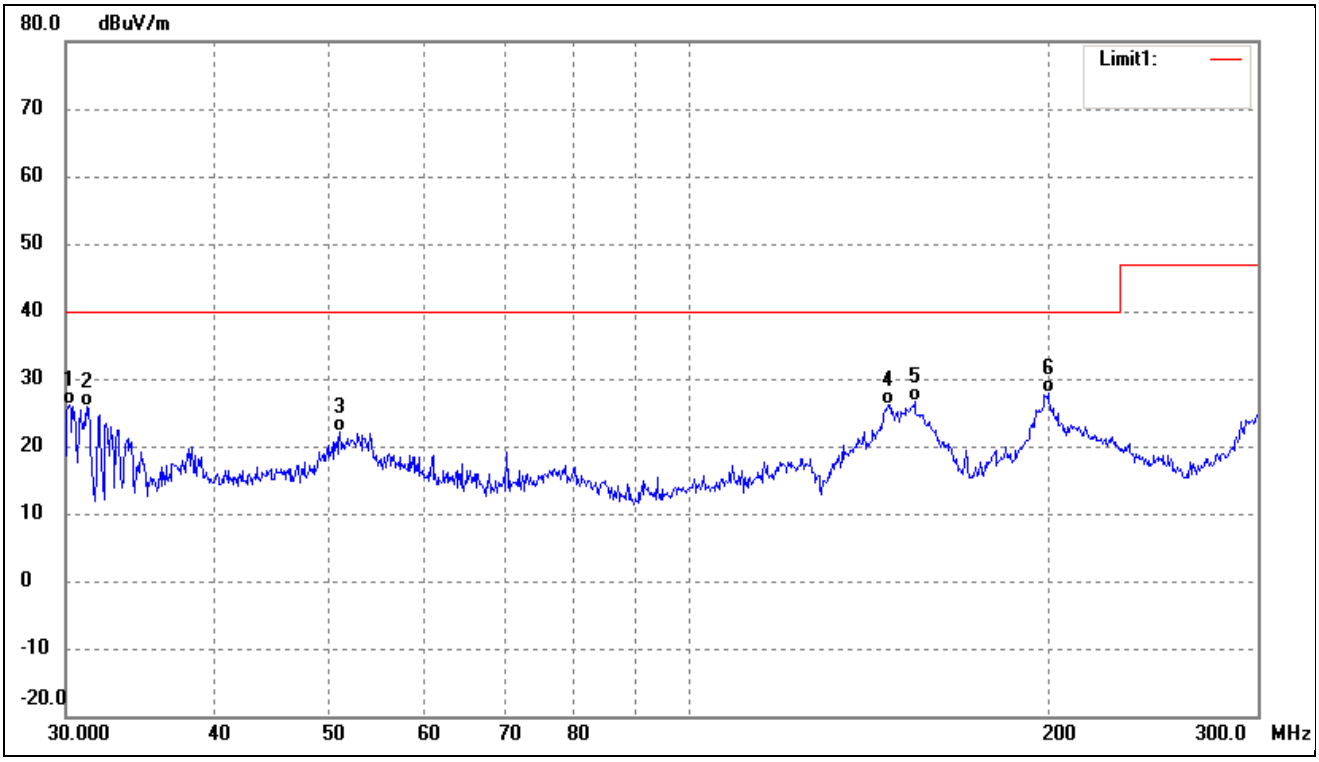
Look at the graphs and data below：

Test mode:	TM1	Polarity:	Horizontal



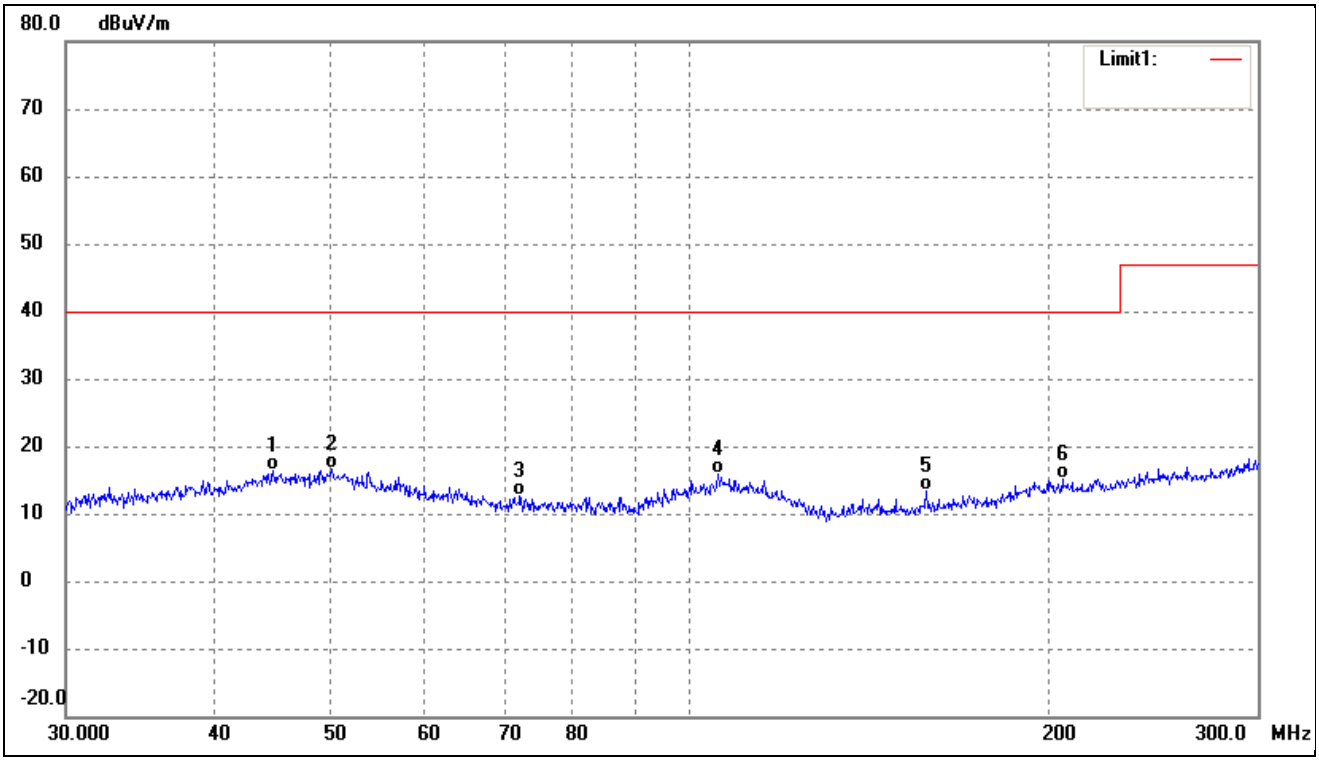
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	50.8301	28.65	-11.18	17.47	40.00	-22.53	350	100	QP
2	108.4230	30.07	-13.04	17.03	40.00	-22.97	91	100	QP
3	128.8609	33.13	-16.52	16.61	40.00	-23.39	138	100	QP
4	154.5686	40.06	-15.73	24.33	40.00	-15.67	108	100	QP
5	198.2080	46.29	-12.83	33.46	40.00	-6.54	264	100	QP
6	296.5658	37.94	-9.41	28.53	47.00	-18.47	272	100	QP

Test mode:	TM1	Polarity:	Vertical



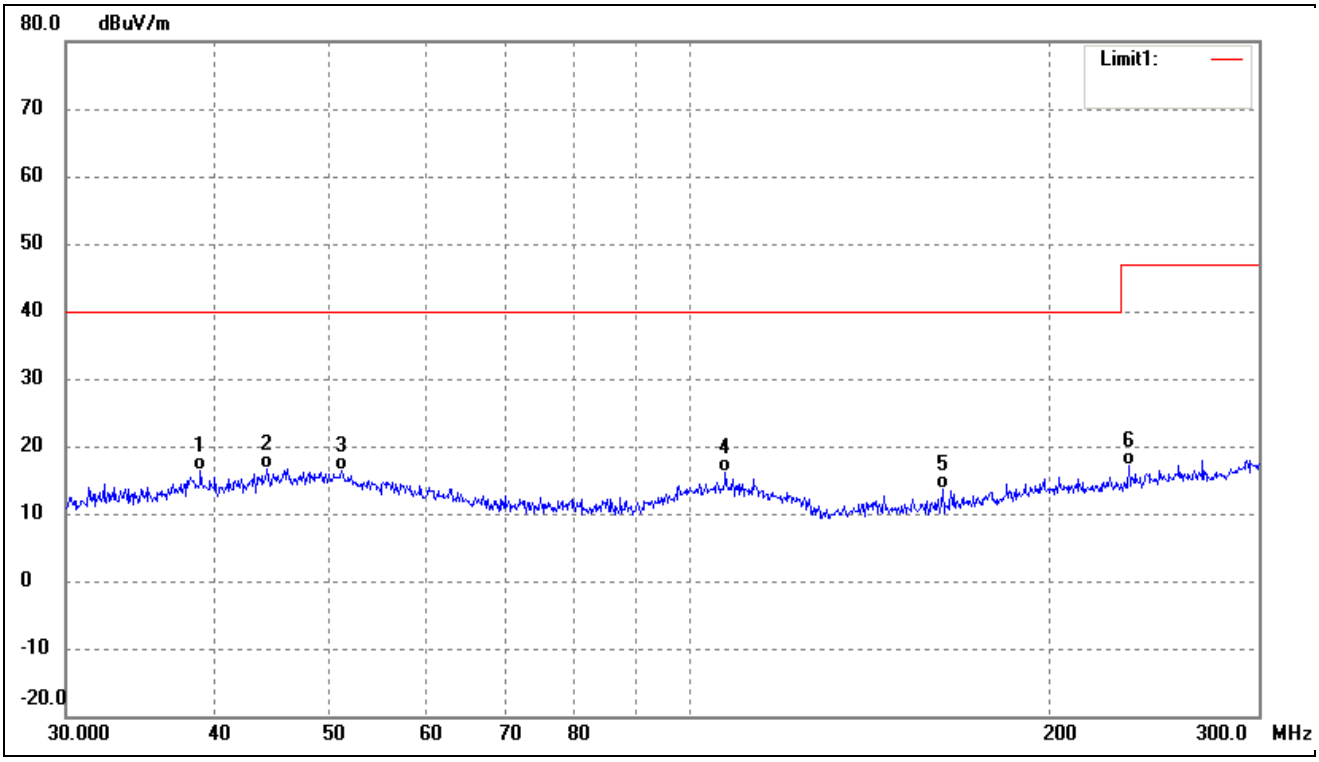
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	30.2080	40.69	-14.53	26.16	40.00	-13.84	319	100	QP
2	31.2695	40.23	-14.27	25.96	40.00	-14.04	207	100	QP
3	50.9473	33.26	-11.21	22.05	40.00	-17.95	97	100	QP
4	146.9336	41.93	-15.82	26.11	40.00	-13.89	344	100	QP
5	154.5686	42.42	-15.73	26.69	40.00	-13.31	79	100	QP
6	200.0420	40.46	-12.70	27.76	40.00	-12.24	142	100	QP

Test mode:	TM2	Polarity:	Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	44.7838	27.79	-11.39	16.40	40.00	-23.60	146	100	QP
2	50.1327	27.62	-11.02	16.60	40.00	-23.40	171	100	QP
3	72.1309	27.88	-15.17	12.71	40.00	-27.29	57	100	QP
4	105.7113	29.06	-13.08	15.98	40.00	-24.02	125	100	QP
5	158.1690	28.84	-15.56	13.28	40.00	-26.72	106	100	QP
6	205.6465	27.77	-12.60	15.17	40.00	-24.83	274	100	QP

Test mode:	TM2	Polarity:	Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	38.9153	28.96	-12.69	16.27	40.00	-23.73	57	100	QP
2	44.2712	28.23	-11.51	16.72	40.00	-23.28	180	100	QP
3	51.0648	27.57	-11.23	16.34	40.00	-23.66	125	100	QP
4	107.1819	29.11	-13.06	16.05	40.00	-23.95	96	100	QP
5	162.9751	28.88	-15.29	13.59	40.00	-26.41	227	100	QP
6	233.4110	28.97	-11.87	17.10	47.00	-29.90	205	100	QP

6. Electrostatic Discharge Immunity (ESD)

6.1 Test Procedure

Test is conducting under the description of EN 61000-4-2.

Test Performance

Performance Criterion: B

Environmental Conditions

Temperature:	26 °C
Relative Humidity:	55%
ATM Pressure:	1011 mbar

6.2 Electrostatic Discharge Immunity Test Data

Table 1: Electrostatic Discharge Immunity (Air Discharge)

EN 61000-4-2	Test Levels (kV)									
Test Points	-2	+2	-4	+4	-6	+6	-8	+8	-15	+15
gap	A	A	A	A	A	A	A	A	/	/
controller	A	A	A	A	A	A	A	A	/	/

Table 2: Electrostatic Discharge Immunity (Direct Contact)

EN 61000-4-2	Test Levels (kV)									
Test Points	-2	+2	-4	+4	-6	+6	-8	+8	-15	+15
Metal case	A	A	A	A	/	/	/	/	/	/
input port	A	A	A	A	/	/	/	/	/	/

Table 3: Electrostatic Discharge Immunity (Indirect Contact HCP & VCP)

EN 61000-4-2	Test Levels (kV)									
Test Points	-2	+2	-4	+4	-6	+6	-8	+8	-15	+15
HCP (6 Sides)	A	A	A	A	/	/	/	/	/	/
VCP (4 Sides)	A	A	A	A	/	/	/	/	/	/

Test Result: Pass

7. Radio-Frequency Electromagnetic Fields (R/S)

7.1 Test Procedure

Test is conducting under the description of EN 61000-4-3.

Test Performance

Performance Criterion: A

Environmental Conditions

Temperature:	25 °C
Relative Humidity:	52%
ATM Pressure:	1010 mbar

7.2 Continuous Radiated Disturbances Test Data

Frequency step: 1% of fundamental
Dwell time: 1 second
Modulation: AM by 1kHz sine wave with 80% modulation depth

Frequency Range(MHz)	Field (V/m)	Front		Rear		Left Side		Right Side	
		VERT	HORI	VERT	HORI	VERT	HORI	VERT	HORI
80-1000	3	A	A	A	A	A	A	A	A

Test Result: Pass

8. Electrical Fast Transients (EFT)

8.1 Test Procedure

Test is conducting under the description of EN 61000-4-4.

Test Performance

Performance Criterion: B

Environmental Conditions

Temperature:	22 °C
Relative Humidity:	53%
ATM Pressure:	1011 mbar

8.2 Electrical Fast Transients Test Data

EN 61000-4-4 Test Points		Test Levels (kV)							
		+0.5	-0.5	+1.0	-1.0	+2.0	-2.0	+4.0	-4.0
Power Supply Power Port of EUT	L1	/	/	A	A	/	/	/	/
	L2	/	/	A	A	/	/	/	/
	PE	/	/	/	/	/	/	/	/
	L1+L2	/	/	A	A	/	/	/	/
	L1 + PE	/	/	/	/	/	/	/	/
	L2 + PE	/	/	/	/	/	/	/	/
	L1+L2+PE	/	/	/	/	/	/	/	/
Signal ports	/	/	/	/	/	/	/	/	/

Test Result: Pass

9. Surges

9.1 Test Procedure

Test is conducting under the description of EN 61000-4-5.

Test Performance

Performance Criterion: B

Environmental Conditions

Temperature:	25 °C
Relative Humidity:	53%
ATM Pressure:	1011 mbar

9.2 Surge Test Data

Level	Voltage	Poll	Path	Pass	Fail
1	0.5kV	±	L-N	A	/
2	1kV	±	L-N	/	/
3	2kV	±	L-PE, N-PE	/	/
4	4kV	±	L-N, L-PE, N-PE	/	/

Test Result: Pass

10. Injected Currents (C/S)

10.1 Test Procedure

Test is conducting under the description of EN 61000-4-6.

Test Performance

Performance Criterion: A

Environmental Conditions

Temperature:	25 °C
Relative Humidity:	53%
ATM Pressure:	1011 mbar

10.2 Continuous Conducted Disturbances Test Data

Sweep frequency range: 150kHz~80MHz
Frequency step: 1% of fundamental
Dwell time: 1 second

Level	Voltage Level (e.m.f.) U_0	Modulation:	Pass	Fail
1	1	AM 80%, 1kHz sinewave	/	/
2	3	AM 80%, 1kHz sinewave	A	/
3	10	AM 80%, 1kHz sinewave	/	/
X	Special	/	/	/

Test Result: Pass

11. Power Frequency Magnetic Fields

11.1 Test Procedure

Test is conducting under the description of EN 61000-4-8.

Test Performance

Performance Criterion: A

Environmental Conditions

Temperature:	25 °C
Relative Humidity:	50%
ATM Pressure:	1011 mbar

11.2 Power-Frequency Magnetic Field Test Data

Level	Magnetic Field Strength (r.m.s) A/m	Frequency Hz	Induction Coil Postion	Pass	Fail
1	1	50	X, Y, Z	/	/
2	3	50	X, Y, Z	A	/
3	10	50	X, Y, Z	/	/
X	Special	/	/	/	/

Test Result: Pass

EXHIBIT 1 - PRODUCT LABELING

Proposed CE Label Format

Flashlight
Model: Perun Mini
Brand: OLIGHT
Importer Name: XXX
Importer Address: XXX
Dongguan Olight E-Commerce Technology Co., Ltd.
4th Floor Building 4 Kegu Industrial Park No6 Zhongnan Road,
Changan Town, Dongguan City ,Guangdong, China

Specifications: Text is Black in color and is justified. Labels are printed in indelible ink on permanent adhesive backing or silk-screened onto the EUT or shall be affixed at a conspicuous location on the EUT. The 'CE' marking must be affixed to the EUT or to its data plate. Where this is not possible or not warranted on account of the nature of the apparatus, it must be affixed to the packaging, if any, and to the accompanying documents. The 'CE' marking is allowed less than 5 mm but must clear. If the 'CE' marking is reduced or enlarged the proportions given in the above graduated drawing must be respected. The Importer name, address and Manufacturer name and address should indicate on marking label or packaging or in a document accompanying

Proposed Label Location on EUT

CE Label Location



EXHIBIT 2 - EUT PHOTOGRAPHS

EUT View 1



EUT View 2



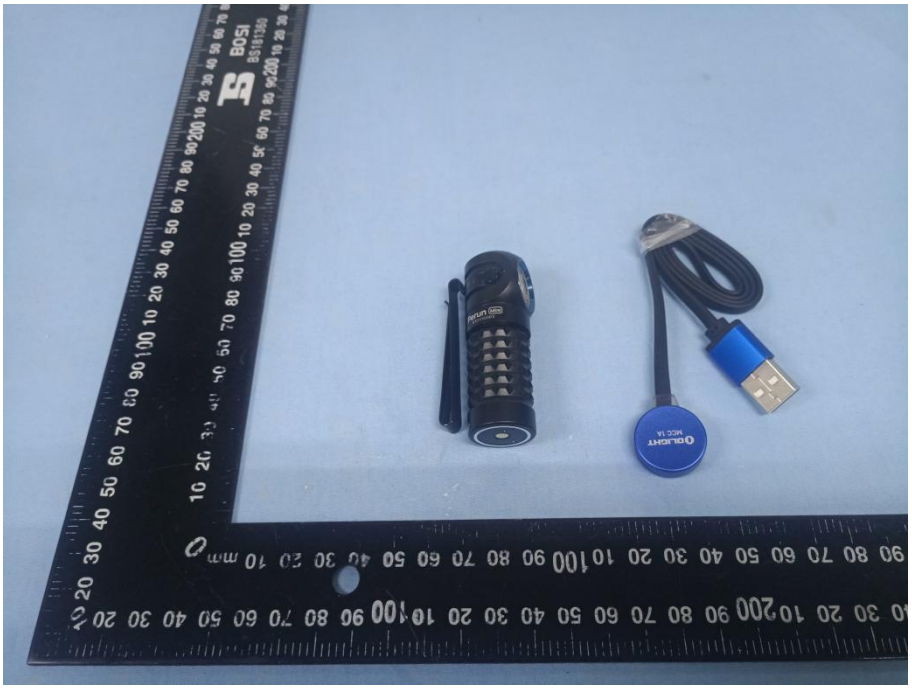
EUT View 3



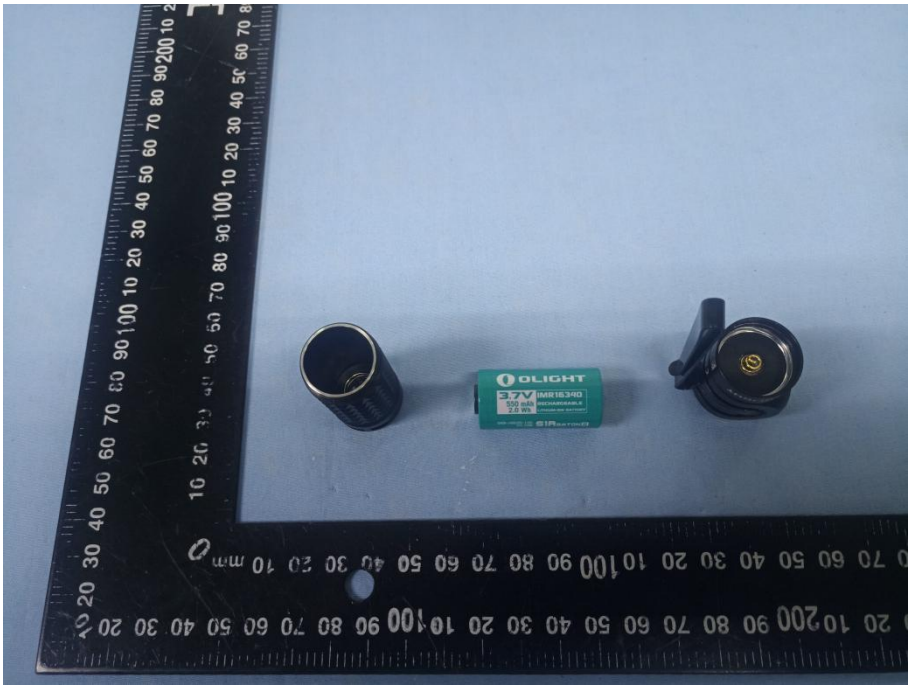
EUT View 4



EUT View 5



EUT Housing and Board View 1



Solder Board-Component View 1

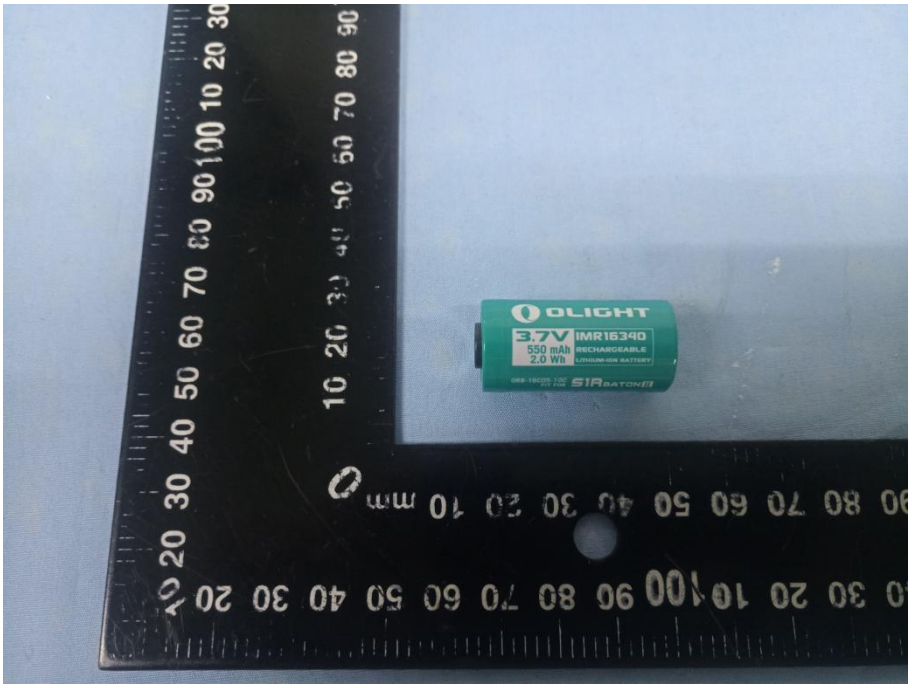


EXHIBIT 3 - TEST SETUP PHOTOGRAPHS

Conduction Emission Test View



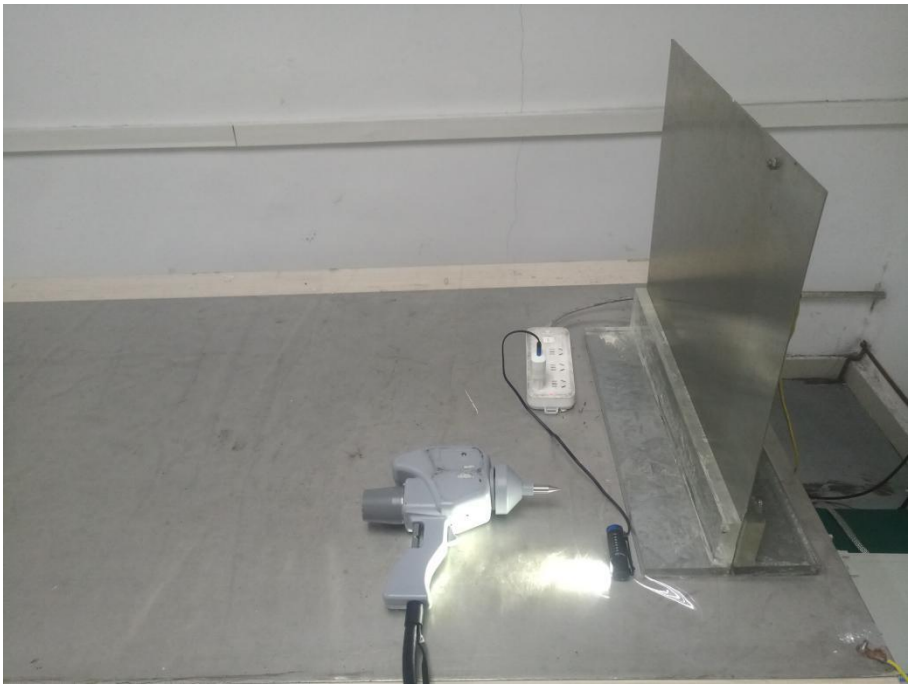
Radiation Emission Test View (9kHz to 30MHz)



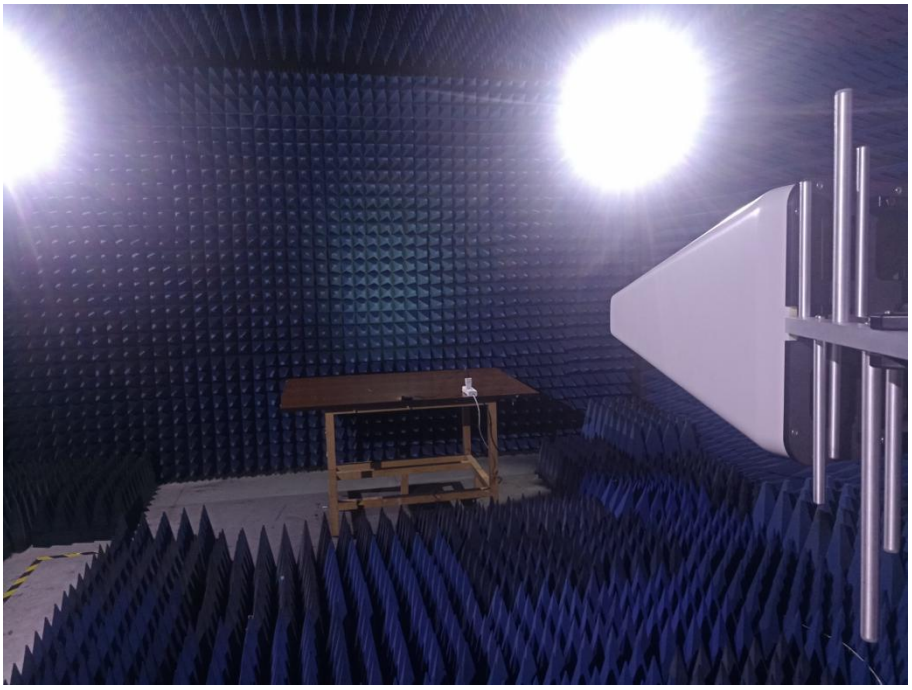
Radiation Emission Test View (30MHz to 300MHz)



EN 61000-4-2 Test View



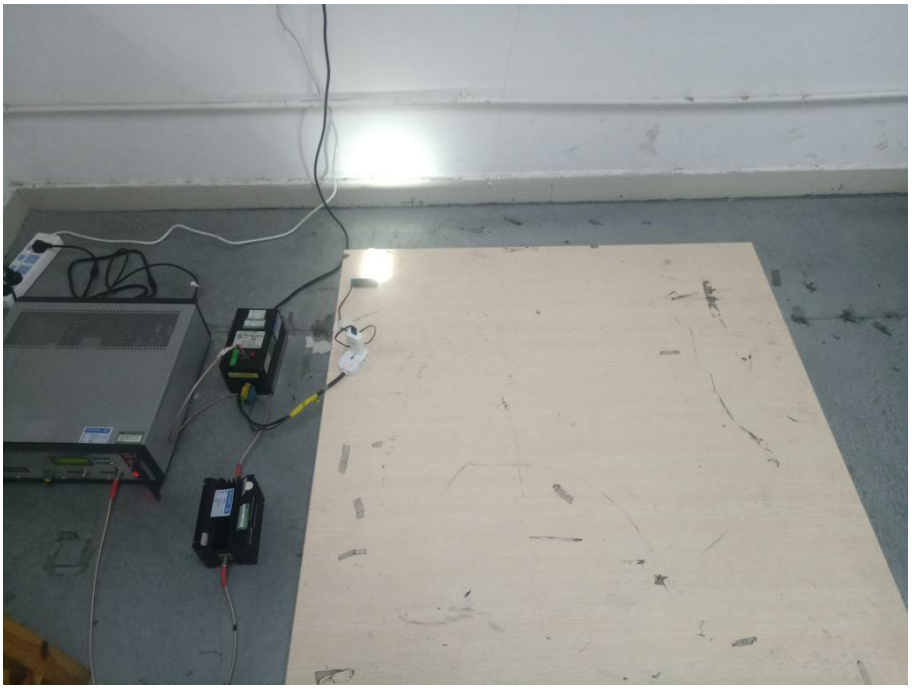
EN 61000-4-3 Test View



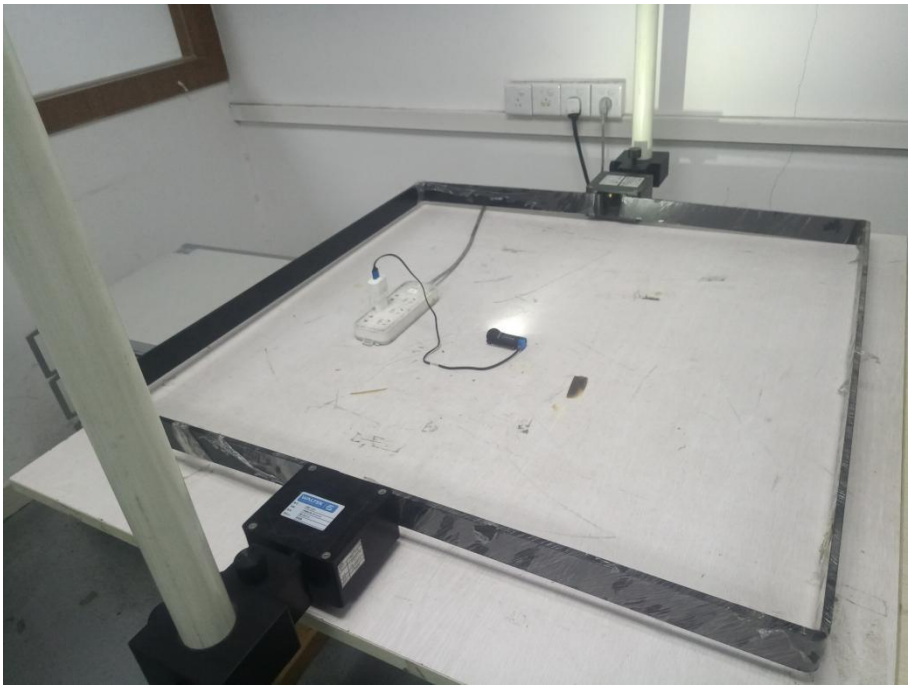
EN 61000-4-4/5 Test View



EN 61000-4-6 Test View



EN 61000-4-8 Test View



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