APPLICATION FOR EMC DIRECTIVE

On Behalf of

Shenzhen Lightvictor Technalogy Co.,Ltd

Led T8 Tube Light

Trade Name: GVC

Model: GVC-T8-150-28W, GVC-T8-150-25W, GVC-T8-150-22W, GVC-T8-120-25W, GVC-T8-120-22W, GVC-T8-120-18W, GVC-T8-90-18W, GVC-T8-90-14W, GVC-T8-60-15W, GVC-T8-60-10W

Prepared For : **Shenzhen Lightvictor Technalogy Co.,Ltd**

4th Floor, No.5-3 niujiao Road, Yanchuan Community, Yanluo Street, Baoan District, Shenzhen

Prepared By : **TMC Testing Services (Shenzhen) Co., Ltd.**

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Date of Test	:	October 24, 2020- October 29, 2020
Date of Report	:	October 29, 2020
Report Number	:	TMC201023102-E

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TEST REPORT DECLARATION

Applicant	:	Shenzhen Lightvictor Technalogy Co.,Ltd
Address	:	4th Floor, No.5-3 niujiao Road, Yanchuan Community, Yanluo Street, Baoan District, Shenzhen.
EUT Description	:	Led T8 Tube Light
Manufacturer	:	Shenzhen Lightvictor Technalogy Co.,Ltd
Address	:	4th Floor, No.5-3 niujiao Road, Yanchuan Community, Yanluo Street, Baoan District, Shenzhen.
Model Number	:	GVC-T8-150-28W, GVC-T8-150-25W, GVC-T8-150-22W, GVC-T8-120-25W, GVC-T8-120-22W, GVC-T8-120-18W, GVC-T8-90-18W, GVC-T8-90-14W, GVC-T8-60-15W, GVC-T8-60-10W

Test Standards:

FCC Part 15B:2019

The EUT described above is tested by US to determine the maximum emission levels emanating from the EUT, the maximum emission levels are compared to the FCC Part 15 Subpart Class B limits.The measurement results are contained in this test report.and TMC Testing Services (Shenzhen) Co., Ltd is assumed of full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT is to be technically compliant with the FCC requirements.

This report applies to above tested sample only and shall not be reproduced in part without written approval of TMC Testing Services (Shenzhen) Co., Ltd

Prepared by : ZI XI YIN/Assistant

Reviewer : Vivian Jiang/Supervisor

Approved & Authorized Signer : Lemon F

1. GENERAL INFORMATION

1.1. Report information

1.1.1. This report is not a certificate of quality; it only applies to the sample of the specific product/equipment given at the time of its testing. The results are not used to indicate or imply that they are application to the similar items. In addition, such results must not be used to indicate or imply that TMC approves recommends or endorses the manufacture, supplier or use of such product/equipment, or that TMC in any way guarantees the later performance of the product/equipment.

1.1.2. The sample/s mentioned in this report is/are supplied by Applicant, TMC therefore assumes no responsibility for the accuracy of information on the brand name, model number, origin of manufacture or any information supplied.

1.1.3. Additional copies of the report are available to the Applicant at an additional fee. No third part can obtain a copy of this report through TMC, unless the applicant has authorized TMC in writing to do so.

1.2. Measurement Uncertainty

Available upon request.

1.3. Test Uncertainty

Conducted Emission Uncertainty	=	±2.66dB
Radiated Emission Uncertainty	=	±4.26dB

2. PRODUCT DESCRIPTION

2.1. EUT Description

Description	:	Led T8 Tube Light
Applicant	:	Shenzhen Lightvictor Technalogy Co.,Ltd 4th Floor, No.5-3 niujiao Road, Yanchuan Community, Yanluo Street, Baoan District, Shenzhen.
Manufacturer	:	Shenzhen Lightvictor Technalogy Co.,Ltd 4th Floor, No.5-3 niujiao Road, Yanchuan Community, Yanluo Street, Baoan District, Shenzhen.
Model Number	:	GVC-T8-150-28W

2.2. Test Conditions

Temperature: 23~25℃

Relative Humidity: 55~63 %

2.3. Support Equipment List

No.	Equipment	Model No.	Serial No.	FCC ID	Trade Name	Data Cable	Power Cord
1	/	/	/	/	/	/	/

3. TEST RESULTS SUMMARY

Table 1 Test Results Summary

Test Items	Test Results
Conducted disturbance	Pass
Radiated disturbance	Pass

4. TEST EQUIPMENT USED

4.1. For Conducted Emission Test

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Test Receiver	Rohde & Schwarz	ESHS30	828985/018	Jun 01,2020	1 Year
2.	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100006	Jun 01,2020	1 Year
3.	L.I.S.N.	Rohde & Schwarz	ESH2-Z5	834549/005	Jun 01,2020	1 Year
4.	Conical	Emtek	N/A	N/A	N/A	N/A
5.	Voltage Probe	Schwarzbeck	TK9416	N/A	Jun. 01, 2020	1 Year
6.	Coaxial Switch	Anritsu	MP59B	6100214550	Jun 01,2020	1 Year

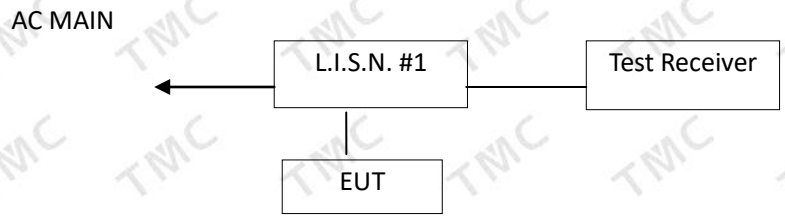
4.2. For Radiated Emission Measurement

Anechoic Chamber

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum Analyzer	ANRITSU	MS2661C	6200140915	Jun 01,2020	1 Year
2.	Test Receiver	Rohde&Schwarz	ESC830	828982/018	Jun 01,2020	1 Year
3.	Bilog Antenna	Schwarzbeck	VULB9163	142	Jun 01,2020	1 Year
4.	50 Coaxial Switch	Anritsu Corp	MP59B	6100237248	Jun 01,2020	1 Year
5.	Cable	Schwarzbeck	AK9513	ACRX1	Jun 01,2020	1 Year
6.	Cable	Rosenberger	N/A	FR2RX2	Jun 01,2020	1 Year
7.	Cable	Schwarzbeck	AK9513	CRRX2	Jun 01,2020	1 Year
8.	Cable	Schwarzbeck	AK9513	CRRX2	Jun 01,2020	1 Year
9.	Single Phase Power Line Filter	MPE	23332C	N/A	Jun 01,2020	1 Year
10.	Single Phase Power Line Filter	MPE	23333C	N/A	Jun 01,2020	1 Year
11.	Signal Generator	HP	864A	3625U00573	Jun 01,2020	1 Year

5. CONDUCTED EMISSION TEST

5.1. Block Diagram of Test Setup



(EUT: Led T8 Tube Light)

5.2. Test Standard

FCC Part 15 B:2019

5.3. Conducted Emission Limit (Class B)

Frequency MHz	Limits dB(μV)	
	Quasi-peak Level	Average Level
0.15 ~ 0.50	66 ~ 56*	56 ~ 46*
0.50 ~ 5.00	56	46
5.00 ~ 30.00	60	50

Notes: 1. *Decreasing linearly with logarithm of frequency.

5.4. EUT Configuration on Test

The following equipments are installed on conducted emission test to meet Part 15 requirement and operating in a manner, which tends to maximize its emission characteristics in a normal application.

5.4.1.EUT Information

Model Number**:** GVC-T8-150-28W

5.5. Operating Condition of EUT

5.5.1.Setup the EUT and simulators as shown in Section 5.1.

5.5.2.Turn on the power of all equipments.

5.5.3.Let the EUT work in test modes (EUT Working) and test it.

5.6. Test Procedure

The EUT is put on a table of non-conducting material that is 80cm high. The vertical conducting wall of shielding is located 40cm to the rear of the EUT. The power line of the EUT is connected to the AC mains through a Artificial Mains Network (A.M.N.). A EMI test receiver (R&S Test Receiver ESCS30) is used to test the emissions form both sides of AC line. The bandwidth of EMI test receiver is set at 9kHz.

The bandwidth of the test receiver (R&S Test Receiver ESHS30) is set at 10KHz. All the test results are listed in Section 5.7. and all the scanning waveform are attached within **Appendix I**

5.7. Test Result

Pass

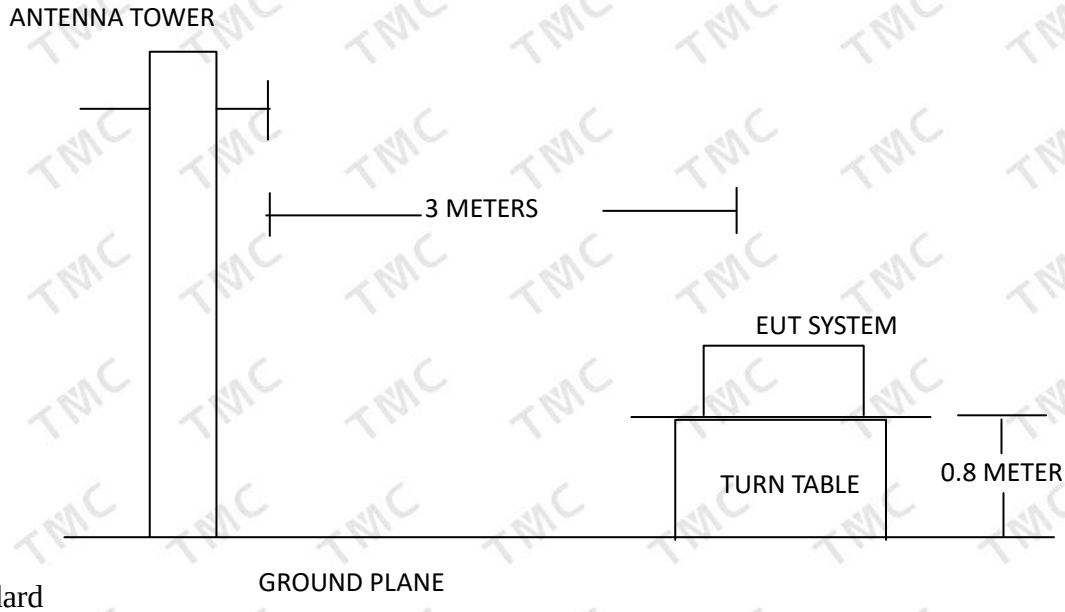
6. RADIATED EMISSION MEASUREMENT

6.1. Block Diagram of EUT Configuration

6.1.1.Block Diagram of connection between the EUT and the simulators

(EUT: Led T8 Tube Light)

6.1.2.Anechoic Chamber Test Setup Diagram



6.2. Test Standard

FCC Part 15 B:2019

6.3. Radiated Emission Limit (Class B)

FREQUENCY (MHz)	DISTANCE (Meters)	FIELD STRENGTHS LIMITS (dBμV/m)
30 ~ 88	3	40.0
88 ~ 216	3	43.5
216 ~ 960	3	46.0
960 ~ 1000	3	54.0

Note:(1) The smaller limit shall apply at the edge 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 or system.

6.4. EUT Configuration on Test

The following equipment are installed on Radiated Emission Measurement to meet the Commission requirements and operating regulations in a manner which tends to maximize Its emission characteristics in normal application.

6.5. Operating Condition of EUT

6.5.1.Setup the EUT as shown on Section 6.1.2

6.5.2.Turn on the power of all equipments.

6.5.3.Let the EUT work in test mode (EUT working) and measure it.

6.6. Test Procedure

The EUT is placed on a turn table which is 0.8 meter above 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 move up and down between 1 to 4 meters to find out the maximum emission level. Broadband antenna (calibrated by dipole antenna) are used as a receiving antenna. Both horizontal and vertical polarization of the antenna are set on measurement.

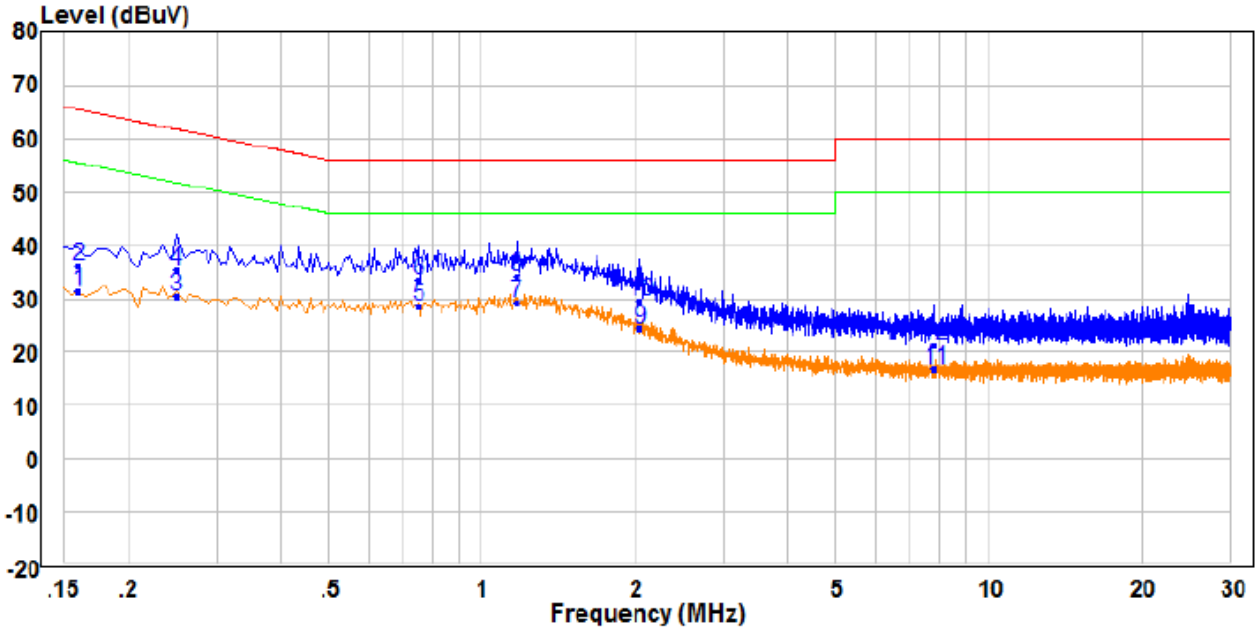
The bandwidth setting on the test receiver (R&S TEST RECEIVER ESCS20) is 120 KHz. The EUT is tested in Anechoic Chamber. The frequency range from 30MHz to 1000 MHz is checked. All the test results are listed in Section 6.7. and all the scanning waveform are attached within **Appendix II**

6.7. Test Result

PASS

Test Mode: operating

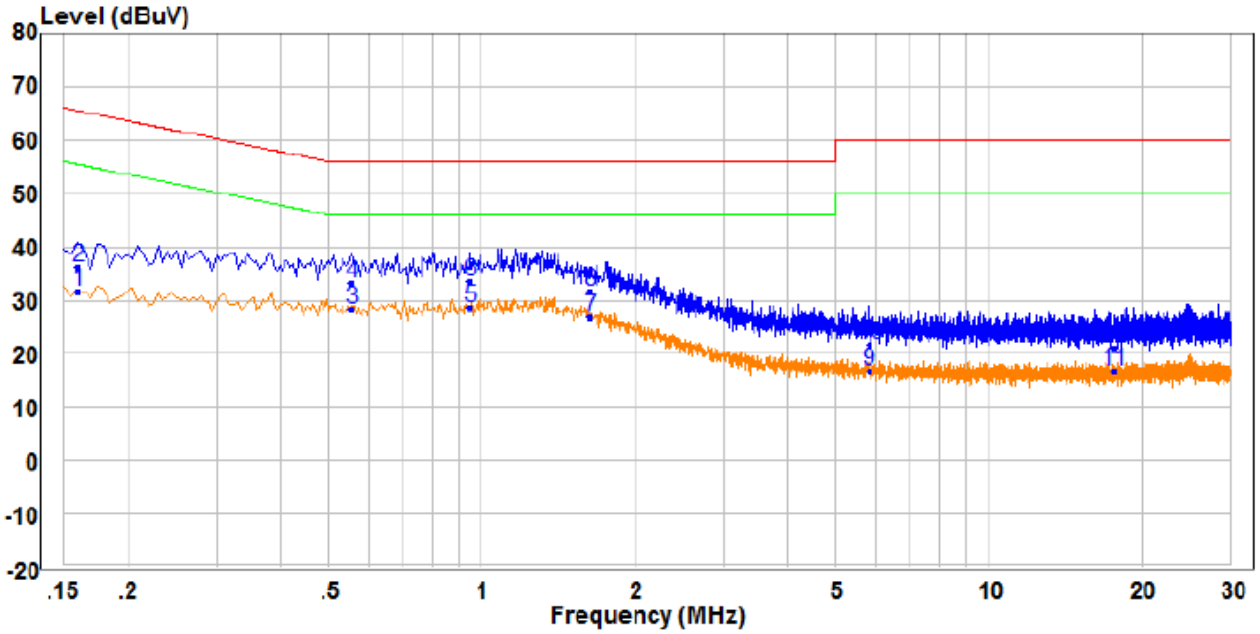
APPENDIX I



Trace: 1

Condition : FCC CLASS-B QP Neutral

		Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark	Pol/Phase
		MHz	dBuV	dB	dBuV	dBuV	dB		
1		0.160	21.80	9.48	31.28	55.46	-24.18	Average	Neutral
2		0.160	26.81	9.48	36.29	65.46	-29.17	QP	Neutral
3		0.250	21.03	9.48	30.51	51.76	-21.25	Average	Neutral
4		0.250	25.98	9.48	35.46	61.76	-26.30	QP	Neutral
5		0.750	18.89	9.82	28.71	46.00	-17.29	Average	Neutral
6		0.750	23.58	9.82	33.40	56.00	-22.60	QP	Neutral
7	PP	1.170	19.63	9.72	29.35	46.00	-16.65	Average	Neutral
8	QP	1.170	24.49	9.72	34.21	56.00	-21.79	QP	Neutral
9		2.055	14.82	9.72	24.54	46.00	-21.46	Average	Neutral
10		2.055	19.89	9.72	29.61	56.00	-26.39	QP	Neutral
11		7.850	6.93	9.83	16.76	50.00	-33.24	Average	Neutral
12		7.850	11.60	9.83	21.43	60.00	-38.57	QP	Neutral

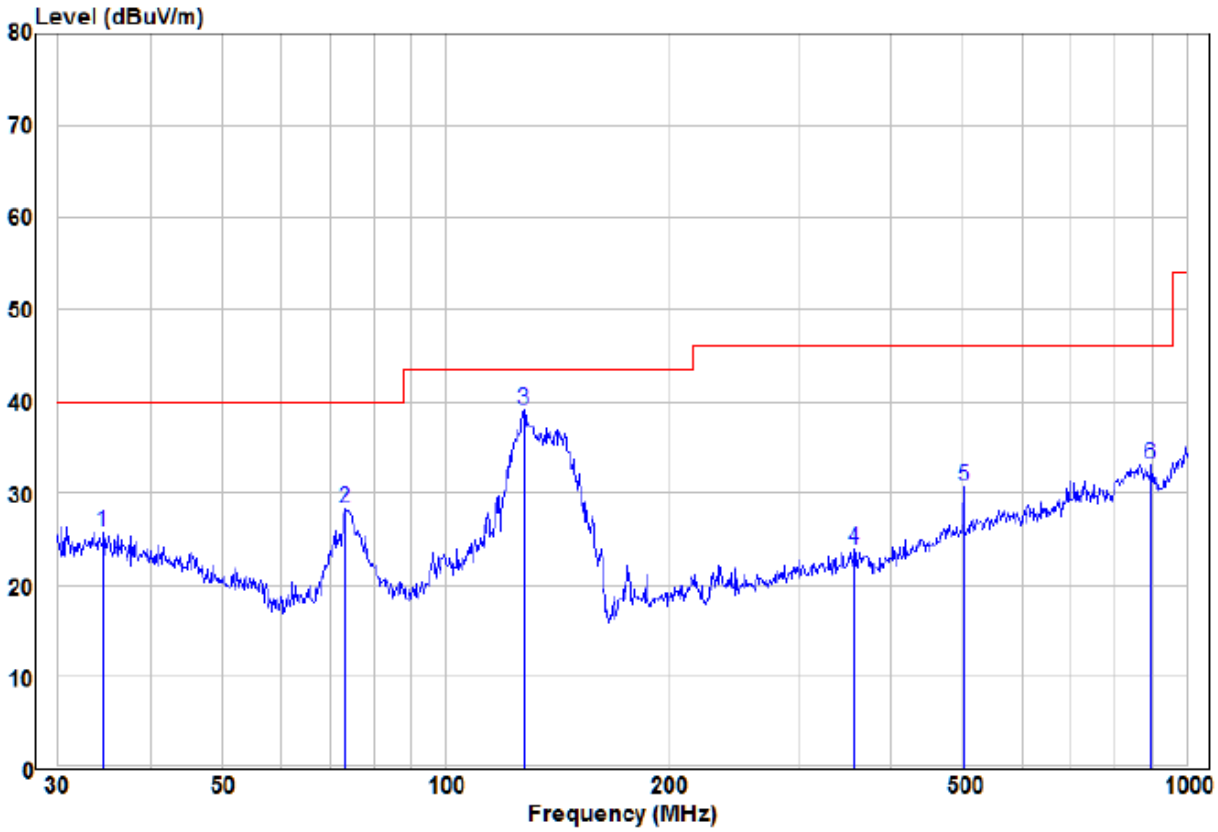


Trace: 1

Condition : FCC CLASS-B QP Line

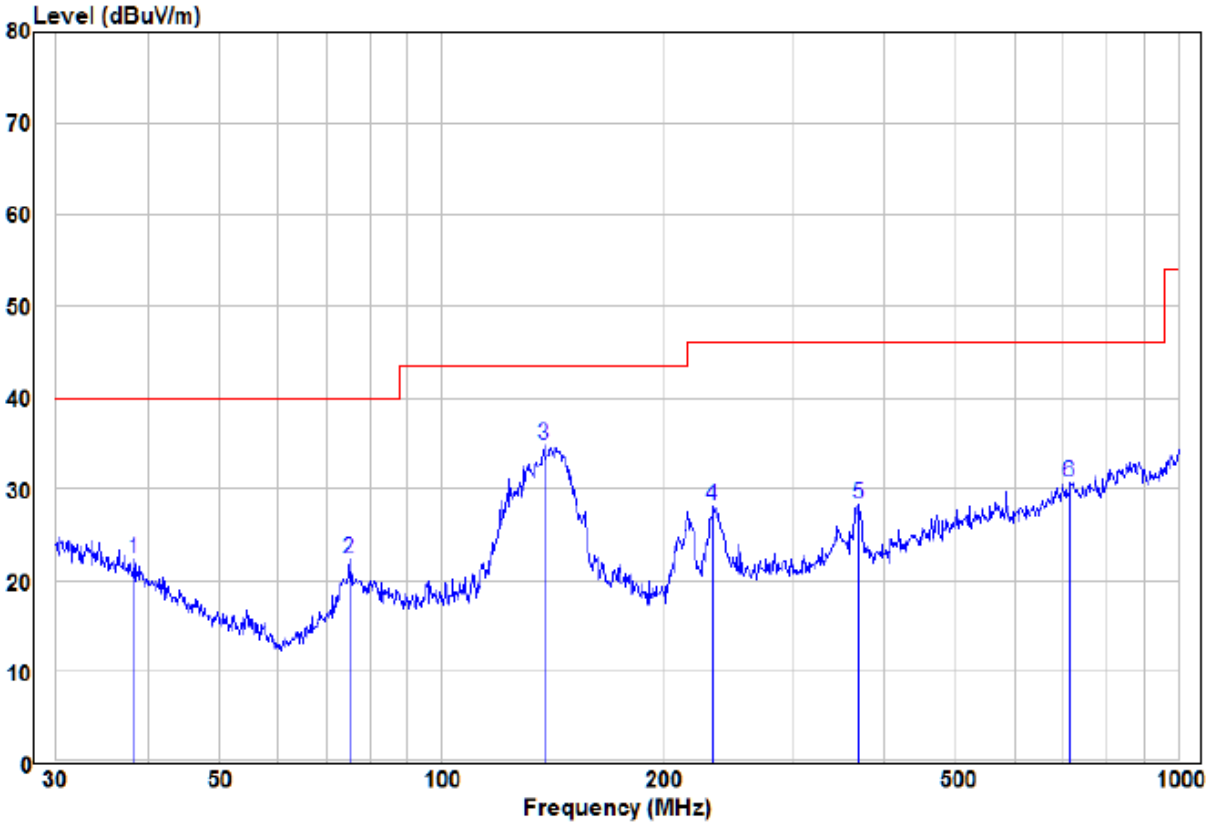
		Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark	Pol/Phase
		MHz	dBuV	dB	dBuV	dBuV	dB		
1		0.160	22.11	9.49	31.60	55.46	-23.86	Average	Line
2		0.160	26.82	9.49	36.31	65.46	-29.15	QP	Line
3		0.555	18.63	9.63	28.26	46.00	-17.74	Average	Line
4		0.555	23.64	9.63	33.27	56.00	-22.73	QP	Line
5	PP	0.950	19.05	9.58	28.63	46.00	-17.37	Average	Line
6	QP	0.950	23.89	9.58	33.47	56.00	-22.53	QP	Line
7		1.635	17.21	9.52	26.73	46.00	-19.27	Average	Line
8		1.635	22.31	9.52	31.83	56.00	-24.17	QP	Line
9		5.830	6.99	9.73	16.72	50.00	-33.28	Average	Line
10		5.830	11.89	9.73	21.62	60.00	-38.38	QP	Line
11		17.705	6.74	10.00	16.74	50.00	-33.26	Average	Line
12		17.705	11.17	10.00	21.17	60.00	-38.83	QP	Line

APPENDIX II



Condition: FCC PART15B CLASS B VERTICAL

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark	Pol/Phase
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
1	34.52	10.97	14.73	25.70	40.00	-14.30	Peak	VERTICAL
2	73.36	19.56	8.70	28.26	40.00	-11.74	Peak	VERTICAL
3 pp	127.66	28.73	10.41	39.14	43.50	-4.36	Peak	VERTICAL
4	356.68	8.72	15.11	23.83	46.00	-22.17	Peak	VERTICAL
5	501.18	12.49	18.29	30.78	46.00	-15.22	Peak	VERTICAL
6	897.00	9.47	23.65	33.12	46.00	-12.88	Peak	VERTICAL



Condition: FCC PART15B CLASS B HORIZONTAL

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark	Pol/Phase
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
1	38.35	8.89	13.40	22.29	40.00	-17.71	Peak	HORIZONTAL
2	75.18	13.28	9.00	22.28	40.00	-17.72	Peak	HORIZONTAL
3 pp	137.90	26.30	8.52	34.82	43.50	-8.68	Peak	HORIZONTAL
4	234.17	17.26	10.91	28.17	46.00	-17.83	Peak	HORIZONTAL
5	369.40	12.98	15.42	28.40	46.00	-17.60	Peak	HORIZONTAL
6	714.17	9.51	21.19	30.70	46.00	-15.30	Peak	HORIZONTAL

APPENDIX III

Photo 1 Radiated Emission Test

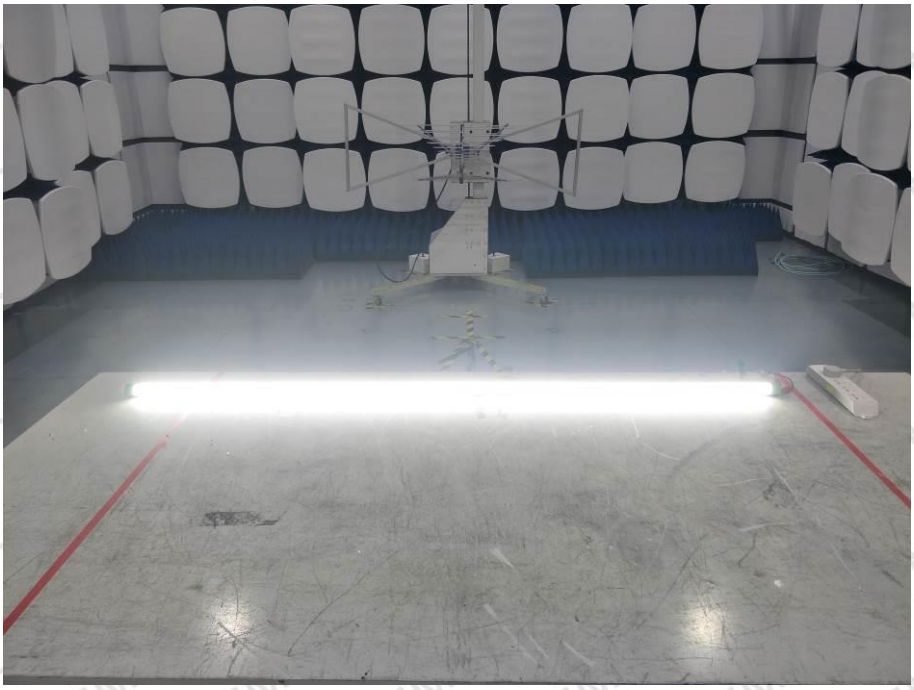


Photo 2 Conducted Emission Test

Photo 3 General Appearance of the EUT

Photo 4 General Appearance of the EUT

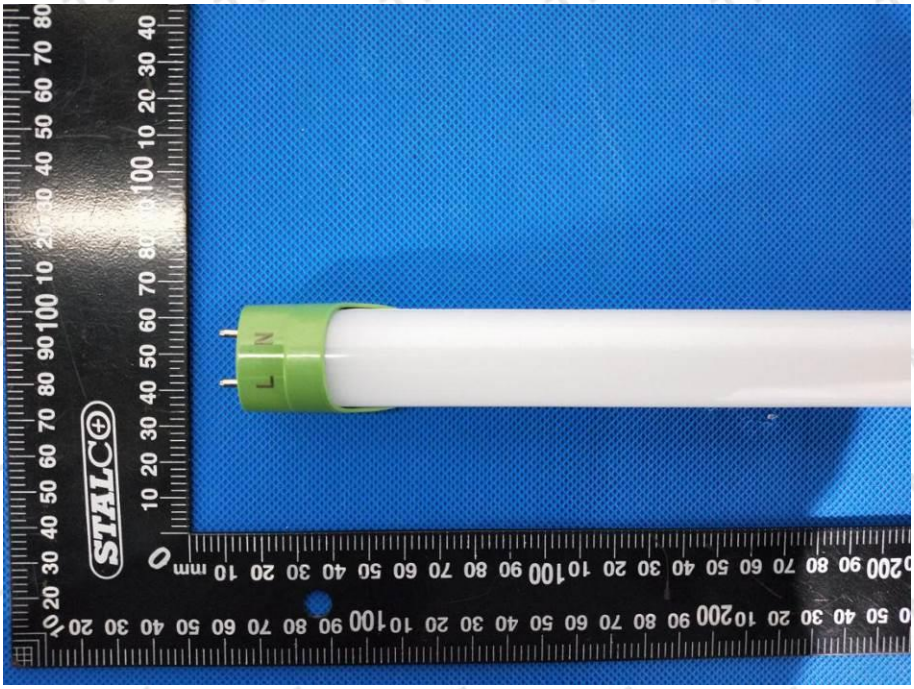


Photo 5 General Appearance of the EUT

Photo 6 General Appearance of the EUT

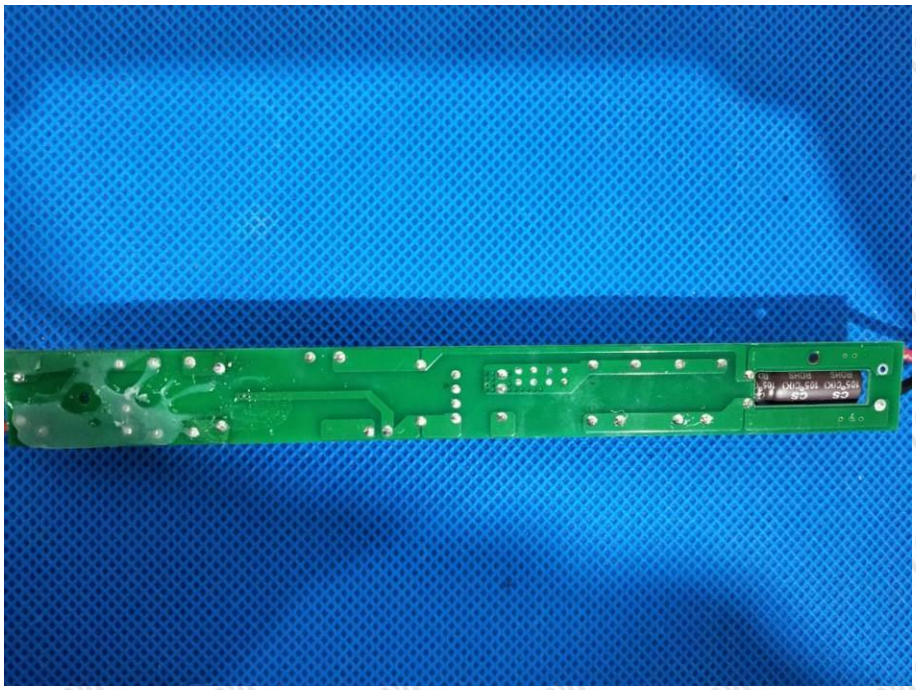


Photo 7 General Appearance of the EUT

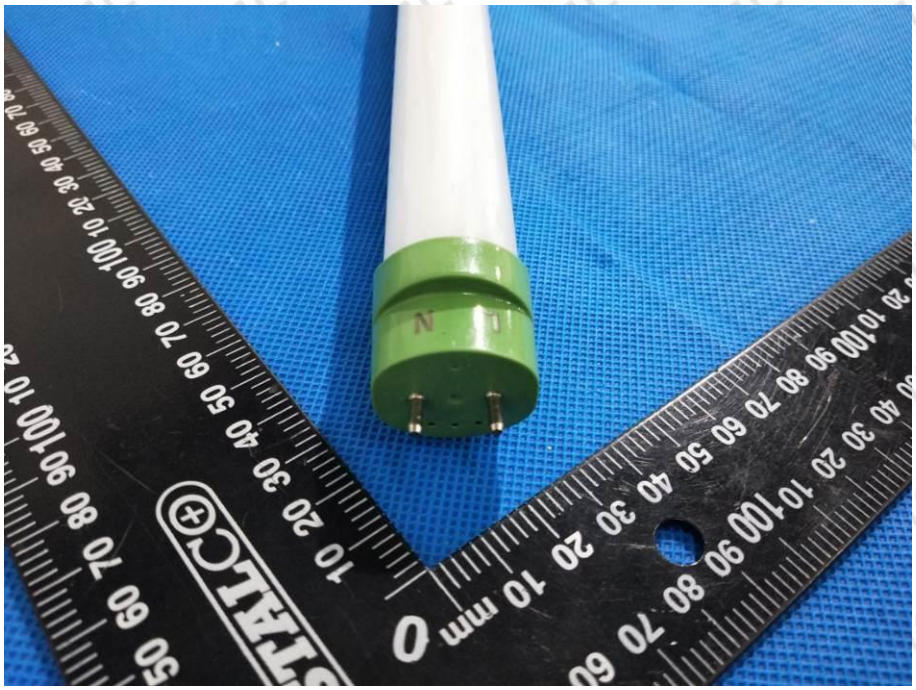


Photo 8 General Appearance of the EUT

Photo 9 General Appearance of the EUT

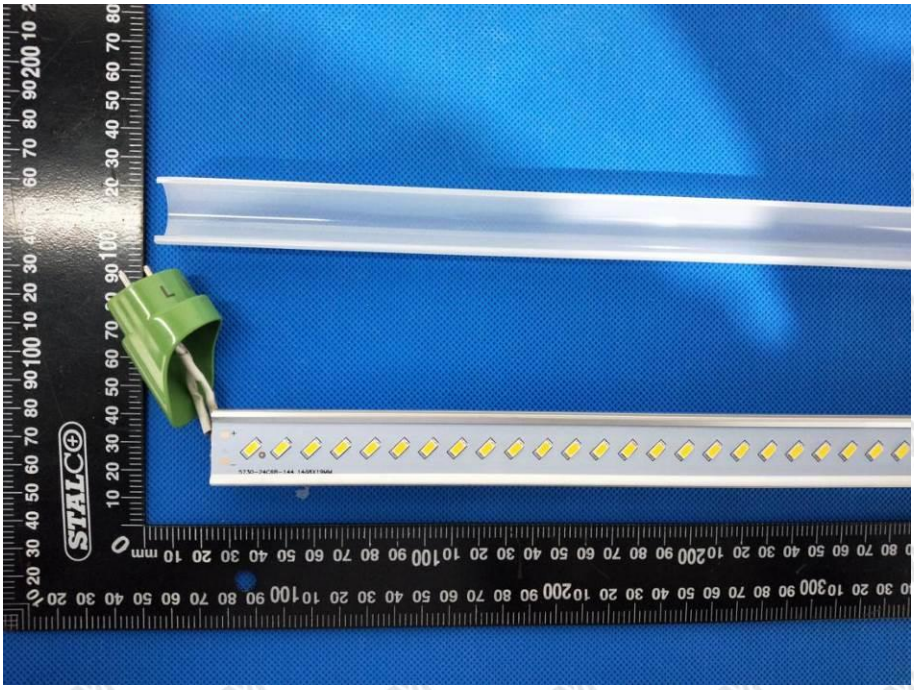


Photo 10 General Appearance of the EUT

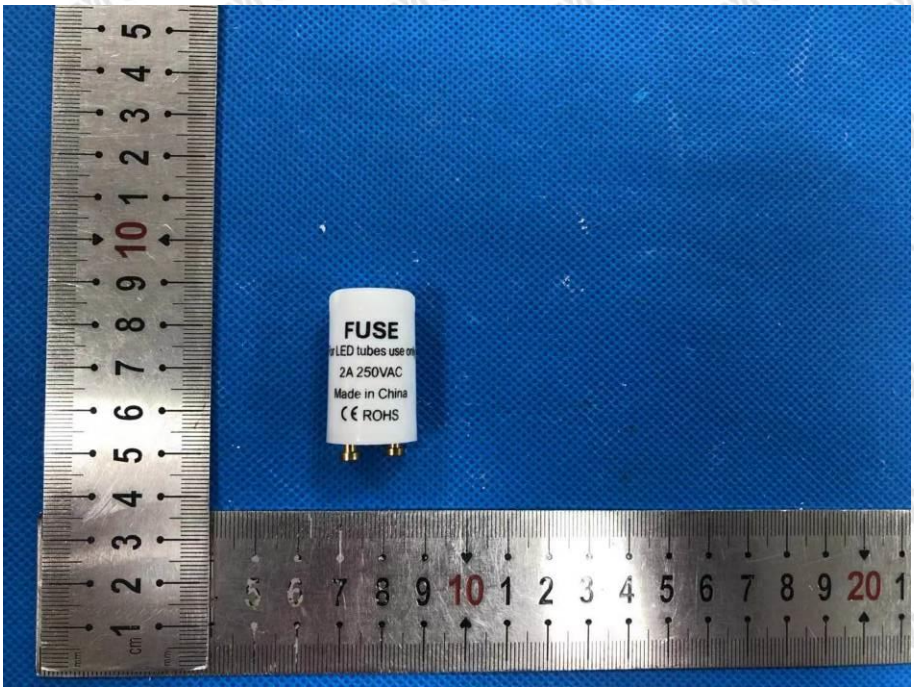


Photo 11 General Appearance of the EUT

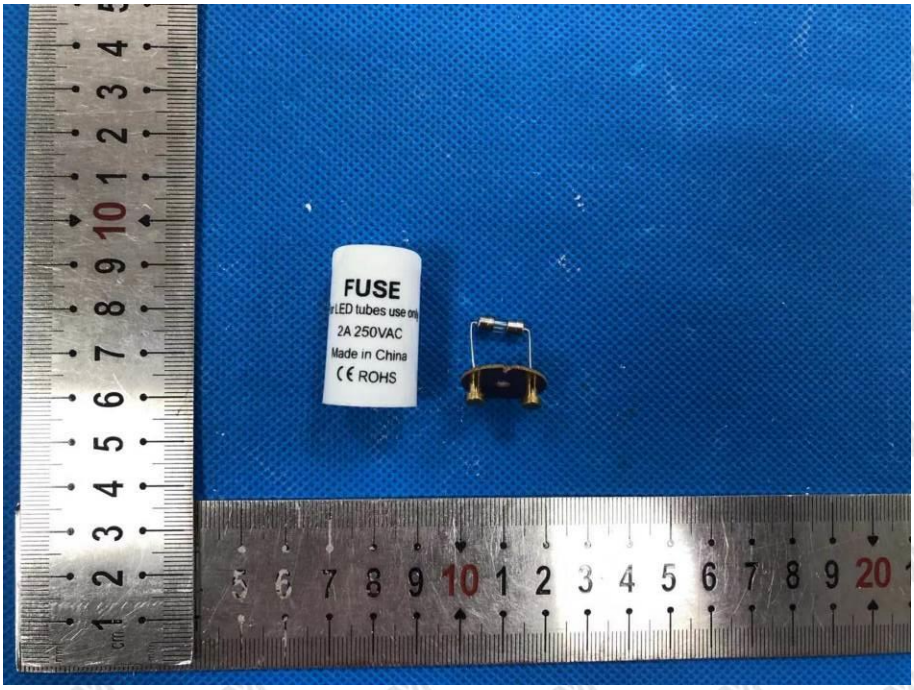
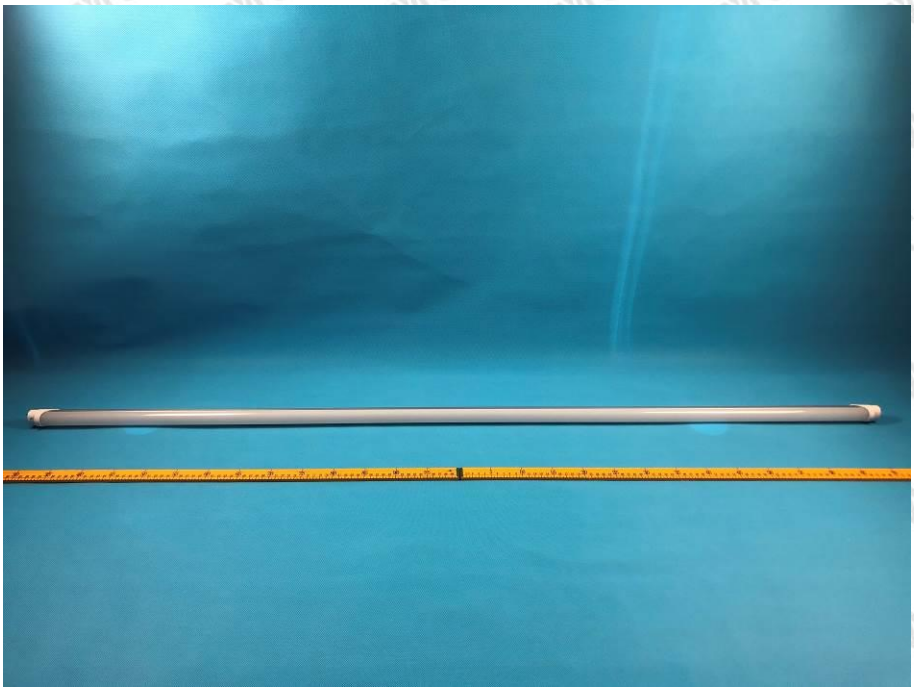


Photo 12 General Appearance of the additional model



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