TEST REPORT

Applicant:	ARTIKA FOR LIVING INC
Address of Applicant:	1756 50th avenue, Lachine Quebec, Canada H8T 2V5
Manufacturer/ Factory:	ZHONGSHAN WEIHUA LIGHTING TECHNOLGY CO .,LTD.
Address of Manufacturer/ Factory:	No.13 YOUNG YI 2RD HENGLAN TOWN ZHONGSHAN CITY GUANGDONG PROVINCE CHINA

Equipment Under Test (EUT)

Product Name:	OUTDOOR LIGHT
Model No.:	OUT-WTC-XXXXX (The suffix “XXXXX” can be two to five character denotes product color or customer code.)
FCC ID:	2AUHG-OUT-WTC
Applicable standards:	FCC CFR Title 47 Part 15 Subpart B
Date of sample receipt:	September 30, 2022
Date of Test:	September 30, 2022-October 08, 2022
Date of report issued:	October 09, 2022
Test Result :	Pass *

* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:

Robinson Luo
Laboratory Manager

2 Version

Version No.	Date	Description
00	October 09, 2022	Original

Prepared by: **Date:** October 09, 2022

Project Engineer

Reviewed by: **Date:** October 09, 2022

Reviewer

3 Contents

4 Test Summary

Test Item	Test Requirement	Test Method	Class / Severity	Result
Conducted Emission	FCC Part15.107	ANSI C63.4a	Class B	PASS
Radiated Emissions #	FCC Part15.109	ANSI C63.4a	Class B	PASS

Remark:

1. Pass: The EUT complies with the essential requirements in the standard.

2. # Refer to FCC Part 15.33 (b)(1) conditional testing procedure :

Highest frequency generated or used in the device or on which the device operates or tunes (MHz)	*Upper frequency of measurement range (MHz)*
Below 1.705	*30*
1.705-108	*1000*
108-500	*2000*
500-1000	*5000*
Above 1000	*5th harmonic of the highest frequency or 40 GHz, whichever is lower.*

Measurement Uncertainty

Test Item	Frequency Range	Measurement Uncertainty	Notes
Radiated Emission	30MHz-200MHz	3.8039dB	(1)
Radiated Emission	200MHz-1GHz	3.9679dB	(1)
Radiated Emission	1GHz-18GHz	4.29dB	(1)
AC Power Line Conducted Emission	0.15MHz ~ 30MHz	3.44dB	(1)
Note (1): The measurement uncertainty is for coverage factor of k=2 and a level of confidence of 95%.			

5 General Information

5.1 General Description of EUT

Product Name:	OUTDOOR LIGHT
Model No.:	OUT-WTC-XXXXX (The suffix “XXXXX” can be two to five character denotes product color or customer code.)
Remark:	All above models are identical in the same PCB layout, interior structure and electrical circuits. The differences are product color and model name for commercial purpose.
Power supply:	110-135Vac, 50/60Hz

5.2 Test mode and Test voltage

Test mode:	
Operation mode	Keep the EUT in lighting mode.
Test voltage:	
AC 120V/60Hz	

5.3 Description of Support Units

None.

5.4 Deviation from Standards

None.

5.5 Abnormalities from Standard Conditions

None.

5.6 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

● **FCC —Registration No.: 381383**

Designation Number: CN5029

Global United Technology Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in files.

● **IC —Registration No.: 9079A**

CAB identifier: CN0091

The 3m Semi-anechoic chamber of Global United Technology Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing.

● **NVLAP (LAB CODE:600179-0)**

Global United Technology Services Co., Ltd., is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP).

5.7 Test Location

Tests were performed at:

Global United Technology Services Co., Ltd.
Address: No. 123-128, Tower A, Jinyuan Business Building, No.2, Laodong Industrial Zone, Xixiang Road, Baoan District, Shenzhen, Guangdong, China 518102
Tel: 0755-27798480 Fax: 0755-27798960

6 Test Instruments list

Radiated Emission:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	3m Semi- Anechoic Chamber	ZhongYu Electron	9.2(L)*6.2(W)* 6.4(H)	GTS250	July 02, 2020	July 01, 2025
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A
3	EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	April 22, 2022	April 21, 2023
4	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9168	GTS640	March 21, 2022	March 20, 2023
5	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120 D	GTS208	June 12, 2022	June 11, 2023
6	Horn Antenna	ETS-LINDGREN	3160	GTS217	June 23, 2022	June 22, 2023
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
8	Coaxial Cable	GTS	N/A	GTS213	April 22, 2022	April 21, 2023
9	Coaxial Cable	GTS	N/A	GTS211	April 22, 2022	April 21, 2023
10	Coaxial cable	GTS	N/A	GTS210	April 22, 2022	April 21, 2023
11	Coaxial Cable	GTS	N/A	GTS212	April 22, 2022	April 21, 2023
12	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	April 22, 2022	April 21, 2023
13	Amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	June 23, 2022	June 22, 2023
14	Band filter	Amindeon	82346	GTS219	June 23, 2022	June 22, 2023
15	Power Meter	Anritsu	ML2495A	GTS540	June 23, 2022	June 22, 2023
16	Power Sensor	Anritsu	MA2411B	GTS541	June 23, 2022	June 22, 2023
17	Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	GTS575	April 22, 2022	April 21, 2023
18	Splitter	Agilent	11636B	GTS237	June 23, 2022	June 22, 2023
19	Loop Antenna	ZHINAN	ZN30900A	GTS534	Nov. 30, 2021	Nov. 29, 2022
20	Broadband Preamplifier	SCHWARZBECK	BBV9718	GTS535	April 22, 2022	April 21, 2023
21	Breitband hornantenna	SCHWARZBECK	BBHA 9170	GTS579	Oct. 17, 2021	Oct. 16, 2022
22	Amplifier	TDK	PA-02-02	GTS574	Oct. 17, 2021	Oct. 16, 2022
23	Amplifier	TDK	PA-02-03	GTS576	Oct. 17, 2021	Oct. 16, 2022
24	PSA Series Spectrum Analyzer	Rohde & Schwarz	FSP	GTS578	June 23, 2022	June 22, 2023
25	Amplifier(1GHz-26.5GHz)	HP	8449B	GTS601	April 22, 2022	April 21, 2023

Conducted Emission						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	Shielding Room	ZhongYu Electron	7.3(L)x3.1(W)x2.9(H)	GTS252	May 14, 2022	May 13, 2025
2	EMI Test Receiver	R&S	ESCI 7	GTS552	April 24, 2022	April 23, 2023
3	Coaxial Switch	ANRITSU CORP	MP59B	GTS225	June 23, 2022	June 22, 2023
4	ENV216 2-L-V-NETZNACHB.DE	ROHDE&SCHWARZ	ENV216	GTS226	April 22, 2022	April 21, 2023
5	Coaxial Cable	GTS	N/A	GTS227	N/A	N/A
6	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
7	Thermo meter	JINCHUANG	GSP-8A	GTS639	April 28, 2022	April 27, 2023
8	Absorbing clamp	Elektronik-Feinmechanik	MDS21	GTS229	April 15, 2022	April 14, 2023
9	ISN	SCHWARZBECK	NTFM 8158	GTS565	April 22, 2022	April 21, 2023
10	High voltage probe	SCHWARZBECK	TK9420	GTS537	April 22, 2022	April 21, 2023

General used equipment:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	Humidity/ Temperature Indicator	KTJ	TA328	GTS243	April 25, 2022	April 24, 2023
2	Barometer	KUMAO	SF132	GTS647	July 26, 2022	July 25, 2023

7 Test Results and Measurement Data

7.1 Radiated Emission

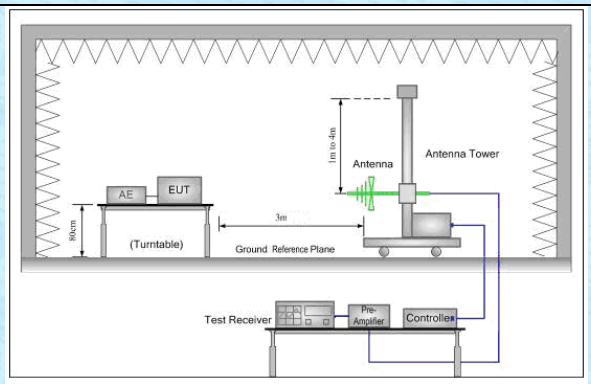
Test Requirement:	FCC Part15 B Section 15.109
Test Method:	ANSI C63.4a:2017
Test Frequency Range:	30MHz to 1GHz
Test site:	Measurement Distance: 3m (Semi-Anechoic Chamber)
Receiver setup:	

Frequency	Detector	RBW	VBW	Value
30MHz-1GHz	Quasi-peak	120kHz	300kHz	Quasi-peak

Limit:

Frequency	Limit (dBμV/m @3m)	Value
30MHz-88MHz	40.00	Quasi-peak
88MHz-216MHz	43.50	Quasi-peak
216MHz-960MHz	46.00	Quasi-peak
960MHz-1GHz	54.00	Quasi-peak

Test setup:



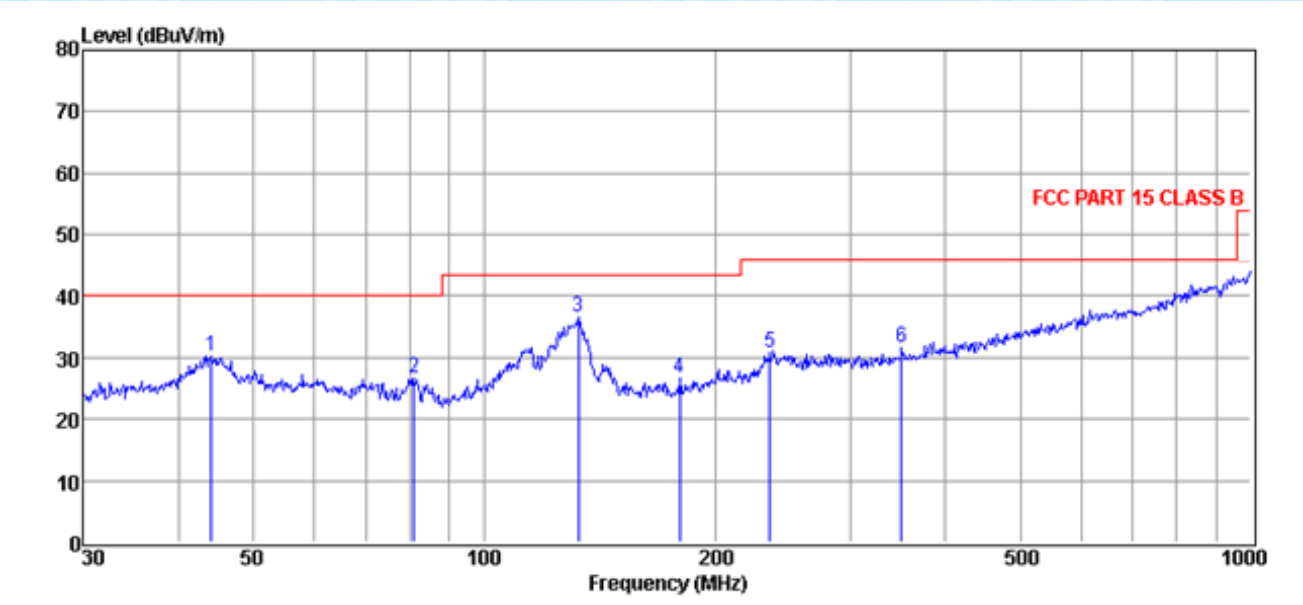
Test Procedure:

1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
6. If the emission level of the EUT in peak mode was 10dB lower than

	the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.					
Test environment:	Temp.:	25 °C	Humid.:	52%	Press.:	1 012mbar
Test Instruments:	Refer to section 6 for details					
Test mode:	Refer to section 5.2 for details.					
Test results:	Pass					

Measurement Data

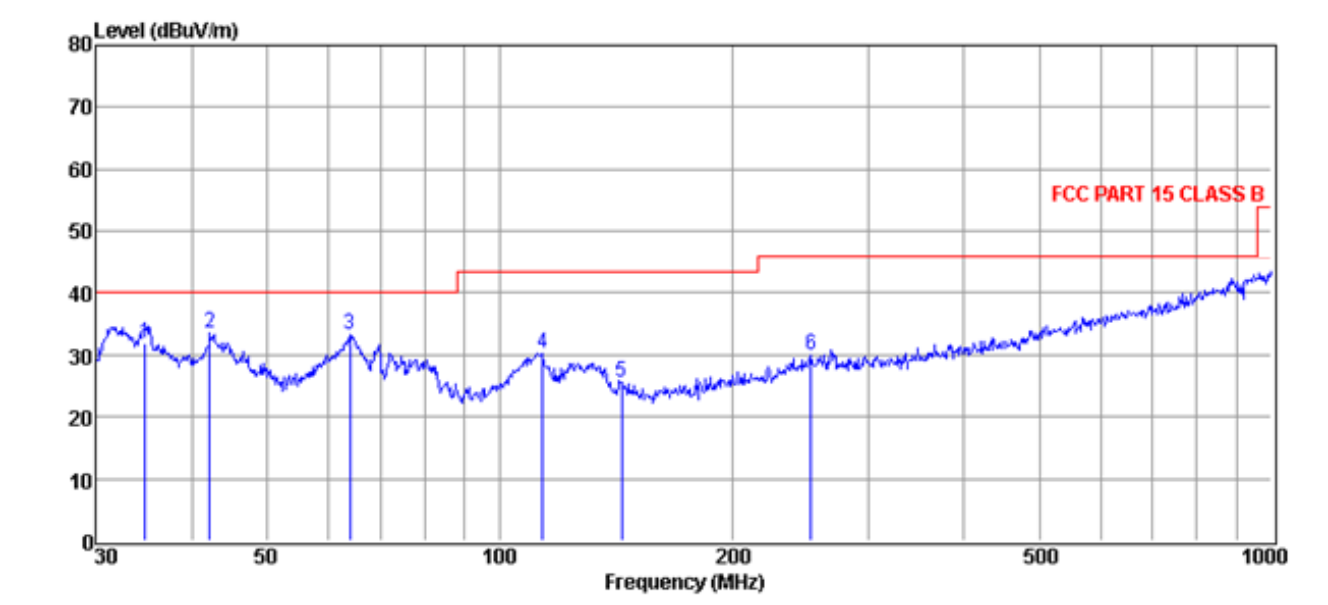
Test mode:	Operation mode	Antenna Polarity:	Horizontal



Quasi-peak measurement:

Item (Mark)	Freq (MHz)	Read Level (dBµV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBµV/m)	Limit Line (dBµV/m)	Over Limit (dB)	Detector	Polarization
1	44.12	12.77	16.84	0.00	0.68	30.29	40.00	-9.71	Peak	HORIZONTAL
2	80.93	17.87	8.08	0.00	0.74	26.69	40.00	-13.31	Peak	HORIZONTAL
3	132.69	24.80	10.65	0.00	1.11	36.56	43.50	-6.94	Peak	HORIZONTAL
4	180.02	15.21	10.20	0.00	1.37	26.78	43.50	-16.72	Peak	HORIZONTAL
5	235.82	15.36	13.72	0.00	1.76	30.84	46.00	-15.16	Peak	HORIZONTAL
6	350.48	13.52	15.61	0.00	2.60	31.73	46.00	-14.27	Peak	HORIZONTAL

Test mode:	Operation mode	Antenna Polarity:	Vertical

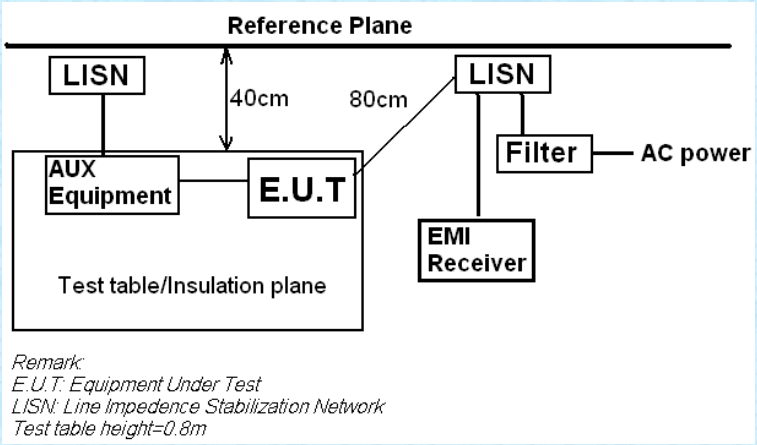


Quasi-peak measurement:

Item (Mark)	Freq (MHz)	Read Level (dBµV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBµV/m)	Limit Line (dBµV/m)	Over Limit (dB)	Detector	Polarization
1	34.76	19.55	11.63	0.00	0.60	31.78	40.00	-8.22	QP	VERTICAL
2	42.15	17.22	15.70	0.00	0.63	33.55	40.00	-6.45	Peak	VERTICAL
3	63.98	21.31	11.17	0.00	0.67	33.15	40.00	-6.85	Peak	VERTICAL
4	113.71	16.84	12.50	0.00	1.01	30.35	43.50	-13.15	Peak	VERTICAL
5	143.83	13.86	10.54	0.00	1.23	25.63	43.50	-17.87	Peak	VERTICAL
6	252.95	13.59	14.32	0.00	1.99	29.90	46.00	-16.10	Peak	VERTICAL

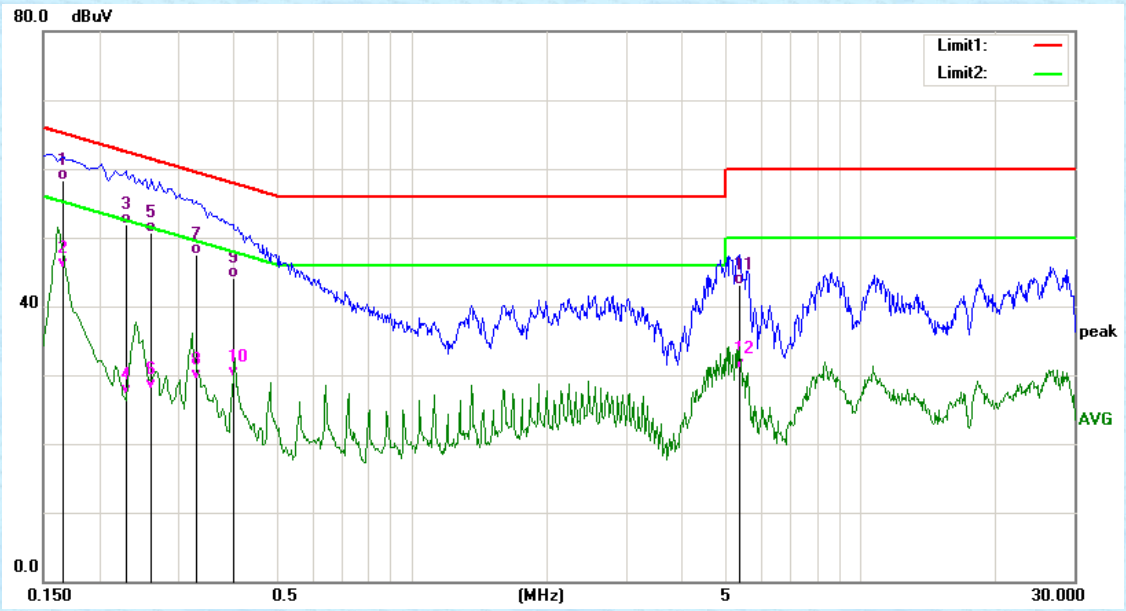
Note:
The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:
Final Test Level =Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor

7.2 Conducted Emissions

Test Requirement:	FCC Part15 B Section 15.107
Test Method:	ANSI C63.4a:2017
Test Frequency Range:	150kHz to 30MHz
Class / Severity:	Class B
Receiver setup:	RBW=9kHz, VBW=30kHz
Limit:	Frequency range (MHz) / Limit (dBµV): Quasi-peak / Average 0.15-0.5: 66 to 56* / 56 to 46* 0.5-5: 56 / 46 5-30: 60 / 50 * Decreases with the logarithm of the frequency.
Test setup:	 *Remark:* *E.U.T: Equipment Under Test* *LISN: Line Impedence Stabilization Network* *Test table height=0.8m*
Test procedure	1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network(L.I.S.N.). The provide a 50ohm/50uH coupling impedance for the measuring equipment. 2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refers to the block diagram of the test setup and photographs). 3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4a:2017 on conducted measurement.
Test environment:	Temp.: 25 °C / Humid.: 52% / Press.: 1 012mbar
Test Instruments:	Refer to section 6 for details
Test mode:	Refer to section 5.2 for details.
Test results:	Pass

Measurement Data

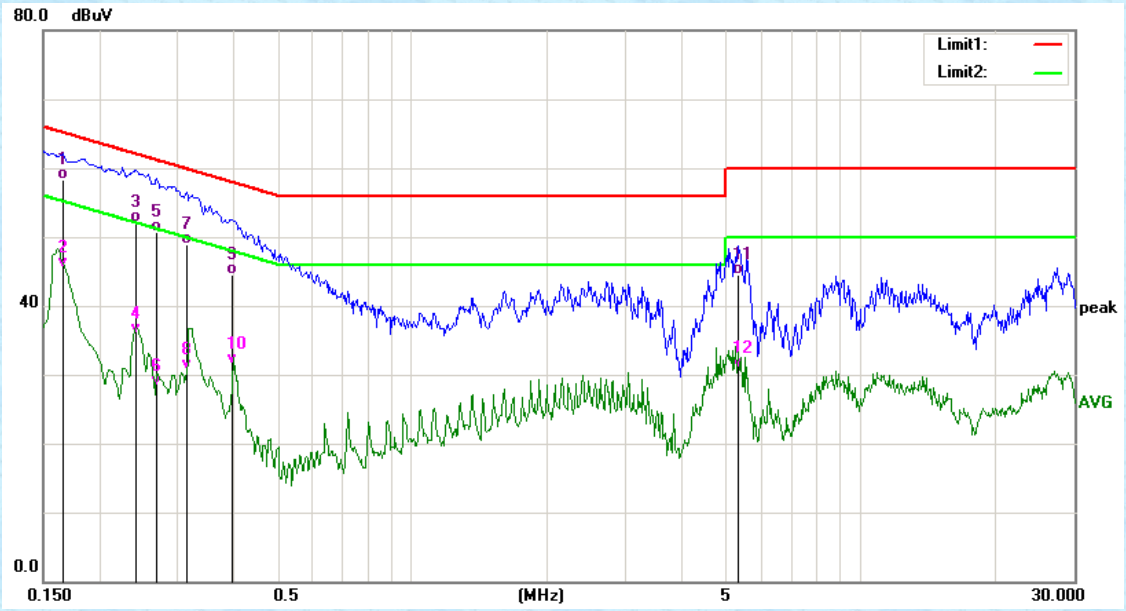
Test mode:	Operation mode	Phase Polarity:	Line



Quasi-peak and Average measurement:

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1660	48.50	9.74	58.24	65.16	-6.92	QP
2	0.1660	35.80	9.74	45.54	55.16	-9.62	AVG
3	0.2300	42.04	9.81	51.85	62.45	-10.60	QP
4	0.2300	17.34	9.81	27.15	52.45	-25.30	AVG
5	0.2620	40.85	9.86	50.71	61.37	-10.66	QP
6	0.2620	18.11	9.86	27.97	51.37	-23.40	AVG
7	0.3300	37.51	9.95	47.46	59.45	-11.99	QP
8	0.3300	19.44	9.95	29.39	49.45	-20.06	AVG
9	0.3980	34.11	10.05	44.16	57.90	-13.74	QP
10	0.3980	19.69	10.05	29.74	47.90	-18.16	AVG
11	5.3620	32.57	10.50	43.07	60.00	-16.93	QP
12	5.3620	20.50	10.50	31.00	50.00	-19.00	AVG

Test mode:	Operation mode	Phase Polarity:	Neutral



Quasi-peak and Average measurement:

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1660	48.65	9.74	58.39	65.16	-6.77	QP
2	0.1660	35.72	9.74	45.46	55.16	-9.70	AVG
3	0.2420	42.20	9.83	52.03	62.03	-10.00	QP
4	0.2420	26.04	9.83	35.87	52.03	-16.16	AVG
5	0.2700	40.89	9.87	50.76	61.12	-10.36	QP
6	0.2700	18.35	9.87	28.22	51.12	-22.90	AVG
7	0.3140	38.98	9.93	48.91	59.86	-10.95	QP
8	0.3140	20.81	9.93	30.74	49.86	-19.12	AVG
9	0.3997	34.48	10.05	44.53	57.86	-13.33	QP
10	0.3997	21.38	10.05	31.43	47.86	-16.43	AVG
11	5.3500	34.02	10.50	44.52	60.00	-15.48	QP
12	5.3500	20.31	10.50	30.81	50.00	-19.19	AVG

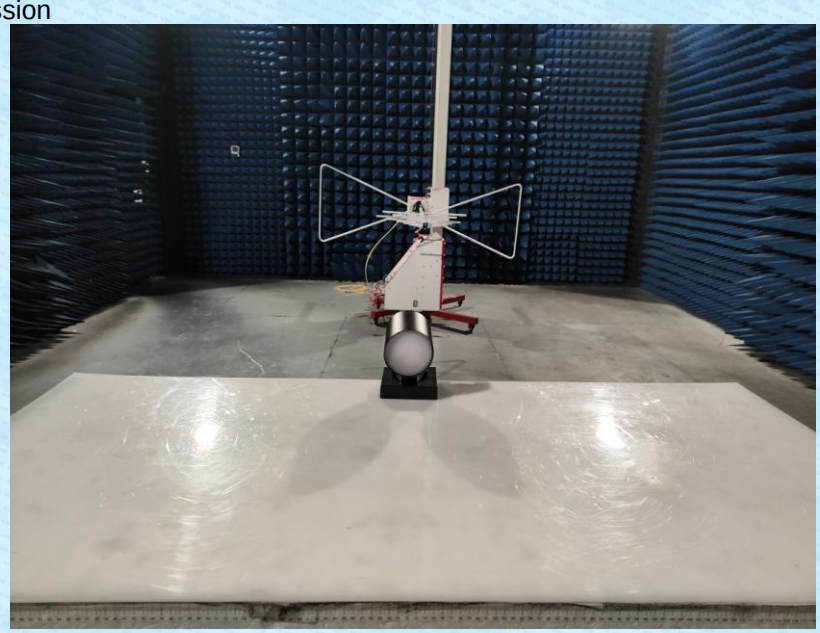
Notes:

1. The following Quasi-Peak and Average measurements were performed on the EUT:

2. Final Test Level =Receiver Reading + LISN Factor + Cable Loss.

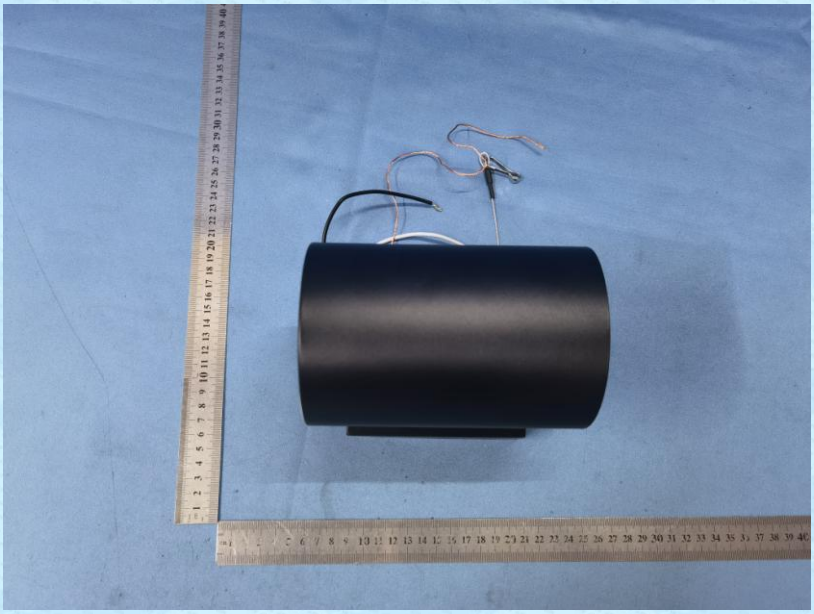
8 Test Setup Photo

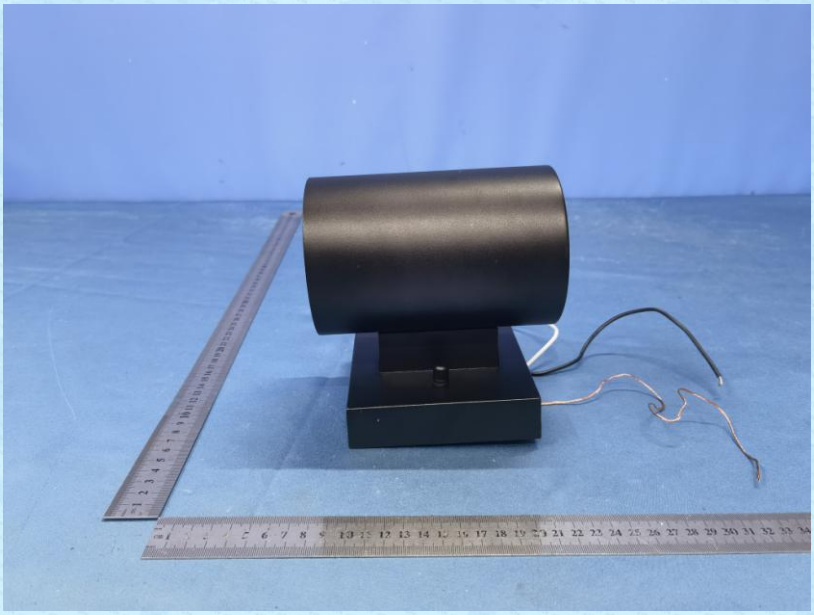
Radiated Emission

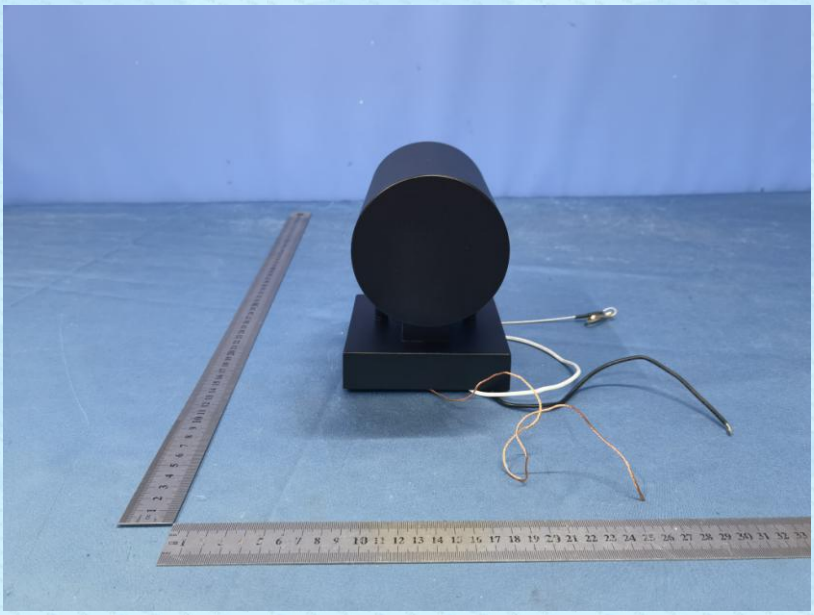


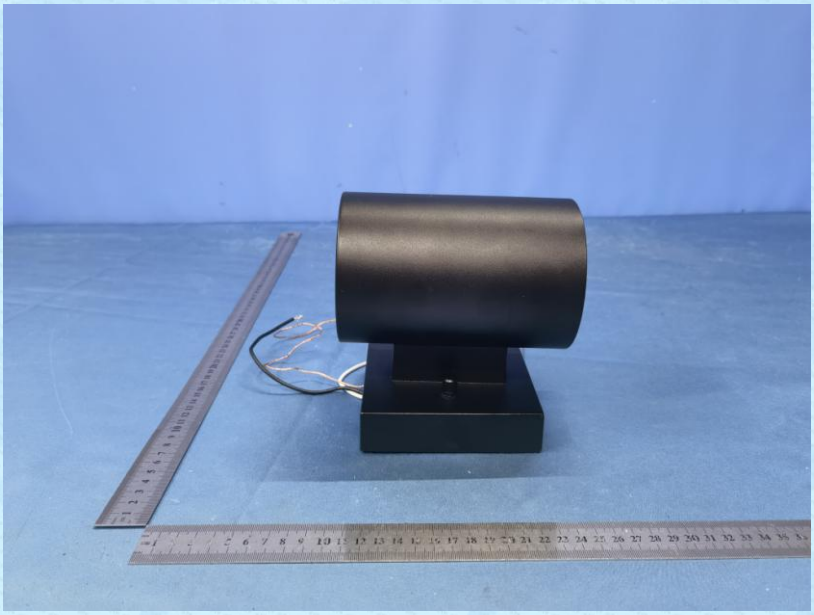
Conducted Emission

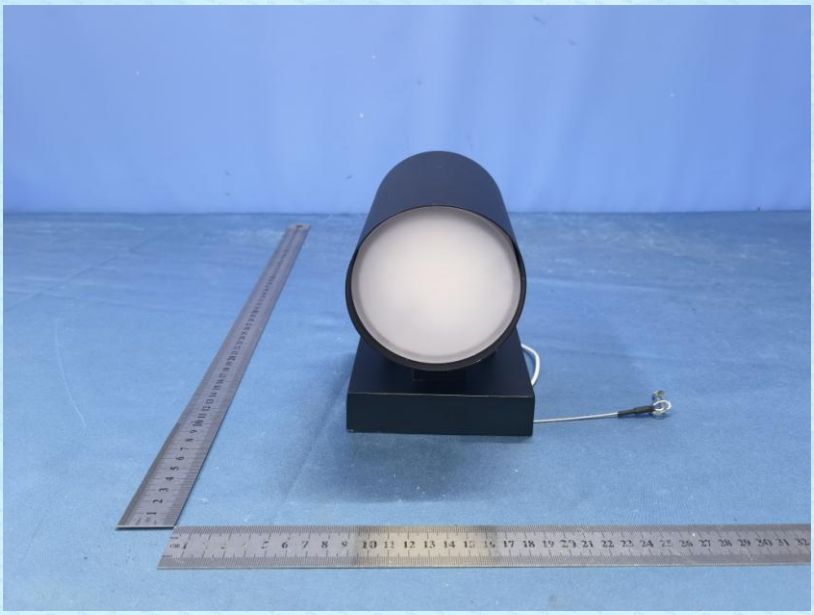
9 EUT Constructional Details

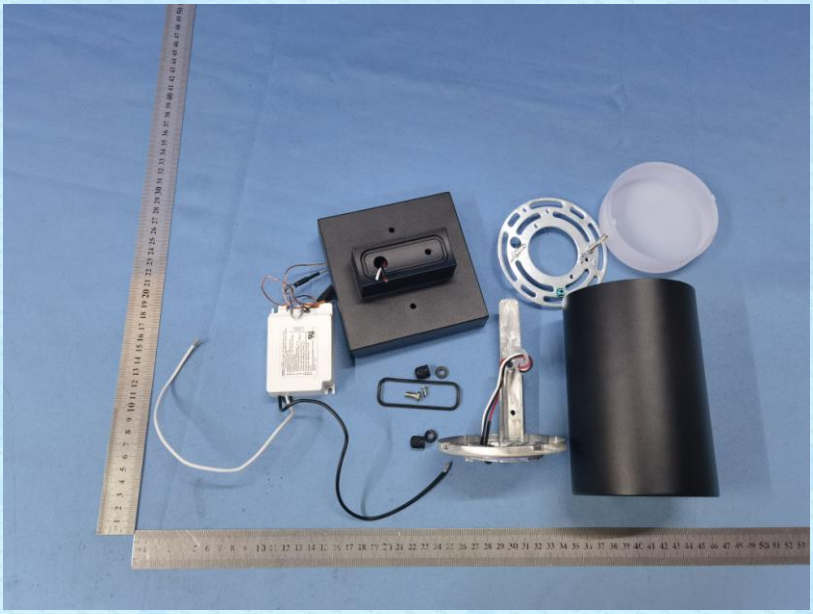


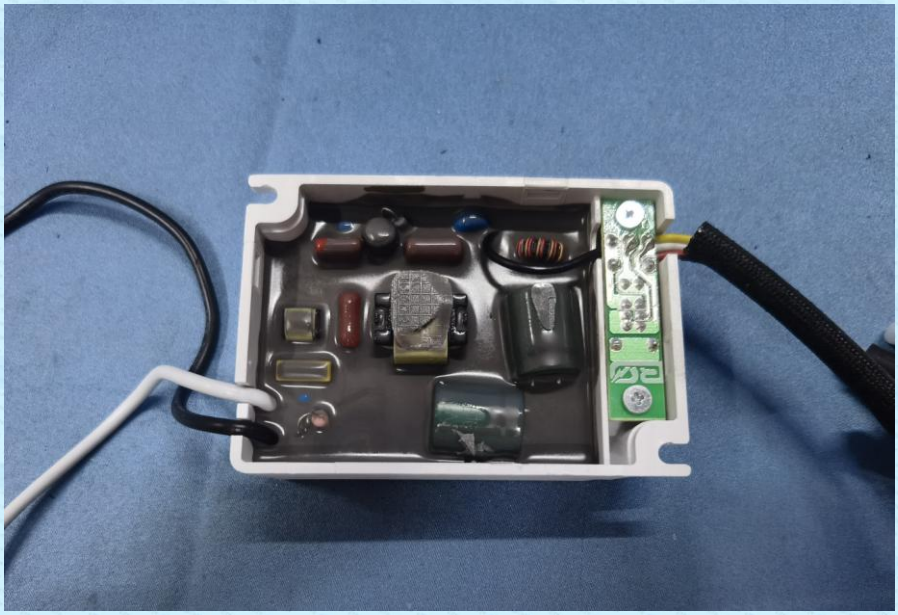










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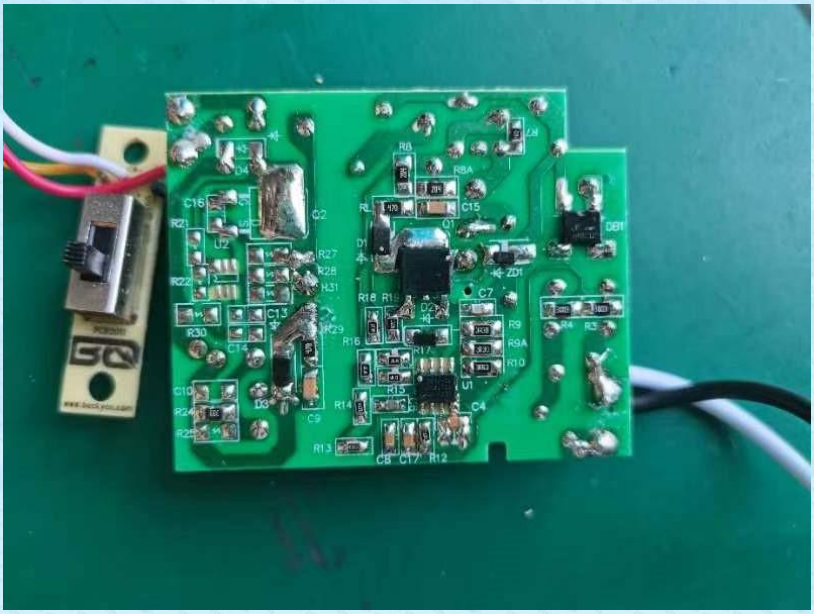

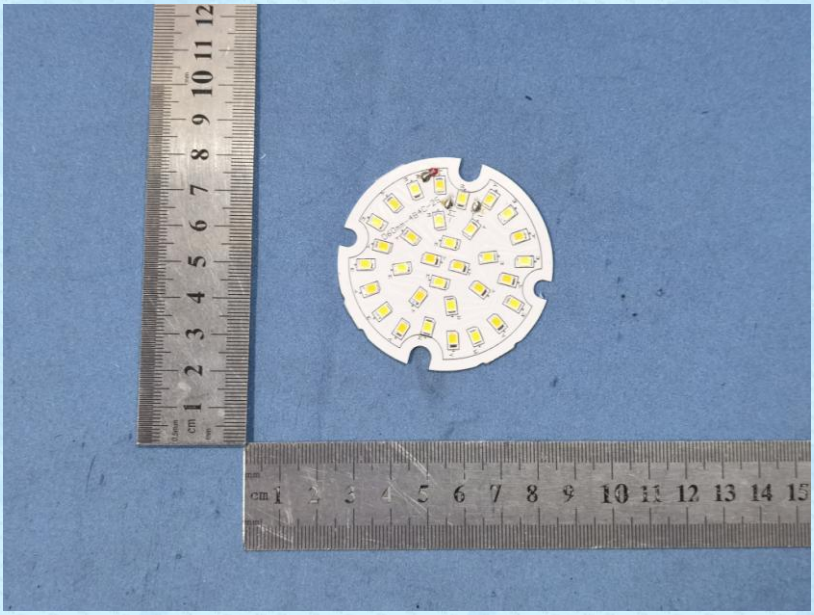

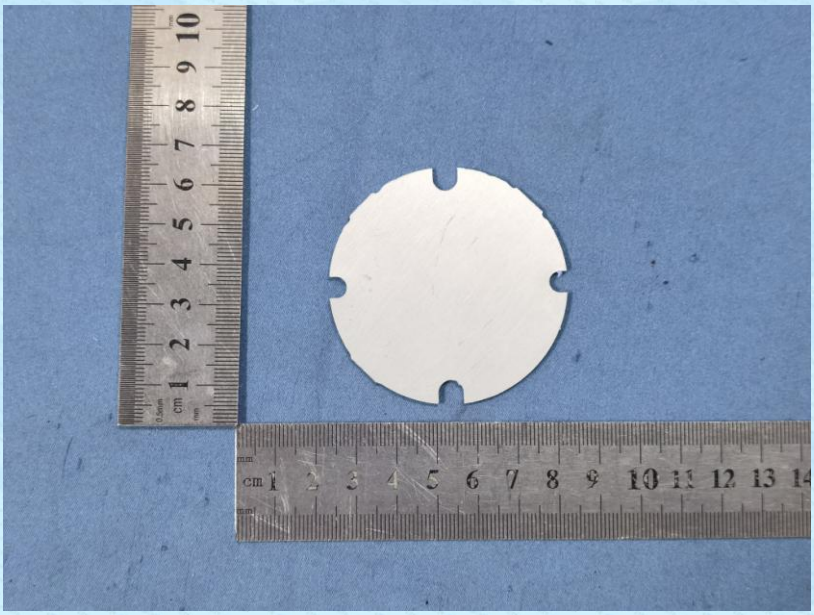

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