Shenzhen CTA Testing Technology Co., Ltd.
Room 106, Building 1, Yibaolai Industrial Park, Qiaotou Community, Fuhai Street, Bao'an District, Shenzhen, China

TEST REPORT

47 CFR FCC Part 15 Subpart B (Class B)

Radio Frequency Devices – Unintentional Radiators – Limits and methods of measurement

ANSI C63.4: 2014

American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz

Report Reference No.....:	**CTA23033100301**
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Date of issue.....:	Apr. 05, 2023

Testing Laboratory Name.....:	**Shenzhen CTA Testing Technology Co., Ltd.**
Address.....:	Room 106, Building 1, Yibaolai Industrial Park, Qiaotou Community, Fuhai Street, Bao'an District, Shenzhen, China

Applicant's name.....:	**SHENZHEN OMI LIGHTING CO.,LTD.**
Address.....:	No. 47, 2 Lane, Jinxing 1 Street, Sansha Industrial Zone, Henglan Town, Zhongshan City, Guangdong Province, China

Test specification.....:	
Standard.....:	**47 CFR FCC Part 15 Subpart B (Class B)** **ANSI C63.4: 2014**

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Equipment description.....:	**SMART BULB**
Trade Mark.....:	N/A
Manufacturer.....:	SHENZHEN OMI LIGHTING CO.,LTD.
Model/Type reference.....:	OMI-12SA300
List Model.....:	OMI-618SA300, OMI-1824SA300, OMI-9SA300, OMI-7SA300, OMI-6SA300
Ratings.....:	AC120V 60Hz
Result.....:	**PASS**

TEST REPORT

Equipment under Test	:	SMART BULB
Model /Type	:	OMI-12SA300
Listed Models	:	OMI-618SA300, OMI-1824SA300, OMI-9SA300, OMI-7SA300, OMI-6SA300
Applicant	:	SHENZHEN OMI LIGHTING CO.,LTD.
Address	:	No. 47, 2 Lane, Jinxing 1 Street, Sansha Industrial Zone, Henglan Town, Zhongshan City, Guangdong Province, China
Manufacturer	:	SHENZHEN OMI LIGHTING CO.,LTD.
Address	:	No. 47, 2 Lane, Jinxing 1 Street, Sansha Industrial Zone, Henglan Town, Zhongshan City, Guangdong Province, China

Test Result:	**PASS**

The test report merely corresponds to the test sample.
It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

Contents

1. TEST STANDARDS 4

2. SUMMARY 5

2.1. General Remarks 5
2.2. Product Description 5
2.3. EUT operation mode 5
2.4. EUT configuration 5
2.5. Modifications 5

3. TEST ENVIRONMENT 6

3.1. Address of the test laboratory 6
3.2. Test Facility 6
3.3. Environmental conditions 6
3.4. Test Description 6
3.5. Statement of the measurement uncertainty 6
3.6. Equipments Used during the Test 7

4. TEST CONDITIONS AND RESULTS 9

4.1. EMISSION 9
4.1.1. LIMITS OF DISTURBANCE (CLASS B) 9
4.1.2. TEST CONFIGURATION 9
4.1.3. TEST PROCEDURE 9
4.1.4. TEST RESULTS 10
4.2. Conducted Emission 13
4.2.1. LIMITS OF DISTURBANCE (CLASS B) 13
4.2.2. TEST CONFIGURATION 13
4.2.3. TEST PROCEDURE 13
4.2.4. TEST RESULTS 13

5. TEST SET-UP PHOTOS OF THE EUT 16

6. EXTERNAL AND INTERNAL PHOTOS OF THE EUT 17

1. TEST STANDARDS

The tests were performed according to following standards:

47 CFR FCC Part 15 Subpart B (Class B) Radio Frequency Devices – Unintentional Radiators – Limits and methods of measurement
ANSI C63.4: 2014 American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz.

2. SUMMARY

2.1. General Remarks

Date of receipt of test sample	:	Mar. 28,2023
Testing commenced on	:	Mar. 28,2023
Testing concluded on	:	Apr. 05,2023

2.2. Product Description

Product Name:	SMART BULB
Model/Type reference:	OMI-12SA300
Listed Model:	OMI-618SA300, OMI-1824SA300, OMI-9SA300, OMI-7SA300, OMI-6SA300
Power supply：	AC 120V 60Hz

2.3. EUT operation mode

As the function of the EUT, test mode selected to test as below to conform this standard:

Operation mode	Description
Mode 1	lighting

Test item	Test mode
Conducted emission	Mode 1
Radiated emission	Mode 1

2.4. EUT configuration

The following peripheral devices(Supplied by the testing Lab) and interface cables were connected during the measurement:

Item	Name	Description	Model	Certificate	Note
1Note1	/	/	/	/	/
2Note1	/	/	/	/	/

Note1: This Auxiliary used during the test is provided by the test laboratory.

2.5. Modifications

No modifications were implemented to meet testing criteria

3. TEST ENVIRONMENT

3.1. Address of the test laboratory

Shenzhen CTA Testing Technology Co., Ltd.

Room 106, Building 1, Yibaolai Industrial Park, Qiaotou Community,Fuhai Street, Bao'an District, Shenzhen, China

3.2. Test Facility

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

FCC-Registration No.: 517856 Designation Number: CN1318

Shenzhen CTA Testing Technology Co., Ltd. has been listed on the US Federal Communications Commission list of test facilities recognized to perform electromagnetic emissions measurements.

A2LA-Lab Cert. No.: 6534.01

Shenzhen CTA Testing Technology Co., Ltd. has been listed by American Association for Laboratory Accreditation to perform electromagnetic emission measurement.

The 3m-Semi anechoic test site fulfils CISPR 16-1-4 according to ANSI C63.10 and CISPR 16-1-4:2010.

3.3. Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Normal Temperature:	15-35 ° C
Lative Humidity	30-60 %
Air Pressure	950-1050mbar

3.4. Test Description

Emission Measurement		
Radiated Emission	47 CFR FCC Part 15 Subpart B Class B ANSI C63.4 2014	PASS
Conducted Emission	47 CFR FCC Part 15 Subpart B Class B ANSI C63.4 2014	PASS

Remark:1. N/A means "not applicable".

2.The measurement uncertainty is not included in the test result.

3.5. Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to TR-100028-01" Electromagnetic compatibility and Radio spectrum Matters (ERM);Uncertainties in the measurement of mobile radio equipment characteristics; Part 1" and TR-100028-02 "Electromagnetic compatibility and Radio spectrum Matters (ERM);Uncertainties in the measurement of mobile radio equipment characteristics; Part 2 " and is documented in the Shenzhen CTA Testing Technology Co., Ltd. quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for Shenzhen CTA Testing Technology Co., Ltd. :

Test	Range	Measurement Uncertainty	Notes
Radiated Emission	30~1000MHz	4.06 dB	(1)
Radiated Emission	1~18GHz	5.14 dB	(1)
Conducted Disturbance	0.15~30MHz	2.14 dB	(1)

(1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

3.6. Equipments Used during the Test

Radiated Emission						
Item	Test Equipment	Manufacturer	Model No.	Equipment No.	Last Cal.	Cal.Due
1	ULTRA-BROADBAND ANTENNA	Schwarzbeck	VULB9163	CTA-310	2021/08/07	2024/08/06
2	EMI Test Receiver	ROHDE & SCHWARZ	ESCI	CTA-306	2022/08/03	2023/08/02
3	Horn Antenna	Schwarzbeck	BBHA 9120D	CTA-309	2021/08/07	2024/08/06
4	Universal Radio Communication	CMW500	R&S	CTA-302	2022/08/03	2023/08/02
5	Band-reject filter	Xi'an Xingbo Technology Co.,Ltd	XBLBQ-DZA66	CTA-410	2022/08/03	2023/08/02
6	Band-reject filter	Xi'an Xingbo Technology Co.,Ltd	XBLBQ-DZA64	CTA-411	2022/08/03	2023/08/02
7	Band-reject filter	Xi'an Xingbo Technology Co.,Ltd	XBLBQ-DZA63	CTA-411	2022/08/03	2023/08/02
8	High-pass filter	Xi'an Xingbo Technology Co.,Ltd	XBLBQ-GTA10	CTA-412	2022/08/03	2023/08/02
9	High-pass filter	Xi'an Xingbo Technology Co.,Ltd	XBLBQ-GTA18	CTA-402	2022/08/03	2023/08/02
10	EMI Test Software	Tonscend	TS®JS32-RE	N/A	N/A	N/A

Conducted Emission						
Item	Test Equipment	Manufacturer	Model No.	Equipment No.	Last Cal.	Cal.Due
1	EMI Test Receiver	R&S	ESPI	CTA-307	2022/08/03	2023/08/02
2	Artificial Mains	R&S	ENV-216	CTA-308	2022/08/03	2023/08/02
3	Artificial Mains	R&S	ENV-216	CTA-314	2022/08/03	2023/08/02
4	ISN	Schwarzbeck	NTFM8158	CTA-407	2022/08/03	2023/08/02
5	ISN	Schwarzbeck	CAT58158	CTA-408	2022/08/03	2023/08/02
6	ISN	Schwarzbeck	CAT38158	CTA-409	2022/08/03	2023/08/02
7	Universal Radio Communication	R&S	CMW500	CTA-302	2022/08/03	2023/08/02
8	EMI Test Software	Tonscend	TS®JS32-CE	N/A	N/A	N/A

4. TEST CONDITIONS AND RESULTS

4.1. EMISSION

4.1.1. LIMITS OF DISTURBANCE (CLASS B)

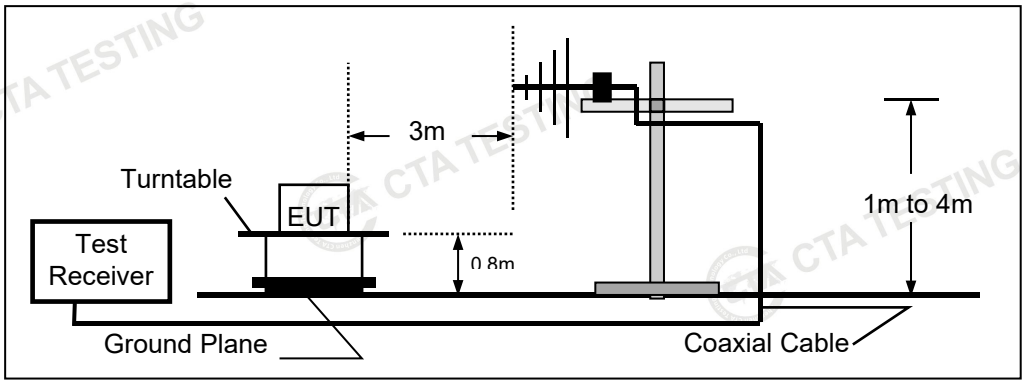
Frequency (MHz)	Distance (Meters)	Field Strengths Limits (dBμV/m)
30 ~ 88	3	40
88~216	3	43.5
216 ~ 960	3	46
Above 960(AV)	3	54
Above 960(PK)	3	74

Note: (1) The tighter limit shall apply at the edge between two frequency bands.

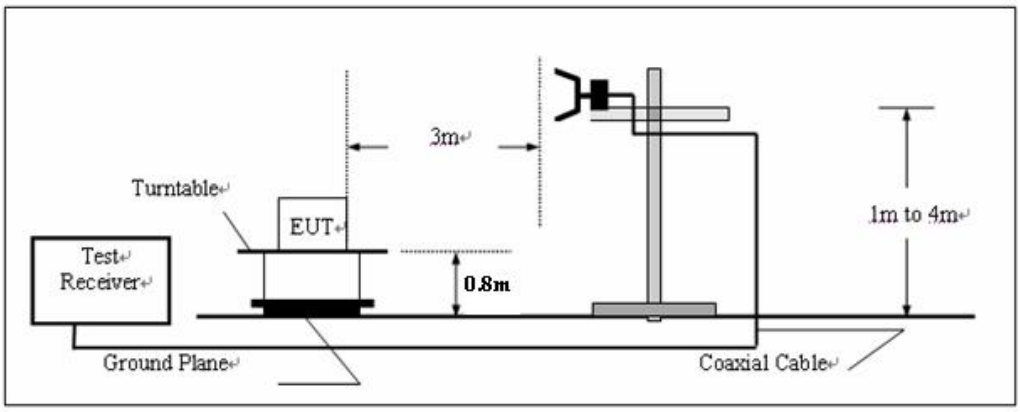
(2) Distance refers to the distance in meters between the test instrument antenna and the closest point of any part of the E.U.T.

4.1.2. TEST CONFIGURATION

a) Radiated emission test set-up, frequency below 1000MHz:



b) Radiated emission test set-up, frequency above 1000MHz



4.1.3. TEST PROCEDURE

EUT is tested in Semi-Anechoic Chamber. EUT is placed on a nonmetal table which is 0.8 meter above a grounded turntable. The turntable can rotate 360 degrees to determine the azimuth of the maximum emission level. EUT is set 3 meters away from the center of receiving antenna. The antenna can move up and down from 1 to 4 meter to find out the maximum emission level. Both horizontal and vertical polarizations of the antenna are set on the test.

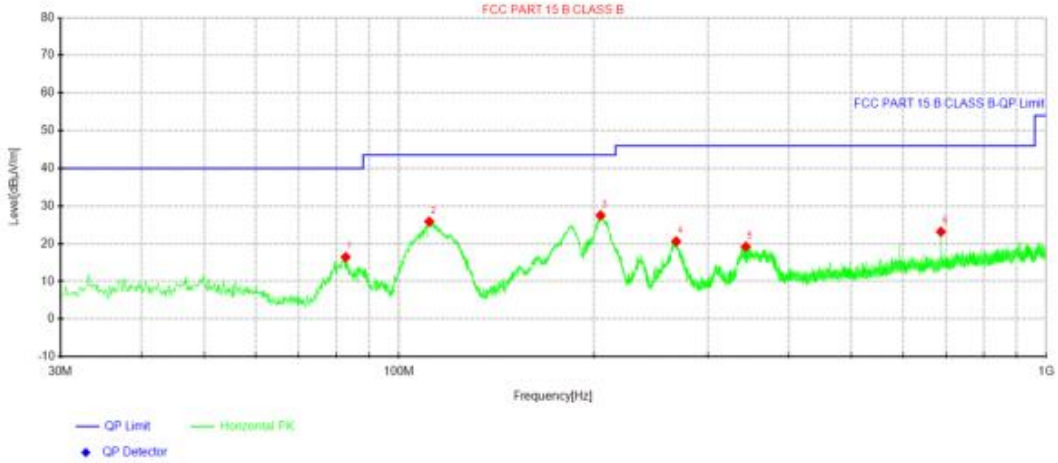
4.1.4. TEST RESULTS

Passed

Please refer to the below test data:

Polarization:	Horizontal	Test mode:	Mode 1

Test Graph



Suspected Data List

NO.	Freq. [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	82.7438	37.38	16.43	-20.95	40.00	23.57	100	88	Horizontal
2	111.358	44.91	25.86	-19.05	43.50	17.64	100	250	Horizontal
3	204.842	46.70	27.50	-19.20	43.50	16.00	100	275	Horizontal
4	268.135	38.32	20.62	-17.70	46.00	25.38	100	292	Horizontal
5	343.431	35.42	19.20	-16.22	46.00	26.80	100	97	Horizontal
6	687.538	34.91	23.17	-11.74	46.00	22.83	100	207	Horizontal

Note:1).Level(dBµV/m)= Reading (dBµV/m)+ Factor (dB/m)

2). Factor(dB/m)=Antenna Factor (dB/m) + Cable loss (dB) - Pre Amplifier gain (dB)

3). Margin(dB) = Limit (dBµV/m) - Level (dBµV/m)

Polarization:	Vertical	Test mode:	Mode 1

Test Graph



Suspected Data List

NO.	Freq. [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	45.2775	44.20	27.77	-16.43	40.00	12.23	100	35	Vertical
2	80.6825	48.15	26.92	-21.23	40.00	13.08	100	136	Vertical
3	119.482	58.62	38.40	-20.22	43.50	5.10	100	246	Vertical
4	204.357	47.60	28.40	-19.20	43.50	15.10	100	321	Vertical
5	369.015	35.67	19.78	-15.89	46.00	26.22	100	214	Vertical
6	687.538	38.86	27.12	-11.74	46.00	18.88	100	69	Vertical

Note:1).Result (dBµV/m)= Reading (dBµV/m)+ Factor (dB/m)
2). Factor(dB/m)=Antenna Factor (dB/m) + Cable loss (dB) - Pre Amplifier gain (dB)
3). Margin(dB) = Limit (dBµV/m) - Level (dBµV/m)

Test mode:	Mode 1	Polarization	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
1169.73	65.42	-3.64	61.78	74	-12.22	peak
1169.68	46.37	-3.64	42.73	54	-11.27	AVG
3768.54	65.06	-0.95	64.11	74	-9.89	peak
3788.54	45.18	-0.95	44.23	54	-9.77	AVG
---	---	---	---	---	---	---
---	---	---	---	---	---	---

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Test mode:	Mode 1	Polarization	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
1152.16	64.28	-3.64	60.64	74	-13.36	peak
1152.16	45.42	-3.64	41.78	54	-12.22	AVG
3708.31	65.37	-0.95	64.42	74	-9.58	peak
3708.31	45.69	-0.95	44.74	54	-9.26	AVG
---	---	---	---	---	---	---
---	---	---	---	---	---	---

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

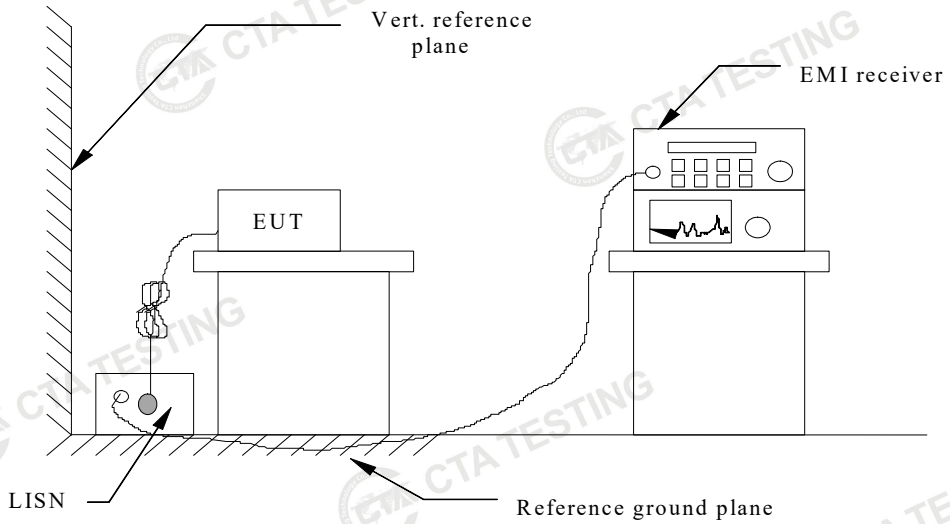
4.2. Conducted Emission

4.2.1. LIMITS OF DISTURBANCE (CLASS B)

Frequency Range (MHz)	Limits (dBuV)	
	Quasi-Peak	Average
0.150～0.500	66~56	56~46
0.500～5.000	56	46
5.000~30.000	60	50

Note: (1) The tighter limit shall apply at the edge between two frequency bands.

4.2.2. TEST CONFIGURATION



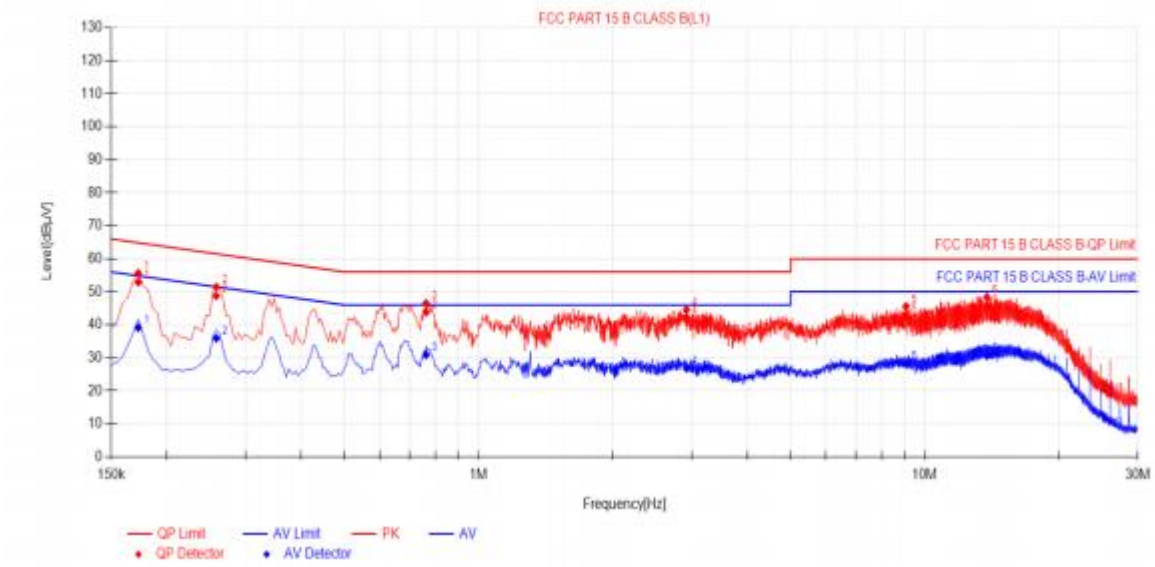
4.2.3. TEST PROCEDURE

EUT is placed on a nonmetal table which is 0.8 meter (or 0.1 meter for floor-stood equipments) above the grounded reference plane. Connect the power line of the EUT to the LISN. Voltage of the power supply is varied over a range of 0.9 to 1.1 times of the rated voltage in order to check whether the level of disturbance varies considerably with the supply voltage at the selected frequency about 160KHz. Perform an initial measurement on each line with peak detector to identify the frequencies where the maximum disturbances may occur. Then measure and record the maximum disturbances with quasi-peak and average detector.

4.2.4. TEST RESULTS

Passed

Line:	L	Test mode:	Mode 1

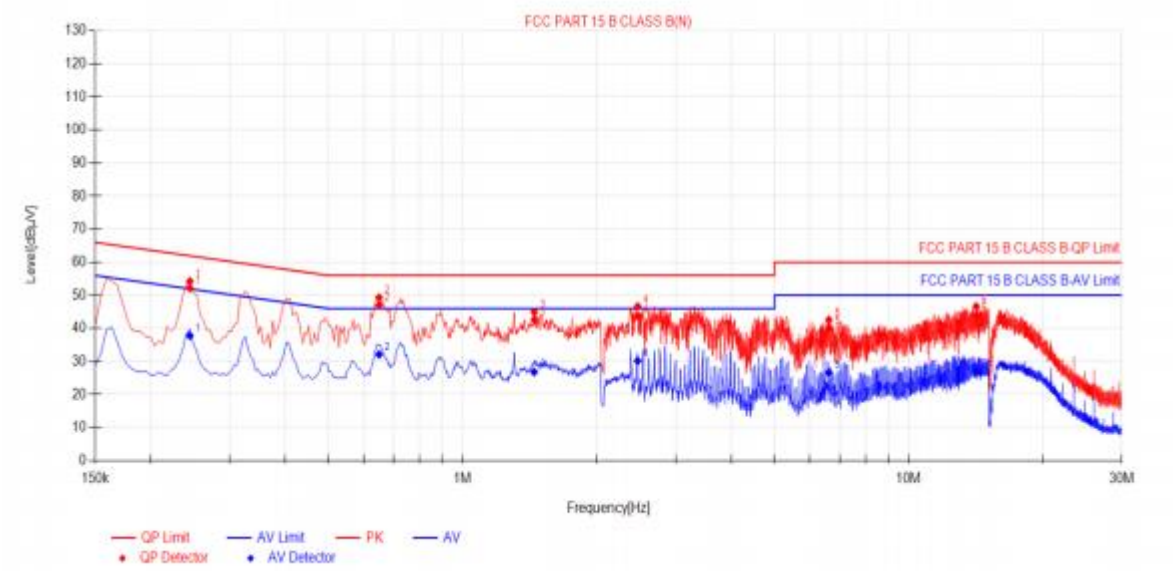


Final Data List

NO.	Freq. [MHz]	Factor [dB]	QP Reading[dBµV]	QP Value [dBµV]	QP Limit [dBµV]	QP Margin [dB]	AV Reading [dBµV]	AV Value [dBµV]	AV Limit [dBµV]	AV Margin [dB]	Verdict
1	0.1725	10.50	42.42	52.92	64.84	11.92	28.61	39.11	54.84	15.73	PASS
2	0.258	10.50	38.25	48.75	61.50	12.75	25.44	35.94	51.50	15.56	PASS
3	0.762	10.50	33.31	43.81	56.00	12.19	20.42	30.92	46.00	15.08	PASS
4	2.922	10.50	31.73	42.23	56.00	13.77	16.37	26.87	46.00	19.13	PASS
5	9.078	10.50	32.27	42.77	60.00	17.23	17.83	28.33	50.00	21.67	PASS
6	13.7805	10.50	34.91	45.41	60.00	14.59	20.12	30.62	50.00	19.38	PASS

Note:1).Result (dBµV/m)= Reading (dBµV/m)+ Factor (dB/m)
2). Factor(dB/m)=Cable loss (dB) + LISN Factor (dB)

Line:	N	Test mode:	Mode 1



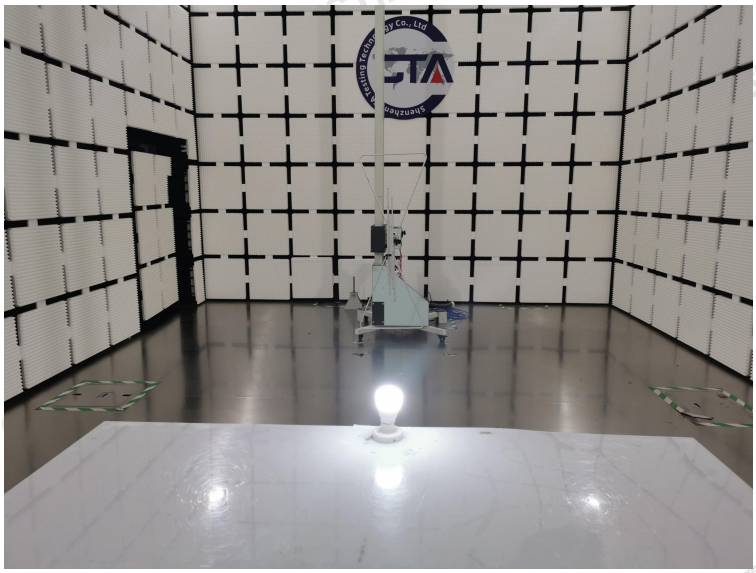
Final Data List

NO.	Freq. [MHz]	Factor [dB]	QP Reading[dBµV]	QP Value [dBµV]	QP Limit [dBµV]	QP Margin [dB]	AV Reading [dBµV]	AV Value [dBµV]	AV Limit [dBµV]	AV Margin [dB]	Verdict
1	0.2445	10.50	41.68	52.18	61.94	9.76	27.28	37.78	51.94	14.16	PASS
2	0.6495	10.50	36.48	46.98	56.00	9.02	21.62	32.12	46.00	13.88	PASS
3	1.446	10.50	32.12	42.62	56.00	13.38	16.32	26.82	46.00	19.18	PASS
4	2.4675	10.50	33.18	43.68	56.00	12.32	19.68	30.18	46.00	15.82	PASS
5	6.621	10.50	29.53	40.03	60.00	19.97	16.10	26.60	50.00	23.40	PASS
6	14.163	10.50	33.48	43.98	60.00	16.02	16.52	27.02	50.00	22.98	PASS

Note:1).Result (dBµV/m)= Reading (dBµV/m)+ Factor (dB/m)
2). Factor(dB/m)=Cable loss (dB) + LISN Factor (dB)

5. Test Set-up Photos of the EUT

Radiated Emission



Conducted Disturbance



6. External and Internal Photos of the EUT

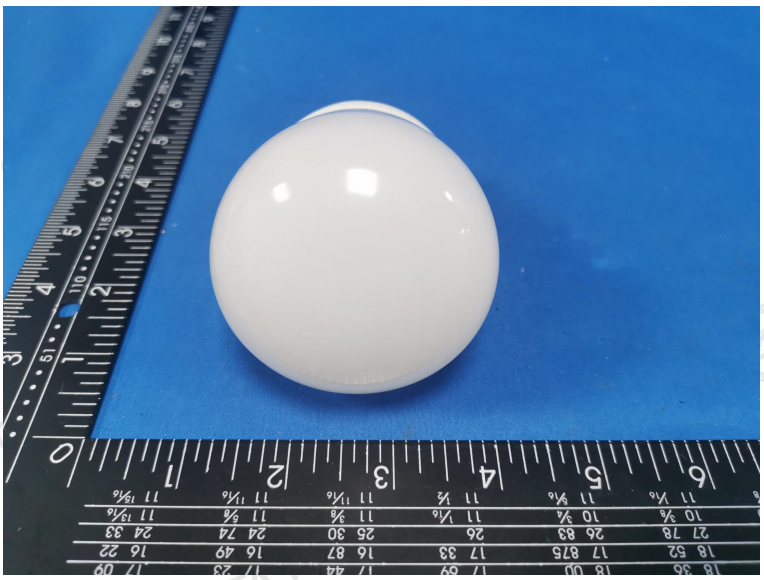




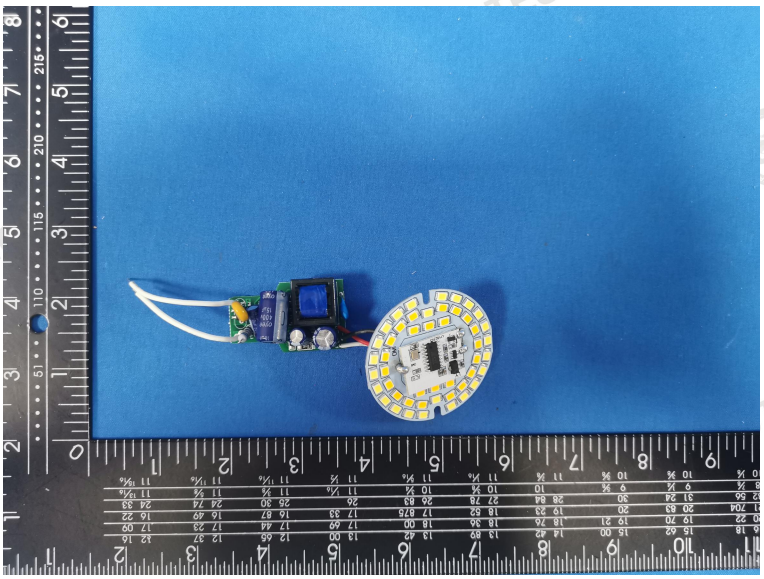


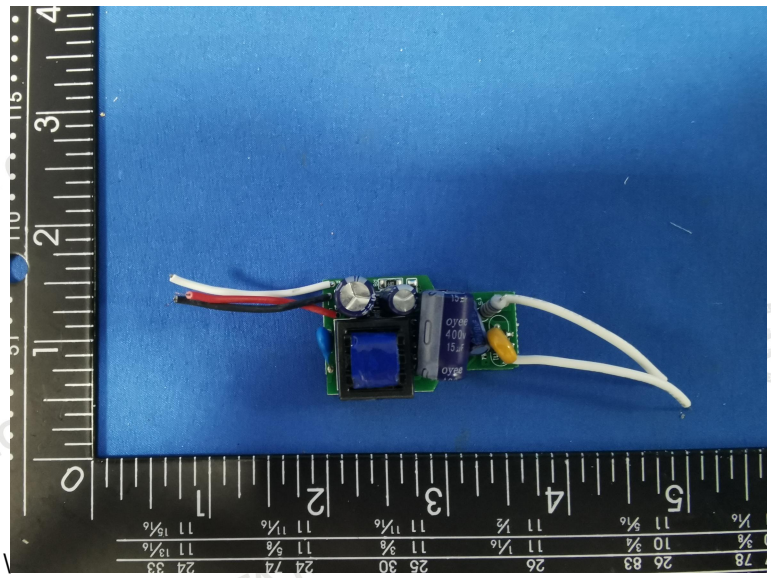


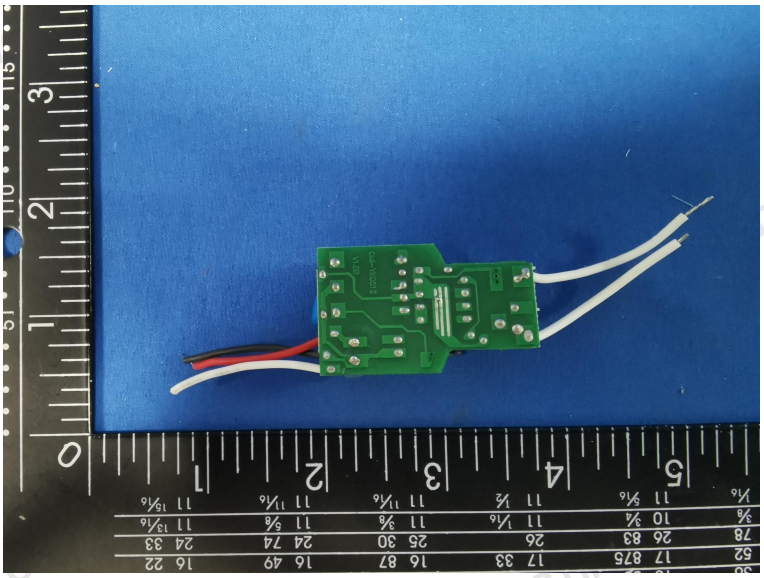


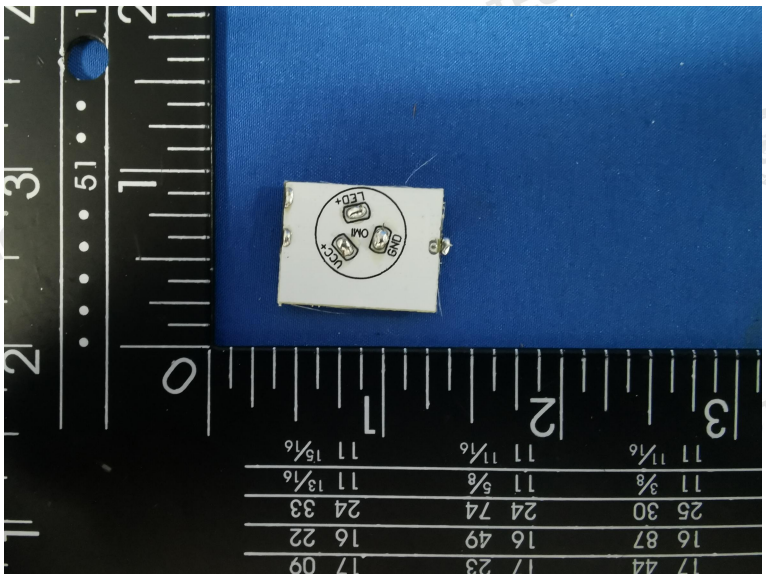


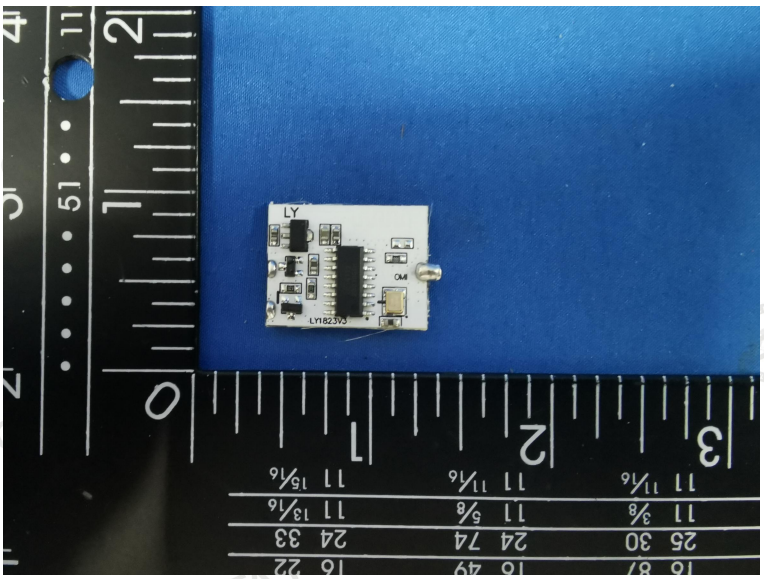












**********End of Report**********