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FCC TEST REPORT

Report No: STS1803230E01

Issued for

SUNVALLEYTEK INTERNATIONAL, INC.

46724 Lakeview Blvd, Fremont, CA 94538

Product Name:	LED DESK LAMP
Brand Name:	TAOTRONICS
Model Name:	TT-DL043
Series Model:	N/A
FCC ID:	2AFDGT-T-DL043
Test Standard:	FCC Part 18

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Shenzhen STS Test Services Co., Ltd.
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**TEST RESULT CERTIFICATION**

Applicant's name.....: SUNVALLEYTEK INTERNATIONAL, INC.
Address.....: 46724 Lakeview Blvd, Fremont, CA 94538
Manufacture's Name: Shenzhen NearbyExpress Technology Development Company Limited
Address.....: 333 Bulong Road, Jialianda Industrial Park, Building 1, Bantian, Longgang District, Shenzhen, China

Product description

Product name.....: LED DESK LAMP
Model Name : TT-DL043
Series Model : N/A

Standards.....: 47 CFR PART 18:2016

This device described above has been tested by STS, and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

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Date of Test.....
Date of performance of tests 16 Mar. 2018 ~ 29 Mar. 2018
Date of Issue 30 Mar. 2018
Test Result **Pass**

Testing Engineer :

Kyle. Rao

(Kyle Rao)

Technical Manager :

Chopin. Xiao

(Chopin Xiao)

Authorized Signatory :

Vita Li

(Vita Li)





TABLE OF CONTENTS

1. TEST SUMMARY	5
1.1 TEST FACTORY	5
1.2 MEASUREMENT UNCERTAINTY	5
2. GENERAL INFORMATION	6
2.1 GENERAL DESCRIPTION OF EUT	6
2.2 DESCRIPTION OF TEST MODES	7
2.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED	7
2.4 DESCRIPTION OF SUPPORT UNITS	8
2.5 EQUIPMENTS LIST FOR ALL TEST ITEMS	9
3. EMC EMISSION TEST	10
3.1 CONDUCTED DISTURBANCE MEASUREMENT	10
3.2 RADIATED DISTURBANCE MEASUREMENT	14
APPENDIX 1- TEST SETUP	21
APPENDIX 2-PHOTOGRAPHS OF EUT CONSTRUCTIONAL DETAILS	23

**Revision History**

Rev.	Issue Date	Report NO.	Effect Page	Contents
00	30 Mar. 2018	STS1803230E01	ALL	Initial Issue
Note: Format version of the report -V01				





1. TEST SUMMARY

Electromagnetic Interference (EMI)

EMISSION			
Standard	Item	Class / Severity	Result
FCC PART 18:2016 ANSI C63.4:2014	Conducted Emission (150 kHz to 30 MHz)	18.307(b)	PASS
	Radiated Emission (9 kHz to 30 MHz)	18.305(b)	PASS
	Radiated Emission (30 MHz to 1 GHz)	18.305(b)	PASS
	Radiated Emission (1 GHz to 25 GHz)	18.305(b)	N/A

NOTE:

(1) EUT: In this whole report EUT means Equipment Under Test.

1.1 TEST FACTORY

Company Name:	Shenzhen STS Test Services Co., Ltd.
Address:	1/F., Building B, Zhuoke Science Park, No.190, Chongqing Road, Fuyong Street, Bao'an District, Shenzhen, Guangdong, China
Telephone:	+86-755 3688 6288
Fax:	+86-755 3688 6277
Registration No.:	CNAS Registration No.: L7649; FCC Registration No.: 625569
	IC Registration No.: 12108A; A2LA Certificate No.: 4338.01;

1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement $y \pm U$, where expanded uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95 %.

No.	Item	Uncertainty
1	Conducted Emission (9KHz-150KHz)	$\pm 2.88\text{dB}$
2	Conducted Emission (150KHz-30MHz)	$\pm 2.67\text{dB}$
3	All emissions, radiated (<1G) 30MHz-200MHz	$\pm 3.73\text{dB}$
4	All emissions, radiated (<1G) 200MHz-1000MHz	$\pm 3.92\text{dB}$
5	All emissions, radiated (>1G)	$\pm 3.31\text{dB}$



2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Equipment	LED DESK LAMP	
Trade Name	TAOTRONICS	
Test Model Name	TT-DL043	
Series Model	N/A	
Model Difference	N/A	
Technical Specifications	The technical specifications of EUT are as below:	
	Power Supply	Input: AC 100-240V, 50/60Hz, 1.2A Output: DC 12V, 3A
	Rated Power	5W/samsung10W/Apple 7.5W
	Frequency	110KHz-128KHz
	NOTE: For more detailed information or features please refer to user's manual of EUT.	
Hardware version number	2.0.6	
Software version number	CPS100BFE_13_ZBAO_V1.0.0.hex	

Note: For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

2.2 DESCRIPTION OF TEST MODES

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.

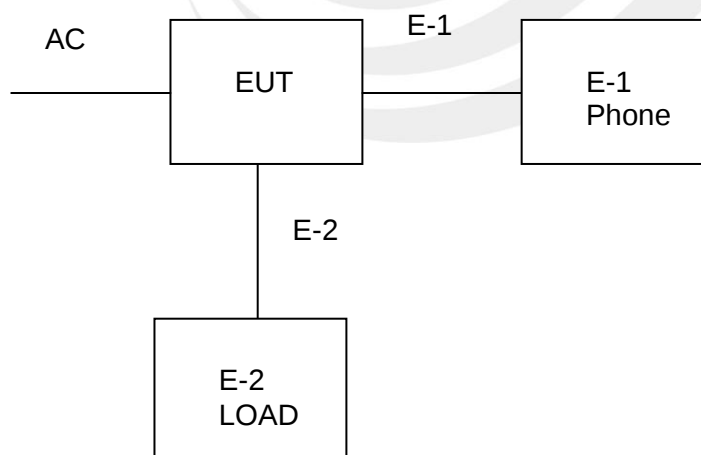
Pretest Mode	Description
Mode 1	Charge+Discharge Mode

For Conducted Test	
Final Test Mode	Description
Mode 1	Charge+Discharge Mode

For Radiated Test	
Final Test Mode	Description
Mode 1	Charge+Discharge Mode

NOTE: The test modes were carried out for all operation modes. Only worst case will be show in this report

2.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED





2.4 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.
E-1	Phone	AOC	195LM00001
E-2	LOAD	N/A	N/A

Item	Shielded Type	Ferrite Core	Length
C-1	Shielded	NO	69cm
C-2	Shielded	NO	75cm

Note:

- (1) The support equipment was authorized by Declaration of Confirmation.
- (2) For detachable type I/O cable should be specified the length in cm in 『Length』 column.
- (3) “YES” is means “shielded” “with core”; “NO” is means “unshielded” “without core”.

2.5 EQUIPMENTS LIST FOR ALL TEST ITEMS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Radiation Test equipment

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last Calibration	Calibrated Until
EMI Test Receiver	R&S	ESCI	101427	2017.10.15	2018.10.14
Bilog Antenna	TESEQ	CBL6111D	34678	2017.11.02	2018.11.01
Horn Antenna	SCHWARZBECK	BBHA 9120D	1343	2017.10.27	2018.10.26
Spectrum Analyzer	Agilent	E4407B	MY50140340	2018.03.08	2019.03.07
Pre-mpplier(1G-18G)	Agilent	8449B	60538	2017.10.27	2018.10.26
Spectrum Analyzer	Agilent	N9020A	MY49100060	2018.03.08	2019.03.07
Pre-mpplier(0.1M-3GHz)	EM	EM330	--	2018.03.11	2019.03.10
EMI Test Receiver	R&S	ESCI	101427	2017.10.15	2018.10.14

Conduction Test equipment

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last Calibration	Calibrated Until
EMI Test Receiver	R&S	ESPI	102086	2017.10.15	2018.10.14
LISN	R&S	ENV216	101242	2017.10.15	2018.10.14
LISN	EMCO	3810/2NM	23625	2017.10.15	2018.10.14
Absorbing clamp	R&S	MDS-21	100668	2017.10.19	2018.10.18
Power meter	STS S094	PF9901	G100731CJ351244	2018.03.11	2019.03.10



3. EMC EMISSION TEST

3.1 CONDUCTED DISTURBANCE MEASUREMENT

3.1.1 Limits of conducted disturbance voltage

(A) All other part 18 consumer devices:		
Frequency of emission (MHz)	Conducted limit (dB μ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50
(B) RF lighting devices:		
Frequency (MHz)	Maximum RF line voltage measured with a 50 μ H/50 ohm LISN	
Non-consumer equipment:	μ V	dB μ V
0.45 to 1.6	1,000	60
1.6 to 30	3,000	69.5
Consumer equipment: $\sqrt{}$	μ V	dB μ V
0.45 to 2.51	250	48
2.51 to 3.0	3,000	69.5
3.0 to 30	250	48

Note:

- (1) The tighter limit applies at the band edges.
- (2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

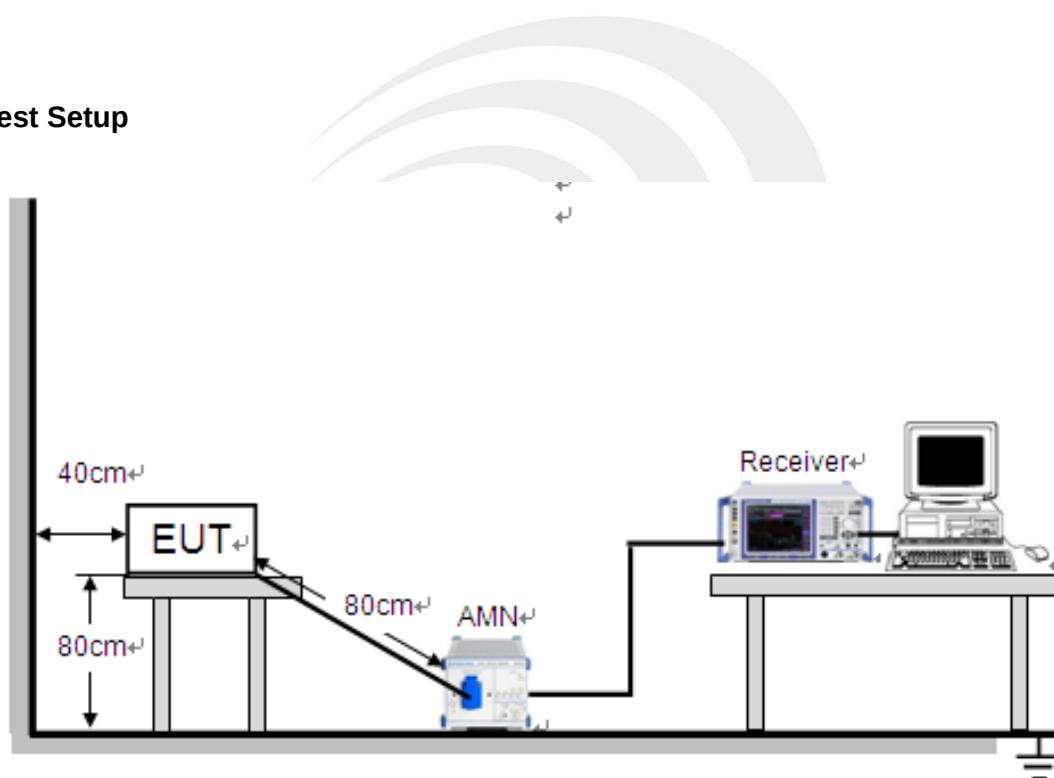
The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15/0.45 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

3.1.2 Test Procedure

- 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 at least 80 cm from nearest part of EUT chassis.
- For the actual test configuration, please refer to the related Item:EUT Test Photos.

3.1.3 Test Setup



For the actual test configuration, please refer to Appendix I: Photographs of the Test Configuration.



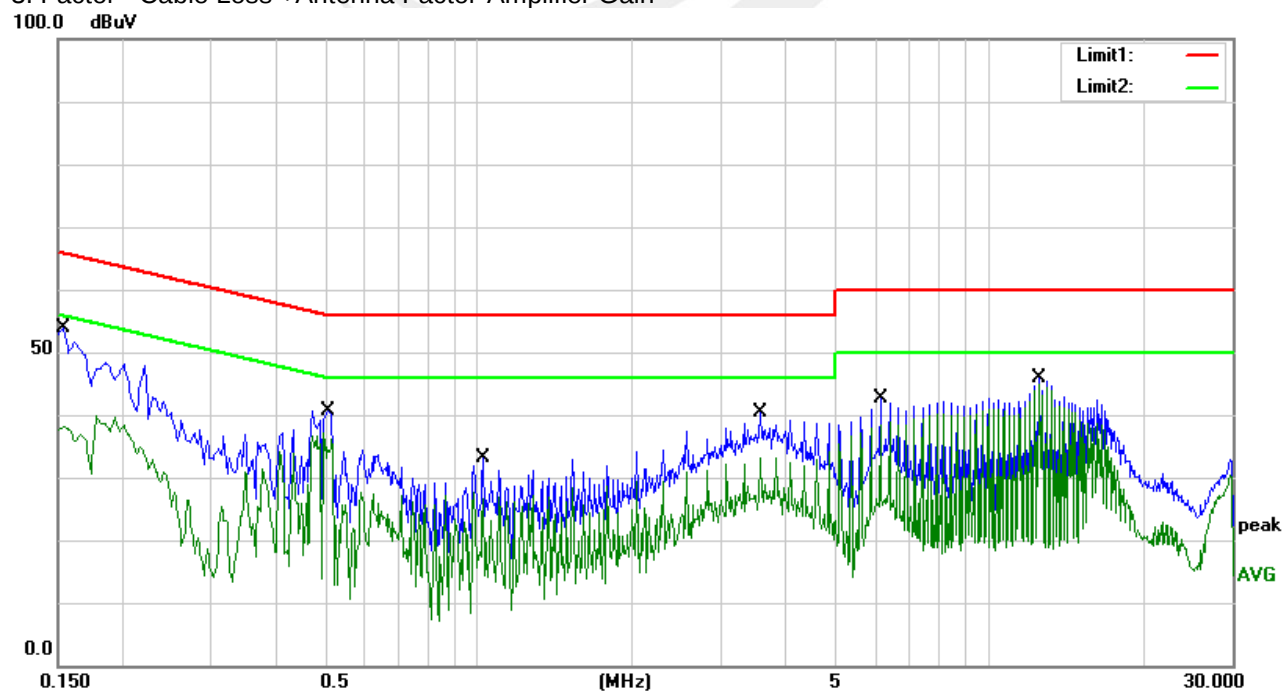
3.1.6 TEST RESULTS

Temperature:	23.5 °C	Relative Humidity:	59%
Phase:	L	Test Mode:	Mode 1
Test Voltage:	AC 120V/60Hz		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1540	44.16	9.76	53.92	65.78	-11.86	QP
2	0.1540	28.31	9.76	38.07	55.78	-17.71	AVG
3	0.5100	30.76	9.97	40.73	56.00	-15.27	QP
4	0.5100	24.24	9.97	34.21	46.00	-11.79	AVG
5	1.0220	23.42	9.80	33.22	56.00	-22.78	QP
6	1.0220	16.88	9.80	26.68	46.00	-19.32	AVG
7	3.5780	30.32	9.93	40.25	56.00	-15.75	QP
8	3.5780	23.27	9.93	33.20	46.00	-12.80	AVG
9	6.1340	32.73	9.90	42.63	60.00	-17.37	QP
10	6.1340	17.07	9.90	26.97	50.00	-23.03	AVG
11	12.5220	35.84	10.01	45.85	60.00	-14.15	QP
12	12.5220	34.86	10.01	44.87	50.00	-5.13	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Margin = Result (Result = Reading + Factor) - Limit
3. Factor = Cable Loss + Antenna Factor - Amplifier Gain





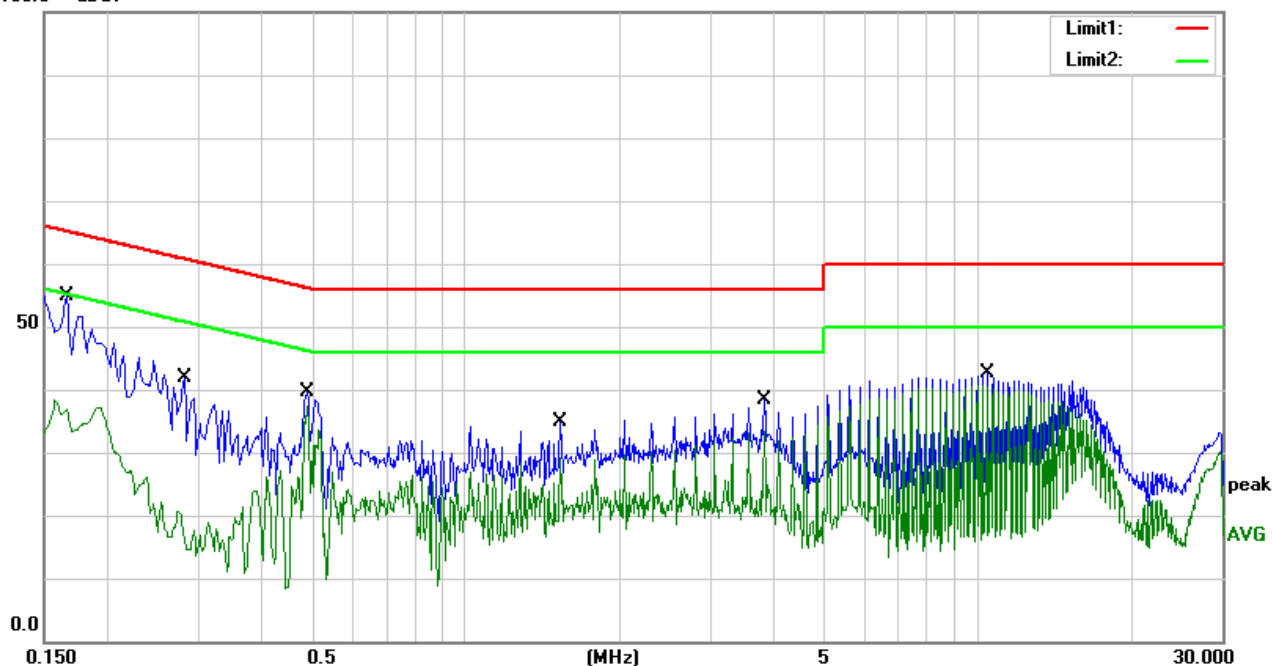
Temperature:	23.5 °C	Relative Humidity:	59%
Phase:	N	Test Mode:	Mode 1
Test Voltage:	AC 120V/60Hz		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1660	45.19	9.79	54.98	65.16	-10.18	QP
2	0.1660	26.97	9.79	36.76	55.16	-18.40	AVG
3	0.2820	31.78	10.20	41.98	60.76	-18.78	QP
4	0.2820	5.66	10.20	15.86	50.76	-34.90	AVG
5	0.4900	29.72	9.99	39.71	56.17	-16.46	QP
6	0.4900	27.35	9.99	37.34	46.17	-8.83	AVG
7	1.5340	25.00	9.84	34.84	56.00	-21.16	QP
8	1.5340	19.26	9.84	29.10	46.00	-16.90	AVG
9	3.8340	28.36	9.94	38.30	56.00	-17.70	QP
10	3.8340	23.37	9.94	33.31	46.00	-12.69	AVG
11	10.4780	32.62	9.94	42.56	60.00	-17.44	QP
12	10.4780	30.35	9.94	40.29	50.00	-9.71	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Margin = Result (Result = Reading + Factor) - Limit
3. Factor = Cable Loss + Antenna Factor - Amplifier Gain

100.0 dBuV





3.2 RADIATED DISTURBANCE MEASUREMENT

3.2.1.Limits of radiated disturbance measurement

Field strength limits

(1) ISM equipment operating on a frequency specified in §18.301 is permitted unlimited radiated energy in the band specified for that frequency.

(2) The field strength levels of emissions which lie outside the bands specified in §18.301, unless otherwise indicated, shall not exceed the following:

Equipment	Operating frequency	RF Power generated by equipment (watts)	Field strength limit (uV/m)	Distance (meters)
Any type unless otherwise specified (miscellaneous)	Any ISM frequency	Below 500 500 or more	25 $25 \times \text{SQRT}(\text{power}/500)$	300 ¹ 300
	Any non-ISM frequency	Below 500 500 or more	15 $15 \times \text{SQRT}(\text{power}/500)$	300 ¹ 300
Industrial heaters and RF stabilized arc welders	On or below 5,725 MHz Above 5,725 MHz	Any Any	10 (²)	1,600 (²)
Medical diathermy	Any ISM frequency Any non-ISM frequency	Any Any	25 15	300 300
Ultrasonic	Below 490 kHz	Below 500 500 or more	$2,400/F(\text{kHz})$ $2,400/F(\text{kHz}) \times \text{SQRT}(\text{power}/500)$	300 ³ 300
	490 to 1,600 kHz Above 1,600 kHz	Any Any	$24,000/F(\text{kHz})$ 15	30 30
Induction cooking ranges	Below 90 kHz On or above 90 kHz	Any Any	1,500 300	⁴ 30 ⁴ 30

¹Field strength may not exceed 10 µV/m at 1600 meters. Consumer equipment operating below 1000 MHz is not permitted the increase in field strength otherwise permitted here for power over 500 watts.

²Reduced to the greatest extent possible.

³Field strength may not exceed 10 µV/m at 1600 meters. Consumer equipment is not permitted the increase in field strength otherwise permitted here for over 500 watts.

⁴Induction cooking ranges manufactured prior to February 1, 1980, shall be subject to the field strength limits for miscellaneous ISM equipment.



(3) The field strength limits for RF lighting devices shall be the following:

Frequency (MHz)	Field strength limit at 30 meters ($\mu\text{V/m}$)	Field strength limit at 3 meters ($\text{dB}\mu\text{V/m}$)
Non-consumer equipment:		
30-88	30	49.5
88-216	50	54
216-1000	70	56.9
Consumer equipment:		
30-88	10	40
88-216	15	43.5
216-1000	20	46

NOTE:

- (1) The limit for radiated test was performed according to;
- (2) The tighter limit applies at the band edges;
- (3) Emission level ($\text{dB}\mu\text{V/m}$) = $20\log$ Emission level ($\mu\text{V/m}$),
3m Emission level = 30m Emission level + $20\log(30\text{m}/3\text{m})$;

(a) The field strength levels of emissions which lie outside the bands specified in §18.301, unless otherwise indicated, shall not exceed the following:

Frequency (MHz)	Field Strength ($\mu\text{V/m}$ @300m)	Field Strength ($\text{dB}\mu\text{V/m}$ @300m)	Field Strength ($\mu\text{V/m}$ @3m)	Field Strength ($\text{dB}\mu\text{V/m}$ @3m)
0.009 - 1000	25	27.96	2500	68.0

Note: According to the article 18.305(b), the operating frequency is ISM frequency, RF power generated by equipment is below 500 (watts).

(b)

Equipment	Operating frequency	RF Power generated by equipment (watts)	Field strength limit ($\text{dB}\mu\text{V/m}$)	Distance (meters)
	Any NON-ISM frequency	Below 500 500 or more	63.52	3

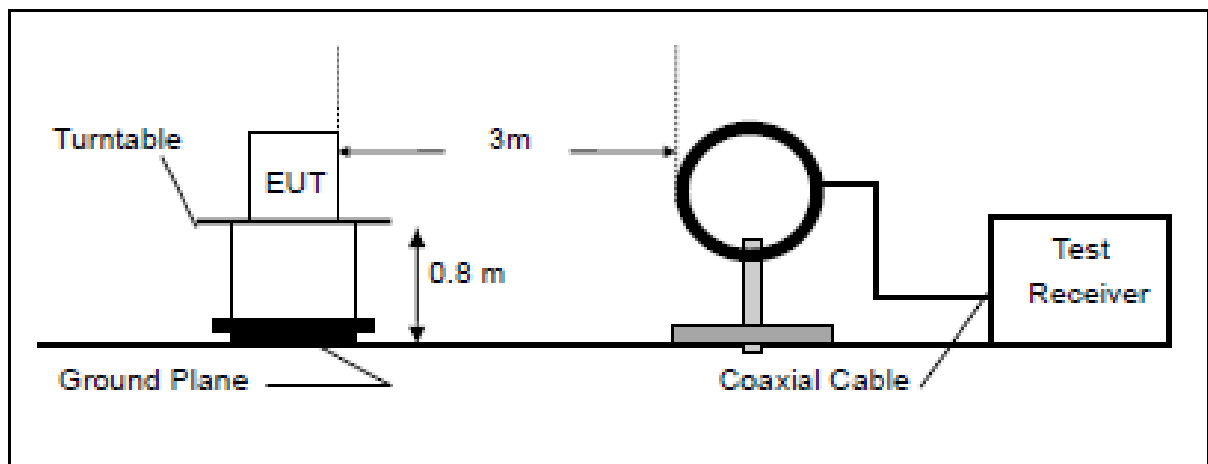
Note: The limit of any NON-ISM frequency is more stringent than any ISM frequency limit, so the limit of the NON-ISM frequency can be satisfied and the limit of any ISM frequency can be satisfied.

3.2.2. Test Procedure

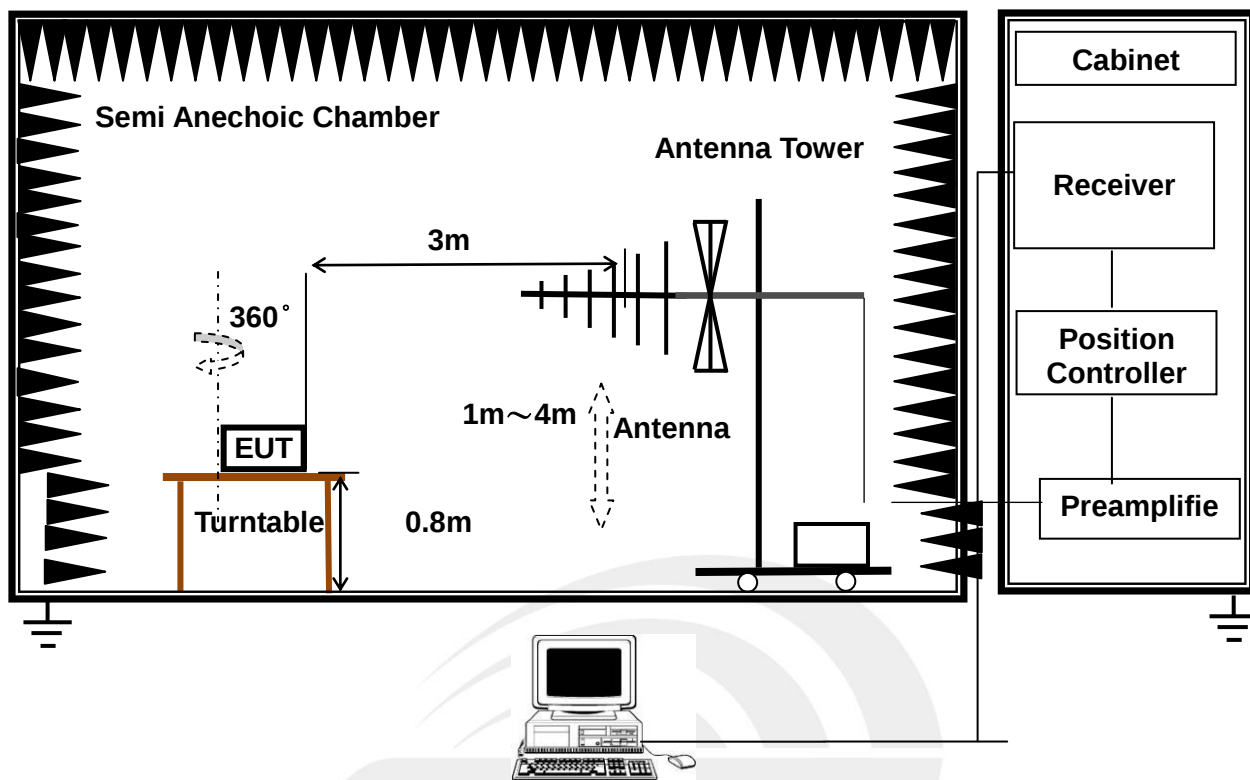
- The measuring distance of at 3m shall be used for measurements at frequency up to 1GHz.
- The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- For the actual test configuration, please refer to the related Item:EUT Test Photos.

3.2.3. Test Setup

(a) Radiated Emission Test Set-Up, Frequency Below 30MHz



(b) Radiated Disturbance Test Set-Up Frequency 30MHz - 1GHz



For the actual test configuration, please refer to Appendix I: Photographs of the Test Configuration.



3.2.4 TEST RESULTS

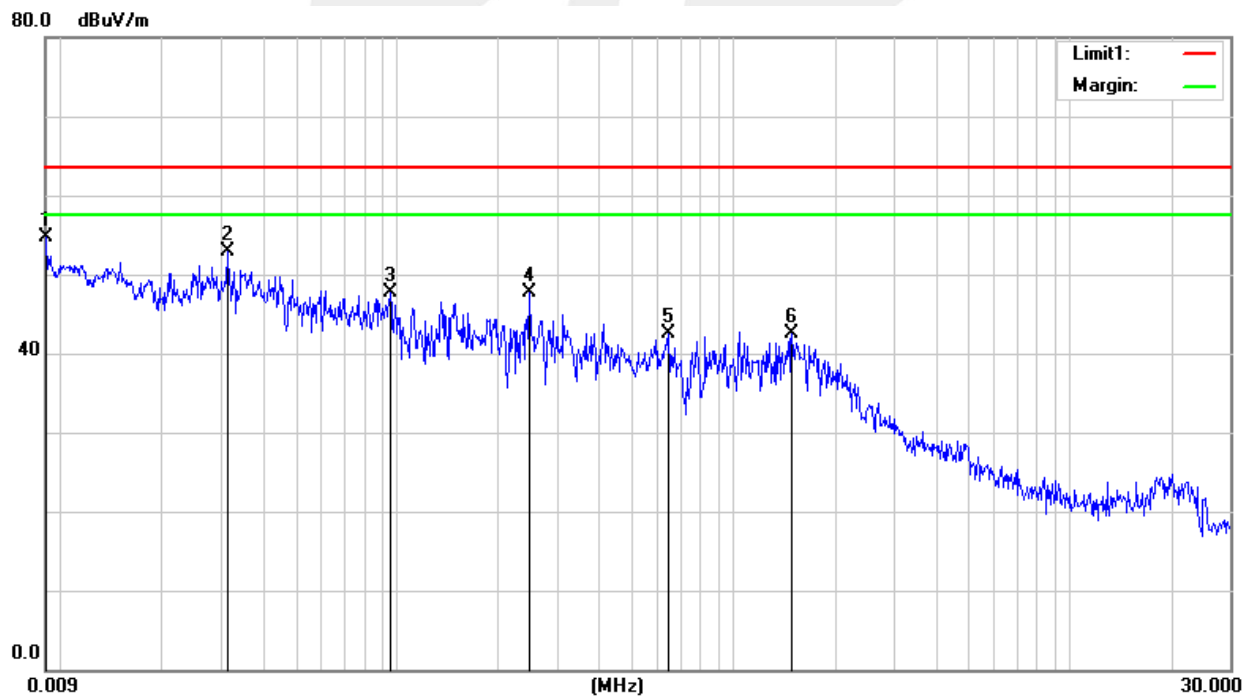
Between 0.15MHz-30MHz

Temperature:	22.1 °C	Relative Humidity:	56%
Phase:	X	Test Mode:	Mode 1
Test Voltage:	AC 120V/60Hz		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	0.0090	22.14	32.51	54.65	63.52	-8.87	QP
2	0.0314	27.66	25.26	52.92	63.52	-10.60	QP
3	0.0954	25.81	21.83	47.64	63.52	-15.88	QP
4	0.2464	25.05	22.61	47.66	63.52	-15.86	QP
5	0.6416	20.63	21.79	42.42	63.52	-21.10	QP
6	1.4916	20.82	21.66	42.48	63.52	-21.04	QP

Remark:

1. All readings are Quasi-Peak .
2. Margin = Result (Result =Reading + Factor)–Limit
3. Factor= Cable Loss +Antenna Factor-Amplifier Gain





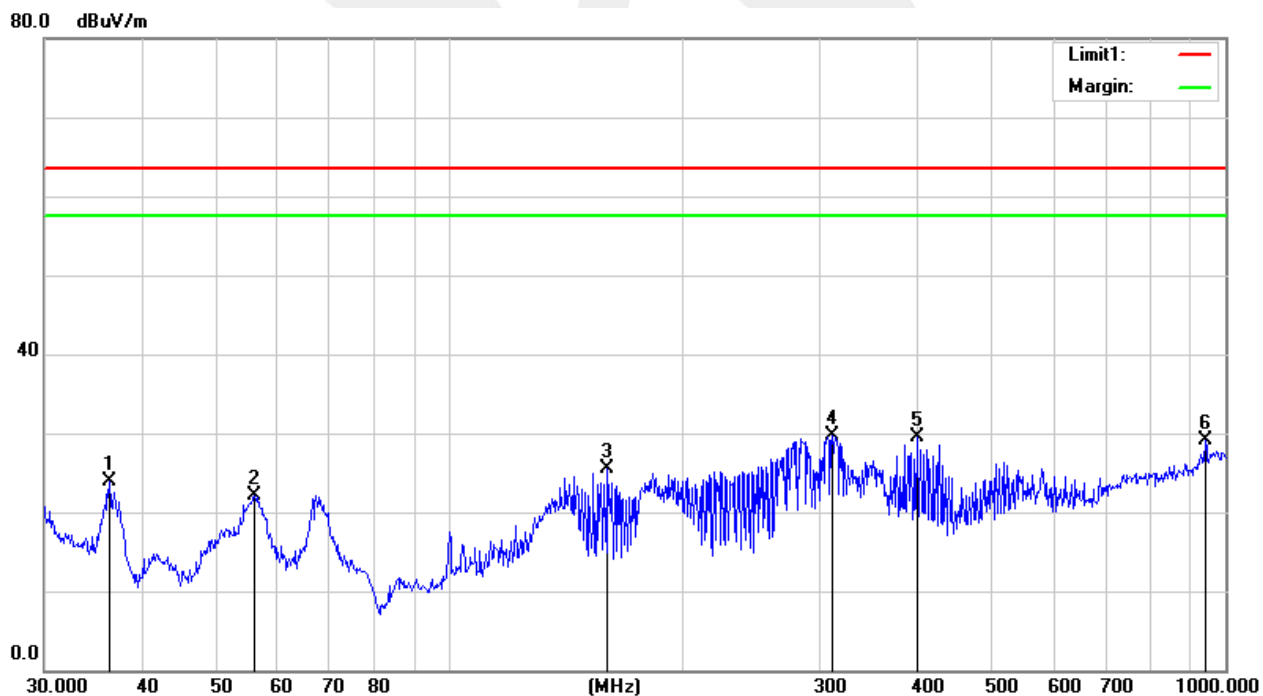
Between 30MHz-1GHz

Temperature:	22.1 °C	Relative Humidity:	56%
Phase:	Horizontal	Test Mode:	Mode 1
Test Voltage:	AC 120V/60Hz		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	36.3814	38.33	-14.47	23.86	63.52	-39.66	QP
2	56.0007	45.26	-23.19	22.07	63.52	-41.45	QP
3	159.7844	43.94	-18.49	25.45	63.52	-38.07	QP
4	311.0867	44.23	-14.46	29.77	63.52	-33.75	QP
5	400.4320	40.78	-11.22	29.56	63.52	-33.96	QP
6	942.1305	29.78	-0.65	29.13	63.52	-34.39	QP

Remark:

1. All readings are Quasi-Peak .
2. Margin = Result (Result =Reading + Factor)-Limit
3. Factor= Cable Loss +Antenna Factor-Amplifier Gain





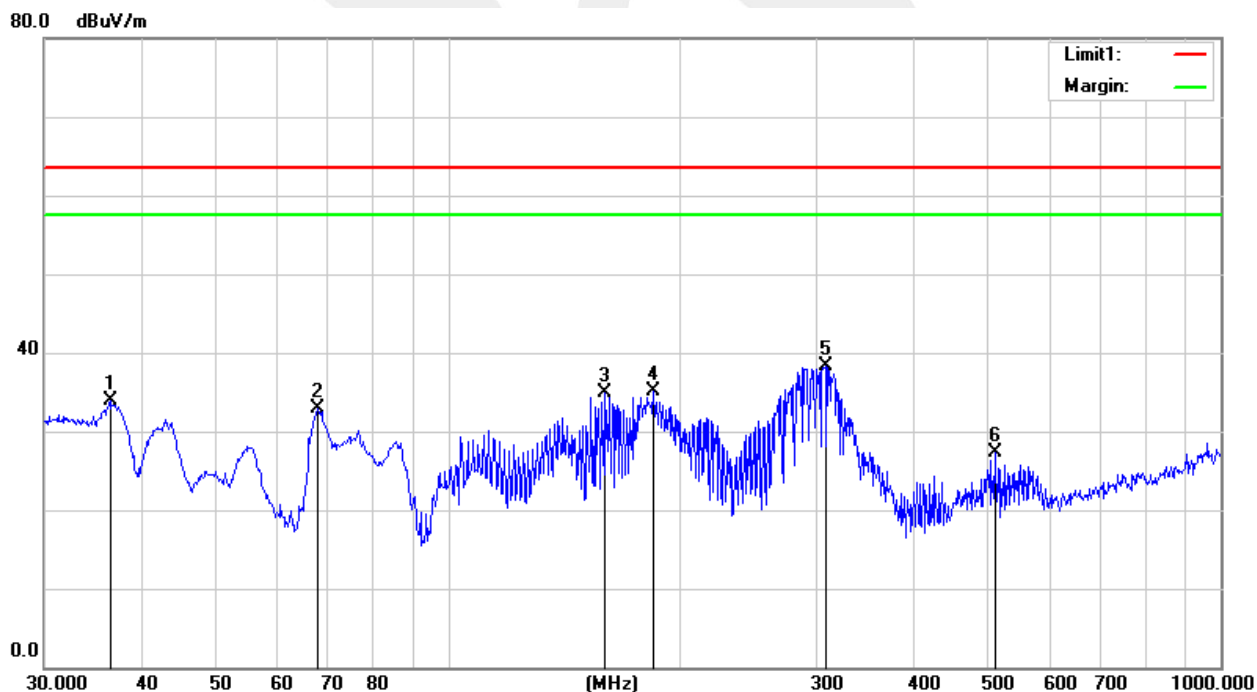
Between 30MHz-1GHz

Temperature:	22.1℃	Relative Humidity:	56%
Phase:	Vertical	Test Mode:	Mode 1
Test Voltage:	AC 120V/60Hz		

No.	Frequency (MHz)	Reading (dBUV)	Correct Factor (dB)	Results (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Detector
1	36.5092	48.44	-14.52	33.92	63.52	-29.60	QP
2	67.6751	57.06	-24.16	32.90	63.52	-30.62	QP
3	159.7844	53.39	-18.49	34.90	63.52	-28.62	QP
4	184.4898	54.86	-19.81	35.05	63.52	-28.47	QP
5	307.8313	52.82	-14.57	38.25	63.52	-25.27	QP
6	510.0436	36.14	-8.88	27.26	63.52	-36.26	QP

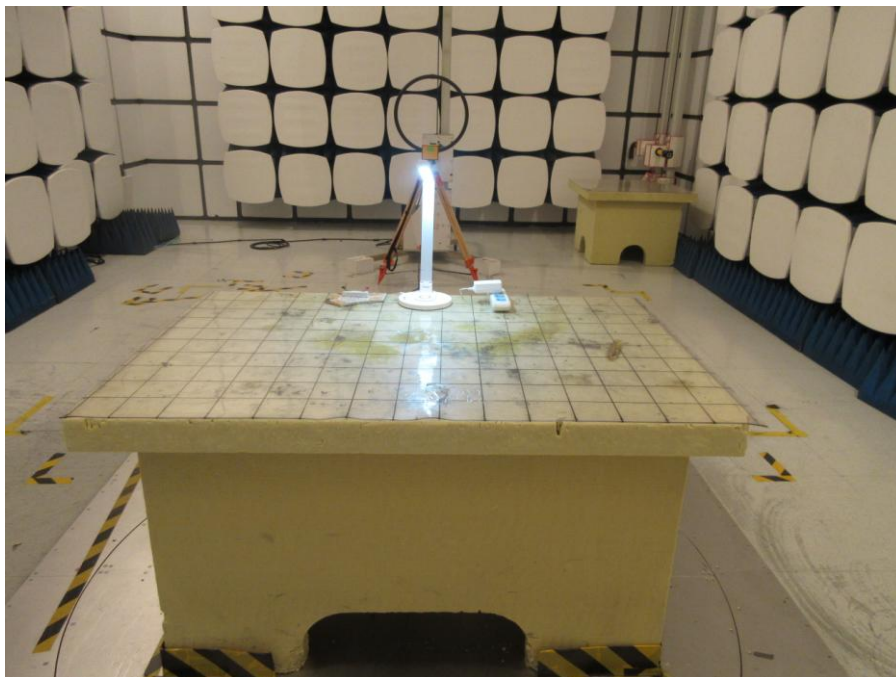
Remark:

1. All readings are Quasi-Peak .
2. Margin = Result (Result =Reading + Factor)-Limit
3. Factor= Cable Loss +Antenna Factor-Amplifier Gain

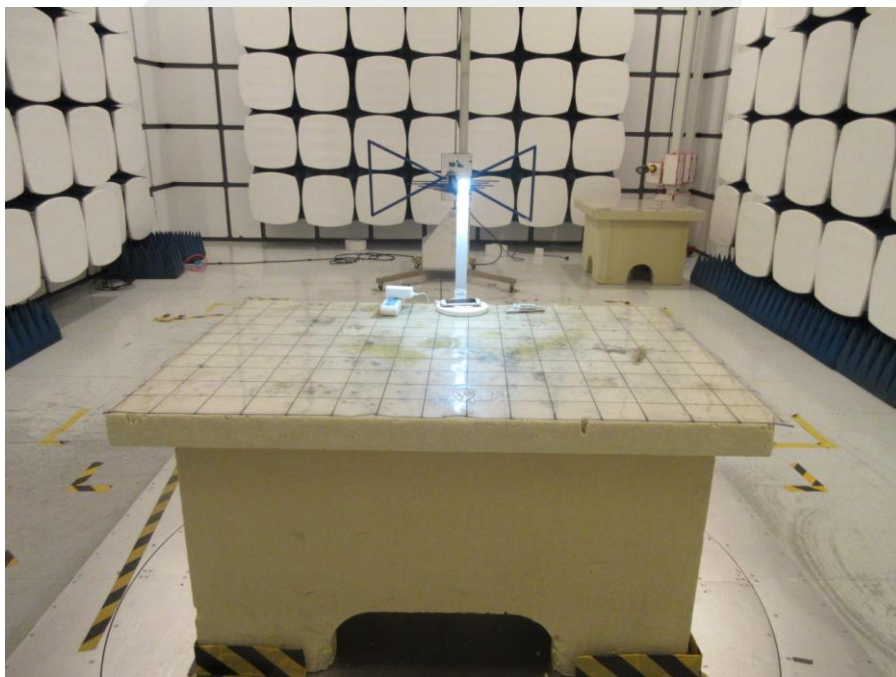


APPENDIX 1- TEST SETUP

Radiated Measurement Photos (0.15MHz-30MHz)



Radiated Measurement Photos (30MHz-1GHz)

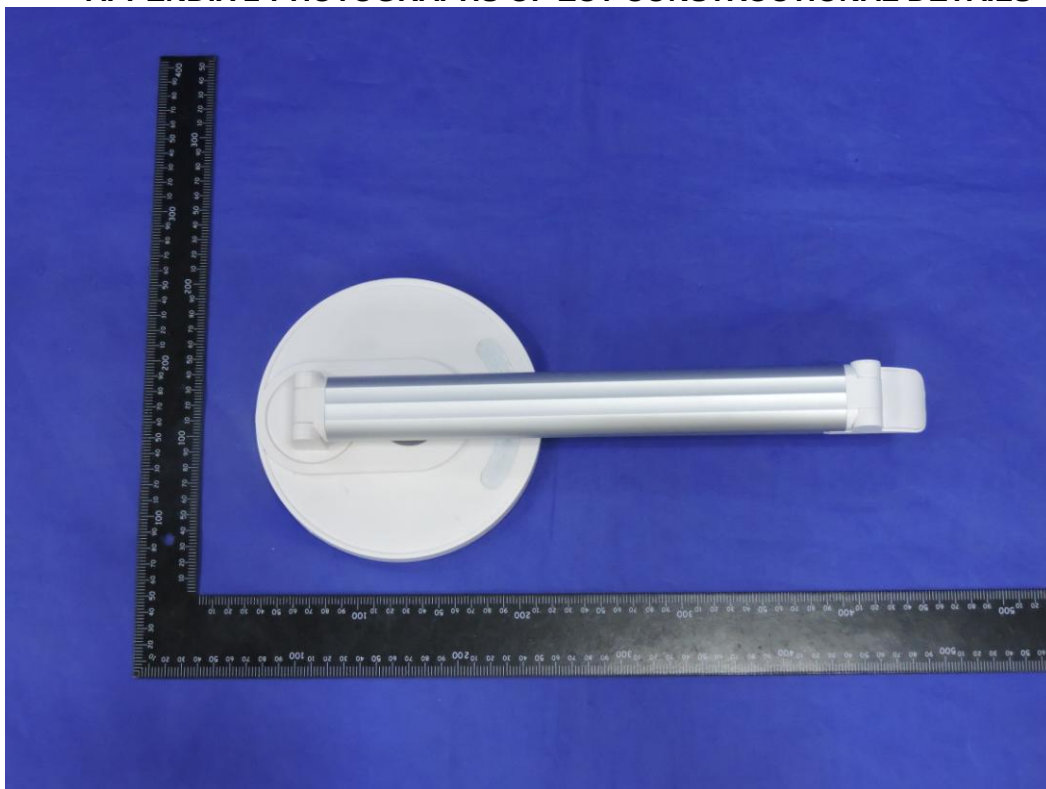


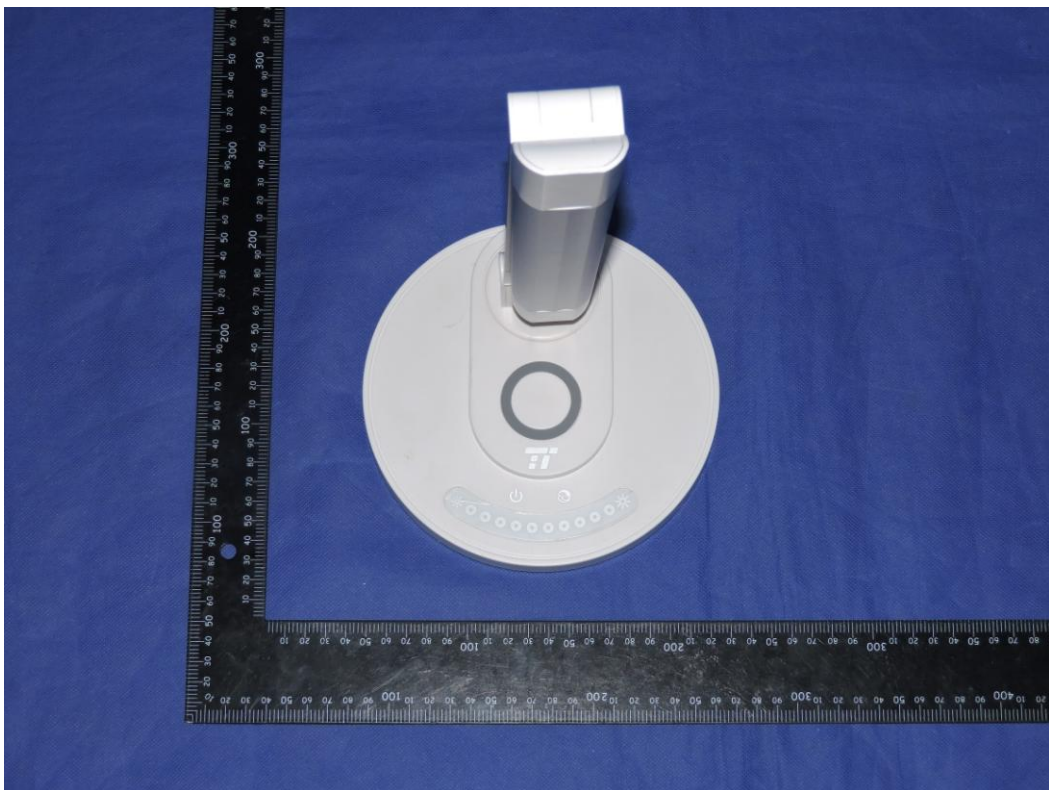
Conducted Measurement Photos

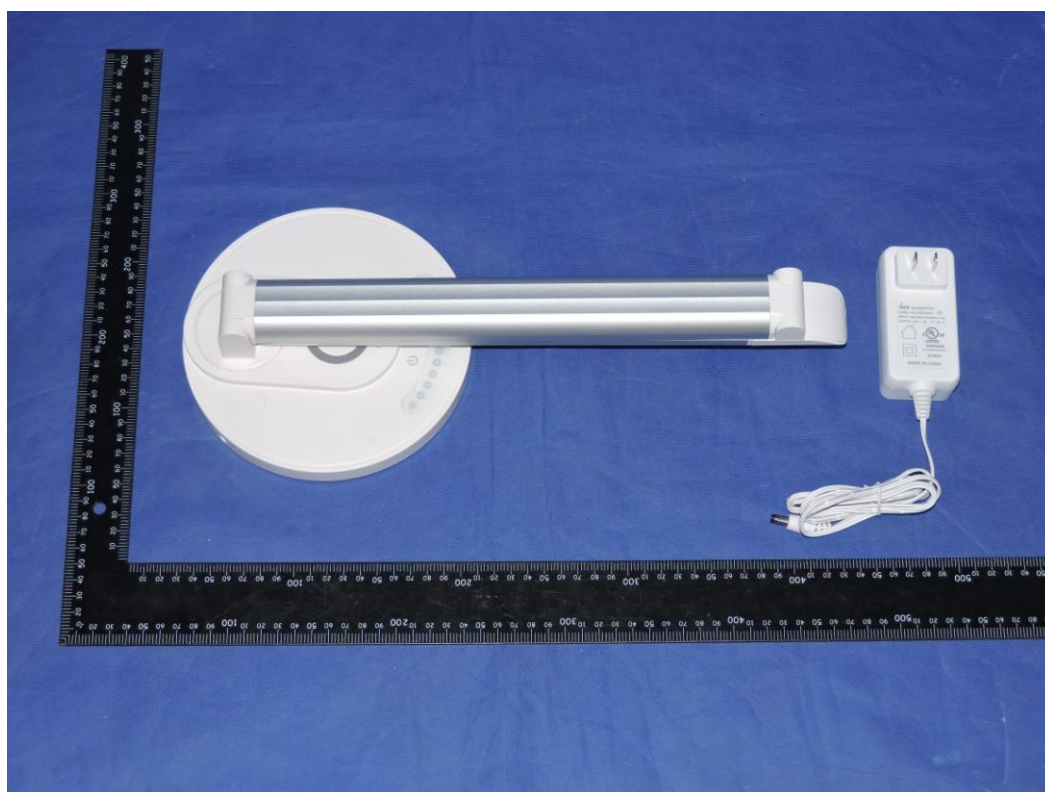
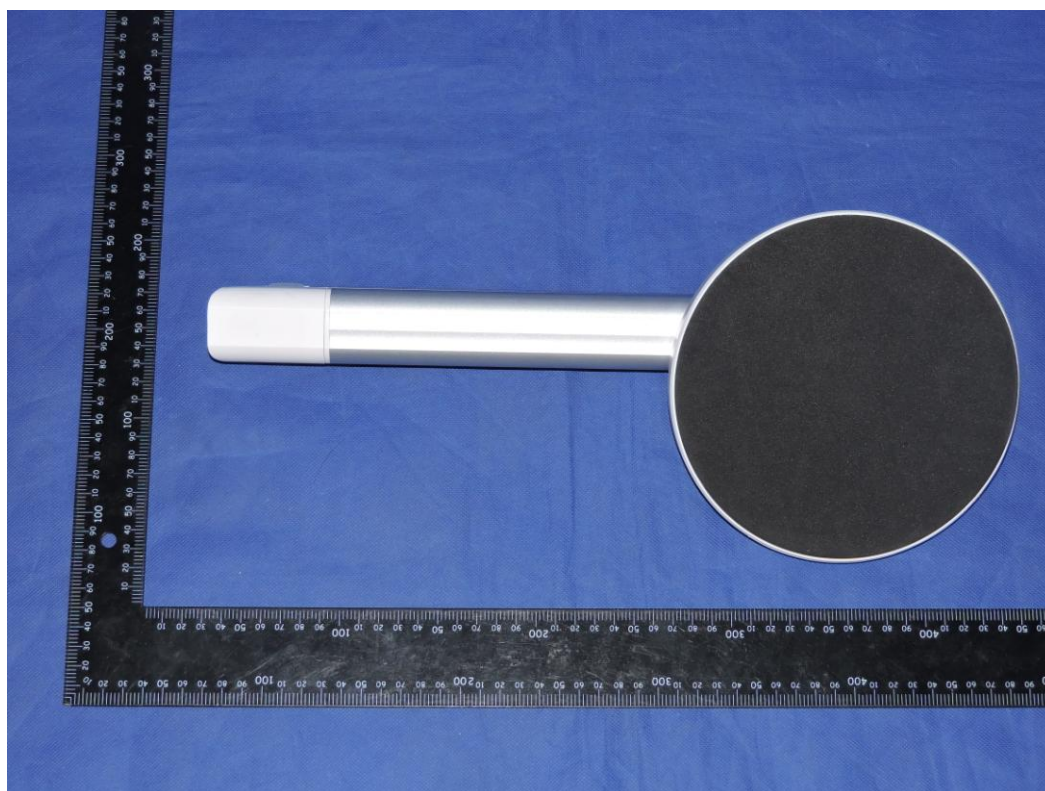


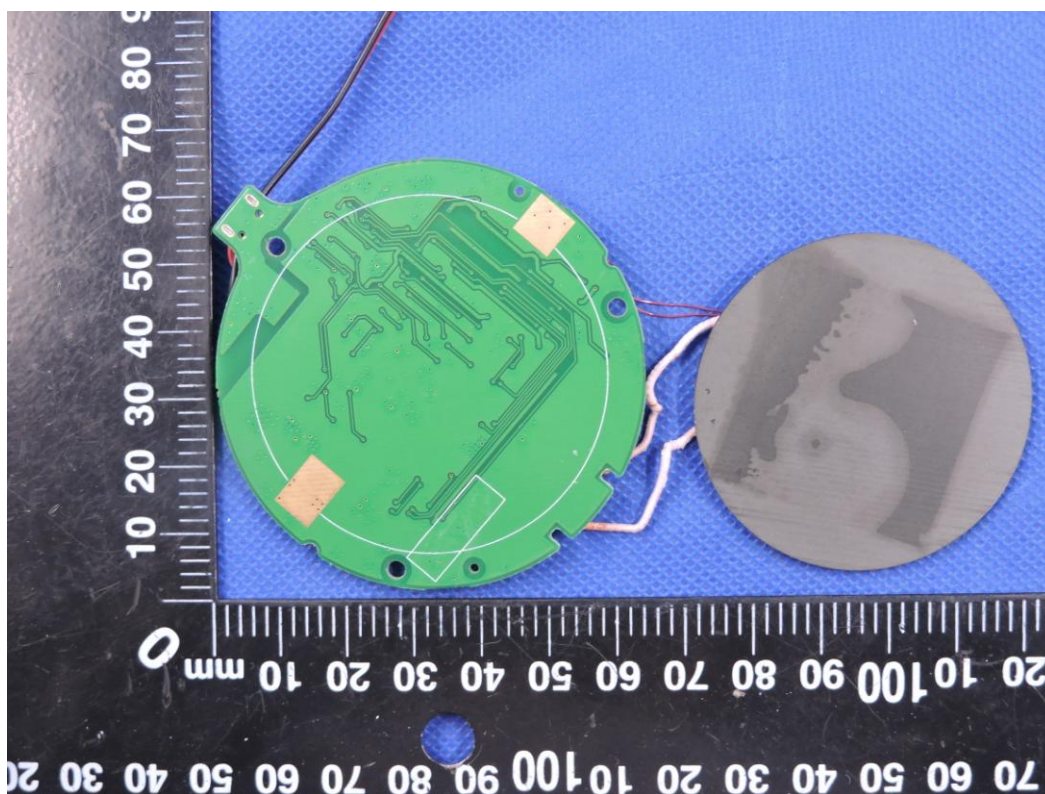
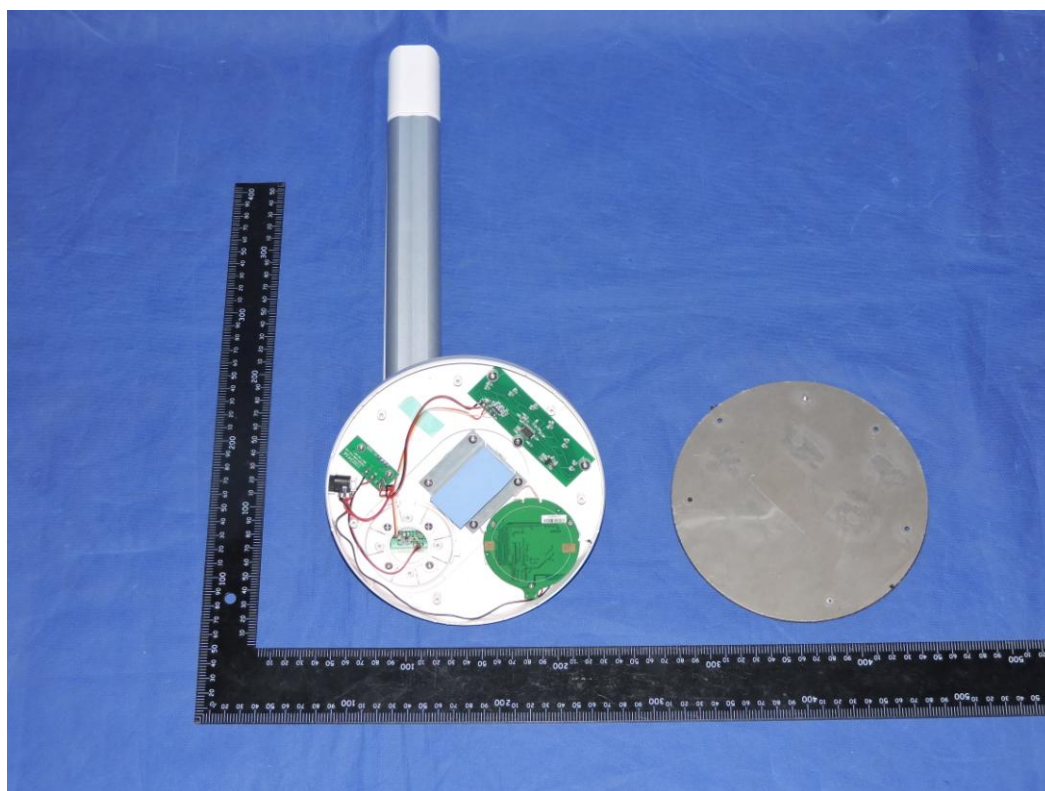
Conducted Measurement Photos

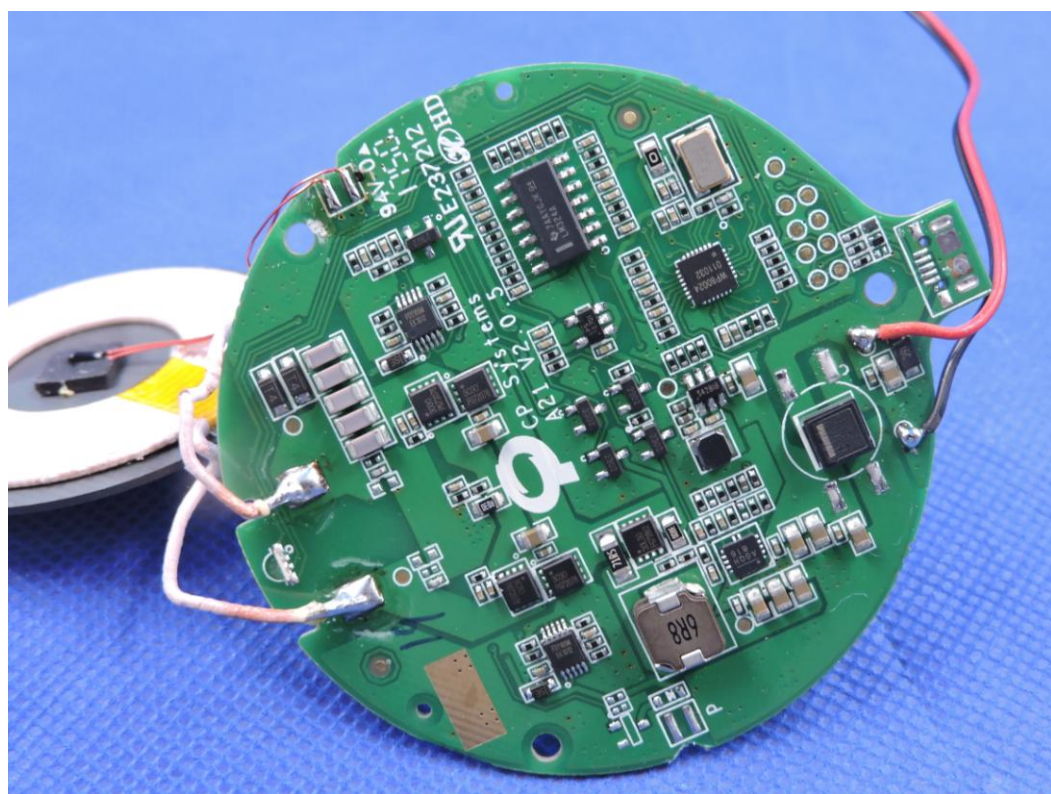
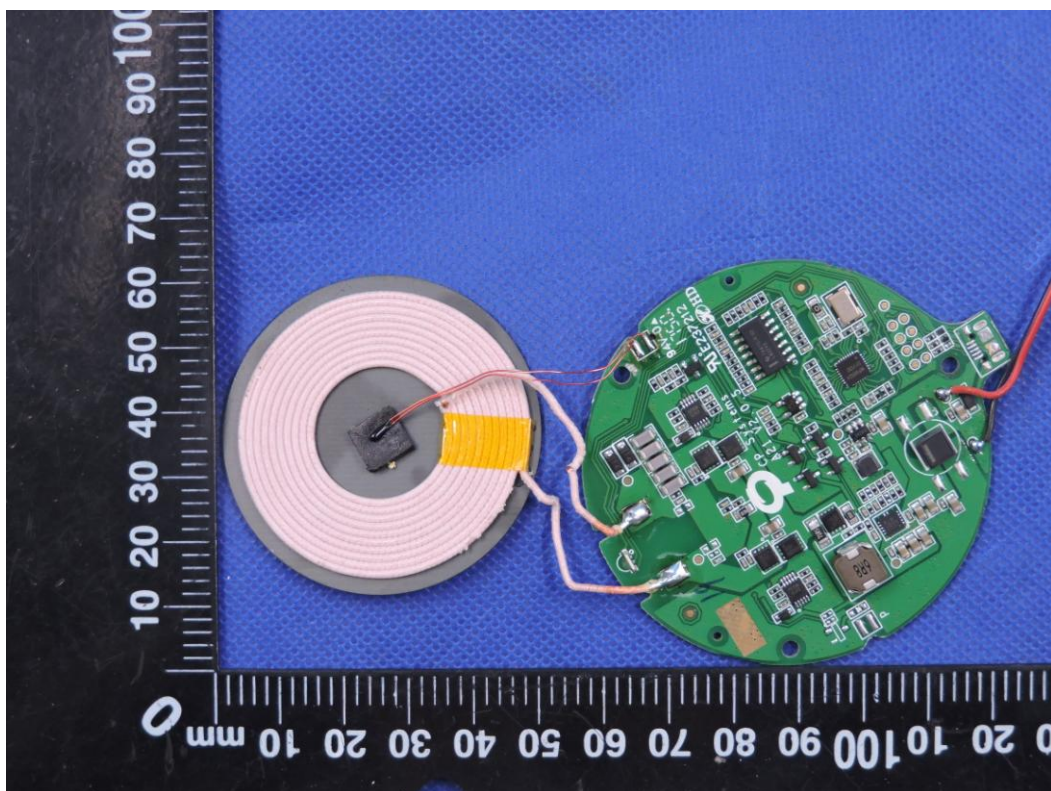


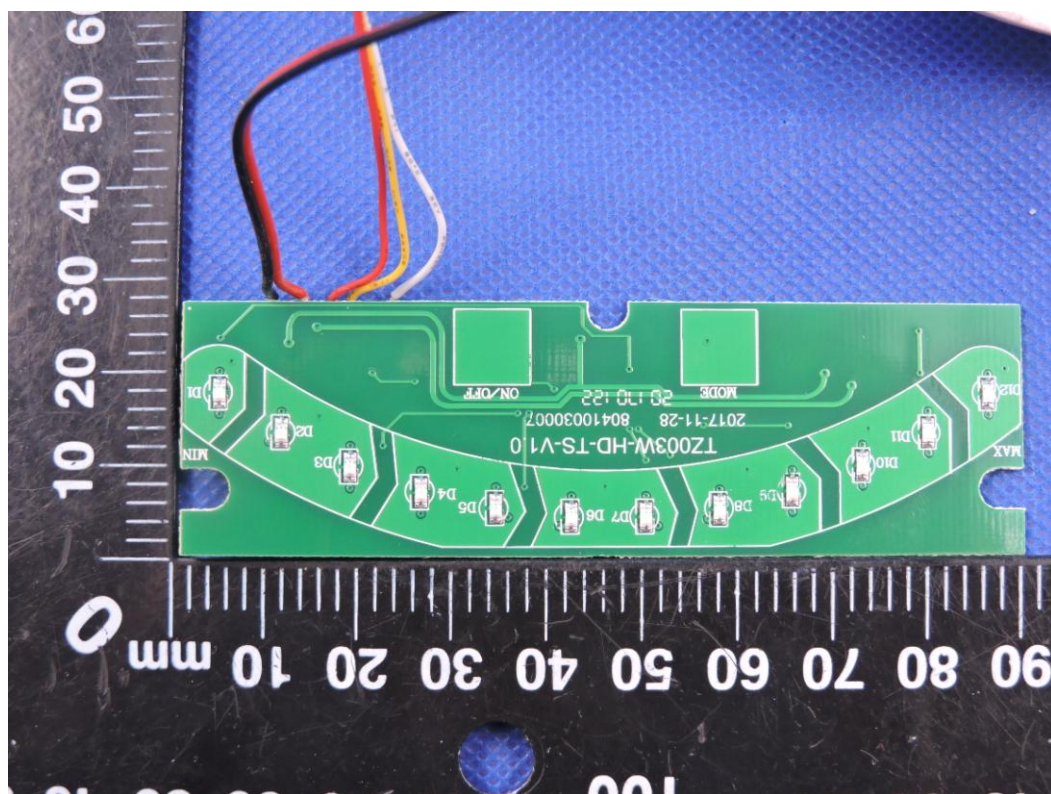
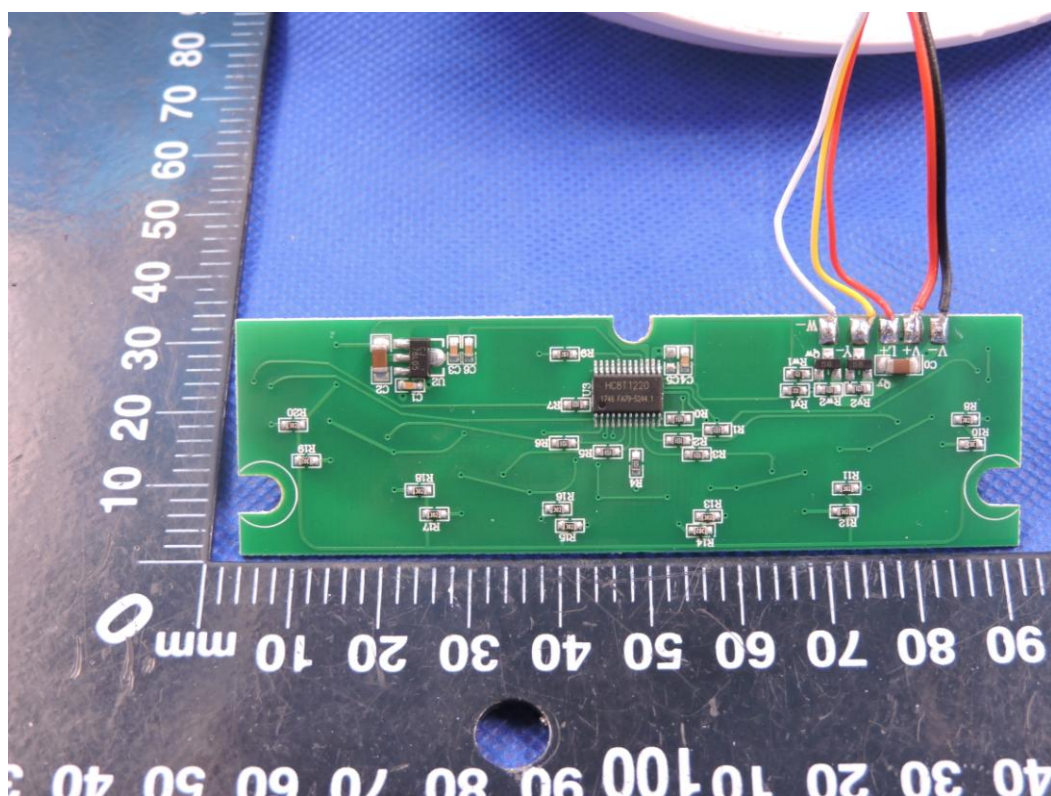
APPENDIX 2-PHOTOGRAPHS OF EUT CONSTRUCTIONAL DETAILS

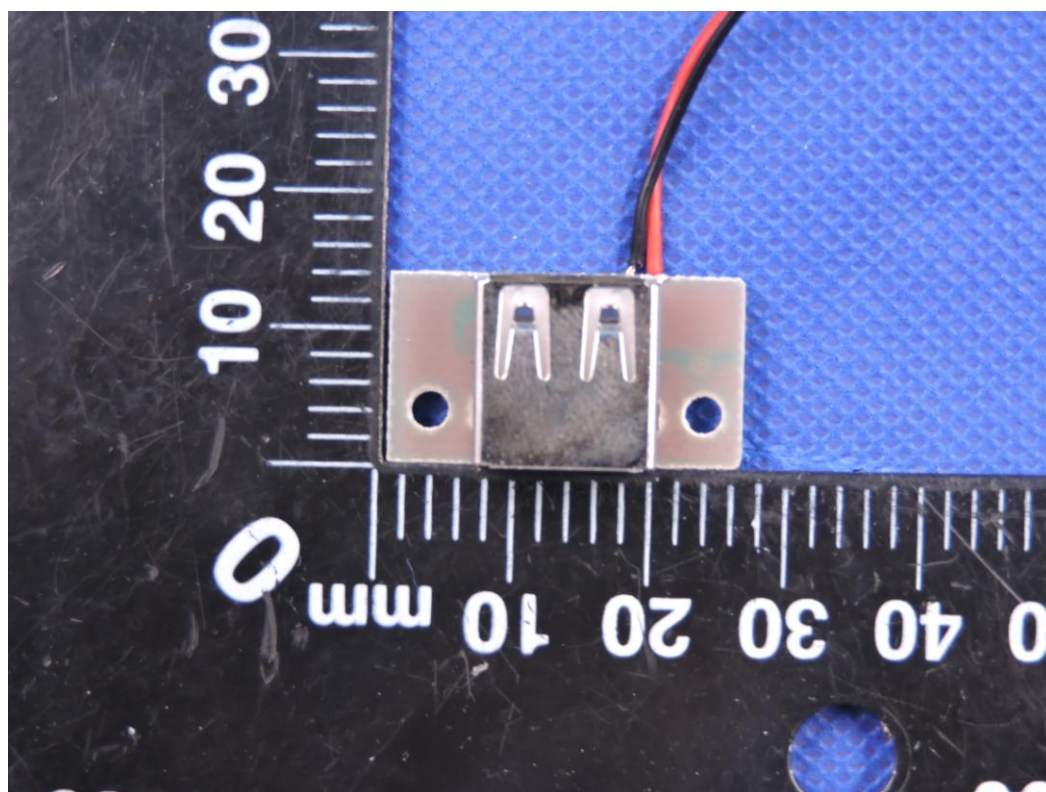
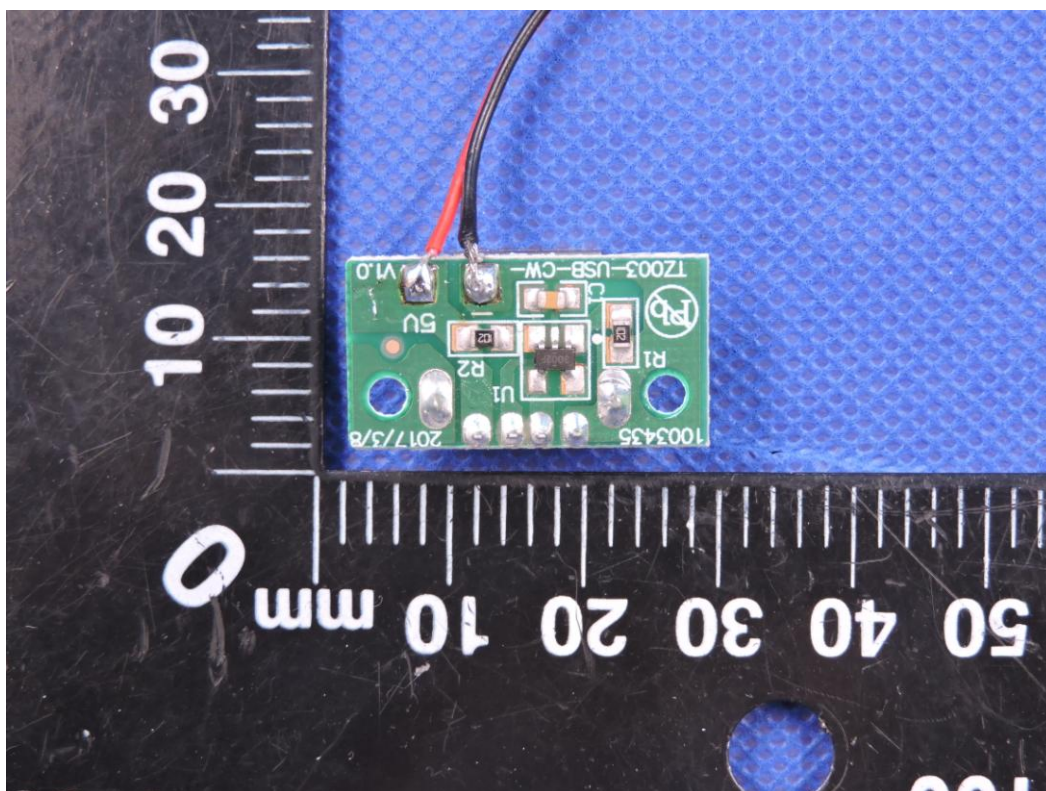


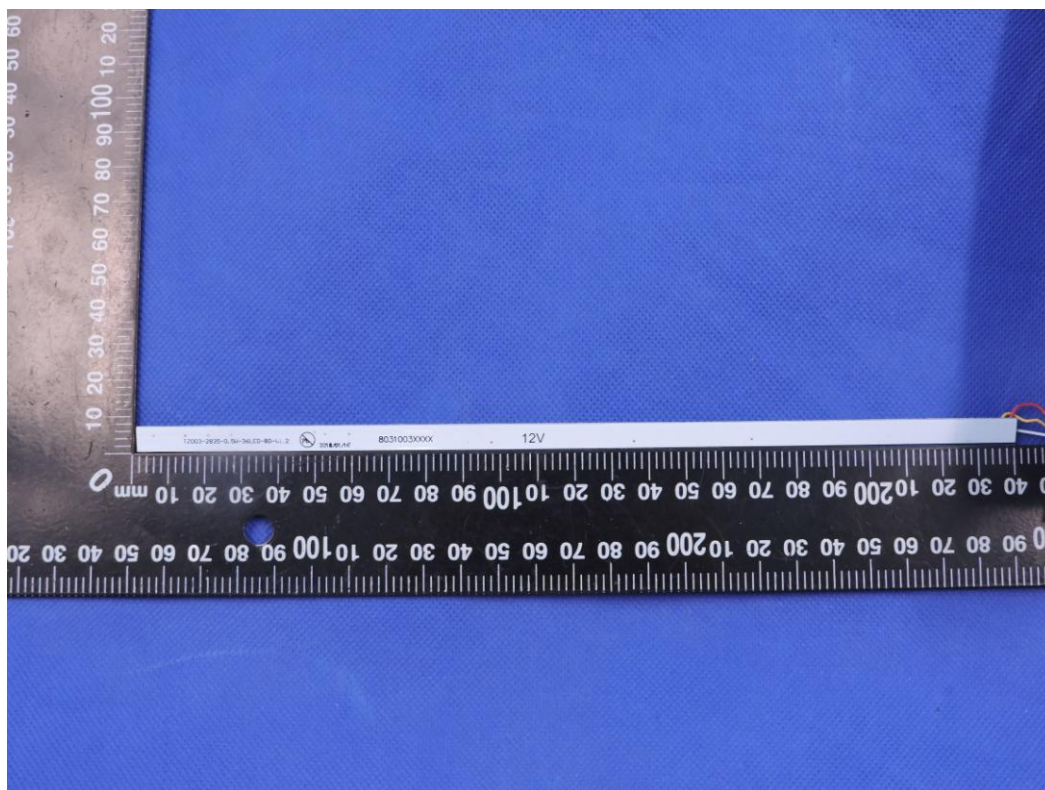
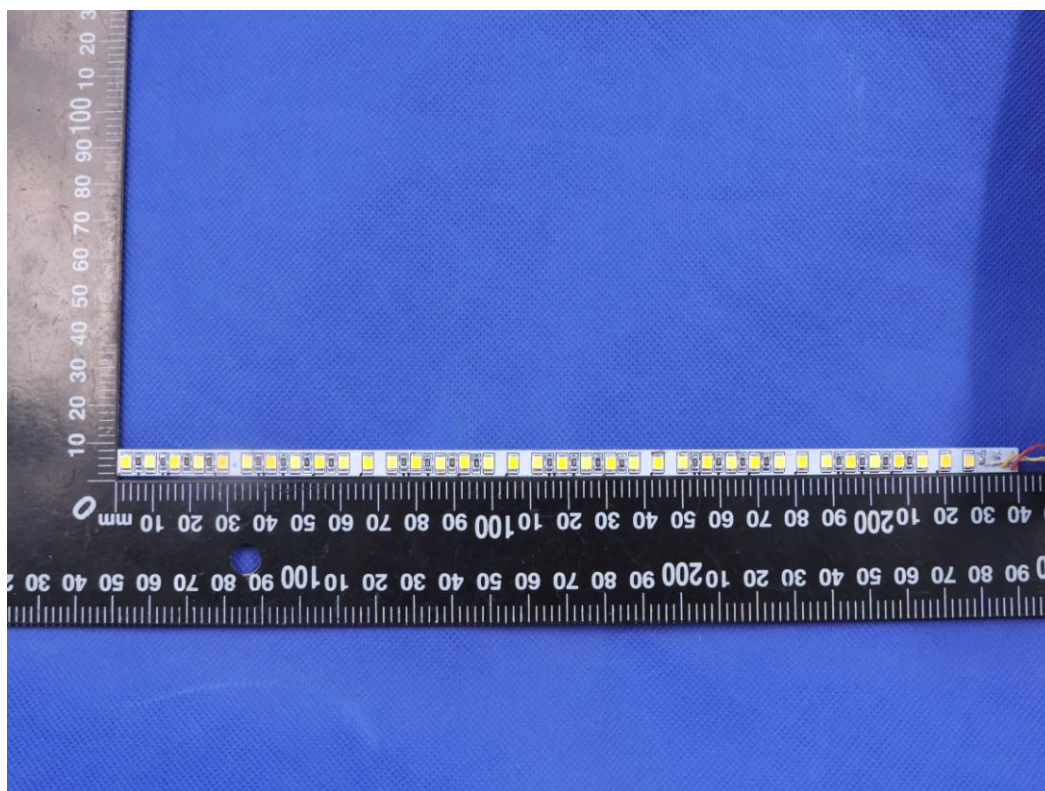














*****END OF THE REPORT*****