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## FCC TEST REPORT

Report No.: STS1810023E01

Issued for

SUNVALLEYTEK INTERNATIONAL, INC.

46724 Lakeview Blvd, Fremont, CA 94538

<b>Product Name:</b>	LED DESK LAMP
<b>Brand Name:</b>	TaoTronics
<b>Model Name:</b>	TT-DL053
<b>Series Model:</b>	N/A
<b>FCC ID:</b>	2AFDGT-T-DL036
<b>Test Standard:</b>	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-DL053

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 .....: 09 Oct. 2018 ~ 11 Oct. 2018

Date of Issue.....: 12 Oct. 2018

Test Result .....: **Pass**

Testing Engineer :

( Barry Li )

Technical Manager :

( Chopin Xiao )

Authorized Signatory :

( Vita Li )



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**Revision History**

Rev.	Issue Date	Report No.	Effect Page	Contents
00	12 Oct. 2018	STS1810023E01	ALL	Initial Issue



## 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 THE EUT

Equipment	LED DESK LAMP	
Trade Name	TaoTronics	
Test Model Name	TT-DL053	
Series Model	N/A	
Model Difference	N/A	
Test Sample Number	181009013	
Technical Specifications	The technical specifications of EUT are as below:	
	Power Supply	Input: AC100-120V, 1200mA, 50/60Hz Output: DC10V, 3000mA
	Rated Power	10Vd.c. by adaptor
	Frequency	105 KHz -148KHz
	NOTE: For more detailed information or features please refer to user's manual of EUT.	
Hardware Version Number	N/A	
Software Version Number	N/A	

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

## 2.2 DESCRIPTION OF THE 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.

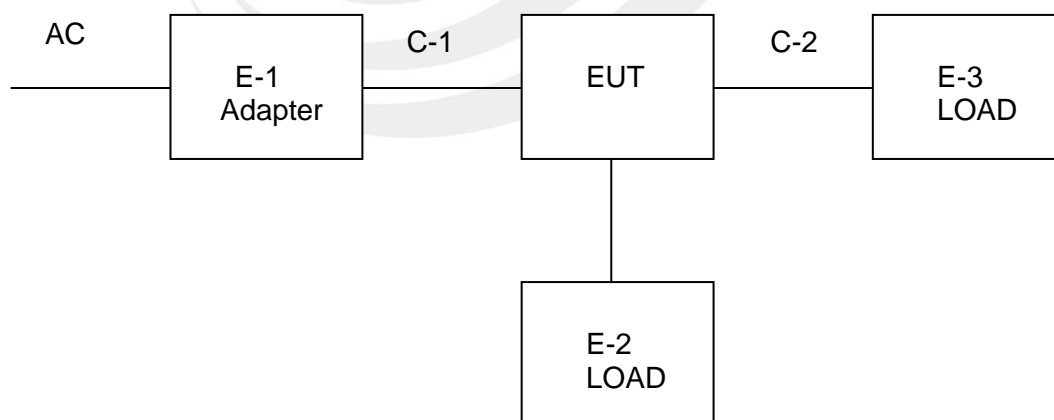
Pretest Mode	Description
Mode 1	Lighting+Wireless Charging Mode

For Conducted Test	
Final Test Mode	Description
Mode 1	Lighting+Wireless Charging Mode

For Radiated Test	
Final Test Mode	Description
Mode 1	Lighting+Wireless Charging 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 THE SYSTEM TESTED





## 2.4 DESCRIPTION OF THE 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.

### Accessories equipment

Item	Equipment	Mfr/Brand	Model/Type No.
E-1	Adapter	RAVPOWER	RP-PC092

### Auxiliary equipment

Item	Equipment	Mfr/Brand	Model/Type No.
E-2	LOAD	N/A	N/A
E-3	LOAD	N/A	N/A

### Cable

Item	Type	Shielded Type	Ferrite Core	Length
C-1	N/A	Shielded	NO	177cm
C-2	N/A	Shielded	NO	96cm

### 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	102086	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-mplifier(1G-18G)	Agilent	8449B	60538	2017.10.27	2018.10.26
Spectrum Analyzer	Agilent	N9020A	MY49100060	2018.03.08	2019.03.07
Pre-mplifier(0.1M-3GHz)	EM	EM330	--	2018.03.11	2019.03.10
Active Loop Antenna	ZHINAN	ZN30900C	16035	2018.03.11	2019.03.10

### Conduction Test equipment

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last Calibration	Calibrated Until
EMI Test Receiver	R&S	ESCI	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 the conducted disturbance voltage

Test Method:

The test was performed in accordance with MP-5: 1986, with the following: an initial measurement was performed in peak and average detection mode on the live line, any emissions recorded within 30dB of the relevant limit line were re-measured using quasi-peak and average detection on the live and neutral lines with the worst case recorded in the table of results.

Limit for Conducted Emissions (FCC 47 CFR Part 18.307 (b):		
Frequency of emission (MHz)	Conducted limit (dBμV)	
	Quasi-peak	Average
0.15 to 0.5	66 to 56*	56 to 46*
0.5 to 5	56	46
5 to 30	60	50

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.

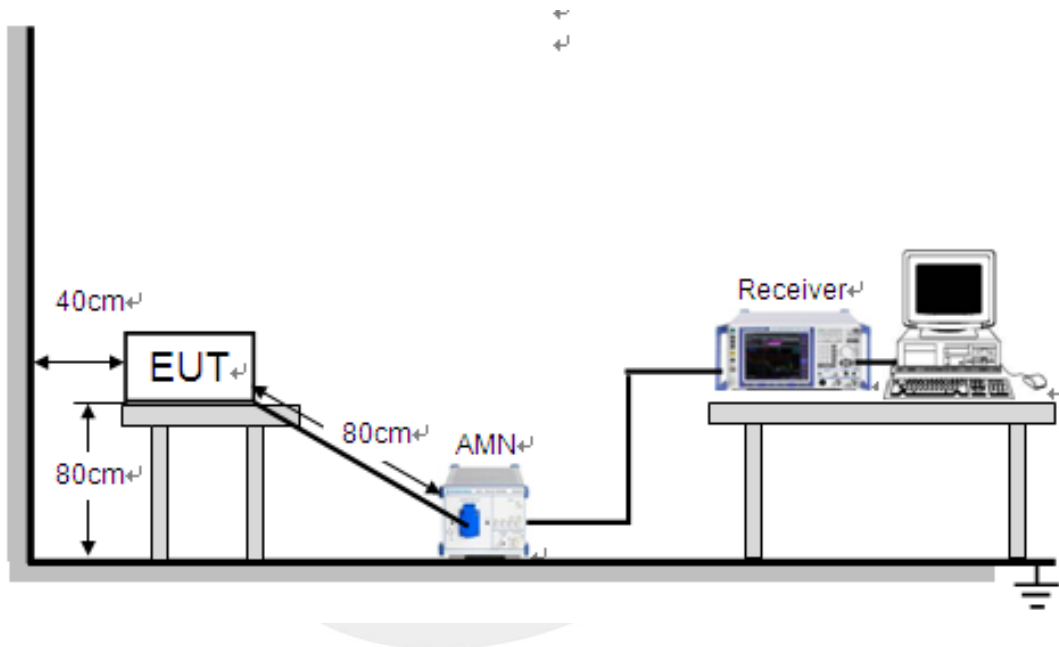
The following table is the setting of the receiver

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.
- 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.



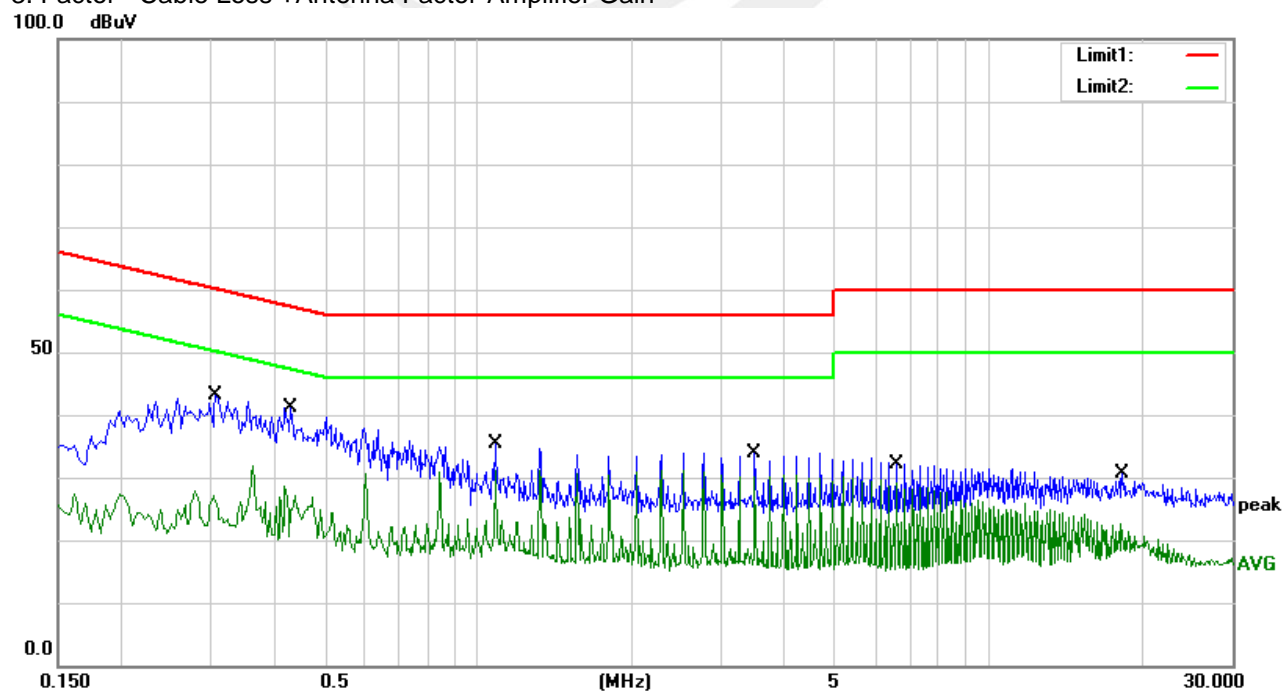
### 3.1.6 TEST RESULTS

Temperature:	26℃	Relative Humidity:	61%
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	0.3060	22.31	20.71	43.02	60.08	-17.06	QP
2	0.3060	11.11	20.71	31.82	50.08	-18.26	AVG
3	0.4300	20.69	20.49	41.18	57.25	-16.07	QP
4	0.4300	10.15	20.49	30.64	47.25	-16.61	AVG
5	1.0820	15.26	20.15	35.41	56.00	-20.59	QP
6	1.0820	11.01	20.15	31.16	46.00	-14.84	AVG
7	3.4860	13.89	19.97	33.86	56.00	-22.14	QP
8	3.4860	10.17	19.97	30.14	46.00	-15.86	AVG
9	6.6140	12.31	19.91	32.22	60.00	-27.78	QP
10	6.6140	9.15	19.91	29.06	50.00	-20.94	AVG
11	18.2820	10.75	19.95	30.70	60.00	-29.30	QP
12	18.2820	2.59	19.95	22.54	50.00	-27.46	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





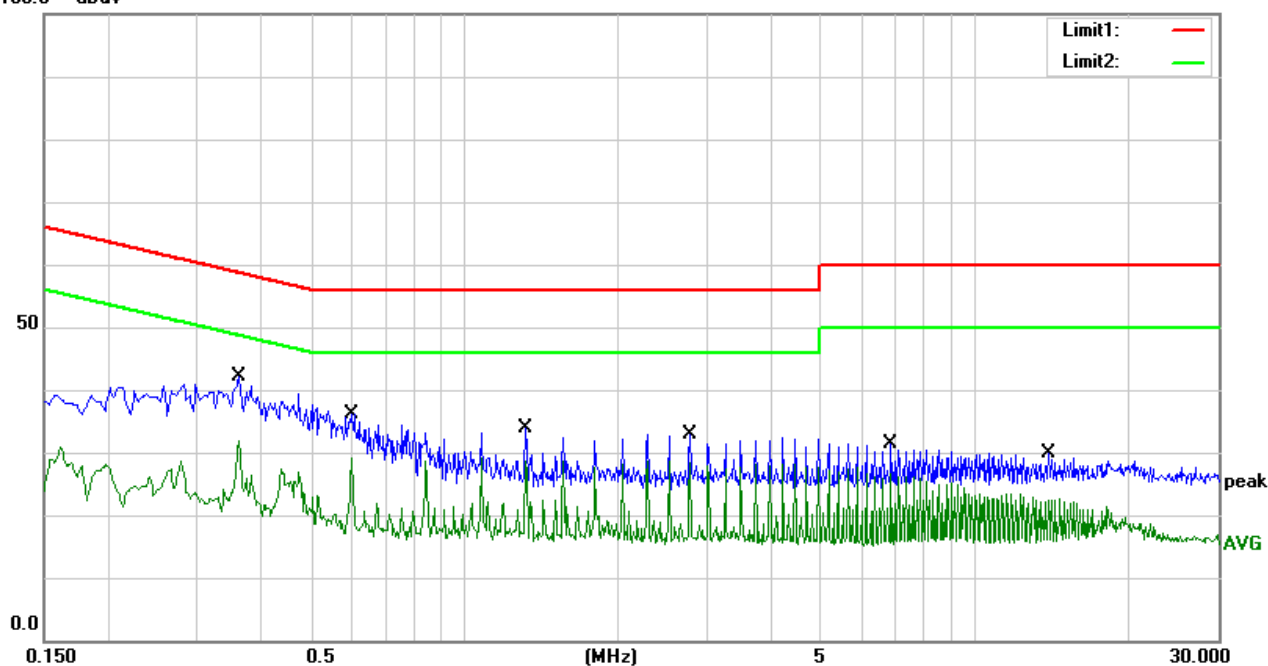
Temperature:	26 °C	Relative Humidity:	61%
Phase:	N	Test Mode:	Mode 1
Test Voltage:	AC 120V/60Hz		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.3620	21.48	20.58	42.06	58.68	-16.62	QP
2	0.3620	11.34	20.58	31.92	48.68	-16.76	AVG
3	0.6020	15.82	20.36	36.18	56.00	-19.82	QP
4	0.6020	8.65	20.36	29.01	46.00	-16.99	AVG
5	1.3220	13.69	20.12	33.81	56.00	-22.19	QP
6	1.3220	8.55	20.12	28.67	46.00	-17.33	AVG
7	2.7660	12.98	20.00	32.98	56.00	-23.02	QP
8	2.7660	8.50	20.00	28.50	46.00	-17.50	AVG
9	6.8580	11.54	19.91	31.45	60.00	-28.55	QP
10	6.8580	6.60	19.91	26.51	50.00	-23.49	AVG
11	13.9540	9.77	20.00	29.77	60.00	-30.23	QP
12	13.9540	2.53	20.00	22.53	50.00	-27.47	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 the radiated disturbance measurement

Test Method:

The sample was placed 0.8m above the ground plane of Semi-anechoic chamber\*. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating turntable. The emissions worst-case are shown in Test Results of the following pages.

Limits 9kHz-30MHz:

Limits for Radiated Emissions [FCC 47 CFR 18.305 (b)]:  $15\mu\text{V/m}@300\text{meter}^* = 103\text{dB}\mu\text{V/m}@3\text{m}$

Limits 30MHz-1GHz:

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.

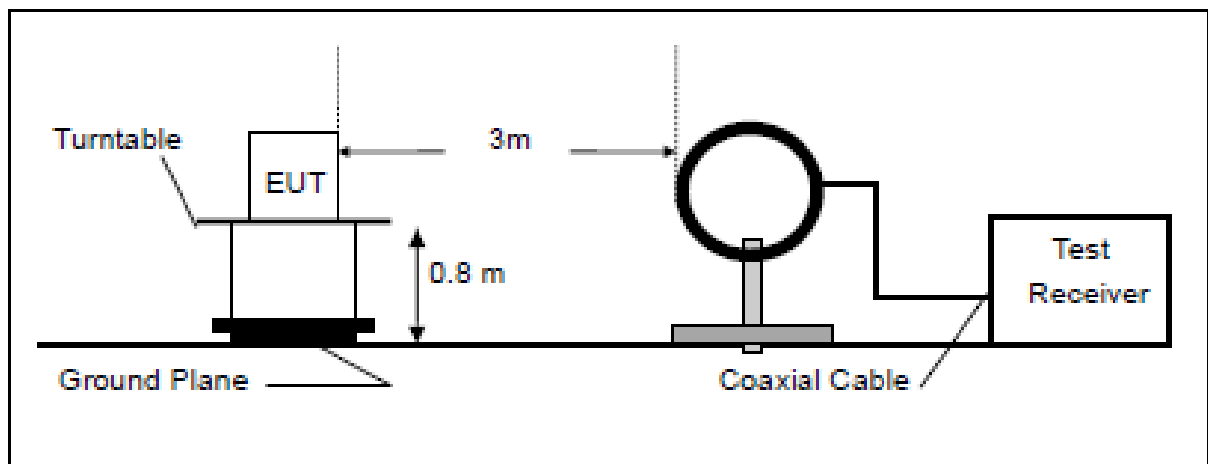
Equipment	Operating frequency	RF Power generated by equipment (watts)	Field strength limit (dBuV/m)	Distance (meters)
	Any NON-ISM frequency	Below 500 500 or more	63.52	3

### 3.2.2. Test Procedure

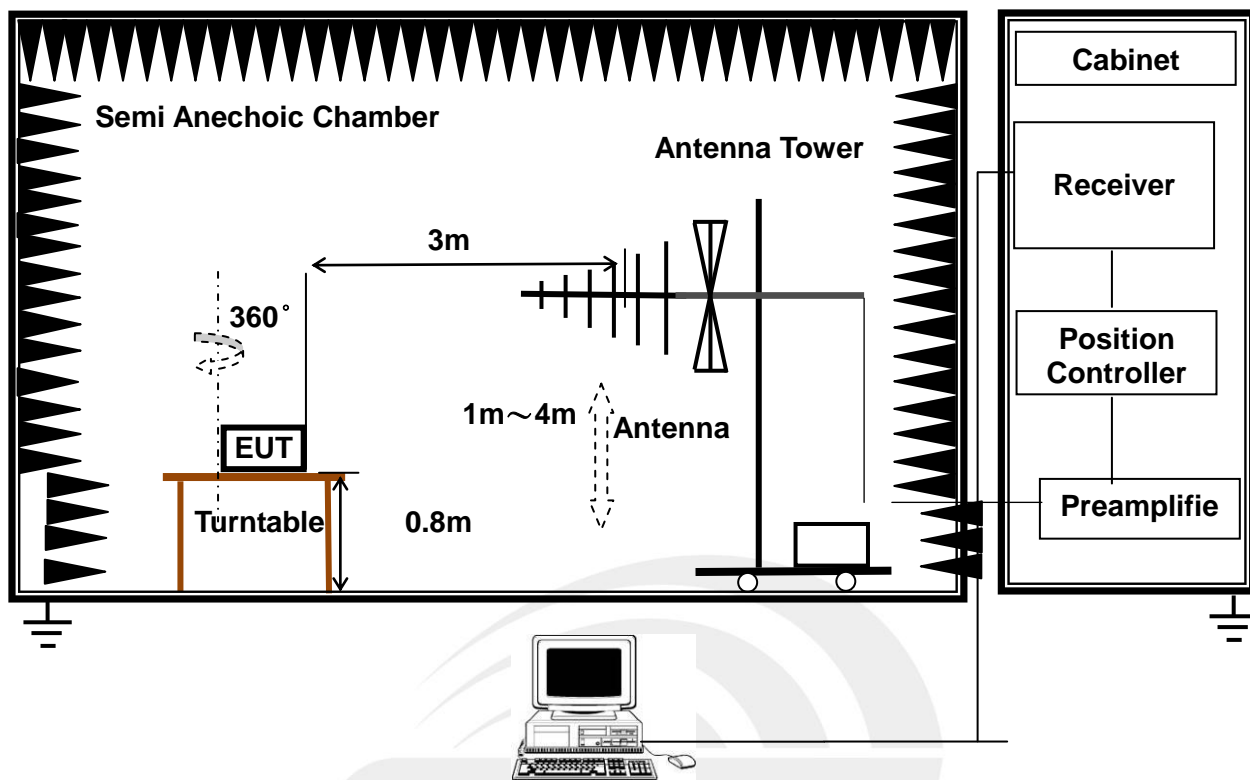
- The measuring distance of at 3m shall be used for measurements at frequency up to 1GHz.
- The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- The height of the equipment 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

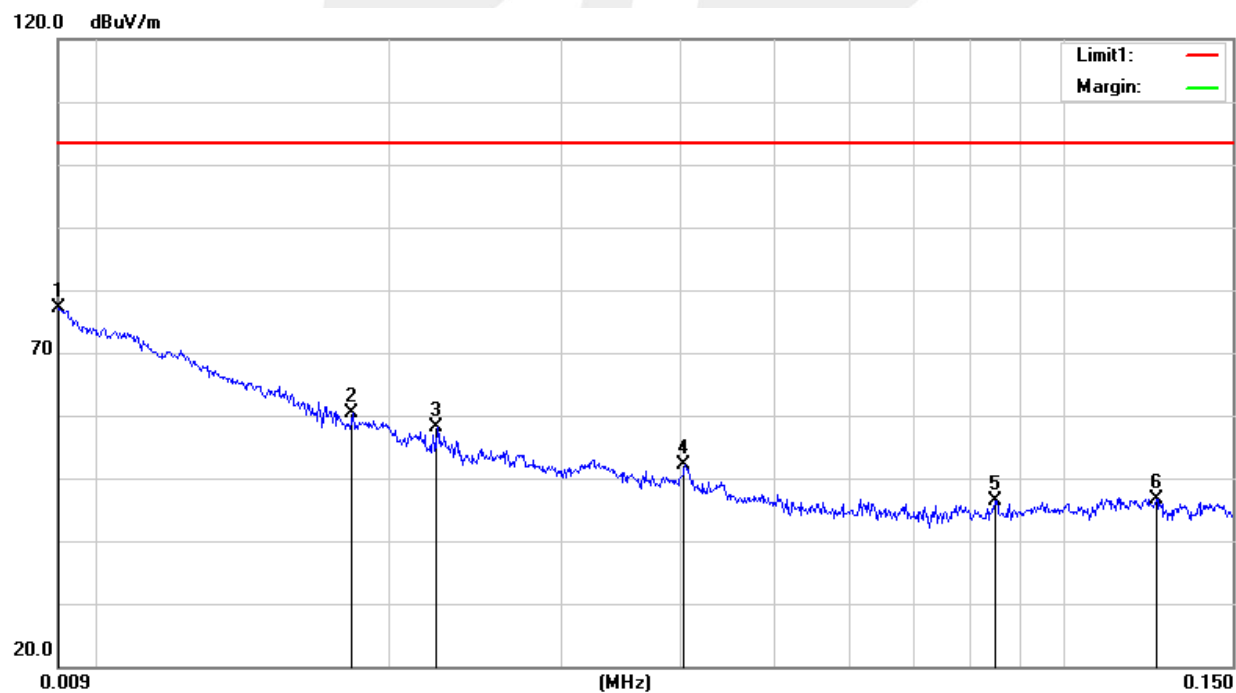
Between 0.009MHz-0.15MHz

Temperature:	24.3 °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	55.00	22.15	77.15	103.50	-26.35	QP
2	0.0182	37.72	22.70	60.42	103.50	-43.08	QP
3	0.0223	36.15	22.03	58.18	103.50	-45.32	QP
4	0.0403	31.19	20.84	52.03	103.50	-51.47	QP
5	0.0850	29.33	17.10	46.43	103.50	-57.07	QP
6	0.1247	27.51	19.16	46.67	103.50	-56.83	QP

Remark:

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





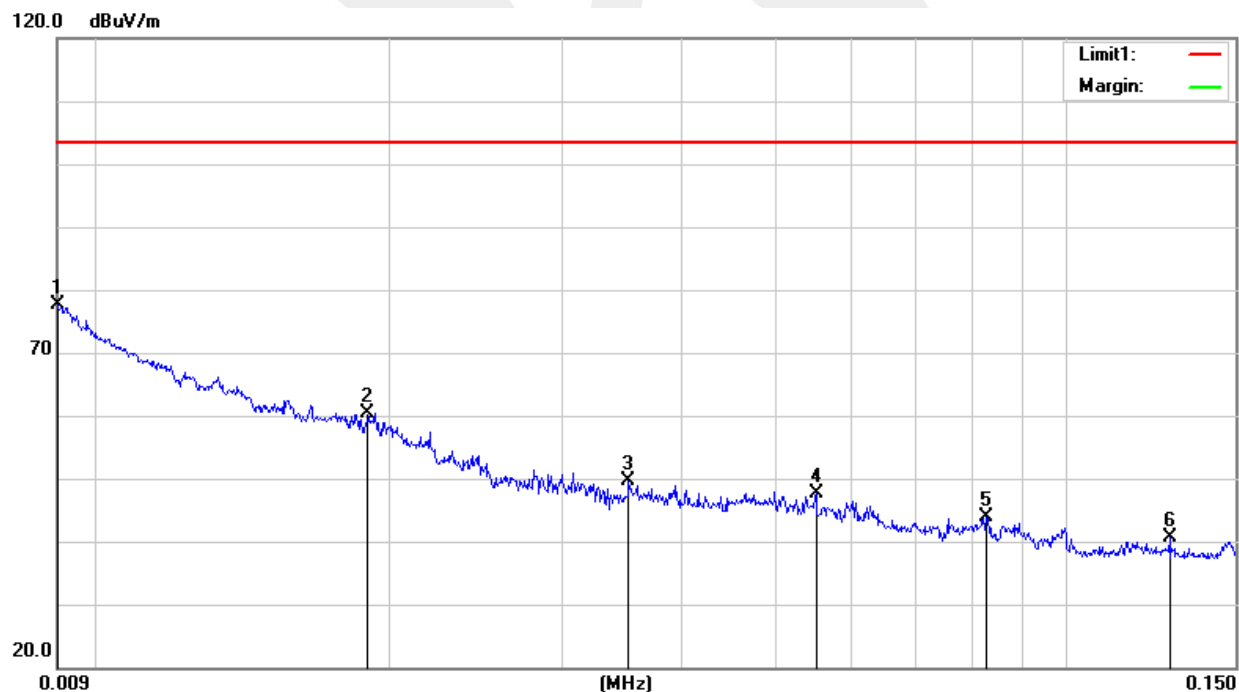
Between 0.009MHz-0.15MHz

Temperature:	24.3 °C	Relative Humidity:	56%
Phase:	Y	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	55.52	22.15	77.67	103.50	-25.83	QP
2	0.0190	37.70	22.69	60.39	103.50	-43.11	QP
3	0.0352	27.58	22.01	49.59	103.50	-53.91	QP
4	0.0551	26.74	20.84	47.58	103.50	-55.92	QP
5	0.0826	26.65	17.14	43.79	103.50	-59.71	QP
6	0.1280	21.49	19.13	40.62	103.50	-62.88	QP

Remark:

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





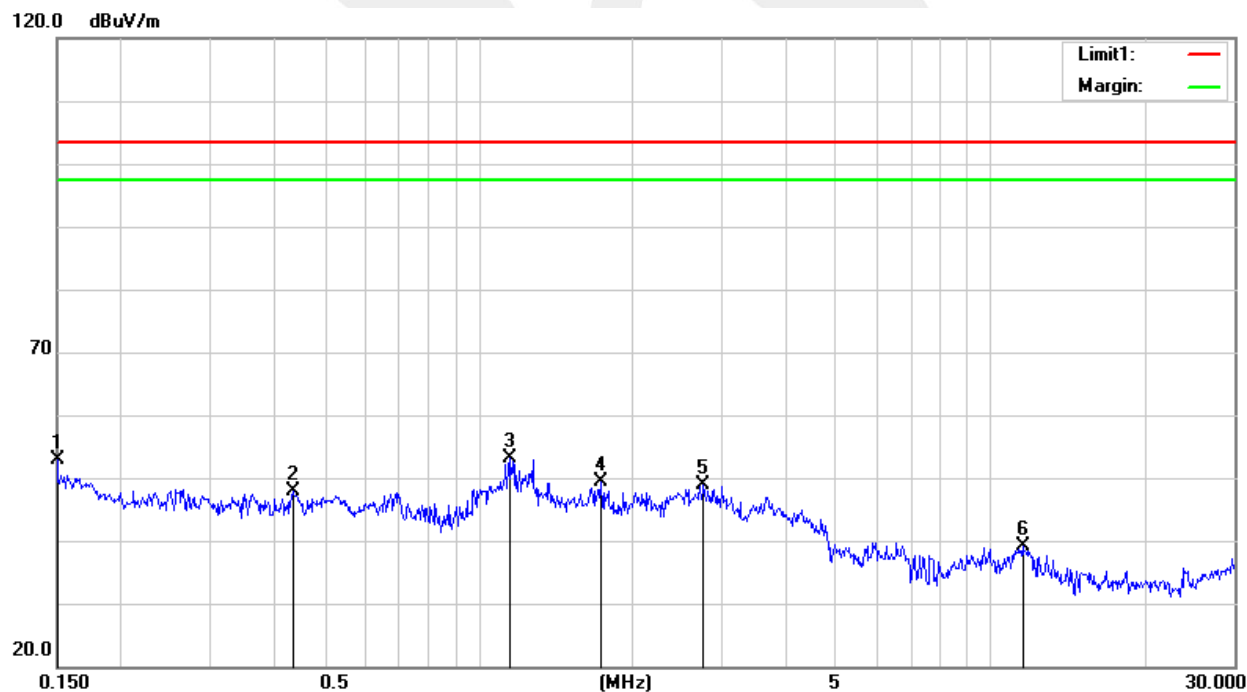
Between 0.15MHz-30MHz

Temperature:	24.3 °C	Relative Humidity:	561%
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	0.1500	30.70	22.11	52.81	103.50	-50.69	QP
2	0.4328	25.17	22.68	47.85	103.50	-55.65	QP
3	1.1471	31.03	22.01	53.04	103.50	-50.46	QP
4	1.7342	28.64	20.84	49.48	103.50	-54.02	QP
5	2.7501	29.84	19.01	48.85	103.50	-54.65	QP
6	11.5594	19.73	19.28	39.01	103.50	-64.49	QP

Remark:

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





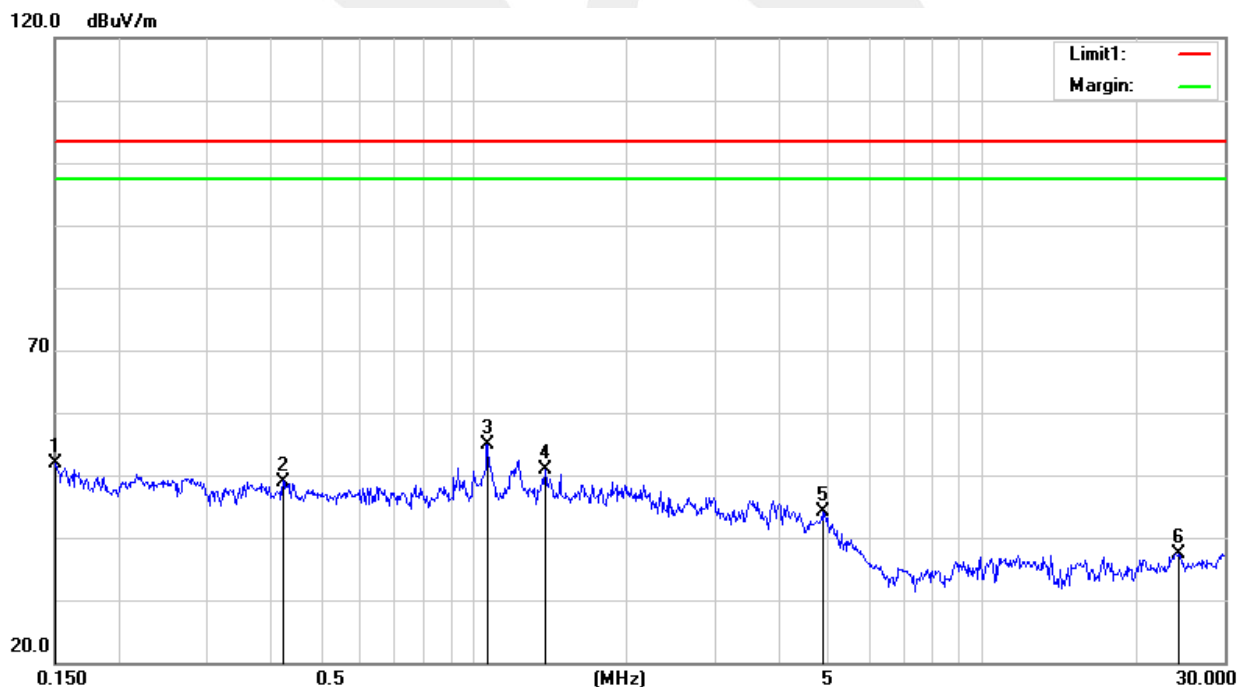
Between 0.15MHz-30MHz

Temperature:	24.3 °C	Relative Humidity:	56%
Phase:	Y	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	0.1507	29.29	22.70	51.99	103.50	-51.51	QP
2	0.4213	27.18	21.82	49.00	103.50	-54.50	QP
3	1.0650	32.94	22.03	54.97	103.50	-48.53	QP
4	1.3810	30.10	20.84	50.94	103.50	-52.56	QP
5	4.8480	27.03	17.10	44.13	103.50	-59.37	QP
6	24.3993	18.25	19.16	37.41	103.50	-66.09	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:	25.6℃	Relative Humidity:	54%
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	72.5916	50.40	-23.74	26.66	63.50	-36.84	QP
2	136.9391	52.28	-17.52	34.76	63.50	-28.74	QP
3	193.7728	70.42	-20.22	50.20	63.50	-13.30	QP
4	219.8450	65.86	-19.13	46.73	63.50	-16.77	QP
5	446.4141	51.57	-10.85	40.72	63.50	-22.78	QP
6	929.0082	31.14	-1.19	29.95	63.50	-33.55	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:	25.6℃	Relative Humidity:	54%
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	35.6240	46.20	-14.07	32.13	63.50	-31.37	QP
2	73.1025	58.14	-23.66	34.48	63.50	-29.02	QP
3	102.0014	57.39	-19.02	38.37	63.50	-25.13	QP
4	197.2001	77.81	-20.19	57.62	63.50	-5.88	QP
5	400.4320	55.52	-11.22	44.30	63.50	-19.20	QP
6	665.8035	42.49	-6.11	36.38	63.50	-27.12	QP

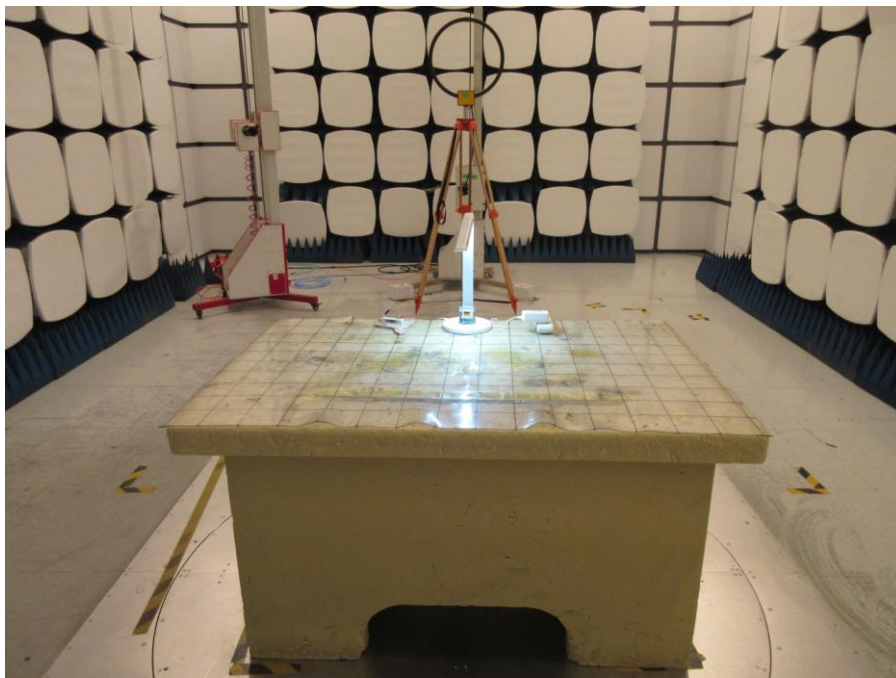
Remark:

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

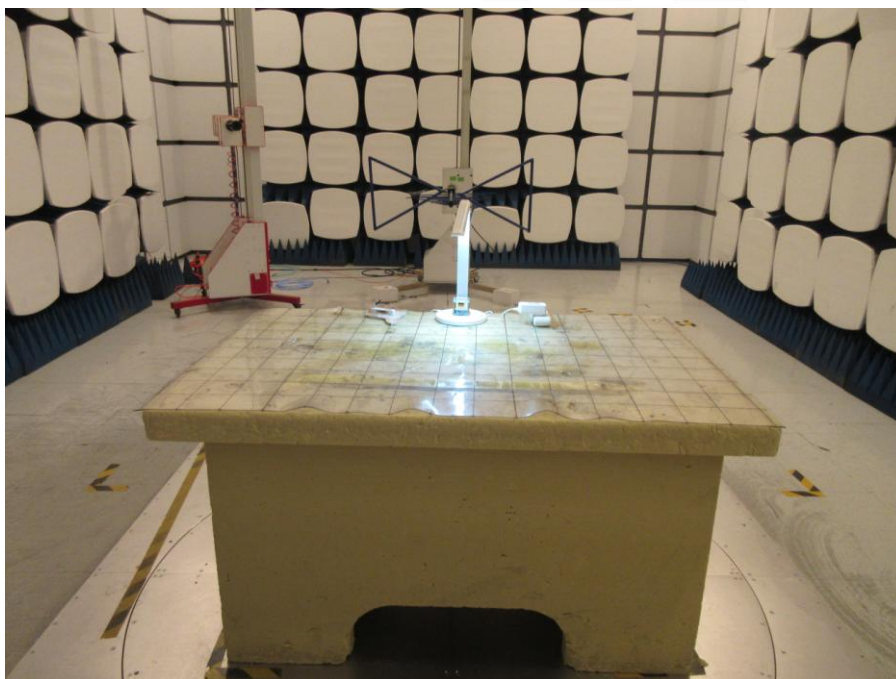


## APPENDIX 1- TEST SETUP

### Radiated Measurement Photos (9kHz-30MHz)

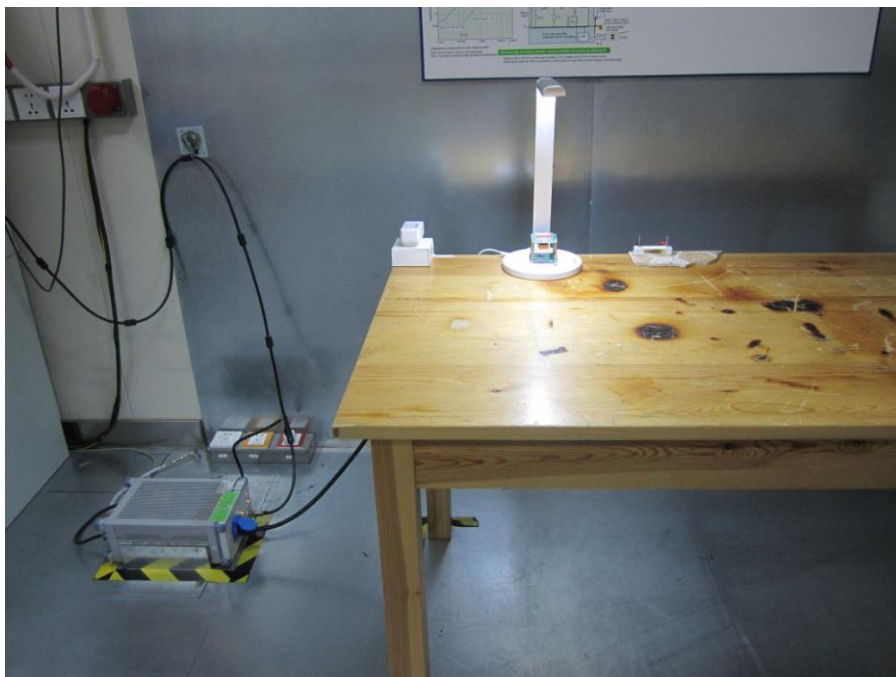


### Radiated Measurement Photos (30MHz-1GHz)

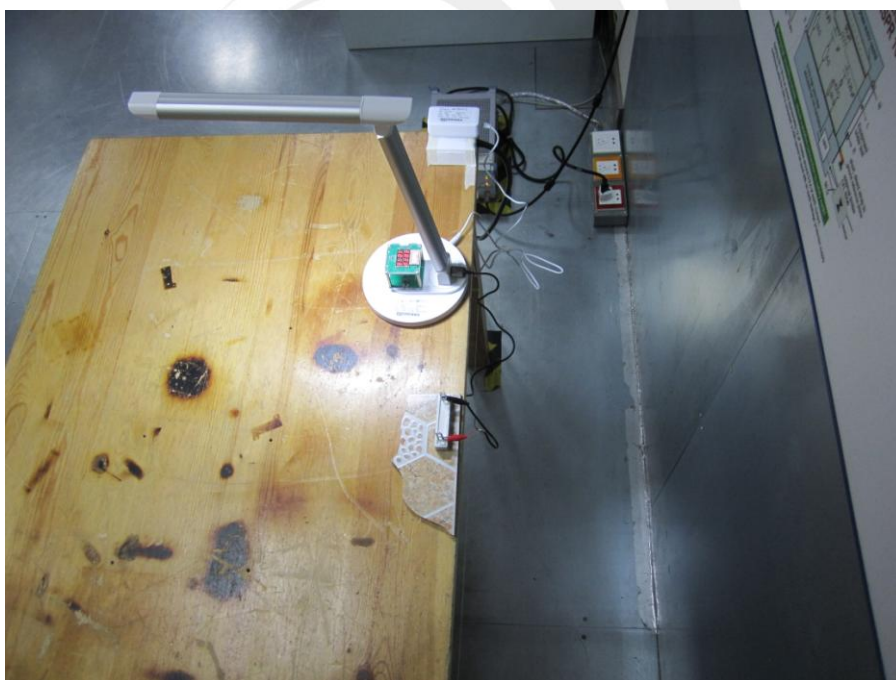




## Conducted Measurement Photos



## Conducted Measurement Photos





**APPENDIX 2-PHOTOGRAPHS OF EUT CONSTRUCTIONAL DETAILS**

Photo 1

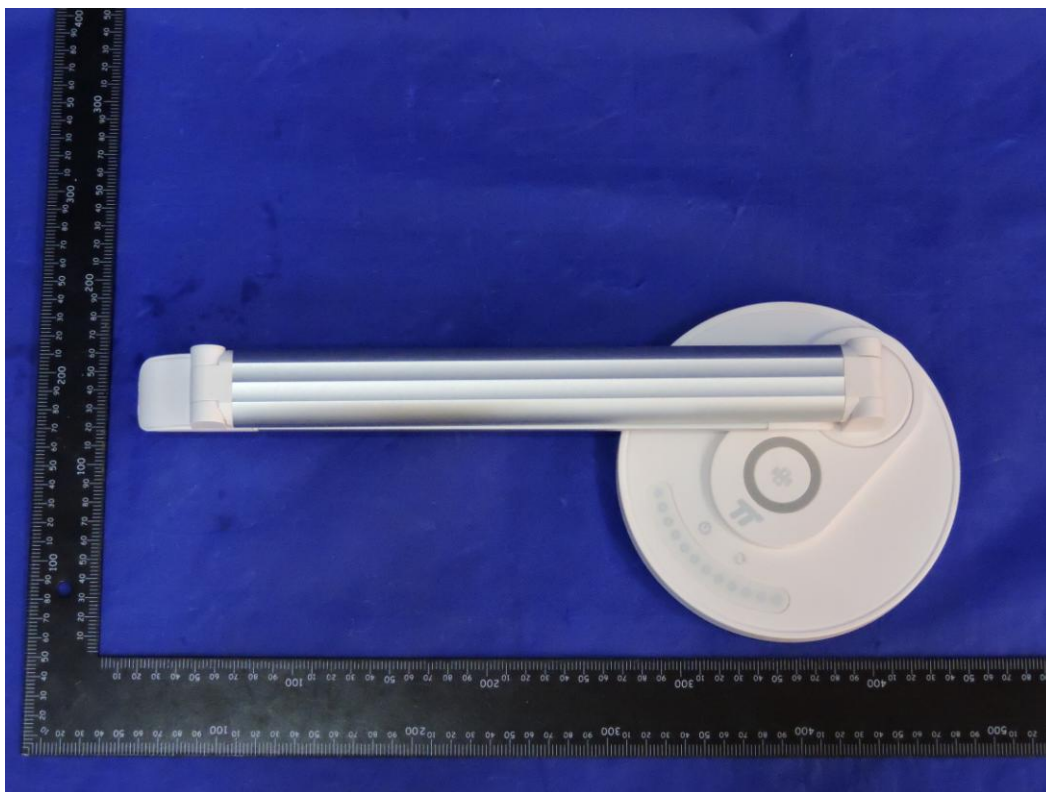


Photo 2

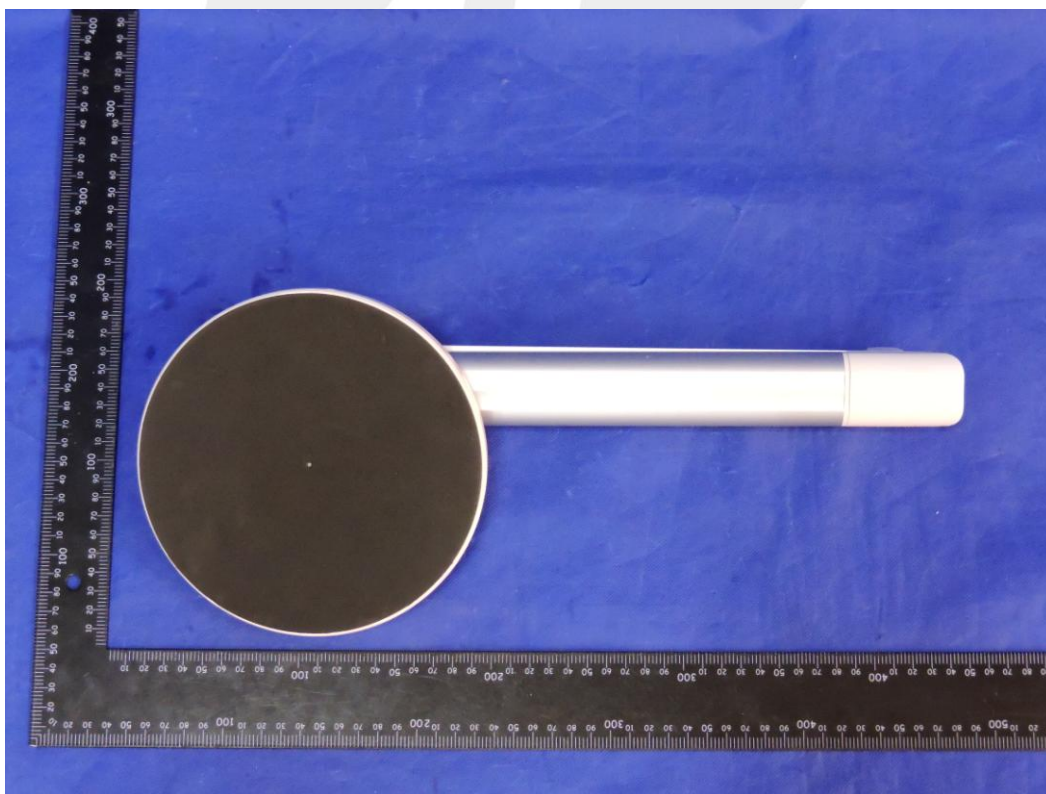


Photo 3



Photo 4





Photo 5

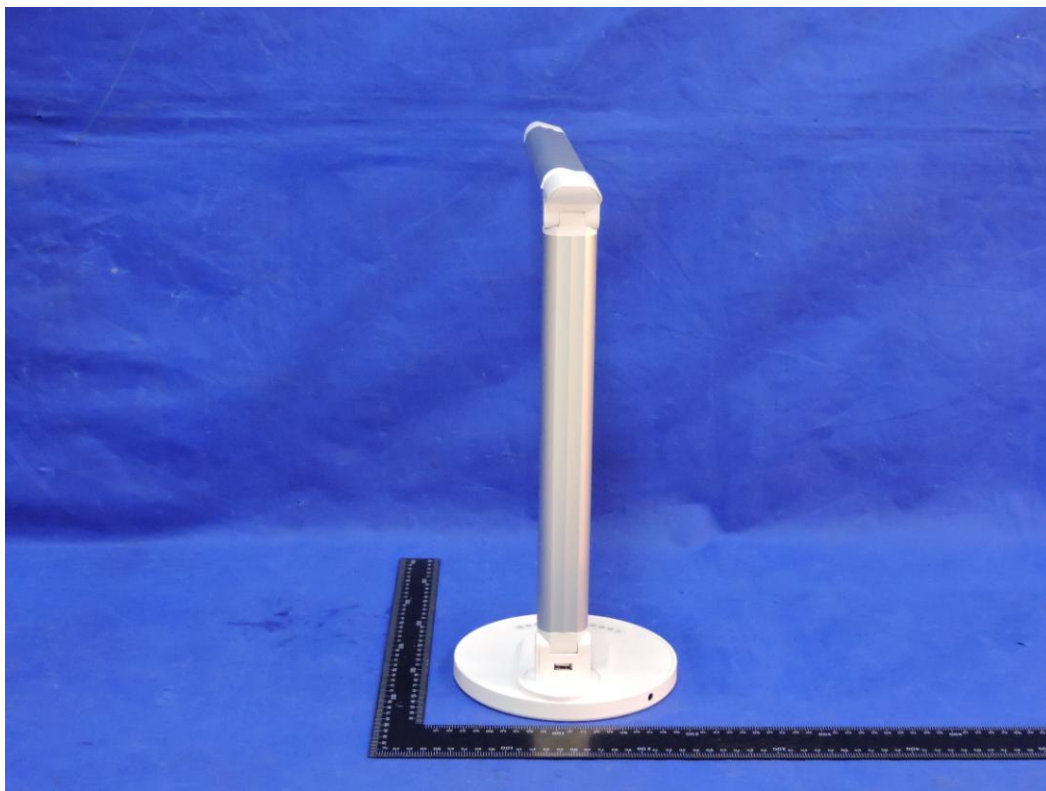


Photo 6



Photo 7

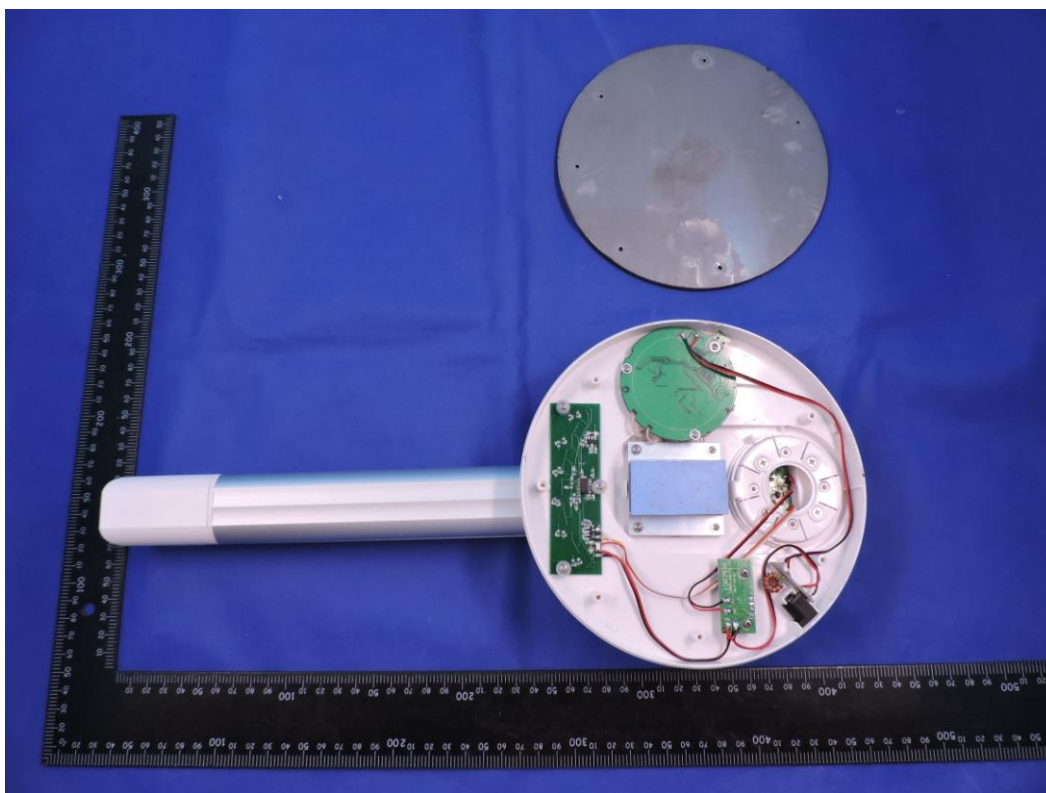


Photo 8

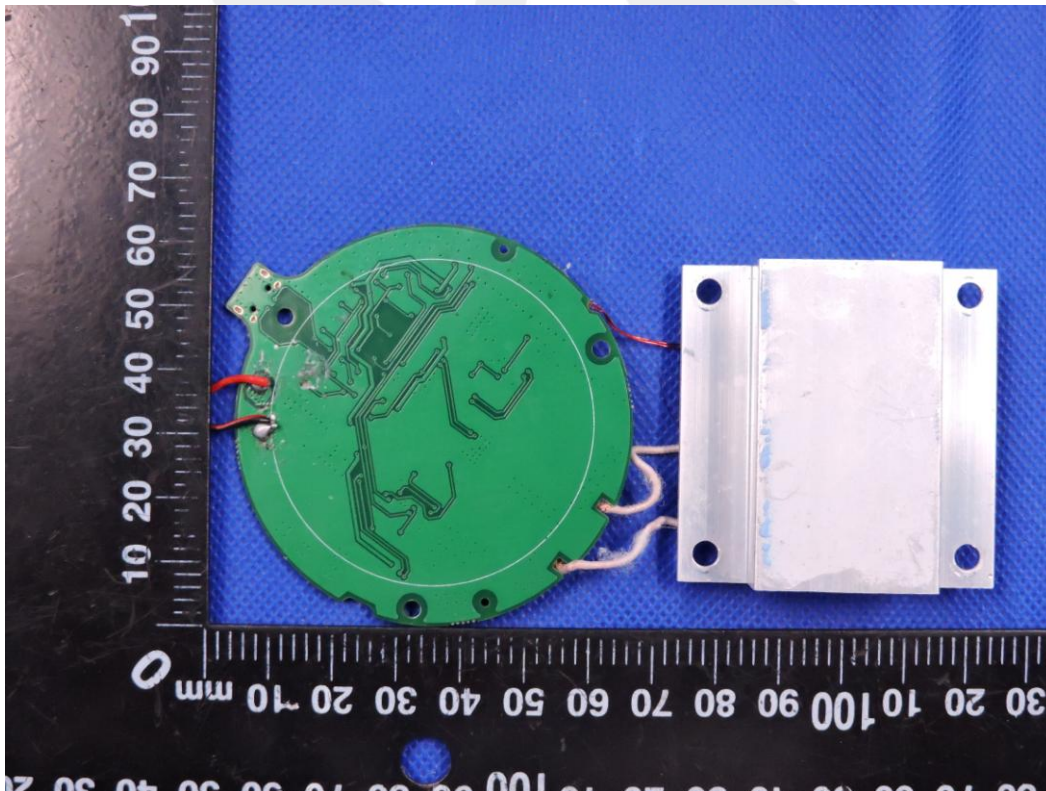




Photo 9

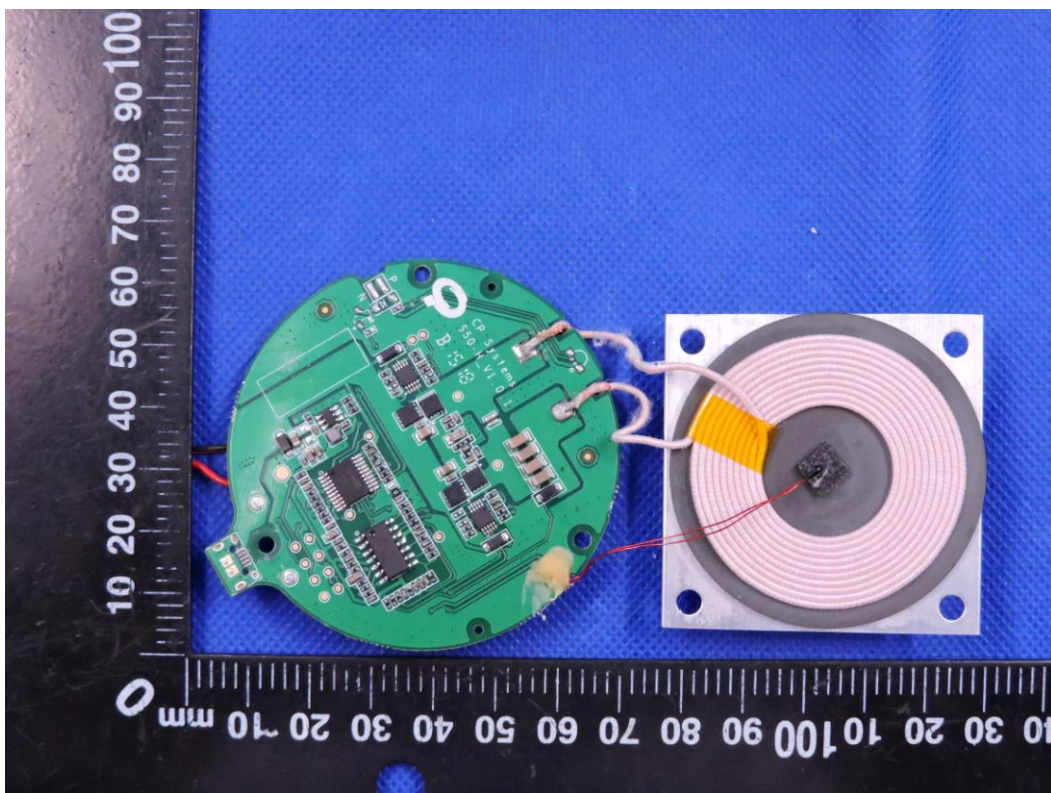


Photo 10

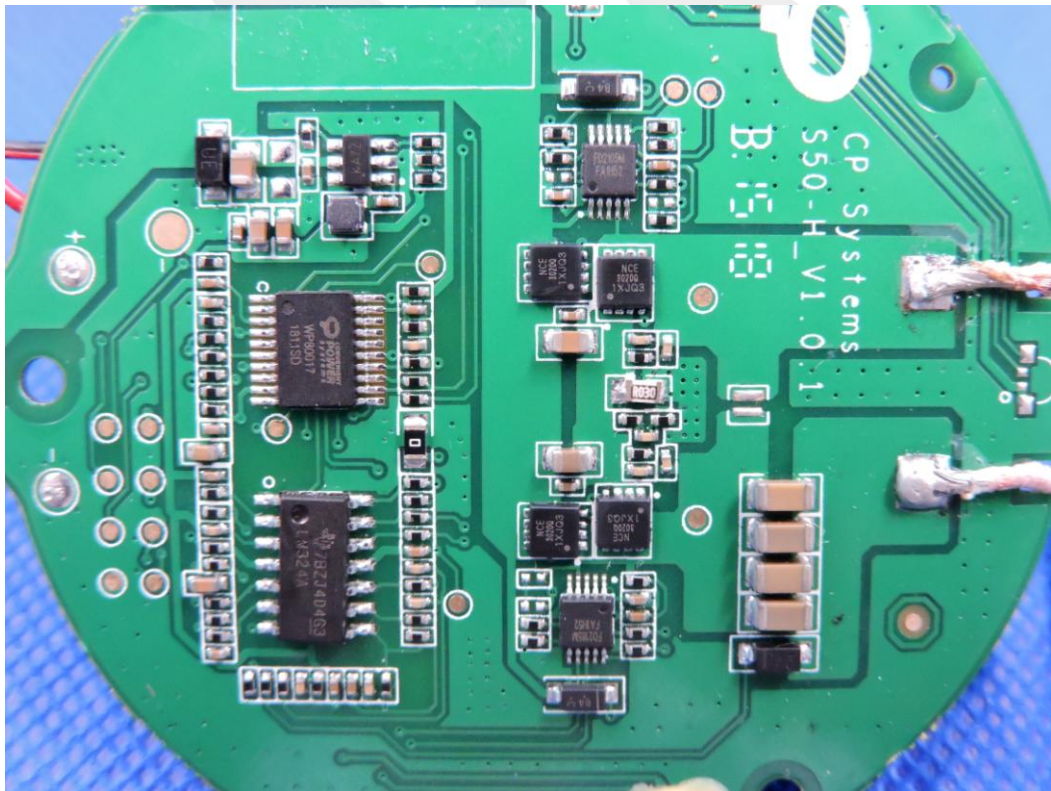




Photo 11

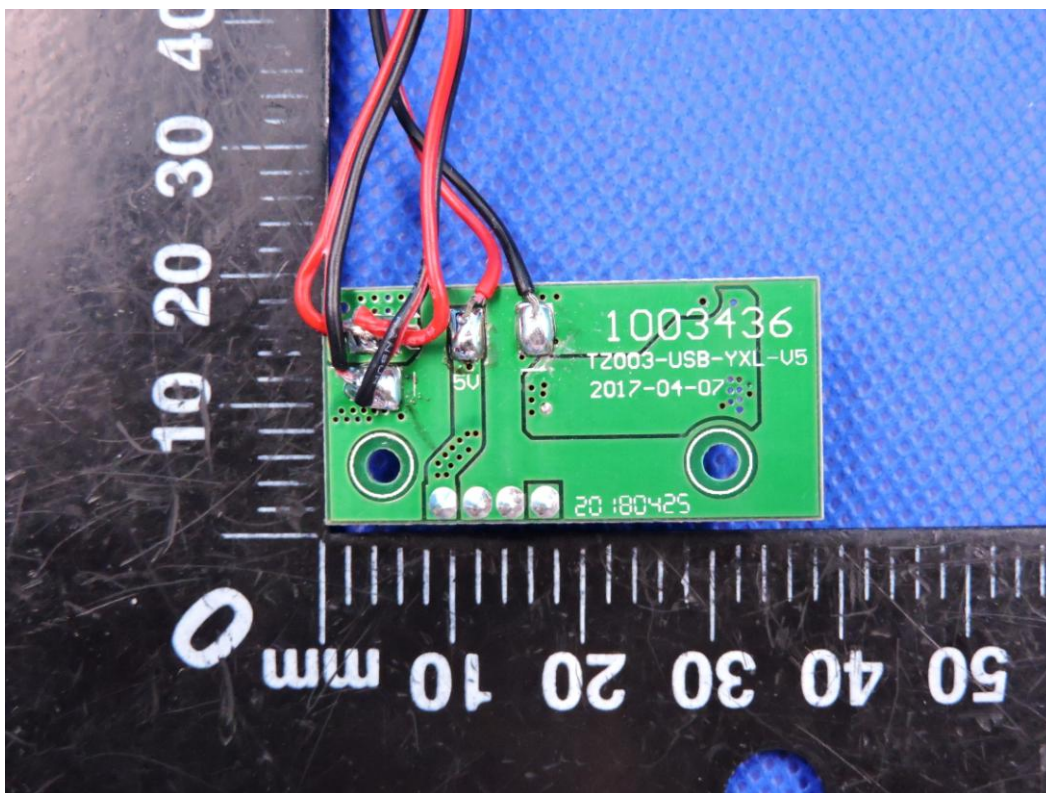


Photo 12

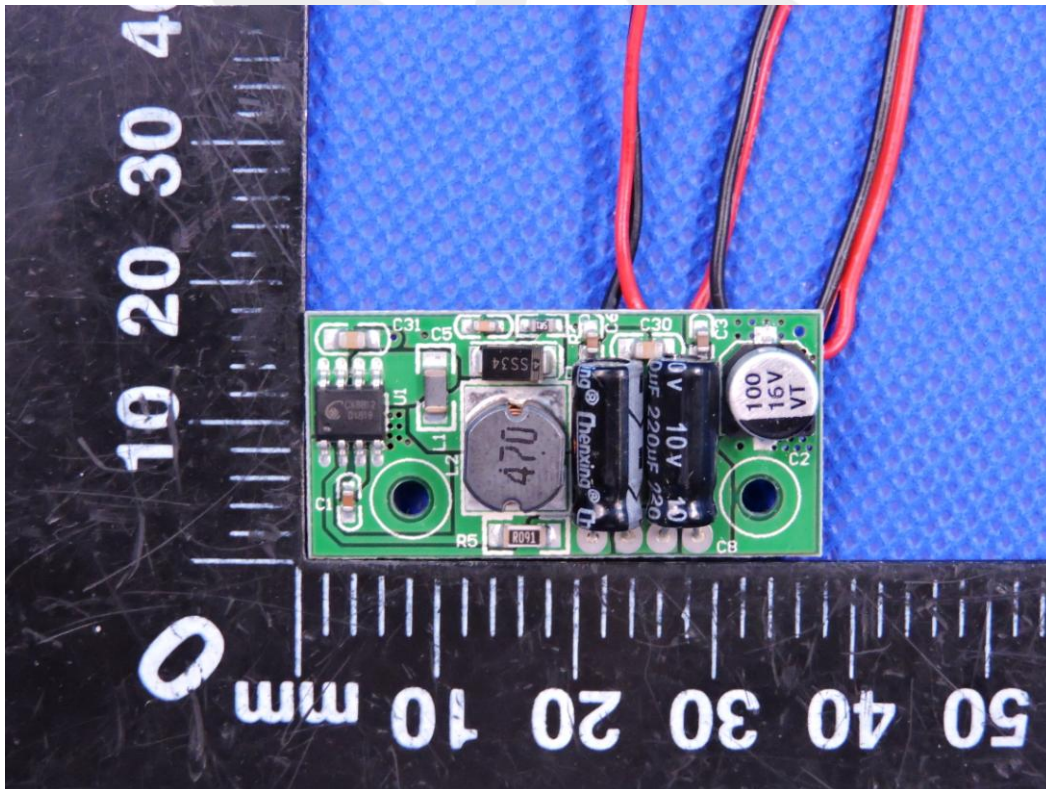




Photo 13

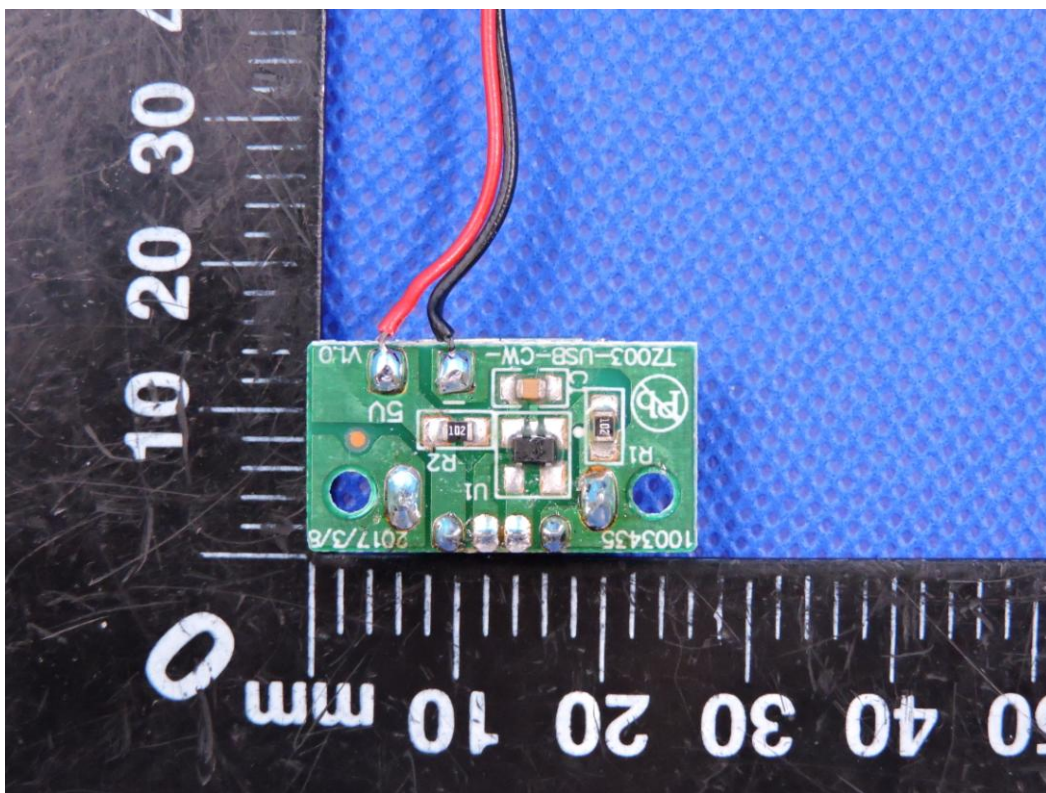


Photo 14

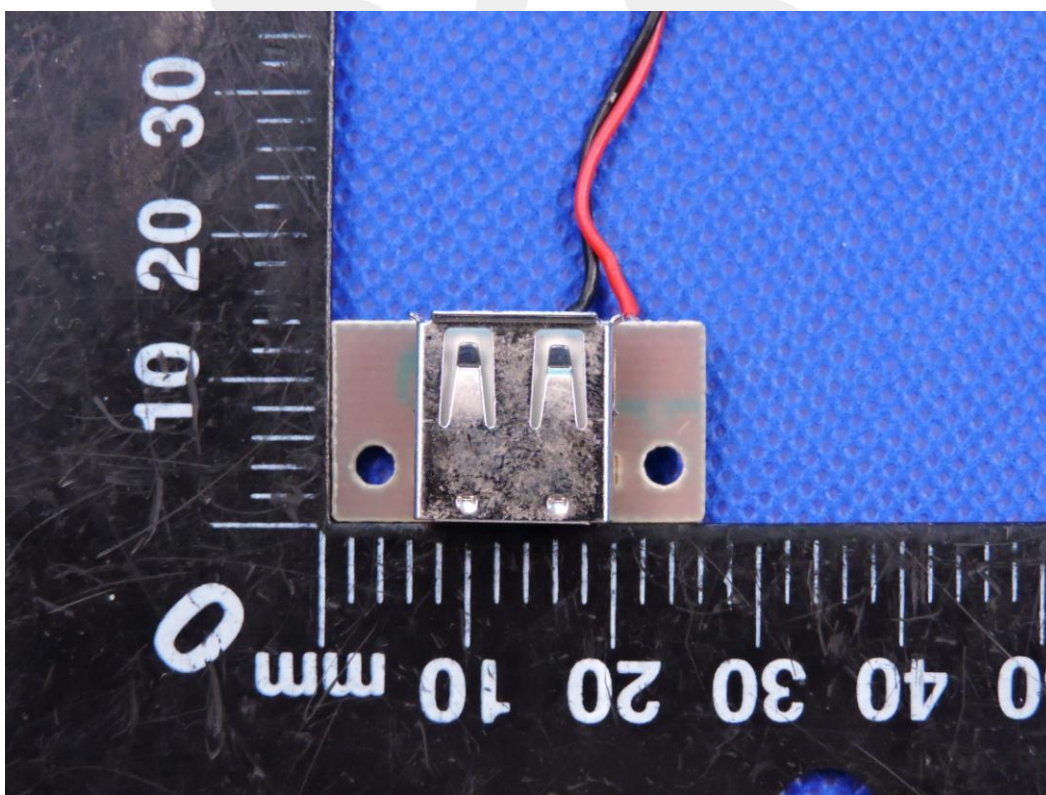




Photo 15

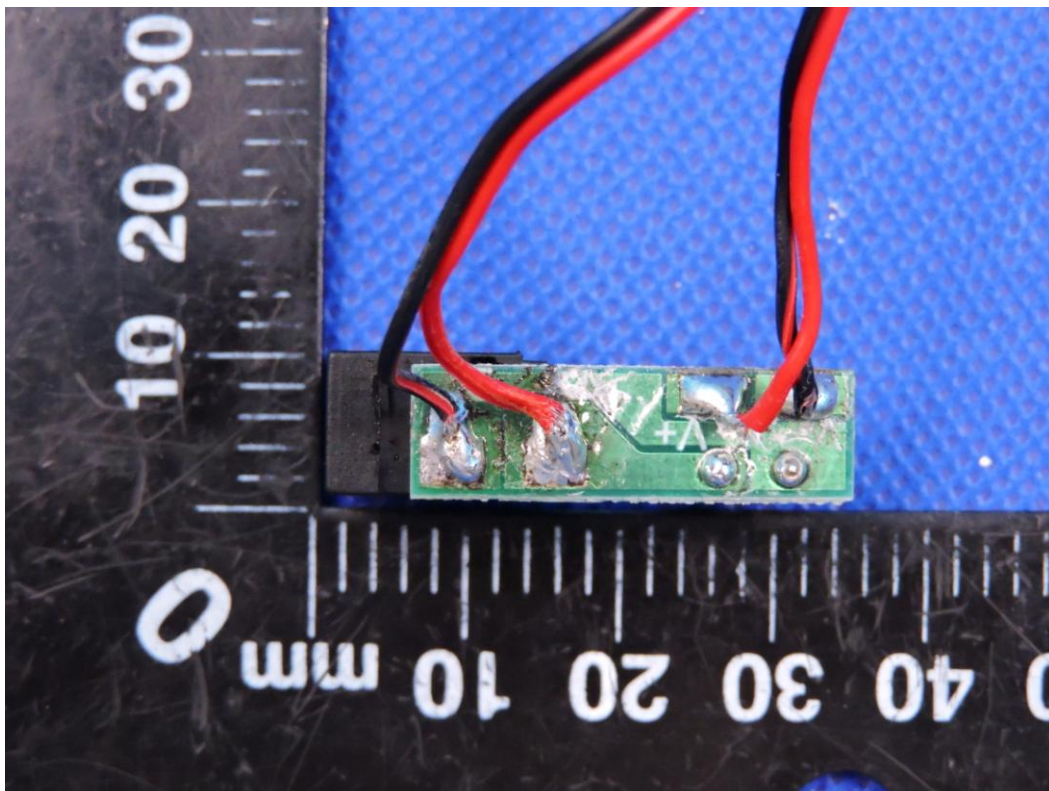


Photo 16

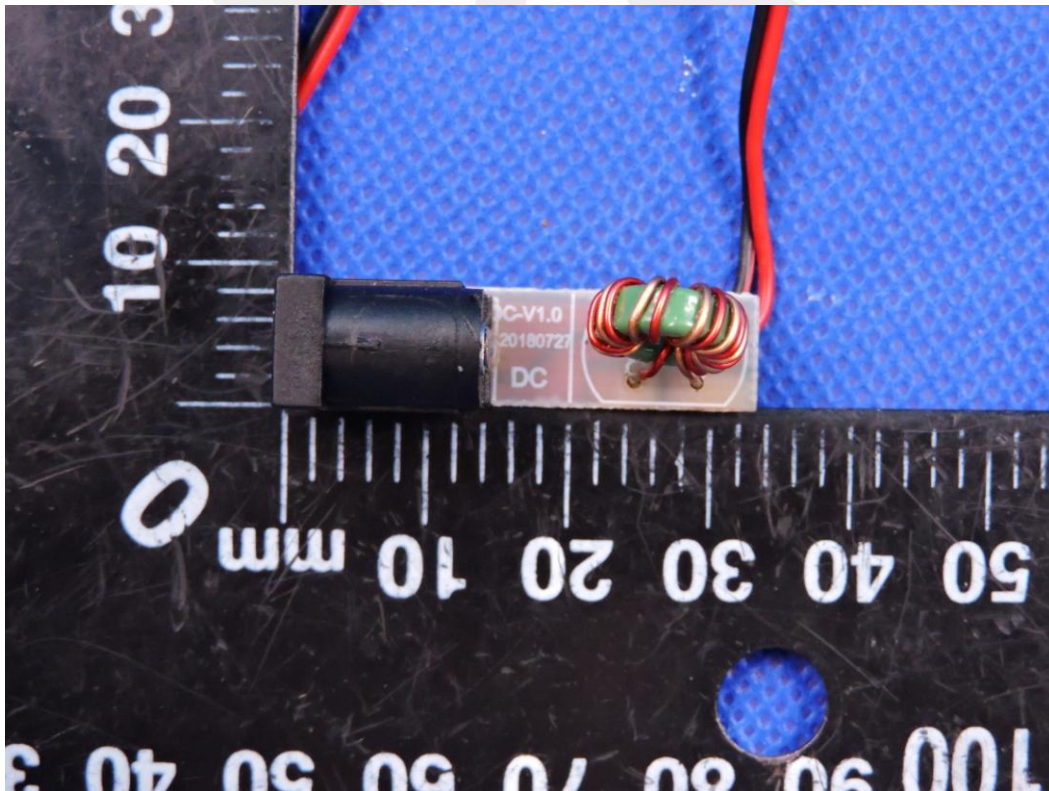




Photo 17

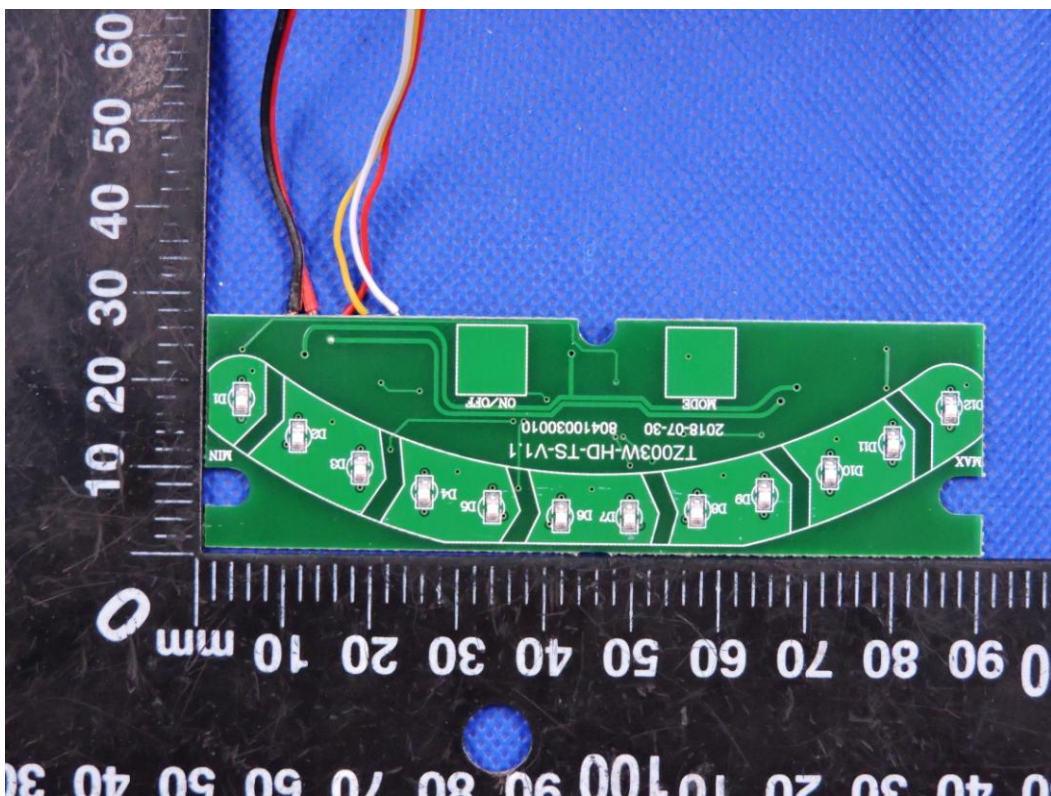


Photo 18

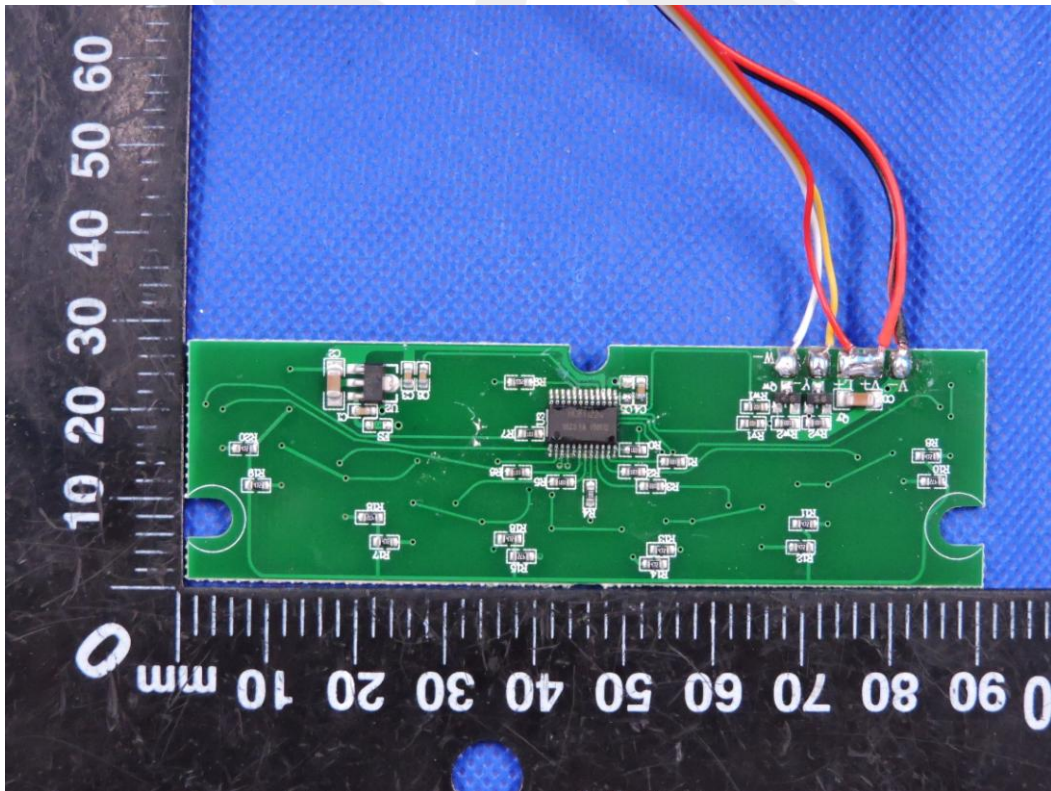


Photo 19

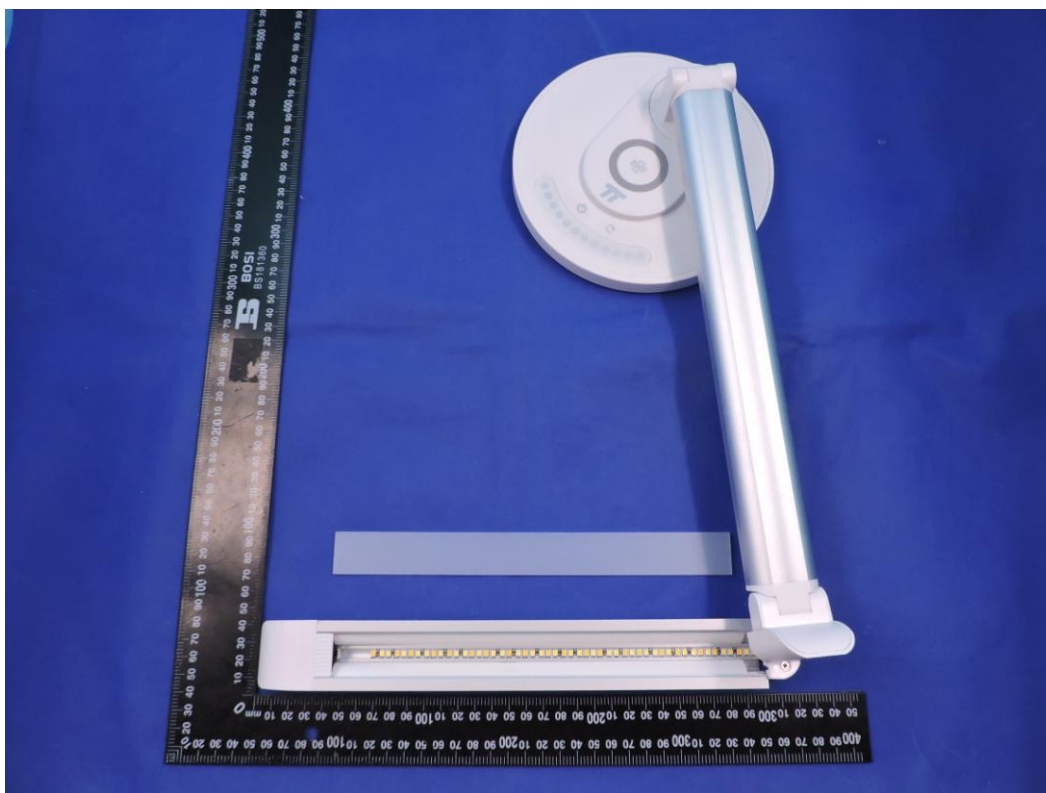


Photo 20





Photo 21

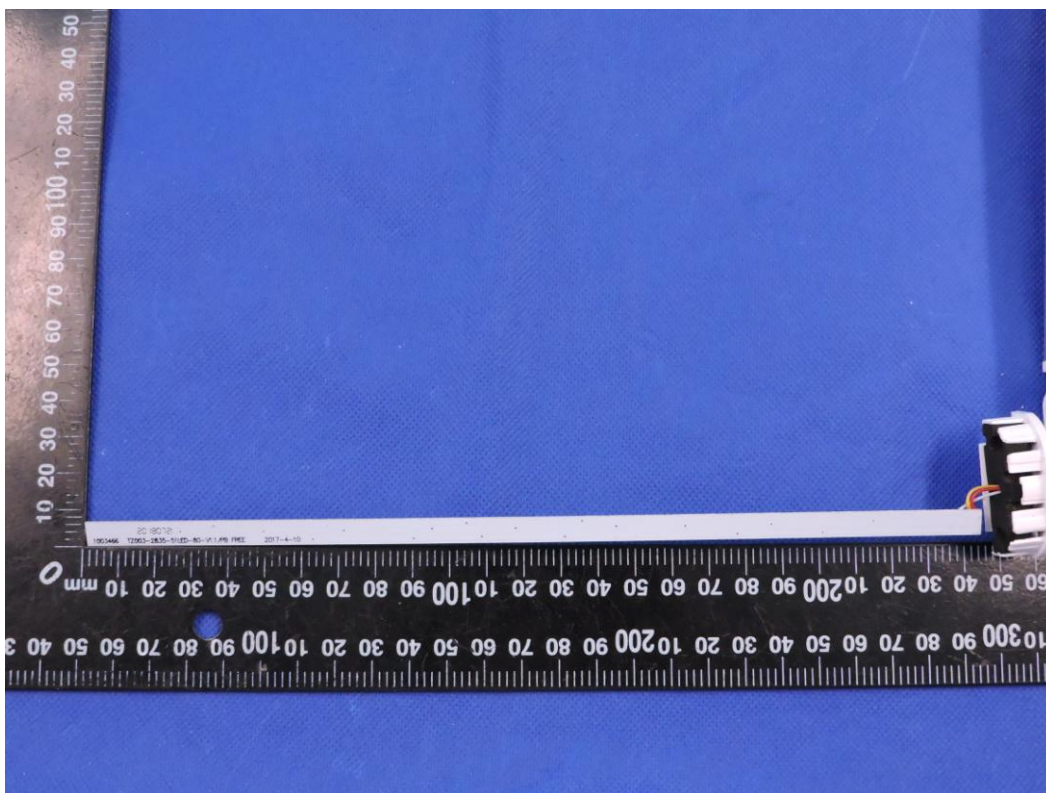


Photo 22



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