

	TEST REPORT		
FCC ID:	2AQRG-B18D		
Test Report No::	TCT230626E025		(c)
Date of issue::	Jul. 21, 2023		
Testing laboratory:	SHENZHEN TONGCE TESTING LA	AB	
Testing location/ address:	2101 & 2201, Zhenchang Factory R Subdistrict, Bao'an District, Shenzho People's Republic of China		•
Applicant's name::	Shenzhen Feihe Electronics Co., Lt	d	
Address:	3/F, Bldg 3, HongFa Innovative Par Baoan District, Shenzhen 518101 C	•	mmunity,
Manufacturer's name:	Shenzhen Feihe Electronics Co., Lt	d (S)	
Address:	3/F, Bldg 3, HongFa Innovative Par Baoan District, Shenzhen 518101 C		mmunity,
Standard(s):	FCC CFR Title 47 Part 15 Subpart (		
Product Name::	LED table lamp		
Trade Mark:	N/A		
Model/Type reference:	B18D		
Rating(s):	Adapter Information: Model: K25A120150U Input: AC 100-240V, 50/60Hz, 0.6A Output: DC 12.0V, 1.5A Lithium Cell DC 3V		
Date of receipt of test item:	Jun. 26, 2023		
Date (s) of performance of test:	Jun. 26, 2023 ~ Jul. 21, 2023		
Tested by (+signature):	Brews XU	nens Mace	
Check by (+signature):	Beryl ZHAO	of METCT	NILLS
Approved by (+signature):	Tomsin	oms is	

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## 1. General Product Information

## 1.1.EUT description

Product Name:	LED table lamp	)	
Model/Type reference:	B18D		
Sample Number:	TCT230626E025-0101		
Operation Frequency:	110.90kHz – 174.70kHz	(0)	
Modulation Technology:	Load modulation		
Max. Wireless Output Power:	5W (5)		
Antenna Type:	Inductive loop coil Antenna		
Rating(s):	Adapter Information: Model: K25A120150U Input: AC 100-240V, 50/60Hz, 0.6A Output: DC 12.0V, 1.5A Lithium Cell DC 3V		

## 1.2.Model(s) list

None.





## 2.Test Result Summary

Requirement	CFR 47 Section	Result		
Antenna requirement	§15.203	PASS		
AC Power Line Conducted Emission	§15.207	PASS		
Spurious Emission	§15.209(a)(f)	PASS		

#### Note:

- 1. PASS: Test item meets the requirement.
- 2. Fail: Test item does not meet the requirement.





#### 3. General Information

#### 3.1. Test environment and mode

Operating Environment:								
Condition	Conducted Emission	Radiated Emission						
Temperature:	23.5 °C	24.9 °C						
Humidity:	52 % RH	51 % RH						
Atmospheric Pressure:	1010 mbar	1010 mbar						
Test Mode:								

Keep the EUT in three different wireless output modes Engineering mode: (99% load, 50% load, 1% load).

The sample was placed 0.8m for the measurement below above the ground plane of 3m 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 the turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case(Z axis) are shown in Test Results of the following pages.

## 3.2. 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.

Equipment	Model No.	Serial No.	FCC ID	Trade Name
Load	1 (0)	1 (6)	/	YBZ

#### Note:

- 1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
- 2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.





### 4. Facilities and Accreditations

#### 4.1. Facilities

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

• FCC - Registration No.: 645098

SHENZHEN TONGCE TESTING LAB

**Designation Number: CN1205** 

The testing lab has been registered and fully described in a report with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files.

IC - Registration No.: 10668A-1

SHENZHEN TONGCE TESTING LAB

CAB identifier: CN0031

The testing lab has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing.

#### 4.2.Location

SHENZHEN TONGCE TESTING LAB

Address: 2101 & 2201, Zhenchang Factory Renshan Industrial Zone, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, 518103, People's Republic of China

TEL: +86-755-27673339

## 4.3. Measurement Uncertainty

The reported uncertainty of measurement  $y \pm U$ , where expended 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	MU
1	Conducted Emission	± 3.10 dB
2	RF power, conducted	± 0.12 dB
3	Spurious emissions, conducted	± 0.11 dB
4	All emissions, radiated(<1 GHz)	± 4.56 dB
5	All emissions, radiated(1 GHz - 18 GHz)	± 4.22 dB
6	All emissions, radiated(18 GHz- 40 GHz)	± 4.36 dB



#### 5. Test Results and Measurement Data

## 5.1. Antenna requirement

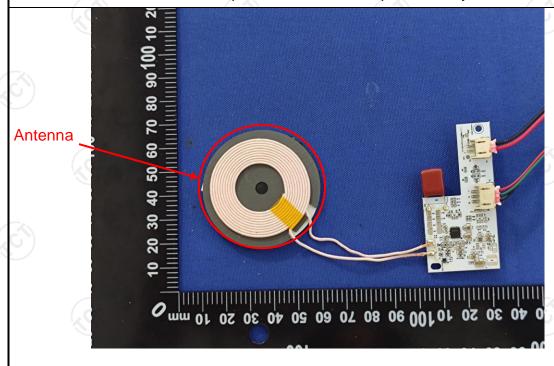
Standard requirement: FCC Part15 C Section 15.203

15.203 requirement:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

#### **E.U.T Antenna:**

The antennas are inductive loop coil antenna which permanently attached.





## 5.2. Conducted Emission

## 5.2.1. Test Specification

Test Requirement:	FCC Part15 C Section 15.207							
Test Method:	ANSI C63.10:2013							
Frequency Range:	150 kHz to 30 MHz	C)	(0)					
Receiver setup:	RBW=9 kHz, VBW=30	kHz, Sweep time	e=auto					
Limits:	Frequency range (MHz) 0.15-0.5 0.5-5 5-30	Limit ( Quasi-peak 66 to 56* 56 60	dBuV) Average 56 to 46* 46 50					
Test Setup:	Reference Plane  40cm  80cm LISN  Filter — AC power  Test table/Insulation plane  Remark  E.U.T. Equipment Under Test LISN Line Impedence Stabilization Network Test table height=0.8m							
Test Mode:	Wireless Changing							
Test Procedure:	<ol> <li>The E.U.T is connected to an adapter through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm/50uH coupling impedance for the measuring equipment.</li> <li>The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs).</li> <li>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 C63.10: 2013 on conducted measurement.</li> </ol>							
Test Result:	PASS							



#### 5.2.2. Test Instruments

Conducted Emission Shielding Room Test Site (843)									
Equipment Manufacturer Model Serial Number Calibration Du									
EMI Test Receiver	R&S	ESCI3	100898	Jun. 29, 2024					
Line Impedance Stabilisation Newtork(LISN)	Schwarzbeck	NSLK 8126	8126453	Feb. 20, 2024					
Line-5	TCT	CE-05	/	Jul. 03, 2024					
EMI Test Software	Shurple Technology	EZ-EMC	1 (6)	1					

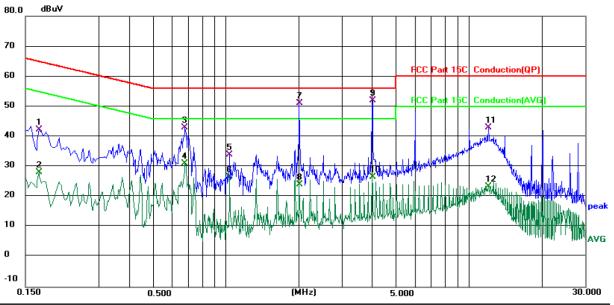




#### 5.2.3. Test data

#### Please refer to following diagram for individual

#### Conducted Emission on Line Terminal of the power line (150 kHz to 30MHz)



Site 844 Shielding Room

Phase: L1

Temperature: 23.5 (°C)

Humidity: 52 %

Limit: FCC Part 15C Conduction(QP)

Power: AC 120V/60Hz

No. Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
	MHz	dBu∀	dB	dBu∀	dBu∀	dB	Detector	Comment
1	0.1700	32.20	10.13	42.33	64.96	-22.63	QP	
2	0.1700	18.01	10.13	28.14	54.96	-26.82	AVG	
3	0.6820	33.60	9.28	42.88	56.00	-13.12	QP	
4	0.6820	21.89	9.28	31.17	46.00	-14.83	AVG	
5	1.0380	25.08	8.94	34.02	56.00	-21.98	QP	
6	1.0380	17.52	8.94	26.46	46.00	-19.54	AVG	
7	2.0020	41.14	10.01	51.15	56.00	-4.85	QP	
8	2.0020	14.07	10.01	24.08	46.00	-21.92	AVG	
9 *	4.0100	42.02	10.07	52.09	56.00	-3.91	QP	
10	4.0100	16.55	10.07	26.62	46.00	-19.38	AVG	
11	12.0180	32.88	10.16	43.04	60.00	-16.96	QP	
12	12.0180	13.29	10.16	23.45	50.00	-26.55	AVG	

#### Note:

Freq. = Emission frequency in MHz

Reading level ( $dB\mu V$ ) = Receiver reading

Corr. Factor (dB) = LISN factor + Cable loss

Measurement  $(dB\mu V)$  = Reading level  $(dB\mu V)$  + Corr. Factor (dB)

 $Limit (dB\mu V) = Limit stated in standard$ 

 $Margin (dB) = Measurement (dB\mu V) - Limits (dB\mu V)$ 

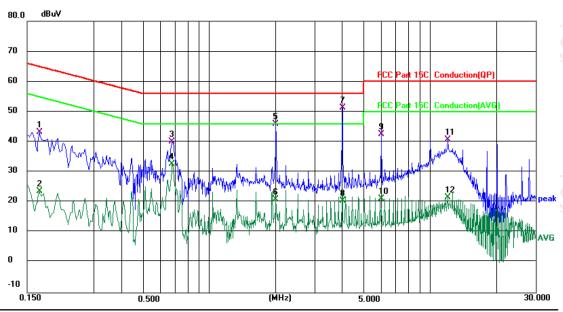
Q.P. =Quasi-Peak

AVG =average

 $<sup>^{\</sup>star}$  is meaning the worst frequency has been tested in the frequency range 150 kHz to 30MHz



#### Conducted Emission on Neutral Terminal of the power line (150 kHz to 30MHz)



Site 844 Shielding Room
Limit: FCC Part 15C Conduction(QP)

Phase: N

Temperature: 23.5 (℃)

Humidity: 52 %

Powe

Power: AC 120V/60Hz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment	
1		0.1700	33.08	10.11	43.19	64.96	-21.77	QP		
2		0.1700	13.57	10.11	23.68	54.96	-31.28	AVG		
3		0.6820	30.84	9.29	40.13	56.00	-15.87	QP		
4		0.6820	23.36	9.29	32.65	46.00	-13.35	AVG		
5		2.0100	35.82	10.02	45.84	56.00	-10.16	QP		
6		2.0100	10.96	10.02	20.98	46.00	-25.02	AVG		
7	*	4.0140	41.14	10.09	51.23	56.00	-4.77	QP		
8		4.0140	10.47	10.09	20.56	46.00	-25.44	AVG		
9		6.0179	32.34	10.12	42.46	60.00	-17.54	QP		
10		6.0179	11.10	10.12	21.22	50.00	-28.78	AVG		
11		12.0180	30.63	10.21	40.84	60.00	-19.16	QP		
12		12.0180	11.40	10.21	21.61	50.00	-28.39	AVG		

#### Note:

Freq. = Emission frequency in MHz

Reading level  $(dB\mu V)$  = Receiver reading

Corr. Factor (dB) = LISN factor + Cable loss

Measurement  $(dB\mu V)$  = Reading level  $(dB\mu V)$  + Corr. Factor (dB)

 $Limit (dB\mu V) = Limit stated in standard$ 

 $Margin (dB) = Measurement (dB\mu V) - Limits (dB\mu V)$ 

Q.P. =Quasi-Peak AVG =average

\* is meaning the worst frequency has been tested in the frequency range 150 kHz to 30MHz

All three different wireless output modes (99% load, 50% load, 1% load) have been tested, only the worst Mode (99% load) reported.





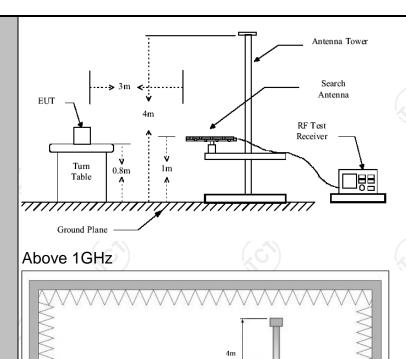
## **5.3. Radiated Spurious Emission Measurement**

## 5.3.1. Test Specification

ANSI C63.10: 2013	Test Requirement:	ECC Port15	C Soction	15 200	(0)			
Prequency Range:   9 kHz to 25 GHz	·			15.209				
Receiver Setup:   Sam	Test Method:	ANSI C63.10	): 2013					
Refer to item 3.1	Frequency Range:	9 kHz to 25 (	GHz			(c		
Refer to item 3.1	Measurement Distance:	3 m						
Frequency	Antenna Polarization:	Horizontal &	Vertical					
SkHz-150kHz	Operation mode:	Refer to item	3.1		(C)		ĹζĆ	
150kHz-30MHz		Frequency	Detector	RBW	VBW		Remark	
30MHz		9kHz- 150kHz	Quasi-peal	200Hz	1kHz	Quas	si-peak Value	
Above 1GHz	Receiver Setup:		Quasi-peal	9kHz	30kHz	Quas	si-peak Value	
Above 1GHz	·	30MHz-1GHz	Quasi-peal	120KHz	300KHz	Quas	si-peak Value	
Peak 1MHz 10Hz Average Value		Al 4011-			3MHz			
Computer		Above 1GHz	Peak	1MHz	10Hz	Ave	erage Value	
Detector				(microvolts	/meter)		nce (meters)	
1.705-30   30   30   30   30   30   30   30				,				
Section   Sect					(KHz)	/ A)		
R8-216								
Above 960    Solution   Prequency   Preduction   Prequency   Preduction   Prequency   Preduction   Preduction								
Above 960 500 3  Frequency Field Strength (microvolts/meter) Distance (meters)  Above 1GHz 500 3 Average 5000 3 Peak  For radiated emissions below 30MHz  Distance = 3m Computer  Occupater  Pre-Amphifier  Receiver	l imit:							
Frequency Field Strength (microvolts/meter) Detector (meters)  Above 1GHz 500 3 Average 5000 3 Peak  For radiated emissions below 30MHz  Distance 3m Computer  Pre-Amplifier  Receiver	Lillit.							
Frequency (microvolts/meter) Distance (meters)  Above 1GHz 500 3 Average 5000 3 Peak  For radiated emissions below 30MHz  Distance = 3m  Computer  Pre - Amplifier  Receiver		710000		300	(0)			
For radiated emissions below 30MHz  Test setup:  Test setup:		Frequency		-	Distan	ice	Detector	
For radiated emissions below 30MHz  Test setup:  Test setup:		Above 1GH	,	500		(,0	Average	
Test setup:    Distance = 3m		Above IGHZ	-	5000		Peak		
	Test setup:	For radiated emissions below 30MHz  Distance = 3m  Computer  Pre - Amplifier  Receiver						







## Test Procedure:

1. For the radiated emission test below 1GHz: The EUT was placed on a turntable with 0.8 meter above ground. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high PASS filter are used for the test in order to get better signal level. For the radiated emission test above 1GHz: Place the measurement antenna on a turntable with 1.5 meter above ground, which is away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final









## 5.3.2. Test Instruments

Radiated Emission Test Site (966)										
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due						
EMI Test Receiver	R&S	ESIB7	100197	Jun. 29, 2024						
Spectrum Analyzer	R&S	FSQ40	200061	Jun. 29, 2024						
Pre-amplifier	SKET	LNPA_0118G- 45	SK2021012 102	Feb. 20, 2024						
Pre-amplifier	SKET	LNPA_1840G- 50	SK2021092 03500	Feb. 20, 2024						
Pre-amplifier	HP	8447D	2727A05017	Jun. 27, 2024						
Loop antenna	Schwarzbeck	FMZB1519B	00191	Jul. 02, 2024						
Broadband Antenna	Schwarzbeck	VULB9163	340	Jul. 01, 2024						
Horn Antenna	Schwarzbeck	BBHA 9120D	631	Jul. 01, 2024						
Horn Antenna	Schwarzbeck	BBHA 9170	00956	Feb. 24, 2024						
Antenna Mast	Keleto	RE-AM	1							
Coaxial cable	SKET	RC-18G-N-M	1	Feb. 24, 2024						
Coaxial cable	SKET	RC_40G-K-M	1	Feb. 24, 2024						
EMI Test Software	Shurple Technology	EZ-EMC	100	,						

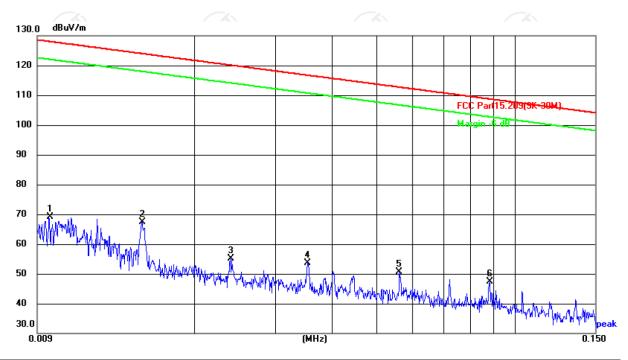




#### 5.3.3. Test Data

## Please refer to following diagram for individual 9KHz-30MHz

9KHz-150KHz:



Site: #3 3m Anechoic Chamber Polarization: Vertical Temperature: 23.3(°C) Humidity: 48 %

Limit: FCC Part15.209(9K-30M)

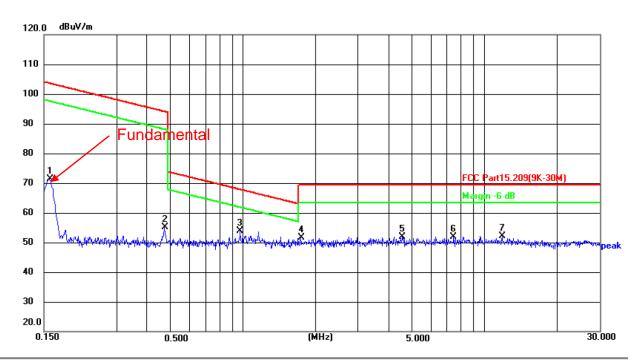
Power:AC 120 V/60 Hz

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector	P/F	Remark
1	0.0096	48.37	20.82	69.19	127.96	-58.77	peak	Р	
2 *	0.0153	46.70	20.67	67.37	123.91	-56.54	peak	Р	
3	0.0239	34.59	20.54	55.13	120.04	-64.91	peak	Р	
4	0.0352	33.15	20.52	53.67	116.67	-63.00	peak	Р	
5	0.0560	29.79	20.76	50.55	112.64	-62.09	peak	Р	
6	0.0881	26.30	21.01	47.31	108.70	-61.39	peak	Р	





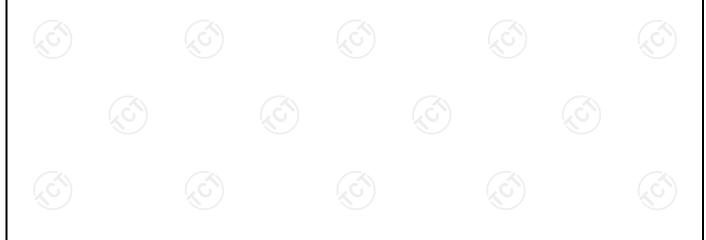
#### 150KHz-30MHz:



Site: #3 3m Anechoic Chamber Polarization: Vertical Temperature: 23.3(°C) Humidity: 48 %

Limit: FCC Part15.209(9K-30M) Power:AC 120 V/60 Hz

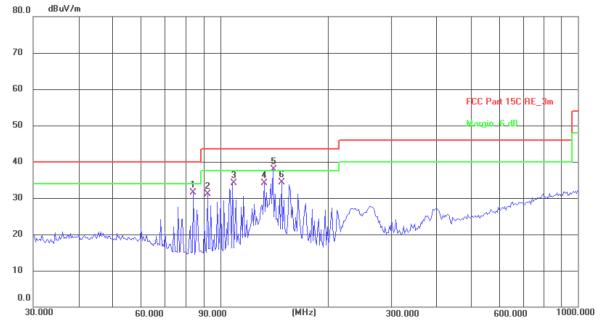
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	0.1582	50.58	20.74	71.32	103.62	-32.30	peak	Р	
2	0.4749	33.72	21.47	55.19	94.07	-38.88	peak	Р	
3 *	0.9735	31.30	22.59	53.89	67.85	-13.96	peak	Р	
4	1.7437	27.56	24.19	51.75	69.50	-17.75	peak	Р	
5	4.5857	21.97	29.84	51.81	69.50	-17.69	peak	Р	
6	7.4662	16.43	35.42	51.85	69.50	-17.65	peak	Р	
7	11.8383	31.96	20.06	52.02	69.50	-17.48	peak	Р	





#### 30MHz-1GHz





Site: #1 3m Anechoic Chamber Polarization: Horizontal Temperature: 24.9(C) Humidity: 51 %

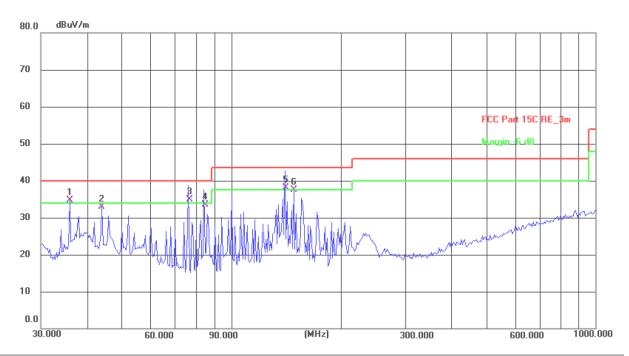
Limit: FCC Part 15C RE\_3m Power: AC 120 V/60 Hz

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector	P/F	Remark
1	84.1100	21.83	9.64	31.47	40.00	-8.53	QP	Р	
2	92.1386	21.22	9.95	31.17	43.50	-12.33	QP	Р	
3	108.2665	22.79	11.32	34.11	43.50	-9.39	QP	Р	
4	132.6850	20.79	13.33	34.12	43.50	-9.38	QP	Р	
5 *	140.3421	23.94	13.88	37.82	43.50	-5.68	QP	Р	
6	148.4410	19.89	14.40	34.29	43.50	-9.21	QP	Р	





#### Vertical:



Site: #1 3m Anechoic Chamber Polarization: Vertical Temperature: 24.9(C) Humidity: 51 %

Limit: FCC Part 15C RE\_3m Power: AC 120 V/60 Hz

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1!	36.0007	21.01	13.62	34.63	40.00	-5.37	QP	Р	
2	44.1200	19.08	13.83	32.91	40.00	-7.09	QP	Р	
3 *	76.2742	24.85	10.09	34.94	40.00	-5.06	QP	Р	
4	84.1400	23.81	9.64	33.45	40.00	-6.55	QP	Р	
5 !	140.3921	24.26	13.89	38.15	43.50	-5.35	QP	Р	
6	148.4410	23.10	14.40	37.50	43.50	-6.00	QP	Р	

#### Note:

Emission Level=Peak Reading + Correction Factor; Correction Factor= Antenna Factor + Cable loss - Pre-amplifier All three different wireless output modes (99% load, 50% load, 1% load) have been tested, only the worst Mode (99% load) reported.

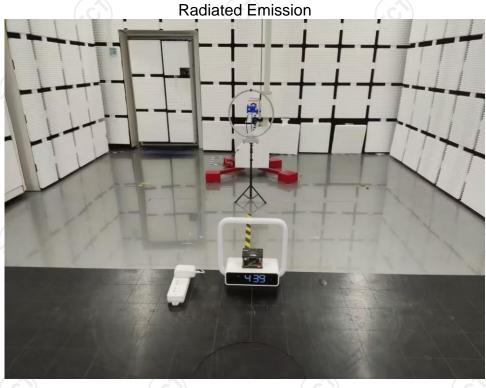






# Appendix A: Photographs of Test Setup Product: LED table lamp

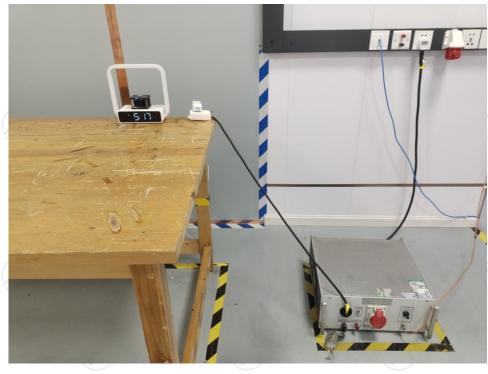
Model: B18D







#### Conducted Emission











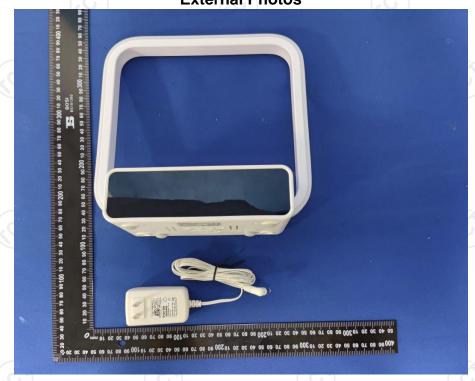






# Appendix B: Photographs of EUT Product: LED table lamp

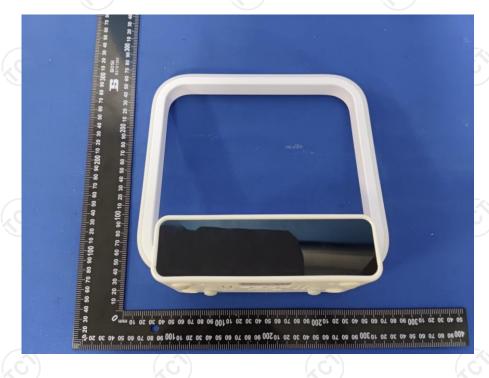
Model: B18D External Photos





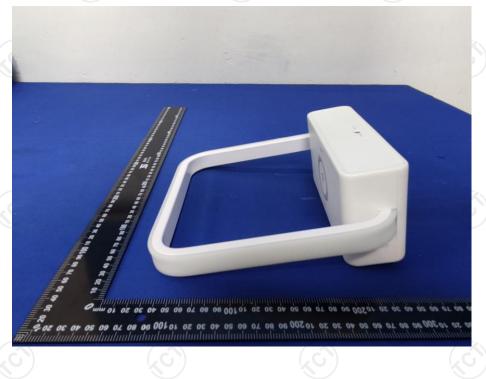






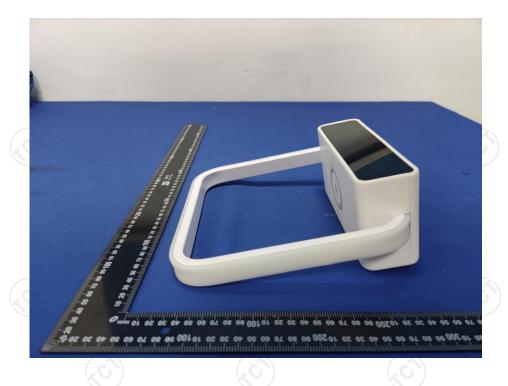


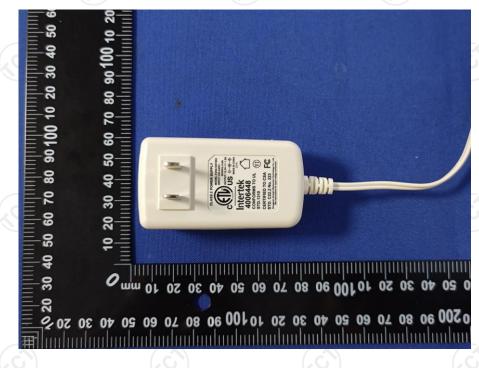






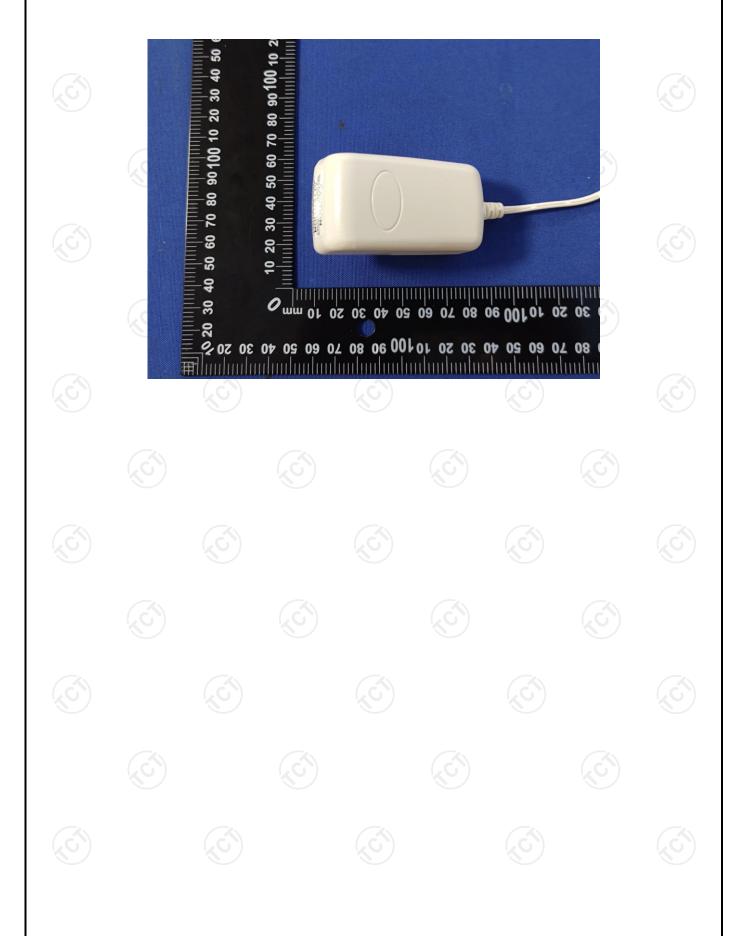


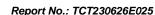






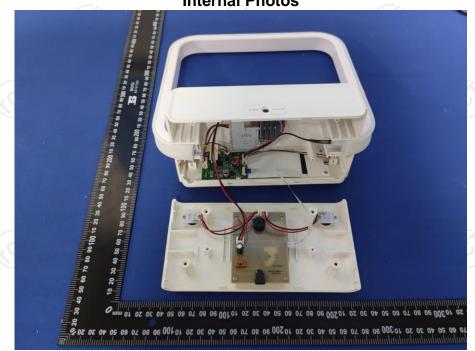


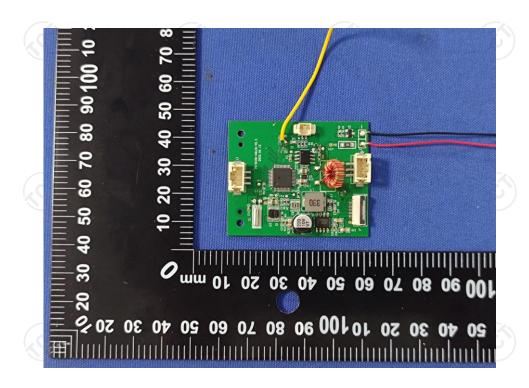


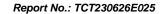




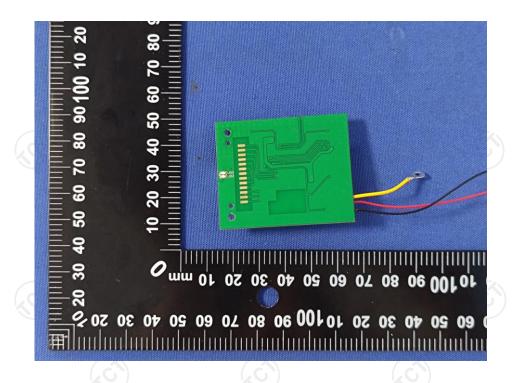
Product: LED table lamp Model: B18D Internal Photos

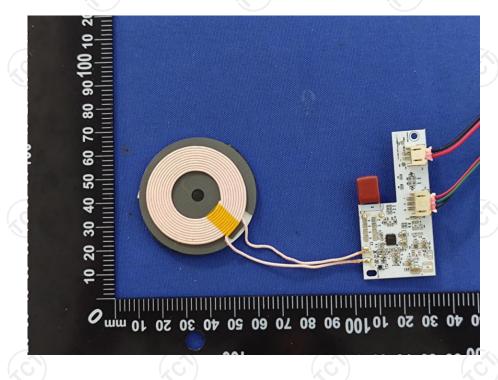


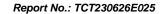




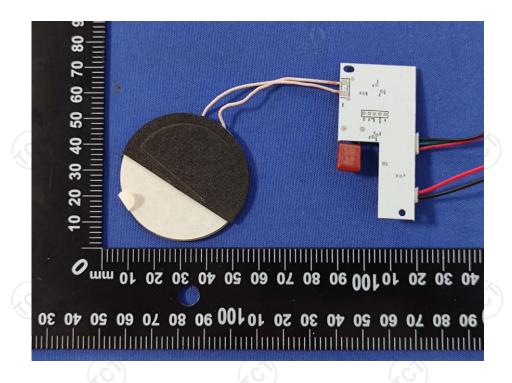


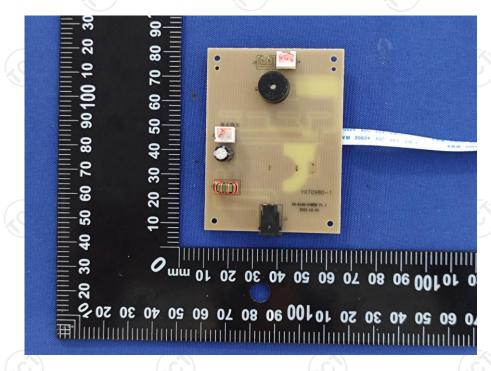




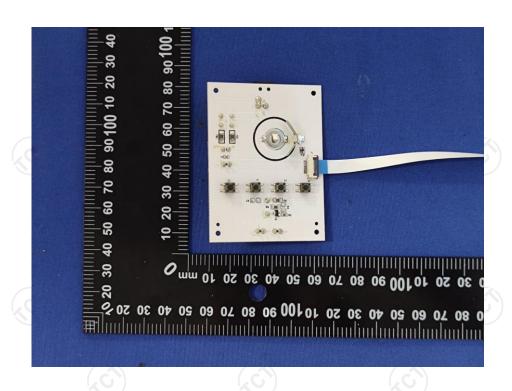


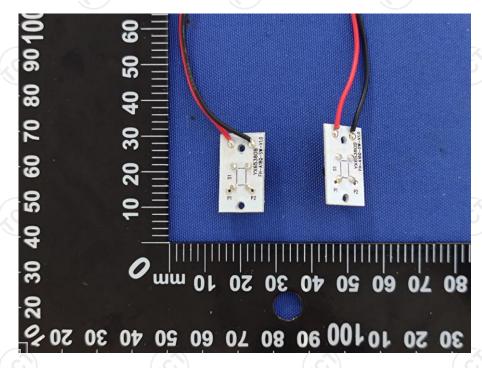






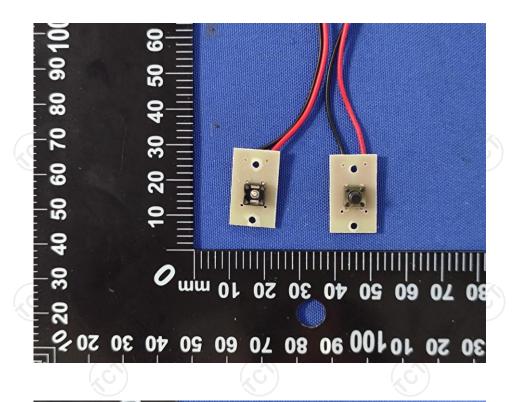


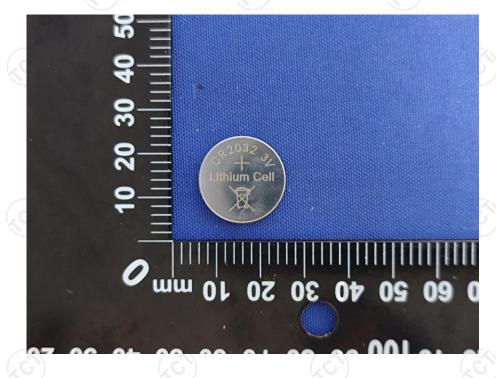


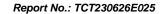




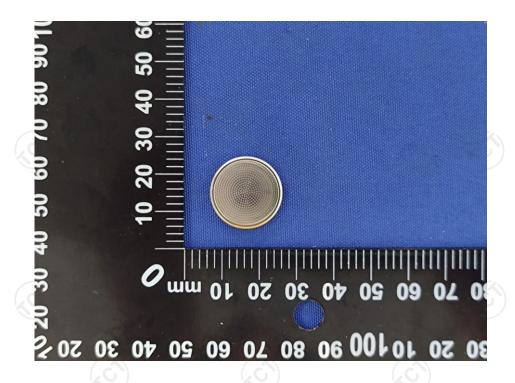


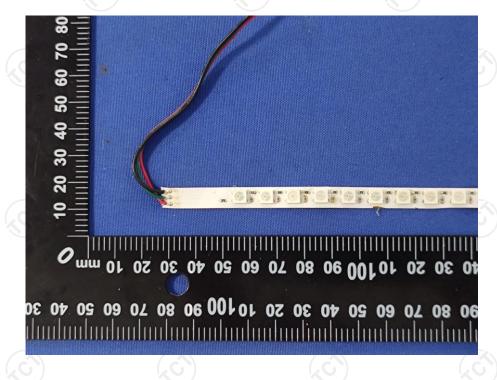






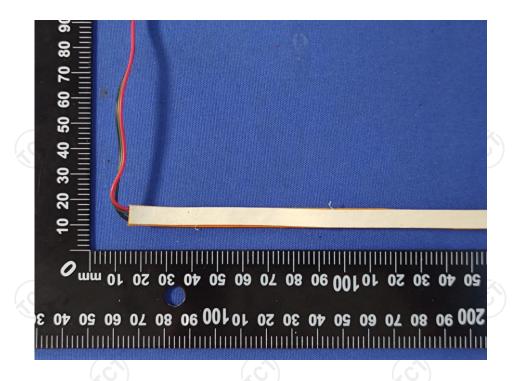


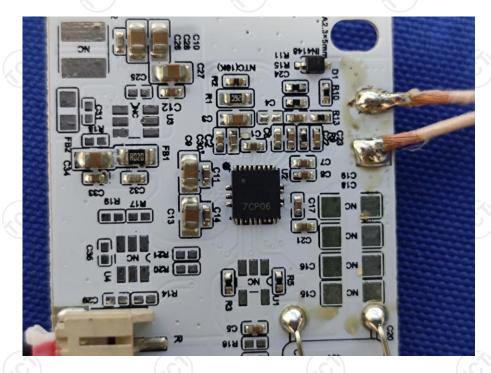








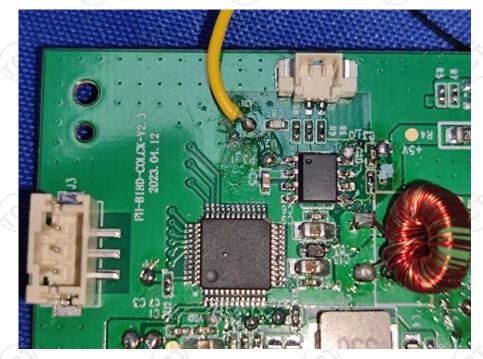












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