# **EMC TEST REPORT**

FCC ID: 2BF55-MINI-2

**Report No.** : SSP24040253-1E

**Applicant**: Anshan Xupu Trading Co., Ltd

**Product Name**: LED BULB

**Model Name**: MINI-2

**Test Standard** : FCC Part 15 Subpart B

**Date of Issue** : 2024-05-15



## Shenzhen CCUT Quality Technology Co., Ltd.

1F, Building 35, Changxing Technology Industrial Park, Yutang Street, Guangming District, Shenzhen, Guangdong, China; (Tel.:+86-755-23406590 website: www.ccuttest.com)

This test report is limited to the above client company and the product model only. It may not be duplicated without prior permitted by Shenzhen CCUT Quality Technology Co., Ltd.

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## **Test Report Basic Information**

Anshan Xupu Trading Co., Ltd Applicant..... 46, Floor 4,128 B, Jiefang East Road, Tiedong, Anshan, Liaoning Address of Applicant....: Anshan Xupu Trading Co., Ltd Manufacturer....: 46, Floor 4,128 B, Jiefang East Road, Tiedong, Anshan, Liaoning Address of Manufacturer.....: LED BULB Product Name..... **PIBAOGU** Brand Name..... MINI-2 Main Model..... AP-1-1w, AP-2-2w, AP-3-3w, AP-4-4w, AP-5-5w, AP-6-6w, leida-1-7W, leida-8-9W, leida-2-8W, leida-3-10W, leida-4-11W, leida-5-12W, leida-6-13W, leida-7-14W, FJ-2-15W, JG-1-16W, JG-2-17W, JG-3-18W, Series Models....: mi4-1-19W, mini-2-20w, mini-3-21w, mini-5-24w, mini-4-28w, HW-6-30W FCC Part 15 Subpart B **Test Standard**...... ANSI C63.4-2014 Test Result....: PASS (Choco Qiu) (Lieber Ouvang) Authorized Signatory..... (Lahm Peng)

Note: This test report is limited to the above client company and the product model only. It may not be duplicated without prior permitted by Shenzhen CCUT Quality Technology Co., Ltd.. All test data presented in this test report is only applicable to presented test sample.

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Revision	Issue Date	Description	Revised By
V1.0	2024-05-15	Initial Release	Lahm Peng

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# 1. General Information

## 1.1 Product Information

Product Name:	LED BULB				
Trade Name:	PIBAOGU				
Main Model:	MINI-2				
	AP-1-1w, AP-2-2w, AP-3-3w, AP-4-4w, AP-5-5w, AP-6-6w, leida-1-7W,				
	leida-8-9W, leida-2-8W, leida-3-10W, leida-4-11W, leida-5-12W, leida-6-13W,				
Series Models:	leida-7-14W, FJ-2-15W, JG-1-16W, JG-2-17W, JG-3-18W, mini4-1-19W,				
	mini-2-20w, mini-3-21w, mini-5-24w, mini-4-28w, HW-6-30W				
Class of Equipment:	☐ Class A ☐ Class B				
Highest Internal Frequency:	<108MHz				
Rated Voltage:	Input: AC 120V/60Hz				
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Note 1: The test data is gathered from a production sample, provided by the manufacturer.

Note 2: The color of appearance and model name of series models listed are different from the main model, but the circuit and the electronic construction are the same, declared by the manufacturer.

# 1.2 Test Setup Information

List of Test Mo	odes						
Test Mode	De	escription		Remark			
TM1	7	Working		AC 120V/60	OHz		
TM2		-		-			
TM3		-		-			
TM4		-		-			
List and Detai	ls of Auxiliar	y Cable					
Descri	iption Length (cm)		Shielded/Unshielded		With/Without Ferrite		
-	-		-		-		
-					-		
-				-	-		
List and Detai	ls of Auxiliar	y Equipment					
Description Manufactures			r	Model	Serial Number		
-	-			-	-		
-		-		-	-		
				-	-		
The equipment under test (EUT) was configured to measure its highest possible emission and immunity level.							

The equipment under test (EUT) was configured to measure its highest possible emission and immunity level. The test modes were adapted according to the operation manual for use.

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# 1.3 Compliance Standards

Compliance Standards				
ECC Doub 15 Culonaut D	FEDERAL COMMUNICATIONS COMMISSION, RADIO FREQUENCY DEVICES,			
FCC Part 15 Subpart B	Unintentional Radiators			
All measurements contained i	n this report were conducted with all above standards			
According to standards for	test methodology			
FCC Part 15 Subpart B	FEDERAL COMMUNICATIONS COMMISSION, RADIO FREQUENCY DEVICES,			
	Unintentional Radiators			
	American National Standard for Methods of Measurement of Radio-Noise Emissions			
ANSI C63.4-2014	from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40			
	GHz.			
Maintenance of compliance is	the responsibility of the manufacturer or applicant. Any modification of the product, which			
result is lowering the emission, should be checked to ensure compliance has been maintained.				

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## 1.4 Test Facilities

Shenzhen CCUT Quality Technology Co., Ltd.					
1F, Building 35, Changxing Technology Industrial Park, Yutang Street,					
Guangming District, Shenzhen, Guangdong, China					
L18863					
6893.01					
583813					
CN0164					

All measurement facilities used to collect the measurement data are located at 1F, Building 35, Changxing Technology Industrial Park, Yutang Street, Guangming District, Shenzhen, Guangdong, China.

# 1.5 Measurement Uncertainty

Test Item	Conditions	Uncertainty
Conducted Disturbance	9kHz~30MHz	±1.64 dB
Radiated Disturbance	30MHz ~ 1GHz	±3.32 dB
Radiated Disturbance	1GHz ~ 18GHz	±3.50 dB

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# 1.6 List of Test and Measurement Instruments

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date		
	Conducted Emissions						
AMN ROHDE&SCHWARZ ENV216 101097 2023-10-21 2024-10-2							
EMI Test Receiver	ROHDE&SCHWARZ	ESPI	100242	2023-07-31	2024-07-30		
EMI Test Software	FARA	EZ-EMC	EMEC-3A1+	N/A	N/A		
		Radiated Emission	ons				
EMI Test Receiver	ROHDE&SCHWARZ	ESPI	100154	2023-07-31	2024-07-30		
Spectrum Analyzer	KEYSIGHT	N9020A	MY48030972	2023-07-31	2024-07-30		
Amplifier	SCHWARZBECK	BBV 9743B	00251	2023-07-31	2024-07-30		
Amplifier	HUABO	YXL0518-2.5-45		2023-07-31	2024-07-30		
Loop Antenna	DAZE	ZN30900C	21104	2023-08-07	2024-08-06		
Broadband Antenna	SCHWARZBECK	VULB 9168	01320	2023-08-07	2024-08-06		
Horn Antenna	SCHWARZBECK	BBHA 9120D	02553	2023-08-07	2024-08-06		
EMI Test Software	FARA	EZ-EMC	FA-03A2 RE+	N/A	N/A		

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# 2. Summary of Test Results

FCC Rule	Description of Test Item	Result
FCC Part 15.107	Conducted Emissions	Passed
FCC Part 15.109	Radiated Emissions	Passed

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Passed: The EUT complies with the essential requirements in the standard

Failed: The EUT does not comply with the essential requirements in the standard

N/A: Not applicable

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## 3. Conducted Emissions

## 3.1 Standard and Limit

According to the rule FCC Part 15.107, Conducted limit, the limit for a class A and class B device as below:

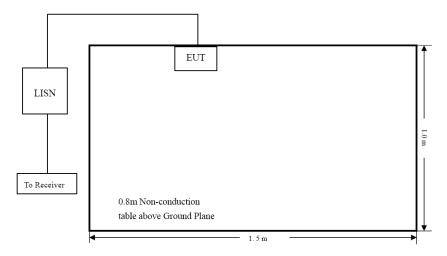
Frequency of Emission	Class A	(dBuV)	Class B (dBuV)			
(MHz)	Quasi-peak Average		Quasi-peak	Average		
0.15-0.5	79	66	66 to 56	56 to 46		
0.5-5	73	60	56	46		
5-30	73	60	60	50		

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Note 1: Decreases with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz

#### 3.2 Test Procedure

Test is conducting under the description of 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.



Test Setup Block Diagram

## 3.3 Test Data and Results

Based on all tested data, the EUT complied with the FCC Part 15.107 standard limit for a Class B device, and with the worst case as below:

Remark: Level = Reading + Factor, Margin = Level - Limit

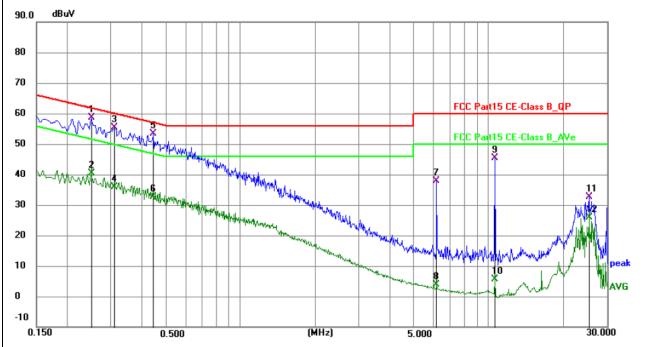
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Note 2: The lower limit applies at the band edges

Test	Test Plots and Data of Conducted Emissions									
Teste	ed Model:	MIN	I-2							
Teste	ed Mode:	TM1								
Test	Voltage:	AC 1	20V/60Hz	Z						
Test	Power Line:	Neut	ral							
Rema	ark:									
90.0	dBuV	I								
										$\neg$
80								_		-
70										
									FCC Part15 CE-Class B_QP	
60	~~~~~~	¥ 5					3			$\neg$
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						Mare	the same			AVG
0								1	March and and land Vista	
-10 n	150	0.50	00		(MHz)		5.0	nn	30	0.000
	130	0.50	JU		(14112)		5.0	UU		
No	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark	
1	0.2040	48.40	9.60	58.00	63.45	-5.45	QP	Р		
2	0.2040	32.38	9.60	41.98	53.45	-11.47	AVG	Р		
3	0.3570	45.85	9.44	55.29	58.80	-3.51	QP	P		
5	0.3570 0.4335	25.56 43.06	9.44 9.94	35.00 53.00	48.80 57.19	-13.80 -4.19	AVG QP	P		
6	0.4335	25.51	9.94	35.45	47.19	-4.19	AVG	Р		
7	1.0590	31.56	9.77	41.33	56.00	-14.67	QP	P		
8	1.0590	15.06	9.77	24.83	46.00	-21.17	AVG	Р		$\overline{}$
9	* 3.7590	42.56	10.14	52.70	56.00	-3.30	QP	Р		
10	3.7590	1.85	10.14	11.99	46.00	-34.01	AVG	Р		
11		23.90	10.42	34.32	60.00	-25.68	QP	Р		
12	25.4310	20.41	10.42	30.83	50.00	-19.17	AVG	Р		

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Test Plots and Data of Conducted Emissions					
INI-2					
TM1					
AC 120V/60Hz					
Live					



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1 *	0.2490	49.21	9.52	58.73	61.79	-3.06	QP	Р	
2	0.2490	30.83	9.52	40.35	51.79	-11.44	AVG	Р	
3	0.3074	45.68	9.78	55.46	60.04	-4.58	QP	Р	
4	0.3074	26.17	9.78	35.95	50.04	-14.09	AVG	Р	
5	0.4425	43.33	9.93	53.26	57.01	-3.75	QP	Р	
6	0.4425	22.70	9.93	32.63	47.01	-14.38	AVG	Р	
7	6.1844	27.68	10.25	37.93	60.00	-22.07	QP	Р	
8	6.1844	-6.48	10.25	3.77	50.00	-46.23	AVG	Р	
9	10.5854	35.30	10.08	45.38	60.00	-14.62	QP	Р	
10	10.5854	-4.56	10.08	5.52	50.00	-44.48	AVG	Р	
11	25.4355	22.42	10.28	32.70	60.00	-27.30	QP	Р	
12	25.4355	15.52	10.28	25.80	50.00	-24.20	AVG	Р	

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# 4. Radiated Disturbance

#### 4.1 Standard and Limit

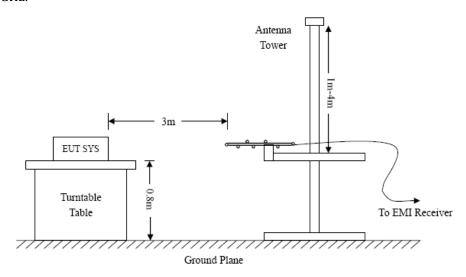
According to the rule FCC Part 15.109, Radiated emission limit for a class A and class B device as below:

Eraguangy of Emission (MHz)	Class A (3m)	Class B (3m)				
Frequency of Emission (MHz)	Quasi-peak (dBuV/m)	Quasi-peak (dBuV/m)				
30-88	50	40				
88-216	54.0	43.5				
216-960	57.0	46				
Above 960	60	54				
Note: The more stringent limit app	lies at transition frequencies.					

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#### **4.2 Test Procedure**

Test is conducting under the description of 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.



Test Setup Block Diagram

## 4.3 Test Data and Results

Based on all tested data, the EUT complied with the FCC Part 15.109 standard limit for a Class B device, and with the worst case as below:

Remark: Level = Reading + Factor, Margin = Level - Limit

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Test I	Plots and	Data	of Rad	liate	d Em	issio	ons							
Teste	d Model:				MIN	I-2								
Teste	d Mode:				TM1									
Test \	/oltage:				AC 1	20V	7/60Hz							
Test A	Antenna I	Polariz	zation	:	Hori	zon	tal							
Rema	ırk:													
80.0	dBuV/n	n			ı									
70														
60														
50											C Part15 R	E-Class B_	30-100	DOMHz [
50										Ma	argin -6 dB			
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3	0.000		6	0.00				(MHz)		30	0.00			1000.000
No.	Frequ (MF		Read (dBu			ctor /m)	Level (dBuV/m	Limit (dBuV/m)	Margin (dB)	Detecto	r Height (cm)	Azimuth (deg.)	P/F	Remark
1	41.2	765	24.8	35	-8.	31	16.54	40.00	-23.46	QP	100	0	Р	
2	81.4		27.7	72		.34	14.38	40.00	-25.62	QP	100	0	Р	
3	149.4		23.8			68	15.17	43.50	-28.33	QP	100	0	Р	
4	273.2		27.4			.06	18.37	46.00	-27.63	QP	100	0	P	
5 6 *	437.1		25.6		_	28	20.32	46.00	-25.68	QP	100	0	P	
_ <u> </u>	599.3	0212	26.2	20	-1.	.07	25.19	46.00	-20.81	QP	100	0		

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Test P	lots and	Data	of Rac	liate	d En	nissio	ons							
Tested	l Model:	!			MIN	NI-2								
Гested	l Mode:				TM	1								
Test V	oltage:				AC	120V	7/60Hz							
Test A	ntenna	Polari	zation	1:	Ver	tical								
Remai	rk:													
80.0	dBuV/n	n												
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70														
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60														
										FCC	Part15 R	E-Class B_	30-10	00MHz
50										Mar	gin -6 dB			
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30.	000		6	0.00				(MHz)		300	.00			1000.
1	Frequ	IODGV/	Read	dina		actor	Level	Limit	Margin		Height	Azimuth		
No.		Hz)	(dBi			B/m)		(dBuV/m)	(dB)	Detector	(cm)	(deg.)	P/F	Remark
1	39.7	146	26.	84	-7	7.99	18.85	40.00	-21.15	QP	100	360	Р	
2 *	82.6		38.		-	3.35	24.73	40.00	-15.27	QP	100	360	Р	
3	148.4		26.		-	3.75	18.09	43.50	-25.41	QP	100	360	Р	
4	190.4		30.			2.21	18.43	43.50	-25.07	QP	100	360 360	P	
5 6	333.0 599.3		26. 27.		-	7.90 1.07	18.46 26.63	46.00 46.00	-27.54 -19.37	QP QP	100	360	P	

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