

FCC SDOC TEST REPORT

for

Wireless mite removal device

Model: LP-018

Prepared for: Wenzhou Laipin Electronic Technology Co., Ltd.
West side of 104 National Highway at Lan Ganqiao intersection,
Wanquan Town, Pingyang County, Wenzhou City

Prepared by: RED Laboratories Inc.
Room 101, Building A, Zhengtailai Hi-Tech Innovation Park, Yintian
Creative Park, Yantian Community, Xixiang Subdistrict, Bao'an District,
Shenzhen, Guangdong, China

TEL: +86-0755-23080724

Report Number: RED241022078237ED-AM
Date of Test: Oct. 17, 2024 ~ Oct. 22, 2024
Date of Issue: Oct. 22, 2024

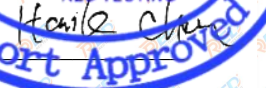
Tested By:



Reported By:



Reviewed By:



The results detailed in this test report relate only to the specific sample(s) tested. It is the Application's responsibility to ensure that all production units are manufactured with equivalent EMC characteristics. This report is not to be reproduced except in full, without written approval from RED Laboratories Inc.

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1.0 General Information

1.1 Client Information

Application:	Wenzhou Laipin Electronic Technology Co., Ltd.
Address of Application:	West side of 104 National Highway at Lan Ganqiao intersection, Wanquan Town, Pingyang County, Wenzhou City
Manufacturer:	Wenzhou Laipin Electronic Technology Co., Ltd.
Address of Manufacturer:	West side of 104 National Highway at Lan Ganqiao intersection, Wanquan Town, Pingyang County, Wenzhou City

1.2 General Description of E.U.T.

Product Name:	Wireless mite removal device
Model:	LP-018
Additional Model:	N/A
Trade Mark:	N/A
Power Supply:	Input: 5V, 2A Rated power: 120W

Memo:	According client required.
Model Difference:	N/A
Remark:	N/A

1.3 Test Facility:

Name of Test Lab:	RED Laboratories Inc.
Address of Test Lab:	Room 101, Building A, Zhengtailai Hi-Tech Innovation Park, Yintian Creative Park, Yantian Community, Xixiang Subdistrict, Bao'an District, Shenzhen, Guangdong, China
Telephone:	+86-0755-23080724

2.0 List of Measurement Equipment					
Conducted emission					
Name	Model No.	Serial No.	Manufacturer	Date of Cal.	Due Date
EMI Test Receiver	ESPI	101604	RS	2024/6/17	2025/6/16
LISN	ENV 216	102796	RS	2024/6/17	2025/6/16
LISN	VN1-13S	004023	CRANAGE	2024/6/17	2025/6/16

Radiated emission					
Name	Model No.	Serial No.	Manufacturer	Date of Cal.	Due Date
EMI Test Receiver	ESCI	101178	RS	2024/6/17	2025/6/16
Spectrum Analyzer	N9020A	MY50510202	Agilent	2024/6/17	2025/6/16
Amplifier	BBV 9743 B	00374	SCHWARZBECK	2024/6/17	2025/6/16
Bilog Antenna	VULB9162	00473	SCHNARZBECK	2023/3/19	2025/3/18
Horn antenna	BBHA 9120 D	02622	SCHNARZBECK	2023/3/19	2025/3/18
Preamplifier	BBV 9718D	00042	SCHNARZBECK	2024/6/17	2025/6/16

3.0 Technical Details

3.1 Investigations Requested

Perform Electromagnetic Interference [EMI] tests for FCC Requirement.

3.2 Test Standards

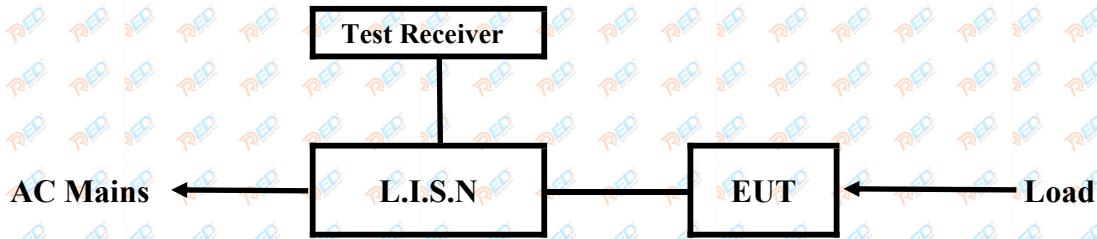
FCC Part 15 Subpart B

3.3 Measurement Uncertainty (95% confidence levels, k=2)

No.	Item	MU
1.	Temperature	$\pm 0.1^{\circ}\text{C}$
2.	Humidity	$\pm 1.0\%$
3.	Spurious emissions, conducted	$\pm 3.24\text{dB}$
4.	All emissions, radiated	$\pm 5.03\text{dB}$

4.0 Power Line Conducted Emission Test

4.1 Schematics of the test

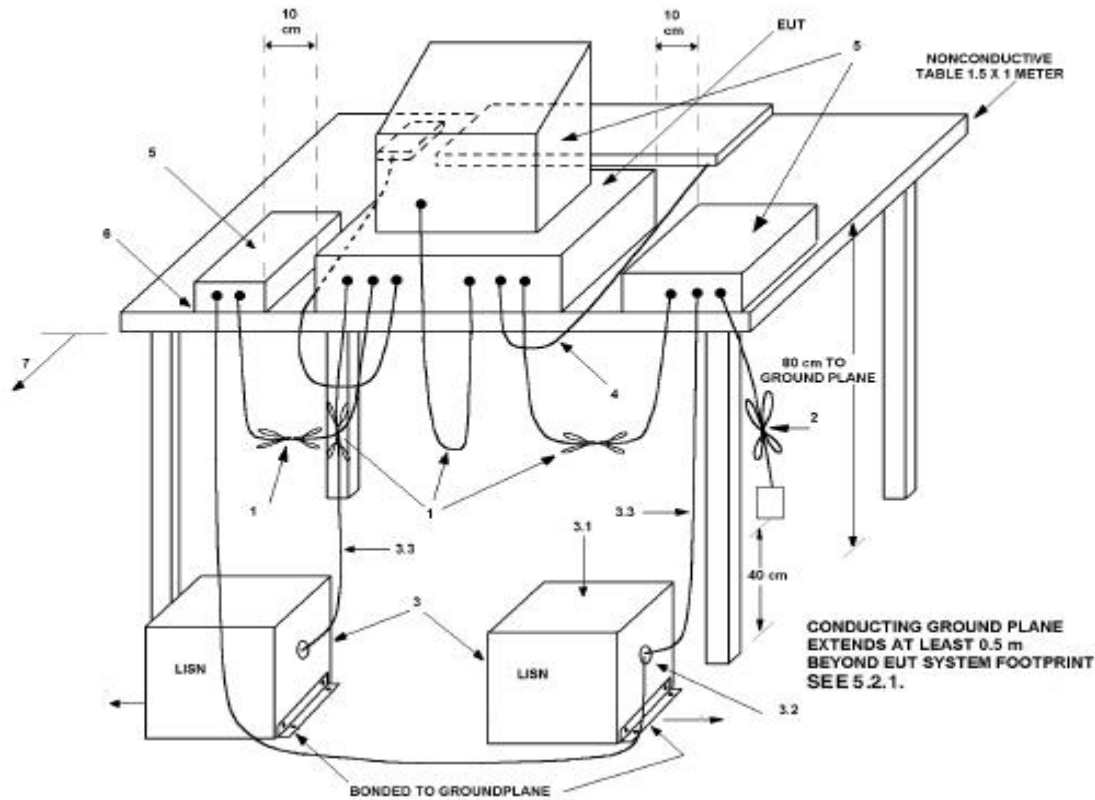


EUT: Equipment Under Test

4.2 Test Method and test Procedure

The EUT was tested according to ANSI C63.4-2014. The Frequency spectrum From 0.15MHz to 30MHz was investigated. The LISN used was 50ohm/50uH as specified by section 5.1 of ANSI C63.4 –2014.

Test Voltage: 120V~, 60HZ
 Block diagram of Test setup



4.3 EUT Operating Condition

Operating condition is according to ANSI C63.4 -2014

- 1) Setup the EUT and simulators as shown on the following
- 2) Enable AF signal and confirm EUT active to normal condition

4.4 Test Equipment

Please refer to the Section 2

4.5 Power line conducted Emission Limit

Frequency(MHz)	Class A Limits (dBμV)		Class B Limits (dBμV)	
	Quasi-peak Level	Average Level	Quasi-peak Level	Average Level
0.15 ~ 0.50	79.0	66.0	66.0~56.0*	56.0~46.0*
0.50 ~ 5.00	73.0	60.0	56.0	46.0
5.00 ~ 30.00	73.0	60.0	60.0	50.0

- Notes:
1. *Decreasing linearly with logarithm of frequency.
 2. The tighter limit shall apply at the transition frequencies

4.6 Photo documentation of the test set-up

Please refer to the Section 7

4.7 Test specification:

Environmental conditions: Temperature: 23° C Humidity: 54% Atmospheric pressure: 101.6kPa

Frequency range: 0.15 MHz – 30 MHz

4.8 Test result N/A

Remarks: According to the FCC Part 15 Subpart B

A Conducted Emission on Live Terminal of the power line (150kHz to 30MHz)

EUT Description: --
 Operation Mode: --
 Tested By: --
 Test date: --
 Test Result: --

Start Frequency 0.15MHz Stop Frequency 30MHz Step 4.5KHz IF BW 10KHz Detector QP+AV Final M-Time 1s

Frequency (MHz)	Reading(dBμV)				Limit (dBμV)	
	Live		Neutral		Quasi-peak	Average
	Quasi-peak	Average	Quasi-peak	Average		
			--	--		
			--	--		

Remark: The test item is not applicable.

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

EUT Description: --
 Operation Mode: --
 Tested By: --
 Test date: --
 Test Result: --

Start Frequency 0.15MHz Stop Frequency 30MHz Step 4.5KHz IF BW 10KHz Detector QP+AV Final M-Time 1s

Frequency (MHz)	Reading(dB μ V)				Limit (dB μ V)	
	Live		Neutral		Quasi-peak	Average
	Quasi-peak	Average	Quasi-peak	Average		
	--	--				
	--	--				

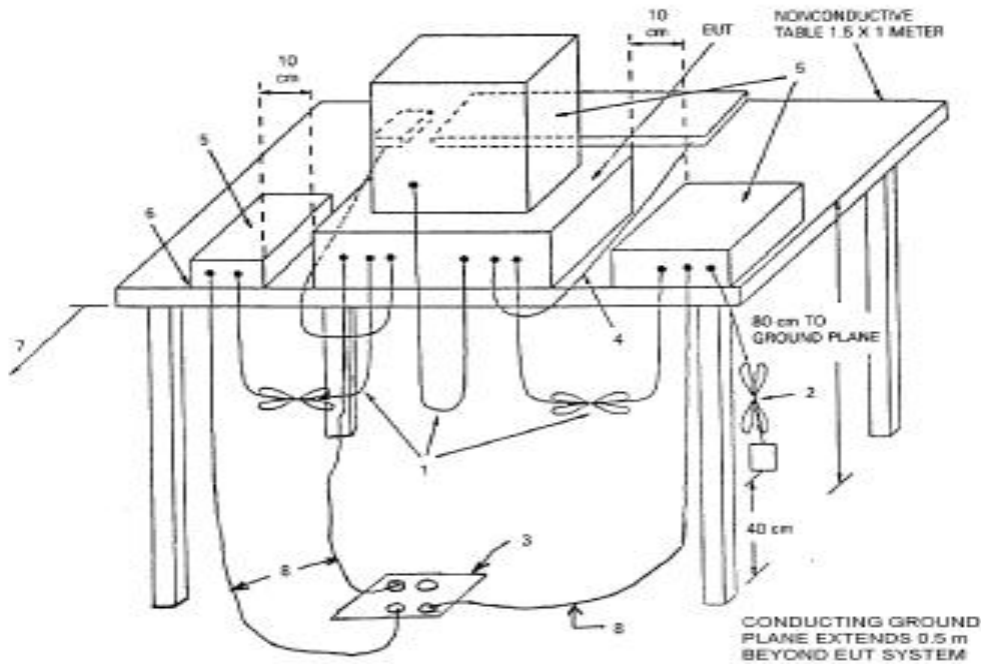
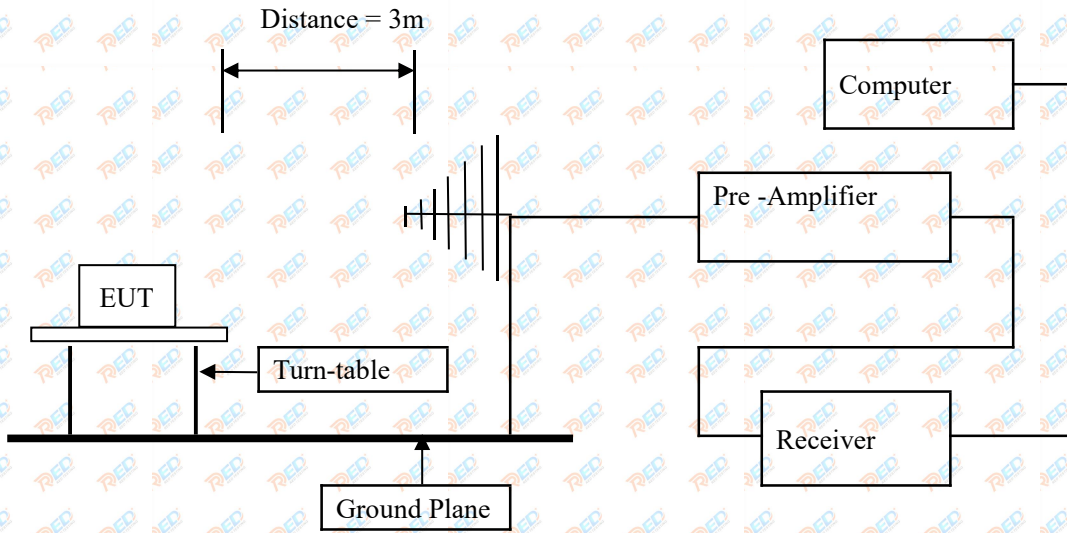
Remark: The test item is not applicable.

5.0 Radiated Emission Test

5.1 Test Method and test Procedure:

- 1) The EUT was tested according to ANSI C63.4 –2014.
- 2) The EUT, peripherals were put on the turntable which table size is 1m x 1.5 m, table high 0.8 m. All set up is according to ANSI C63.4-2014.
- 3) The antenna high is varied from 1 m to 4 m high to find the maximum emission for each frequency.
- 4) The antenna polarization: Vertical polarization and Horizontal polarization.

Block diagram of Test setup



5.2 EUT Operating Condition

Operating condition is according to ANSI C63.4 -2014

5.3 Radiated Emission Limit

All emission from a digital device, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strength specified below:

Frequency Range (MHz)	Distance (m)	Field strength (dBμV/m)
30-88	3	40.0
88-216	3	43.5
216-960	3	46.0
Above 960	3	54.0

- Note:
- 1) The frequency spectrum from 30MHz to 8GHz was investigated. All reading from 30MHz to 1GHz are quasi-peak values with a resolution bandwidth of 120KHz. For measurement above 1GHz, peak values with RBW=VBW=1MHz and PK detector. AV value with RBW=1MHz, VBW=10Hz and PK.
 - 2) Measurements were made at 3 meters.
 - 3) If measurement is not made at 3m distance, then F.S Limitation at 3m distance is adjusted by using the formula $Ld1 = Ld2 * (d2/d1)$

5.4 Photo documentation of the test set-up

Please refer to the Section 7

5.5 Test Equipment:

Please refer to the Section 2

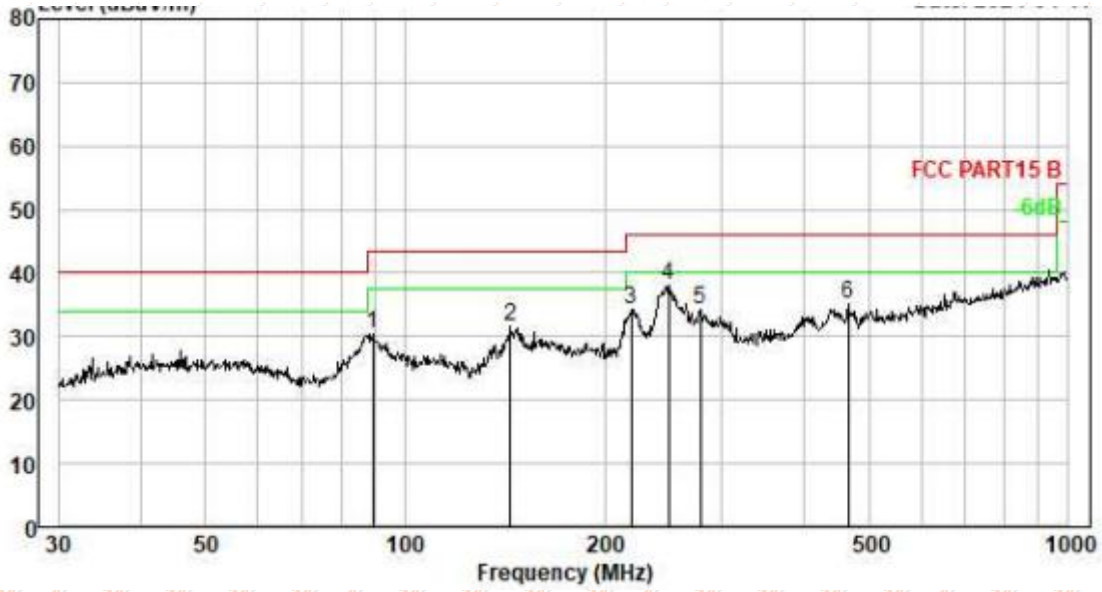
5.6 Test specification:

Environmental conditions: Temperature 23° C Humidity: 54% Atmospheric pressure: 101.6kPa

5.7 Test result Pass

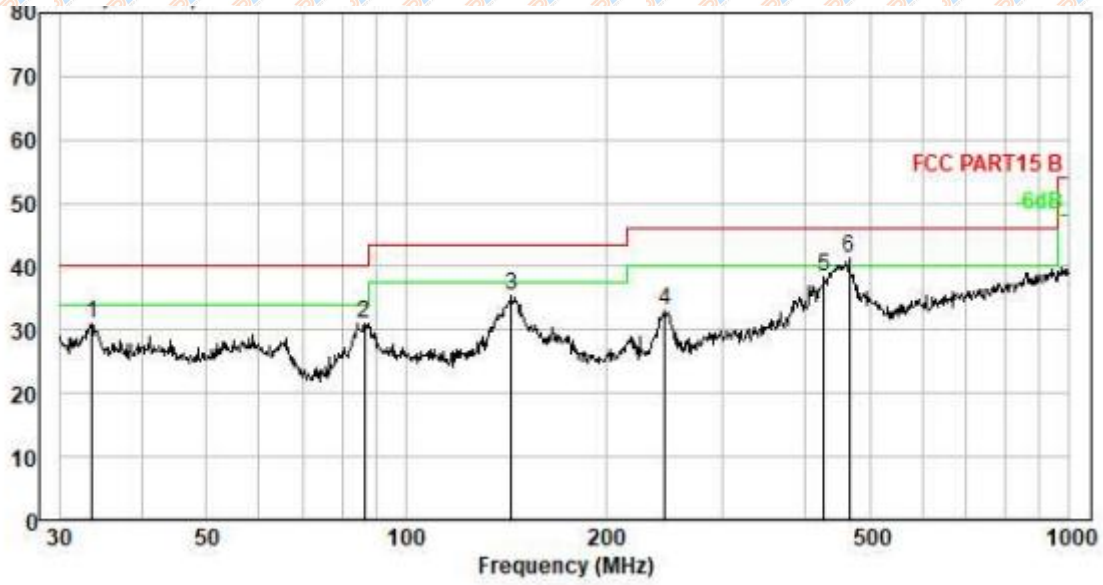
Remarks: According to the FCC Part 15 Subpart B

A. Radiated Emission In Horizontal (30MHz---1000MHz)



No.	Freq MHz	Cable Loss dB	ANT Factor dB/m	Preamplifier Gain dB	Receiver Reading dBμV	Emission Level dBμV/m	Limit dBμV/m	Over Limit dB	Remark
1	89.276	0.65	9.89	0.00	19.97	30.51	43.50	-12.99	QP
2	144.335	0.89	8.41	0.00	22.29	31.59	43.50	-11.91	QP
3	219.075	1.11	12.05	0.00	21.11	34.27	46.00	-11.73	QP
4	249.425	1.18	12.98	0.00	23.94	38.10	46.00	-7.90	QP
5	279.044	1.24	13.78	0.00	19.31	34.33	46.00	-11.67	QP
6	465.599	1.51	16.75	0.00	16.96	35.22	46.00	-10.78	QP

B. Radiated Emission In Vertical (30MHz----1000MHz)



No.	Freq MHz	Cable Loss dB	ANT Factor dB/m	Preamp Gain dB	Receiver Reading dBμV	Emission Level dBμV/m	Limit dBμV/m	Over Limit dB	Remark
1	33.562	0.28	10.73	0.00	19.96	30.97	40.00	-9.03	QP
2	86.503	0.64	9.83	0.00	20.57	31.04	40.00	-8.96	QP
3	144.335	0.89	8.41	0.00	26.12	35.42	43.50	-8.08	QP
4	245.951	1.17	12.88	0.00	19.04	33.09	46.00	-12.91	QP
5	426.521	1.47	16.20	0.00	20.82	38.49	46.00	-7.51	QP
6	465.599	1.51	16.75	0.00	23.18	41.44	46.00	-4.56	QP

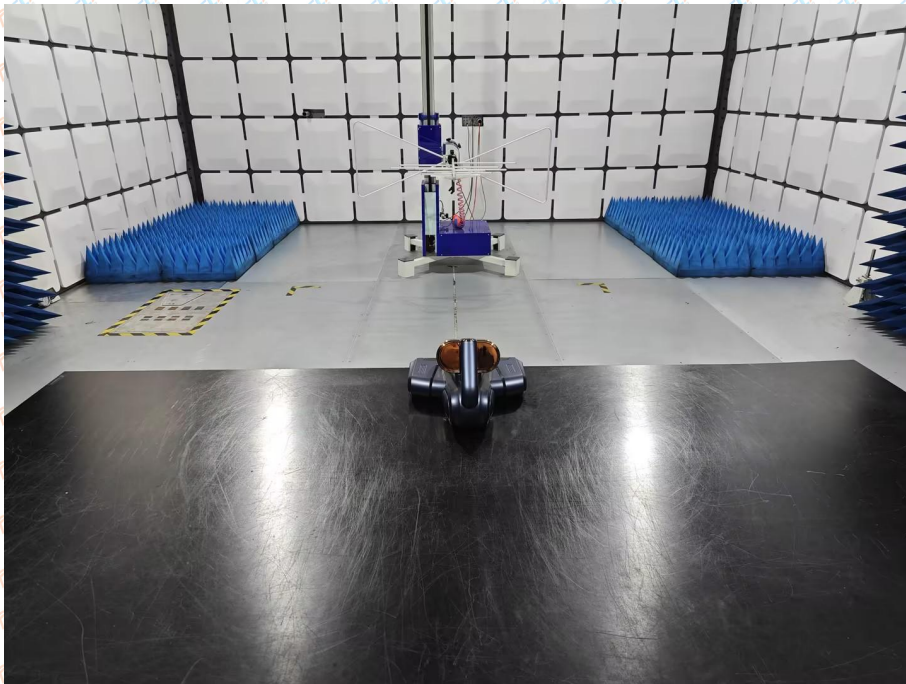
6.0 FCC Label

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

The label must not be a stick-on paper label. The label on these products must be permanently affixed to the product and readily visible at the time of purchase and must last the expected lifetime of the equipment not be readily detachable.

Mark Location: On the product body

7.0 Photos of testing
Radiated Emission Test View



8.0 Photographs – E.U.T.









--End of the report--