

RF Exposure Evaluation Report

Product : LED Floodlight
Trade mark : N/A
Model/Type reference : LAW25E,LAW10E
Test Model No. : LAW25E
Serial Number : N/A
Report Number : EED32N81243703
FCC ID : 2AT7E-LAW25E
Date of Issue : Apr. 07, 2022
Test Standards : 47 CFR Part 1.1307
47 CFR Part 2.1093
KDB447498D01 General
RF Exposure Guidance v06
Test result : PASS

Prepared for:

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Qian Wan yi lu 1 hao A dong 201 shi, qian hai shen gang he
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2 Version

Version No.	Date	Description
00	Apr. 07, 2022	Original

3 Contents

	Page
1 COVER PAGE.....	1
2 VERSION.....	2
3 CONTENTS.....	3
4 GENERAL INFORMATION.....	4
4.1 CLIENT INFORMATION.....	4
4.2 GENERAL DESCRIPTION OF EUT.....	4
4.3 PRODUCT SPECIFICATION SUBJECTIVE TO THIS STANDARD.....	4
4.4 TEST LOCATION.....	6
4.5 DEVIATION FROM STANDARDS.....	6
4.6 ABNORMALITIES FROM STANDARD CONDITIONS.....	6
4.7 OTHER INFORMATION REQUESTED BY THE CUSTOMER.....	6
5 RF EXPOSURE EVALUATION.....	7
5.1 RF EXPOSURE COMPLIANCE REQUIREMENT.....	7
5.2 MAXIMUM PERMISSIBLE EXPOSURE.....	8
PHOTOGRAPHS OF EUT CONSTRUCTIONAL DETAILS.....	9

4 General Information

4.1 Client Information

Applicant:	Shen Zhen Shi Zhi Hui Duo Ke Ji You Xian Gong Si
Address of Applicant:	Qian Wan yi lu 1 hao A dong 201 shi, qian hai shen gang he zuo qu, shen zhen, guang dong, China 518000
Manufacturer:	Shen Zhen Shi Zhi Hui Duo Ke Ji You Xian Gong Si
Address of Manufacturer:	Qian Wan yi lu 1 hao A dong 201 shi, qian hai shen gang he zuo qu, shen zhen, guang dong, China 518000
Factory:	Shen Zhen Shi Zhi Hui Duo Ke Ji You Xian Gong Si
Address of Factory:	Qian Wan yi lu 1 hao A dong 201 shi, qian hai shen gang he zuo qu, shen zhen, guang dong, China 518000

4.2 General Description of EUT

Product Name:	LED Floodlight
Model No.:	LAW25E, LAW10E
Test model:	LAW25E
Trade Mark:	N/A
EUT Supports Radios application:	IEEE 802.11b/g/n(HT20 and HT40): 2412MHz to 2462MHz GFSK, $\pi/4$ DQPSK, 8DPSK

4.3 Product Specification subjective to this standard

Frequency Range:	IEEE 802.11b/g/n(HT20 and HT40): 2412MHz to 2462MHz GFSK, $\pi/4$ DQPSK, 8DPSK:2402MHz~2480MHz
Modulation Type:	IEEE for 802.11b: DSSS(CCK,DQPSK,DBPSK) IEEE for 802.11g :OFDM(64QAM, 16QAM, QPSK, BPSK) IEEE for 802.11n(HT20 and HT40) : OFDM (64QAM, 16QAM,QPSK,BPSK) GFSK, $\pi/4$ DQPSK, 8DPSK
Test Power Grade:	Default
Test Software of EUT:	Wifi Test Tool v1.6.0
Antenna Type:	PCB antenna
Antenna Gain:	2.4G WiFi:5dBi BLE:5dBi
Power Supply:	AC 100-120V~60Hz
Test Voltage:	AC 110V
Max Conducted Peak Output Power:	2.4G WiFi:22.94dBm(196.789mW) BLE:5.27dBm(3.365mW) The Max Conducted Peak Output Power data refer to the report 709502102919-00 and 709502102915-00.
Sample Received Date:	Feb. 24, 2022
Sample tested Date:	Feb. 25, 2022 to Mar. 31, 2022
1.Company Name and Address shown on Report, the sample(s) and sample Information were provided by the applicant who should be responsible for the authenticity which CTI hasn't verified.	
2.Model No.:LAW25E,LAW10E	
Only the model LAW25E was tested.Their electrical circuit design, layout, components used and internal	

wiring are identical, all use the same linear constant current IC, the same auxiliary power supply, the same WiFi module and the same antenna. The only difference is the difference in the number of linear ICs and LED chips. The greater the power, the more ICs and LED chips used, and the larger the size of the aluminum substrate is different.

4.4 Test Location

All tests were performed at:

Centre Testing International Group Co., Ltd

Building C, Hongwei Industrial Park Block 70, Bao'an District, Shenzhen, China

Telephone: +86 (0) 755 33683668 Fax: +86 (0) 755 33683385

No tests were sub-contracted.

FCC Designation No.: CN1164

4.5 Deviation from Standards

None.

4.6 Abnormalities from Standard Conditions

None.

4.7 Other Information Requested by the Customer

None.

5 RF Exposure Evaluation

5.1 RF Exposure Compliance Requirement

Given $E = \frac{\sqrt{30 \times P \times G}}{d}$ & $S = \frac{E^2}{377}$

Where E = Field strength in Volts / meter

P = Power in Watts

G = Numeric antenna gain

d = Distance in meters

S = Power density in milliwatts / square centimeter

Combining equations and re-arranging the terms to express the distance as a function of the remaining variables yields:

$$S = \frac{30 \times P \times G}{377 d^2}$$

Changing to units of mW and cm, using:

$$P \text{ (mW)} = P \text{ (W)} / 1000 \text{ and}$$

$$d \text{ (cm)} = d \text{ (m)} / 100$$

Yields

$$S = \frac{30 \times (P/1000) \times G}{377 \times (d/100)^2} = 0.0796 \times \frac{P \times G}{d^2} \quad \text{Equation 1}$$

Where d = Distance in cm

P = Power in mW

G = Numeric antenna gain

S = Power density in mW / cm²

5.2 Maximum Permissible Exposure

Substituting the MPE safe distance using $d = 20$ cm into Equation 1:

$$S = 0.000199 \times P \times G$$

Where P = Power in mW

G = Numeric antenna gain

S = Power density in mW / cm²

BLE:

Ch.	Frq. (MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm ²	Limit (mW/cm ²)
0	2402	3.365000	3.162	20	0.0021	1

2.4G WiFi:

Ch.	Frq. (MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm ²	Limit (mW/cm ²)
11	2462	196.789000	3.162	20	0.1238	1

PHOTOGRAPHS OF EUT Constructional Details

Refer to Report No. EED32N81243701 for EUT external and internal photos.

The test report is effective only with both signature and specialized stamp, The result(s) shown in this report refer only to the sample(s) tested. Without written approval of CTI, this report can't be reproduced except in full.

*** End of Report ***