

RF Exposure Evaluation Report

Product : LED Work Light
Trade mark : Olafus
Model/Type reference : LEB50E
Test Model No. : LEB50E
Serial Number : N/A
Report Number : EED32O80591202
FCC ID : 2AT7E-LEB50E
Date of Issue : May 27, 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
zuo qu, shen zhen, guang dong, China 518000

Prepared by:

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2 Version

Version No.	Date	Description
00	May 27, 2022	Original

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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 Work Light
Model No.:	LEB50E
Test model:	LEB50E
Trade Mark:	Olafus
EUT Supports Radios application:	BLE:1Mbps

4.3 Product Specification subjective to this standard

Frequency Range:	2402MHz~2480MHz
Modulation Type:	GFSK
Test Power Grade:	Default
Test Software of EUT:	EMI Tool
Antenna Type:	PCB antenna
Antenna Gain:	5.0dBi
Power Supply:	AC 100-120V~60Hz
Test Voltage:	AC 120V
Max Conducted Peak Output Power:	BLE:9.80dBm(9.5499258602 mW) The Max Conducted Peak Output Power data refer to the report 708881974871-00.
Sample Received Date:	Apr. 28, 2022
Sample tested Date:	May. 18, 2022 to May.25, 2022
Remark:	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.

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:

The tune-up conducted power:

Maximum peak output power at antenna input terminal(dBm)	9.80
Maximum peak output power at antenna input terminal(mW)	9.55
Tune-up conducted power(dBm)	10
Tune-up conducted power(mW)	10

Calculated data:

Ch.	Frq. (MHz)	P (mW)	Gain (dBi)	Gain (num.)	D (cm)	Power density in mW / cm ²	Limit (mW/cm ²)
0	2480	10.00	5.00	3.1622776602	20	0.00629	1

Note: The tune-up conducted power (10dBm) was declared by the manufacturer of module. The test data please refer to original report No.708881974871-00A.

$0.00629(\text{mW}/\text{cm}^2) < 1(\text{mW}/\text{cm}^2)$

Result: compliant

PHOTOGRAPHS OF EUT Constructional Details

Refer to Report No. EED32O80591201 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 ***