



MPE Test Report

Report No.: LGD-ESH-P20062572B-4

FCC ID: Q4B-LMFS

Product: FIXTURE INTEGRATED SENSOR - PIR AND DAYLIGHT SENSING

Test Model: LMFS-601

Received Date: Jun.30, 2020

Test Date: Jul.06 to 16, 2020

Issued Date: Jul.30, 2020

Applicant: The Watt Stopper Inc. d/b/a Qmotion

Address: 3400 Copter Rd., Pensacola, FL. 32514

Manufacturer: Shanghai Legrand Electrical Co., Ltd

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Issued By: BUREAU VERITAS ADT (Shanghai) Corporation

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Table of Contents

Release Control Record.....	3
1 Certificate of Conformity	4
2 General Information.....	5
2.1 General Description of EUT.....	5
3 RF Exposure	6
3.1 Limits For Maximum Permissible Exposure (MPE)	6
3.2 MPE Calculation Formula.....	6
3.3 MPE Calculation Formula.....	6
3.4 Calculation Result of Maximum Permissible Exposure.....	7



Release Control Record

Issue No.	Description	Date Issued
LGD-ESH-P20062572B-4	Original release	Jul.30, 2020



1 Certificate of Conformity

Product: FIXTURE INTEGRATED SENSOR - PIR AND DAYLIGHT SENSING

Brand:  **legrand**

Test Model: LMFS-601

Applicant: The Watt Stopper Inc. d/b/a Qmotion

Test Date: Jul.06 to 16, 2020

Standards: FCC Part 2 (Section 2.1091)
KDB 447498 D01 General RF Exposure Guidance v06
IEEE C95.1-1992

The above equipment has been tested by **BUREAU VERITAS ADT (Shanghai) Corporation**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.


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Project Engineer

Approved by : Daniel SUN, **Date:** Jul.30, 2020
Daniel SUN
EMC Lab Manager


2 General Information

2.1 General Description of EUT

802.15.4

Product	FIXTURE INTEGRATED SENSOR - PIR AND DAYLIGHT SENSING
Brand	
Test Model	LMFS-601
Power Rating	12-20Vdc powered by DALI
Modulation Type	O-QPSK
Modulation Technology	DSSS
Operating Frequency	2405MHz to 2480MHz
Number of Channel	16
Antenna Type	Monopole Antenna
Antenna Connector	--
Antenna Gain	1.0dBi

BLE

Product	FIXTURE INTEGRATED SENSOR - PIR AND DAYLIGHT SENSING
Brand	
Test Model	LMFS-601
Power Rating	12-20Vdc powered by DALI
Modulation Type	GFSK
Modulation Technology	Bluetooth Low Energy 5.0
Tx/Rx Function	1Tx/1Rx
Operating Frequency	2402MHz ~ 2480MHz
Number of Channel	40
Antenna Type	Monopole Antenna
Antenna Connector	--
Antenna Gain	1.0dBi

Note: For more details, please refer to the User's manual of the EUT.

3 RF Exposure

3.1 Limits For Maximum Permissible Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Average Time (minutes)
Limits For General Population / Uncontrolled Exposure				
300-1,500	-	-	F/1500	30
1,500-100,000	-	-	1.0	30

F = Frequency in MHz

3.2 MPE Calculation Formula

Power density (S) is calculated according to the formula:

$$S = PG / (4\pi R^2)$$

Where S = power density in mW/cm²

P = transmit power in mW

G = numeric gain of transmit antenna (numeric gain=Log-1(dB antenna gain/10))

R = distance (cm)

3.3 MPE Calculation Formula

The antenna of this product, under normal use condition, is at least 20cm from the body of the user. So the device is classified as Mobile Device.

3.4 Calculation Result of Maximum Permissible Exposure

802.15.4:

Frequency Band (MHz)	Max. Conducted output power(dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
2402-2480	0.50	1.0	20	0.000281148	1

BLE

Frequency Band (MHz)	Max. Conducted output power(dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
2402-2480	3.76	1.0	20	0.000595582	1

Conclusion:

The calculation result of MPE is less than the limit.

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