



MPE Test Report

Report No.: LGD-ESH-P19112802B-2

FCC ID: Q4B-P3B

Product: BLE and 6LoWPAN Wireless module

Model: IPPAN3-B-LROT

Received Date: Dec.08, 2019

Test Date: Mar.15 to May.29, 2020

Issued Date: Jun.02, 2020

Applicant: The Watt Stopper, Inc.

Address: 2700 Zanker Road Suite 168 San Jose California United States

Manufacturer: Shanghai Legrand Electrical Co.,Ltd

Address: 1/F,Building 1, No.1358 Xiangyang Road, Minhang District, Shanghai

Issued By: BUREAU VERITAS ADT (Shanghai) Corporation

Lab Address: No. 829, Xinzhuan Road, Shanghai, P.R.China (201612)

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Release Control Record

Issue No.	Description	Date Issued
LGD-ESH-P19112802B-2	Original release	Jun.02, 2020



1 Certificate of Conformity

Product: BLE and 6LoWPAN Wireless module

Brand: 

Model: IPPAN3-B-LROT

Applicant: The Watt Stopper, Inc.

Test Date: Mar.15 to May.29, 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.

Prepared by :



, Date:

Jun.02, 2020

Scott XU

Project Engineer

Approved by :



, Date:

Jun.02, 2020

Daniel SUN

EMC Lab Manager

2 General Information

2.1 General Description of EUT

802.15.4

Product	BLE and 6LoWPAN Wireless module
Brand	 legrand
Test Model	IPPAN3-B-LROT
Power Rating	2.0-3.3Vdc
Modulation Type	O-QPSK
Modulation Technology	DSSS
Operating Frequency	2405MHz to 2480MHz
Number of Channel	16
Antenna Type	Ant 1: Ceramic Ant 2: Dipole
Antenna Connector	--
Antenna Gain	Ant 1: 0.5dBi Ant 2: 2.0dBi

BLE

Product	BLE and 6LoWPAN Wireless module
Brand	 legrand
Test Model	IPPAN3-B-LROT
Power Rating	2.0-3.3Vdc
Modulation Type	GFSK
Modulation Technology	Bluetooth Low Energy 5.0
Operating Frequency	2402 ~ 2480MHz
Number of Channel	40
Antenna Type	Ant 1: Ceramic Ant 2: Dipole
Antenna Gain	Ant 1: 0.5dBi Ant 2: 2.0dBi

Note:1. 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

Frequency Band (MHz)	Max. Conducted output power(dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
2405-2480	12.00	2.0	20	0.0049998	1
2402-2480	-0.92	2.0	20	0.0002552	1

Conclusion:

The calculation result of MPE is less than the limit.

Note: The Bluetooth and Zigbee function can not be transmission at the same time

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