MPE Test Report

Report No.: LDF-ESH-P22121218B-3

FCC ID: DWN-TO50ZB

Product: Drive for the venetian blind

Model: TILT ONLY 50 WF ZIGBEE HP UNIT ;
TILT ONLY 50 WF ZIGBEE HP PACK

Received Date: Dec.28, 2022

Test Date: Dec.28, 2022 to Feb.09, 2023

Issued Date: Feb.20, 2023

Applicant: Zhejiang Lianda Science and Technology Co., Ltd.

Address: Technological and Industrial District, 2# Road, Nanxun, Huzhou, Zhejiang, China

Manufacturer: Somfy Activités SA

Address: 50 avenue du Nouveau Monde 74300 CLUSES - FRANCE

Issued By: BUREAU VERITAS ADT (Shanghai) Corporation

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

Test Lab
Cert 2343.01

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Release Control Record

Issue No.	Description	Date Issued
LDF-ESH-P22121218B-3	Original release	Feb.20, 2023

1 Certificate of Conformity

Product: Drive for the venetian blind

Brand: somfy.

Model: TILT ONLY 50 WF ZIGBEE HP UNIT ;
TILT ONLY 50 WF ZIGBEE HP PACK

Applicant: Zhejiang Lianda Science and Technology Co., Ltd.

Test Date: Dec.28, 2022 to Feb.09, 2023

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 : Jan.Zhou , **Date:** Feb.20, 2023

Yan ZHOU

Project Engineer

Approved by : Sean Yu , **Date:** Feb.20, 2023

Sean YU

RF Supervisor

2 General Information

2.1 General Description of EUT

For BLE

Product	Drive for the venetian blind
Brand	somfy®
Test Model	TILT ONLY 50 WF ZIGBEE HP UNIT ; TILT ONLY 50 WF ZIGBEE HP PACK
Power Rating	12V⎓; 0,45A; 1Nm; Operating time: 4 minutes;
Modulation Type	GFSK
Modulation Technology	Bluetooth Low Energy 5.0
Operating Frequency	2402MHz ~ 2480MHz
Number of Channel	40
Antenna Type	PCB Antenna
Antenna Connector	--
Antenna Gain	2dBi
Product SW/HW version	--
Radio SW/HW version	--
Test SW version	--
RF power setting in Test SW	--

Note:

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

For Zigbee

Product	Drive for the venetian blind
Brand	somfy
Test Model	TILT ONLY 50 WF ZIGBEE HP UNIT ; TILT ONLY 50 WF ZIGBEE HP PACK
Power Rating	12V⎓; 0,45A; 1Nm; Operating time: 4 minutes;
Modulation Type	O-QPSK
Modulation Technology	6LoWPAN
Operating Frequency	2405MHz to 2480MHz
Number of Channel	16
Antenna Type	PCB Antenna
Antenna Connector	--
Antenna Gain	2dBi
Product SW/HW version	--
Radio SW/HW version	--
Test SW version	--
RF power setting in Test SW	--

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/cm^2

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)
2402-2480	3.67	2	20	0.000734	1
2405-2480	15.62	2	20	0.0115	1

Conclusion:

The calculation result of MPE is less than the limit.

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