

TEST REPORT

Product Name : Roller Shade Driver E1
Model Number : RSD-M01
FCC ID : 2AKIT-RSDM01

Prepared for : Lumi United Technology Co., Ltd
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1. TEST RESULT CERTIFICATION

Applicant : Lumi United Technology Co., Ltd
 Address : B1, Chongwen Park, Nanshan iPark, Liuxian Avenue, Taoyuan Residential District, Nanshan District Shenzhen, China
 Manufacturer : Lumi United Technology Co., Ltd
 Address : B1, Chongwen Park, Nanshan iPark, Liuxian Avenue, Taoyuan Residential District, Nanshan District Shenzhen, China
 EUT : Roller Shade Driver E1
 Model Name : RSD-M01
 Trademark : N/A

Measurement Procedure Used:

APPLICABLE STANDARDS	
STANDARD	TEST RESULT
§ 15.247(i), § 2.1093	PASS

The above equipment was tested by EMTEK(DONGGUAN) CO., LTD. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.10 (2013) and the energy emitted by the sample EUT tested as described in this report is in compliance with the requirements of FCC Rules FCC § 15.247(i), § 2.1093.

The test results of this report relate only to the tested sample identified in this report

Date of Test : March 29, 2023 to April 12, 2023

Prepared by : Warren Deng

Warren Deng /Editor

Reviewer : Tim Dong

Tim Dong/ Supervisor

 

Approve & Authorized Signer : Sam Lv / Manager

Modified History

Version	Report No.	Revision Date	Summary
	EDG2303290157E00702R	/	Original Report



2. EUT Specification

Characteristics	Description
Product:	Roller Shade Driver E1
Model Number:	RSD-M01
Sample:	2#
Device Type:	zigbee
Modulation:	O-QPSK
Operating Frequency Range(s) :	2405-2480MHz
Number of Channels:	16 Channels
Transmit Power Max:	-9.81 dBm(0.000104W)
Antenna Type :	FPC Antenna
Antenna Gain:	1.75 dBi
Power supply:	DC 5V from USB C
Evaluation applied:	<input checked="" type="checkbox"/> MPE Evaluation <input type="checkbox"/> SAR Evaluation

3. Test Requirement:

RF EXPOSURE EVALUATION

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency(RF) Radiation as specified in §1.1307(b)

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
(A) Limits for Occupational/Control Exposures				
300-1500	--	--	F/300	6
1500-100000	--	--	5	6
(B) Limits for General Population/Uncontrol Exposures				
300-1500	--	--	F/1500	6
1500-100000	--	--	1	30

Friis transmission formula: $P_d = (P_{out} * G) / (4 * \pi * R^2)$

Where

P_d = Power density in mW/cm²

P_{out} =output power to antenna in mW

G= Numeric gain of the antenna relative to isotropic antenna

π =3.1416

R= distance between observation point and center of the radiator in cm

P_d the limit of MPE, 1mW/cm². If we know the maximum gain of the antenna and total power input to the antenna, through the calculation, we will know the distance where the MPE limit is reached.

4. Measurement Result

Antenna gain:
2.4G: 1.75 dBi

1M: Antenna A

Channel	Channel Freq. (MHz)	Measured power (dBm)	Tune-up power (dBm)	Max tune-up power (dBm)	Max tune up power tolerance (mW)	Antenna Gain Numeric	Power Density at R=20cm (mW/cm ²)	Power density Limits (mW/cm ²)
1	2405	-9.9	-10±1	-9	0.126	1.496	0.0000595	1
8	2440	-9.81	-10±1	-9	0.126	1.496	0.0000595	1
15	2475	-10.43	-11±1	-10	0.1	1.496	0.0000473	1

According to KDB 447498, no stand-alone required for Zigbee antenna, and no simultaneous SAR measurement is required.

*** End of Report ***