

TEST REPORT

Product Name : LED Bulb T2
Model Number : LB-L03D
FCC ID : 2AKIT-LBL03D

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

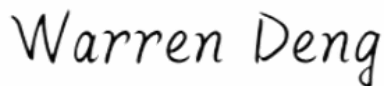
Applicant : Lumi United Technology Co., Ltd.
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Manufacturer : Lumi United Technology Co., Ltd.
Address : Room 801-804, Building 1, Chongwen Park, Nanshan iPark, No. 3370, Liuxian Avenue, Fuguang Community, Taoyuan Residential District, Nanshan District, Shenzhen, China
Factory : NINGBO SIYING OPTOELECTRONIC LIGHTING SCIENCE&TECHNOLOGY CO.,LTD
Address : No.9 Anda road, Fengshan street, Yuyao city, ZIP code 315400, Zhejiang Province, China
EUT : LED Bulb T2
Model Name : LB-L03D
Trademark : Aqara

Measurement Procedure Used:

APPLICABLE STANDARDS	
STANDARD	TEST RESULT
§ 15.247(i), § 2.1093, 1.1307(b)(1)	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, 1.1307(b)(1). The test results of this report relate only to the tested sample identified in this report

Date of Test : August 01, 2024 to November 23, 2024

Prepared by : 
Warren Deng /Editor

Reviewer : 
Galen Xiao /Supervisor

Approve & Authorized Signer :  
Sam Lv /Manager

Modified History

Version	Report No.	Revision Date	Summary
	EDG2407300092E00104R	/	Original Report



2. EUT Specification

Characteristics	Description
Product:	LED Bulb T2
Model Number:	LB-L03D
Sample:	2#
Device Type:	zigbee
Modulation:	QPSK for BLE O-QPSK for zigbee & thread
Operating Frequency Range(s) :	2405-2480 MHz for zigbee & thread 2402-2480 MHz for BLE
Number of Channels:	16 channels for zigbee 40 channels for BLE
Transmit Power Max:	6.06 dBm(0.004036 W) for zigbee 6.17 dBm(0.004140 W) for BLE 6.36 dBm(0.004325 W) for thread
Antenna Gain:	1.78 dBi for BLE & zigbee & thread
Power supply:	100-240V, 50/60Hz
Evaluation applied:	☒ MPE Evaluation ☐ 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: 1.78 dBi

zigbee

Channel	Output Power(dBm)	E.I.R.P(dBm)	Target Power W/tolerance (dBm)	Max tune up power(dBm) tolerance	Max tuneup power(mW) tolerance	Power Density at R=20cm (mW/cm2)	Power density Limits (mW/cm2)
1	5.08	6.86	6±1	7	5.01	0.001502	1
8	6.17	7.95	7±1	8	6.31	0.001891	1
16	3.7	5.48	5±1	6	3.98	0.001193	1

thread

Channel	Output Power(dBm)	E.I.R.P(dBm)	Target Power W/tolerance (dBm)	Max tune up power(dBm) tolerance	Max tuneup power(mW) tolerance	Power Density at R=20cm (mW/cm2)	Power density Limits (mW/cm2)
1	6.34	8.12	8±1	9	7.94	0.002381	1
8	6.36	8.14	8±1	9	7.94	0.002381	1
16	5.04	6.82	6±1	7	5.01	0.001502	1

BLE

Mode	Frequen cy (MHz)	Output Power(dB m)	E.I.R.P(dB m)	Target Power W/toleran ce (dBm)	Max tune up power(dB m) tolerance	Max tuneup power(m W) tolerance	Power Density at R=20cm (mW/cm2)	Limit (mW/ cm2)
1M	2402	7.29	9.07	9±1	10	10.00	0.002997	1
	2440	7.48	9.26	9±1	10	10.00	0.002997	1
	2480	5.9	7.68	7±1	8	6.31	0.001891	1
2M	2402	7.26	9.04	9±1	10	10.00	0.002997	1
	2440	7.22	9	9±1	10	10.00	0.002997	1
	2480	5.87	7.65	7±1	8	6.31	0.001891	1

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

*** End of Report ***