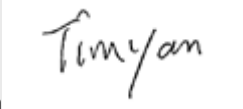


Test report No: RF Exposure

TEST REPORT

Radio Spectrum Matters (RF)

Identification of item tested	Permanent Outdoor Lights H1
Trademark	
Model and /or type reference	LB-L15E, LB-L16E, LB-L17E, LB-L15D, LB-L16D, LB-L17D
FCC ID	2AKIT-LBL17
Features	LED driver: XY48SR-240200VQ-UP Input: 100-120 Vac, 50/60 Hz, 1.2A Max ; Output: 24 Vdc, 2.0A
Applicant's name / address	Lumi United Technology Co., Ltd. B1, Chongwen Park, Nanshan iPark, Liuxian Avenue, Taoyuan Residential District, Nanshan District, Shenzhen, China.
Test method requested, standard	KDB 447498 D01V06 FCC Part 1.1310
Verdict Summary	COMPLIANCE
Tested by (name & signature)	 Jazz Liang
Approved by (name & signature)	 Tim Yan
Date of issue	2026-07-22
Report template No	TRF_EMCC 2017-06- FCC_Exposure

INDEX

	page
General conditions	3
Uncertainty	3
Environmental conditions	3
Possible test case verdicts	3
Definition of symbols used in this test report	4
Abbreviations	4
Document History	4
Remarks and Comments	4
1 General Information	5
1.1 General Description of the Item(s)	5
1.2 Test data	9
1.3 The environment(s) in which the EUT is intended to be used	9
2 Description of Test Setup	10
2.1 Operating mode(s) used for tests	10
2.2 Support / Auxiliary equipment / unit / software for the EUT	10
2.3 Test Configuration / Block diagram used for tests	10
3 RF Exposure Evaluation	11
3.1 Limits	11
3.2 Test Procedure	12
3.3 Test Result	12

GENERAL CONDITIONS

1. This report is only referred to the item that has undergone the test.
2. This report does not constitute or imply on its own an approval of the product by the Certification Bodies or Competent Authorities.
3. This document is only valid if complete; no partial reproduction can be made without previous written permission of DEKRA.
4. This test report cannot be used partially or in full for publicity and/or promotional purposes without previous written permission of DEKRA.
5. This report will not be used for social proof function in China market.

UNCERTAINTY

For all measurements where guidance for the calculation of the instrumentation uncertainty of a measurement is specified in EN 55016-4-2 (CISPR 16-4-2), EN/IEC 61000-4 series or a product standard, the measurement instrumentation uncertainty has been calculated and applied in accordance with these standards.

Uncertainties have been calculated according to the DEKRA internal document. The reported expanded uncertainties are based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95%.

ENVIRONMENTAL CONDITIONS

The climatic conditions during the tests are within the limits specified by the manufacturer for the operation of the EUT and the test equipment. The climatic conditions during the tests were within the following limits:

Ambient temperature	15 °C – 35 °C
Relative Humidity air	30% - 60%
Atmospheric pressure	86 kPa – 106 kPa

If explicitly required in the basic standard or applied product / product family standard the climatic values are recorded and documented separately in this test report.

POSSIBLE TEST CASE VERDICTS

Test case does not apply to test object	N/A
Test object does meet requirement	P (Pass) / PASS
Test object does not meet requirement	F (Fail) / FAIL
Not measured	N/M

DEFINITION OF SYMBOLS USED IN THIS TEST REPORT

☒ Indicates that the listed condition, standard or equipment is applicable for this report/test/EUT.			
☐ Indicates that the listed condition, standard or equipment is not applicable for this report/test/EUT.			
Decimal separator used in this report	☒	Comma (,)	☐ Point (.)

ABBREVIATIONS

For the purposes of the present document, the following abbreviations apply:

EUT	: Equipment Under Test
QP	: Quasi-Peak
CAV	: CISPR Average
AV	: Average
CDN	: Coupling Decoupling Network
SAC	: Semi-Anechoic Chamber
OATS	: Open Area Test Site
BW	: Bandwidth
AM	: Amplitude Modulation
PM	: Pulse Modulation
HCP	: Horizontal Coupling Plane
VCP	: Vertical Coupling Plane
U_N	: Nominal voltage
Tx	: Transmitter
Rx	: Receiver
N/A	: Not Applicable
N/M	: Not Measured

DOCUMENT HISTORY

Report nr.	Date	Description
RF Exposure	2026-07-22	First release.

REMARKS AND COMMENTS

The equipment under test (EUT) does meet the essential requirements of the stated standard(s)/test(s).

1 GENERAL INFORMATION

1.1 General Description of the Item(s)

Description of the item	Permanent Outdoor Lights H1
Trademark.....	
Model / Type number	LB-L15E, LB-L16E, LB-L17E, LB-L15D, LB-L16D, LB-L17D
FCC ID	2AKIT-LBL17
Hardware	N/A
Software	N/A
Firmware	N/A
Ratings	LED driver: XY48SR-240200VQ-UP Input: 100-120 Vac, 50/60 Hz, 1.2A Max ; Output: 24 Vdc, 2.0A
Manufacturer	Same as Applicant
Factory1	Dongguan ZOYO Electronics Technology Co., LTD. Building 1, No. 6, Songshan Lake Section, Kehai Road, Songshan Lake Hi-Tech Industrial Development Zone, Dongguan City, Guangdong Province, China.
Factory2	SILVER AGE VIETNAM TECHNOLOGY COMPANY LIMITED. Lot A4, GiaLe Industrial Zone, Nam Dong Hung Commune, Hung Yen province, Vietnam.

Rated power supply	Voltage and Frequency		Reference poles				
			L1	L2	L3	N	PE
	☒	AC: 100-120 V, 50/60 Hz	☒	☐	☐	☒	☐
	☐	AC:	☐	☐	☐	☐	☐
	☐	DC:					
	☐	Battery:					
Mounting position.....	☐	Table top equipment					
	☒	Wall/Ceiling mounted equipment					
	☐	Floor standing equipment					
	☐	Hand-held equipment					
	☐	Other:					

According to customer description, the characteristics of wireless module:

Operating frequency range(s) :	BLE: 2402 MHz – 2480 MHz Thread/Zigbee: 2405 MHz – 2480 MHz
Type of Modulation :	BLE: GFSK Thread/Zigbee: O-QPSK
Antenna type :	FPC-Antenna
Operating Temperature Range:	-20– 40 °C
Antenna gain :	1 dBi
Adaptive/ non-adaptive equipment	Adaptive

Antenna List

Antenna Model No.		N/A	
Antenna Manufacturer		N/A	
Antenna Delivery		☒ 1*TX+1*RX	☐ 2*TX+2*RX ☐ 3*TX+3*RX
Antenna Technology		☒ SISO ☐ MIMO ☐ Basic methodology ☐ Sectorized antenna systems ☐ Cross-polarized antennas ☐ Unequal antenna gains, with equal transmit powers ☐ Spatial Multiplexing ☐ Cyclic Delay Diversity (CDD)	
Antenna Type		FPC-antenna	
Antenna Gain			
Antenna Technology		Ant Gain(eth1) (dBi)	
☒	SISO	☒ Ant1	1
		☐ Ant2	-

The radio module operating channels are---

BLE:

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
0	2402	14	2430	28	2458
1	2404	15	2432	29	2460
2	2406	16	2434	30	2462
3	2408	17	2436	31	2464
4	2410	18	2438	32	2466
5	2412	19	2440	33	2468
6	2414	20	2442	34	2470
7	2416	21	2444	35	2472
8	2418	22	2446	36	2474
9	2420	23	2448	37	2476
10	2422	24	2450	38	2478
11	2424	25	2452	39	2480
12	2426	26	2454	-	-
13	2428	27	2456	-	-

Zigbee/Thread:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
0	2405	8	2445
1	2410	9	2450
2	2415	10	2455
3	2420	11	2460
4	2425	12	2465
5	2430	13	2470
6	2435	14	2475
7	2440	15	2480

Intended use of the Equipment Under Test (EUT)

The apparatus as supplied for the test is Permanent Outdoor Lights H1 which intended for residential use, the product contains electronic control circuitry and without earth connection.

The products covered in this report are Class III LED lighting chains for indoor or outdoor use and equipped with approved SELV LED driver.

All Lighting chains have similar construction, the main differences are quantity of LED bulbs, length, power and LED driver.

Model Number	Sales channel	String length	LED driver	National deviations considered
LB-L15E	Online	50ft	XY48SR-240200VQ-UP	US
LB-L15D	Offline			
LB-L16E	Online	100ft		
LB-L16D	Offline			
LB-L17E	Online	150ft		
LB-L17D	Offline			

Models suffix with D and E are identical accordingly except for the sales channel.

Copy of marking plate:

Refer to document label.

1.2 Test data

Test Location	DEKRA Testing and Certification (Shanghai) Ltd. Block 5, No.3, Qiyun Road, Huangpu District, Guangzhou, Guangdong, China FCC Designation Number: CN1324;
Date of receipt of test item	2026-07-21
Date (s) of performance of tests	2026-07-21 to 2026-08-13
Test sample	Normal sample: LB-L17D(Lab no.4961425-01), LB-L15D(Lab no.4961425-04), RF conducted sample: LB-L17D(Lab no. 4961425-02), RF radiated sample: LB-L17D(Lab no. 4961425-03)

1.3 The environment(s) in which the EUT is intended to be used

The equipment under test (EUT) is intended to be used in the following environment(s):

☒	Residential (domestic) environment.
☒	Commercial and light-industrial environment.
☐	Industrial environment.

2 DESCRIPTION OF TEST SETUP

2.1 Operating mode(s) used for tests

During the tests the following operating mode(s) has(have) been used.

Operating mode	Operating mode description	Used for methos	
		Conducted	Radiated
1	Transmitting at BLE mode	☒	☐
2	Transmitting at Zigbee/Thread mode	☒	☐
3		☐	☐
Supplemental information: ---			

2.2 Support / Auxiliary equipment / unit / software for the EUT

The EUT has been tested with the following auxiliary equipment / unit / software:

Auxiliary equipment / unit / software	Type / Version	Manufacturer	Supplied by
Laptop	Latitude 5488	DELL	DEKRA
Sofeware	QCOM_V1.0	-	Client
Supplemental information: ---			

2.3 Test Configuration / Block diagram used for tests

Refer to Annex 3.

3 RF EXPOSURE EVALUATION

3.1 Limits

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)

TABLE 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)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3–3.0	614	1.63	*(100)	6
3.0–30	1842/f	4.89/f	*(900/f ²)	6
30–300	61.4	0.163	1.0	6
300–1500			f/300	6
1500–100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3–1.34	614	1.63	*(100)	30
1.34–30	824/f	2.19/f	*(180/f ²)	30
30–300	27.5	0.073	0.2	30
300–1500			f/1500	30
1500–100,000			1.0	30

F= Frequency in MHz

Friis Formula

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

Power Density: $P_d (W/m^2) = E^2 / 377$

Where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 3.1416

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

E = Electric Field (V/m)

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

3.2 Test Procedure

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

The temperature and related humidity: 18°C and 78% RH.

3.3 Test Result

Test Mode	Frequency Band (MHz)	Conducted RF Power Output (dBm)	Conducted RF Power Output (mW)	EIRP (dBm)	Maximum Power (mW)	Power Density at R = 20 cm (mW/cm ²)	Limit of Power Density S(mW/cm ²)
BLE	2402 ~ 2480	6.618	4.59	7.618	5.78	0.00115	1
Thread/ zigbee	2405 ~ 2480	6.612	4.58	7.612	5.77	0.00115	1

Remark: antenna gain: 1 dBi.

BLE and Thread/zigbee will not transmit simultaneously.

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

For example,: EIRP= $P_{out} \cdot G$ = 5.78 mW

$P_d = 5.78 / (4 \cdot \pi \cdot 20^2) = 0.00115 \text{ mW/cm}^2$

--- END ---