



RF Exposure Evaluation Declaration

Product Name : WIFI LED BULB
Model No. : L3A19MC08E26XX,L3A19MTW08E26
XX, L3A19MW08E26XX
(X can be blank, 0-9 or A-Z, for
commercial use only)
FCC ID : 2AA53-MINI

Applicant : LiFi Labs Inc.
Address : 524 Union Street #309 San Francisco, CA 94133 USA

Date of Receipt : Sep. 13th, 2017
Test Date : Sep. 13th, 2017~ Sep. 29th, 2017
Issued Date : Oct. 11th, 2017
Report No. : 1792057R-RF-US-P20V01
Report Version : V1.0

The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standard through the calibration of the equipment and evaluated measurement uncertainty herein.

This report must not be used to claim product endorsement by TAF, A2LA or any agency of the government.

The test report shall not be reproduced without the written approval of DEKRA Testing and Certification (Suzhou) Co., Ltd.

Test Report Certification

Issued Date : Oct. 11th, 2017

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 Applicant : LiFi Labs Inc.
 Address : 524 Union Street #309 San Francisco, CA 94133 USA
 Manufacturer : LiFi Labs Inc.
 Address : 524 Union Street #309 San Francisco, CA 94133 USA
 Model No. : L3A19MC08E26XX,L3A19MTW08E26XX,
 L3A19MW08E26XX
 (X can be blank, 0-9 or A-Z, for commercial use only)
 FCC ID : 2AA53-MINI
 EUT Voltage : AC 100V-240V 50/60Hz
 Test Voltage : AC 120V/60Hz
 Brand Name



Applicable Standard : KDB 447498D01V06
 FCC Part1.1310
 Test Result : Complied
 Performed Location : DEKRA Testing and Certification (Suzhou) Co., Ltd.
 No.99 Hongye Rd., Suzhou Industrial Park, Suzhou,
 215006, Jiangsu, China
 TEL: +86-512-6251-5088 / FAX: +86-512-6251-5098
 FCC Registration Number: 800392

Documented By : Kitty Li
 (Adm. Specialist: Kitty Li)

Reviewed By : Frank He
 (Senior Engineer: Frank He)

Approved By : Harry Zhao
 (Engineering Manager : Harry Zhao)

1. RF Exposure Evaluation

1.1. 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)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Average Time (Minutes)
(A) Limits for Occupational/ Control Exposures				
300-1500	--	--	F/300	6
1500-100,000	--	--	5	6
(B) Limits for General Population/ Uncontrolled Exposures				
300-1500	--	--	F/1500	6
1500-100,000	--	--	1	30

F= Frequency in MHz

Friis Formula

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

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

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.

1.2. 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 and 78% RH.

1.3. Test Result of RF Exposure Evaluation

Product	:	WIFI LED BULB
Test Item	:	RF Exposure Evaluation
Test Site	:	AC-6

Antenna Information:

Antenna manufacturer	Shenzhen Well-Wisdom PCB Co Ltd.		
Antenna Delivery	<input checked="" type="checkbox"/> 1*TX+1*RX	<input type="checkbox"/> 2*TX+2*RX	<input type="checkbox"/> 3*TX+3*RX
Antenna technology	<input checked="" type="checkbox"/> SISO		
	<input type="checkbox"/> MIMO	<input type="checkbox"/> Basic	
		<input type="checkbox"/> Sectorized antenna systems	
		<input type="checkbox"/> Cross-polarized antennas	
		<input type="checkbox"/> Unequal antenna gains, with equal transmit powers	
		<input type="checkbox"/> Spatial Multiplexing	
		<input type="checkbox"/> CDD	
		<input type="checkbox"/> Beam-forming	
Antenna Type	<input type="checkbox"/> External	<input type="checkbox"/> Dipole	
	<input checked="" type="checkbox"/> Internal	<input checked="" type="checkbox"/> PIFA	
		<input type="checkbox"/> PCB	
		<input type="checkbox"/> Ceramic Chip Antenna	
		<input type="checkbox"/> Metal plate type F antenna	
		<input type="checkbox"/> Cross-polarize Antenna	
Antenna Gain #0	1.9dBi		

- Output Power into Antenna & RF Exposure Evaluation Distance
- Standalone modes

Test Mode	Frequency Band (MHz)	Maximum Output Power to Antenna (dBm)	Directional Gain (dBi)	Power Density at R = 20 cm (mW/cm ²)	Power Density Limit at R = 20 cm (mW/cm ²)
802.11b/g/n(20MHz)	2412 ~ 2462 MHz	12.33	1.9	0.0053	1.0
802.11n(40MHz)	2422 ~ 2452 MHz	12.13	1.9	0.0050	1.0

Note: The simultaneous transmission power density is 0.0053mW/cm² for WIFI LED BULB without any other radio equipment.

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