



RF Exposure Evaluation Declaration

Product Name : LED lamp

Model No. : 9290022266

FCC ID : 2AGBW9290022266X

Applicant : Signify (China) Investment Co., Ltd.

Address : Building no.9, Lane 888, Tianlin Road, Minhang
District, Shanghai 200233, China

Date of Receipt : July. 30, 2019

Test Date : July. 31, 2019~ Aug. 21, 2019

Issued Date : Sep. 01, 2019

Report No. : 1972173R-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 A2LA or any agency of the government.

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Test Report Certification

Issued Date : Sep. 01, 2019
Report No. : 1972173R-RF-US-P20V01



Product Name : LED lamp
Applicant : Signify (China) Investment Co., Ltd.
Address : Building no.9, Lane 888, Tianlin Road, Minhang District, Shanghai 200233, China
Manufacturer : Signify (China) Investment Co., Ltd.
Address : Building no.9, Lane 888, Tianlin Road, Minhang District, Shanghai 200233, China
Model No. : 9290022266
FCC ID : 2AGBW9290022266X
Brand Name : PHILIPS
EUT Voltage : 110-130 Vac, 50-60 Hz, 9.5W
Test Voltage : AC 120V/60Hz
Applicable Standard : KDB 447498D01V06
FCC Part1.1310
Test Result : Complied
Performed Location : DEKRA Testing & 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 Designation Number: CN1199
Documented By : 
(Adm. Specialist: Kitty Li)
Reviewed By : 
(Senior Project Manager: Frank He)
Approved By : 
(Engineering Supervisor: Jack Zhang)

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 °C and 78% RH.

1.3. Test Result of RF Exposure Evaluation

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

● Antenna Information:

Antenna manufacturer	N/A									
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 <table> <tr> <td><input type="checkbox"/> Basic</td> </tr> <tr> <td><input type="checkbox"/> CDD</td> </tr> <tr> <td><input type="checkbox"/> Beam-forming</td> </tr> </table>			<input type="checkbox"/> Basic	<input type="checkbox"/> CDD	<input type="checkbox"/> Beam-forming				
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<input type="checkbox"/> CDD										
<input type="checkbox"/> Beam-forming										
Antenna Type	<input type="checkbox"/> External <table> <tr> <td><input type="checkbox"/> Dipole</td> </tr> <tr> <td><input type="checkbox"/> PIFA</td> </tr> <tr> <td><input checked="" type="checkbox"/> PCB</td> </tr> <tr> <td><input type="checkbox"/> Ceramic Chip Antenna</td> </tr> <tr> <td><input type="checkbox"/> Stamping Antenna</td> </tr> <tr> <td><input type="checkbox"/> Metal plate type F antenna</td> </tr> <tr> <td><input type="checkbox"/> Monopole antenna</td> </tr> </table>	<input type="checkbox"/> Dipole	<input type="checkbox"/> PIFA	<input checked="" type="checkbox"/> PCB	<input type="checkbox"/> Ceramic Chip Antenna	<input type="checkbox"/> Stamping Antenna	<input type="checkbox"/> Metal plate type F antenna	<input type="checkbox"/> Monopole antenna	<input type="checkbox"/>	
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Antenna Gain	-1.5dBi									

- **Power Density:**

The tune-up power is 1.0dB, so the maximum conducted power of BT we used to calculate RF exposure is 9.37dBm.

The tune-up power is 1.0dB, so the maximum conducted power of Zigbee we used to calculate RF exposure is 9.61dBm.

Test Mode	Frequency Band (MHz)	EIRP (dBm)	Limit of Power Density S(mW/cm ²)	Power Density at R = 20 cm (mW/cm ²)
BT	2400 ~ 2483.5	8.87	1	0.0015
Zigbee	2400 ~ 2483.5	9.11	1	0.0016

Note:

The maximum power density is 0.0016mW/cm² for LED lamp without any other radio equipment.

The End
