



RF Exposure Evaluation Declaration

Product Name : LED lamp
Model No. : 9290020398
FCC ID : 2AGBW9290020398X

Applicant : Signify (China) Investment Co., Ltd.
Address : Building no.9, Lane 888, Tianlin Road, Minhang
District, Shanghai 200233, China

Date of Receipt : Mar. 05, 2019
Issued Date : May. 10, 2019
Report No. : 1932039R-RF-US-P20V01
Report Version : V1.0

The test results presented in this report relate only to the object tested.

The measurement result is considered in conformance with the requirement if it is within the prescribed limit, It is not necessary to account the uncertainty associated with the measurement result, unless the specification, standard or customer have special requirements

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Test Report Certification

Issued Date : May. 10, 2019

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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. : 9290020398
FCC ID : 2AGBW9290020398X
Brand Name : PHILIPS
EUT Voltage : 110-130 Vac, 50-60 Hz, 5.5W
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 : *Kathy Feng*
(Adm. Specialist: Kathy Feng)
Reviewed By : *Frank He*
(Senior Project Manager: Frank He)
Approved By : *Jack Zhang*
(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 | <input type="checkbox"/> | Basic | | |
| | | | <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 type="checkbox"/> | PIFA | | |
| | | | <input checked="" type="checkbox"/> | PCB | | |
| | | | <input type="checkbox"/> | Ceramic Chip Antenna | | |
| | | | <input type="checkbox"/> | Metal plate type F antenna | | |
| Antenna Gain | -3.8dBi | | | | | |

- **Power Density:**

The tune-up power is 0.5dB, so the maximum conducted power of Zigbee we used to calculate RF exposure is 13.36dBm.

| Test Mode | Frequency Band (MHz) | EIRP (dBm) | Limit of Power Density S(mW/cm ²) | Power Density at R = 20 cm (mW/cm ²) |
|-----------|----------------------|------------|---|--|
| Zigbee | 2400 ~ 2483.5 | 14.36 | 1 | 0.0054 |

Note: The maximum power density is 0.0054mW/cm² for LED lamp without any other radio equipment.

————— The End —————