# RF Exposure Evaluation Declaration

| | | |
|---|---|---|
| Product Name | : | LED lamp |
| Model No. | : | 9290012575A |
| FCC ID | : | 2AGBW9290012575AX |

| | | |
|---|---|---|
| Applicant | : | Philips Lighting (China) Investment Co., Ltd. |
| Address | : | Building 9, Lane 888, Tianlin Road, Minhang district, Shanghai, China |

| | | |
|---|---|---|
| Date of Receipt | : | Sep. 13th, 2017 |
| Test Date | : | Sep. 04th, 2017 ~ Sep. 14th, 2017 |
| Issued Date | : | Oct. 16th, 2017 |
| Report No. | : | 1792056R-RF-US- P20V01 |
| Report Version | : | V1.0 |

# Test Report Certification

Issued Date : Oct. 16th, 2017
Report No. : 1792056R-RF-US-P20V01

| | | |
|---|---|---|
| Product Name | : | LED lamp |
| Applicant | : | Philips Lig hting (China) Investment Co., Ltd. |
| Address | : | Building 9, Lane 888, Tianlin Road, Minhang district, Shanghai |
| Manufacturer | : | Philips Lighting (China) Investment Co., Ltd. |
| Address | : | Building 9, Lane 888, Tianlin Road, Minhang district, Shanghai |
| Model No. | : | 9290012575A |
| FCC ID | : | 2AGBW9290012575AX |
| EUT Voltage | : | AC 110-130V,50-60Hz |
| Test Voltage | : | AC 120V/60Hz |
| Brand Name | : | N/A |
| Applicable Standard | : | KDB 447498D01V06<br>FCC Part1.1310 |
| Test Result | : | Complied |
| Performed Location | : | DEKRA Testing and Certification (Suzhou) Co., Ltd.<br>No.99 Hongye Rd., Suzhou Industrial Park, Suzhou, 215006, Jiangsu, China<br>TEL: +86-512-6251-5088 / FAX: +86-512-6251-5098<br>FCC Registration Number: CN1199 |

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Reviewed By : Frank He

(Senior Project Manager: 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/cm2) | 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: Pd = (Pout*G)/(4*pi*r2)

Where

Pd = power density in mW/ $cm^2$

Pout = output power to antenna in mW

G = gain of antenna in linear scale

Pi = 3.1416

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

Pd is the limit of MPE, 1 mW/$cm^2$ . 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 | : | LED Lamp |
| Test Item | : | RF Exposure Evaluation |
| Test Site | : | AC-6 |

- **Antenna Information:**

| | | | | | | |
|---|---|---|---|---|---|---|
| Antenna manufacturer | N/A | | | | | |
| Antenna Delivery | ☒ | 1*TX+1*RX | ☐ | 2*TX+2*RX | ☐ | 3*TX+3*RX |
| Antenna technology | ☒ | SISO | | | | |
| | ☐ | MIMO | ☐ | Basic | | |
| | | | ☐ | Sectorized antenna systems | | |
| | | | ☐ | Cross-polarized antennas | | |
| | | | ☐ | Unequal antenna gains, with equal transmit powers | | |
| | | | ☐ | Spatial Multiplexing | | |
| | | | ☐ | CDD | | |
| | | | ☐ | Beam-forming | | |
| Antenna Type | ☐ | External | ☐ | Dipole | | |
| | ☒ | Internal | ☐ | PIFA | | |
| | | | ☒ | PCB | | |
| | | | ☐ | Ceramic Chip Antenna | | |
| | | | ☐ | Metal plate type F antenna | | |
| | | | ☐ | Cross-polarize Antenna | | |
| Antenna Gain | 3.1dBi | | | | | |

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

| Test Mode | Frequency Band (MHz) | Maximum Output Power to Antenna (dBm) | Directional Gain (dBi) | Power Density at R = 20 cm (mW/cm2) | Power Density Limit at R = 20 cm (mW/cm2) |
|---|---|---|---|---|---|
| Zigbee | 2400 ~ 2483.5 | 4.16 | 3.1 | 0.0011 | 1.0 |

Note: The simultaneous transmission power density is 0.0011mW/cm$^2$ for LED Lamp without any other radio equipment.

The End