# RF Exposure Evaluation Declaration

| | | |
|---|---|---|
| Product Name | : | C-Reach |
| Model No. | : | CBYGEH001 |
| FCC ID | : | PUU-CBYGEH001 |

| | | |
|---|---|---|
| Applicant | : | GE Lighting |
| Address | : | 1975 Noble Road Cleveland Ohio United States 44077 |

| | | |
|---|---|---|
| Date of Receipt | : | Mar. 31st, 2017 |
| Test Date | : | Mar. 31st, 2017~ Apr. 28th, 2017 |
| Issued Date | : | Jun. 20th, 2017 |
| Report No. | : | 1732171R-RF-US-P20V01 |
| Report Version | : | V1.0 |

# Test Report Certification

Issued Date : Jun. 20th, 2017
Report No. : 1732171R-RF-US-P20V01

| | | |
|---|---|---|
| Product Name | : | C-Reach |
| Applicant | : | GE Lighting |
| Address | : | 1975 Noble Road Cleveland Ohio United States 44077 |
| Manufacturer | : | GE Lighting |
| Address | : | 1975 Noble Road Cleveland Ohio United States 44077 |
| Model No. | : | CBYGEH001 |
| FCC ID | : | PUU-CBYGEH001 |
| Brand Name | : | GE Lighting |
| EUT Voltage | : | AC 120V/60Hz |
| Test Voltage | : | AC 120V/60Hz |
| 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: 800392 |

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Reviewed By : Frank he

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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 | : | C-Reach |
| Test Item | : | RF Exposure Evaluation |
| Test Site | : | AC-6 |

- **Antenna Gain:**

The maximum Gain measured in fully anechoic chamber is 2.35dBi for BLE, and 3.5dBi for Wifi in linear scale.

- **Power Density**

**Standlone modes:**

| Test Mode | Frequency Band (MHz) | EIRP (dBm) | Power Density at R = 20 cm ($mW/cm^2$) | Limit of Power Density $S(mW/cm^2)$ |
|---|---|---|---|---|
| BLE | 2400 ~ 2483.5 | 7.617 | 0.00115 | 1 |
| Wifi | 2400 ~ 2483.5 | 20.824 | 0.02405 | 1 |

**Simultaneous transmission:**

| Operation Mode | Frequency Range (MHz) | Maximum EIRP (dBm) | Limit of Power Density $S(W/m^2)$ | Power Density $S(mW/m^2)$ |
|---|---|---|---|---|
| BLE | 2400 ~ 2483.5 | 7.617 | 10 | 0.00115 |
| Wifi | 2400 ~ 2483.5 | 20.824 | 10 | 0.02405 |
| Simultaneous transmission | | | | 0.0252 |

Note: The power density is 0.0252$mW/cm^2$ for C-Reach without any other radio equipment.

The End