



## RF Exposure Evaluation Declaration

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**FCC ID:** 2AJ3WEBEQPZ05  
**APPLICANT:** Hangzhou Eboylamp Electronics Co.,Ltd.  
**Application Type:** Certification  
**Product:** SMART LED LAMP  
**Model No.:** EBE-QPZ05  
**FCC Classification:** Digital Transmission System (DTS)  
**FCC Rule Part(s):** FCC CFR 47 §2.1091  
**Test Date:** December 12, 2016 ~ January 16, 2017

Reviewed By : *Robin Wu*  
( Robin Wu )  
Approved By : *Marlin Chen*  
( Marlin Chen )



The test results relate only to the samples tested.

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in ANSI C63.10-2013. Test results reported herein relate only to the item(s) tested.

The test report shall not be reproduced except in full without the written approval of MRT Technology (Suzhou) Co., Ltd.

## Revision History

Report No.	Version	Description	Issue Date	Note
1611RSU01103	Rev. 01	Initial report	01-24-2017	Valid

## 1. PRODUCT INFORMATION

### 1.1. Equipment Description

Product Name	SMART LED LAMP
Model No.	EBE-QPZ05
WLAN Specification	
Frequency Range	802.11b/g/n-HT20: 2412 ~ 2462 MHz
Maximum Peak Output Power	802.11b: 12.51dBm 802.11g: 17.78dBm 802.11n-HT20: 17.65dBm
Type of Modulation	802.11b: DSSS 802.11g/n: OFDM
Antenna Type	PCB Antenna
Antenna Gain	3.0dBi

### 1.2. Antenna Description

Antenna Type	Frequency Band (MHz)	Manufacturer	Max Peak Gain (dBi)
PCB Antenna	2412~2462	Tuya	3.0

## 2. RF Exposure Evaluation

### 2.1. 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 <sup>2</sup> )	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

**Formula as follows:**

f= Frequency in MHz

Calculation Formula:  $P_d = (P_{out} * G) / (4 * \pi * r^2)$

Where

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

$P_{out}$  = 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

$P_d$  is the limit of MPE,  $1mW/cm^2$ . 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.

## 2.2. Test Result of RF Exposure Evaluation

Product	SMART LED LAMP
Test Item	RF Exposure Evaluation

Antenna Gain: The maximum Gain measured in fully anechoic chamber is 3.0dBi for Wi-Fi band in logarithm scale.

### For 802.11b/g/n(HT-20):

Test Mode	Frequency Band (MHz)	Maximum Average Output Power (dBm)	Power Density at r = 20 cm (mW/cm <sup>2</sup> )	FCC Limit (mW/cm <sup>2</sup> )
802.11b/g/n(HT-20)	2412 ~ 2462	17.78	0.0238	1

### CONCLUSION:

Therefore, the Max Power Density at r (20 cm) = 0.0238mW/cm<sup>2</sup> < 1mW/cm<sup>2</sup>.

So the EUT complies with the FCC requirement.

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