

Maximum Permissible Exposure Evaluation

FCC ID: 2AKBP-Q1WM

1. Client Information

| | | |
|---------------------|---|--|
| Applicant | : | Shenzhen Hysiry Technology Co., Ltd. |
| Address | : | 2403D, 24th Floor, Coast Huanqing Building, No.24 Futian Road, Xu Town Community, Futian Street, Futian District, Shenzhen |
| Manufacturer | : | Shenzhen Hysiry Technology Co., Ltd. |
| Address | : | 2403D, 24th Floor, Coast Huanqing Building, No.24 Futian Road, Xu Town Community, Futian Street, Futian District, Shenzhen |

2. General Description of EUT

| | | | |
|------------------------|---|--|---|
| EUT Name | : | Smart LED bulb | |
| Models No. | : | Q1WM, Q1CM | |
| Model Different | : | All these models are the same PCB, layout and electrical circuit, the only difference is Color temperature of lamp beads | |
| Product Description | : | Operation Frequency: | 802.11b/g/n(HT20): 2412MHz~2462MHz |
| | | RF Output Power: | 802.11b: 3.81dBm 802.11g: 0.86dBm 802.11n (HT20): 0.58dBm |
| | | Antenna Gain: | 1.7dBi PCB Antenna |
| | | Modulation Type: | 802.11b: DSSS(CCK, DQPSK, DBPSK) 802.11g/n: OFDM(BPSK,QPSK,16QAM, 64QAM) |
| Power Supply | : | AC Voltage supplied | |
| Power Rating | : | Input: AC 100-240V 50/60Hz | |
| Software Version | : | 1.0 | |
| Hardware Version | : | 1.0 | |
| Connecting I/O Port(S) | : | Please refer to the User's Manual | |

TB-RF-075-1.0

MPE Calculations for WIFI

1. Antenna Gain:

PCB Antenna: 1.7dBi.

2. EUT Operation Condition:

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

3. Exposure Evaluation:

Equation from page 18 of OET Bulletin 65, Edition 97-01

$$S=(PG)/4\pi R^2$$

Where

S: power density

P: power input to the antenna

G: power gain of the antenna in the direction of interest relative to an isotropic radiator.

R: distance to the center of radiation of the antenna

4. Test Result:

| Mode | Conducted Power(max) (dBm) | Turn-up Power (dB) | Max tune up power (dBm) [P] | ANT Gain (dBi) [G] | Distance (cm) [R] | Power Density (mW/ cm ²) [S] |
|-------------------|-------------------------------|-----------------------|-----------------------------------|--------------------------|-------------------------|--|
| 802.11b | 3.81 | 4±1 | 5 | 1.7 | 20 | 0.00093 |
| 802.11g | 0.86 | 0±1 | 1 | 1.7 | 20 | 0.00037 |
| 802.11n (HT20) | 0.58 | 0±1 | 1 | 1.7 | 20 | 0.00037 |

5. Conclusion:

As specified in Table 1B of 47 CFR 1.1310- Limits for Maximum Permissible Exposure (MPE),

Limits for General Population/ Uncontrolled Exposure

| Frequency Range (MHz) | Power density (mW/ cm ²) |
|-----------------------|--------------------------------------|
| 300-1,500 | F/1500 |
| 1,500-100,000 | 1.0 |

For 802.11b/g/n:2412~2462 MHz

MPE limit S: 1mW/ cm²

The MPE is calculated as $0.00093 / \text{cm}^2 < \text{limit } 1 \text{mW} / \text{cm}^2$. So, RF exposure limit warning or SAR test are not required.

The EUT will only be used with a separation of 20cm or greater between the antenna and nearby persons and can therefore be considered a mobile transmitter per 47 CFR2.1091 (b).

The RF Exposure Information page from the manual is included here for reference.

Note

For a more detailed features description, please refer to the RF Test Report.

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