

# Maximum Permissible Exposure Evaluation

## FCC ID: 2AN3K-ZN04

### 1. Client Information

|                     |   |                                                                                          |
|---------------------|---|------------------------------------------------------------------------------------------|
| <b>Applicant</b>    | : | Shenzhen Zhuoyue Yuntai Technology Co.,Ltd                                               |
| <b>Address</b>      | : | Room 201, Block A, No.1 of Qianwan Road, Qianhaishen Port Cooperative District, Shenzhen |
| <b>Manufacturer</b> | : | Shenzhen Zhuoyue Yuntai Technology Co.,Ltd                                               |
| <b>Address</b>      | : | Room 201, Block A, No.1 of Qianwan Road, Qianhaishen Port Cooperative District, Shenzhen |

### 2. General Description of EUT

|                        |   |                                                        |                                                                             |
|------------------------|---|--------------------------------------------------------|-----------------------------------------------------------------------------|
| EUT Name               | : | Smart WI-FI Plug                                       |                                                                             |
| Models No.             | : | FLHS-ZN04                                              |                                                                             |
| Model Different        | : | N/A                                                    |                                                                             |
| Product Description    | : | Operation Frequency:                                   | 802.11b/g/n(HT20): 2412MHz~2462MHz                                          |
|                        |   | RF Output Power:                                       | 802.11b: 7.55dBm<br>802.11g: 12.70dBm<br>802.11n (HT20): 12.72dBm           |
|                        |   | Antenna Gain:                                          | 1dBi PCB Antenna                                                            |
|                        |   | Modulation Type:                                       | 802.11b: DSSS(CCK, DQPSK, DBPSK)<br>802.11g/n: OFDM(BPSK,QPSK,16QAM, 64QAM) |
| Power Supply           | : | AC Voltage supplied                                    |                                                                             |
| Power Rating           | : | Input: AC 100~240V 15A, 50/ 60Hz<br>Output: DC 5V 2.1A |                                                                             |
| SoftwareVersion        | : | N/A                                                    |                                                                             |
| Hardware Version       | : | N/A                                                    |                                                                             |
| 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: 1dBi.

### 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)<br>(dBm) | Turn-up Power<br>(dB) | Max tune up power<br>(dBm)<br>[P] | ANT Gain<br>(dBi)<br>[G] | Distance<br>(cm)<br>[R] | Power Density<br>(mW/ cm <sup>2</sup> )<br>[S] |
|-------------------|-------------------------------|-----------------------|-----------------------------------|--------------------------|-------------------------|------------------------------------------------|
| 802.11b           | 7.55                          | 7±1                   | 8                                 | 1                        | 20                      | 0.00158                                        |
| 802.11g           | 12.70                         | 12±1                  | 13                                | 1                        | 20                      | 0.00500                                        |
| 802.11n<br>(HT20) | 12.72                         | 12±1                  | 13                                | 1                        | 20                      | 0.00500                                        |



**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 <sup>2</sup> ) |
|-----------------------|--------------------------------------|
| 300-1,500             | F/1500                               |
| 1,500-100,000         | 1.0                                  |

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

MPE limit S: 1mW/ cm<sup>2</sup>

The MPE is calculated as  $0.01580\text{mW} / \text{cm}^2 < \text{limit } 1\text{mW} / \text{cm}^2$ . 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.

-----END OF REPORT-----