

Maximum Permissible Exposure Evaluation

FCC ID: 2AQI7-CZU101

1. Client Information

Applicant	:	SHENZHEN HUANGJINTAI ELECTRONICS CO., LTD.
Address	:	7 Floor, Bldg4, Hanhaida Hi-tech Industrial Park, Baoshan Road, Tianliao, Guangming New District, Shenzhen, China.
Manufacturer	:	SHENZHEN HUANGJINTAI ELECTRONICS CO., LTD.
Address	:	7 Floor, Bldg4, Hanhaida Hi-tech Industrial Park, Baoshan Road, Tianliao, Guangming New District, Shenzhen, China.

2. General Description of EUT

EUT Name	:	WiFi Smart Plug
Models No.	:	CZ-U101, CZ-U102, CZ-U103, CZ-U201, CZ-U202, CZ-U203, CZ-E101, CZ-E102, CZ-E103, CZ-E201, CZ-E202, CZ-E203, CZ-K101, CZ-K102, CZ-K103, CZ-K201, CZ-K202, CZ-K203, CZ-C101, CZ-C102, CZ-C103, CZ-C201, CZ-C202, CZ-C203, DZ-01, DZ-02, DZ-03, KG-01, KG-02, KG-03, LED-01, LED-02, LED-03, HY-01, HY-02, HY-03
Model Difference	:	All these models are identical in the same PCB, layout and electrical circuit, the only difference is appearance and color.
Product Description	Operation Frequency:	802.11b/g/n(HT20): 2412MHz~2462MHz
	RF Output Power:	802.11b: 15.81dBm 802.11g: 10.71dBm 802.11n (HT20): 9.76dBm
	Antenna Gain:	1dBi PCB Antenna
Power Supply	:	AC Voltage Supply from 120V/60Hz.
Power Rating	:	Input: AC 100V-240V 50/60Hz Output: 15A maximum load (MAX:3600W)
Software Version	:	N/A
Hardware Version	:	N/A
Connecting I/O Port(S)	:	Please refer to the User's Manual

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) (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	15.81	15±1	16	1	20	0.00997
802.11g	10.71	10±1	11	1	20	0.00315
802.11n (HT20)	9.76	9±1	10	1	20	0.00250

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 $0.00997\text{mW} / \text{cm}^2 < \text{limit } 1\text{mW} / \text{cm}^2$. 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.

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