

# Maximum Permissible Exposure Evaluation

## FCC ID: 2APRB-WNIP-2L-BU

### 1. Client Information

<b>Applicant</b>	:	Guangzhou Juan Intelligent Tech Joint Stock Co.,Ltd
<b>Address</b>	:	No.2 Plant, West of Shanxi country, Dashi street, Panyu District, Guangzhou City, China
<b>Manufacturer</b>	:	Guangzhou Juan Intelligent Tech Joint Stock Co.,Ltd
<b>Address</b>	:	No.2 Plant, West of Shanxi country, Dashi street, Panyu District, Guangzhou City, China

### 2. General Description of EUT

<b>EUT Name</b>	:	Wireless IP Camera
<b>Models No.</b>	:	WNIP-2LTA-BS, WNIP-2LTA-BS-U, CAM-2PK-WNIP2LBU, CAM-WNIP2LBU, CL-CAM-WNIP2LBU, WNIP2-4L1, CL-2WNP1-2L, CL-2WNP1-4L, CL-2WNP1-8L, WNIP21L-2-B, WNIP21L-4-B, WNIP21L-8-B
<b>Model Different</b>	:	All these models are identical in the same PCB, layout and electrical circuit, the only difference is model name for commercial.
<b>Brand Name</b>	:	NIGHT OWL
<b>Product Description</b>	Operation Frequency:	802.11b/g/n(HT20): 2412MHz~2462MHz
	Number of Channel:	802.11b/g/n(HT20):11 channels
	RF Output Power:	802.11b:18.26dBm 802.11g: 18.66dBm 802.11n (HT20): 18.84dBm
	Antenna Gain:	5 dBi Dipole Antenna
<b>Power Rating</b>	:	DC 12V from AC/DC Adapter(CS-1201000): Input: AC 100-240V, 50/60Hz. Output: DC 12V, 1A.
<b>Software Version</b>	:	WNIP-2L-BU_20200331
<b>Hardware Version</b>	:	FH8852-F37-M-V2
<b>Connecting I/O Port(S)</b>	:	Please refer to the User's Manual
<b>Remark</b>	:	the MPE report used the EUT(20200401-20-02).

## MPE Calculations for WIFI

### 1. Antenna Gain:

Dipole Antenna: 5dBi.

### 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:

Worst Maximum MPE Result								
Mode	N <sub>TX</sub>	Freq. (MHz)	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 <sup>2</sup> ) [S]
802.11b	1	2412	18.26	18±1	19	5	20	0.0500
		2437	17.79	18±1	19	5	20	0.0500
		2462	17.45	18±1	19	5	20	0.0500
802.11g	1	2412	18.66	18±1	19	5	20	0.0500
		2437	18.23	18±1	19	5	20	0.0500
		2462	17.82	18±1	19	5	20	0.0500
802.11n(HT20)	1	2412	18.84	18±1	19	5	20	0.0500
		2437	18.39	18±1	19	5	20	0.0500
		2462	17.60	18±1	19	5	20	0.0500

Note:

(1) N<sub>TX</sub>= Number of Transmit Antennas

(2) RF Output power specifies that Maximum Conducted Peak Output Power.

**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 Bluetooth:2412~2462 MHz

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

The MPE is calculated as **0.0500mW / cm<sup>2</sup> < limit 1mW / cm<sup>2</sup>**. 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.

**6. Conclusion:**

The measurement results comply with the FCC Limit per 47 CFR 2.1091 for the uncontrolled RF Exposure of mobile device.

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