



Maximum Permissible Exposure Evaluation

FCC ID:2BD6T-FWIP4L-BS3

1. Client Information

Applicant	:	Juan IOT Technology (Hong Kong) Co., Limited
Address	:	ROOM 803, CHEVALIER HOUSE 45-51 CHATHAM ROAD SOUTH TSIM SHA TSUI, KOWLOON, HONG KONG, CHINA
Manufacturer	:	DONGSONG INTERNATIONAL VIETNAM COMPANY LIMITED
Address	:	Lot 32, Road 7, Tan Duc Industrail Park, Duc Hoa Ha Commune, Duc Hoa District, Long An Province, Vietnam

2. General Description of EUT

EUT Name	:	IPCam
Models No.	:	WCM-FWIP4L-BS-V3, FWR8-64GB-F44L, FWR8-64GB-F43L
Model Different	:	All these models are identical in the same PCB, layout and electrical circuit, the only difference is shipment packaging.
Product Description	:	Operation Frequency: 802.11b/g/n(HT20): 2412MHz~2462MHz 802.11n(HT40): 2422MHz~2452MHz
	:	Antenna Gain: 3.66dBi FPC Antenna
Power Rating	:	Input: 12V
Software Version	:	1.5.9
Hardware Version	:	V165P
Connecting I/O Port(S)	:	Please refer to the User's Manual
Remark	:	the evaluation report used the EUT(HC-C-202405-0293-01-02#).

Method of Measurement for FCC

1. EUT Operation Condition:

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

2. 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

3. Simultaneous transmission MPE Considerations

According to KDB447498: All transmitters and antennas in the host must be either evaluated for MPE compliance, by measurement or computational modeling, or qualify for the standalone MPE test exclusion in section 7.1. Simultaneous transmission MPE test exclusion applies when the sum of the MPE ratios for all simultaneous transmitting antennas incorporated in a host device, based on the calculated/estimated, numerically modeled or measured field strengths or power density, is ≤ 1.0 .

This means that:

\sum of MPE ratios ≤ 1.0



4. Test Result:

2.4G WiFi Worst Maximum MPE Result								
Mode	N _{TX}	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 ²) [S]
802.11b	1	2412	18.93	19±1	20	3.66	20	0.0462
		2437	18.24	18±1	19	3.66	20	0.0367
		2462	18.38	18±1	19	3.66	20	0.0367
802.11g	1	2412	15.14	15±1	16	3.66	20	0.0184
		2437	14.58	15±1	16	3.66	20	0.0184
		2462	14.97	15±1	16	3.66	20	0.0184
802.11n (HT20)	1	2412	13.45	13±1	14	3.66	20	0.0116
		2437	13.07	13±1	14	3.66	20	0.0116
		2462	11.22	11±1	12	3.66	20	0.0073
802.11n (HT40)	1	2412	13.28	13±1	14	3.66	20	0.0116
		2437	13.62	14±1	15	3.66	20	0.0146
		2462	11.88	12±1	13	3.66	20	0.0092

Note:

 N_{TX}= Number of Transmit Antennas

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 ²)
300-1,500	F/1500
1,500-100,000	1.0

For 2.4G WIFI: 2412~2462MHz

MPE limit S: 1mW/ cm²

The worst MPE is calculated as **0.0462mW/cm² < limit 1mW/cm²**. 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.

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

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

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

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

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

