

# Maximum Permissible Exposure Evaluation

## FCC ID: SJ8WL100

### 1. Client Information

<b>Applicant</b>	:	RDI Technology (Shenzhen) Co., Ltd.
<b>Address</b>	:	101 to 401, Building 1, and Building 2, No. 7 Yongyue Road, East Baishixia, Fuyong, Baoan, Shenzhen. PRC
<b>Manufacturer</b>	:	RDI Technology (Shenzhen) Co., Ltd.
<b>Address</b>	:	101 to 401, Building 1, and Building 2, No. 7 Yongyue Road, East Baishixia, Fuyong, Baoan, Shenzhen. PRC

### 2. General Description of EUT

<b>EUT Name</b>	:	Wireless Spotlight Camera	
<b>Models No.</b>	:	WL100, WD542	
<b>Model Different</b>	:	All of these models are in the same PCB, layout and circuitry, the only difference is model name.	
<b>Brand Name</b>	:	CasaCam	
<b>Product Description</b>	:	Operation Frequency:	802.11b/g/n(HT20): 2412MHz~2462MHz 802.11n(HT40): 2422MHz~2452MHz
		Number of Channel:	802.11b/g/n(HT20):11 channels 802.11n(HT40):7 channels
		RF Output Power:	802.11b:18.27dBm 802.11g: 17.66dBm 802.11n (HT20): 16.25dBm 802.11n (HT40): 15.61dBm
		Antenna Gain:	2 dBi Dipole Antenna
<b>Power Rating</b>	:	Input:AC100-AC240V(CS18J090200FGF) Output:9V2A	
<b>Software Version</b>	:	N/A	
<b>Hardware Version</b>	:	N/A	
<b>Connecting I/O Port(S)</b>	:	Please refer to the User's Manual	
<b>Remark</b>	:	the MPE report used the EUT(TBBJ-20200622-03-2#).	



## MPE Calculations for WIFI

### 1. Antenna Gain:

Dipole Antenna:2dBi.

### 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	18.20	18±1	19	2	20	0.0250
		2437	18.27	18±1	19	2	20	0.0250
		2462	17.88	18±1	19	2	20	0.0250
802.11g	1	2412	17.66	17±1	18	2	20	0.0198
		2437	17.53	17±1	18	2	20	0.0198
		2462	17.01	17±1	18	2	20	0.0198
802.11n(HT20)	1	2412	15.94	16±1	17	2	20	0.0158
		2437	16.25	16±1	17	2	20	0.0158
		2462	16.21	16±1	17	2	20	0.0158
802.11n(HT40)	1	2422	15.14	15±1	16	2	20	0.0125
		2437	15.61	15±1	16	2	20	0.0125
		2452	15.31	15±1	16	2	20	0.0125

**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 2.4WIFI:2412~2462 MHz  
2422~2452 MHz

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

The MPE is calculated as  $0.0250 \text{ mW} / \text{cm}^2 < \text{limit } 1\text{mW} / \text{cm}^2$ . 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.

**6. Conclusion:**

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

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