

Maximum Permissible Exposure Evaluation

FCC ID: 2A6GP-WYJ202203

1. Client Information

Applicant	:	David's LED Light
Address	:	Room 2703, Building A10, 76 Huanhe Road, Guangzhou, China
Manufacturer	:	Guangzhou Weiyujian Technology Co., LTD
Address	:	Room 259-15, 2nd Floor, No. 18, Dongpupo East Road, Tianhe District, Guangzhou city, China

2. General Description of EUT

EUT Name	:	Outdoor LED scrolling sign								
Models No.	:	WYJ202203, WYJ202201, WYJ202202, WYJ202204, WYJ202205, WYJ202206, WYJ202207, WYJ202208, WYJ202209								
Model Difference	:	All PCB boards and circuit diagrams are the same, the only difference is that Appearance of size.								
Product Description	:	<table border="1"><tr><td>Operation Frequency:</td><td>802.11b/g/n(HT20): 2412MHz~2462MHz</td></tr><tr><td>Number of Channel:</td><td>802.11b/g/n(HT20):11 channels</td></tr><tr><td>RF Output Power:</td><td>802.11b: 16.46dBm 802.11g: 16.97dBm 802.11n (HT20): 16.99dBm</td></tr><tr><td>Antenna Gain:</td><td>3dBi PCB Antenna</td></tr></table>	Operation Frequency:	802.11b/g/n(HT20): 2412MHz~2462MHz	Number of Channel:	802.11b/g/n(HT20):11 channels	RF Output Power:	802.11b: 16.46dBm 802.11g: 16.97dBm 802.11n (HT20): 16.99dBm	Antenna Gain:	3dBi PCB Antenna
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Antenna Gain:	3dBi PCB Antenna									
Power Rating	:	Input: AC 100-220V~ 60Hz								
Software Version	:	IOS software HC-LED V2.08								
Hardware Version	:	HC3								
Connecting I/O Port(S)	:	Please refer to the User's Manual								
Remark	:	the MPE report used the EUT (202204-0158_01-02).								

MPE Calculations for WIFI

1. Antenna Gain:

PCB Antenna:3dBi.

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

$$S = (P_G) / 4\pi R^2$$

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 _{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	16.24	16±1	17	3	20	0.0199
		2437	16.32	16±1	17	3	20	0.0199
		2462	16.46	16±1	17	3	20	0.0199
802.11g	1	2412	16.56	16±1	17	3	20	0.0199
		2437	16.75	17±1	18	3	20	0.0250
		2462	16.97	17±1	18	3	20	0.0250
802.11n(HT20)	1	2412	16.69	17±1	18	3	20	0.0250
		2437	16.84	17±1	18	3	20	0.0250
		2462	16.99	17±1	18	3	20	0.0250

Note:

(1) N_{TX}= 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 ²)
300-1,500	F/1500
1,500-100,000	1.0

For 2.4WIFI:2412~2462 MHz

MPE limit S: 1mW/ cm²

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

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