Maximum Permissible Exposure Evaluation

FCC ID:2BD6T-BW4TA-SOLAR

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 Industrial Park, Duc Hoa Ha Commune, Duc Hoa District, Long An Province, Vietnam

2. General Description of EUT

EUT Name	:	BW-4TA-SOLAR	
Models No.	:	BW-4TA-SOLAR	
Model Different	:	N/A	
Brand Name	:	NIGHT OWL	
Sample ID	:	HC-C-202412-0018-01-01	
Product Description	:	Operation Frequency:	2412MHz~2462MHz
Power Rating	:	Input:5V DC 3.6V 2600mAH*2 Lithium ion battery	
Software Version	:	N/A	
Hardware Version	:	V356PB	
Remark	:	The antenna gain provided by the manufacturer, the verified for the RF conduction test provided by TOBY test lab.	

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Method of Measurement for FCC

1. Max. Antenna Gain:

Mode	Antenna Type	Antenna Gain(dBi)
WIFI	FPC	3.51

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

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:

∑ of MPE ratios ≤ 1.0

4. Test Result:

Worst MPE Result							
Test Mode	Frequency (MHz)	Conducted Power(max) (dBm)	Turn-up Power (dB)	Max tune up power (dBm) [P]	Max. ANT Gain (dBi) [G]	Distance (cm) [R]	Power Density (mW/ cm^2) [S]
2.4G WIFI	2412	16.89	17±1	18	3.51	20	0.02817
	2437	17.25	17±1	18	3.51	20	0.02817
	2462	17.32	17±1	18	3.51	20	0.02817

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: 2412~2462MHz
MPE limit S: 1mW/ cm^2
The MPE is calculated as ***0.02817mW / 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.

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