

Maximum Permissible Exposure Evaluation

FCC ID: 2A4QD-AI-C20

1. Client Information

Applicant	:	Shenzhen Skymee Technology Co., Ltd
Address	:	Room 1119, 11/F, Department Store East Building, Shennan East Road No.123, Dongmen Street, Luohu District, Shenzhen City China
Manufacturer	:	Chengdu Weizheng Digital Technology Co., Ltd.
Address	:	69 Chuangye Road, Xindu Industrial East Area, Chengdu City, Sichuan Province China

2. General Description of EUT

EUT Name	:	Owl Robot
Models No.	:	AI-C20, AI-C10, AI-C30, AI-C40, AI-C50, AI-C60, AI-C70, AI-C80, AI-C90, AI-C100, AI-C110, AI-C120, AI-C130, AI-C140, AI-C150, AI-C160, AI-C170, AI-C180, AI-C190, AI-C200, AI-C210, AI-C220, AI-C230, AI-C240, AI-C250, AI-C260, AI-C270, AI-C280, AI-C290, AI-C300
Model Different	:	All these models are identical in the same PCB, layout and electrical circuit, the only difference is model name.
Brand Name	:	Skymee
Product Description	Operation Frequency:	802.11b/g/n(HT20): 2412MHz~2462MHz
	Number of Channel:	802.11b/g/n(HT20):11 channels
	RF Output Power:	18.145dBm (Max)
	Antenna Gain:	2.0dBi PCB Antenna
Power Rating	:	Adapter(BI12T-050200-IU) Input: 100-240V 50/60Hz 0.5A Output: 5V2A 10.0W DC 3.7V by 5000mAh(18.5Wh) Li-ion battery
Software Version	:	01.01.00.33_4001026
Hardware Version	:	ai-c20_main_v6
Connecting I/O Port(S)	:	Please refer to the User's Manual
Remark	:	the MPE report used the EUT-2(C-202202-0042-2#).

MPE Calculations for Bluetooth

1. Antenna Gain:

PCB Antenna: 2.0dBi.

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:

2.4G WiFi 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	17.995	17±1	18	2	20	0.0198
		2437	18.145	18±1	19	2	20	0.0250
		2462	18.057	18±1	19	2	20	0.0250
802.11g	1	2412	17.193	17±1	18	2	20	0.0198
		2437	17.253	17±1	18	2	20	0.0198
		2462	17.165	17±1	18	2	20	0.0198
802.11n20	1	2412	16.608	16±1	17	2	20	0.0158
		2437	16.657	16±1	17	2	20	0.0158
		2462	16.479	16±1	17	2	20	0.0158

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 2.4 WIFI:2412~2462MHz

MPE limit S: 1mW/ cm²

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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