

Maximum Permissible Exposure Evaluation

FCC ID: 2A4QD-AI-B20

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	:	Smart Feeder AI
Models No.	:	AI-B20, AI-B30, AI-B40, AI-B50, AI-B60, AI-B70, AI-B80, AI-B90, AI-B100, AI-B110, AI-B120, AI-B130, AI-B140, AI-B150, AI-B160, AI-B170, AI-B180, AI-B190, AI-B200, AI-B210, AI-B220, AI-B230, AI-B240, AI-B250, AI-B260, AI-B270, AI-B280, AI-B290, AI-B300
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 802.11n(HT40): 2422MHz~2452MHz
	Number of Channel:	802.11b/g/n(HT20):11 channels 802.11n(HT40): 7 channels
	RF Output Power:	16.687dBm (Max)
	Antenna Gain:	3.0dBi FPC Antenna
Power Rating	:	Adapter(BI12T-050200-IU) Input: 100-240V 50/60Hz 0.5A Output: 5V2A 10.0W
Software Version	:	40.3.10.2
Hardware Version	:	ai-b20_ak3918ev3_main_v1
Connecting I/O Port(S)	:	Please refer to the User's Manual
Remark	:	the MPE report used the EUT-2(RW-C-202202-0042-4-2#).

MPE Calculations for Bluetooth

1. Antenna Gain:

FPC Antenna: 3.0dBi.

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	16.687	16±1	17	3.0	20	0.0198
		2437	16.588	16±1	17	3.0	20	0.0198
		2462	16.115	16±1	17	3.0	20	0.0198
802.11g	1	2412	14.729	14±1	15	3.0	20	0.0125
		2437	14.163	14±1	15	3.0	20	0.0125
		2462	13.812	13±1	14	3.0	20	0.0099
802.11n20	1	2412	14.882	14±1	15	3.0	20	0.0125
		2437	14.304	14±1	15	3.0	20	0.0125
		2462	13.833	13±1	14	3.0	20	0.0099
802.11n40	1	2422	13.679	13±1	14	3.0	20	0.0099
	1	2437	8.173	8±1	9	3.0	20	0.0031
	1	2452	9.038	9±1	10	3.0	20	0.0039

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 **$0.0198\text{mW} / \text{cm}^2 < \text{limit } 1\text{mW} / \text{cm}^2$** . 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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