

Maximum Permissible Exposure Evaluation

FCC ID: 2AM52FN-VRC001

1. Client Information

Applicant : Shenzhen Funi Digital Technology Co., Ltd
Address : 401, 4/F, NO.28, Shi Jing Hong Yuan Technology Park, Fu Cheng Shi Jing Road, Guan Lan Street, Long Hua New district, Shenzhen, China
Manufacturer : Shenzhen Funi Digital Technology Co., Ltd
Address : 401, 4/F, NO.28, Shi Jing Hong Yuan Technology Park, Fu Cheng Shi Jing Road, Guan Lan Street, Long Hua New district, Shenzhen, China

2. General Description of EUT

EUT Name	:	Panoramic WiFi Camera
Models No.	:	FN-VRC001, FN-VRCXXX(X stands for 0~9,A~Z)
Model Difference	:	All models are identical in the same PCB layout interior structure and electrical circuits, The only difference is appearance and color.
Product Description		Operation Frequency: 802.11b/g/n(HT20): 2412MHz~2462MHz
		Number of Channel: 802.11b/g/n(HT20):11 channels
		RF Output Power: 802.11b: 17.67dBm 802.11g: 16.20dBm 802.11n (HT20):15.51dBm
	:	Antenna Gain: 4.5dBi Internal Antenna
		Modulation Type: 802.11b: DSSS(CCK, QPSK, BPSK) 802.11g: OFDM 802.11n: OFDM
		Bit Rate of Transmitter: 802.11b: 11/5.5/2/1 Mbps 802.11g: 54/48/36/24/18/12/9/6 Mbps 802.11n:up to 150Mbps
Power Supply	:	DC Voltage by the Host System. DC Voltage Supply from AC/DC Adapter
Power Rating	:	DC 5V/2A by AC/DC Adapter

TB-RF-075-1.0

Connecting I/O Port(S)	:	Please refer to the User's Manual
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Note: More information about the RF function, please refer the RF test reports.

MPE Calculations for WIFI

1. Antenna Gain:

Internal Antenna: 4.5dBi.

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 _{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	17.59	17±1	18	4.5	20	0.0354
		2437	17.67	17±1	18	4.5	20	0.0354
		2462	17.46	17±1	18	4.5	20	0.0354
802.11g	1	2412	15.84	16±1	17	4.5	20	0.0281
		2437	16.20	16±1	17	4.5	20	0.0281
		2462	16.07	16±1	17	4.5	20	0.0281
802.11n (HT20)	1	2412	15.07	15±1	16	4.5	20	0.0223
		2437	15.39	15±1	16	4.5	20	0.0223
		2462	14.93	15±1	16	4.5	20	0.0223

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 802.11b/g/n (2412~2462 MHz)

MPE limit S: 1 mW/ cm²

The MPE is calculated as $0.0354 \text{ mW} / \text{cm}^2 < \text{limit } 1 \text{ mW} / \text{cm}^2$. 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.

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