



Maximum Permissible Exposure Evaluation

FCC ID: 2AXEK-X50

1. Client Information

Applicant	:	SHENZHEN GENERAL TECHNOLOGY CO., LTD
Address	:	Floor 1-3, Building A, Floor 1-4, Building B, No. 11 Xiantian Road, Xinsheng Community, Longgang Sub-District, Longgang District, Shenzhen, China
Manufacturer	:	SHENZHEN GENERAL TECHNOLOGY CO., LTD
Address	:	Floor 1-3, Building A, Floor 1-4, Building B, No. 11 Xiantian Road, Xinsheng Community, Longgang Sub-District, Longgang District, Shenzhen, China

2. General Description of EUT

EUT Name	:	Smart PTZ Camera
Models No.	:	X50, X51, X52, X53, X54, X55, X56, X57, X58, X59
Model Different	:	All these models are identical in the same PCB, layout and electrical circuit, the only difference is model name.
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
	Antenna Gain:	External antenna, Maximum Gain: 3.0dBi
Power Rating	:	Input: DC 12V
Software Version	:	V0.2.3
Hardware Version	:	CB140_C02_V2
Connecting I/O Port(S)	:	Please refer to the User's Manual
Remark	:	the evaluation report used the EUT(RW-C-202209-0141-9-2#).

MPE Calculations for WIFI

1. Antenna Gain:

External 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

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	17.23	17±1	18	3.0	20	0.0250
		2437	16.87	16±1	17	3.0	20	0.0199
		2462	16.88	16±1	17	3.0	20	0.0199
802.11g	1	2412	16.57	16±1	17	3.0	20	0.0199
		2437	16.78	16±1	17	3.0	20	0.0199
		2462	16.64	16±1	17	3.0	20	0.0199
802.11n20	1	2412	16.76	16±1	17	3.0	20	0.0199
		2437	16.50	16±1	17	3.0	20	0.0199
		2462	16.12	16±1	17	3.0	20	0.0199
802.11n40	1	2422	16.97	16±1	17	3.0	20	0.0199
		2437	15.42	15±1	16	3.0	20	0.0158
		2452	16.01	16±1	17	3.0	20	0.0199
Note: N _{TX} = Number of Transmit Antennas RE 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 **$0.0250\text{mW} / \text{cm}^2 < \text{limit } 1\text{mW} / \text{cm}^2$** . 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.

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

