



Maximum Permissible Exposure Evaluation

FCC ID: 2AXEK-X92

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	:	PanTilt Camera
Models No.	:	X92, X01, X02, X03, X04, X05, X06, X07, X08, X09, X10, X11, X12, X13, X14, X15, X16, X17, X18, X19, X20, XXX(X means letters and numbers)
Model Difference	:	All PCB boards and circuit diagrams are the same, the only difference is models name.
Sample ID	:	202307-0003-2-1# & 202307-0003-2-2#
Product Description	:	Operation Frequency: 802.11b/g/n(HT20): 2412MHz~2462MHz
Power Rating	:	Adapter (TPA-46B050100UU) Input: 100-240V~ 50/60Hz 0.2A Output: 5.0V=1.0A
Software Version	:	----
Hardware Version	:	----
Connecting I/O Port(S)	:	Please refer to the User's Manual
Remark	:	the MPE report used the EUT-2(RW-C-202304-0229-1-2#).

MPE Calculations

1. Antenna Gain:

Antenna	Brand	Model Name	Type	Antenna Gain(dBi)
2.4G WIFI	N/A	N/A	FPC	1.7

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. 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:

$$\sum \text{ of MPE ratios } \leq 1.0$$



5. Standalone MPE Evaluation:

2.4G WiFi 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	14.352	14±1	15	1.7	20	0.0093
		2437	14.993	15±1	16	1.7	20	0.0117
		2462	15.348	15±1	16	1.7	20	0.0117
802.11g	1	2412	12.821	13±1	14	1.7	20	0.0074
		2437	13.28	13±1	14	1.7	20	0.0074
		2462	12.673	13±1	14	1.7	20	0.0074
802.11n (HT20)	1	2412	12.285	12±1	13	1.7	20	0.0059
		2437	13.166	13±1	14	1.7	20	0.0074
		2462	12.235	12±1	13	1.7	20	0.0059

Note:
 N_{TX}= Number of Transmit Antennas
 RF Output power specifies that Maximum Conducted Peak Output Power.

Remark:

- Output power including turn-up tolerance;
- Output power was adjust to duty cycle at 100% if measured duty cycle less than 98%;
- MPE evaluate distance is 20cm from user manual provide by manufacturer.
- Only the worst power was evaluated for each wireless function



6. 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 **0.0117** < **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.

7. Conclusion:

The measurement results comply with the FCC Limit per 47 CFR 2.1091 for the uncontrolled RF Exposure of mobile device.

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

