

Maximum Permissible Exposure Evaluation

FCC ID: 2AXEK-GS-X03

1. Client Information

Applicant	:	SHENZHEN GENERAL TECHNOLOGY CO.,LTD
Address	:	No.5 Xiantian Road, Longgang District, Shenzhen, China
Manufacturer	:	SHENZHEN GENERAL TECHNOLOGY CO.,LTD
Address	:	No.5 Xiantian Road, Longgang District, Shenzhen, China

2. General Description of EUT

EUT Name	:	2.4G WIFI Camera
Models No.	:	GS-X03, GS-XXX (X means digital number “0” - “9” or English letter “A” - “Z”)
Model Different	:	All these models are identical in the same PCB, layout and electrical circuit, the only difference is Housing.
Brand Name	:	----
Product Description	Operation Frequency:	802.11b/g/n(HT20): 2412MHz~2462MHz
	Number of Channel:	802.11b/g/n(HT20):11 channels
	E.I.R.P:	802.11b: 15.25 dBm 802.11g: 15.42 dBm 802.11n (HT20): 14.57 dBm
	Antenna Gain:	2dBi FPC Antenna
Power Rating	:	Adapter(XED-UL050150CU) Input: AC 100~240V, 50/60Hz 0.3A MAX Output: DC 5V, 1.5A.
Software Version	:	V1.1.4_20200709
Hardware Version	:	A0
Connecting I/O Port(S)	:	Please refer to the User's Manual
Remark	:	the MPE report used the EUT(TBBJ-20200807-11-2#).

MPE Calculations for WIFI

1. Antenna Gain:

FPC Antenna: 2dBi.

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	15.25	15±1	16	2	20	0.0125
		2437	13.97	13±1	14	2	20	0.0079
		2462	13.38	13±1	14	2	20	0.0079
802.11g	1	2412	15.42	15±1	16	2	20	0.0125
		2437	14.08	14±1	15	2	20	0.0099
		2462	13.49	13±1	14	2	20	0.0079
802.11n(HT20)	1	2412	14.57	14±1	15	2	20	0.0099
		2437	13.46	13±1	14	2	20	0.0079
		2462	13.47	13±1	14	2	20	0.0079

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 2.4WIFI:2412~2462 MHz

MPE limit S: 1mW/ cm²

The MPE is calculated as $0.0125 \text{ mW} / \text{cm}^2 < \text{limit } 1 \text{mW} / \text{cm}^2$. 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-----