

Maximum Permissible Exposure Evaluation

FCC ID: 2AXEK-X81

1. Client Information

Applicant	:	SHENZHEN GENERAL TECHNOLOGY CO., LTD
Address	:	Floor 1-3, Building A, NO.11 Xiantian Road, Longgang District, Shenzhen, China 518000
Manufacturer	:	SHENZHEN GENERAL TECHNOLOGY CO., LTD
Address	:	Floor 1-3, Building A, NO.11 Xiantian Road, Longgang District, Shenzhen, China 518000

2. General Description of EUT

EUT Name	:	Wireless Smart Battery Camera	
Models No.	:	X81	
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
		Number of Channel:	802.11b/g/n(HT20):11 channels
		RF Output Power:	802.11b: 17.903dBm(MAX)
		Antenna Gain:	2.6dBi Dipole Antenna
Power Rating	:	Input: DC 5V Output: DC 3.7V by 9000 mAh Rechargeable Li-ion battery	
Software Version	:	0.4.1 (68e27f)	
Hardware Version	:	CG721	
Connecting I/O Port(S)	:	Please refer to the User's Manual	
Remark	:	the evaluation report used the EUT(20211020-10-02#).	

MPE Calculations for WIFI

1. Antenna Gain:

FPC Antenna: 2.6dBi.

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

Mode	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]	Limit of Power Density (mW/ cm ²) (S)
802.11B	17.903	17±1	18	2.6	20	0.02284	1
802.11G	16.847	16±1	17	2.6	20	0.01814	1
802.11N(HT20)	16.485	16±1	17	2.6	20	0.01814	1

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: $1\text{mW} / \text{cm}^2$

The MPE is calculated as $0.02284\text{mW} / \text{cm}^2 < \text{limit } 1\text{mW} / \text{cm}^2$. 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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