

Maximum Permissible Exposure Evaluation

FCC ID: 2AZL7-ZS-GX1S

1. Client Information

Applicant	:	Shenzhen CTV Int Cloud Technology Co., Ltd.
Address	:	601, B Building, No.10, East District, Shangxue Industrial City, Xinxue Community, Bantian Street, Shenzhen, China
Manufacturer	:	Shenzhen CTV Int Cloud Technology Co., Ltd.
Address	:	601, B Building, No.10, East District, Shangxue Industrial City, Xinxue Community, Bantian Street, Shenzhen, China

2. General Description of EUT

EUT Name	:	Security Camera
Models No.	:	ZS-GX1S, ZS-GX2S, ZS-GX3S, ZS-GX4S, ZS-GX5S, ZS-GX6S, ZS-GX7S, ZS-GX8S, ZS-GQ1, ZS-GQ2, ZS-GQ3, ZS-GQ4, ZS-GQ5
Model Different	:	All these models are the same in the same PCB, layout and circuit, the only difference is the appearance and model.
Brand Name	:	N/A
Product Description	Operation Frequency:	802.11b/g/n(HT20): 2412MHz~2462MHz
	Number of Channel:	802.11b/g/n(HT20):11 channels see note(3)
	RF Output Power:	802.11b:17.674dBm 802.11g: 15.951dBm 802.11n (HT20): 12.588dBm
	Antenna Gain:	3 dBi Dipole Antenna
Power Rating	:	USB Input: DC 5V2A DC 3.7V by 14400mAh Li-ion battery
Software Version	:	ppstrong-b6-neutral_std-1.2.1.20210121-upgrade
Hardware Version	:	SNAP B24S-H1MB-GQ1-REV1.0
Connecting I/O Port(S)	:	Please refer to the User's Manual
Remark	:	the MPE report used the EUT(TBBJ-20210226-02-02#).

MPE Calculations for WIFI

1. Antenna Gain:

Dipole Antenna:3dBi.

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	17.674	17±1	18	3	20	0.02505	1
802.11G	15.951	15±1	16	3	20	0.01580	1
802.11N(HT20)	12.588	12±1	13	3	20	0.00792	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: 1mW/ cm²

The MPE is calculated as $0.02505 \text{ mW} / \text{cm}^2 < \text{limit } 1 \text{ mW} / \text{cm}^2$. 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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