

Maximum Permissible Exposure Evaluation

FCC ID: 2AT5F-SY-101A

1. Client Information

Applicant	:	Shenzhen Sekery Smart Co.,Ltd
Address	:	11F, C6 Building, Hengfeng Industrial Park, Zhoushi Road, BaoAn, Shenzhen, China
Manufacturer	:	Shenzhen Sekery Smart Co.,Ltd
Address	:	11F, C6 Building, Hengfeng Industrial Park, Zhoushi Road, BaoAn, Shenzhen, China

2. General Description of EUT

EUT Name	:	WiFi Camera	
Models No.	:	SY-101A, SY-201A, SY-101T, SY-201T, SY-118A, SY-218A, SY-118T, SY-218T, SY-120A, SY-220A, SY-120T, SY-220T, SY-209T, SY-108T, SY-208T	
Model Different	:	All these models are the same PCB, layout and electrical circuit, the only difference is External color.	
Product Description	:	Operation Frequency:	802.11b/g/n(HT20): 2412MHz~2462MHz 802.11n (HT40): 2422MHz~2452MHz
		RF Output Power:	802.11b: 9.22dBm 802.11g: 8.66dBm 802.11n (HT20): 7.67dBm 802.11n (HT40): 6.57dBm
		Antenna Gain:	2dBi Dipole Antenna
		Modulation Type:	802.11b: DSSS(CCK, DQPSK, DBPSK) 802.11g/n: OFDM(BPSK,QPSK,16QAM, 64QAM)
Power Supply	:	AC/DC adapter(Model:SAN-05015) Input:AC100-240V, 1.5A, 50/60Hz Output: DC 5V 1.5A	
Software Version	:	V3.1042.9.8656	
Hardware Version	:	BK-38-2.0-V1	
Connecting I/O Port(S)	:	Please refer to the User's Manual	

MPE Calculations for WIFI

1. Antenna Gain:

Dipole 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										
ANT	Mode	Freq. (MHz)	Conducted Power(max) (dBm) [P]	Tune up Power (dB)	Max tune up power (dBm) [P]	ANT Gain (dBi) [G]	Distance (cm) [R]	Power Density (mW/cm ²) [S]	Power Density Limit (mW/cm ²)	Result
ANT 1	B	2412	9.22	9±1	10	2	20	0.00315	1	PASS
		2437	9.17	9±1	10			0.00315		
		2462	9.16	9±1	10			0.00315		
	G	2412	8.41	8±1	9			0.00250		
		2437	8.21	8±1	9			0.00250		
		2462	8.66	8±1	9			0.00250		
	N20	2412	7.67	8±1	9			0.00250		
		2437	7.46	8±1	9			0.00250		
		2462	7.08	8±1	9			0.00250		
	N40	2422	6.57	6±1	7			0.00158		
		2437	6.16	6±1	7			0.00158		
		2452	6.46	6±1	7			0.00158		
Max Power Density(mW/ cm ²)			Power Density=0.00315							
Note: 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 802.11b/g/n:2412~2462 MHz

MPE limit S: 1mW/ cm²

The MPE is calculated as $0.00315\text{mW} / \text{cm}^2 < \text{limit } 1\text{mW} / \text{cm}^2$. 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.

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