RF EXPOSURE
Test Report

Report No.:	MTi231221009-05E3
Date of issue:	2024-02-01
Applicant:	Shenzhen Zhaoyang Tianxia Technology CO., Ltd.
Product:	IP Camera
Model(s):	HX01, HX02, HX03, HX04, HX05, HX06, HX07, A01, A02, A03, A04, A05, A06, A07, A08
FCC ID:	2AP56-A01HX01

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Test Result Certification	
Applicant:	Shenzhen Zhaoyang Tianxia Technology CO., Ltd.
Address:	Room217, Building C1, Bantian International Center, Bantian Street, Longgang District, Shenzhen, China
Manufacturer:	Shenzhen Zhaoyang Shidai Technology Co., Ltd.
Address:	F6, Block F, JIN HENG RUN Industrial Park, Xintang, Fucheng Street, Longhua District, Shenzhen, China
Product description	
Product name:	IP Camera
Trademark:	SV3C
Model name:	HX01
Serial Model:	HX02, HX03, HX04, HX05, HX06, HX07, A01, A02, A03, A04, A05, A06, A07, A08
Standards:	N/A
Test procedure:	KDB 447498 D01 v06
Date of Test	
Date of test:	2024-01-20 to 2024-01-30
Test result:	Pass

Test Engineer : Maleah Deng

(Maleah Deng)

Reviewed By: : Leon Chen

(Leon Chen)

Approved By: : Tom Xue

(Tom Xue)

RF EXPOSURE EVALUATION

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) Radiation as specified in §1.1307(b)

Limits for Maximum Permissible Exposure (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm^2)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposure				
0.3-3.0	614	1.63	*100	6
3.0-30	1842/f	4.89/f	$*900/f^2$	6
30-300	61.4	0.163	1.0	6
300-1,500			f/300	6
1,500-100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*100	30
1.34-30	824/f	2.19/f	$*180/f^2$	30
30-300	27.5	0.073	0.2	30
300-1,500			f/1500	30
1,500-100,000			1.0	30

f = frequency in MHz * = Plane-wave equivalent power density

MPE Calculation Method

Friis transmission formula: $Pd= (Pout*G)\ (4*pi*R^2)$

Where

Pd= Power density in mW/cm^2

Pout=output power to antenna in mW

G= Numeric gain of the antenna relative to isotropic antenna

Pi=3.1415926

R= distance between observation point and center of the radiator in cm(20cm)

Pd the limit of MPE, $1mW/cm^2$. If we know the maximum gain of the antenna and total power input to the antenna, through the calculation, we will know the distance where the MPE limit is reached.

Measurement Result

2.4GWiFi:
Operation Frequency: WIFI 802.11b/g/n HT20: 2412-2462MHz
Power density limited: 1mW/ cm^2
5GWiFi:
Operation Frequency: 5180-5240MHz
802.11a: 20 MHz
802.11n: 20 MHz

Antenna Type: PCB Antenna;
Antenna gain: 2.4G: 5dBi; 5G: 5dBi

R=20cm
mW=10^(dBm/10)
2.4G: antenna gain Numeric=10^(dBi/10)= 10^(5/10)= 3.16
5G: antenna gain Numeric=10^(dBi/10)= 10^(5/10)= 3.16

2.4GWiFi:

Channel Freq. (MHz)	modulation	conducted power	Tune-up power	Max		Antenna	Evaluation result at 20cm	Power density Limits
		(dBm)	(dBm)	tune-up power		Gain	Power density(mW/cm^2)	(mW/cm^2)
				(dBm)	(mW)	Numeric		
2412	802.11b	11.10	11±1	12	15.849	3.16	0.00997	1
2437		7.63	7±1	8	6.310	3.16	0.00397	1
2462		6.88	7±1	8	6.310	3.16	0.00397	1
2412	802.11g	13.57	13±1	14	25.119	3.16	0.01580	1
2437		9.95	10±1	11	12.589	3.16	0.00792	1
2462		7.59	7±1	8	6.310	3.16	0.00397	1
2412	802.11n H20	13.22	13±1	14	25.119	3.16	0.01580	1
2437		8.97	9±1	10	10.000	3.16	0.00629	1
2462		6.95	7±1	8	6.310	3.16	0.00397	1

5G WIFI: UNII-1

Channel Freq. (MHz)	modulation	conducted power	Tune-up power	Max		Antenna	Evaluation result at 20cm	Power density Limits
		(dBm)	(dBm)	tune-up power		Gain	Power density(mW/cm^2)	(mW/cm^2)
				(dBm)	(mW)	Numeric		
5180	11a	5.18	5±1	6	3.981	3.16	0.00250	1
5200	11a	4.70	4±1	5	3.162	3.16	0.00199	1
5240	11a	6.00	6±1	7	5.012	3.16	0.00315	1
5180	11n (HT20)	5.19	5±1	6	3.981	3.16	0.00250	1
5200	11n (HT20)	6.03	6±1	7	5.012	3.16	0.00315	1
5240	11n (HT20)	6.16	6±1	7	5.012	3.16	0.00315	1

Conclusion:

Note: 2.4GWIFI and 5GWIFI cannot work at the same time

For the max result: 0.01580≤ 1.0 SAR, No SAR is required.

----END OF REPORT----