

# MPE REPORT

FCC ID: 2AP56-B08W-5MP-HX

Date of issue: July 29, 2019

|                     |   |
|---------------------|---|
| Report Number:      | MTi19070107-6E2   |
| Sample Description: | IP Camera   |
| Model(s):           | B08W-5MP-HX, B06W-3MP-HX, B06W-5MP-HX, B07W-1080P-HX, B08W-3MP-HX, B16VW-5MP-HX, SD5W-3MP-HX, SD5W-5MP-HX, SD7W-3MP-HX, SD7W-5MP-HX |
| Applicant:          | Shenzhen Zhaoyang Tianxia Technology CO., Ltd.  |
| Address:            | Room217, Building C1, Bantian International Center, Bantian Street, Longgang District, Shenzhen, China                              |
| Date of Test:       | July 10, 2019 to July 26, 2019  |

Shenzhen Microtest Co., Ltd.

<http://www.mtitest.com>

| <b>TEST RESULT CERTIFICATION</b> |  |
|----------------------------------|--|
| Applicant's name:                | Shenzhen Zhaoyang Tianxia Technology CO., Ltd.   |
| Address:                         | Room217, Building C1, Bantian International Center, Bantian Street, Longgang District, Shenzhen, China                 |
| Manufacture's Name:              | Shenzhen Zhaoyang Shidai Technology Co., Ltd.  |
| Address:                         | F6, Block F, JIN HENG RUN Industrial Park, Xintang, Fucheng Street, Longhua District, Shenzhen, China                  |
| Product name:                    | IP Camera  |
| Trademark:                       | SV3C   |
| Model and/or type reference .:   | B08W-5MP-HX  |
| Serial Model.....:               | B06W-3MP-HX, B06W-5MP-HX, B07W-1080P-HX, B08W-3MP-HX, B16VW-5MP-HX, SD5W-3MP-HX, SD5W-5MP-HX, SD7W-3MP-HX, SD7W-5MP-HX |
| RF Exposure Procedures.....:     | KDB 447498 D01 v06   |

*This device described above has been tested by Shenzhen Microtest Co., Ltd and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.*

Tested by:



\_\_\_\_\_  
Jone Lee

July 26, 2019

Reviewed by:



\_\_\_\_\_  
Blue Zheng

July 29, 2019

Approved by:



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Smith Chen

July 29, 2019

## 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 <sup>2</sup> ) | Averaging time (minutes) |
|--|-------------------------------|-------------------------------|-------------------------------------|--------------------------|
| <b>(A) Limits for Occupational/Controlled Exposure</b>         |                               |                               |                                     |                          |
| 0.3-3.0  | 614                           | 1.63                          | *100                                | 6                        |
| 3.0-30   | 1842/f                        | 4.89/f                        | *900/f <sup>2</sup>                 | 6                        |
| 30-300   | 61.4                          | 0.163                         | 1.0                                 | 6                        |
| 300-1,500  |                               |                               | f/300                               | 6                        |
| 1,500-100,000  |                               |                               | 5                                   | 6                        |
| <b>(B) Limits for General Population/Uncontrolled Exposure</b> |                               |                               |                                     |                          |
| 0.3-1.34   | 614                           | 1.63                          | *100                                | 30                       |
| 1.34-30  | 824/f                         | 2.19/f                        | *180/f <sup>2</sup>                 | 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:  $P_d = (P_{out} * G) / (4 * \pi * R^2)$

Where

$P_d$  = Power density in mW/cm<sup>2</sup>

$P_{out}$  = 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)

$P_d$  the limit of MPE, 1mW/cm<sup>2</sup>. 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

### WIFI:

Operation Frequency: WIFI 802.11b/g/n HT20: 2412-2462MHz,

802.11n HT40: 2422-2452MHz,

Power density limited: 1mW/ cm<sup>2</sup>

Antenna Type: Wifi Antenna: External Antenna;

WIFI antenna gain: 3.5dBi

R=20cm

$mW=10^{(dBm/10)}$

antenna gain Numeric= $10^{(dBi/10)}=10^{(3.5/10)}=2.24$

| 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 <sup>2</sup> ) | (mW/cm <sup>2</sup> ) |
|                     |             | Ant A           | Ant A         | (dBm)         | (mW)      | Numeric |                                    |                       |
| 2412                | 802.11b     | 13.38           | 13±1          | 14            | 25.118864 | 2.24    | 0.01119                            | 1                     |
| 2437                |             | 13.53           | 13±1          | 14            | 25.118864 | 2.24    | 0.01119                            | 1                     |
| 2462                |             | 12.84           | 13±1          | 14            | 25.118864 | 2.24    | 0.01119                            | 1                     |
| 2412                | 802.11g     | 13.32           | 13±1          | 14            | 25.118864 | 2.24    | 0.01119                            | 1                     |
| 2437                |             | 13.57           | 13±1          | 14            | 25.118864 | 2.24    | 0.01119                            | 1                     |
| 2462                |             | 12.9            | 13±1          | 14            | 25.118864 | 2.24    | 0.01119                            | 1                     |
| 2412                | 802.11n H20 | 13.73           | 13±1          | 14            | 25.118864 | 2.24    | 0.01119                            | 1                     |
| 2437                |             | 13.51           | 13±1          | 14            | 25.118864 | 2.24    | 0.01119                            | 1                     |
| 2462                |             | 12.93           | 13±1          | 14            | 25.118864 | 2.24    | 0.01119                            | 1                     |
| 2422                | 802.11n H40 | 10.87           | 10±1          | 11            | 12.589254 | 2.24    | 0.00561                            | 1                     |
| 2437                |             | 10.6            | 10±1          | 11            | 12.589254 | 2.24    | 0.00561                            | 1                     |
| 2452                |             | 10.45           | 10±1          | 11            | 12.589254 | 2.24    | 0.00561                            | 1                     |

### Conclusion:

For the max result: 0.01119 ≤ 1.0 for 1g SAR, No SAR is required.

----END OF REPORT----