



**1 Cover Page**

***RF Exposure Evaluation Report***

**Application No.:** SHEM2106005672CR  
**FCC ID:** 2APV2-CSC3TN1H2  
**Applicant:** Hangzhou Ezviz Software Co., Ltd.  
**Address of Applicant:** Room 302,Unit B,Building 2,399 Danfeng Road,Binjiang District, Hangzhou, Zhejiang  
**Manufacturer:** Hangzhou Ezviz Software Co., Ltd.  
**Address of Manufacturer:** Room 302,Unit B,Building 2,399 Danfeng Road,Binjiang District, Hangzhou, Zhejiang  
**Equipment Under Test (EUT):**  
**EUT Name:** Smart Home Camera  
**Model No.:** CS-C3TN (1080P, W1)  
**Add Model No.:** CS-C3TN, CS-C3TNA0-1H2WF  
**Trade mark:** EZVIZ  
**Standard(s) :** FCC Rules 47 CFR §2.1091  
 KDB447498 D01 General RF Exposure Guidance v06  
**Date of Receipt:** 2021-06-08  
**Date of Test:** 2021-06-12 to 2021-06-13  
**Date of Issue:** 2021-06-13

|                     |              |
|---------------------|--------------|
| <b>Test Result:</b> | <b>Pass*</b> |
|---------------------|--------------|

\* In the configuration tested, the EUT complied with the standards specified above.

*Parlam Zhan*

Parlam Zhan  
E&E Section Manager

The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS International Electrical Approvals or testing done by SGS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by SGS International Electrical Approvals in writing.



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| Revision Record |             |            |        |
|-----------------|-------------|------------|--------|
| Version         | Description | Date       | Remark |
| 00              | Original    | 2021-06-13 | /      |
|                 |             |            |        |
|                 |             |            |        |

|                                 |  |                                       |  |
|---------------------------------|--|---------------------------------------|--|
| <b>Authorized for issue by:</b> |  |                                       |  |
|                                 |  | <i>Michael Niu</i>                    |  |
|                                 |  | <hr/>                                 |  |
|                                 |  | <b>Micheal Niu / Project Engineer</b> |  |
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|                                 |  | <hr/>                                 |  |
|                                 |  | <b>Parlam Zhan / Reviewer</b>         |  |



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### 3 General Information

#### 3.1 General Description of E.U.T.

|               |                   |
|---------------|-------------------|
| Power supply: | DC 12V by Adapter |
|---------------|-------------------|

#### 3.2 Technical Specifications

2.4GHz

|                      |  |
|----------------------|--|
| Antenna Gain:        | Ant 1:5.78dBi(Provided by manufacturer)<br>Ant 2:4.72dBi(Provided by manufacturer)<br>Directional gain:8.29dBi |
| Antenna Type:        | Antenna 1: PIFA Antenna<br>Antenna 2: PIFA Antenna   |
| Channel Spacing:     | 5MHz   |
| Modulation Type:     | 802.11b: DSSS (CCK, DQPSK, DBPSK)<br>802.11g/n: OFDM (64QAM, 16QAM, QPSK, BPSK)                                |
| Data Rate:           | 802.11b: 1/2/5.5/11Mbps,<br>802.11g: 6/9/12/18/24/36/48/54Mbps<br>802.11n: MCS 0 to 7 for HT20MHz              |
| Number of Channels:  | 802.11b/g/n(HT20):11   |
| Operation Frequency: | 802.11b/g/n(HT20): 2412MHz to 2462MHz  |



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### 3.3 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. E&E Lab  
588 West Jindu Road, Xinqiao, Songjiang, 201612 Shanghai, China  
Tel: +86 21 6191 5666 Fax: +86 21 6191 5678

No tests were sub-contracted.

### 3.4 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **CNAS (No. CNAS L0599)**

CNAS has accredited SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. to ISO/IEC 17025:2017 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

- **A2LA (Certificate No. 6332.01)**

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. is accredited by the American Association for Laboratory Accreditation(A2LA).

- **FCC (Designation Number: CN1301)**

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been recognized as an accredited testing laboratory.

- **ISED (CAB Identifier: CN0020)**

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. EMC Laboratory has been recognized by Innovation, Science and Economic Development Canada (ISED) as an accredited testing laboratory  
Company Number: 8617A

- **VCCI (Member No.: 3061)**

The 3m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-13868, C-14336, T-12221, G-10830 respectively.



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## 4 Test Standards and Limits

### 4.1 FCC Radiofrequency radiation exposure limits:

According to §1.1310, the limit for general population/uncontrolled exposures

| Frequency     | Power density(mW/cm <sup>2</sup> ) | Averaging time(minutes) |
|---------------|------------------------------------|-------------------------|
| 300MHz~1.5GHz | f/1500                             | 30                      |
| 1.5GHz~100GHz | 1.0                                | 30                      |



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## 5 Measurement and Calculation

### 5.1 Maximum transmit power

The Power Data is based on the RF Test Report SHEM210600567201

| Test Mode | Channel | Antenna 1 Power[dBm] | Antenna 2 Power[dBm] | MIMO Power[dBm] | Antenna 1 Power[mW] | Antenna 2 Power[mW] | MIMO Power[mW] |
|-----------|---------|----------------------|----------------------|-----------------|---------------------|---------------------|----------------|
| 11B       | 2412    | 14.94                | 14.26                | NA              | 31.19               | 26.67               | N/A            |
| 11B       | 2437    | 15.13                | 14.37                | NA              | 32.58               | 27.35               | N/A            |
| 11B       | 2462    | 15.02                | 14.21                | NA              | 31.77               | 26.36               | N/A            |
| 11G       | 2412    | 14.93                | 14.62                | NA              | 31.12               | <b>28.97</b>        | N/A            |
| 11G       | 2437    | 15.39                | 14.55                | NA              | <b>34.59</b>        | 28.51               | N/A            |
| 11G       | 2462    | 15.23                | 14.22                | NA              | 33.34               | 26.42               | N/A            |
| 11N20MIMO | 2412    | 15.17                | 14.48                | 17.85           | 32.89               | 28.05               | <b>60.95</b>   |
| 11N20MIMO | 2437    | 15.20                | 14.41                | 17.83           | 33.11               | 27.61               | 60.67          |
| 11N20MIMO | 2462    | 15.01                | 14.02                | 17.55           | 31.70               | 25.23               | 56.89          |



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### 5.2 MPE Calculation

According to the formula  $S=P/4\pi R^2$ , we can calculate S which is MPE.

Note:

- 1) P (mW)
- 2) R = distance to the center of radiation of antenna (in meter) = 20cm
- 3) MPE limit = 1mW/cm<sup>2</sup>

For 2.4G WiFi –Antenna1:

The max. antenna gain is 5.78 dBi

| Max. Conducted Power P(mW) | Gain in Linear Scale G | Operation Distance R(cm) | Power Density (mW/cm <sup>2</sup> ) | Limit (mW/cm <sup>2</sup> ) | Result |
|----------------------------|------------------------|--------------------------|-------------------------------------|-----------------------------|--------|
| 34.59                      | 3.784                  | 20                       | 0.02604                             | 1                           | Pass   |

For 2.4G WiFi –Antenna2:

The max. antenna gain is 4.72 dBi

| Max. Conducted Power P(mW) | Gain in Linear Scale G | Operation Distance R(cm) | Power Density (mW/cm <sup>2</sup> ) | Limit (mW/cm <sup>2</sup> ) | Result |
|----------------------------|------------------------|--------------------------|-------------------------------------|-----------------------------|--------|
| 28.97                      | 2.965                  | 20                       | 0.01709                             | 1                           | Pass   |

In MIMO mode:

The max. antenna gain is 8.29 dBi

| Max. Conducted Power P(mW) | Gain in Linear Scale G | Operation Distance R(cm) | Power Density (mW/cm <sup>2</sup> ) | Limit (mW/cm <sup>2</sup> ) | Result |
|----------------------------|------------------------|--------------------------|-------------------------------------|-----------------------------|--------|
| 60.95                      | 6.745                  | 20                       | 0.08179                             | 1                           | Pass   |

According to the KDB447498 section 7.2 determine the device is exclusion from SAR test

**--End of the Report--**



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