



1 Cover Page

RF Exposure Evaluation Report

Application No.: SHEM1904012143CR
FCC ID: 2APV2-CSX5S4W
Applicant: Hangzhou Ezviz Software Co., Ltd.
Address of Applicant: Floor 16, Unit B Building 1, No. 555, Qianmo Road, Binjiang District, Hangzhou City, Zhejiang Province
Manufacturer: Hangzhou Ezviz Software Co., Ltd.
Address of Manufacturer: Floor 16, Unit B Building 1, No. 555, Qianmo Road, Binjiang District, Hangzhou City, Zhejiang Province
Factory: Hangzhou Hikvision Electronics Co., Ltd.
Address of Factory: No.299, Qiushi Road, Tonglu Economic Development Zone, Tonglu County, Hangzhou, Zhejiang, 310052, China.

Equipment Under Test (EUT):
EUT Name: Network Video Recorder
Model No.: CS-X5S-8W, 8
Add Model No.: CS-X5S-4W
Trade mark: eZVIZ
Standard(s) : FCC Rules 47 CFR §2.1091
KDB447498 D01 General RF Exposure Guidance v06

Date of Receipt: 2019-04-04
Date of Test: 2019-04-08 to 2019-04-10
Date of Issue: 2019-05-05

Test Result:	Pass*
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* 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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Attention: To check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.
Testing Center (E&E)

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Revision Record			
Version	Description	Date	Remark
00	Original	2019-05-05	/

Authorized for issue by:				
		Vincent Zhu		
		Vincent Zhu /Project Engineer		
		Parlam Zhan		
		Parlam Zhan /Reviewer		



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3 General Information

3.1 General Description of E.U.T.

Power supply:	DC 12V by adapter Adapter: Model:MSA-C1500IC12.0-18P-US Input:100-240V~50/60Hz 0.7A max Output:12V 1.5A
Test voltage:	AC 120V 60Hz
Cable:	DC Cable 150cm for adapter
Antenna Gain	Antenna1: 5dBi Antenna2: 5dBi
Antenna Type	Whip antenna
Channel Spacing	5MHz
Modulation Type	802.11b: DSSS (CCK, DQPSK, DBPSK) 802.11g/n: OFDM (64QAM, 16QAM, QPSK, BPSK)
Number of Channels	802.11b/g/n(HT20):11 802.11n(HT40):7
Operation Frequency	802.11b/g/n(HT20): 2412MHz to 2462MHz 802.11n(HT40): 2422MHz to 2452MHz



3.2 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd. Shanghai Branch

588 West Jindu Road, Xinqiao, Songjiang, 201612 Shanghai, China.

Tel: +86 21 6191 5666

Fax: +86 21 6191 5678

3.3 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 17025:2005 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.

- **NVLAP (Certificate No. 201034-0)**

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. is accredited by the National Voluntary Laboratory Accreditation Program(NVLAP). Certificate No. 201034-0.

- **FCC –Designation Number: CN5033**

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

Designation Number: CN5033. Test Firm Registration Number: 479755.

- **Innovation, Science and Economic Development Canada**

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

IC Registration No.: 8617A-1. CAB identifier: CN0020.

- **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.

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 ²)	Averaging time(minutes)
300MHz~1.5GHz	f/1500	30
1.5GHz~100GHz	1.0	30

5 Measurement and Calculation

5.1 Maximum transmit power

The Power Data is based on the RF Test Report SHEM190401214301

Test Mode	Channel	Antenna 0 Power[dBm]	Antenna 1 Power[dBm]	MIMO Power[dBm]	Antenna 0 Power[mW]	Antenna 1 Power[mW]	MIMO Power[mW]
11B	2412	12.99	14.09	NA	19.91	25.64	N/A
11B	2437	13.63	14.10	NA	23.07	25.70	N/A
11B	2462	12.78	14.47	NA	18.97	27.99	N/A
11G	2412	12.05	13.76	NA	16.03	23.77	N/A
11G	2437	13.49	13.35	NA	22.34	21.63	N/A
11G	2462	12.48	13.89	NA	17.70	24.49	N/A
11N20SISO	2412	11.66	12.87	15.32	14.66	19.36	34.04
11N20SISO	2437	12.46	12.80	15.64	17.62	19.05	36.64
11N20SISO	2462	11.68	12.90	15.34	14.72	19.50	34.20
11N40SISO	2422	10.54	11.77	14.21	11.32	15.03	26.36
11N40SISO	2437	10.93	10.96	13.96	12.39	12.47	24.89
11N40SISO	2452	11.08	10.73	13.92	12.82	11.83	24.66

5.2 MPE Calculation

The best case gain of the antenna is 8dBi(MIMO). 8dB logarithmic terms convert to numeric result is nearly 6.31.

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

Note:

- 1) P_d = Power density in mW/cm^2
- 2) P_{out} = Output power to antenna in mW
- 3) G = gain of antenna in linear scale
- 4) R = min. separation distance between the antenna and the user.

The max. antenna gain is 8 dBi

Max. Conducted Power $P(mW)$	Gain in Linear Scale G	Operation Distance $R(cm)$	Power Density (mW/cm^2)	Limit (mW/cm^2)	Result
36.64	6.310	20	0.04599	1	Pass

So the device is exclusion from SAR test.

--End of the Report--