

1 Cover Page

RF Exposure Evaluation Report

Application No.: KSEM2101000081CR
FCC ID: 2AL8S-0235C54W
Applicant: Zhejiang Uniview Technologies Co., Ltd.
Address of Applicant: 88 Jiangling Road, Xixing Town, Binjiang District, Hangzhou City
Manufacturer: Zhejiang Uniview Technologies Co., Ltd.
Address of Manufacturer: 88 Jiangling Road, Xixing Town, Binjiang District, Hangzhou City
Factory: Zhejiang Uniview Systems Technology Co., Ltd.
Address of Factory: No.1277 South Qingfeng South Road, Tongxiang City, Jiaxing City, Zhejiang Province, China

Equipment Under Test (EUT):

EUT Name: IP Camera
Model No.: C1L-2WN-G
Add Model No.: C1L-xxxxxxx-yyy-yyyy-zzz (x,y,z are variables, can be "0-9", "A-Z", "a-z" or blank, the differences of the basic function. "-" is optional)

Standard(s) : FCC Rules 47 CFR §2.1091
 KDB447498 D01 General RF Exposure Guidance v06

Date of Receipt: 2021-01-15
Date of Test: 2021-01-18 to 2021-01-29
Date of Issue: 2021-02-01

Test Result:	Pass*
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* In the configuration tested, the EUT complied with the standards specified above.

Eric Lin
EMC Lab 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
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Revision Record			
Version	Description	Date	Remark
00	Original	2021-02-01	/

Authorized for issue by:			
		<i>Damon Zhou</i>	

		Damon Zhou / Project Engineer	
		<i>Eric Lin</i>	

		Eric Lin / Reviewer	

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3 General Information

3.1 General Description of E.U.T.

Power supply:	DC 5V by adapter
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3.2 Technical Specifications

2.4G WiFi

Antenna Gain:	3.5dBi
Antenna Type:	PCB 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

3.3 Test Location

All tests were performed at:

Compliance Certification Services (Kunshan) Inc.

No.10 Weiye Rd, Innovation park, Eco&Tec, Development Zone, Kunshan City, Jiangsu, China.

Tel: +86 512 5735 5888 Fax: +86 512 5737 0818

No tests were sub-contracted.

3.4 Test Facility

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

• **CNAS (No. CNAS L4354)**

CNAS has accredited Compliance Certification Services (Kunshan) Inc. 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. 2541.01)**

Compliance Certification Services (Kunshan) Inc. is accredited by the American Association for Laboratory Accreditation (A2LA). Certificate No. 2541.01.

• **FCC –Designation Number: CN1172**

Compliance Certification Services Inc. has been recognized as an accredited testing laboratory. Designation Number: CN1172. Test Firm Registration Number: 995260.

• **ISED (CAB identifier: CN0072)**

Compliance Certification Services (Kunshan) Inc. has been recognized by Innovation, Science and Economic Development Canada (ISED) as an accredited testing laboratory.

CAB Identifier: CN0072.

• **VCCI (Member No.: 1938)**

The 3m and 10m Semi-anechoic chamber and Shielded Room of Compliance Certification Services (Kunshan) Inc. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-1600, C-1707, T-1499, G-10216 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 range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
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
300-1500	/	/	f/1500	30
1500-100,000	/	/	1.0	30

Note: Limit for 2.4GHz is 1.0 mW/cm²

5 Measurement and Calculation

5.1 Maximum transmit power

The Power Data is based on the RF Test Report KSEM210100008101.

Test Mode	Test Channel	Ant	Power [dBm]	Power [mW]
11B	2412	Ant1	17.34	54.20
11B	2437	Ant1	17.57	57.15
11B	2462	Ant1	16.75	47.32
11G	2412	Ant1	17.72	59.16
11G	2437	Ant1	17.28	53.46
11G	2462	Ant1	16.57	45.39
11N20SISO	2412	Ant1	16.95	49.55
11N20SISO	2437	Ant1	17.64	58.08
11N20SISO	2462	Ant1	16.93	49.32
11N40SISO	2422	Ant1	17.78	59.98
11N40SISO	2437	Ant1	17.97	62.66
11N40SISO	2452	Ant1	17.66	58.34

5.2 MPE Calculation

For WiFi:

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/cm²

Max. Conducted Power P(mW)	Gain in Linear Scale G	Operation Distance R(cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)	Result
62.66	2.239	20	0.02791	1	Pass

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

--End of the Report--