

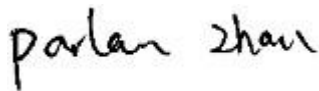
1 Cover Page

RF MPE REPORT

Application No.: SHEM2107007979CR
FCC ID: 2APV2-CSDB11J5
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: Wi-Fi Video Doorbell
Model No.: CS-DB1
Add Model No.: CS-DB1 (B0-1J5W2FR)
 CS-DB1-B0-1J5W2FR
Trade mark: EZVIZ
Standard(s) : FCC Rules 47 CFR §2.1091
 KDB447498 D01 General RF Exposure Guidance v06
Date of Receipt: 2021-07-19
Date of Test: 2021-07-19 to 2021-08-09
Date of Issue: 2021-08-11

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



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

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Revision Record			
Version	Description	Date	Remark
00	Original	2021-08-11	/

Authorized for issue by:			
		<i>Michael Niu</i>	

		Micheal Niu / Project Engineer	
		<i>Parlam Zhan</i>	

		Parlam Zhan / Reviewer	



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3 General Information

3.1 General Description of E.U.T.

Power supply:	16-24V~,50/60Hz,8W MAX
---------------	------------------------

3.2 Technical Specifications

2.4G WiFi

Antenna Gain:	1.62dBi(Provided by the manufacturer)
Antenna Type:	Shrapnel 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

5G WiFi

Operation Frequency:	Band	Mode	Frequency Range(MHz)	Number of channels
	UNII Band I	802.11a/n(HT20)	5180-5240	4
		802.11n(HT40)	5190-5230	2
	UNII Band III	802.11a/n(HT20)	5745-5825	5
		802.11n(HT40)	5755-5795	2
Modulation Type:	802.11a: OFDM (64QAM, 16QAM, QPSK, BPSK) 802.11n: OFDM (BPSK, QPSK, 16QAM, 64QAM)			
Channel Spacing:	802.11a/n(HT20): 20MHz 802.11n(HT40): 40MHz			
Data Rate:	802.11a: 6/9/12/18/24/36/48/54Mbps 802.11n: MCS0-7			
Antenna Gain:	3.14dBi(Provided by the manufacturer)			
Antenna Type:	Shrapnel Antenna			



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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.

- **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-20134, R-11600,C-11707, T-11499, G-10216 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 ²)	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 SHEM210700797901; SHEM210700797902;

2.4G WiFi

Test Mode	Test Channel	Ant	Power [dBm]	Power [mW]
11B	2412	Ant1	13.40	21.88
11B	2437	Ant1	13.36	21.68
11B	2462	Ant1	14.10	25.70
11G	2412	Ant1	17.12	51.52
11G	2437	Ant1	16.78	47.64
11G	2462	Ant1	18.33	68.08
11N20SISO	2412	Ant1	17.41	55.08
11N20SISO	2437	Ant1	17.73	59.29
11N20SISO	2462	Ant1	18.09	64.42
11N40SISO	2422	Ant1	17.61	57.68
11N40SISO	2437	Ant1	17.52	56.49
11N40SISO	2452	Ant1	18.08	64.27



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5G

Test Mode	Frequency (MHz)	Ant	Power [dBm]	Power [mW]
802.11a	5180	Ant1	12.82	19.14
	5200	Ant1	12.63	18.32
	5240	Ant1	12.33	17.10
	5745	Ant1	11.69	14.76
	5785	Ant1	11.58	14.39
	5825	Ant1	12.07	16.11
802.11n (HT20)	5180	Ant1	11.92	15.56
	5200	Ant1	13.01	20.00
	5240	Ant1	12.56	18.03
	5745	Ant1	11.75	14.96
	5785	Ant1	11.77	15.03
	5825	Ant1	12.00	15.85
802.11n (HT40)	5190	Ant1	12.86	19.32
	5230	Ant1	12.72	18.71
	5755	Ant1	11.54	14.26
	5795	Ant1	11.46	14.00



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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/cm²

For 2.4G WiFi :

The max. antenna gain is 1.62 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
68.08	1.452	20	0.01967	1	Pass

For 5G WiFi:

The max. antenna gain is 3.14 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
20	2.061	20	0.00820	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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