

1 Cover Page

RF Exposure Evaluation Report

Application No.: KSCR2109000098AT
FCC ID: 2ADTD-D0212023
Applicant: Hangzhou Hikvision Digital Technology Co.,Ltd.
Address of Applicant: No. 555, Qianmo Road, Binjiang District, Hangzhou
Manufacturer: Hangzhou Hikvision Digital Technology Co.,Ltd.
Address of Manufacturer: No. 555, Qianmo Road, Binjiang District, Hangzhou
Factory: 1.Hangzhou Hikvision Technology Co., Ltd.
 2.Hangzhou Hikvision Electronics Co.,Ltd.
 3.CHONGQING HIKVISION TECHNOLOGY CO.,LTD.
 1.No.700, Dongliu Road, Binjiang District, Hangzhou Ctiy, Zhejiang, 310052, China
Address of Factory: 2.No.299, Qiushi Road, Tonglu Economic Development Zone, Tonglu County, Hangzhou, Zhejiang, 310052, China.
 3. Building 18, Louyu Area, C area, Jianqiao industrial park, Chongqing.
Equipment Under Test (EUT):
EUT Name: Wireless Dual-Tech Detector
Model No.: DS-PDD12P-EG2-WA
Add Model No.: DS-PDD12P-EG2-WAUHK,DS-PDD12P-EG2-WACKV,DS-PDD12P-EG2-WAUVS,DS-PDD12P-EG2-WAKVO,DS-PDD12P-EG2-WAHUN
Standard(s) : FCC Rules 47 CFR §2.1091
Date of Receipt: 2021-09-27
Date of Test: 2021-10-01 to 2021-10-03
Date of Issue: 2021-10-03

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

Eric Lin
Laboratory 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	2021-10-03	/

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 3.0V
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3.2 Technical Specifications

915MHz

Operation Frequency:	912.5MHz ~ 917.4MHz
Number of Channels:	50
Channel Spacing:	100kHz
Modulation Type:	FSK
Antenna Gain:	0.61dBi (Provided by manufacturer)
Antenna Type:	Monopole Antenna

24GHz

Frequency	24000~24250MHz
Modulation Technique:	CW
Number of Channel:	1
Antenna Type	Integrated Patch 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.

Company Number: 2324E

• **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 KSCR210900009801(915MHz) and 1-5845/18-01-02-A (24GHz) of CTC advanced GmbH.

Test Mode	Channel	Antenna Power[dBm]	Antenna Power[mW]
915MHz	912.5	12.11	16.26
	917.4	12.08	16.14

Test Mode	Level (dBuV/m)	Power [dBm]	Power [mW]
24GHz	106.1	10.9	12.3027

$$\text{EIRP[dBm]} = \text{E[dB}\mu\text{V/m]} + 20 \log(\text{d[meters]}) - 104.77$$

$$\text{EIRP[dBm]} = \text{E[dB}\mu\text{V/m]} - 95.2$$

$$= 106.1 \text{ dB}\mu\text{V/m} - 95.2$$

$$= 10.9 \text{ dBm} = 12.3027 \text{ mW}$$

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) For 912.5MHz ~ 917.4MHz, MPE limit = 912.5MHz / 1500 = 0.608mW/cm².

For 24GHz, MPE limit = 1mW/cm²

For 915MHz

The max. antenna gain is		0.61	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
16.26	1.151	20	0.00372	0.608	Pass

For 24GHz



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$$S = \frac{PG}{4R^2\pi} = \frac{12.3027}{4 \times 400 \times 3.14} = 0.00245 \text{ mW/cm}^2 \leq 1 \text{ mW/cm}^2$$

The 915MHz and 24GHz can simultaneously transmit. But the maximum rate of MPE is $0.00372/0.608 + 0.00245/1 = 0.0086 \leq 1$, According to the KDB447498 section 7.2 determine the device is exclusion from SAR test.

--End of the Report--



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