

# 1 Cover Page

## RF Exposure Evaluation Report

**Application No.:** KSCR2111000222AT  
**FCC ID:** 2ADTD-T020301113  
**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 Electronics Co., Ltd.  
 2.Hangzhou Hikvision Technology Co., Ltd.  
 3.CHONGQING HIKVISION TECHNOLOGY CO.,LTD  
 1.No.299,Qiushi Road,Tonglu Economic Development Zone,Tonglu County, Hangzhou,Zhejiang.  
**Address of Factory:** 2.No.700 Dongliu Road, Binjiang District, Hangzhou 310052, China  
 3.No. 118, Haikang Road, Area C, Jianqiao Industrial Park, Dadukou District, Chongqing, 401325,China

**Equipment Under Test (EUT):**

**EUT Name:** Wireless Tag Reader  
**Model No.:** DS-PT1-WA  
**Add Model No.:** DS-PT1-WAUHK,DS-PT1-WACKV,DS-PT1-WAUVS,DS-PT1-WAKVO,DS-PT1-WAHUN  
**Standard(s) :** FCC Rules 47 CFR §2.1091  
**Date of Receipt:** 2021-11-08  
**Date of Test:** 2021-11-26 to 2021-12-24  
**Date of Issue:** 2021-12-27

<b>Test Result:</b>	<b>Pass*</b>
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\* In the configuration tested, the EUT complied with the standards specified above.

Eric Lin  
Laboratory Manager



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Revision Record			
Version	Description	Date	Remark
00	Original	2021-12-27	/

<b>Authorized for issue by:</b>			
		<i>Damon Zhou</i>	
		<b>Damon Zhou / Project Engineer</b>	
		<i>Eric Lin</i>	
		<b>Eric Lin / Reviewer</b>	



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### 3 General Information

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

Power supply:	1.5V=500mA by 3AA batteries
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#### 3.2 Technical Specifications

##### 915MHz:

Operation Frequency:	912.5MHz ~ 917.4MHz
Number of Channels:	50
Channel Spacing:	100kHz
Spectrum Spread:	Frequency Hopping Spread Spectrum (FHSS)
Modulation Type:	FSK
Antenna Gain:	-2.94 dBi (Provided by manufacturer)
Antenna Type:	Spring Antenna

##### 13.56MHz

Operation Frequency	13.56MHz
Modulation Technique:	ASK
Antenna Type:	Loop antenna
Number of Channel:	1



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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 range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm <sup>2</sup> )	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 <sup>2</sup> )	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	f/1500	30
1500-100,000	/	/	1.0	30

Note: Limit for 915MHz is 0.608 mW/cm<sup>2</sup>, Limit for 13.56MHz is 60.77 V/m.



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## 5 Measurement and Calculation

### 5.1 Maximum transmit power

The Power Data is based on the RF Test Report KSCR211100022201, KSCR211100022202.

#### 915MHz

Test Mode	Channel	Antenna Power[dBm]	Antenna Power[mW]
FSK	912.5	11.87	15.38
	917.4	11.70	14.79

**13.56MHz: 84.15dBuV/m@3m, @20cm=@3m+40log(3/0.2)= 131.19dBuV/m**

### 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 = 0.608mW/cm<sup>2</sup>

The max. antenna gain is		-2.94	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
15.38	0.508	20	0.00155	0.608	Pass

For 912.5MHz ~ 917.4MHz, the limit: 912.5MHz / 1500 = 0.608mW/cm<sup>2</sup>.

For 13.56MHz:131.19dBuV/m=3.63V/m< 60.77 V/m.

The 915MHz band and 13.56MHz function can simultaneous transmitting. But the maximum rate of MPE is 0.00155/0.608+3.63/60.77=0.062<=1.0. according to the KDB447498 section 7.2 determine the device is exclusion from SAR test.

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



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