

## 1 Cover Page

# **RF Exposure Evaluation Report**

<b>Application No.:</b>	SHEM1511004111CR
<b>Applicant:</b>	Hangzhou Hikvision Digital Technology Co., Ltd.
<b>FCC ID:</b>	2ADTD-KV8102
<b>IC :</b>	20199-KV8102
<b>Equipment Under Test (EUT):</b>	
<b>NOTE:</b> The following sample(s) submitted was/were identified on behalf of the client as	
<b>Product Name:</b>	Video Intercom Indoor Station
<b>Model No.(EUT):</b>	DS-KV8102-VP
<b>Add Model No.:</b>	DS-KV8102-IP, DS-KV81XX-XYZ
<b>Standards:</b>	FCC Rules 47 CFR §2.1091 KDB447498 D01 General RF Exposure Guidance v06 RSS-102 Issue 5 (March 2015)
<b>Date of Receipt:</b>	November 11, 2015
<b>Date of Test:</b>	December 12, 2015
<b>Date of Issue:</b>	January 15, 2016
<b>Test Result:</b>	<b>Pass*</b>

\* In the configuration tested, the EUT detailed in this report complied with the standards specified above.

Parlam Zhan  
E&E Section Manager  
SGS-CSTC (Shanghai) Co., Ltd.

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.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government. All test results in this report can be traceable to National or International Standards.

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## 2 Version

Revision Record				
Version	Chapter	Date	Modifier	Remark
00	/	January 15, 2016	/	Copy (Base on SHEM150700217303)

<b>Authorized for issue by:</b>			
<b>Engineer</b>		Eddy Zong	<u>Eddy Zong</u>
<b>Clerk</b>		Susie Liu	<u>Susie Liu</u>
<b>Reviewer</b>		Keny Xu	<u>Keny Xu</u>

### **3 Contents**

	Page
<b>1 COVER PAGE</b>	<b>1</b>
<b>2 VERSION</b>	<b>2</b>
<b>3 CONTENTS</b>	<b>3</b>
<b>4 GENERAL INFORMATION</b>	<b>4</b>
4.1 CLIENT INFORMATION	4
4.2 GENERAL DESCRIPTION OF E.U.T	4
4.3 TECHNICAL SPECIFICATIONS	4
4.4 TEST LOCATION	5
4.5 TEST FACILITY	5
<b>5 TEST STANDARDS AND LIMITS</b>	<b>6</b>
5.1 FCC RADIOFREQUENCY RADIATION EXPOSURE LIMITS:	6
5.2 IC RADIOFREQUENCY RADIATION EXPOSURE LIMITS:	6
<b>6 MEASUREMENT AND CALCULATION</b>	<b>7</b>
6.1 MAXIMUM TRANSMIT POWER	7
6.2 MPE CALCULATION	7
<b>7 EUT CONSTRUCTIONAL DETAILS</b>	<b>8</b>

## 4 General Information

### 4.1 Client Information

Applicant:	Hangzhou Hikvision Digital Technology Co., Ltd.
Address of Applicant:	700 Dongliu Road, Binjiang, Hangzhou, 310052 Zhejiang, China
Manufacturer:	Hangzhou Hikvision Digital Technology Co., Ltd.
Address of Manufacturer:	700 Dongliu Road, Binjiang, Hangzhou, 310052 Zhejiang, China
Factory:	Hangzhou Hikvision Digital Technology Co., Ltd.
Address of Factory:	700 Dongliu Road, Binjiang, Hangzhou, 310052 Zhejiang, China

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

Product Description:	Fixed product with 13.56MHz RF ID function		
Rated Input:	DC 12V/24V		
Adapter:	Model No.:	KPL-040F	
	Rated Input:	AC 100V-240V 50/60Hz 1.7A	
	Rated Output:	DC 12V 3.33A	
	Cable length:	AC port:	140 cm(3 wires)
		DC port:	120 cm
Test Voltage:	AC 120V 60Hz for adapter		

### 4.3 Technical Specifications

Operation Frequency:	13.56MHz
Modulation Type:	ASK
Antenna Type	Integral Antenna

#### **4.4 Test Location**

All tests were performed at:

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.  
No.588 West Jindu Road, Songjiang District, Shanghai, China.201612.  
Tel: +86 21 6191 5666  
Fax: +86 21 6191 5678

#### **4.5 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. Date of expiry: 2017-07-14.

- FCC – Registration No.: 402683**

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered and fully described in a report filed with the Federal Communications Commission (FCC). The acceptance letter from the FCC is maintained in our files. Registration No.: 402683, Expiry Date: 2017-09-16.

- Industry Canada (IC) – IC Assigned Code: 8617A**

The 3m Semi-anechoic chamber of SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 8617A-1. Expiry Date: 2017-06-18.

- 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-3868, C-4336, T-2221, G-830 respectively. Date of Expiry: 2017-11-16.

## 5 Test Standards and Limits

### 5.1 FCC Radiofrequency radiation exposure limits:

According to §1.1310, the limit for general population/uncontrolled exposures

Frequency	Power density(mW/cm <sup>2</sup> )	Averaging time(minutes)
300MHz~1.5GHz	f/1500	30
1.5GHz~100GHz	1.0	30

### 5.2 IC Radiofrequency radiation exposure limits:

According to RSS-102 section 2.5.2, RF exposure evaluation is required if the separation distance between the user and/or bystander and the device's radiating element is greater than 20 cm, except when the device operates as follows:

below 20 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 1 W (adjusted for tune-up tolerance);

- at or above 20 MHz and below 48 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than  $4.49/f^{0.5}$  W (adjusted for tune-up tolerance), where  $f$  is in MHz;
- at or above 48 MHz and below 300 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 0.6 W (adjusted for tune-up tolerance);
- at or above 300 MHz and below 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than  $1.31 \times 10^{-2} f^{0.6834}$  W (adjusted for tune-up tolerance), where  $f$  is in MHz;
- at or above 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 5 W (adjusted for tune-up tolerance).

For 2.4G device, the limit of worse case is 2.68 W

## 6 Measurement and Calculation

### 6.1 Maximum transmit power

The test level of the fundamental signal is 52.52dBuV/m based on the RF Test Report SHEM151100411102;

### 6.2 MPE Calculation

The following formula is converted from EIRP in watts to electric field strength in dB(uA/m):

$$E_{\text{lim}} = 20 \times \log_{10} \left( \frac{\sqrt{30P_{\text{lim}}}}{d} \right) + 120$$

where

$E_{\text{lim}}$  = electric field strength limit, in dB ( $\mu\text{V/m}$ )

$P_{\text{lim}}$  = EIRP limit, in watts

$d$  = measurement distance, in metres

So,  $P=((10^{(E-120)/20})^2d)/30 = 5.35 \times 10^{-8}\text{W} = 5.35 \times 10^{-5}\text{mW}$

For FCC:

The test level of the fundamental signal is below the limit of general spurious emission, so the test no performs.

For IC:

E.I.R.P. =  $5.35 \times 10^{-8}\text{W} < 1\text{W}$

So the device is exclusion from SAR test.

## **7 EUT Constructional Details**

Refer to the < DS-KV8102-VP\_External Photos > & < DS-KV8102-VP\_Internal Photos >.

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