# SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.

588 West Jindu Road, Xinqiao, Songjiang, 201612 Shanghai, China
Telephone:  +86 (0) 21 6191 5666
Fax:  +86 (0) 21 6191 5678
ee.shanghai@sgs.com

## 1    Cover Page

# *RF MPE REPORT*

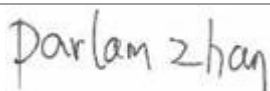| Application No.: | SHEM1803001616CR |
|---|---|
| Applicant: | Hangzhou Hikvision Digital Technology Co., Ltd. |
| FCC ID: | 2ADTD-KB6003 |
| **Equipment Under Test (EUT):**<br>**NOTE:** The following sample(s) was/were submitted and identified by the client as | |
| Product Name: | Wi-Fi Video Doorbell |
| Model No.(EUT): | DS-KB6003-WIP, DS-KB6403-WIP |
| Add Model No.: | CVP-B2DB50-ODIW, DS-KB6003-WIP/OEM2, DS-KB6003-WIP/OEM3, NA-KB6013-WIP |
| Standards: | FCC Rules 47 CFR §2.1091<br>KDB447498 D01 General RF Exposure Guidance v06 |
| Date of Receipt: | 2017-03-16 |
| Date of Test: | 2017-03-27 to 2017-03-28 & 2018-03-05 |
| Date of Issue: | 2018-03-14 |
| Test Result: | **Pass\*** |

\*    In the configuration tested, the EUT 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. 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.

| Revision Record | | | |
|---|---|---|---|
| **Version** | **Chapter** | **Date** | **Remark** |
| 00 | Updated Product | 2018-03-14 | Base on SHEM170300132704 |
| | | | |
| | | | |

| Authorized for issue by: | | | |
|---|---|---|---|
| | *Vincent Zhu* | | |
| | **Vincent Zhu /Project Engineer** | | |
| | *Parlam zhan* | | |
| | **Parlam Zhan /Reviewer** | | |

## 2    Contents

## 3 General Information

### 3.1 Client Information

| | |
|---|---|
| Applicant: | Hangzhou Hikvision Digital Technology Co., Ltd. |
| Address of Applicant: | No. 555 Qianmo Road, Binjiang District, Hangzhou 310052, China |
| Manufacturer: | Hangzhou Hikvision Digital Technology Co., Ltd. |
| Address of Manufacturer: | No. 555 Qianmo Road, Binjiang District, Hangzhou 310052, China |
| Factory: | 1. Hangzhou Hikvision Technology Co., Ltd. |
| | 2. Hangzhou Hikvision Electronics Co., Ltd. |
| Address of Factory: | 1. No.700, Dongliu Road, Binjiang District, Hangzhou Ctiy,Zhejiang, 310052, China |
| | 2. No.299, Qiushi Road,Tonglu Economic Development Zone,Tonglu County, Hangzhou,Zhejiang,310052,China. |

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

| | |
|---|---|
| Product Description: | Fixed product with 2.4G WiFi function |
| Brand Name: | HIKVISION |
| EUT Power Supply: | AC 16V~24V, 0.37A or DC 12V 0.5A |
| Test Voltage: | AC 24V and DC 12V from Support Units |

### 3.2 Technical Specifications

| | |
|---|---|
| Operation Frequency: | 802.11 b/g/n(HT20): 2412MHz~2462MHz<br>802.11 n(HT40): 2422MHz~2452MHz |
| Modulation Technique: | 802.11 b: DSSS(CCK, DQPSK, DBPSK)<br>802.11 g/n(HT20/n(HT40): OFDM(64QAM, 16QAM, QPSK, BPSK) |
| Data Rate: | 802.11 b: 1/2/5.5/11Mbps<br>802.11 g: 6/9/12/18/24/36/48/54Mbps<br>802.11n(HT20)/n(HT40): MCS0-MCS7 |
| Number of Channel: | 802.11 b/g/n(HT20): 11<br>802.11 n(HT40): 7 |
| Antenna Type: | Integral |
| Antenna Gain: | 3.5 dBi |

## 3.3 Test Location

All tests were performed at:

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

588 West Jindu Road, Xinqiao, Songjiang, 201612 Shanghai, China

Tel: +86 21 6191 5666

Fax: +86 21 6191 5678

## 3.4 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.

**• NVLAP (Certificate No. 201034-0)**

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. is accredited by the National Voluntary Laboratory Accreditation Program(NVLAP). Certificate No. 201034-0.

**• FCC –Designation Number: CN5033**

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been recognized as an accredited testing laboratory.

Designation Number: CN5033. Test Firm Registration Number: 479755.

- **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.

- **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-12221, G-10830 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 | Power density(mW/cm²) | Averaging time(minutes) |
|---|---|---|
| 300MHz~1.5GHz | f/1500 | 30 |
| 1.5GHz~100GHz | 1.0 | 30 |

## 5 Measurement and Calculation

### 5.1 Maximum transmit power

The Power Data is based on the RF Test Report SHEM180300161601.

Power: AC 24V

| Test mode | Test Frequency (MHz) | Output Power (dBm) | Output Power (mW) |
|---|---|---|---|
| 802.11b | 2412 | 12.32 | 17.06 |
| | 2437 | 12.96 | 19.77 |
| | 2462 | 12.27 | 16.87 |
| 802.11g | 2412 | 12.61 | 18.24 |
| | 2437 | 13.35 | 21.63 |
| | 2462 | 12.78 | 18.97 |
| 802.11 n(HT20) | 2412 | 12.88 | 19.41 |
| | 2437 | 13.02 | 20.04 |
| | 2462 | 12.79 | 19.01 |
| 802.11 n(HT40) | 2422 | 14.18 | 26.18 |
| | 2437 | 12.95 | 19.72 |
| | 2452 | 14.91 | **30.97** |

Power:DC 12V

| Test mode | Test Frequency (MHz) | Output Power (dBm) | Output Power (mW) |
|---|---|---|---|
| 802.11b | 2412 | 12.40 | 17.38 |
| | 2437 | 13.73 | 23.60 |
| | 2462 | 13.00 | 19.95 |
| 802.11g | 2412 | 11.79 | 15.10 |
| | 2437 | 13.19 | 20.84 |
| | 2462 | 12.62 | 18.28 |
| 802.11 n(HT20) | 2412 | 13.13 | 20.56 |
| | 2437 | 12.39 | 17.34 |
| | 2462 | 13.14 | 20.61 |
| 802.11 n(HT40) | 2422 | 13.66 | 23.23 |
| | 2437 | 12.32 | 17.06 |
| | 2452 | 13.67 | 23.28 |

## 5.2 MPE Calculation

The Max Conducted Peak Output Power is 30.97mW;

The best case gain of the antenna is 3.5dBi. 3.5dB logarithmic terms convert to numeric result is nearly 2.24.

*For FCC:*

According to the formula $S=\dfrac{PG}{4R^2\pi}$ , we can calculate S which is MPE.

Note:

1) P (Watts) =Power Input to antenna $=10^{\frac{dBm}{10}}$ / 1000

2) G (Antenna gain in numeric) = 10^ (Antenna gain in dBi /10)

3) R = distance to the center of radiation of antenna (in meter) = 20cm

4) MPE limit = 1mW/cm²

$$S= \frac{PG}{4R^2\pi} =\frac{30.97\times 2.24}{4\times 400\times 3.14}=0.014 \text{ mW/cm}^2$$

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