



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

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

Report No.: SHEM150300065103  
Page: 1 of 7

## 1 Cover Page

# FCC MPE REPORT

|                             |   |
|-----------------------------|---|
| Application No.:            | SHEM1503000651CR  |
| Applicant:                  | Hangzhou Hikvision Digital Technology Co., Ltd.   |
| FCC ID:                     | 2ADTD-25IPC   |
| Equipment Under Test (EUT): |   |
| NOTE:                       | The following sample(s) was/were submitted and identified by the client as                          |
| Product Name:               | Network Camera  |
| Model No.(EUT):             | DS-2CD2512F-IWS   |
| Add Model No.:              | DS-2CD2512F-IW, DS-2CD2522F-IW, DS-2CD2522F-IWS, DS-2CD2532F-IW, DS-2CD2532F-IWS, DS-2CD25WXYZ-ABCD |
| Standards:                  | FCC Rules 47 CFR §2.1091<br>KDB447498 D01 General RF Exposure Guidance v05r02                       |
| Date of Receipt:            | March 16, 2015  |
| Date of Test:               | March 25, 2015 to May 12, 2015  |
| Date of Issue:              | May 25, 2015  |
| 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.



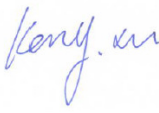
The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards.

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.

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at [www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm) and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at [www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

## 2 Version

| Revision Record |         |              |          |          |
|-----------------|---------|--------------|----------|----------|
| Version         | Chapter | Date         | Modifier | Remark   |
| 00              | /       | May 25, 2015 | /        | Original |
|                 |         |              |          |          |
|                 |         |              |          |          |
|                 |         |              |          |          |
|                 |         |              |          |          |

|                          |  |            |  |   |
|--------------------------|--|------------|--|---|
| Authorized for issue by: |  |            |  |   |
| Engineer                 |  | Eddy Zong  |  |  |
|                          |  | Print Name |  |   |
| Clerk                    |  | Susie Liu  |  |  |
|                          |  | Print Name |  |   |
| Reviewer                 |  | Keny Xu    |  |  |
|                          |  | Print Name |  |   |



### **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 DETAILS OF E.U.T. ....                 | 4        |
| 4.4 TEST LOCATION.....                     | 5        |
| 4.5 TEST FACILITY .....                    | 5        |
| <b>5 TEST STANDARDS AND LIMITS .....</b>   | <b>6</b> |
| <b>6 MEASUREMENT AND CALCULATION .....</b> | <b>6</b> |
| 6.1 MAXIMUM TRANSMIT POWER .....           | 6        |
| 6.2 MPE CALCULATION .....                  | 7        |
| <b>7 EUT CONSTRUCTIONAL DETAILS.....</b>   | <b>7</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.

Brand Name: HIKVISION  
 Product Description: Fixed product with WiFi function  
 Power Supply: DC 12V 0.5A or PoE 0.15A  
 Adapter: Rated Input: AC 100V-240V 50/60Hz  
 Rated Output: DC 12V 1A  
 Cable Length: AC port: 2 Wires  
 DC port: 140cm

### 4.3 Details of E.U.T.

Operation Frequency: 802.11 b/g/n20: 2412MHz-2462MHz  
 802.11 n40: 2422MHz-2452MHz  
 Modulation Technique: 802.11 b: DSSS(CCK, DQPSK, DBPSK)  
 802.11 g/n20/n40: OFDM(64QAM, 16QAM, QPSK, BPSK)  
 Number of Channel: 802.11 b/g/n20: 11  
 802.11 n40: 7  
 Data Rate: 802.11b: 1/2/5.5/11Mbps  
 802.11g: 6/9/12/18/24/36/48/54Mbps  
 802.11n20: 13/26/39/52/78/104/117/135Mbps  
 802.11n40: 27/54/81/108/162/216/243/270Mbps  
 Antenna Type: Integral  
 Antenna Gain: 2.24dBi

#### **4.4 Test Location**

All tests were performed at SGS E&E EMC lab

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

According to §1.1310 Radiofrequency radiation exposure limits:

The limit for general population/uncontrolled exposures

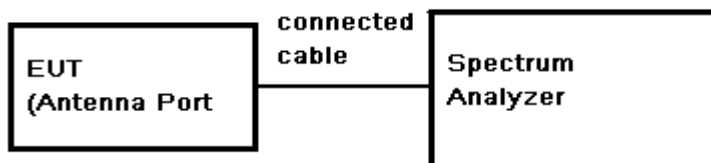
| Frequency     | Power density(mW/cm <sup>2</sup> ) | Averaging time(minutes) |
|---------------|------------------------------------|-------------------------|
| 300MHz~1.5GHz | f/1500                             | 30                      |
| 1.5GHz~100GHz | 1.0                                | 30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

## 6 Measurement and Calculation

### 6.1 Maximum transmit power

**EUT Operation:** Test in fixing frequency operating mode at lowest, middle and highest frequency.

**Test Configuration:**



**Test Data:**

| Test mode | Channel     | Reading Peak Power (dBm) | Cable Loss (dB) | Output Power (dBm) | Output Peak Power (mW) | Peak Power Limit (dBm) | Result |
|-----------|-------------|--------------------------|-----------------|--------------------|------------------------|------------------------|--------|
| 802.11b   | Low         | 19.22                    | 0.5             | 19.72              | 93.76                  | 30                     | PASS   |
|           | Mid         | 19.86                    | 0.5             | 20.36              | 108.64                 |                        | PASS   |
|           | High        | 19.79                    | 0.5             | 20.29              | 106.91                 |                        | PASS   |
| 802.11g   | Low         | 19.32                    | 0.5             | 19.82              | 95.94                  |                        | PASS   |
|           | Mid         | 19.90                    | 0.5             | 20.40              | 109.65                 |                        | PASS   |
|           | <b>High</b> | <b>20.01</b>             | <b>0.5</b>      | <b>20.51</b>       | <b>112.46</b>          |                        | PASS   |
| 802.11n20 | Low         | 18.53                    | 0.5             | 19.03              | 79.98                  |                        | PASS   |
|           | Mid         | 18.47                    | 0.5             | 18.97              | 78.89                  |                        | PASS   |
|           | High        | 18.73                    | 0.5             | 19.23              | 83.75                  |                        | PASS   |
| 802.11n40 | Low         | 18.61                    | 0.5             | 19.11              | 81.47                  |                        | PASS   |
|           | Mid         | 19.04                    | 0.5             | 19.54              | 89.95                  |                        | PASS   |
|           | High        | 19.38                    | 0.5             | 19.88              | 97.27                  |                        | PASS   |

## 6.2 MPE Calculation

According to the formula  $S = \frac{PG}{4R^2\pi}$ , 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/cm<sup>2</sup>

The Max Conducted Peak Output Power is 112.46mW in Highest channel of 802.11g;

The best case gain of the antenna is 2.24dBi. 2.24dB logarithmic terms convert to numeric result is nearly 1.6749

$$\text{So, } S = \frac{PG}{4R^2\pi} = \frac{112.46 \times 1.6749}{4 \times 400 \times 3.14} = 0.03749 \text{ mW/cm}^2$$

So the device is exclusion from SAR test.

## 7 EUT Constructional Details

Refer to the < DS-2CD2512F-IWS \_External Photos > & < DS-2CD2512F-IWS \_Internal Photos>.

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