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

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# 1 Cover Page

# *FCC MPE REPORT*

| | |
|---|---|
| **Application No.:** | SHEM1504001031CR |
| **Applicant:** | Hangzhou Hikvision Digital Technology Co., Ltd. |
| **FCC ID:** | 2ADTA-CSC |
| **Equipment Under Test (EUT):**<br>**NOTE:** The following sample(s) was/were submitted and identified by the client as | |
| **Product Name:** | Internet Camera |
| **Model No.(EUT):** | CS-C2mini-31WFR |
| **Add Model No.:** | CS-C2C-31WFR, CS-C2mini-UVWXYZ, CS-C2C-UVWXYZ, CS-H2mini-31WFR, CS-H2C-31WFR, CS-H2mini-UVWXYZ, CS-H2C-UVWXYZ, CV-100 |
| **Standards:** | FCC Rules 47 CFR §2.1091<br>KDB447498 D01 General RF Exposure Guidance |
| **Date of Receipt:** | April 15, 2015 |
| **Date of Test:** | May 28, 2015 to June 06, 2015 |
| **Date of Issue:** | June 16, 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.**

# 2 Version

| Revision Record | | | | |
|---|---|---|---|---|
| **Version** | **Chapter** | **Date** | **Modifier** | **Remark** |
| 00 | / | June 16, 2015 | / | Original |
| | | | | |
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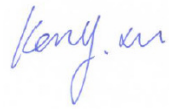
|---|---|---|---|---|
| **Authorized for issue by:** | | | | |
| **Engineer** | | Eddy Zong<br>**Print Name** | |  |
| **Clerk** | | Susie Liu<br>**Print Name** | |  |
| **Reviewer** | | Keny Xu<br>**Print Name** | |  |

# 3 Contents

# 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 WiFi monitor function |
| Rated Input: | | DC 5.0V 0.7A via adapter |
| Adapter: | Mode: | FEF-0500150WU |
| | Rated Input: | AC 100V-240V 50/60Hz MAX0.3A |
| | Rated Output: | DC 5V 1.5A |
| | Cable length: | AC port: 2 wires |
| | | DC port: 150 cm |

## 4.3 Details of E.U.T.

| | |
|---|---|
| Operation Frequency: | 2412MHz-2462MHz |
| Modulation Type: | 802.11b: DSSS(CCK, DQPSK, DBPSK) |
| | 802.11g/n20: OFDM(64QAM, 16QAM, QPSK, BPSK) |
| Number of Channel: | 11 Channels |
| Data Rate: | 802.11b: 1Mbps, 5.5Mbps, 11Mbps, |
| | 802.11g: 6Mbps, 9Mbps, 12Mbps, 18Mbps, 36Mbps, 48Mbps, 54Mbps |
| | 802.11n20: 13/26/39/52/78/104/117/135Mbps |
| Antenna Type: | Integral |
| Antenna Gain: | 2.4 dBi |

## 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.

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## 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

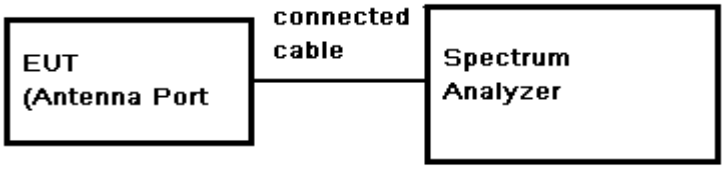
| Frequency | Power density($mW/cm^2$) | Averaging time(minutes) |
|---|---|---|
| 300MHz~1.5GHz | f/1500 | 30 |
| 1.5GHz~100GHz | 1.0 | 30 |

# 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 | Test Channel | Reading Power (dBm) | Cable Loss (dB) | Output Power (dBm) | Output Power (mW) | Power Limit (dBm) | Result |
|---|---|---|---|---|---|---|---|
| 802.11b | Lowest | 19.71 | 0.5 | 20.21 | 104.95 | 30 | PASS |
| | Middle | 18.95 | 0.5 | 19.45 | 88.10 | 30 | PASS |
| | Highest | 18.41 | 0.5 | 18.91 | 77.80 | 30 | PASS |
| 802.11g | Lowest | 16.82 | 0.5 | 17.32 | 53.95 | 30 | PASS |
| | Middle | 16.24 | 0.5 | 16.74 | 47.21 | 30 | PASS |
| | Highest | 16.51 | 0.5 | 17.01 | 50.23 | 30 | PASS |
| 802.11n20 | **Lowest** | **20.25** | **0.5** | **20.75** | **118.85** | 30 | PASS |
| | Middle | 19.72 | 0.5 | 20.22 | 105.20 | 30 | PASS |
| | Highest | 19.11 | 0.5 | 19.61 | 91.41 | 30 | 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/cm²

The Max Conducted Peak Output Power is 118.85mW in Lowest channel of 802.11n20;

The best case gain of the antenna is 2.4dBi. 2.4dB logarithmic terms convert to numeric result is nearly 1.7378

So, S= $\frac{PG}{4R^2\pi}$ = $\frac{118.85 \times 1.7378}{4 \times 400 \times 3.14}$ =0.0411 mW/cm$^2$

The DTS module cann't simultaneous transmitting at frequency 2.4GHz band, according to the KDB447498 D01 section 7.2 determine the device is exclusion from SAR test.

# 7 EUT Constructional Details

Refer to the < CS-C2mini-31WFR _External Photos > & < CS-C2mini-31WFR _Internal Photos>.

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