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Report No.: SHEM160900615404
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1 Cover Page

MPE REPORT

Application No.:	SHEM1609006154CR
Applicant:	Hangzhou Hikvision Digital Technology Co., Ltd
FCC ID:	2ADTD-I002U00
IC:	20199-I002U00
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-2CV2U01FD-IW
Add Model No.:	DS-2CV2U21FD-IW
Standards:	FCC Rules 47 CFR §2.1091 KDB447498 D01 General RF Exposure Guidance v06 RSS-102 Issue 5 (March 2015)
Date of Receipt:	2016-09-14
Date of Test:	2017-04-25 to 2017-07-06
Date of Issue:	2017-07-10
Test Result:	Pass*

* 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. 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.

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Revision Record				
Version	Chapter	Date	Modifier	Remark
00	/	2017-07-10	/	Original

Authorized for issue by:				
Tested By		Eddy Zong Eddy Zong /Project Engineer		2017-07-06 Date
Checked By		Parlam zhan Parlam Zhan /Reviewer		2017-07-06 Date

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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 City, 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.

Brand Name:	HIKVISION
Product Description:	Fixed product with 2.4GHz WiFi function
Rated Input:	DC 5V via adapter
Test Voltage:	AC 120V 60Hz for adapter

3.2 Technical Specifications

Operation Frequency:	802.11 b/g/n(HT20): 2412MHz-2462MHz 802.11 n(HT40): 2422MHz-2452MHz
Modulation Technique:	02.11 b DSSS(CCK, DQPSK, DBPSK) 802.11 g/n(HT20)/n(HT40) OFDM(64QAM, 16QAM, QPSK, BPSK)
Data Rate:	802.11 b/g/n(HT20): 11 802.11 n(HT40) 7
Number of Channel:	802.11b: 1/2/5.5/11Mbps, 802.11g: 6/9/12/18/24/36/48/54Mbps 802.11n: MCS0-7
Antenna Type:	Integral Antenna
Antenna Gain:	3 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

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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.

- **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

- **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-2221, G-830 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/cm ²)	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 SHEM160900615403.

Test Mode	Test Channel	Power[dBm]	Power[mW]
11B	2412	14.85	30.55
11B	2437	15.7	37.15
11B	2462	15.73	37.41
11G	2412	20.62	115.35
11G	2437	21.90	154.88
11G	2462	20.75	118.85
11N20SISO	2412	20.53	112.98
11N20SISO	2437	21.30	134.90
11N20SISO	2462	21.37	137.09
11N40SISO	2422	19.99	99.77
11N40SISO	2437	20.37	108.89
11N40SISO	2452	20.33	107.89

5.2 MPE Calculation

The Max Conducted Peak Output Power is 21.90dBm (154.88mW);

The best case gain of the antenna is 3dBi. 3dB logarithmic terms convert to numeric result is nearly 1.99

For FCC:

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

$$S = \frac{PG}{4R^2\pi} = \frac{154.88 \times 1.99}{4 \times 400 \times 3.14} = 0.061\text{ mW/cm}^2$$

So the device is exclusion from SAR test.

For IC

The Max Conducted Peak Output Power is 21.90dBm (154.88mW);

The best case gain of the antenna is 3dBi. 3dB logarithmic terms convert to numeric result is nearly 1.99.

$$E.I.R.P. = P \times G = 0.15488 \times 1.99 = 0.308W < 2.68W$$

So the device is exclusion from SAR test

6 EUT Constructional Details

Refer to the < External Photos > & < Internal Photos >.

--End of the Report--