



1 Cover Page

# RF Exposure Evaluation Report

**Application No.:** SHEM1901010165CR  
**FCC ID:** 2ADTD-MP1460  
**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.  
3, Chongqing Hikvision technology Co., LTD.  
4, Hangzhou Hikvision Digital Technology 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, No. 118, Haikang Road, Area C, Jianqiao Industrial Park, Dadukou District, Chongqing.  
4, No.555 Qianmo Road, Binjiang District, Hangzhou 310052, China  
**Equipment Under Test (EUT):**  
**EUT Name:** Digital Video Recorder  
**Model No.:** DS-MP1460, DS-MP1460/GW, DS-MP1460/GW/WI, DS-MP1460UVS  
DS-MP1460/GW/WI58, DS-MP1460/GLF, DS-MP1460/GLF/WI,  
DS-MP1460/GLF/WI58, DS-MP1460/YY/ZZ, DS-MP1460UHK,  
DS-MP1460CKV, DS-MP1460KVO, DS-MP1460HUN, DS-83152HM,  
DS-83152HM/GW, DS-83152HM/GW/WI, DS-83152HM/GLF,  
DS-83152HM/GLF/WI, DS-83152HM/YY/ZZ  
☐ Please refer to section 2 of this report which indicates which model was actually tested and which were electrically identical.  
**Trade mark:** HIKVISION  
**Standard(s) :** FCC Rules 47 CFR §2.1091  
KDB447498 D01 General RF Exposure Guidance v06  
**Date of Receipt:** 2019-01-09  
**Date of Test:** 2019-01-21 to 2019-01-24  
**Date of Issue:** 2019-02-13

<b>Test Result:</b>	<b>Pass*</b>
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Parlan Zhan

Parlan Zhan  
E&E Section Manager

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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\* In the configuration tested, the EUT complied with the standards specified above.



Revision Record			
Version	Description	Date	Remark
00	Original	2019-02-13	/

Authorized for issue by:				
		Bill Wu		
		Bill Wu / Project Engineer		
		Parlam Zhan		
		Parlam Zhan /Reviewer		



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### 3 General Information

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

Power supply:	DC 5V
Test voltage:	DC 5V
Operation Frequency:	802.11a/n(HT20)/ac(HT20): 5745MHz-5825MHz 802.11n(HT40)/ac(HT40): 5755MHz-5795MHz 802.11ac(HT80): 5775MHz
Modulation Technique:	OFDM(256QAM, 64QAM, 16QAM, QPSK, BPSK) Remark: 256QAM for 802.11 ac only
Data Rate:	802.11a: 6/9/12/18/24/36/48/54Mbps 802.11n: MCS0-7 802.11ac: MCS0-9
Number of Channel:	802.11 a/n(HT20)/ac(HT20): 5 Channel 149, 153, 157, 161, 165 802.11 n(HT40)/ac(HT40): 2 Channel 151, 159 802.11 ac(HT80): 1 Channel 155
Antenna Type	Dipole Antenna
Antenna Gain	3.0dBi

#### 3.2 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd. Shanghai Branch

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

Tel: +86 21 6191 5666

Fax: +86 21 6191 5678

### 3.3 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-13868, C-14336, 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/cm <sup>2</sup> )	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 SHEM190101016501

Test Mode	Test Channel	Power [dBm] Ant1	Power [dBm] Ant2	Power [dBm] MIMO	Power [mW] Max
11A	5745	13.7	13.27	/	23.44
11A	5785	13.16	14.28	/	26.79
11A	5825	13.33	14.64	/	29.11
11N20	5745	12.38	11.88	15.15	32.73
11N20	5785	11.65	12.95	15.36	34.36
11N20	5825	12.04	13.26	15.70	<b>37.15</b>
11N40	5755	11.21	11.36	14.30	26.92
11N40	5795	10.46	12.44	14.57	28.64
11AC20	5745	12.93	11.54	15.30	33.88
11AC20	5785	10.91	12.61	14.85	30.55
11AC20	5825	11.05	12.96	15.12	32.51
11AC40	5755	10.58	11.04	13.83	24.15
11AC40	5795	10.34	12.14	14.34	27.16
11AC80	5775	9.48	10.65	13.11	20.46

The power for modular UC20 refer certificate of FCC ID: XMR201510UC20

The power for modular UC25 refer certificate of FCC ID: XMR201805EC25AU.

## 5.2 MPE Calculation

For WiFi

The Max Conducted Peak Output Power is 37.15mW;

Based on original module grantee,

For module (UC20):

Frequency for 826.4-846.6MHz: the max output power is 0.1795W;

Frequency for 1852.4-1907.6MHz:: the max output power is 0.2415W.

For module (UC25):

Frequency for 824.2-848.3MHz: the max output power is 1.25W;

Frequency for 1850.2-1909.8MHz: the max output power is 0.778W;

Frequency for 1710.7.2-1754.3MHz: the max output power is 0.308W.

Frequency for 2502.5-2567.5MHz: the max output power is 0.614W.

The best case antenna gain for 5.8G WiFi band is 3dBi. the logarithmic terms convert to numeric result is nearly 2.00;

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

Note:

- 1) P (Watts)
- 2) G (Antenna gain in numeric)
- 3) R = distance to the center of radiation of antenna (in meter) = 20cm
- 4) MPE limit = 1mW/cm<sup>2</sup>

For WiFi:

$$S = \frac{PG}{4R^2\pi} = \frac{37.15 \times 2.00}{4 \times 400 \times 3.14} = 0.01 \text{ mW/cm}^2$$

Module(UC 20):

$$\text{Frequency for 826.4-846.6MHz : } S = \frac{PG}{4R^2\pi} = \frac{179.5}{4 \times 400 \times 3.14} = 0.036 \text{ mW/cm}^2$$

$$\text{Frequency for 1852.4-1907.6MHz: } S = \frac{PG}{4R^2\pi} = \frac{241.5}{4 \times 400 \times 3.14} = 0.048 \text{ mW/cm}^2$$

Module(UC 25):

$$\text{Frequency for 824.2-848.3MHz: } S = \frac{PG}{4R^2\pi} = \frac{1250}{4 \times 400 \times 3.14} = 0.249 \text{ mW/cm}^2$$

$$\text{Frequency for 1850.2-1909.8MHz: } S = \frac{PG}{4R^2\pi} = \frac{778}{4 \times 400 \times 3.14} = 0.155 \text{ mW/cm}^2$$

$$\text{Frequency for 1710.7.2-1754.3MHz: } S = \frac{PG}{4R^2\pi} = \frac{308}{4 \times 400 \times 3.14} = 0.061 \text{ mW/cm}^2$$



$$\text{Frequency for 2502.5-2567.5MHz: } S = \frac{PG}{4R^2\pi} = \frac{614}{4 \times 400 \times 3.14} = 0.122 \text{ mW/cm}^2$$

Module(UC 20) and WiFi module can simultaneous transmitting, so the maximum rate of MPE is,

$$\text{Frequency for 826.4-846.6MHz: } \frac{0.01}{1} + \frac{0.036}{0.55} = 0.075 \leq 1.0.$$

$$\text{Frequency for 1852.4-1907.6MHz: } \frac{0.01}{1} + \frac{0.048}{1} = 0.058 \leq 1.0.$$

Module(UC 25) and WiFi module can simultaneous transmitting, so the maximum rate of MPE is,

$$\text{Frequency for 824.2-848.3MHz: } \frac{0.01}{1} + \frac{0.249}{0.55} = 0.463 \leq 1.0.$$

$$\text{Frequency for 1850.2-1909.8MHz: } \frac{0.01}{1} + \frac{0.155}{1} = 0.165 \leq 1.0.$$

$$\text{Frequency for 1710.7.2-1754.3MHz: } \frac{0.01}{1} + \frac{0.061}{1} = 0.071 \leq 1.0.$$

$$\text{Frequency for 2502.5-2567.5MHz: } \frac{0.01}{1} + \frac{0.122}{1} = 0.132 \leq 1.0.$$

So the device is exclusion from SAR test.

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