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

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 Exposure Evaluation Report

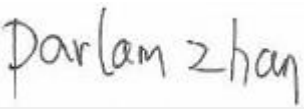
Application No.:	SHEM1811009902CR
FCC ID:	2ADTD-NOH1600
Applicant:	Hangzhou Hikvision Digital Technology Co., Ltd.
Address of Applicant:	No.555 Qianmo Road, Binjiang District, Hangzhou 310052, China
Manufacturer:	Hangzhou Hikvision Digital Technology Co., Ltd.
Address of Manufacturer:	No.555 Qianmo Road, Binjiang District, Hangzhou 310052, China
Factory:	1. Hangzhou Hikvision Technology Co., Ltd. 2. Hangzhou Hikvision Electronics Co., Ltd. 3, 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. 555 Qianmo Road, Binjiang District, Hangzhou 310052, China
Equipment Under Test (EUT):	
EUT Name:	Digital Video Recorder
Model No.:	DVR-H2T80B-162-HIK
Add Model No.:	DVR-H2T80B-16-HIK
Trade mark:	HIKVISION
Standard(s) :	FCC Rules 47 CFR §2.1091 KDB447498 D01 General RF Exposure Guidance v06
Date of Receipt:	2018-11-09
Date of Test:	2018-11-14 to 2018-11-15
Date of Issue:	2018-11-21
Test Result:	**Pass***

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

Parlam 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.

Revision Record			
Version	**Description**	**Date**	**Remark**
00	Original	2018-11-21	/

Authorized for issue by:				
				
		Vincent Zhu / Project Engineer		
				
		Parlam Zhan / Reviewer		

2 Contents

3 General Information

3.1 General Description of E.U.T.

Power supply:	DC 12V by adapter Adapter: Model No.: KPL-040F-VI Input:100-240V~50/60Hz Output: DC 12V 3.33A 40W
Test voltage:	AC 120V 60Hz
Cable:	AC Cable 1.5m for adapter DC Cable 1.3m for adapter
Antenna Gain	Antenna 1:5.5dBi, Antenna 2:5.5dBi
Antenna Type	Monopole Antenna
Channel Spacing	5MHz
Modulation Type	802.11b: DSSS (CCK, DQPSK, DBPSK) 802.11g/n: OFDM (64QAM, 16QAM, QPSK, BPSK)
Number of Channels	802.11b/g/n(HT20):11 802.11n(HT40):7
Operation Frequency	802.11b/g/n(HT20): 2412MHz to 2462MHz 802.11n(HT40): 2422MHz to 2452MHz

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^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 SHEM181100990201

Test Mode	Channel	Antenna 1 Power[dBm]	Antenna 2 Power[dBm]	MIMO Power[dBm]	Antenna 1 Power[mW]	Antenna 2 Power[mW]	MIMO Power[mW]
11B	2412	17.51	16.27	NA	**56.36**	42.36	N/A
11B	2437	17.47	16.59	NA	55.85	45.60	N/A
11B	2462	16.89	16.66	NA	48.87	46.34	N/A
11G	2412	16.83	15.94	NA	48.19	39.26	N/A
11G	2437	16.78	16.27	NA	47.64	42.36	N/A
11G	2462	16.41	16.26	NA	43.75	42.27	N/A
11N20SISO	2412	14.98	13.00	17.11	31.48	19.95	51.40
11N20SISO	2437	14.96	13.34	17.24	31.33	21.58	**52.97**
11N20SISO	2462	14.63	13.45	17.09	29.04	22.13	51.17
11N40SISO	2422	12.92	11.96	15.48	19.59	15.70	35.32
11N40SISO	2437	12.81	12.10	15.48	19.10	16.22	35.32
11N40SISO	2452	12.60	12.22	15.42	18.20	16.67	34.83

5.2 MPE Calculation

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/cm²

For FCC:

The best case gain of the antenna is 5.5dBi. 5.5dB logarithmic terms convert to numeric result is nearly 3.55

The Max Conducted Peak Output Power is 56.36mW;

$S=\frac{PG}{4R^2\pi}=\frac{56.36\times 3.55}{4\times 400\times 3.14}$ =0.04 mW/cm²＜1mW/cm²

For MIMO:

The best case gain of the antenna is 8.51dBi. 8.51dB logarithmic terms convert to numeric result is nearly 7.1

The Max Conducted Peak Output Power is 52.97mW;

$S=\frac{PG}{4R^2\pi}=\frac{52.97\times 7.1}{4\times 400\times 3.14}$ =0.07 mW/cm²

So the device is exclusion from SAR test.

--End of the Report--