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1 Cover Page

RF MPE REPORT

Application No.:	SHEM1808006623CR
Applicant:	Hangzhou Hikvision Digital Technology Co., Ltd.
FCC ID:	2ADTD-MI9605
Equipment Under Test (EUT):	NOTE: The following sample(s) was/were submitted and identified by the client as
Product Name:	Mobile NVR
Model No.(EUT):	DS-MI9605-GA/GW
Add Model No.:	DS-MI9605-GA, DS-MI9605-KK, DS-MI9605-QA36, DS-MI9YYY-WW, DS-MI9605-GAUHK, DS-MI9605-GACKV, DS-MI9605-GAUVS, DS-MI9605-GAKVO, DS-MI9605-GAHUN, DS-MI9605-GA/GW, DS-MI9605-KK/GW, DS-MI9605-QA36/GW, DS-MI9YYY-WW/GW, DS-MI9605-GA/GW/WI, DS-MI9605-KK/GW/WI, DS-MI9605-QA36/GW/WI DS-MI9YYY-WW/GW/WI
Standards:	FCC Rules 47 CFR §2.1091 KDB447498 D01 General RF Exposure Guidance v06
Date of Receipt:	2018-08-07
Date of Test:	2018-08-20 to 2018-08-21
Date of Issue:	2018-09-05
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. 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	Description	Date	Remark
00	Original	2018-09-05	/

Authorized for issue by:			
		<i>Vincent zhu</i>	
		Vincent Zhu /Project Engineer	
		<i>Parlam zhan</i>	
		Parlam Zhan /Reviewer	

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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:	1, Hangzhou Hikvision Digital Technology Co., Ltd 2, Hangzhou Hikvision Electronics Co., Ltd.
Address of Manufacturer:	1, No.555 Qianmo Road, Binjiang District, Hangzhou 310052, China 2, No.299,Qiushi Road,Tonglu Economic Development Zone,Tonglu County, Hangzhou,Zhejiang,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 Ctiy,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.

Power supply:	DC 9-32V
Test voltage:	DC 12V
Cable:	DC Cable 7m
Antenna Gain	3 dBi
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

For 850MHz Band: the limit of worse case is 0.550 mW/cm²

5 Measurement and Calculation

5.1 Maximum transmit power

The Power Data is based on the RF Test Report SHEM180800662301.

Test Mode	Test Channel	Ant	Level [dBm]	Power [dBm]	Power [mW]
11B	2412	Ant1	15.65	15.65	36.73
11B	2437	Ant1	15.29	15.29	33.81
11B	2462	Ant1	14.91	14.91	30.97
11G	2412	Ant1	14.17	14.17	26.12
11G	2437	Ant1	14.13	14.13	25.88
11G	2462	Ant1	13.87	13.87	24.38
11N20SISO	2412	Ant1	13.09	13.09	20.37
11N20SISO	2437	Ant1	13.19	13.19	20.84
11N20SISO	2462	Ant1	13.12	13.12	20.51
11N40SISO	2422	Ant1	12.82	12.82	19.14
11N40SISO	2437	Ant1	12.79	12.79	19.01
11N40SISO	2452	Ant1	12.73	12.73	18.75

The power of 3G band base on the FCC Certificate module of UC20(3G): FCC ID: XMR201510UC20

5.2 MPE Calculation

The Max Conducted Output Power for WiFi is 36.73mW;

For 3G module (UC20):

850MHz band: the max output power is 0.179W;

1900MHz band: the max output power is 0.192W.

The best case antenna gain for 2.4G WiFi band, 3G module (UC20) is 3dBi and 1dBi. the logarithmic terms convert to numeric result is nearly 2, 1.26;

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

$$\text{For WiFi: } S = \frac{PG}{4R^2\pi} = \frac{36.73 \times 2}{4 \times 400 \times 3.14} = 0.015 \text{ mW/cm}^2$$

For 3G module (UC20):

$$850\text{MHz band: } S = \frac{PG}{4R^2\pi} = \frac{179 \times 1.26}{4 \times 400 \times 3.14} = 0.045 \text{ mW/cm}^2$$

$$1900\text{MHz band: } S = \frac{PG}{4R^2\pi} = \frac{192 \times 1.26}{4 \times 400 \times 3.14} = 0.048 \text{ mW/cm}^2$$

3G module and WiFi module can simultaneous transmitting, so the maximum rate of MPE is,

$$\text{For 850MHz band: } \frac{0.015}{1} + \frac{0.045}{0.55} = 0.097 \leq 1.0.$$

$$\text{For 1900MHz band: } \frac{0.015}{1} + \frac{0.048}{1} = 0.063 \leq 1.0.$$

So the device is exclusion from SAR test.

--End of the Report--