



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

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Report No.: SHEM141100288403
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1 Cover Page

FCC MPE REPORT

Application No.:	SHEM1411002884RF
Applicant:	Hangzhou Hikvision Digital Technology Co., Ltd.
FCC ID:	2ADTD-71VWNVR
Equipment Under Test (EUT): NOTE: The following sample(s) submitted was/were identified on behalf of the client as	
Product Name:	Network Video Recorder
Model No.(EUT):	DS-7108NI-E1/V/W
Add Model No.:	DS-71XXNI-ZZ/UU/YY
Standards:	FCC Rules 47 CFR §2.1091 KDB447498 D01 General RF Exposure Guidance
Date of Receipt:	November 14, 2014
Date of Test:	January 16, 2015 to January 20, 2015
Date of Issue:	January 27, 2015
Test Result:	Pass*

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



Tony Wu

E&E Section Manager

SGS-CSTC (Shanghai) Co., Ltd.



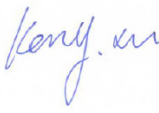
The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government. All test results in this report can be traceable to National or International Standards.

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2 Version

Revision Record				
Version	Chapter	Date	Modifier	Remark
00	/	January 27, 2015	/	Original

Authorized for issue by:			
Engineer		Eddy Zong <hr/> Print Name	 <hr/>
Clerk		Susie Liu <hr/> Print Name	 <hr/>
Reviewer		Keny Xu <hr/> Print Name	 <hr/>

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4 General Information

4.1 Client Information

Applicant:	Hangzhou Hikvision Digital Technology Co., Ltd.
Address of Applicant:	No.700 Dongliu Road, Binjiang District, Hangzhou 310052, China
Manufacturer:	Hangzhou Hikvision Digital Technology Co., Ltd.
Address of Manufacturer:	No.700 Dongliu Road, Binjiang District, Hangzhou 310052, China
Factory:	Hangzhou Hikvision Digital Technology Co., Ltd.
Address of Factory:	No.700 Dongliu Road, Binjiang District, Hangzhou 310052, China

4.2 General Description of E.U.T.

Product Description:	Network Video Recorder with WiFi port
Rated Input:	DC 12V, 1.5A, 16W Max
Adapter:	Model No.: ADS-25FSG-12 12018GPCU
	Rated Input: AC 100V-240V 50/60Hz Max 0.7A
	Rated Output: DC 12V 1.5A
	Cable length: AC port: 2 wires
	DC port: 120cm

4.3 Details of E.U.T.

Operation Frequency:	802.11 b/g/n20: 2412MHz-2472MHz 802.11 n40: 2422MHz-2462MHz
Modulation Technique:	802.11 b DSSS(CCK, DQPSK, DBPSK) 802.11 g/n20/n40 OFDM(64QAM, 16QAM, QPSK, BPSK)
Number of Channel:	802.11 b/g/n20: 13 802.11 n40: 9
Data Rate:	802.11b: 1/2/5.5/11Mbps, 802.11g: 6/9/12/18/24/36/48/54Mbps 802.11n(HT20): MCS 0-7 802.11n(HT40): MCS 0-7
Antenna Type:	Integral
Antenna Gain:	2.3dBi

4.4 Test Location

All tests were performed at SGS E&E EMC lab

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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 and C-4336 respectively. Date of Registration: 2012-05-29. Date of Expiry: 2015-05-28.

5 Test Standards and Limits

According to §1.1310 Radiofrequency radiation exposure limits:

The limit for general population/uncontrolled exposures

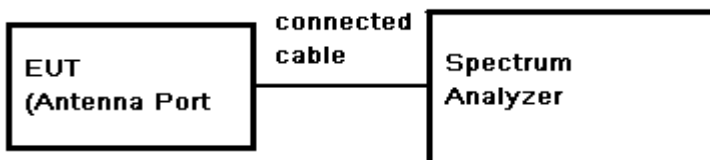
Frequency	Power density(mW/cm ²)	Averaging time(minutes)
300MHz~1.5GHz	f/1500	30
1.5GHz~100GHz	1.0	30

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:
Antenna A:

Test mode	Test Channel	Reading Power (dBm)	Cable Loss (dB)	Output Power (dBm)	Output Power (mW)	Power Limit (dBm)	Result
802.11b	Lowest	20.43	0.5	20.93	123.88	30	PASS
	Middle	20.10	0.5	20.60	114.82	30	PASS
	Highest	20.01	0.5	20.51	112.46	30	PASS
802.11g	Lowest	20.91	0.5	21.41	138.36	30	PASS
	Middle	20.54	0.5	21.04	127.06	30	PASS
	Highest	20.14	0.5	20.64	115.88	30	PASS
802.11n20	Lowest	20.48	0.5	20.98	125.31	30	PASS
	Middle	20.16	0.5	20.66	116.41	30	PASS
	Highest	20.03	0.5	20.53	112.98	30	PASS
802.11n40	Lowest	19.23	0.5	19.73	93.97	30	PASS
	Middle	19.11	0.5	19.61	91.41	30	PASS
	Highest	19.06	0.5	19.56	90.36	30	PASS

Antenna B:

Test mode	Test Channel	Reading Power (dBm)	Cable Loss (dB)	Output Power (dBm)	Output Power (mW)	Power Limit (dBm)	Result
802.11b	Lowest	19.55	0.5	20.05	101.16	30	PASS
	Middle	20.76	0.5	21.26	133.66	30	PASS
	Highest	20.54	0.5	21.04	127.06	30	PASS
802.11g	Lowest	20.88	0.5	21.38	137.40	30	PASS
	Middle	21.15	0.5	21.65	146.22	30	PASS
	Highest	21.17	0.5	21.67	146.89	30	PASS
802.11n20	Lowest	20.27	0.5	20.77	119.40	30	PASS
	Middle	20.55	0.5	21.05	127.35	30	PASS
	Highest	20.51	0.5	21.01	126.18	30	PASS
802.11n40	Lowest	18.91	0.5	19.41	87.30	30	PASS
	Middle	19.02	0.5	19.52	89.54	30	PASS
	Highest	19.21	0.5	19.71	93.54	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 146.89mW in Highest of 802.11g;

The best case gain of the antenna is 2.3dBi. 2.3dB logarithmic terms convert to numeric result is nearly 1.698

$$\text{So, } S = \frac{PG}{4R^2\pi} = \frac{146.89 \times 1.698}{4 \times 400 \times 3.14} = 0.04965 \text{ mW/cm}^2$$

The DTS modules can'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 < DS-7108NI-E1/V/W _External Photos > & < DS-7108NI-E1/V/W _Internal Photos>.

--End of the Report--