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

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1 Cover Page

RF MPE REPORT

Application No.:	SZEM1712012356CR (SHEM1710007117CR)
Applicant:	Hangzhou Hikvision Digital Technology Co., Ltd.
FCC ID:	2ADTD-M55XXHN
Equipment Under Test (EUT): **NOTE:** The following sample(s) was/were submitted and identified by the client as	
Product Name:	Mobile Digital Video Recorder
Model No.(EUT):	DS-M5504HNI/GW/WI, M5504HNI/4G/WI
Add Model No.:	Refer to Page 2
Standards:	FCC Rules 47 CFR §2.1091 KDB447498 D01 General RF Exposure Guidance v06
Date of Receipt:	2017-10-23
Date of Test:	2017-10-25 to 2017-11-15
Date of Issue:	2017-11-16
Test Result:	**Pass***

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

Ukeny Xu
EMC Laboratory 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.

Add Model No.:

WiFi+GPS

DS-M5504HNI/WI, DS-M55XXHNI/WI, DS-MP55XXHN/WI, DS-M5508HNI/WI, DS-M55XXHN/WI

WiFi+GPS+3G

DS-M5504HNI/GW/WI, DS-M5508HNI/GW/WI, DS-M55XXHNI/GW/WI, DS-MP55XXHN/GW/WI, DS-M55XXHN/GW/WI, DS-M55XXHN/3G/WI, DS-MP55XXHN/GW/WI58, DS-M55XXHNI/GW/WI58, DS-M55XXHN/GE/WI,

WiFi+GPS+4G

DS-M5504HNI/GLF, DS-M55XXHNI/GLF, DS-M55XXHN/GLF, DS-MP55XXHN/GLF, DS-M5504HNI/4G, DS-M5508HNI/4G, DS-M55XXHN/GLT, DS-M55XXHN/4G, DS-M55XXHN/5G, DS-M55XXHN/GLE,DS-M5504HNI/GLF/WI, DS-M55XXHNI/GLF/WI, DS-M55XXHN/GLF/WI, DS-MP55XXHN/GLF/WI, DS-M5504HNI/4G/WI, DS-M5508HNI/4G/WI, DS-M55XXHN/GLE/WI, DS-M55XXHN/GLT/WI, DS-M55XXHN/4G/WI, DS-M55XXHN/5G/WI, DS-MP55XXHN/GLF/WI58, DS-M55XXHNI/GLF/WI58

Revision Record				
Version	**Chapter**	**Date**	**Modifier**	**Remark**
00	/	2017-11-16	/	Original

Authorized for issue by:				
		 **Foray Chen /Project Engineer**		
		 **Eric Fu /Reviewer**		

2 Contents

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 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.

Brand Name:	HIKVISION
Product Description:	Vehicular use with Enternet port ,WiFi and 3G /4G function,
Test Voltage:	DC 24V by Battery

3.2 Technical Specifications

Operation Frequency:	802.11 b/g/n(HT20): 2412MHz~2462MHz 802.11 n(HT40): 2422MHz~2452MHz
Modulation Technique:	802.11 b: DSSS(CCK, DQPSK, DBPSK) 802.11 g/n(HT20/n(HT40): OFDM(64QAM, 16QAM, QPSK, BPSK)
Data Rate:	802.11 b: 1/2/5.5/11Mbps 802.11 g: 6/9/12/18/24/36/48/54Mbps 802.11 n: MCS0-7
Number of Channel:	802.11 b/g/n(HT20): 11 802.11 n(HT40): 7
Antenna Type:	Integral
Antenna Gain:	3.0dBi

3.3 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen Branch
No. 1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, Guangdong, China. 518057.
Tel: +86 755 2601 2053 Fax: +86 755 2671 0594

3.4 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

• CNAS (No. CNAS L2929)

CNAS has accredited SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab 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.

• A2LA (Certificate No. 3816.01)

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

• VCCI

The 10m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-823, R-4188, T-1153 and C-2383 respectively.

• FCC –Designation Number: CN1178

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized as an accredited testing laboratory.

Designation Number: CN1178. Test Firm Registration Number: 406779.

• Industry Canada (IC)

Two 3m Semi-anechoic chambers and the 10m Semi-anechoic chamber of SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab have been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 4620C-1, 4620C-2, 4620C-3.

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 3G 850MHz Band: the limit of worse case is 0.549 mW/cm^2

For 4G 700MHz Band: the limit of worse case is 0.471 mW/cm^2

For 4G 850MHz Band: the limit of worse case is 0.550 mW/cm^2

5 Measurement and Calculation

5.1 Maximum transmit power

The Power Data is based on the RF Test Report SZEM171201235602.

Test Mode	Test Channel	Power[dBm]	Power (mW)
11B	2412	14.08	25.59
11B	2437	13.82	24.10
11B	2462	15.53	**35.73**
11G	2412	12.21	16.63
11G	2437	12.03	15.96
11G	2462	13.65	23.17
11N20SISO	2412	12.17	16.48
11N20SISO	2437	12.03	15.96
11N20SISO	2462	13.64	23.12
11N40SISO	2422	10.51	11.25
11N40SISO	2437	10.64	11.59
11N40SISO	2452	11.4	13.80

The power of 3G band & 4G band base on the FCC Certificate module of MU609: FCC ID: QISMU609 and the module of ME909u-523: FCC ID:QISME909u-523..

5.2 MPE Calculation

For WIFI The Max Conducted Average Output Power is 35.73mW;

For 3G 850MHz band the Max Output power is 1.64W.

For 3G 1900MHz band the Max Output power is 0.81W.

For 4G 700MHz band the Max Output power is 0.241W.

For 4G 850MHz band the Max Output power is 0.229W.

For 4G 1900MHz band the Max Output power is 0.405W.

The best case gain of the WiFi antenna is 3dBi. 3 dB logarithmic terms convert to numeric result is nearly 2.

The best case gain of the 3G band antenna is 1dBi. 1 dB logarithmic terms convert to numeric result is nearly 1.26.

The best case gain of the 4G band antenna is 2dBi. 2 dB logarithmic terms convert to numeric result is nearly 1.58.

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

WiFi: $S=\frac{PG}{4R^2\pi}=\frac{35.73\times 2}{4\times 400\times 3.14}$ =0.028 mW/cm²

For 3G 850MHz band: $S=\frac{PG}{4R^2\pi}=\frac{1640\times 1.26}{4\times 400\times 3.14}$ =0.411 mW/cm²

For 3G 1900MHz band: $S=\frac{PG}{4R^2\pi}=\frac{810\times 1.26}{4\times 400\times 3.14}$ =0.203 mW/cm²

For 4G 700MHz band: $S=\frac{PG}{4R^2\pi}=\frac{241\times 1.58}{4\times 400\times 3.14}$ =0.076 mW/cm²

For 4G 850MHz band: $S=\frac{PG}{4R^2\pi}=\frac{229\times 1.58}{4\times 400\times 3.14}$ =0.072 mW/cm²

For 4G 1900MHz band: $S=\frac{PG}{4R^2\pi}=\frac{405\times 1.58}{4\times 400\times 3.14}$ =0.127 mW/cm²

3G 850MHz band and 2.4GHz WiFi modules can simultaneous transmitting, so the maximum rate of MPE is $\frac{0.028}{1}+\frac{0.411}{0.549}$ =0.777<=1.0.

3G 1900MHz and 2.4GHz WiFi modules can simultaneous transmitting, so the maximum rate of MPE is $\frac{0.028}{1}+\frac{0.203}{1}$ =0.231<=1.0.

4G 700MHz band and 2.4GHz WiFi modules can simultaneous transmitting, so the maximum rate of MPE is $\frac{0.028}{1}+\frac{0.076}{0.471}$ =0.189<=1.0.

4G 850MHz band and 2.4GHz WiFi modules can simultaneous transmitting, so the maximum rate of MPE is $\frac{0.028}{1}+\frac{0.072}{0.550}$ =0.159<=1.0.

4G 1900MHz band and 2.4GHz WiFi modules can simultaneous transmitting, so the maximum rate of MPE is $\frac{0.028}{1}+\frac{0.127}{1}$ =0.155<=1.0.

So the device is exclusion from SAR test.

--End of the Report--