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Report No.: SHEM170400212003
Page: 1 of 8

1 Cover Page

FCC MPE REPORT

Application No.:	SHEM1704002120CR
Applicant:	Hangzhou Hikvision Digital Technology Co., Ltd.
FCC ID:	2ADTD-T03C2N00
Equipment Under Test (EUT): NOTE: The following sample(s) was/were submitted and identified by the client as	
Product Name:	Wireless Transmitter & Receiver
Model No.(EUT):	DS-3WF01C-2N
Standards:	FCC Rules 47 CFR §2.1091 KDB447498 D01 General RF Exposure Guidance v06
Date of Receipt:	2017-04-14
Date of Test:	2017-04-14 to 2017-05-05
Date of Issue:	2017-06-18
Test Result:	Pass*

* In the configuration tested, the EUT detailed in this report complied with the standards specified above.





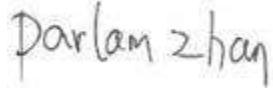
Parlam Zhan
E&E Section Manager
SGS-CSTC (Shanghai) Co., Ltd.

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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2 Version

Revision Record				
Version	Chapter	Date	Modifier	Remark
00	/	2017-06-18	/	Original

Authorized for issue by:				
Engineer		Eddy Zong		
		Print Name		
Clerk		Vincent Zhu		
		Print Name		
Reviewer		Parlam Zhan		
		Print Name		

3 Contents

	Page
1 COVER PAGE.....	1
2 VERSION	2
3 CONTENTS	3
4 GENERAL INFORMATION	4
4.1 CLIENT INFORMATION.....	4
4.1 GENERAL DESCRIPTION OF E.U.T.....	4
4.2 TECHNICAL SPECIFICATIONS	4
4.3 TEST LOCATION	5
4.4 TEST FACILITY	5
5 TEST STANDARDS AND LIMITS	6
5.1 FCC RADIOFREQUENCY RADIATION EXPOSURE LIMITS:	6
6 MEASUREMENT AND CALCULATION	7
6.1 MAXIMUM TRANSMIT POWER	7
6.2 MPE CALCULATION.....	8
7 EUT CONSTRUCTIONAL DETAILS.....	8

4 General Information

4.1 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 City, Zhejiang, 310052, China 2. No.299, Qiushi Road, Tonglu Economic Development Zone, Tonglu County, Hangzhou, Zhejiang, 310052, China.

4.1 General Description of E.U.T.

Product Description:	Fixed product with WiFi function		
Power Supply:	DC 12V 1A		
Test Voltage:	AC 120V 60Hz for adapter		
Adapter:	Manufacturer:	DVE	
	Model No.:	DSA-12G-12FEU	
	Rated Input:	AC 100~240V, 50/60Hz 0.3A	
	Rated Output:	DC 12V 1.0A	
	Cable length:	AC port:	2 wires
		DC port:	150 cm

4.2 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:	802.11b: 1/2/5.5/11Mbps, 802.11g: 6/9/12/18/24/36/48/54Mbps 802.11n: MCS0-15 up to 300Mbps (2T X 2R MIMO)
Number of Channel:	802.11 b/g/n(HT20): 11 802.11 n(HT40): 7
Antenna Type:	Antenna A: Integral antenna Antenna B: Integral antenna
Antenna Gain:	Antenna A: 6 dBi Antenna B: 6 dBi

4.3 Test Location

All tests were performed at:

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

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

Tel: +86 21 6191 5666

Fax: +86 21 6191 5678

4.4 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.

- **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.

- **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-3868, C-4336, T-2221, G-830 respectively.

5 Test Standards and Limits

5.1 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

6 Measurement and Calculation

6.1 Maximum transmit power

The Power Data is based on the RF Test Report SHEM170400212002.

Test Mode	Channel	Antenna A Power[dBm]	Antenna B Power[dBm]	MIMO Power[dBm]	Antenna A Power[mW]	Antenna B Power[mW]	MIMO Power[mW]
11B	2412	17.86	16.82	N/A	61.09	48.08	N/A
11B	2437	17.58	16.28	N/A	57.28	42.46	N/A
11B	2462	16.19	16.21	N/A	41.59	41.78	N/A
11G	2412	19.15	17.89	N/A	82.22	61.52	N/A
11G	2437	18.98	17.76	N/A	79.07	59.70	N/A
11G	2462	17.71	17.56	N/A	59.02	57.02	N/A
11N20SISO	2412	18.91	17.65	N/A	77.80	58.21	N/A
11N20SISO	2437	18.76	17.37	N/A	75.16	54.58	N/A
11N20SISO	2462	17.48	17.27	N/A	55.98	53.33	N/A
11N40SISO	2422	19.26	15.74	N/A	84.33	37.50	N/A
11N40SISO	2437	17.65	15.88	N/A	58.21	38.73	N/A
11N40SISO	2452	16.7	15.9	N/A	46.77	38.90	N/A
11N20MIMO	2412	17.28	16.43	19.89	53.46	43.95	97.41
11N20MIMO	2437	17.01	15.72	19.42	50.23	37.33	87.56
11N20MIMO	2462	15.62	15.46	18.55	36.48	35.16	71.63
11N40MIMO	2422	17.85	15.95	20.01	60.95	39.36	100.31
11N40MIMO	2437	17.31	15.85	19.65	53.83	38.46	92.29
11N40MIMO	2452	16.29	15.9	19.11	42.56	38.90	81.46

6.2 MPE Calculation

The Max Conducted Peak Output Power is 20.01dBm (100.31mW) in lowest channel;

The best case gain of the antenna is 6dBi. 6dB logarithmic terms convert to numeric result is nearly 3.98, in MIMO mode is nearly 7.96

For FCC:

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

$$S = \frac{PG}{4R^2\pi} = \frac{100.31 \times 7.96}{4 \times 400 \times 3.14} = 0.159 \text{ mW/cm}^2$$

So the device is exclusion from SAR test.

7 EUT Constructional Details

Refer to the < DS-3WF01C-2N _External Photos > & < DS-3WF01C-2N _Internal Photos >.

--End of the Report--