1 Cover Page

RF Exposure Evaluation Report

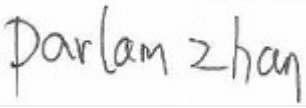
Application No.:	SHEM2009007668CR
FCC ID:	2ADTD-K1T680DFW
Applicant:	Hangzhou Hikvision Digital Technology Co., Ltd.
Address of Applicant:	No.555 Qianmo Road,Binjiang District Hangzhou 310052,China
Manufacturer:	Hangzhou Hikvision Digital Technology Co., Ltd.
Address of Manufacturer:	No.555 Qianmo Road,Binjiang 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 Ctiy,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:	Face Recognition Terminals
Model No.:	DS-K1T680DFW,DS-K1T680DW,DS-K1T680DFWUHK,DS-K1T680DFWCKV,DS-K1T680DFWUVS,DS-K1T680DFWKVO,DS-K1T680DFWHUN,DS-K1T680DWUHK,DS-K1T680DWCKV,DS-K1T680DWUVS,DS-K1T680DWKVO,DS-K1T680DWHUN¤
Standard(s) :	FCC Rules 47 CFR §2.1091 KDB447498 D01 General RF Exposure Guidance v06
Date of Receipt:	2020-09-10
Date of Test:	2020-09-12 to 2020-10-14
Date of Issue:	2020-10-15
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	2020-10-15	/

Authorized for issue by:				
				
		Micheal Niu /Project Engineer		
				
		Parlam Zhan /Reviewer		

2 Contents

3 General Information

3.1 General Description of E.U.T.

Power supply:	DC 12-24V,3A by adapter

3.2 Technical Specifications

2.4G WiFi

Antenna Gain:	2.92dBi
Antenna Type:	PIFA 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

13.56MHz

Antenna Type	Loop Antenna
Modulation Type	ASK
Number of Channels	1
Operation Frequency	13.56MHz

3.3 Test Location

All tests were performed at:

Compliance Certification Services (Kunshan) Inc.

All measurement facilities used to collect the measurement data are located at

No.10 Weiye Rd, Innovation park, Eco&Tec, Development Zone, Kunshan City, Jiangsu, China.

No tests were sub-contracted.

3.4 Test Facility

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

- **CNAS (No. CNAS L4354)**

CNAS has accredited Compliance Certification Services (Kunshan) Inc. to ISO/IEC 17025:2017 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. 2541.01)**

Compliance Certification Services (Kunshan) Inc. is accredited by the American Association for Laboratory Accreditation (A2LA). Certificate No. 2541.01.

- **FCC –Designation Number: CN1172**

Compliance Certification Services Inc. has been recognized as an accredited testing laboratory. Designation Number: CN1172. Test Firm Registration Number: 995260.

- **Industry Canada (IC) – IC Assigned Code:** 2324E

The 10m and 3m Semi-anechoic chamber of Compliance Certification Services (Kunshan) Inc. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 2324E-1 for 10m chamber, 2324E-2 for 3m chamber.

- **VCCI (Member No.: 1938)**

The 3m and 10m Semi-anechoic chamber and Shielded Room of Compliance Certification Services (Kunshan) Inc. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-1600, C-1707, T-1499, G-10216 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 range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm^2)	Averaging time (minutes)
Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f2)	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	f/1500	30
1500-100,000	/	/	1.0	30

Note:Limit for 2.4GHz is 1.0 mW/cm^2
Limit for 13.56MHz is 60.77 V/m

5 Measurement and Calculation

5.1 Maximum transmit power

The Power Data is based on the RF Test Report SHEM200900766801, SHEM200900766802,

2.4G WIFI

Test Mode	Test Channel	Ant	Power [dBm]	Power [mW]
11B	2412	Ant1	17.82	60.53
11B	2437	Ant1	18.41	**69.34**
11B	2462	Ant1	17.45	55.59
11G	2412	Ant1	16.93	49.32
11G	2437	Ant1	17.98	62.81
11G	2462	Ant1	16.65	46.24
11N20SISO	2412	Ant1	17.03	50.47
11N20SISO	2437	Ant1	18.01	63.24
11N20SISO	2462	Ant1	17.73	59.29
11N40SISO	2422	Ant1	17.32	53.95
11N40SISO	2437	Ant1	17.87	61.24
11N40SISO	2452	Ant1	17.84	60.81

13.56MHz: 48.30 dBuV/m@3m, @20cm=@3m+40log(3/0.2)=95.34dBuV/m

5.2 MPE Calculation

For WiFi:

According to the formula $S=P/4\pi R^2$, we can calculate S which is MPE.

Note:

1) P (mW)

2) R = distance to the center of radiation of antenna (in meter) = 20cm

3) MPE limit = 1mW/cm²

For WIFI

The max. antenna gain is 2.92 dBi

Max. Conducted Power P(mW)	Gain in Linear Scale G	Operation Distance R(cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)	Result
69.34	1.959	20	0.02702	1	Pass

For 13.56MHz: 95.34dBuV/m=0.058V/m< 60.77 V/m.

The 2.4G band and 13.56MHz function can simultaneous transmitting.But the maximum rate of MPE is 0.03/1.0+0.058/60.77=0.03<=1.0. according to the KDB447498 section 7.2 determine the device is exclusion from SAR test.

--End of the Report--