

1 Cover Page

RF Exposure Evaluation Report

Application No.: SHEM1912019995CR
FCC ID: 2ADTD-K1T642MW
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 City,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 Terminal
Model No.: DS-K1T642MFW
Add Model No.: DS-K1T642MF,DS-K1T642MW,DS-K1T642M, DS-KAB642-D, DS-K1T642MFUHK,DS-K1T642MFCKV, DS-K1T642MFUVS,DS-K1T642MFKVO,DS-K1T642MFHUN,DS-K1T642MUHK,DS-K1T642MCKV,DS-K1T642MUVS,DS-K1T642MKVO,DS-K1T642MHUN

Standard(s) : FCC Rules 47 CFR §2.1091
 KDB447498 D01 General RF Exposure Guidance v06

Date of Receipt: 2019-12-23
Date of Test: 2020-02-18 to 2020-02-21
Date of Issue: 2020-02-25

Test Result:	Pass*
---------------------	--------------

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

Parlam Zhan

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.



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

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

NO.588 West Jindu Road, Songjiang District, Shanghai, China 201612
中国·上海·松江区金都西路588号 邮编: 201612

t(86-21)61915666 f(86-21)61915678 www.sgsgroup.com.cn
t(86-21)61915666 f(86-21)61915678 e.sgs.china@sgs.com



Revision Record			
Version	Description	Date	Remark
00	Original	2020-02-25	/

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



2 Contents

	Page
1 COVER PAGE	1
2 CONTENTS	3
3 GENERAL INFORMATION.....	4
3.1 GENERAL DESCRIPTION OF E.U.T.....	4
3.2 TECHNICAL SPECIFICATIONS.....	4
3.3 TEST LOCATION.....	5
3.4 TEST FACILITY	5
4 TEST STANDARDS AND LIMITS.....	6
4.1 FCC RADIOFREQUENCY RADIATION EXPOSURE LIMITS:	6
5 MEASUREMENT AND CALCULATION.....	7
5.1 MAXIMUM TRANSMIT POWER.....	7
5.2 MPE CALCULATION	8



3 General Information

3.1 General Description of E.U.T.

Power supply:	DC 12V 2A By Adapter
Test voltage:	AC 120V/60Hz

3.2 Technical Specifications

2.4G WiFi

Antenna Gain	-0.6dBi
Antenna Type	PCB 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:

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

3.4 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 17025:2017 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.

- **NVLAP (LAB CODE: 201034-0)**

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP).

- **FCC (Designation Number: CN5033)**

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been recognized as an accredited testing laboratory. Test Firm Registration Number: 479755.

- **ISED (CAB identifier: CN0020)**

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. EMC Laboratory has been recognized by Innovation, Science and Economic Development Canada (ISED) as an accredited testing laboratory. ISED#: 8617A.

- **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 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/f ²)	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	f/1500	30
1500-100,000	/	/	1.0	30

Note: Limit for 13.56MHz is 60.77 V/m

Limit for 2.4GHz is 1.0 mW/cm²



5 Measurement and Calculation

5.1 Maximum transmit power

The Power Data is based on the RF Test Report SHEM191201999501 & SHEM191201999502

Test Mode	Test Channel	Ant	Power [dBm]	Power [mW]
11B	2412	Ant1	16.60	45.71
11B	2437	Ant1	18.96	78.70
11B	2462	Ant1	19.59	90.99
11G	2412	Ant1	17.26	53.21
11G	2437	Ant1	18.40	69.18
11G	2462	Ant1	19.15	82.22
11N20SISO	2412	Ant1	16.93	49.32
11N20SISO	2437	Ant1	18.24	66.68
11N20SISO	2462	Ant1	19.06	80.54
11N40SISO	2422	Ant1	16.95	49.55
11N40SISO	2437	Ant1	18.77	75.34
11N40SISO	2452	Ant1	18.49	70.63

13.56MHz: 40.27dBuV/m@ 3m

@20cm=@3m+40*log(3/0.02)=127.31dBuV/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

The max. antenna gain is -0.6 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
90.99	0.871	20	0.01577	1	Pass

For 13.56MHz: 127.31dBuV/m=2.32V/m< 60.77 V/m.

13.56MHz and WiFi modules can simultaneous transmitting, so the maximum rate of MPE is $2.32/60.77+0.01577/1.0=0.054\leq 1.0$. according to the KDB447498 section 7.2 determine the device is exclusion from SAR test.

--End of the Report--