



1 Cover Page

RF Exposure Evaluation Report

Application No.: SHEM2010009159CR
FCC ID: 2ADTD-K1T341BMWIT
IC: 20199-K1T341BMWIT
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 Terminal / Thermographic Access Control Terminal
Model No.: DS-K1T341BMWIT-T,DS-K1T341BMWIT-TUHK,DS-K1T341BMWIT-TCKV,
DS-K1T341BMWIT-TUVS,DS-K1T341BMWIT-TKVO,
DS-K1T341BMWIT-THUN

Standard(s) : FCC Rules 47 CFR §2.1091
KDB447498 D01 General RF Exposure Guidance v06
RSS-102 Issue 5

Date of Receipt: 2020-11-02

Date of Test: 2020-11-03 to 2020-11-10

Date of Issue: 2020-11-11

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

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

Parlan Zhan

Parlan 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



For FCC Model No.: DS-K1T341BMWI-T,DS-K1T341BMWI-TUHK,DS-K1T341BMWI-TCKV,
DS-K1T341BMWI-TUVS,DS-K1T341BMWI-TKVO,
DS-K1T341BMWI-THUN
For IC Model No: DS-K1T341BMWI-T



Revision Record			
Version	Description	Date	Remark
00	Original	2020-11-11	/

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



2 Contents

	Page
1 COVER PAGE.....	1
2 CONTENTS	4
3 GENERAL INFORMATION.....	5
3.1 GENERAL DESCRIPTION OF E.U.T.....	5
3.2 TECHNICAL SPECIFICATIONS	5
3.3 TEST LOCATION.....	6
3.4 TEST FACILITY	6
4 TEST STANDARDS AND LIMITS	7
4.1 FCC RADIOFREQUENCY RADIATION EXPOSURE LIMITS:	7
5 MEASUREMENT AND CALCULATION	8
5.1 MAXIMUM TRANSMIT POWER	8
5.2 MPE CALCULATION	9



3 General Information

3.1 General Description of E.U.T.

Power supply:	DC 12V by adapter
Serial Number:	E73959167
Firmware Version:	V2.2.6build201020

3.2 Technical Specifications

2.4G WiFi

Antenna Gain:	2.22dBi
Antenna Type:	LDS 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/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 2.4GHz is 1.0 mW/cm²

Limit for 13.56MHz is 60.77 V/m

4.2 IC Radiofrequency radiation exposure limits:

According to RSS-102 section 2.5.2, RF exposure evaluation is required if the separation distance between the user and/or bystander and the device's radiating element is greater than 20 cm, except when the device operates as follows:

below 20 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 1 W (adjusted for tune-up tolerance);

- at or above 20 MHz and below 48 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than $4.49/f^{0.5}$ W (adjusted for tune-up tolerance), where f is in MHz;

- at or above 48 MHz and below 300 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 0.6 W (adjusted for tune-up tolerance);

- at or above 300 MHz and below 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than $1.31 \times 10^{-2} f^{0.6834}$ W (adjusted for tune-up tolerance), where f is in MHz;

- at or above 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 5 W (adjusted for tune-up tolerance).

For 13.56MHz device, the limit of worse case is 1W

For 2.4G device, the limit of worse case is 2.68W

5 Measurement and Calculation

5.1 Maximum transmit power

The Power Data is based on the RF Test Report SHEM201000915901, SHEM201000915902,

2.4G WIFI

Test Mode	Test Channel	Ant	Power [dBm]	Power [mW]
11B	2412	Ant1	16.27	42.36
11B	2437	Ant1	16.73	47.10
11B	2462	Ant1	17.02	50.35
11G	2412	Ant1	16.98	49.89
11G	2437	Ant1	17.47	55.85
11G	2462	Ant1	17.88	61.38
11N20SISO	2412	Ant1	17.01	50.23
11N20SISO	2437	Ant1	17.52	56.49
11N20SISO	2462	Ant1	17.80	60.26
11N40SISO	2422	Ant1	16.06	40.36
11N40SISO	2437	Ant1	16.40	43.65
11N40SISO	2452	Ant1	16.66	46.34

13.56MHz: 60.58 dBuV/m@3m, @20cm=@3m+40log(3/0.2)=107.62dBuV/m

5.2 MPE Calculation

FCC :

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 2.22 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
61.38	1.667	20	0.02036	1	Pass

For 13.56MHz: 107.62dBuV/m=0.24V/m< 60.77 V/m.

The 2.4G band and 13.56MHz function can simultaneous transmitting. But the maximum rate of MPE is $0.02/1.0+0.24/60.77=0.024\leq 1.0$. according to the KDB447498 section 7.2 determine the device is exclusion from SAR test.

IC:

For WiFi:

The Max Conducted Output Power is 61.38mW(0.06138W);

The best case gain of the antenna is 2.22dBi. 2.22dB logarithmic terms convert to numeric result is nearly 1.667.

$$E.I.R.P.= P \times G = 0.06138 \times 1.667 = 0.102W < 2.68W$$

For 13.56MHz: 107.62dBuV/m=0.001W< 1W.

13.56MHz and WiFi modules can simultaneous transmitting, so the maximum rate of MPE is $0.001/1+0.102/2.68 = 0.039\leq 1.0$. according to the KDB447498 section 7.2 determine the device is exclusion from SAR test.

--End of the Report--