

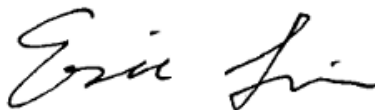
# 1 Cover Page

## RF Exposure Evaluation Report

**Application No.:** KSCR2202000215AT  
**FCC ID:** 2ADTD-KD9633WBE6  
**IC:** 20199-KD9633WBE6  
**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.  
 4.Chongqing Hikvision technology Co., LTD.  
**Address of Factory:** 1.No.700,Dongliu Road, Binjiang District, Hangzhou 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  
 4.No. 118,Haikang Road,Area C, Jinqiao Industrial Park, Dadukou District, Chongqing, 401325, ChinaDoor Station  
**Equipment Under Test (EUT):**  
**EUT Name:** Door Station  
**Model No.:** DS-KD9633-WBE6  
**Add Model No.:** DS-KD9633-WBE6UHK, DS-KD9633-WBE6CKV, DS-KD9633-WBE6UVS, DS-KD9633-WBE6KVO, DS-KD9633-WBE6HUN  
**For IC Model No.:** DS-KD9633-WBE6  
**Standard(s) :** FCC Rules 47 CFR §2.1091  
 KDB447498 D01 General RF Exposure Guidance v06  
 RSS-102 Issue 5 Amendment 2 (February 2, 2021)  
**Date of Receipt:** 2022-02-24  
**Date of Test:** 2022-03-14 to 2022-03-30  
**Date of Issue:** 2022-03-31

<b>Test Result:</b>	<b>Pass*</b>
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\* In the configuration tested, the EUT complied with the standards specified above.



Eric Lin  
Laboratory Manager



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Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2022-03-31		Original

<b>Authorized for issue by:</b>			
		<i>Milo Li</i>	
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		<b>Milo Li/Project Engineer</b>	
		<i>Eric Lin</i>	
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		<b>Eric Lin/Reviewer</b>	



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### 3 General Information

#### 3.1 General Description of E.U.T.

Power supply:	DC 12V
Test Voltage:	AC 120V/60Hz
Firmware Version:	V2.3.4
Serial Number:	G75903827

#### 3.2 Technical Specifications

##### BLE

Operation Frequency:	2402MHz to 2480MHz
Bluetooth Version:	V5.0 LE
Modulation Type:	GFSK
Data Rate:	1Mbps
Number of Channels:	40
Channel Spacing:	2MHz
Antenna Type:	PCB Antenna
Antenna Gain:	-5dBi (Provided by the manufacturer)

##### 2.4G

Operation Frequency:	802.11b/g/n(HT20): 2412MHz to 2462MHz, 802.11n(HT40): 2422MHz to 2452MHz
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
Channel Spacing:	5MHz
Data Rate:	802.11b: 1/2/5.5/11Mbps 802.11g: 6/9/12/18/24/36/48/54Mbps 802.11n(HT20): MCS0~MCS7 802.11n(HT40): MCS0~MCS7
Antenna Type:	PCB Antenna
Antenna Gain:	0.7dBi (Provided by the manufacturer)

##### 13.56MHz

Operation Frequency:	13.56MHz
Modulation Type:	ASK
Antenna Type:	Loop Antenna



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### 3.3 Test Location

All tests were performed at:

Compliance Certification Services (Kunshan) Inc.

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

Tel: +86 512 5735 5888 Fax: +86 512 5737 0818

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.

• **ISED (CAB Identifier: CN0072)**

Compliance Certification Services (Kunshan) Inc. has been recognized by Innovation, Science and Economic Development (ISED) Canada as an accredited testing laboratory. CAB Identifier: CN0072.

• **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-20134, R-11600, C-11707, T-11499, G-10216 respectively.



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## 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 <sup>2</sup> )	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 <sup>2</sup> )	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	f/1500	30
1500-100,000	/	/	1.0	30

### 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 2.4GHz Wi-Fi, the limit of worse case is 2.68W;  
For 13.56MHz device, the limit of worse case is 1W



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## 5 Measurement and Calculation

### 5.1 Maximum transmit power

The Power Data is based on the RF Test Report KSEM220200021501, KSCR220200021502, KSCR220200021503

#### BLE

Test Mode	Test Frequency (MHz)	Output Power (dBm)	Output Power (mW)
1M	2402	-0.26	0.94
	2442	-0.06	<b>0.99</b>
	2480	-0.21	0.95

#### 2.4G WiFi

Test Mode	Test Channel	Ant	Power [dBm]	Power [mW]
11B	2412	Ant1	14.12	<b>25.82</b>
11B	2437	Ant1	14.07	25.53
11B	2462	Ant1	13.99	25.06
11G	2412	Ant1	12.36	17.22
11G	2437	Ant1	12.46	17.62
11G	2462	Ant1	12.57	18.07
11N20SISO	2412	Ant1	11.27	13.40
11N20SISO	2437	Ant1	11.34	13.61
11N20SISO	2462	Ant1	11.41	13.84
11N40SISO	2422	Ant1	11.87	15.38
11N40SISO	2437	Ant1	11.70	14.79
11N40SISO	2452	Ant1	11.78	15.07

**13.56MHz: 74.67dBuV/m@3m, @20cm=@3m+40log(3/0.2)= 121.71dBuV/m**



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### 5.2 MPE Calculation

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/cm<sup>2</sup>

For FCC:

For BLE

The max. antenna gain is -5 dBi

Max. Conducted Power P(mW)	Gain in Linear Scale G	Operation Distance R(cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )	Result
0.99	0.316	20	0.00006	1	Pass

For 2.4G WIFI

The max. antenna gain is 0.7 dBi

Max. Conducted Power P(mW)	Gain in Linear Scale G	Operation Distance R(cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )	Result
25.82	1.175	20	0.00604	1	Pass

For 13.56MHz: 121.71dBuV/m=1.218V/m< 60.77 V/m.

The BLE, 2.4G Wi-Fi and 13.56MHz function can simultaneous transmitting. But the maximum rate of MPE is  $0.00006/1.0+0.00604/1.0+1.218/60.77=0.0261 \leq 1.0$ . according to the KDB447498 section 7.2 determine the device is exclusion from SAR test.

For IC:

For BLE: EIRP= P x G = 0.99 x 0.316 = 0.3128mW = 0.0003W < 2.68W

For 2.4G Wi-Fi: EIRP= P x G = 25.82 x 1.175 = 30.3385mW = 0.0303W < 2.68W

For 13.56MHz: 121.71dBuV/m = 0.0020W < 1W.

The BLE, 2.4GHz Wi-Fi and 13.56MHz can simultaneous transmitting. The maximum rate of MPE is  $0.0003/2.68 + 0.0303/2.68 + 0.0020/1 = 0.0134 \leq 1.0$ , So the SAR report is not required.

-End of the Report-



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