

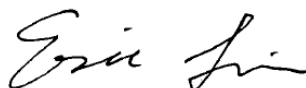
1 Cover Page

RF Exposure Evaluation Report

Application No.: KSCR2205000703AT
FCC ID: 2AL8S-0235C68W
IC: 25987-0235C68W
Applicant: Zhejiang Uniview Technologies Co., Ltd
Address of Applicant: 88 Jiangling Road, Xixing Town, Binjiang District, Hangzhou, Zhejiang, China
Manufacturer: Zhejiang Uniview Technologies Co., Ltd
Address of Manufacturer: 88 Jiangling Road, Xixing Town, Binjiang District, Hangzhou, Zhejiang, China
Factory: Zhejiang Uniview System Technology Co., Ltd
Address of Factory: No.1277 Qingfeng South Road (South), Tongxiang Economic Development Zone, Tongxiang City, Jiaxing, 311042, Zhejiang, China
Equipment Under Test (EUT):
EUT Name: Face Recognition Access Control Terminal
Model No.: OET-573B-HMQR-WR, OET-573B-HMQR-WR-NB
Standard(s) : FCC Rules 47 CFR §2.1091
 KDB447498 D01 General RF Exposure Guidance v06
 RSS-102 Issue 5 Amendment 1 (February 2, 2021)
Date of Receipt: 2022-05-12
Date of Test: 2022-05-23 to 2022-06-02
Date of Issue: 2022-06-09

Test Result:	Pass*
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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		2022-06-09		Original

Authorized for issue by:			
		<i>Tommie Tang</i>	
		<hr/>	
		Tommie_Tang /Project Engineer	
		<i>Eric Lin</i>	
		<hr/>	
		Eric Lin/Reviewer	



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3 General Information

3.1 General Description of E.U.T.

Power supply:	DC 12V, 2.0A
Serial Number:	3224000005
Firmware Version:	QPTS-B2501.3.5.220524

3.2 Technical Specifications

2.4G WiFi

Antenna Gain:	3.61dBi (Provided by the manufacturer)
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



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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 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 60.77V/m



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

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 KSCR220500070301, KSCR220500070302

2.4G WiFi

Test Mode	Test Channel	Ant	Power [dBm]	Power [mW]
11B	2412	Ant1	13.96	24.89
11B	2437	Ant1	13.67	23.28
11B	2462	Ant1	13.24	21.09
11G	2412	Ant1	13.68	23.33
11G	2437	Ant1	13.48	22.28
11G	2462	Ant1	12.77	18.92
11N20SISO	2412	Ant1	13.26	21.18
11N20SISO	2437	Ant1	13.08	20.32
11N20SISO	2462	Ant1	12.43	17.50
11N40SISO	2422	Ant1	13.60	22.91
11N40SISO	2437	Ant1	13.40	21.88
11N40SISO	2452	Ant1	13.02	20.04

13.56MHz: 56.36dBuV/m@3m, @20cm=@3m+40log(3/0.2)= 103.403dBuV/m = 0.148V/m



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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 2.4G WiFi:

The max. antenna gain is 3.61 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
24.89	2.296	20	0.01137	1	Pass

For 13.56MHz: 103.403dBuV/m = 0.148V/m < 60.77 V/m.

2.4G WiFi and 13.56MHz functions can simultaneous transmitting, and the maximum rate of MPE is $0.01137/1+0.148/60.77=0.0138\leq 1$

For IC:

For 2.4GHz WiFi :

E.I.R.P.= P*G= 0.02489×2.296=0.057W<2.68W

For 13.56MHz: 103.403dBuV/m=0.0001W< 1W.

2.4G WiFi and 13.56MHz functions can simultaneous transmitting, and the maximum rate of MPE is $0.057/2.68+0.00001/1=0.021\leq 1$

So the device is exclusion from SAR test

--End of the Report--



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