1 Cover Page

RF Exposure Evaluation Report

Application No.:	SHEM2104002968CR
FCC ID:	2AZLRQ7S
Applicant:	Zhejiang Laiu Technology Co., Ltd.
Address of Applicant:	Second Floor, Building 1, No. 16, South Yingui Road, Chengxi New District, Yongkang, Zhejiang, China
Manufacturer:	Zhejiang Laiu Technology Co., Ltd.
Address of Manufacturer:	Second Floor, Building 1, No. 16, South Yingui Road, Chengxi New District, Yongkang, Zhejiang, China
Factory:	Zhejiang Laiu Technology Co., Ltd.
Address of Factory:	No.16 Yingui South Road Huachuan District Yongkang city Zhejiang Pro. China
Equipment Under Test (EUT):	
EUT Name:	Fingerprint password smart lock
Model No.:	Q7S
Add Model No.:	A8-1,H5,E6,E8,E9,L8,L9,L9S,Q7,L3,L3S,RF2-13,LUM13,LUM17, LU01,LU02,LY01,LY02,LY03,LY04,LY05,LY06,LY07,LY08,LY09,LY10, LY11,LY12,LY13,LY14,LY15,LY16,LY17,LY18,LY19,LY20,LY21,LY22, LY23, LY24,LY25,LY26,LY27,LY28,LY29,LY30
Standard(s) :	FCC Rules 47 CFR §2.1091 KDB447498 D01 General RF Exposure Guidance v06
Date of Receipt:	2021-04-07
Date of Test:	2021-04-14 to 2021-05-10
Date of Issue:	2021-05-12
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.

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Revision Record			
Version	**Description**	**Date**	**Remark**
00	Original	2021-05-12	/

Authorized for issue by:				
		Bill Wu		
		Bill Wu / Project Engineer		
		Parlam Zhan		
		Parlam Zhan /Reviewer		

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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

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3 General Information

3.1 General Description of E.U.T.

Power supply:	DC 7.4V 4000mAh rechargeable battery

3.2 Technical Specifications

2.4G WiFi

Antenna Gain:	2dBi (Provided by manufacturer)
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

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3.3 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.
588 West Jindu Road, Xinqiao, Songjiang, 201612 Shanghai, China
Tel: +86 21 6191 5666 Fax: +86 21 6191 5678

No tests were sub-contracted.

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.

- **A2LA (Certificate No. 6332.01)**
  SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. is accredited by the American Association for Laboratory Accreditation(A2LA).

- **FCC (Designation Number: CN1301)**
  SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been recognized by Federal Communications Commission (FCC) as an accredited testing laboratory.

- **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.

- **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.

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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/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

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5 Measurement and Calculation

5.1 Maximum transmit power

The Power Data is based on the RF Test Report SHEM210400296801,

2.4G WiFi

Test Mode	Test Channel	Ant	Power [dBm]	Power [mW]
11B	2412	Ant1	13.49	**22.34**
11B	2437	Ant1	13.02	20.04
11B	2462	Ant1	12.52	17.86
11G	2412	Ant1	13.16	20.70
11G	2437	Ant1	12.78	18.97
11G	2462	Ant1	11.84	15.28
11N20SISO	2412	Ant1	12.92	19.59
11N20SISO	2437	Ant1	12.78	18.97
11N20SISO	2462	Ant1	12.09	16.18
11N40SISO	2422	Ant1	12.34	17.14
11N40SISO	2437	Ant1	12.07	16.11
11N40SISO	2452	Ant1	11.66	14.66

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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 WIFI

The max. antenna gain is 2 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
22.34	1.585	20	0.00704	1	Pass

According to the KDB447498 section 7.2 determine the device is exclusion from SAR test.

--End of the Report--

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