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Report Template Version: V04
Report Template Revision Date: 2018-07-06

TEST REPORT

Report No. :	CQASZ20250801928E-02
Applicant:	Guangdong Huarui Lock Industry Co., Ltd.
Address of Applicant:	Floor 3,Building G, Dahongshan Industrial Zone, Guanlong Road, Guancheng Street
Equipment Under Test (EUT):	
EUT Name:	Smart Handle Lock
Model No.:	H24, H27, H29
Test Model No.:	H24
Brand Name:	huarui 华睿
FCC ID:	2BRS6-H24
Standards:	47 CFR Part 1.1307 47 CFR Part 1.1310 KDB447498D01 General RF Exposure Guidance v06
Date of Receipt:	2025-08-20
Date of Test:	2025-08-20 to 2025-09-04
Date of Issue:	2025-10-09
Test Result :	**PASS**

Tested By: lewis zhou

(Lewis Zhou)

Reviewed By: Timo Lei

(Timo Lei)

Approved By:

(Jack Ai)

SHENZHEN HUAXIA TESTING TECHNOLOGY CO., LTD. 华夏准测 APPROVED

The test report is effective only with both signature and specialized stamp, The result(s) shown in this report refer only to the sample(s) tested. Without written approval of CQA, this report can't be reproduced except in full.

1. Version

Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20250801928E-02	Rev.01	Initial report	2025-10-09

Model No.: H24，H27，H29

Their electrical circuit design, layout, components used and internal wiring are identical,

Only the differences in appearance is different.

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3. General Information

4. Client Information

Applicant:	Guangdong Huarui Lock Industry Co., Ltd.
Address of Applicant:	Floor 3,Building G, Dahongshan Industrial Zone, Guanlong Road, Guancheng Street
Manufacturer:	Guangdong Huarui Lock Industry Co., Ltd.
Address of Manufacturer:	Floor 3,Building G, Dahongshan Industrial Zone, Guanlong Road, Guancheng Street
Factory:	Guangdong Huarui Lock Industry Co., Ltd.
Address of Factory:	Floor 3,Building G, Dahongshan Industrial Zone, Guanlong Road, Guancheng Street

5. General Description of EUT

Product Name:	Smart Handle Lock
Model No.:	H24, H27, H29
Test Model No.:	H24
Trade Mark:	huarui 华睿 ®
Software Version:	V.0.12.0
Hardware Version:	HR24Q-V6
Power Supply:	Powered by dry batteries AAA 1.5V*4
Exposure category:	General population/uncontrolled environment
Device Type:	Mobile Device

6. General Description of BLE

Operation Frequency:	2402MHz~2480MHz
Bluetooth Version:	V5.0
Modulation Technique:	Non-Frequency Hopping Spread Spectrum (NFHSS)
Modulation Type:	GFSK
Number of Channel:	BLE:40
Transfer Rate:	BLE:1Mbps
Test Software of EUT:	sscom
Antenna Type:	Chip antenna
Antenna Gain:	1.73dBi

7. General Description of NFC

Operation Frequency:	13.56MHz
Modulation Type:	ASK
Number of Channel:	1

Antenna Type:	PCB antenna
Antenna Gain:	0dBi

8. RF Exposure Evaluation Method

RF Exposure Compliance Requirement

Standard Requirement

Systems operating under the provisions of FCC 47 CFR section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as mobile device whereby a distance of 0.2m normally can be maintained between the user and the device, and below RF Permissible Exposure limit shall comply with.

In accordance with KDB447498D01 for Simultaneous transmission MPE test exclusion applies when the sum of the MPE ratios for all simultaneous transmitting antennas incorporated in a host device, based on the calculated/estimated, numerically modelled or measured field strengths or power density, is ≤ 1.0. The MPE ratio of each antenna is determined at the minimum test separation distance required by the operating configurations and exposure conditions of the host device, according to the ratio of field strengths or power density to MPE limit, at the test frequency. Either the maximum peak or spatially averaged results from measurements or numerical simulations may be used to determine the MPE ratios. Spatial averaging does not apply when MPE is estimated using simple calculations based on far-field plane-wave equivalent conditions. The antenna installation and operating requirements for the host device must meet the minimum test separation distances required by all antennas, in both standalone and simultaneous transmission operations, to satisfy compliance.

Limits Refer Evaluation Method

ANSI C95.1–2019: IEEE Standard for Safety Levels with Respect to Human Exposure to Electric, Magnetic, and Electromagnetic Fields, 0 Hz to 300 GHz

FCC KDB publication 447498 D01 General 1 RF Exposure Guidance v06: Mobile and Portable Devices RF Exposure Procedures and Equipment Authorization Policies.

FCC CFR 47 part1 1.1310: Radiofrequency radiation exposure limits.

FCC CFR 47 part2 2.1091: Radiofrequency radiation exposure evaluation: mobile devices.

FCC CFR 47 part2 2.1091: Radiofrequency radiation exposure evaluation: mobile devices.

Limit

Limits for Maximum Permissible Exposure (MPE)/Controlled Exposure

Frequency Range(MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(A/m)	Power Density (mW/cm²)	Averaging Time (minute)
Limits for Occupational/Controlled Exposure				
0.3 – 3.0	614	1.63	(100) *	6
3.0 – 30	1842/f	4.89/f	(900/f²)*	6
30 – 300	61.4	0.163	1.0	6
300 – 1500	/	/	f/300	6
1500 – 100,000	/	/	5	6

Limits for Maximum Permissible Exposure (MPE)/Uncontrolled Exposure

Frequency Range(MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(A/m)	Power Density (mW/cm²)	Averaging Time (minute)
Limits for Occupational/Uncontrolled Exposure				
0.3 – 3.0	614	1.63	(100) *	30
3.0 – 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

F=frequency in MHz

*=Plane-wave equivalent power density

MPE Calculation Method

Predication of MPE limit at a given distance

Equation from page 18 of OET Bulletin 65, Edition 97-01

$S=PG/4\pi R^2$

Where: S=power density

P=power input to antenna

G=power gain of the antenna in the direction of interest relative to an isotropic radiator

R=distance to the center of radiation of the antenna

EUT RF Exposure

1) For BLE

Measurement Data

Worst case: GFSK				
Test Channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	-2.54	-2.5±1	-1.5	0.708
Middle(2440MHz)	-2.86	-2.5±1	-1.5	0.708
Highest(2480MHz)	-3.68	-3.5±1	-2.5	0.562

Modulation Type	Output power		Antenna Gain (dBi)	Antenna Gain (linear)	MPE (mW/cm^2)	MPE Limits (mW/cm^2)
	dBm	mW				
GFSK	-1.5	0.708	1.73	1.4894	0.00021	1.0000

Remark: The Max Conducted Peak Output Power data refer to report Report No.: CQASZ20250801928E-01

2) For NFC

Mode	Channel	Frequency (MHz)	Field strength of fundamental @ 3m		Field strength of fundamental @ 0.2m		Electric Field Strength (V/m)
			(dBuV/m)	V/m	(dBuV/m)	V/m	
ASK	1	13.56	75.76	0.00614	122.80	1.38096	60.77

The worst case (refer to report CQASZ20250801928E-03) is below:

3) For WLAN/BT modular (Model: WBR3)

The maximum MPE values is 0.0960 mW/m^2 from modular (Model: WBR3; FCC ID: 2ANDL-WBR3) MPE report No. 708881974877-00A

Simultaneous transmission:

$BLE_{ratio} + NFC_{rati} + WLAN_{rati} = 0.00021/1 + 1.38096/60.77 + 0.0960/1 = 0.1189 < 1.0$

9. Conclusion

The measurement results comply with the FCC Limit per 47 CFR 2.1091 for the uncontrolled RF Exposure of mobile device.

----------THE END OF REPORT----------