

TEST REPORT

Applicant: Shenzhen RuisiMai Electronics Limited
Address: Room 609, Gangshun Building, Shangxing Village
No.4, Xinqiao sub-district, Baoan District,
Shenzhen, Guangdong, China
Equipment Type: 2.4G Wireless keyboard
Model Name: GWM-X03B (refer section 2.4)
Brand Name: N/A
FCC ID: 2A6G2-GWMX03K
Test Standard: 47 CFR Part 2.1093
KDB 447498 D01 v06
Test Date: Apr. 02, 2022 - May 10, 2022
Date of Issue: May 25, 2022

ISSUED BY:

Shenzhen BALUN Technology Co., Ltd.

**Tested by:** Julie zhu**Checked by:** Zong Liyao**Approved by:** Wei Yanquan
(Chief Engineer)

Revision History

<u>Version</u>	<u>Issue Date</u>	<u>Revisions Content</u>
<u>Rev. 01</u>	<u>May 25, 2022</u>	<u>Initial Issue</u>

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1 GENERAL INFORMATION

1.1 Identification of the Testing Laboratory

Company Name	Shenzhen BALUN Technology Co., Ltd.
Address	Block B, 1/F, Baisha Science and Technology Park, Shahe West Road, Nanshan District, ShenZhen, GuangDong Province, China
Phone Number	+86 755 6685 0100

1.2 Identification of the Responsible Testing Location

Test Location	Shenzhen BALUN Technology Co., Ltd.
Address	Block B, 1/F, Baisha Science and Technology Park, Shahe West Road, Nanshan District, ShenZhen, GuangDong Province, China
Accreditation Certificate	The laboratory is a testing organization accredited by FCC as a accredited testing laboratory. The designation number is CN1196.
Description	All measurement facilities used to collect the measurement data are located at Block B, 1/F, Baisha Science and Technology Park, Shahe West Road, Nanshan District, ShenZhen, GuangDong Province, China

2 PRODUCT INFORMATION

2.1 Applicant Information

Applicant	Shenzhen RuisiMai Electronics Limited
Address	Room 609, Gangshun Building, Shangxing Village No.4, Xinqiao sub-district, Baoan District, Shenzhen, Guangdong, China

2.2 Manufacturer Information

Manufacturer	Shenzhen RuisiMai Electronics Limited
Address	Room 609, Gangshun Building, Shangxing Village No.4, Xinqiao sub-district, Baoan District, Shenzhen, Guangdong, China

2.3 Factory Information

Factory	N/A
Address	N/A

2.4 General Description for Equipment under Test (EUT)

EUT Name	2.4G Wireless keyboard
Model Name Under Test	GWM-X03B
Series Model Name	GWM-X03W
Description of Model name differentiation	All models are same with electrical parameters and internal circuit structure, but only differ in shell color and model name.
Hardware Version	N/A
Software Version	N/A
Dimensions (Approx.)	N/A
Weight (Approx.)	N/A

2.5 Ancillary Equipment

Note: Not applicable.

2.6 Technical Information

Network and Wireless connectivity	2.4G ISM Band (GFSK modulation)
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The requirement for the following technical information of the EUT was tested in this report:

Operating Mode	2.4G ISM Band (GFSK modulation)	
Frequency Range	2.4G ISM Band (GFSK modulation)	2400 ~ 2483.5 MHz
Antenna Type	2.4G ISM Band (GFSK modulation)	PCB Antenna
Exposure Category	General Population/Uncontrolled Exposure	
EUT Stage	Portable Device	

3 SUMMARY OF TEST RESULT

3.1 Test Standards

No.	Identity	Document Title
1	47 CFR Part 2.1093	Radiofrequency radiation exposure evaluation: portable devices
2	KDB 447498 D01 v06	KDB 447498 General RF Exposure Guidance D01 v06

4 DEVICE CATEGORY AND LEVELS LIMITS

Portable Derives:

CFR Title 47 §2.1093(b)

(b) For purposes of this section, a portable device is defined as a transmitting device designed to be used so that the radiating structure(s) of the device is/are within 20 centimeters of the body of the user.

FCC KDB 447498 D01 General RF Exposure Guidance v06 Limit

Unless specifically required by the published RF exposure KDB procedures, standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Test Exclusion Threshold condition, listed below, is satisfied. These test exclusion conditions are based on source-based time-averaged maximum conducted output power of the RF channel requiring evaluation, adjusted for tune-up tolerance, and the minimum test separation distance required for the exposure conditions. The minimum test separation distance is determined by the smallest distance from the antenna and radiating structures or outer surface of the device, according to the host form factor, exposure conditions and platform requirements, to any part of the body or extremity of a user or bystander.

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances

≤ 50 mm are determined by:

$$\left[\frac{\text{max. power of channel, including tune-up tolerance, mW}}{\text{min. test separation distance, mm}} \right] \cdot \sqrt{f(\text{GHz})} \leq 3.0 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR}$$

Where

- f (GHz) is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- The result is rounded to one decimal place for comparison

The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.

5 ASSESSMENT RESULT

5.1 Output Power

2.4G ISM Band			
Mode	GFSK modulation		
	Low Channel	Middle Channel	High Channel
Peak Power (dBm)	-20.12	-19.93	-20.18
Note: This report listed the worst case peak power value, please refer to RF test report for more details.			

5.2 Turn-up power

Mode	Conducted Power Range (dBm)
Bluetooth	(-20.50)-(-19.50)

5.3 RF Exposure Evaluation Result

Mode	Tune-up limit power (dBm)	Distance (mm)	Calculation Frequency (MHz)	Calculation Results	Threshold Value	Verdict
Bluetooth	-19.50	5	2440	0.0035	3.0	Compliance

5.4 Conclusion

This EUT is deemed to comply with the reference level limits, therefore the basic restrictions are compliant with human exposure limits.

Statement

1. The laboratory guarantees the scientificity, accuracy and impartiality of the test, and is responsible for all the information in the report, except the information provided by the customer. The customer is responsible for the impact of the information provided on the validity of the results.
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7. Any objection shall be raised to the laboratory within 30 days after receiving the report.

--END OF REPORT--