



中国认可
国际互认
检测
TESTING
CNAS L6791

TEST REPORT

Applicant: Ugreen Group Limited
Address: UGREEN Building, Longcheng Industrial Park
Longguanxi Road, Longhua, ShenZhen, China
Equipment Type: Multi-mode Wireless Keyboard
Model Name: K551
Brand Name: **UGREEN**
FCC ID: 2AQI5-K551
Test Standard: 47 CFR Part 2.1093
(refer to section 3.1)
Sample Arrival Date: Mar. 24, 2025
Test Date: Mar. 26, 2025 - Jun. 03, 2025
Date of Issue: Jun. 19, 2025

ISSUED BY:

Shenzhen BALUN Technology Co., Ltd.

Tested by: Xiong Lining**Checked by:** Xu Rui**Approved by:** Tolan Tu

(Testing Director)

Revision History

<u>Version</u>	<u>Issue Date</u>	<u>Revisions Content</u>
<u>Rev. 01</u>	<u>Jun. 19, 2025</u>	<u>Initial Issue</u>

TABLE OF CONTENTS

1	GENERAL INFORMATION	3
1.1	Test Laboratory	3
1.2	Test Location	3
2	PRODUCT INFORMATION	4
2.1	Applicant Information	4
2.2	Manufacturer Information	4
2.3	Factory Information	4
2.4	General Description for Equipment under Test (EUT)	4
2.5	Technical Information	6
3	SUMMARY OF TEST RESULT	7
3.1	Test Standards	7
4	DEVICE CATEGORY AND LEVELS LIMITS	8
5	ASSESSMENT RESULT	10
5.1	Output Power	10
5.2	Tune-up power	10
5.3	RF Exposure Evaluation Result	10
5.4	Conclusion	10

1 GENERAL INFORMATION

1.1 Test Laboratory

Name	Shenzhen BALUN Technology Co., Ltd.
Address	Block B, 1/F, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China
Phone Number	+86 755 6685 0100

1.2 Test Location

Name	Shenzhen BALUN Technology Co., Ltd.
Location	☒ Block B, 1/F, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China
	☐ 1/F, Building B, Ganghongji High-tech Intelligent Industrial Park, No. 1008, Songbai Road, Yangguang Community, Xili Sub-district, Nanshan District, Shenzhen, Guangdong Province, P. R. China
Accreditation Certificate	The laboratory is a testing organization accredited by FCC as a accredited testing laboratory. The designation number is CN1196.

2 PRODUCT INFORMATION

2.1 Applicant Information

Applicant	Ugreen Group Limited
Address	UGREEN Building, Longcheng Industrial Park Longguanxi Road, Longhua, ShenZhen, China

2.2 Manufacturer Information

Manufacturer	Ugreen Group Limited
Address	UGREEN Building, Longcheng Industrial Park Longguanxi Road, Longhua, ShenZhen, China

2.3 Factory Information

Factory	Shenzhen Loyal Electronics Co., Ltd
Address	101, No.5, the Third Road, Shapu Yangchong Industry Park, Songgang Street, Baoan District, Shenzhen, GuangdongProvince, China

2.4 General Description for Equipment under Test (EUT)

EUT Name	Multi-mode Wireless Keyboard
Model Name Under Test	K551
Series Model Name	N/A
Description of Model name differentiation	N/A
Hardware Version	V02
Software Version	0xa0
Dimensions (Approx.)	N/A
Weight (Approx.)	N/A

Remark:

- Product Number (P/N) code in the below table, for marketing purpose, will be marked on the marking plate.

65598	65598P	65598X	65598A	65598B	65598C	65598U	65598JP	65598EU	65598UK	65598US	65598KC	KC-65598	65598RU	65598MX	65598DE	65598AB	65598TH
65592	65592P	65592X	65592A	65592B	65592C	65592U	65592JP	65592EU	65592UK	65592US	65592KC	KC-65592	65592RU	65592MX	65592DE	65592AB	65592TH
75045	75045P	75045X	75045A	75045B	75045C	75045U	75045JP	75045EU	75045UK	75045US	75045KC	KC-75045	75045RU	75045MX	75045DE	75045AB	75045TH
75046	75046P	75046X	75046A	75046B	75046C	75046U	75046JP	75046EU	75046UK	75046US	75046KC	KC-75046	75046RU	75046MX	75046DE	75046AB	75046TH
75047	75047P	75047X	75047A	75047B	75047C	75047U	75047JP	75047EU	75047UK	75047US	75047KC	KC-75047	75047RU	75047MX	75047DE	75047AB	75047TH
75048	75048P	75048X	75048A	75048B	75048C	75048U	75048JP	75048EU	75048UK	75048US	75048KC	KC-75048	75048RU	75048MX	75048DE	75048AB	75048TH
75049	75049P	75049X	75049A	75049B	75049C	75049U	75049JP	75049EU	75049UK	75049US	75049KC	KC-75049	75049RU	75049MX	75049DE	75049AB	75049TH
75050	75050P	75050X	75050A	75050B	75050C	75050U	75050JP	75050EU	75050UK	75050US	75050KC	KC-75050	75050RU	75050MX	75050DE	75050AB	75050TH
75147	75147P	75147X	75147A	75147B	75147C	75147U	75147JP	75147EU	75147UK	75147US	75147KC	KC-75147	75147RU	75147MX	75147DE	75147AB	75147TH
75148	75148P	75148X	75148A	75148B	75148C	75148U	75148JP	75148EU	75148UK	75148US	75148KC	KC-75148	75148RU	75148MX	75148DE	75148AB	75148TH
75149	75149P	75149X	75149A	75149B	75149C	75149U	75149JP	75149EU	75149UK	75149US	75149KC	KC-75149	75149RU	75149MX	75149DE	75149AB	75149TH
75150	75150P	75150X	75150A	75150B	75150C	75150U	75150JP	75150EU	75150UK	75150US	75150KC	KC-75150	75150RU	75150MX	75150DE	75150AB	75150TH
75151	75151P	75151X	75151A	75151B	75151C	75151U	75151JP	75151EU	75151UK	75151US	75151KC	KC-75151	75151RU	75151MX	75151DE	75151AB	75151TH
85064	85064P	85064X	85064A	85064B	85064C	85064U	85064JP	85064EU	85064UK	85064US	85064KC	KC-85064	85064RU	85064MX	85064DE	85064AB	85064TH
85065	85065P	85065X	85065A	85065B	85065C	85065U	85065JP	85065EU	85065UK	85065US	85065KC	KC-85065	85065RU	85065MX	85065DE	85065AB	85065TH

2.5 Technical Information

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

Operating Mode	Bluetooth, 2.4G ISM Band	
Frequency Range	Bluetooth	2402 ~ 2480 MHz
	2.4G ISM Band	2405 ~ 2470 MHz
Antenna Type	Bluetooth	PCB Antenna
	2.4G ISM Band	PCB Antenna
Exposure Category	General Population/Uncontrolled Exposure	
Product Type	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 D04 v01	KDB 447498 D04 Interim General RF Exposure Guidance v01

4 DEVICE CATEGORY AND LEVELS LIMITS

Portable Devices:

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 Devices:

According with FCC KDB 447498 D04, Appendix B, The SAR-based exemption formula applies for single fixed, mobile, and portable RF sources with available maximum time-averaged power or effective radiated power (ERP), whichever is greater, of less than or equal to the threshold P_{th} (mW).

This method shall only be used at separation distances from 0.5 cm to 40 cm and at frequencies from 0.3 GHz to 6 GHz (inclusive). The following table shows the power threshold from 5mm to 50mm.

Power Thresholds (mW)					
Frequency (MHz)	At separation distance of ≤ 5 mm	At separation distance of 10 mm	At separation distance of 15 mm	At separation distance of 20 mm	At separation distance of 25 mm
300	39 mW	65 mW	88 mW	110 mW	129 mW
450	22 mW	44 mW	67 mW	89 mW	112 mW
835	9 mW	25 mW	44 mW	66 mW	90 mW
1900	3 mW	12 mW	26 mW	44 mW	66 mW
2450	3 mW	10 mW	22 mW	38 mW	59 mW
3600	2 mW	8 mW	18 mW	32 mW	49 mW
5800	1 mW	6 mW	14 mW	25 mW	40 mW
Frequency (MHz)	At separation distance of 30 mm	At separation distance of 35 mm	At separation distance of 40 mm	At separation distance of 45 mm	At separation distance of 50 mm
300	148 mW	166 mW	184 mW	201 mW	217 mW
450	135 mW	158 mW	180 mW	203 mW	226 mW
835	116 mW	145 mW	175 mW	207 mW	240 mW
1900	92 mW	122 mW	157 mW	195 mW	236 mW
2450	83 mW	111 mW	143 mW	179 mW	219 mW
3600	71 mW	96 mW	125 mW	158 mW	195 mW
5800	58 mW	80 mW	106 mW	136 mW	169 mW

Note:

1. Maximum power is the source-based time-average power and represents the maximum RF output power including tune-up tolerance among production units
2. Per KDB 447498 D04, for larger devices, the test separation distance of adjacent edge configuration is determined by the closest separation between the antenna and the user.
3. Per KDB 447498 D04, standalone SAR test exclusion threshold is applied; If the distance of the antenna to the user is < 5mm, 5mm is used to determine SAR exclusion threshold
4. Per KDB 447498 D04, for separation distances from 0.5 cm to 40 cm and at frequencies from 0.3 GHz to 6 GHz (inclusive), the threshold Pth (mW) is given by Following:

$$P_{th}(mW) = \begin{cases} ERP_{20cm}(d/20cm)^x & d \leq 20cm \\ ERP_{20cm} & 20cm < d \leq 40cm \end{cases}$$

where

$$x = -\log_{10} \left(\frac{60}{ERP_{20cm}\sqrt{f}} \right)$$

- a. f(GHz) is the RF channel transmit frequency in GHz
- b. d is the separation distance (cm), The result is rounded to one decimal place for comparison
- c. ERP_{20cm} are determined by:

$$ERP_{20cm}(mW) = f(x) = \begin{cases} 2040f & 0.3GHz \leq f < 1.5GHz \\ 3060 & 1.5GHz \leq f \leq 6GHz \end{cases}$$

5 ASSESSMENT RESULT

5.1 Output Power

Mode	Bluetooth	2.4G ISM Band
Conducted Power (dBm)	-15.56	-13.08
Antenna Gain (dBi)	-2.36	-2.36
EIRP (dBm)	-17.92	-15.44

Note: This report listed the worst case power value, please refer to BL-SZ2531122-601, BL-SZ2531122-602 report for more details.

5.2 Tune-up power

Mode	Conducted Power Range (dBm)	EIRP Range (dBm)	ERP Range (dBm)
Bluetooth	[-17.50, -15.50]	[-19.86, -17.86]	[-22.01, -20.01]
2.4G ISM Band	[-15.00, -13.00]	[-17.36, -15.36]	[-19.51, -17.51]

Note1: ERP= EIRP -2.15dB
 Note2: According KDB 447498 D04, used the greater of maximum conducted power and ERP to compare with the threshold value Pth.

5.3 RF Exposure Evaluation Result

Mode	Distance (mm)	Calculation Frequency (MHz)	Tune-up limit power (dBm)	Tune-up limit power (mW)	Threshold Value (mW)	Verdict
Bluetooth	5.00	2480	-15.50	0.03	2.72	Compliance
2.4G ISM Band	5.00	2470	-13.00	0.05	2.73	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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