



RF Exposure Evaluation Report

Report No.: JYTSZ-R12-2301737

Applicant: Hangzhou Roombanker Technology Co., Ltd.

Address of Applicant: A#801 Wantong center, Hangzhou, China

Equipment Under Test (EUT)

Product Name: Keypad

Model No.: RBCT-KP1-915, RBCT-KPx-915:(X:0~9 or X:A~Z), RBCT-KPx-915(Y)/ZZZ:(X:0~9 or X:A~Z), (Y:0~9 or Y:A~Z)/(Z:0~9 or Z:A~Z)

Trade mark: Roombanker

FCC ID: 2AUXBRBCT-KP1915

Applicable standards: KDB 447498 D04 Interim General RF Exposure Guidance v01

Date of sample receipt: 11 Dec., 2023

Date of Test: 12 Dec., 2023 to 29 Feb., 2024

Date of report issue: 01 Mar., 2024

Test Result: PASS

Project by:

Jane Li
Project Engineer

Date:

01 Mar., 2024

Reviewed by:

Bea Zhao
Senior Engineer

Date:

01 Mar., 2024

Approved by:

Janet Wei
Manager

Date:

01 Mar., 2024

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in above the application standard version. Test results reported herein relate only to the item(s) tested.

This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

1 Version

Version No.	Date	Description
00	01 Mar., 2024	Original

2 Contents

	Page
Cover Page	1
1 Version	2
2 Contents	3
3 General Information	4
3.1 Client Information	4
3.2 General Description of E.U.T.	4
3.3 Operating Modes	5
3.4 Additions to, Deviations, or Exclusions from the Method	5
3.5 Laboratory Facility	5
3.6 Laboratory Location	5
4 Technical Requirements Specification	6
4.1 Limits	6
4.2 Result	6
4.3 Conclusion	7

3 General Information

3.1 Client Information

Applicant:	Hangzhou Roombanker Technology Co., Ltd.
Address:	A#801 Wantong center, Hangzhou, China
Manufacturer/Factory:	Zhejiang dusun electron co., ltd
Address:	No.640 Feng Qing St, DeQing Zhejiang China

3.2 General Description of E.U.T.

Product Name:	Keypad
Model No.:	RBCT-KP1-915, RBCT-KPx-915:(X:0~9 or X:A~Z), RBCT-KPx-915(YY)/ZZZ:(X:0~9 or X:A~Z), (Y:0~9 or Y:A~Z)/(Z:0~9 or Z:A~Z)
Operation Frequency:	SUB-G: 903MHz~927MHz
Modulation technology:	SUB-G: FSK
Antenna Type:	Internal Antenna
Antenna gain:	SUB-G: -0.76 dBi (declare by Applicant)
Test Sample Condition:	The test samples were provided in good working order with no visible defects.

3.3 Operating Modes

Operating mode	Detail description
SUB-G mode	Keep the EUT in continuously transmitting in SUB-G mode

3.4 Additions to, Deviations, or Exclusions from the Method

No

3.5 Laboratory Facility

The test facility is recognized, certified, or accredited by the following organizations:

● **FCC - Designation No.: CN1211**

JianYan Testing Group Shenzhen Co., Ltd. has been accredited as a testing laboratory by FCC(Federal Communications Commission). The test firm Registration No. is 727551.

● **ISED – CAB identifier.: CN0021**

The 3m Semi-anechoic chamber of JianYan Testing Group Shenzhen Co., Ltd. has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 10106A-1.

● **CNAS - Registration No.: CNAS L15527**

JianYan Testing Group Shenzhen Co., Ltd. is accredited to ISO/IEC 17025:2017 General Requirements for the Competence of Testing and Calibration laboratories for the competence of testing. The Registration No. is CNAS L15527.

● **A2LA - Registration No.: 4346.01**

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories. The test scope can be found as below link: <https://portal.a2la.org/scopepdf/4346-01.pdf>

3.6 Laboratory Location

JianYan Testing Group Shenzhen Co., Ltd.

Address: No.101, Building 8, Innovation Wisdom Port, No.155 Hongtian Road, Huangpu Community, Xinqiao Street, Bao'an District, Shenzhen, Guangdong, People's Republic of China.

Tel: +86-755-23118282, Fax: +86-755-23116366

Email: info-JYTee@lets.com, Website:<http://jyt.lets.com>

4 Technical Requirements Specification

4.1 Limits

According to KDB 447498 D04 Interim General RF Exposure Guidance v01 RF Exposure Procedures and Equipment Authorization Policies for Mobile and Portable Devices.

RF Exposure Test Exemptions for Single Source

SAR-based Exemption

Evaluation of compliance with the exposure limits in § 1.1310 of this chapter, and preparation of an EA if the limits are exceeded, is necessary for portable devices having single RF sources with more than an available maximum time-averaged power of 1 mW, more than the ERP listed in Table 1 to §1.1307(b)(3)(i)(C), or more than the P_{th} in the following formula, whichever is greater. The following formula shall only be used in conjunction with portable devices not exempt by § 1.1307(b)(3)(i)(C) at distances from 0.5 centimeters to 20 centimeters and frequencies from 0.3 GHz to 6 GHz.

When 10-g extremity SAR applies, SAR test exemption may be considered by applying a factor of 2.5 to the SAR-based exemption thresholds.

$$P_{th} \text{ (mW)} = \begin{cases} ERP_{20 \text{ cm}} (d/20 \text{ cm})^x & d \leq 20 \text{ cm} \\ ERP_{20 \text{ cm}} & 20 \text{ cm} < d \leq 40 \text{ cm} \end{cases} \quad (\text{B.2})$$

where

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

and f is in GHz, d is the separation distance (cm), and $ERP_{20 \text{ cm}}$ is per Formula (B.1).

$$P_{th} \text{ (mW)} = ERP_{20 \text{ cm}} \text{ (mW)} = \begin{cases} 2040f & 0.3 \text{ GHz} \leq f < 1.5 \text{ GHz} \\ 3060 & 1.5 \text{ GHz} \leq f \leq 6 \text{ GHz} \end{cases} \quad (\text{B.1})$$

Table B.2—Example Power Thresholds (mW)

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

4.2 Result

Thus, Worse case below:

Frequency (MHz)	Maximum Output power (dBm)	Maximum Output power (mW)	Distance (cm)	P_{th} (mW) For 10-g extremity SAR
SUB-G				
903	12.23	16.71	0.5	20.71

4.3 Conclusion

Cuz 16.71mW < 20.71mW, The device is exempt from the SAR test and satisfies RF exposure evaluation.

-----End of report-----