



RF Exposure Evaluation Report

Report No.: JYTSZ-R12-2301527

Applicant: Hangzhou Roombanker Technology Co., Ltd.

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

Equipment Under Test (EUT)

Product Name: Smart Touch Screen Gateway

Model No.: DSGW-130, DSGW-130-X(X:1~100), DSGW-130-XXXX(X:0-9&A-Z)

Trade Mark: Dusun

FCC ID: 2AUXBDSGW-130

Applicable standards: FCC CFR Title 47 Part 2 (§2.1091)

Date of sample receipt: 30 Oct., 2023

Date of Test: 31 Oct., to 25 Dec., 2023

Date of report issue: 26 Dec., 2023

Test Result: PASS

Tested by:

Jane Li
Project Engineer

Date:

26 Dec., 2023

Reviewed by:

Seto Chan
Senior Engineer

Date:

26 Dec., 2023

Approved by:

James Wei
Manager

Date:

26 Dec., 2023

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.

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1 Version

Version No.	Date	Description
00	26 Dec., 2023	Original

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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:	Smart Touch Screen Gateway
Model No.:	DSGW-130, DSGW-130-X(X:1~100), DSGW-130-XXXX(X:0-9&A-Z)
Operation Frequency:	2.4G Wi-Fi: 2412MHz~2462MHz 5.2G Wi-Fi Band 1: 5180MHz~5240MHz 5.8G Wi-Fi Band 4: 5725MHz~5875MHz Zigbee: 2405MHz~2480MHz
Modulation technology:	802.11b: DSSS, 802.11a/g/n/ac: OFDM Zigbee: OQPSK
Antenna gain:	Zigbee: 2.52 dBi; 2.4G Wi-Fi:2.98 dBi 5.2G WiFi: 1.63 dBi; 5.8G WiFi: 1.61 dBi (Declare by applicant)
Test Sample Condition:	The test samples were provided in good working order with no visible defects.
Remark:	DSGW-130, DSGW-130-X(X:1~100), DSGW-130-XXXX(X:0-9&A-Z) were identical inside, the electrical circuit design, layout, components used and internal wiring, with only difference being model name.

3.3 Operating Modes

Operating mode	Detail description
Zigbee mode	Keep the EUT in continuously transmitting in Zigbee mode
2.4G WIFI mode	Keep the EUT in continuously transmitting in 2.4G WIFI mode
5.2G WIFI mode	Keep the EUT in continuously transmitting in 5.2G WIFI mode
5.8G WIFI mode	Keep the EUT in continuously transmitting in 5.8G WIFI mode

3.4 Additions to, deviations, or exclusions from the method

No

3.5 Laboratory Facility

<p>The test facility is recognized, certified, or accredited by the following organizations:</p> <ul style="list-style-type: none"> ● 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 and 10m 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
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3.6 Laboratory Location

<p>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</p>

4 Technical Requirements Specification

4.1 Limits

The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in 1.1307(b)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3–3.0	614	1.63	*(100)	6
3.0–30	1842/f	4.89/f	*(900/f ²)	6
30–300	61.4	0.163	1.0	6
300–1500			f/300	6
1500–100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3–1.34	614	1.63	*(100)	30
1.34–30	824/f	2.19/f	*(180/f ²)	30
30–300	27.5	0.073	0.2	30
300–1500			f/1500	30
1500–100,000			1.0	30

4.2 Test Procedure

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

$$S = \frac{P \times G}{4 \times \pi \times R^2}$$

Where:

S = power density

P = power input to the antenna

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

R = distance to the centre of radiation of the antenna

4.3 Result

Frequency (MHz)	Maximum Output power (dBm)	Maximum Output power (mW)	Antenna Gain (dBi)	Antenna Gain (numeric)	Distance (cm)	Result (mW/cm ²)	Limits for General Population/Uncontrolled Exposure (mW/cm ²)	Verdict
2.4G Wi-Fi								
2412	16.5	44.67	2.98	1.97	20.00	0.02	1.0	Pass
5.2G Wi-Fi								
5240	13.47	22.23	1.63	1.46	20.00	0.01	1.0	Pass
5.8G Wi-Fi								
5785	13.33	21.53	1.61	1.45	20.00	0.01	1.0	Pass
ZigBEE								
2440	17.693	58.79	2.52	1.79	20.00	0.02	1.0	Pass

Note:

1. Just the worst case mode was shown in report.

Simultaneous transmission(Worse mode):

Mode	Ratio	Total Ratio	Limit	Verdict
2.4G Wi-Fi	0.02	0.04	1	Pass
ZigBEE	0.02			

4.4 Conclusion

The device is exempt from the SAR test and satisfies RF exposure evaluation.

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