

TEST REPORT

Applicant: Woan Technology (Shenzhen) Co., Ltd.
Room 1101, Qiancheng Commercial Center, No. 5
Haicheng Road, Mabu Community, Xixiang Sub-
district, Bao'an District, Shenzhen, Guangdong,
P.R.China, 518100

Address:

Equipment Type: SwitchBot Keypad

Model Name: W2500020 (refer section 2.4)

Brand Name: SwitchBot

FCC ID: 2AKXB-W2500020

Test Standard: 47 CFR Part 2.1093
KDB 447498 D01 v06

Test Date: Apr. 25, 2022 - May 13, 2022

Date of Issue: Jun. 07, 2022

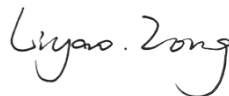
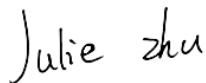
ISSUED BY:

Shenzhen BALUN Technology Co., Ltd.

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Checked by: Liyao Zong

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(Chief Engineer)



Revision History		
Version	Issue Date	Revisions Content
<u>Rev. 01</u>	<u>May 31, 2022</u>	<u>Initial Issue</u>
<u>Rev. 02</u>	<u>Jun. 07, 2022</u>	<u>Delete NFC information.</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	Woan Technology (Shenzhen) Co., Ltd.
Address	Room 1101, Qiancheng Commercial Center, No. 5 Haicheng Road, Mabu Community, Xixiang Sub-district, Bao'an District, Shenzhen, Guangdong, P.R.China, 518100

2.2 Manufacturer Information

Manufacturer	Woan Technology (Shenzhen) Co., Ltd.
Address	Room 1101, Qiancheng Commercial Center, No. 5 Haicheng Road, Mabu Community, Xixiang Sub-district, Bao'an District, Shenzhen, Guangdong, P.R.China, 518100

2.3 Factory Information

Factory	Woan Technology (Shenzhen) Co., Ltd.
Address	Building A2, Zhengfeng Industrial Area, No.610 Fengtang Boulevard, Fuhai Sub-district, Bao'an District, Shenzhen

2.4 General Description for Equipment under Test (EUT)

EUT Name	SwitchBot Keypad	
Model Name Under Test	W2500020	
Series Model Name	W2500010, W2500011, W2500012, W2500013, W2500014, W2500015, W2500021, W2500022, W2500023, W2500024, W2500025	
Description of Model name differentiation	All models are same with electrical parameters and internal circuit structure, but only different on with fingerprint module or without fingerprint module.	
	No Fingerprints Version	W2500010, W2500011, W2500012, W2500013, W2500014, W2500015
	Have Fingerprints Version	W2500021, W2500022, W2500023, W2500024, W2500025
Hardware Version	V1.0	
Software Version	V1.0	
Dimensions (Approx.)	N/A	
Weight (Approx.)	N/A	

2.5 Ancillary Equipment

Ancillary Equipment 1	Battery	
	Brand Name	N/A
	Model No.	CR123A
	Serial No.	N/A
	Capacity	N/A
	Rated Voltage	6 V
	Limit Charge Voltage	N/A

2.6 Technical Information

Network and Wireless connectivity	Bluetooth
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The requirement for the following technical information of the EUT was tested in this report:

Operating Mode	Bluetooth	
Frequency Range	Bluetooth	2400 ~ 2483.5 MHz
Antenna Type	Bluetooth	PIFA
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:

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

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

Bluetooth			
Mode	GFSK (BLE)		
	Low Channel	Middle Channel	High Channel
Peak Power (dBm)	-2.70	-2.68	-4.01

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	(-4.5)-(-2.50)

5.3 RF Exposure Evaluation Result

Mode	Tune-up limit power (dBm)	Distance (mm)	Calculation Frequency (MHz)	Calculation Results	Threshold Value	Verdict
Bluetooth	-2.50	5	2440	0.18	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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4. This report is invalid if it is altered, without the signature of the testing and approval personnel, or without the "inspection and testing dedicated stamp" or test report stamp.
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7. Any objection shall be raised to the laboratory within 30 days after receiving the report.

--END OF REPORT--