



User Manual

Think and Connect

RaccoonBot, Your Coding Partner

Curiosity becomes discovery. Discovery becomes a skill.
RaccoonBot helps students independently master future technologies,
becoming the leaders of their own learning.



RACCOONBOT
Curriculum Book

ROBOMATION
MAKE THINGS ALIVE

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Think and Connect

The RaccoonBot is a small, precise 4-axis robotic arm for learning and research. Its advanced stepping motors provide smooth, quiet, and highly accurate control. Empower your future in the AI revolution with RaccoonBot!

● Features



1. BLE 5 wireless connectivity

Mini Dongle+ for Easy Connectivity
Full support for iOS and Android devices



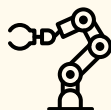
2. Built-in rechargeable battery

Operate Anywhere,
No External Power Needed



3. Optimized for AI & coding

Integrates with RobomationLAB
Supports Scratch and Python languages



4. Teaching & Playback function

Operates Independently,
No Additional Equipment Needed



5. Multiple end-effectors

Compatible with a Variety of Devices
(e.g., grippers, pen holders)



6. Expandable Interface

Works with Additional Equipment
(e.g., conveyor belts)

A hands-on approach to understanding robotics and AI.



Q. What is the Teaching & Playback function?

This feature allows users to physically move the robot arm to teach it a desired action. The robot then remembers and automatically repeats that exact movement. Without complex coding, simply "teaching" the robot arm by hand, and it will "playback" the process on its own.

* Product specifications and usage may be changed without prior notice.

RACCOONBOT

Basic Information



- 1 Play
- 2 Power
- 3 Delete
- 4 PLAY LED
- 5 MODE LED
- 6 Charging LED
- 7 External Device Interface
- 8 Charging Port
- 9 RESET Switch



- 10 TEACH
- 11 JOINT LED
- 12 CONNECTOR

● Button

Button	Teach	Power	Play	Delete
Short Click	Record the current position	Stop motion and return to the home	Play/Pause	Delete last action
Long Click	Pause for as long as the button is held down (with a beep and flashing magenta LED every second)	Power off	Save action	Delete all actions
Double Click	Open or close the gripper and save the position	-	Loop motion	-

Button	Sound Effect
Short Click	Beep x 1
Long Click	Beep x 1 + Beep x 2
Delete Short Click	Delete previous action, then Snore x 1 If no previous action exists, Siren x 1
Delete Long Click	Regardless of whether a previous action exists, delete it and then play Snore x 2

*Home: The initial standby position.
*The Delete button only works in Unplugged mode.
*In Coding mode, all buttons function as inputs for coding only, and other features are unavailable.

● Operating Modes

Mode	Description
Standby Mode	The robot is in an idle state
Coding Mode	The robot is controlled directly through coding
Unplugged Mode	The robot is used independently without a PC
Unplugged Balancing Mode (vertical/horizontal)	In Unplugged Mode, this feature helps balance Joint 4's horizontal and vertical alignment

● How to Enter Unplugged Balancing Mode (Vertical/Horizontal)

From a powered-off state, press the specified keys simultaneously to turn on the robot and enter Unplugged Balancing Mode.
The operating mode is set upon startup and requires a power cycle (turning the robot off and on) to change.

Balancing Mode	How to Enter	Status Indicator
Vertical Mode	Press the Play and Power buttons simultaneously to enter the mode, then press the Teach button	The Mode LED will be Yellow
Horizontal Mode	Press the Power and Delete buttons simultaneously to enter the mode, then press the Teach button.	The Mode LED will be Yellow

● How to Play Back Saved Actions

- 1. You can only enter this mode from Standby Mode. (Pressing the Teach button in Standby Mode will enter Unplugged Mode, so you cannot play back previous actions.)
- 2. From Standby Mode, single-click or double-click the **Play** button to play back the previous action. **Play button double click: Repeat function**
- 3. **To play saved actions + new actions:** From Standby Mode, press the **Play** button to play the previous actions, then press the **Teach** button to record new actions.
To play only new actions: From Standby Mode, simply press the **Teach** button to record new actions directly.

● Smart Stop Function

If the robot collides with an obstacle during an action, a short warning sound will play on the buzzer, and the **Joint LED** will blink **red**.
If the robot continues to hit an obstacle for a certain period, its movement will stop.
Note: This function only works in Unplugged mode.

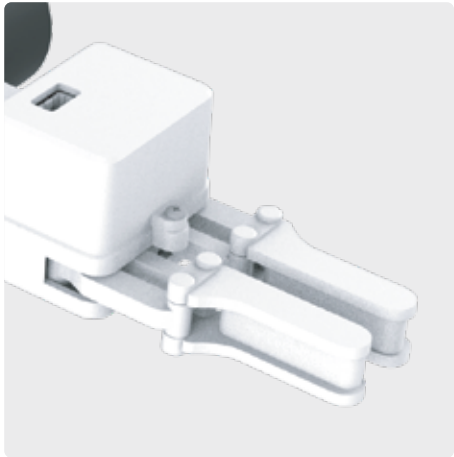
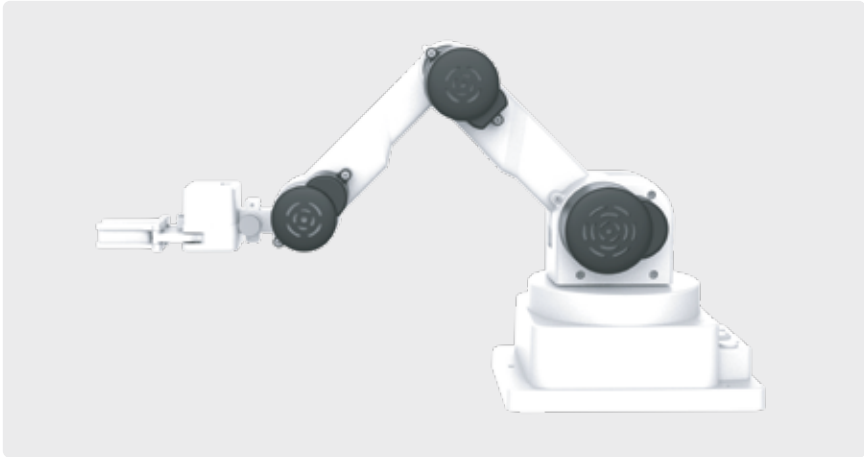
● Error Display

Error Type	Play LED	Mode LED
Calibration state error	Red blinking	Red blinking
Power input error (charging port)	Off	Red blinking + Siren sound
Encoder error	Red blinking	Off

● Battery Status Indicator

When the battery is low during operation, the **Charging LED** and **Joint LED** will blink **red**.
Please charge the robot fully before using it again.

RACCOONBOT
Product Specifications



Tech Specs

Type of equipment : BLE Device
Frequency of use: 2402~2480 MHz

Item	Specification		
Dimensions	93mm (W) x 118mm (L) x 180mm (H)		
Working Range	240° of motion / 295mm reach		
Weight	825g	DoF	4-axis, 4-DoF
Joint Range of Motion	JOINT 1 -120° ~ +120° JOINT 2 -90° ~ +30° JOINT 3 -150° ~ +0° JOINT 4 -105° ~ +105°		
Drive System	Stepper Motor (Microstepping Control)		
End Effector	Mechanical Gripper (Replaceable)		
Input Devices	3 x Buttons, External Device Interface		
Communication Method	BLE 5.0	Battery	3500mAh
Controller Functions	Teaching & Playback / RobomationLAB / Scratch / Python		
Charging Port	USB-C (Charging Voltage: 5 Volts)		
Operating Time	[Operating Time] Approx. 50 min(continuous operation) [Standby Time] Approx. 8 hours [Charging Time] Approx. 3 hours		
Power Management	Battery management / High-voltage input warning / Overcurrent protection		



Compliance Statement

This device complies with part 15 of the FCC Rules.

Operation is subject to the following two conditions :

(1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Caution

THE GRANTEE IS NOT RESPONSIBLE FOR ANY CHANGES OR MODIFICATIONS NOT EXPRESSLY APPROVED BY THE PARTY RESPONSIBLE FOR COMPLIANCE. SUCH MODIFICATIONS COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

IMPORTANT NOTE : FCC RF Radiation Exposure Statement

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment.

This equipment should be installed and operated with a minimum distance of 0.5 centimeters between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.