Yahboom handle

Yahboom Micro:bit Robotic Control Handle User Manual

Model: handle

1. Introduction

The Yahboom Micro:bit Robotic Control Handle is designed to provide an intuitive interface for controlling Micro:bit-based robots and engaging in STEM education activities. This handle is compatible with Micro:bit V2 and V1.5 boards, offering a versatile tool for programming and interactive play. It features a joystick, multiple buttons, and integrated electronic modules for sound and vibration feedback.

2. Product Overview

This section details the components and physical characteristics of the Micro:bit Robotic Control Handle.

2.1 Package Contents

Verify that all items are present in your package:

- Micro:bit Gamepad x 1
- Battery Box x 1
- AAA Battery x 2
- Double-sided Tape x 1

Figure 2.1: Package Contents. The image displays the Micro:bit gamepad, a battery box, two AAA batteries, and a roll of double-sided tape, which are included in the product package.

2.2 Component Identification

Familiarize yourself with the various parts of the control handle:

- **Micro:bit Socket:** Slot for inserting the Micro:bit board.
- **Power Switch:** Controls the power supply to the handle.
- **Vibration Switch:** Activates or deactivates the vibration motor.
- **Rocket (Joystick):** Analog input for directional control.
- **Buttons (A, B, X, Y):** Digital input buttons for various functions.
- **Buzzer:** Provides audible feedback.
- **Vibration Motor:** Provides haptic feedback.
- **Block Holes:** Mounting points for attaching building blocks.

Figure 2.2: Micro:bit Gamepad Diagram. This diagram illustrates the layout and labels of the control handle's various components.

2.3 Dimensions

The control handle measures approximately 107mm in length and 77mm in width.

Figure 2.3: Product Dimensions. The image provides a visual representation of the handle's size, indicating its length and width.

3. Setup

Follow these steps to prepare your Micro:bit Robotic Control Handle for use.

3.1 Battery Installation

1. Open the battery compartment on the battery box.
2. Insert two AAA batteries, ensuring correct polarity (+/-).
3. Close the battery compartment.
4. Connect the battery box cable to the power input on the control handle.

3.2 Micro:bit Board Insertion

1. Carefully align your Micro:bit V2 or V1.5 board with the Micro:bit socket on the control handle.
2. Gently push the Micro:bit board into the socket until it is securely seated. Ensure the pins are correctly engaged.

Figure 3.1: Micro:bit Board Insertion. This image demonstrates the correct way to insert the Micro:bit board into the control handle.

4. Operating Instructions

Once the Micro:bit board is installed and powered, the control handle can be used to interact with compatible robots and projects.

4.1 Basic Control

1. Ensure the power switch on the handle is in the 'ON' position.
2. Use the joystick (labeled 'Rocket') for directional control. The specific movements (e.g., forward, backward, left, right) will depend on the programming of the connected Micro:bit robot.
3. Press the A, B, X, and Y buttons to trigger programmed actions.

4.2 Sound and Vibration Feedback

The handle includes a buzzer and a vibration motor. These can be programmed to provide audio and haptic feedback during use. The vibration switch allows you to enable or disable the vibration motor independently.

Figure 4.1: Sound and Vibration Features. This image illustrates the interactive feedback capabilities of the control handle.

4.3 Building Block Integration

The control handle features block holes, allowing users to attach compatible building blocks. This enables customization and expansion of the handle's physical form, facilitating creative projects and enhanced ergonomics.

Figure 4.2: Building Block Compatibility. The image shows how building blocks can be integrated with the control handle for custom designs.

4.4 Demonstration Video

Watch this video for a visual demonstration of the Micro:bit Robotic Control Handle in action, controlling various Yahboom Micro:bit robots.

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Video 4.1: Micro:bit Robot Handle Demonstration. This video showcases the Yahboom Micro:bit Robotic Control Handle being used to control different Micro:bit-powered robots, illustrating its functionality and versatility.

5. Programming

The Yahboom Micro:bit Robotic Control Handle supports various programming methods, making it suitable for STEM education.

5.1 Supported Programming Environments

The handle is compatible with:

- **JavaScript Graphical Programming (MakeCode):** A block-based visual programming environment ideal for beginners.
- **Python:** A text-based programming language for more advanced users.

Detailed tutorial materials and programming examples are available from the manufacturer to assist with learning and project development.

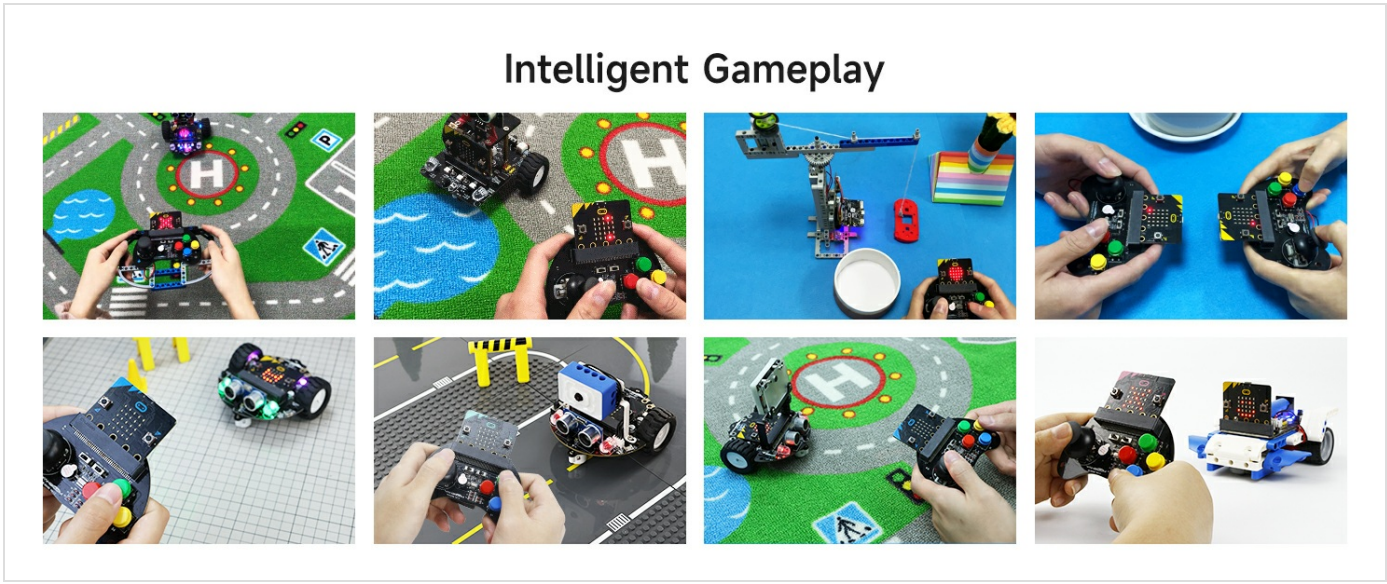

Figure 5.1: Graphical Programming Interface. This image shows a user interacting with a block-based programming environment for Micro:bit, illustrating the ease of programming the control handle.

5.2 Accessing Course Materials

Comprehensive course materials, including programming guides and project ideas, can be found on the Yahboom website. These resources are designed to help users maximize the educational potential of the control handle.

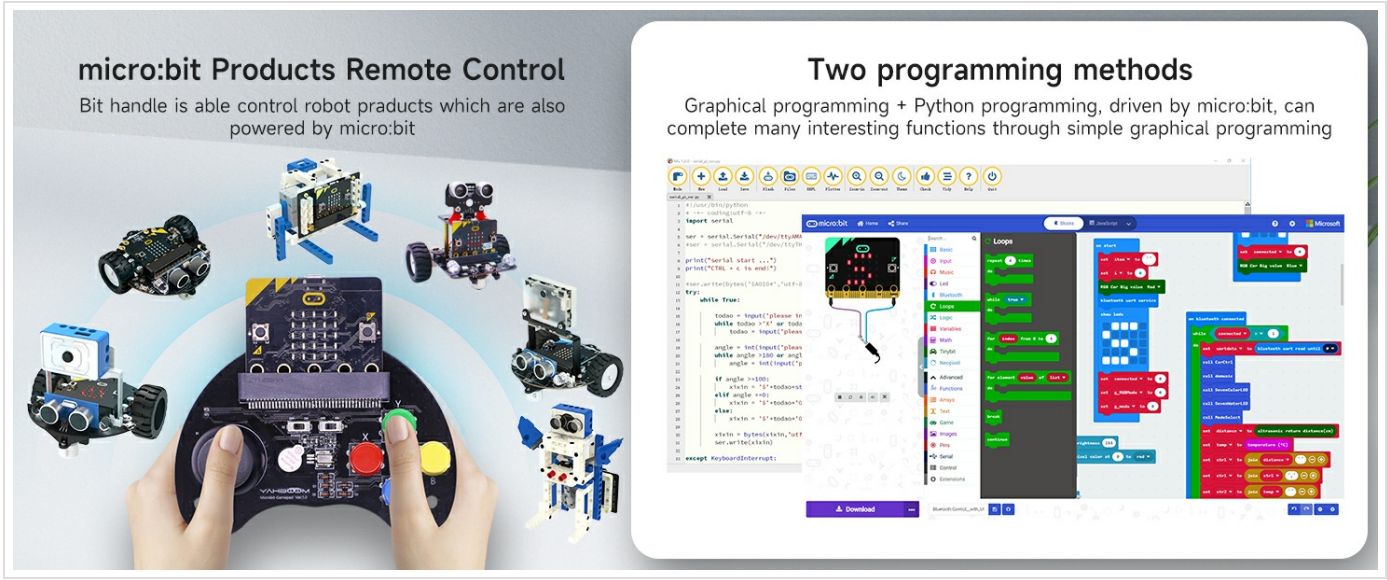

Figure 5.2: Online Course Materials. A screenshot of the Yahboom website displaying various programming courses and tutorials for the Micro:bit Game Handle.

6. Maintenance

Proper maintenance ensures the longevity and optimal performance of your control handle.

- **Cleaning:** Use a soft, dry cloth to clean the surface of the handle. Avoid using abrasive cleaners or solvents.

- **Storage:** Store the handle in a cool, dry place away from direct sunlight and extreme temperatures. Remove batteries if storing for extended periods to prevent leakage.
- **Handling:** Handle the device with care. Avoid dropping it or exposing it to excessive force, which could damage internal components or the Micro:bit board.

7. Troubleshooting

If you encounter issues with your Micro:bit Robotic Control Handle, refer to the following common problems and solutions.

Problem	Possible Cause	Solution
Handle does not power on.	Batteries are dead or incorrectly installed. Power switch is off.	Check battery polarity and replace batteries if necessary. Ensure the power switch is in the 'ON' position.
Handle does not control the robot.	Micro:bit board is not inserted or not programmed. Communication issue.	Ensure the Micro:bit board is securely inserted. Verify that the Micro:bit has the correct program loaded for control. Check for wireless communication range or interference.
Buzzer or vibration motor not working.	Vibration switch is off. Not programmed to activate.	Ensure the vibration switch is in the 'ON' position. Verify that the Micro:bit program includes commands to activate the buzzer and vibration motor.
Buttons or joystick unresponsive.	Micro:bit board not fully inserted. Programming error.	Re-insert the Micro:bit board firmly. Review your Micro:bit program to ensure inputs are correctly read and mapped to actions.

If problems persist after attempting these solutions, please contact Yahboom customer support for further assistance.

8. Specifications

Feature	Detail
Product Dimensions	107mm x 77mm (approx. 4.21 x 3.03 inches)
Item Weight	4.2 ounces
Model Number	handle
Manufacturer Recommended Age	12 months - 3 years (Note: Micro:bit programming is typically for older children/teens)
Batteries Required	2 x AAA batteries
Onboard Modules	Buzzer, Vibration Motor
Features	4 separate buttons, potentiometer (for joystick)
Compatibility	Micro:bit V2 & V1.5

9. Warranty and Support

For product support, technical assistance, or warranty inquiries, please contact Yahboom directly. Refer to the official

Yahboom website for the most up-to-date contact information and support resources.
The product is subject to a 30-day return policy from the point of purchase, as per standard retail terms.