

Get started quickly

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The tutorial demonstrates how to quickly experience the Bluetooth remote control function of the balance car.

1. BalanceBot

Use the mobile browser to scan the QR code to download the BalanceBot APP (only supports Android)



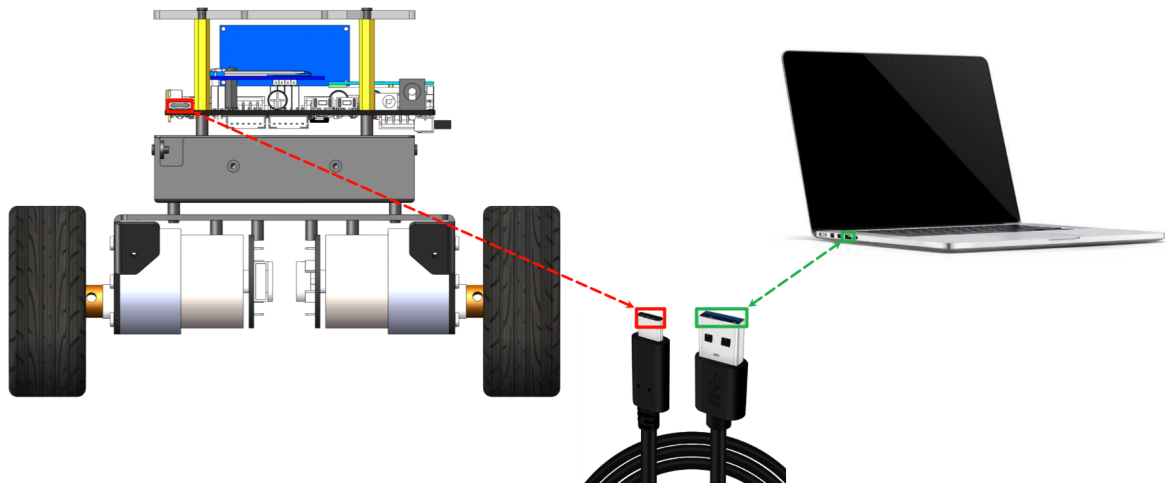
2. Assemble the balance car

Follow the assembly video to check whether all the hardware of the balance car is installed and connected correctly.

3. Download the program

Device connection

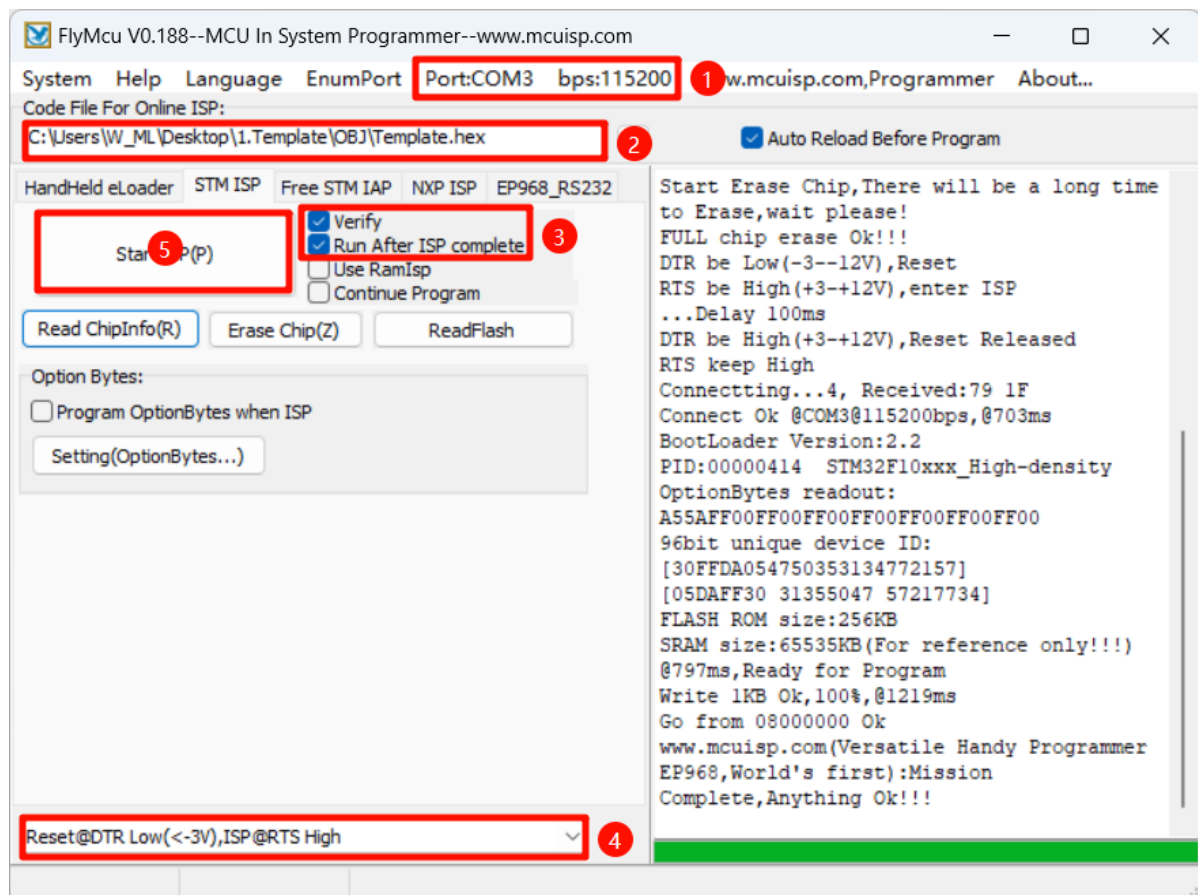
Use a Type-C data cable to connect the computer USB port and the Type-C burning port of the development board:



Program download

Burn the stm32_Balance_Car_L.hex file of the Large program project to the development board through the FlyMCU software: The stm32_Balance_Car_L.hex file is located in the OBJ folder of the project.

Product supporting documents software path: Attachment → Software tools → FlyMcu.zip
 Product supporting documents source code path: Attachment → Source code summary → 0. Large program → 1. Standard library (keil)



4. Program startup

After the program is downloaded to the development board, turn on the power switch of the expansion board; after the program is started, the OLED will display the current function mode.

Mode Switch

Turning any motor tire can switch the mode selection.

Mode Selection

KEY1 button is used to confirm the mode selection and control startup.

Function Mode Description

Note: Quick Start only demonstrates the Bluetooth control function. Other function modes require the installation of corresponding expansion accessories. For detailed usage, please refer to the [Advanced Balance Car Play] tutorial.

Function Mode	Description
1.Standard Mode	Standard Mode: Bluetooth Control
2.UT Follow	Ultrasonic Follow Mode
3.UT Avoid	Ultrasonic Obstacle Avoidance Mode
4.Load Movement	Loading Mode: Bluetooth Control
5.Handle Control	2.4G Wireless Handle Control Mode
6.IR Track	Four-way Line Patrol Mode
7.Adv IR Track	High Difficulty Four-way Line Patrol Mode
8.K210 QR Rec	K210 QR Code Recognition Mode
9.K210 Track	K210 Line Patrol Mode
10.K210 Follow	K210 Follow Mode
11.K210 Self Learn	K210 Self-Learning Mode
12.K210 Num Rec	K210 Number Recognition Mode
13.LiDAR Avoid	Radar Obstacle Avoidance Mode
14.LiDAR Follow	Radar Follow Mode
15.LiDAR Guard	Radar Guard Mode
16.LiDAR Patrol	Radar Patrol Mode
17.LiDAR StrLine1	Radar Straight Line Mode
18.LiDAR StrLine2	Radar Along Wall Mode
19.CCD Track	CCD Track Mode
20.EM Track	Electromagnetic Track Mode

5. Bluetooth Remote Control

Before using Bluetooth remote control, we need to install the BalanceBot APP.

Bluetooth Connection

When you open the BalanceBot APP for the first time, it will automatically search and connect to nearby Bluetooth devices. We need to bring the phone close to the robot, and the BalanceBot APP will automatically connect; if the connection is successful, a "Connection Successful" prompt will appear.

If no search is found, you can click the Bluetooth search and connection options in turn.

Note: The mobile phone needs to turn on the Bluetooth function and allow the Bluetooth remote control APP related permissions



Main control interface

Used for basic control and data display of the balance car.



Direction control

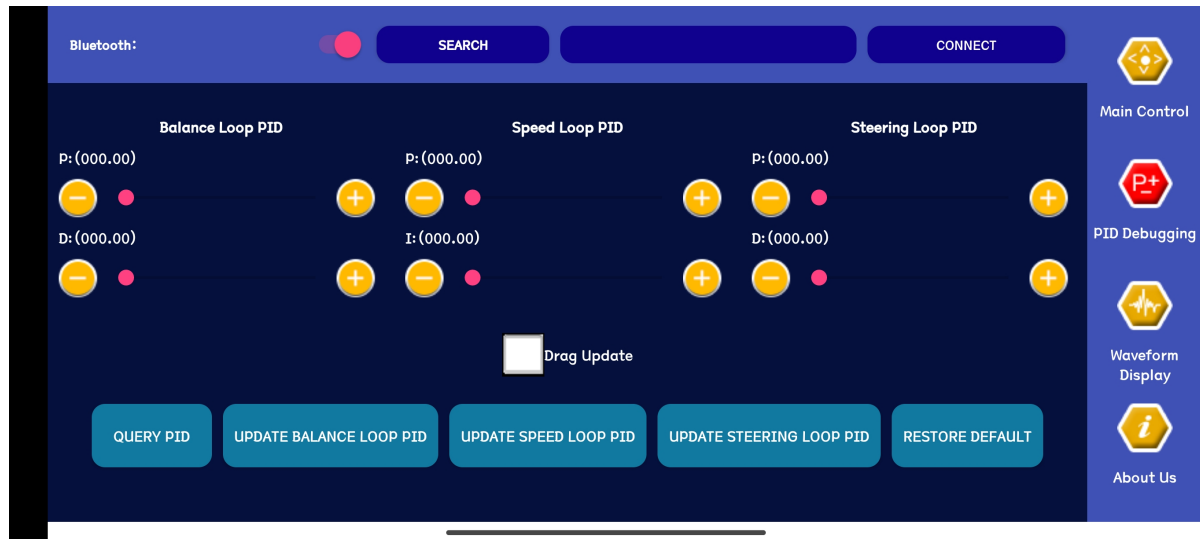
The main control interface can control the movement of the balance car through buttons, gravity and joysticks.

Data display

The main control interface will automatically obtain gravity, ultrasonic distance, battery voltage, and left and right motor speed display.

PID debugging

Used for online query and adjustment of PID parameters to achieve the best effect.



Vertical ring

Adjust the vertical ring PD parameters, support dragging and keystrokes to update data.

Speed ring

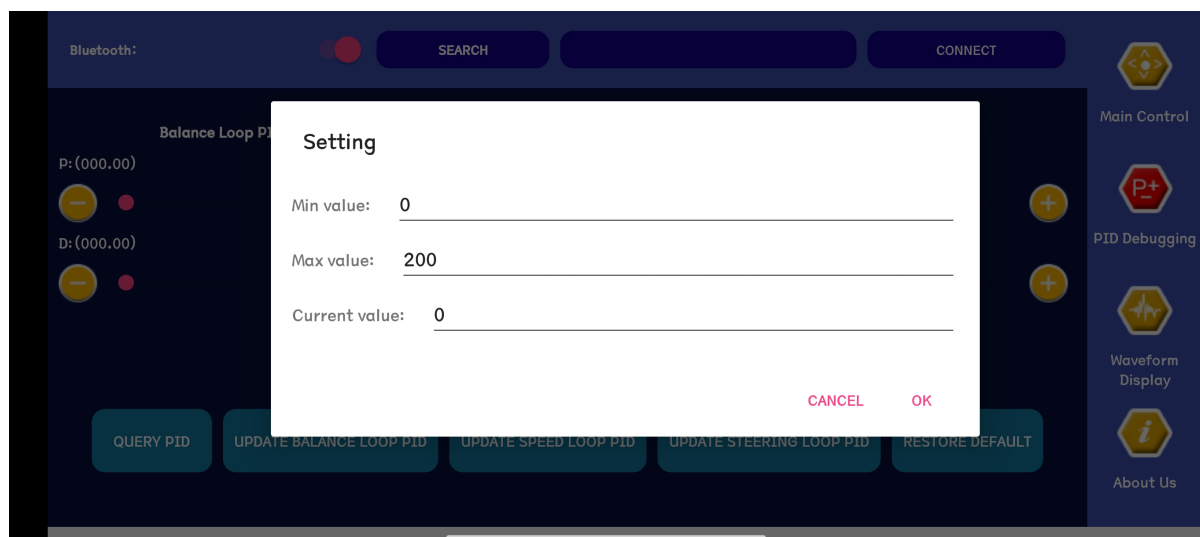
Adjust the speed ring PI parameters, support dragging and keystrokes to update data.

Steering ring

Adjust the steering ring PD parameters, support dragging and keystrokes to update data.

PID parameter range

Click the P, I, D options on the interface to adjust the adjustment range of each PID parameter.



Waveform display

Check the corresponding option to display the dynamic changes of acceleration, gyroscope, and battery voltage data.

