

# PicoRobot and camera

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## 1. Experiment preparation

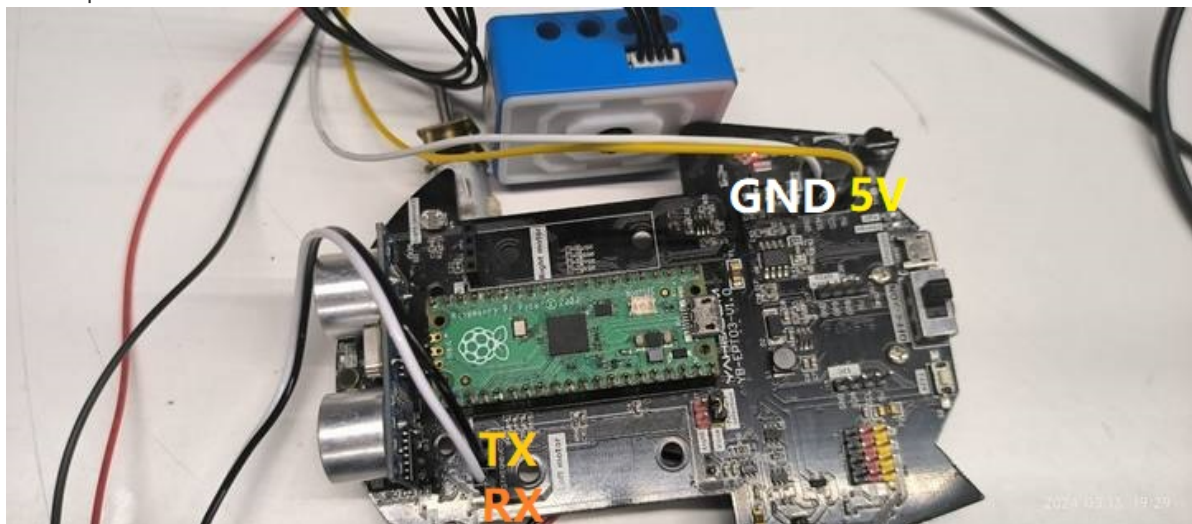
1. One pico car
2. Several male-to-male Dupont lines
3. esp32-wifi camera
4. The serial port cable that comes with the camera

## 2. Experimental wiring

Fix the camera behind the car, connect it to the Bluetooth interface of the pico car, and arrange the interface cable

Camera	pico car
RX	RX
TX	TX
VCC	VCC
GND	GND

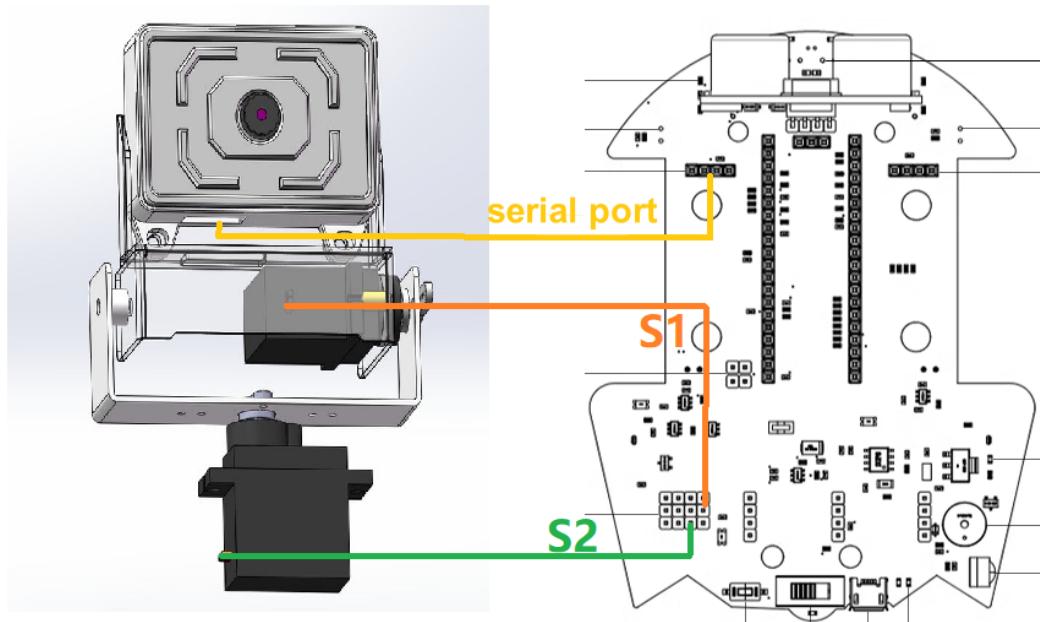
as the picture shows



### Wiring of servo gimbal

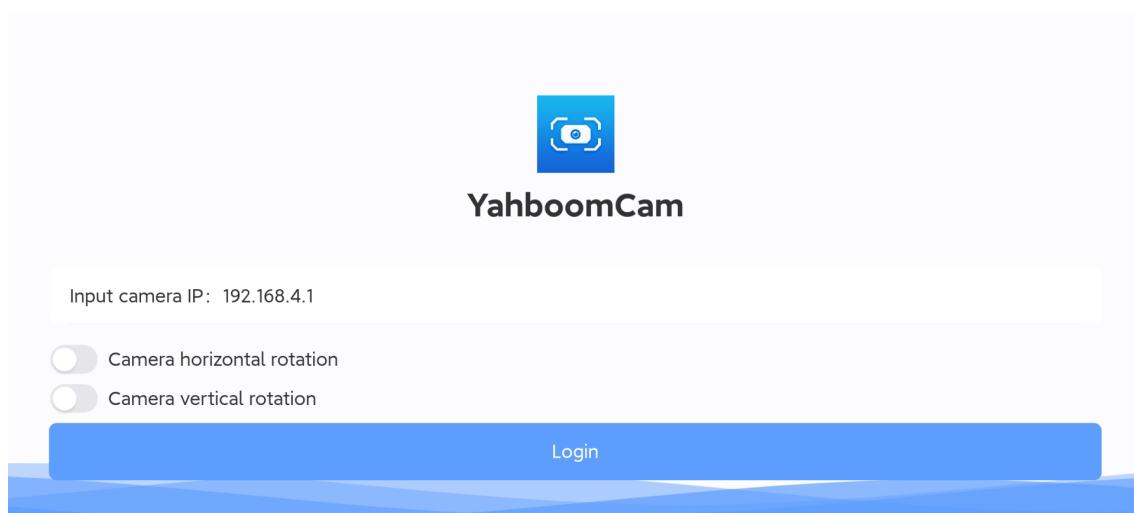
- Connect the servo of the **up and down direction** of the servo gimbal to the S1 interface of the servo interface on the car board

- Connect the left and right servos of the servo gimbal to the S2 interface of the servo interface on the car board



### 3. Experimental steps and experimental results

1. Burn the program of this experiment into the car. For how to download the program and burn the related firmware, please refer to the chapters of PICO Robot for downloading the program and burning the firmware. This experiment will not explain it again.
2. After confirming that the wiring is correct, turn on the car battery switch, install the **ESP32Cam** software on your phone, open it, and log in directly.
3. Connect the mobile phone to the camera's spontaneous wifi. The wifi name of this routine is **ESP32\_WIFI\_TEST**, and you can connect directly without a password.  
Note: If you have changed the wifi name and password of the program, find and connect by yourself
4. After the connection is successful, keep the connection and do not disconnect. Enter the mobile app settings page and set the IP address to **192.168.4.1**



- Click on the login page to successfully see the camera image and control the movement of the car.

### Horizontal screen



Note: Every time you restart the app, you need to click the exit button in the upper right corner, then exit and reconfigure the IP address information before saving it.

## 4. Main source code analysis

```
#define AP_WIFI_SSID "ESP32_WIFI_TEST"
#define AP_WIFI_PD ""
```

The above constants are defined in the `esp32_wifi.c` source code of this project

- AP\_WIFI\_SSID: The wifi name of the wifi camera's spontaneous hotspot, change it according to your own situation
- AP\_WIFI\_PD: The wifi password of the wifi camera's spontaneous hotspot, change it according to your own situation

**If you want to change the wifi mode, this tutorial defaults to dual mode coexistence, that is, STA+AP mode**

Select the mode under the file `esp32_wifi.h`

```
#define MODE_AP 0
#define MODE_STA 0
#define MODE_AP_STA 1
```

0: represents canceling this mode 1: represents selecting this mode

**You can only choose one mode, not at the same time, otherwise the IP address will not be queried**