

## What's in the box

### Puffin wifi Bundle version

1x Puffin (WIFI only) board, 1x MiPi Camera, 1x WiFi/BT antenna, 1x debug cable, 1x power cable 1xSD card, 1x case, 1x servo

### Puffin 4G/GPS version

1x Puffin (4G/GPS) board, 1x MiPi Camera, 1x WiFi/BT antenna, 2x 4G LTE antenna, 1x GPS antenna, 1x debug cable, 1x power cable, 1x case, 1x servo

### Puffin 4G/GPS bundle

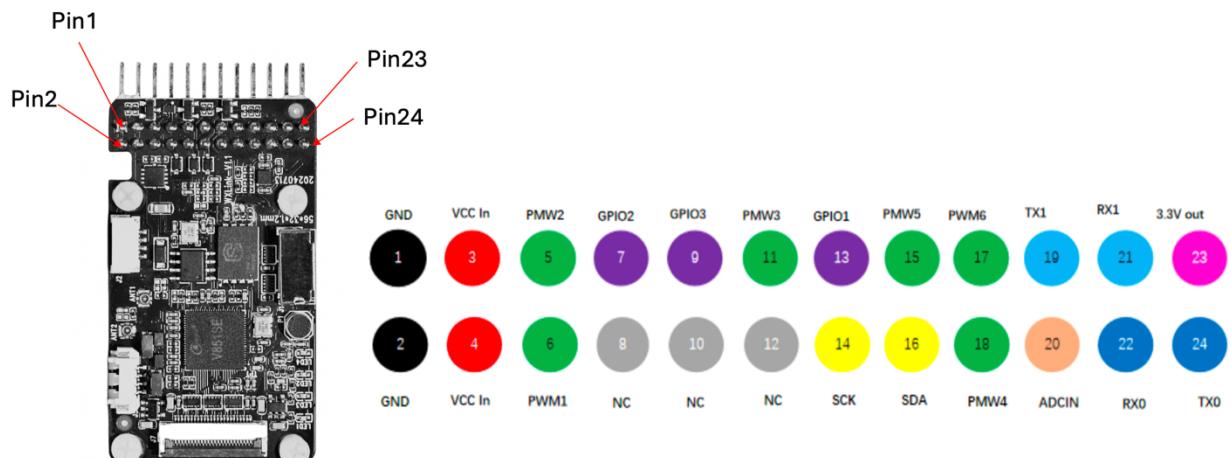
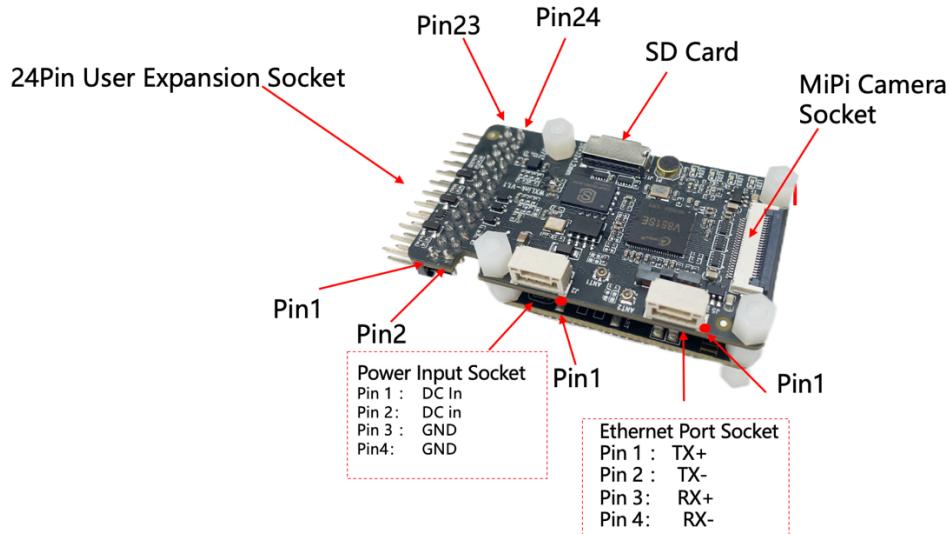


User Manual

1x Puffin (4G, 4G/GPS) board  
1x MiPi Camera,  
1x WiFi/BT antenna,  
2x LTE antenna,  
1x GPS antenna (4G/GPS)  
1x debug cable,  
1x power cable  
1x SD card  
1x User Manual  
1x servo motor  
3x Double sided tape

## Quick Setup

This section will guide you through the process of setting up your Puffin, ensuring that you have all the necessary components connected and configured correctly.



There are 24 extension pins on the puffin board (both wifi and 4G board). The most relevant pins for our setup are:

GND: pin1, pin2

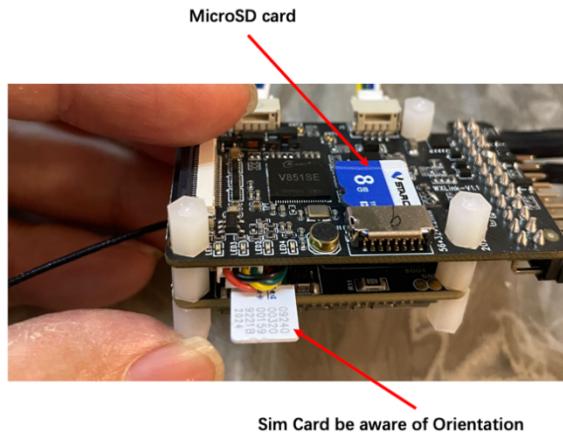
Vcc in: pin3, pin4

Serial port 2x pairs: pin22 and 24, pin19 and 21

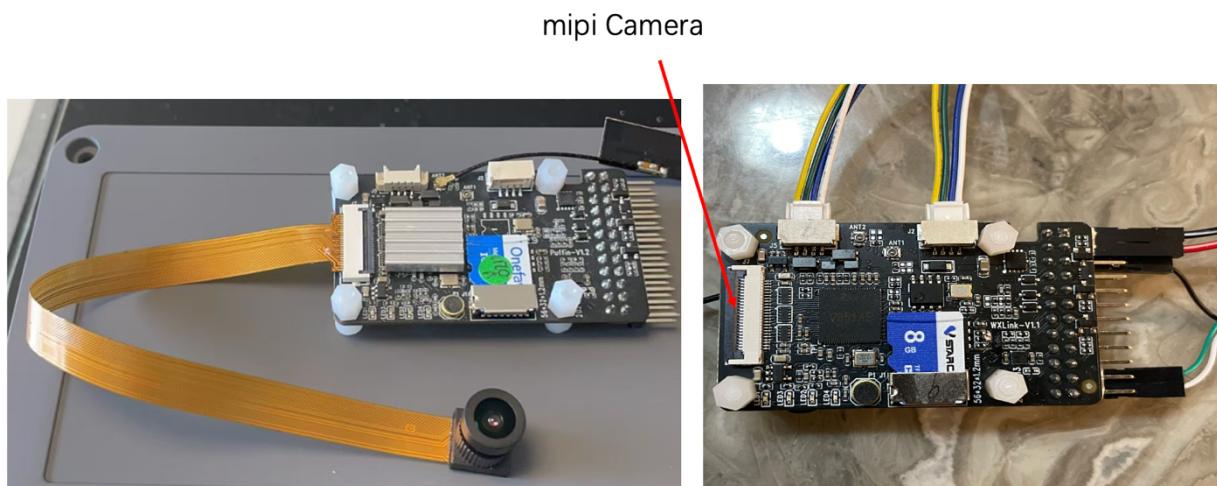
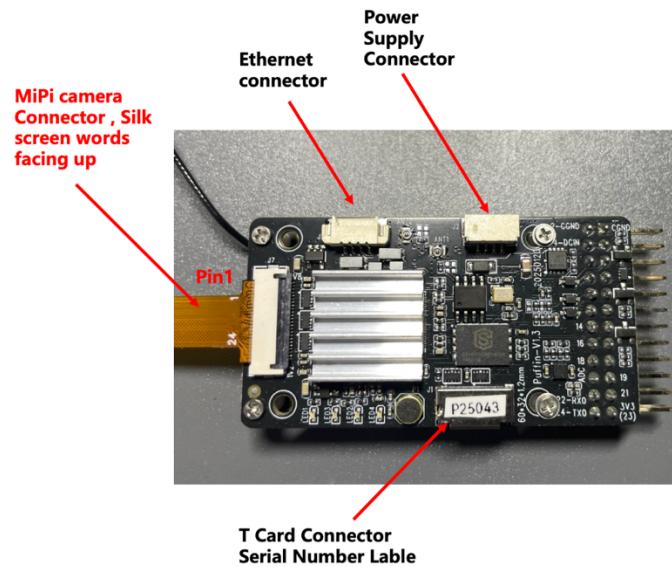
PWM (6 channel): see the table below

PWM1	Pin6
PWM2	Pin5
PWM3	Pin11
PWM4	Pin18
PWM5	Pin15
PWM6	Pin17

1. Begin by inserting the SD card into the designated slot on the Puffin. This card will store important data and files required for the Puffin's operation. If you are using the 4G version of the Puffin, also insert the SIM card into its respective slot.

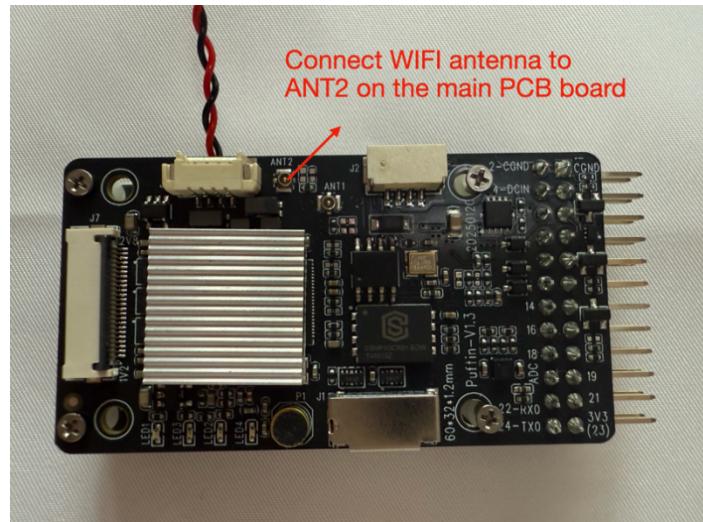


2. Connect miipi camera to the Puffin. Ensure that the camera is securely attached and properly aligned with the Puffin's miipi camera interface.

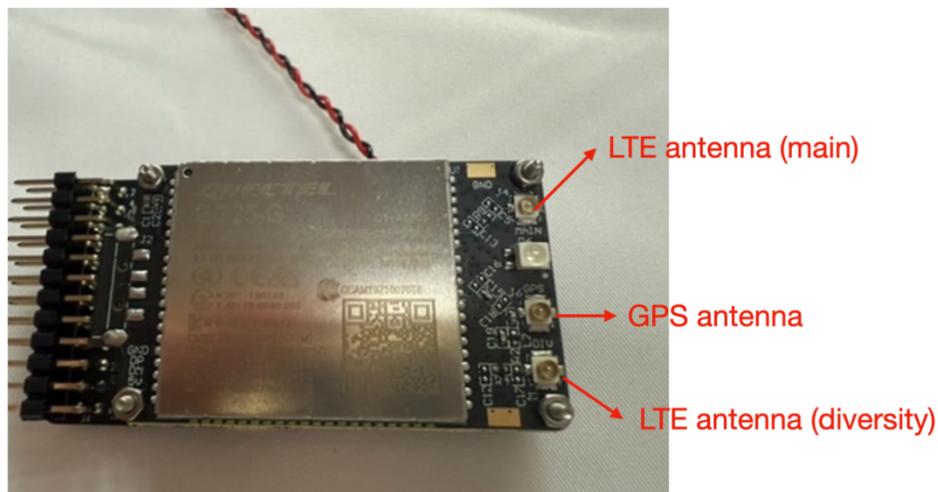


3. Connect the appropriate antennas to your Puffin.

WIFI Bundle version: connect WIFI antenna to the designated connector on the board.



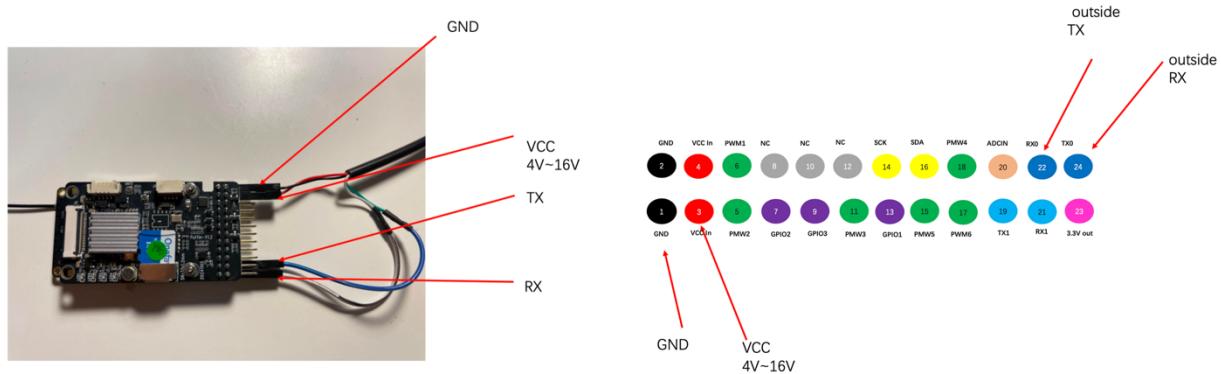
4G/GPS version: connect LTE antenna and GPS antenna to their respective connectors.



#### 4. Connect Power

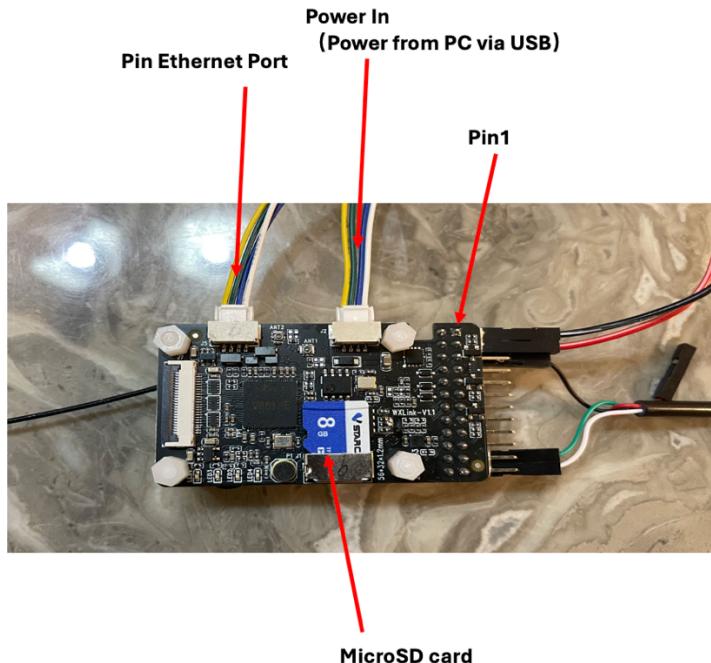
##### 4.1 Using VCC and GND pins.

You can connect external Lipo battery directly to the VCC and GND pins from the 24 expansion pins. The input voltage is 4V to 16V.



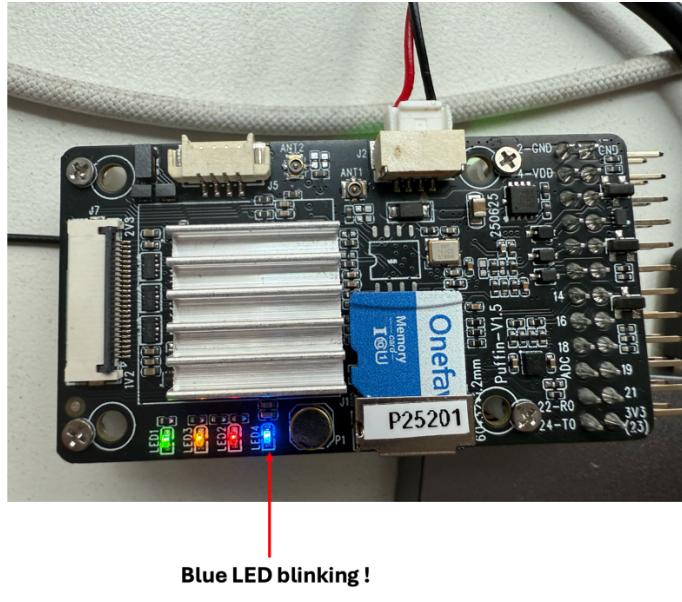
#### 4.2 Using power cable

The provided power cable in the package can be used with a PC or any power source with a USB port. Refer to the picture below to connect the power cable.



#### 5. Connect to the internet.

When Blue LED is **blinking** and all other LED is in solid color that means that the puffin board is online!



4G version: If you are using a 4G version puffin board, you are all set with a sim card plugged in! The puffin board is already online.

WIFI version: If you are using a wifi board, please refer to the section about how to connect to wifi.

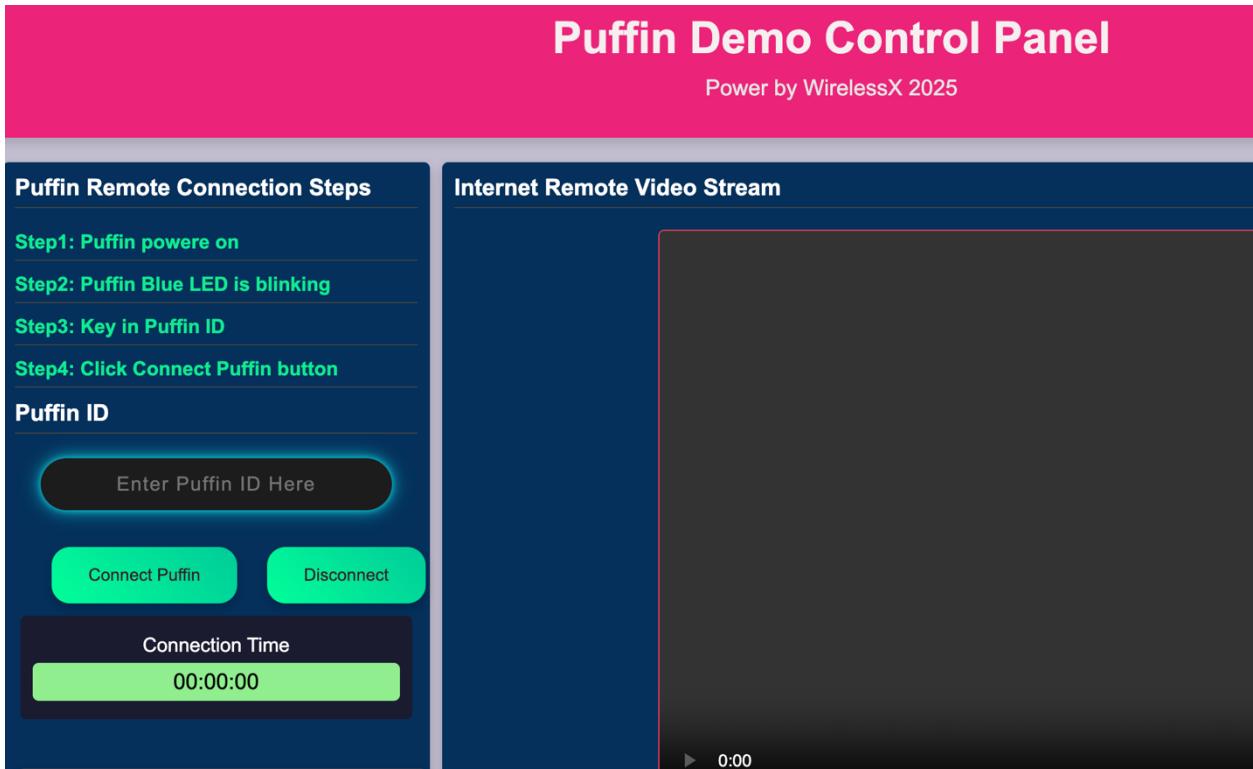
**Additional Tips:** Double-check all connections to ensure they are secure and properly aligned. Handle the components with care to avoid any damage. If you encounter any issues during the setup process, refer to the troubleshooting section or reach out to our support team for assistance.

## Test Puffin board

To start using your Puffin board and access its features, you need to get your ID no. There's a serial No. attached on each puffin board, please send us a PM on discord or email us [sales@wx-link.com](mailto:sales@wx-link.com) with your serial No. and we will provide you with your ID no. Please consider your ID No. as your private key, anyone with your ID No. can get access to your board.

After getting your ID no, please go to this website to test your puffin board.

[https://www.wirelessx.io/html/h2up/control\\_panel/puffin\\_control\\_panel.html](https://www.wirelessx.io/html/h2up/control_panel/puffin_control_panel.html)



Type in your ID No. and click on “connect Puffin”, you should be able to see live streaming video. Should you encounter any problems in this step please contact us on discord or email us.

This is also the control panel to tweak PWM output, get 4G related parameters, and debug with serial interface.

### Use debug cable

The debug cable is highly useful for connecting the Puffin board to a PC, allowing users to modify settings and generate logs for debugging when the Puffin board malfunctions.

**Compatibility:** Please note that the debug cable is only compatible with Windows PCs using an x86 CPU. Mac users with ARM processors cannot use it, even with Parallels installed. However, Mac users with Intel CPUs can use it with Parallels. (Update some mac users can use the debug cable via serial port )

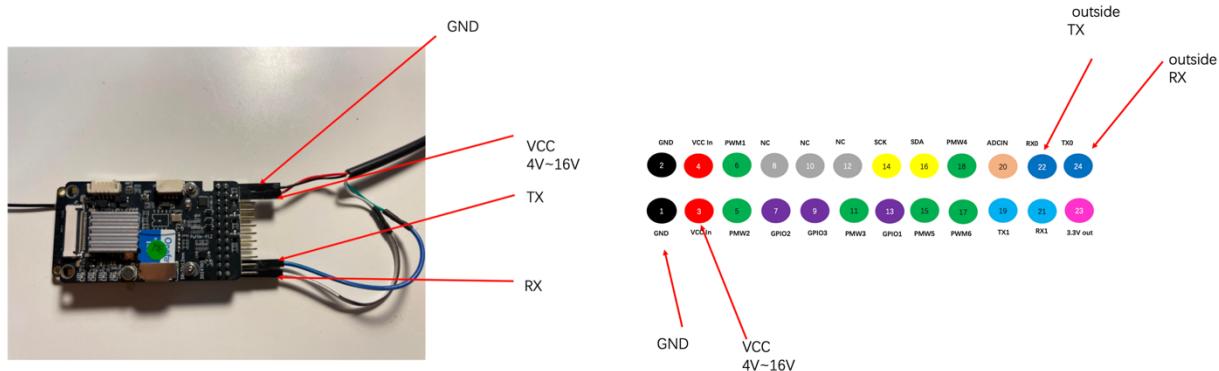
#### 1. Connecting the Debug Cable

Ensure that your Puffin board is powered off before connecting the debug cable.

Locate the RX0 (pin 22) and TX0 (pin 24) pins on your Puffin board. These pins is the serial port pair used for debugging with a PC.

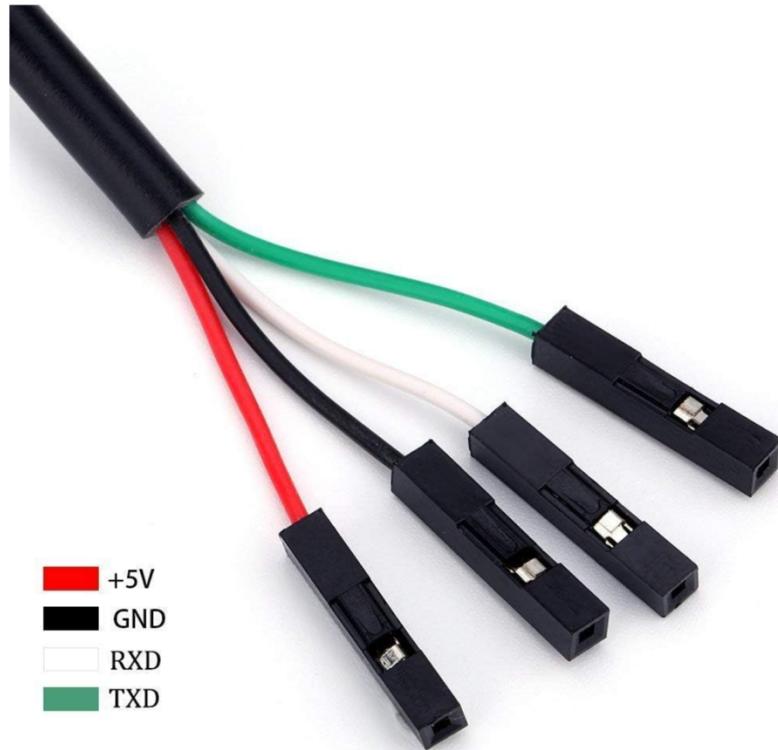
Connect the debug cable's TX wire to the RX0 (pin 22) on the Puffin board, and the debug cable's RX wire to the TX0 (pin 24). It is crucial to avoid mixing up these connections, as doing so could potentially damage the board.

Debug Cable	Puffin Board
TX	RX0 (pin 22)
RX	TX0 (pin 24)



Securely attach the debug cable to your PC's USB port.

We've provided a debug cable in the bundle package. Please see the pinout of the debug cable in the following image.



It is recommended to firstly connect debug cable to your PC and puffin board. Your PC will ask you to select the corresponding COM port. Secondly power on the Puffin board, right after Puffin board is powered on, you will see log info in the control panel.

#### Configuring Serial Communication (Optional)

Open a serial terminal application on your PC,  
serial monitor.

Configure the serial communication settings as follows:

Baud rate: 115200

Data bits: 8

Parity: None

Stop bits: 1

Flow control: None

Select the appropriate COM port that corresponds to the debug cable. This is typically the port that appears after plugging in the debug cable.

#### 2. Using the Debug Cable

With the debug cable connected and serial communication configured, you can now use it for various debugging purposes:

**Viewing Log Messages:** The debug cable allows you to view log messages generated by the Puffin in real-time.

**Modifying Settings:** You can send commands through the serial terminal to modify various settings on the Puffin board. Refer to the documentation for a list of supported commands and their usage.

**Troubleshooting:** When the Puffin board encounters problems, the debug cable enables you to access detailed information and perform troubleshooting steps. You can view error messages, monitor system behavior, and make necessary adjustments.

Remember to disconnect the debug cable when not in use to avoid any potential interference with the Puffin board's normal operation.

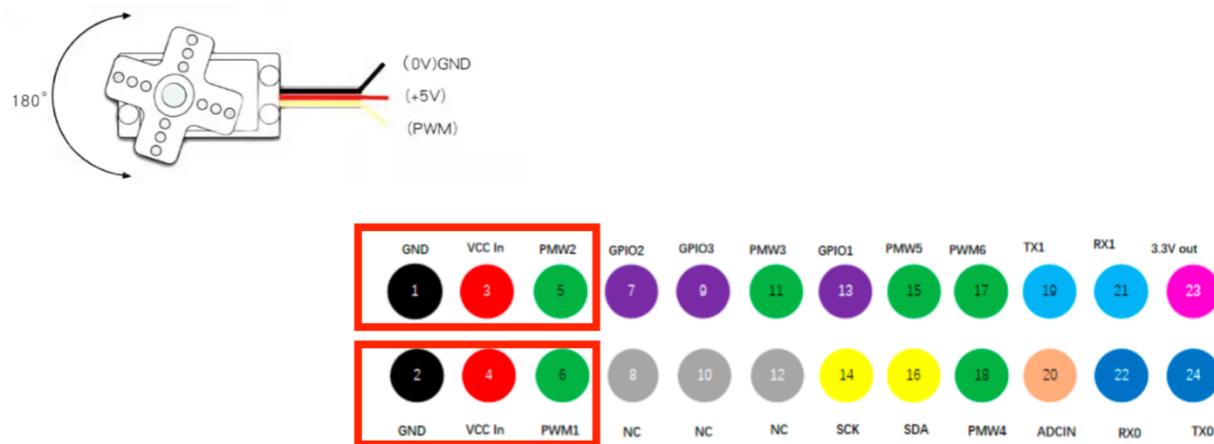
#### **Connect to wifi**

Please check #wifi on discord server for instructions

## Use Servo in the DIY kit

The Puffin DIY kit includes a servo module that allows you to control servo motors using the Puffin board. This section will guide you through the process of connecting a servo motor to your Puffin board and controlling it using the Puffin Control Panel.

### 1. Connecting the Servo Motor



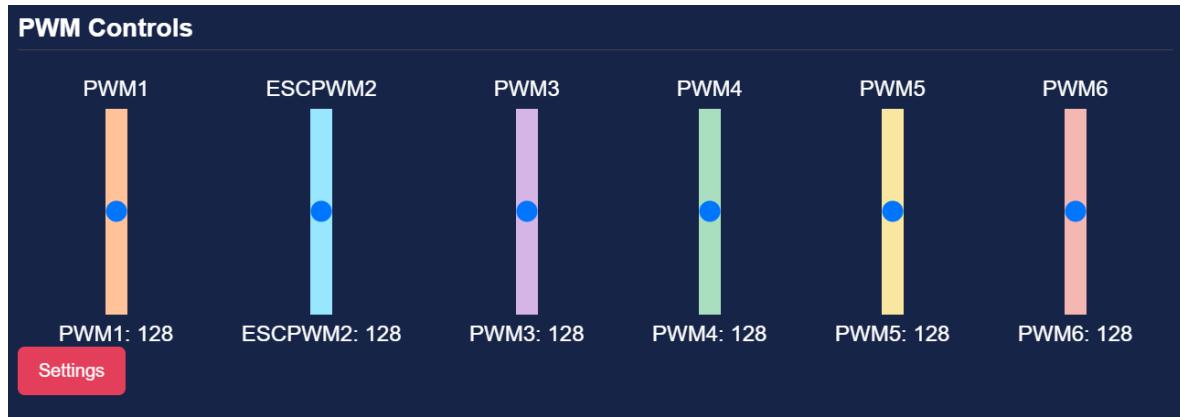
As shown in the red square in the diagram, connect the black GND wire of the servo to either pin1 or pin2 on the Puffin board. Connect the red +5V wire of the servo to either pin3 or pin4 on the Puffin board. Connect the yellow signal wire of the servo to one of the available PWM output pins on the Puffin board, pin5/pin6/pin11/pin15/pin17/pin18.

The Puffin board supports up to 6 PWM outputs, so you can connect multiple servo motors if needed.

### 2. Controlling the Servo Motor

Get into the control panel mentioned in the previous section. Click on the "Start" button next to the module. Scroll down to the "Puffin Control Panel" section and click on the "Enter" button.

Within the Puffin Control Panel, locate the "PWM Controls" section.



To control a servo motor, simply drag the slider between the values of "0" and "255". This corresponds to the rotation range of the servo motor from "0%" to "100%".

You can dynamically control the servo motor by adjusting the slider position in real-time.