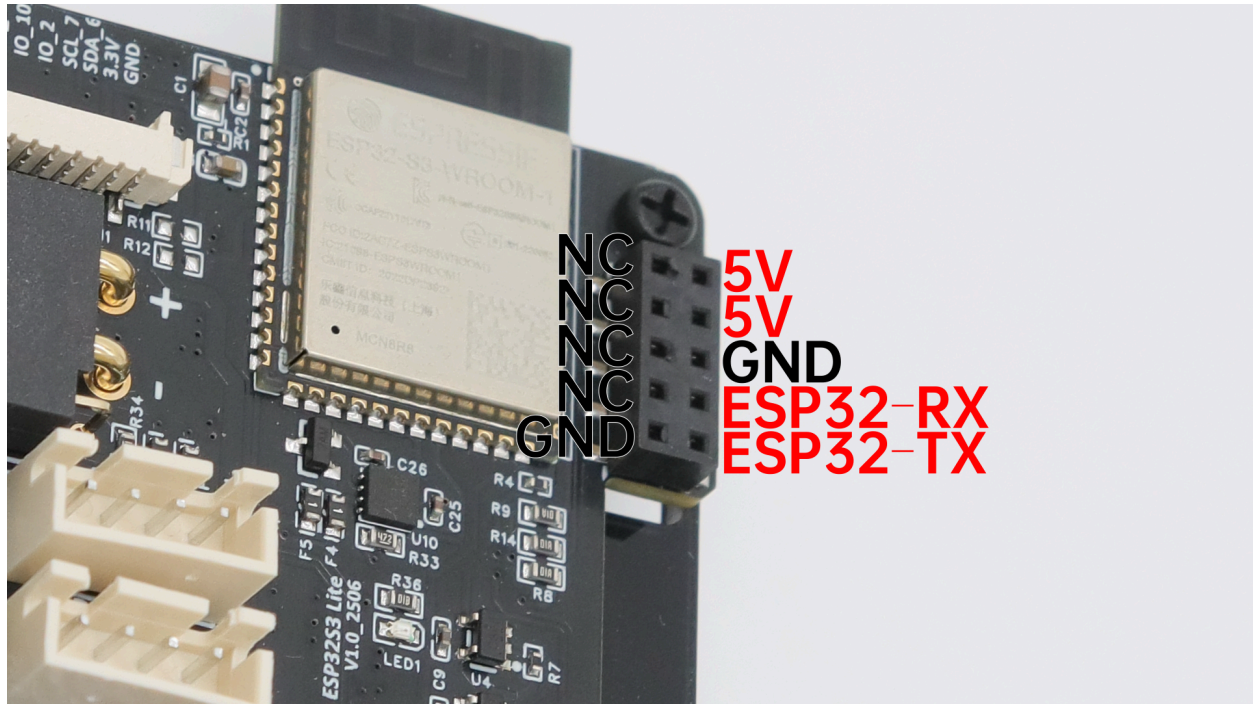


Onboard Resources Overview

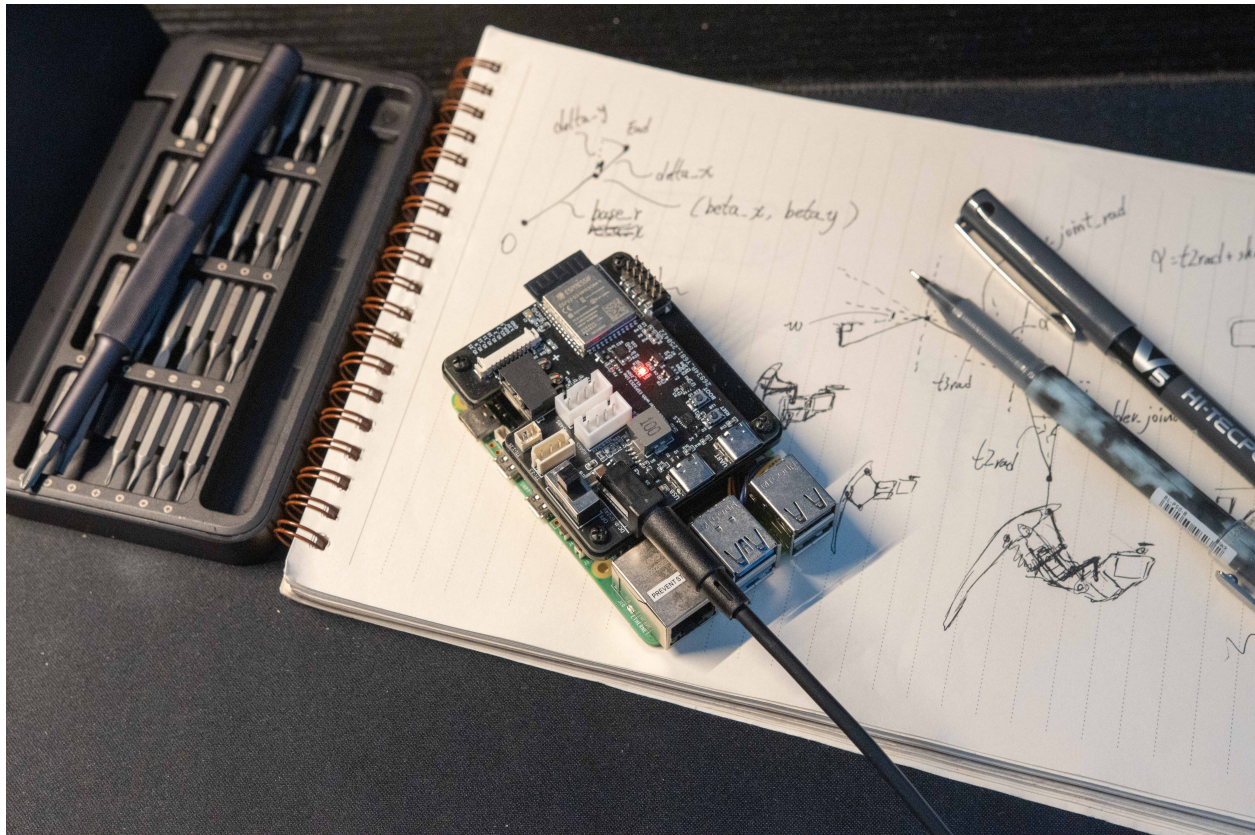
2.54mm 2×5 Pin Header



The onboard **2.54 mm 2×5 header** provides both power and serial communication interfaces between the ESP32 control board and external systems such as the **Raspberry Pi** or **RC receivers**.

It supports flexible configurations depending on your application needs.

1. Raspberry Pi HAT Mode



When used as a **Raspberry Pi HAT**, the header enables direct serial communication and power delivery between the driver board and the Pi.

ESP32 Pin	Raspberry Pi Pin	Description
ESP32 RX	GPIO TX	Serial receive (from Pi)
ESP32 TX	GPIO RX	Serial transmit (to Pi)
5 V / GND	5 V / GND	Power supply to Raspberry Pi (up to 5 A)

⚙️ Default Baud Rate: 1 Mbps

The board can directly power the Raspberry Pi through the 5 V pin, supporting up to **5 A** of current output.

Switching UART0 Function

By default, **UART0** (ESP32 TX/RX) is used for **serial pass-through**.

If you want to use **JSON command communication** instead (for structured data exchange between the host and the board), you need to **disable serial pass-**

through via Wi-Fi (HTTP/WebSocket) or USB CDC before use.

Disable Serial Pass-Through

Send the following JSON command:

```
{"T":605,"sf":0}
```

Auto-Apply at Boot (Recommended)

To automatically enable JSON command mode on startup, add the following to your **boot.mission** file:

```
{"T":303,"name":"boot","json":{"T":605,"sf":0}}
```

2. S.BUS Input Mode

Alternatively, this header can be used to receive **S.BUS** signals from an **RC receiver**.

In this configuration:

- One of the UART RX pins is used to read the **S.BUS** data stream.
- The **5 V** line provides power (up to **5 A**) to the receiver.

Detailed instructions on setting up S.BUS control will be provided in later sections.