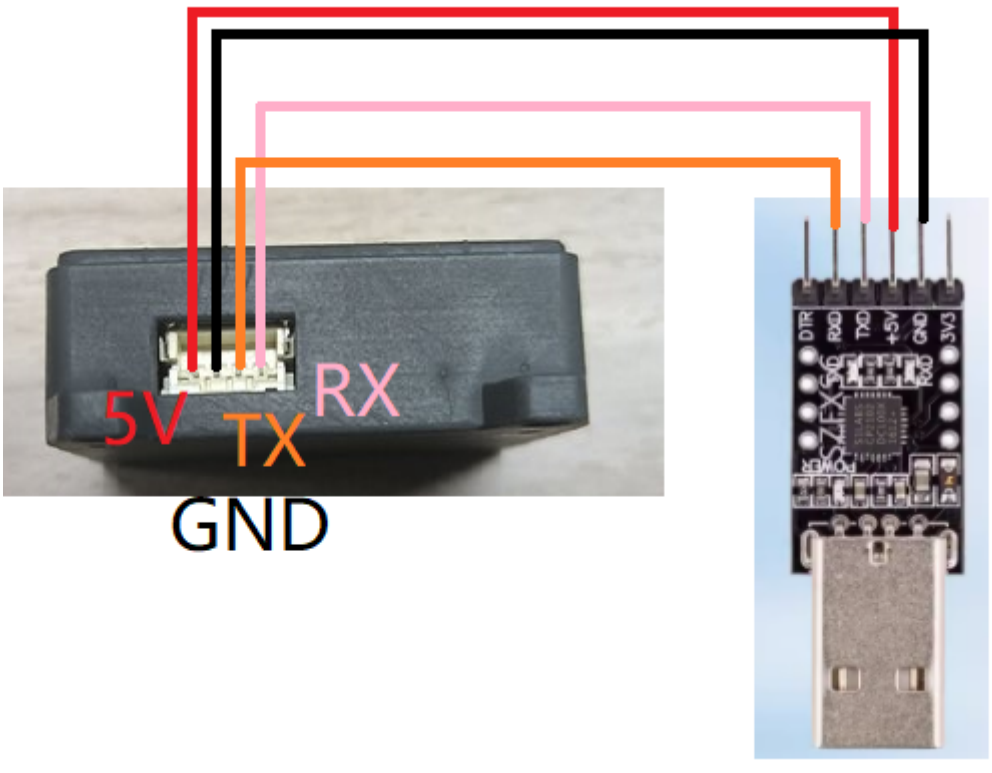
Computer serial port configuration module instructions (ROS version)

The module needs to be connected to the usbttl module

usbttl	wifi camera
RX	TX
TX	RX
GND	GND
VCC	VCC

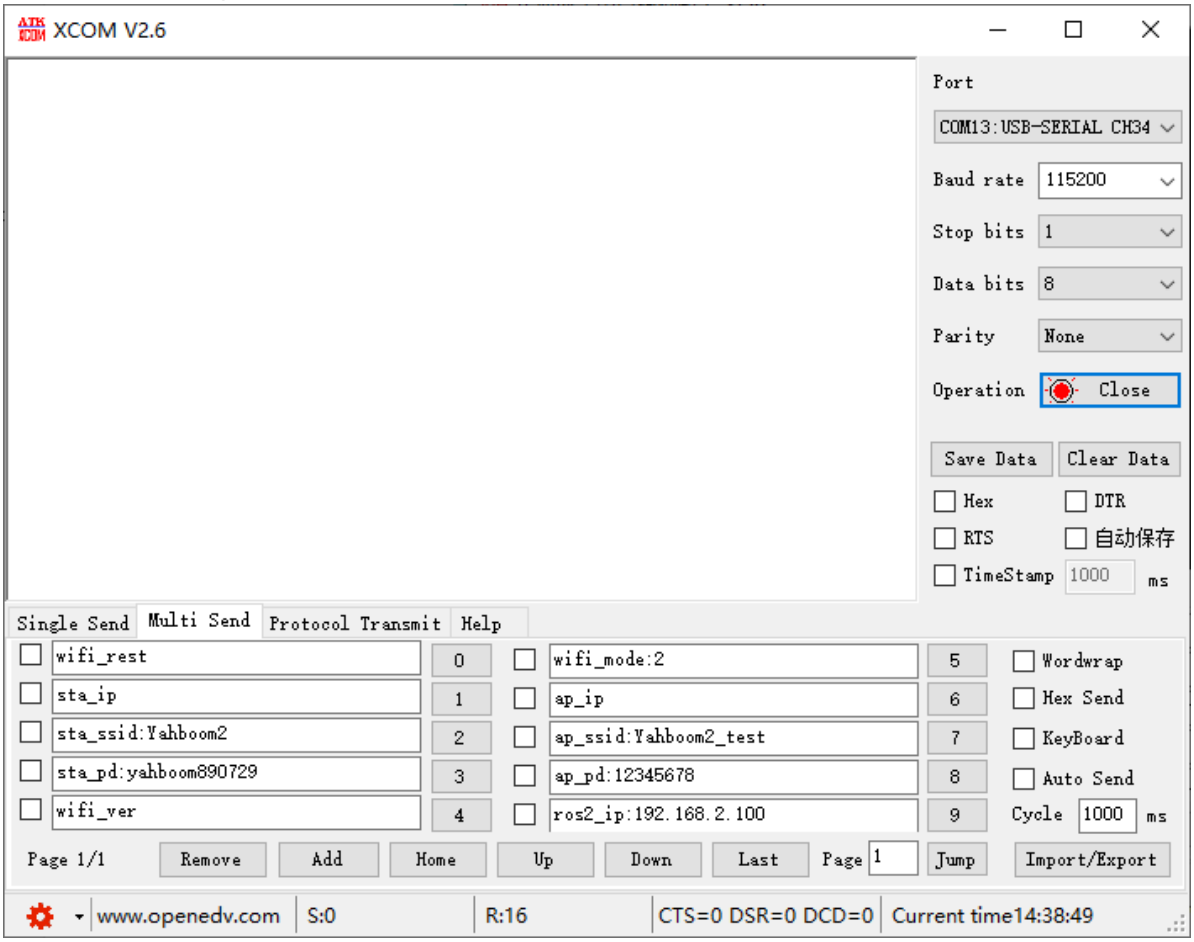


Serial port configuration

Baud rate 115200, no parity, no hardware flow control, 1 stop bit

If you use the serial port assistant configuration, when sending commands, you need to **remove** the automatic sending of new lines (additional bits)

As shown in the figure:



1. Configure the wifi command in STA mode (mode for connecting to LAN)

Command	Description	Example	Remarks
sta_ssid:	Name of the wifi to connect to	sta_ssid:yahboom	yahboom: is the wifi to connect to
sta_pd:	Password of the wifi to connect to	sta_pd:12345678	12345678: is the password of the wifi to connect to

Notes

1. Whether it is sta_ssid or sta_pd, it must be followed by an English character such as **comma (,), colon (:), period (.), etc.**
2. When the wifi to be connected does not have a password, just send **sta_pd:** once.
3. The above command will return **OK** if it is successful. If it does not return any information, check the serial port connection.
4. When sending the **sta_ssid:** command, it will return **fail,ssid is null!**, indicating that the connected wifi name cannot be empty.
5. The command can be sent in all uppercase or lowercase.
6. The wifi name and password cannot exceed 30 characters in length, otherwise the configuration will fail.
7. The wifi name and password cannot contain Chinese characters.

8. **The wifi password will be automatically reset every time it is changed. If you only change the wifi name, you need to manually power off and reset it**

2. Configure the wifi command in AP mode (module self-heating point mode)

Command	Description	Example	Remarks
ap_ssid:	The wifi name to be set	ap_ssid:my_wifi	my_wifi: is the wifi to be set
ap_pd:	The wifi password to be set	sta_pd:12345678	12345678: is the wifi password to be set

Notes

1. Whether it is ap_ssid or ap_pd, it must be followed by an English character such as **comma (,), colon (:), period (.), etc.**
2. When the wifi to be set has no password, just send **ap_pd:** once.
3. The above command will return **OK** if it is successful. If it does not return any information, check the serial port connection.
4. When sending the **ap_ssid:** command, it will return **fail,AP_Name is null!**, indicating that the wifi name cannot be empty.
5. The command can be sent in all uppercase or lowercase.
6. The wifi name and password cannot exceed 30 characters in length, otherwise the configuration will fail.
7. The wifi name and password cannot contain Chinese characters.
8. **The wifi password will be automatically reset every time it is changed. If you only change the wifi name, you need to manually power off and reset**

3. Configure wifi mode

Command	Description	Example	Note
wifi_mode:	Configure wifi mode	wifi_mode:2	0: AP mode 1: STA mode 2: AP+STA mode

Notes

1. wifi_mode It must be followed by a dot symbol such as **comma (,), colon (:), period (.), etc**
2. wifi_mode can only set 3 modes in total. If a negative number is passed in, the default is AP mode. If the number is greater than 2, the default is AP+STA mode

4. Other commands

Command	Description	Example	Return value
sta_ip	Query the ip address of sta mode	sta_ip	Return the ip address connected to the LAN (such as sta_ip:192.168.2.199)
ap_ip	Query the ip address of ap mode	ap_ip	Return the ip address of the wifi mode itself (such as ap_ip:192.168.4.1)
wifi_reset	Restore wifi configuration to factory settings	wifi_reset	Reset_OK
wifi_ver	Check the version of wifi firmware	wifi_ver	YAHBOOM VerSion:1.8.3

Notes

1. The command can be sent in all uppercase or all lowercase
2. If the above command is successful, there will be corresponding information of the return value. If there is no information returned, check the serial port connection
3. wifi_reset is to configure the wifi mode to AP+STA mode. The wifi name of the ap is **Yahboom_ESP32_WIFI**, no password, and it will reset automatically without manual reset

5. Command to configure ROS ip

Command	Description	Example	Notes
ros2_ip:	Host agent to connect to	ros2_ip:192.168.2.105	192.168.2.105: is the IP address of the proxy host

Notes

0. The proxy host is a system with ROS2 (humble) environment unbutu
1. The command can be sent in all uppercase or all lowercase
2. ros2_ip must be followed by an English character such as **comma (,), colon (:), period (.), etc.**
3. The connected host IP must be in the same network segment as the wifi connected to esp32
4. ROS2 can only be started in STA mode/or dual mode coexistence mode, not only AP hotspot mode, otherwise the ROS system will not be implemented
5. The proxy port is 9999, the command to start in the host terminal is as follows:

```
docker run -it --rm -v /dev:/dev -v /dev/shm:/dev/shm --privileged --net=host
microros/micro-ros-agent:humble udp4 --port 9999 -v4
```

6. Configure domain id: command

command	description	example	notes
domain_id:	Host agent to connect to	domain_id:20	20: is the domainid of ROS

Notes

0. The agent host is a system with ROS2 (humble) environment unbutu
1. The command can be sent in all uppercase or all lowercase
2. The domain_id must be followed by an English character such as **comma (,), colon (:), period (.) and so on**
3. The default domain_id firmware is 20