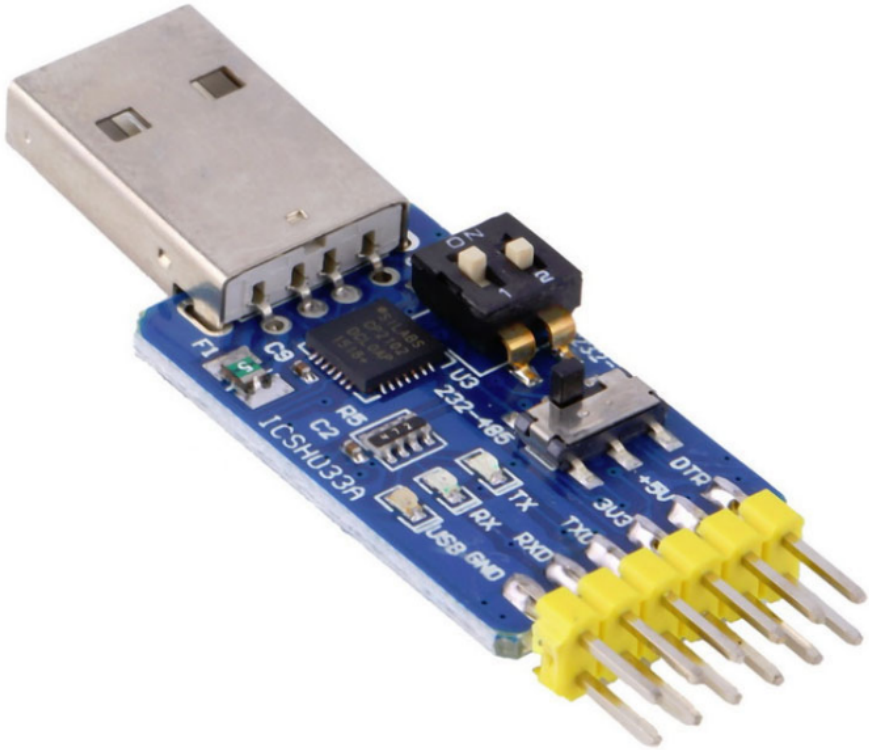
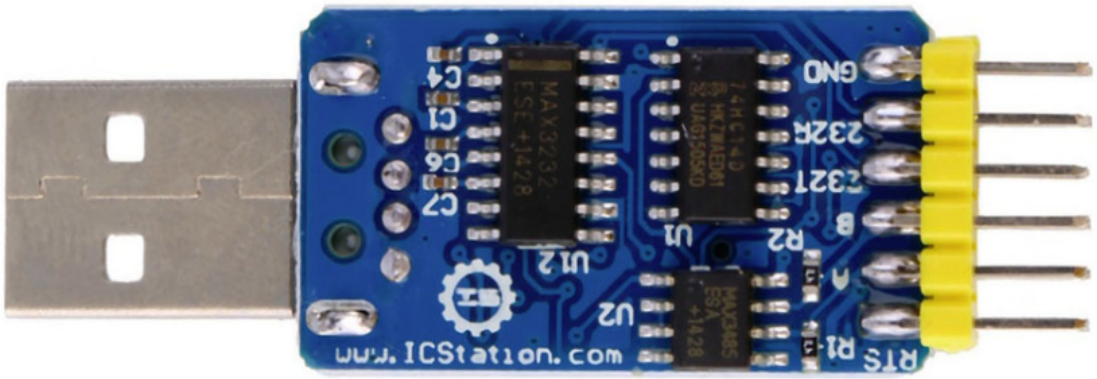
6 in 1 Multi-function Module CP2102 USB to TTL

User Manual

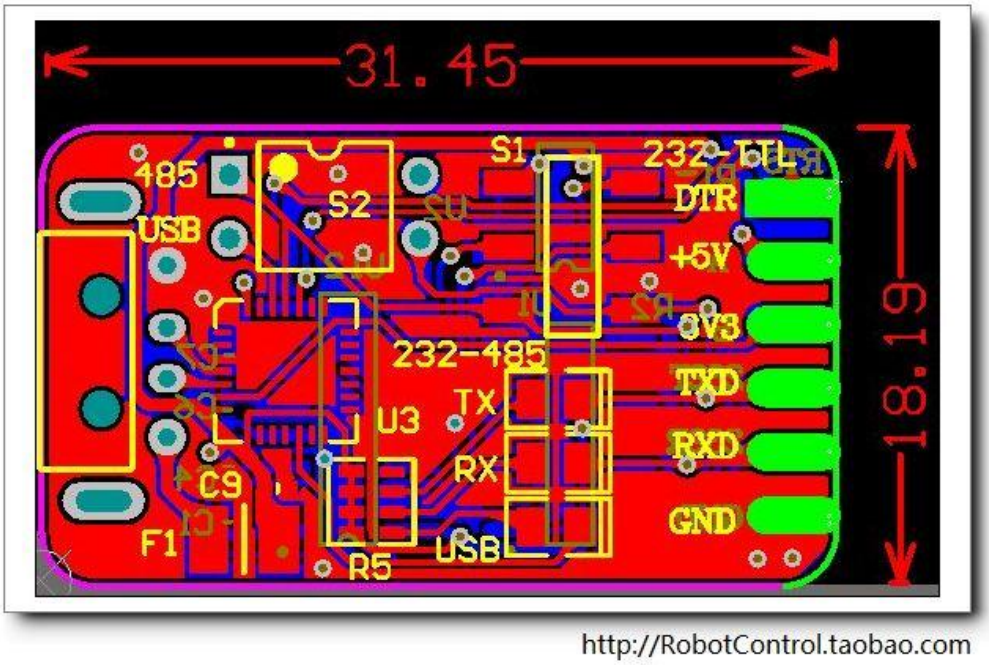
1- Product Description

This product is the company's independent research and development of the USB serial converter, using CP2102 chip, high-speed, stable and tiny! Through clever design, it can achieve USB \ TTL \ RS232 \ RS485 and other levels of free mutual transfer, it is a rare tool for learning microcontroller! See the picture:





Ultra-small size, compact and rigorous components.



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2- Function and product characteristics

1. **Ultra-small size.** The circuit board is only 3.1cm x 1.8cm, less than the size of a U disk, only takes up the width of a USB jack.
2. **3.3V and + 5V compatible.** Whether you are using 3.3V, or +5V, the module can support.
3. **3.3V and + 5V power supply output.** The module can be used to power the microcontroller system, convenient debugging. Maximum current output 500mA.
4. **Overcurrent protection.** On-board resettable fuses, even if the positive and negative poles are not short-circuited, the circuit board will be damaged.
   Short-circuit occurs when current exceeds 500mA, the fuse is automatically disconnected. When the circuit is restored to non-short-circuit state, the fuse gets back to normal. Effective protection of your computer's security.

5. **Send and receive light.** When there is data on the serial transmission line or a receiving line, the transceiver LED on the board will light, convenient debugging.
6. **TTL level interface.**
7. **RS232 level interface.**
8. **RS485 level interface.** Sending control, No line control, the default receive state, there are several transmission lines according to the state when sent.
9. USB, TTL, RS232, RS485 Four levels of free mutual transfer, unique circuit design.
10. **High speed and stable communication speed.** Baud rate up to 1Mbps.
11. Leads to DTR, RTS control signal, multifunction, support MSP430 single-chip computer BSL download and so on.

3- USB to Serial Port Module

3.1 Installing the driver

First of all, run USB_CP1202_XP_2000.exe, install the driver; for Win7 users, please install CP210xwin7.rar.

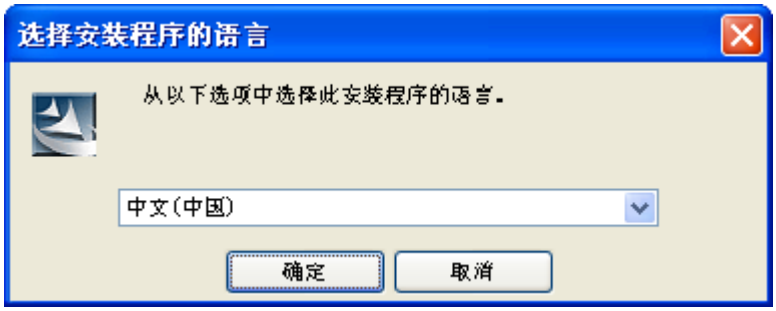


Figure 3.1 Step 1: Select the language

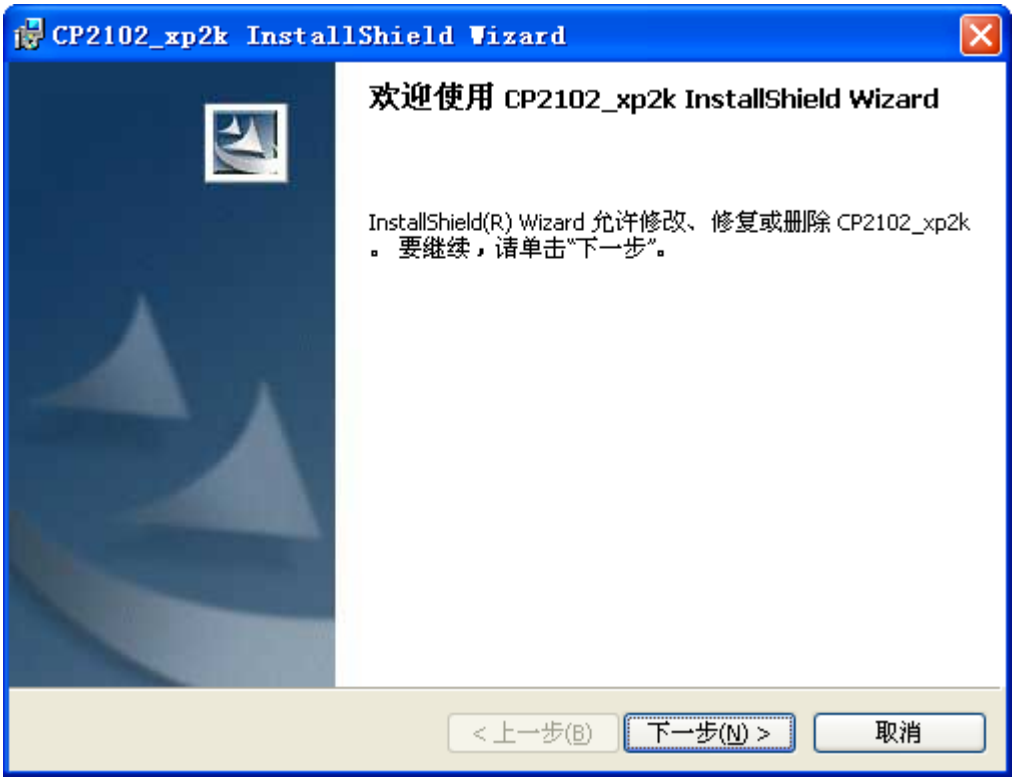


Figure 3.2 Step 2

All the way to the next step, start the installation

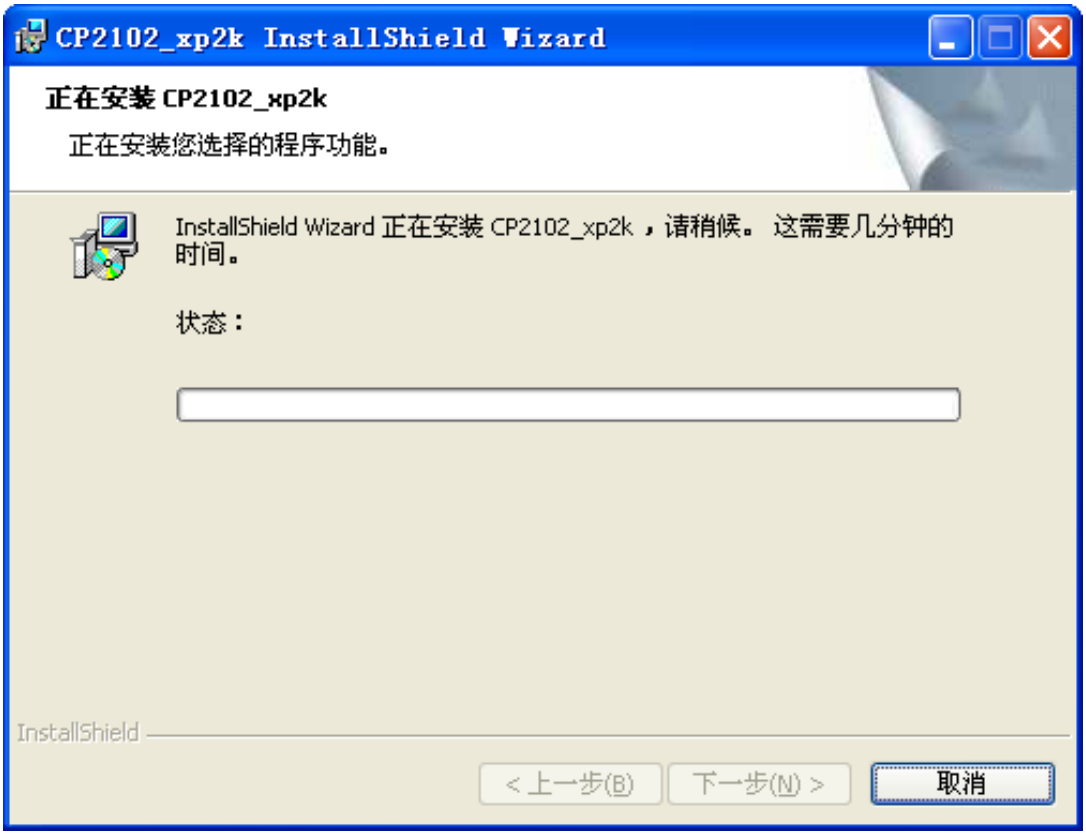


Figure 3.3 Start the installation

Pop-up dialog box prompts to insert the module,

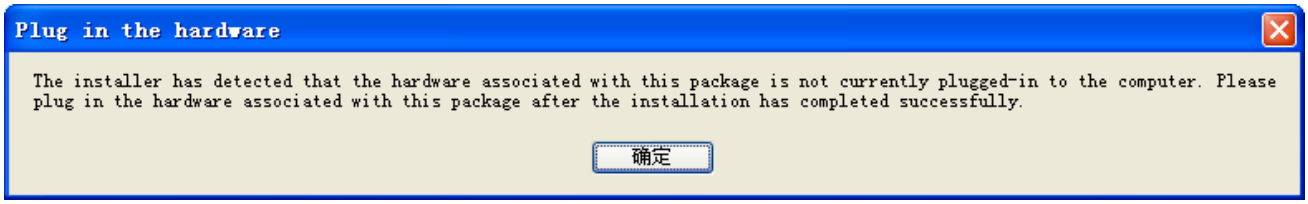


Figure 3.4

Insert the module, point to determine

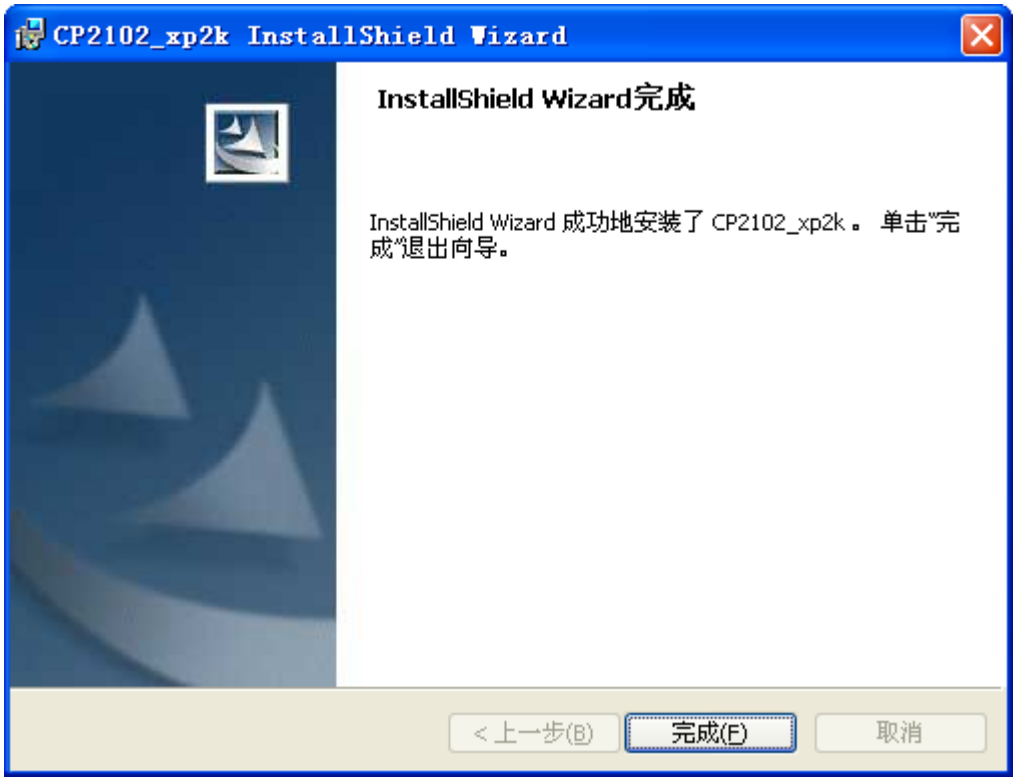


Figure 3.5 Safely installed

3.2 View the port number

Right-click My Computer \ Attributes \, click Hardware Tab

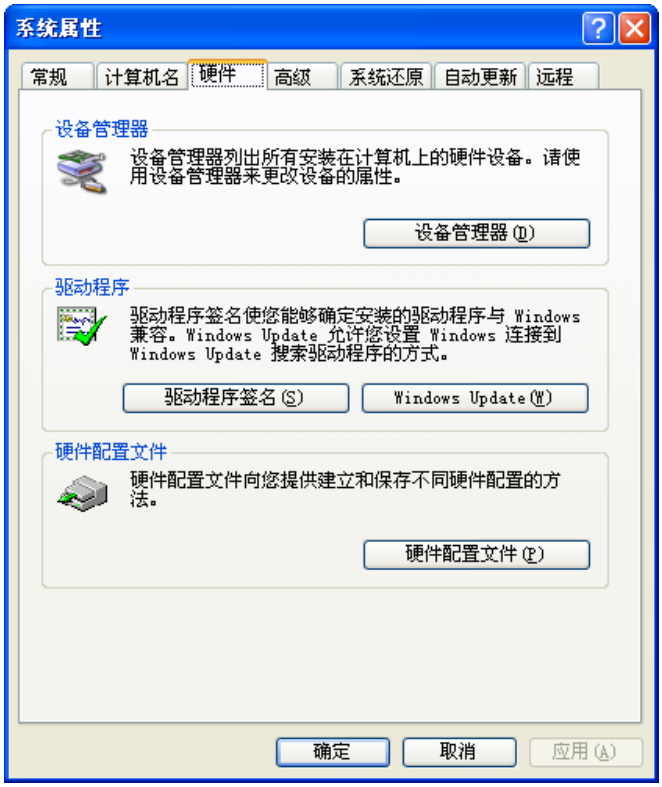


Figure 3.6 System properties

Point Device Manager

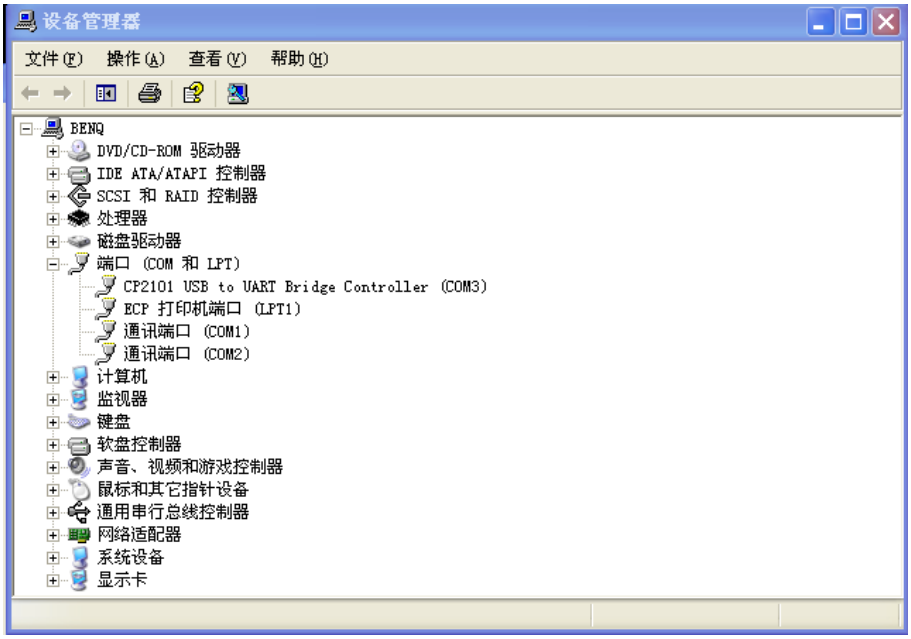


Figure 3.7 Device manager

Expand the port (COM and LPT), you can see the CP102 driver has been installed, the port number is COM3

3.3 Changing the port number

Sometimes we will insert more than one USB serial port module into the computer, based on needs. Sometimes we want the serial number to be assigned the way we want it to, in such case, you need to manually adjust the serial number, such as the above serial port 3 to serial port 4. The procedure is as follows:

Open the diagram 1.7 shown in the Device Manager, right-click CP102 USB to UART Bridge Controller, select Properties

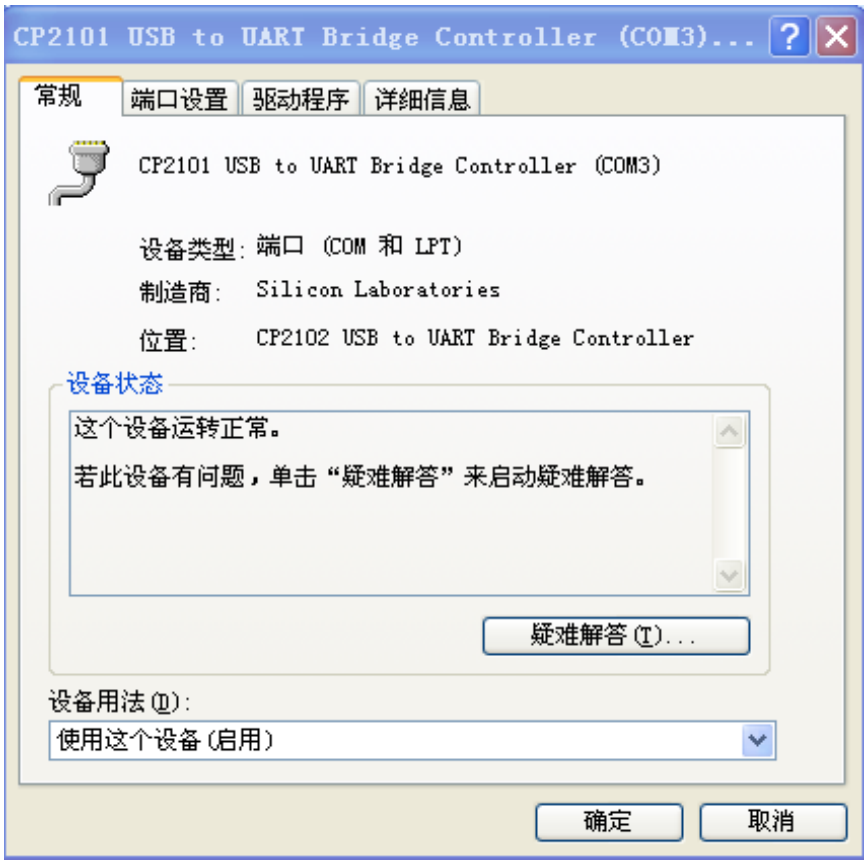


Figure 3.8 Serial Port Properties

Select the port device, advanced settings

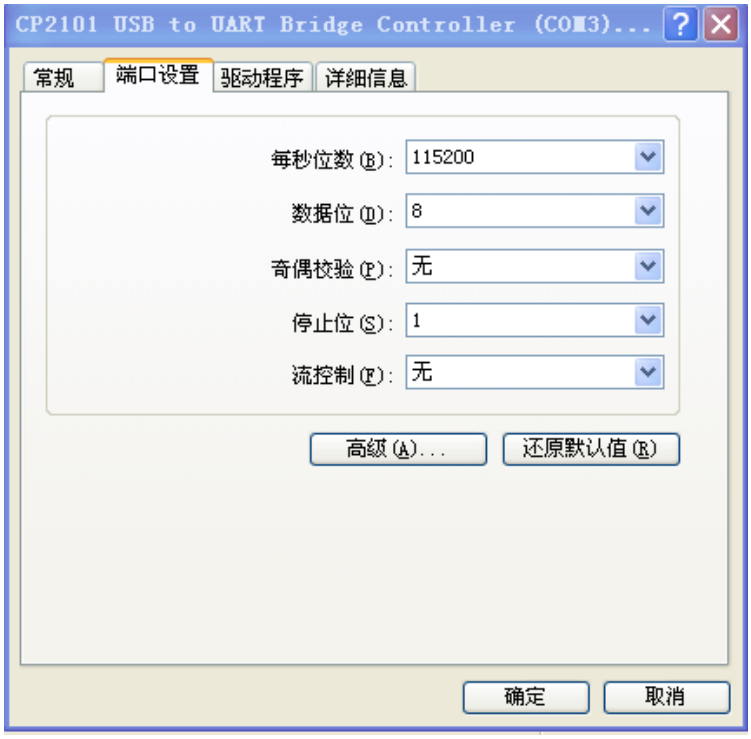


Figure 3.9 Serial Port Advanced Settings

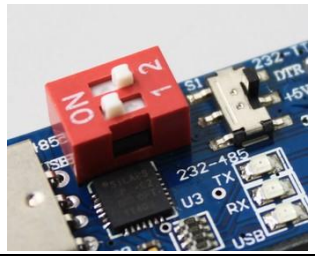
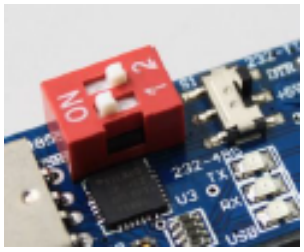
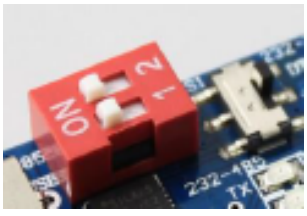
Set the COM port number to COM4, then OK.

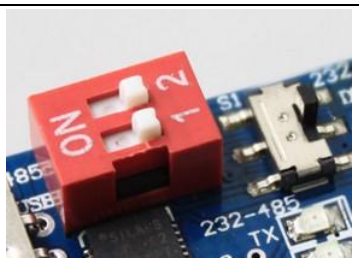
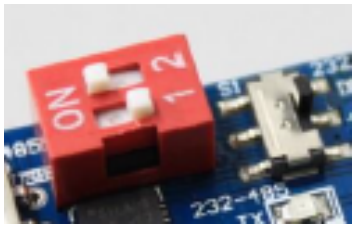
Figure 3.10 Change the port number

3.4 Function Selection

The serial conversion is defined through a two-digit DIP switch and SMD switch to select the conversion function.

The function configuration is shown in the following table

Mode	Dialing 1 (USB)	Dialing 2 (485)	Switch (S1)	Illustration
USB to TTL	On	Off	Up (232 – TTL)	
USB to 232	On	Off	Up (232 – TTL)	
USB to 485	On	On	Up (232 – TTL)	

TTL to 232	Off	Off	Up (232 – TTL)	
TTL to 485	Off	On	Up (232 – TTL)	
232 to 485	Off	On	Down (232 – 485)	

3.5 Interface Wiring Instructions

Mode	Pin Name	Features
TTL level interface	TXD	TTL send
	RXD	TTL receive
	GND	TTL reference ground
232 level interface	232-TX	232 send
	232-RX	232 receive
	GND	232 reference ground
485 level interface	A	485A+
	B	285B-
+5V voltage output	+5V	+ 5V voltage output
3.3V voltage output	3V3	3.3V voltage output
DTR Output	DTR	Special function
RTS Output	RTS	Special function

3.6 Functional self-closed loop test

The self-closed loop test with USB to TTL and USB to 232 verifies product functionality, the method is as follows:

USB to TTL self-closed loop: will be the module's TXD and RXD connect with the DuPont line, set the corresponding DIP switch according to the function selection, then insert the module into the computer, use the serial debug assistant to send the data, to see if there is a corresponding data back. If you can receive the data sent out, this proves that the module is functioning normally.

USB to 232 self-closed loop: will be the module's 232-TXD and 232-RXD connect with the DuPont line, set the corresponding DIP switch according to the function selection, then insert the module into the computer, use the serial debug assistant to send the data, to see if there is a corresponding data back. If you can receive the data sent out, this proves that the module is functioning normally.