USB2RS485X4

Industrial Grade USB To 4 Channel RS485 BUS Converter Compatible with Windows/Linux/MacOs

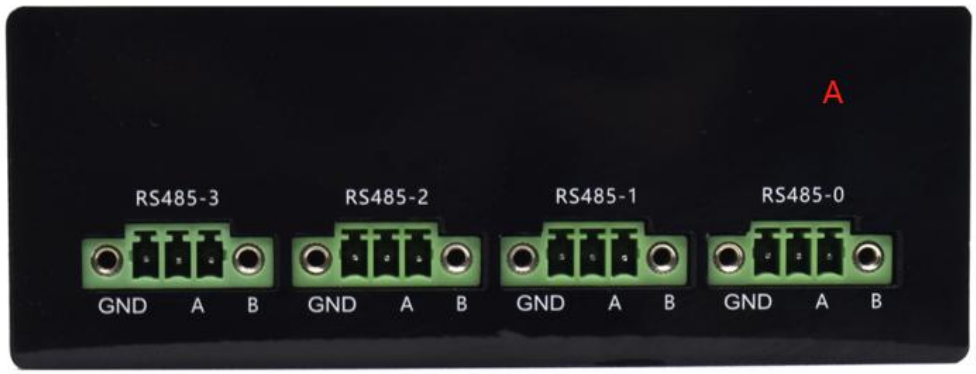
Date	Revision	Description
2023/06/03	V1.0	First Released

1 Hardware Part

1.1 Features

- EMTOP SBCSoM Brand Industrial Grade USB2.0 To 4 Channel RS485 Serial converter isolated voltage up to 3000V;
- Provide Drivers Compatible with Windows/Linux/Mac Os;
- Powered by an USB port / cable no external power required;
- Protection:
  - Continuous Short Circuit Protection
  - No-load input current as low as 5mA
  - Isolation voltage 3000VDC
  - Meets UL62368, EN62368 certification
  - ESD Protection：High common-mode transient imm unity: >25 kV/u
- Baud Rate Up To 500kbps;
- Come with Manual in English;

1.2 Interface



A	RS485-0,RS485-1,RS485-2,RS485-3,
B	LED
C	USB Interface

1.3 RS485 Pin Out Table

PIN Out

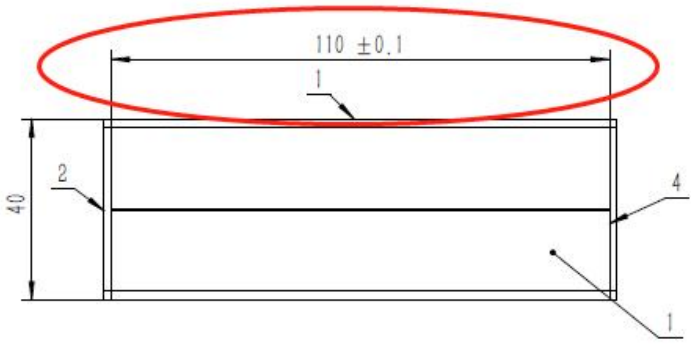
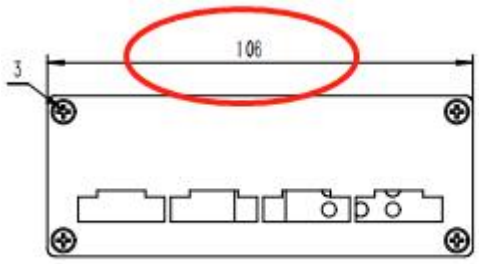
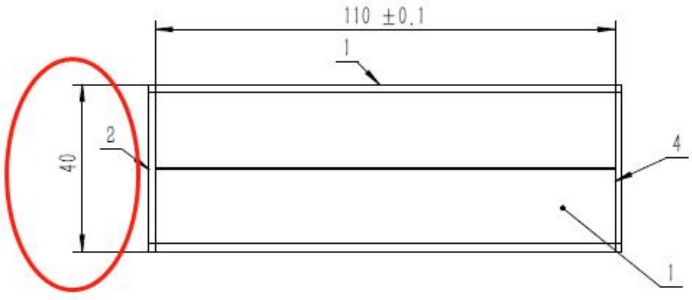
PIN1	**GND**
PIN2	**RS485_A**
PIN3	**RS485_B**

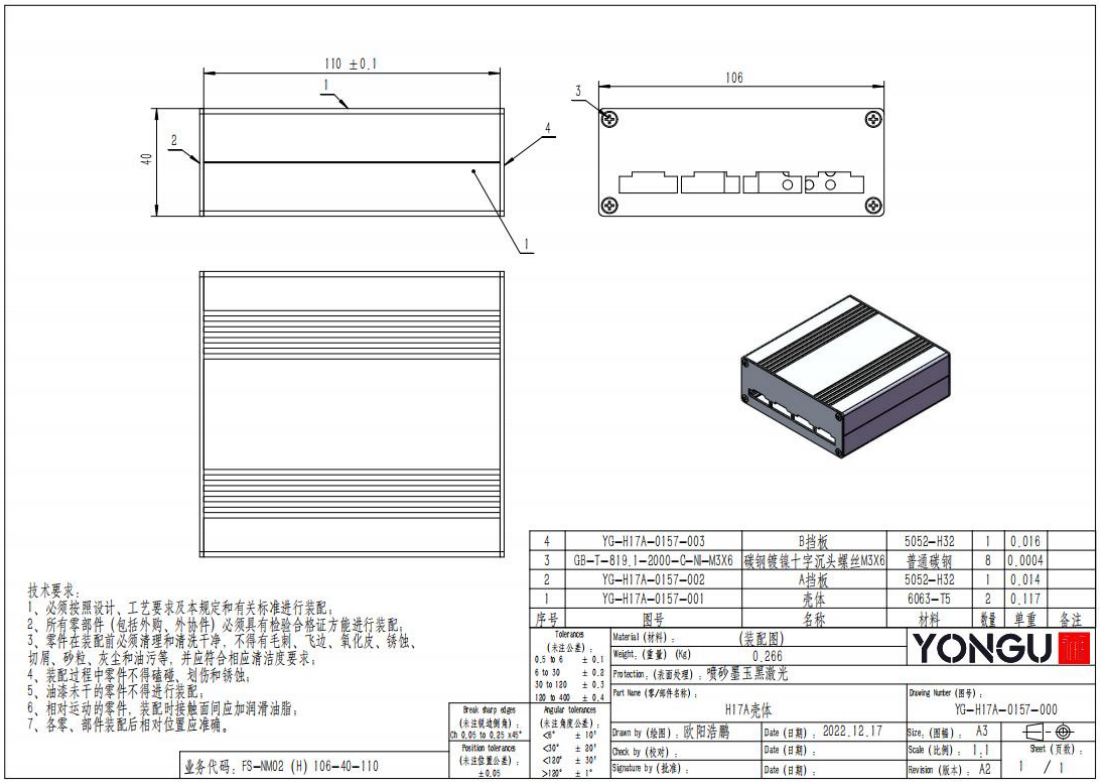
1.4 LED Indication

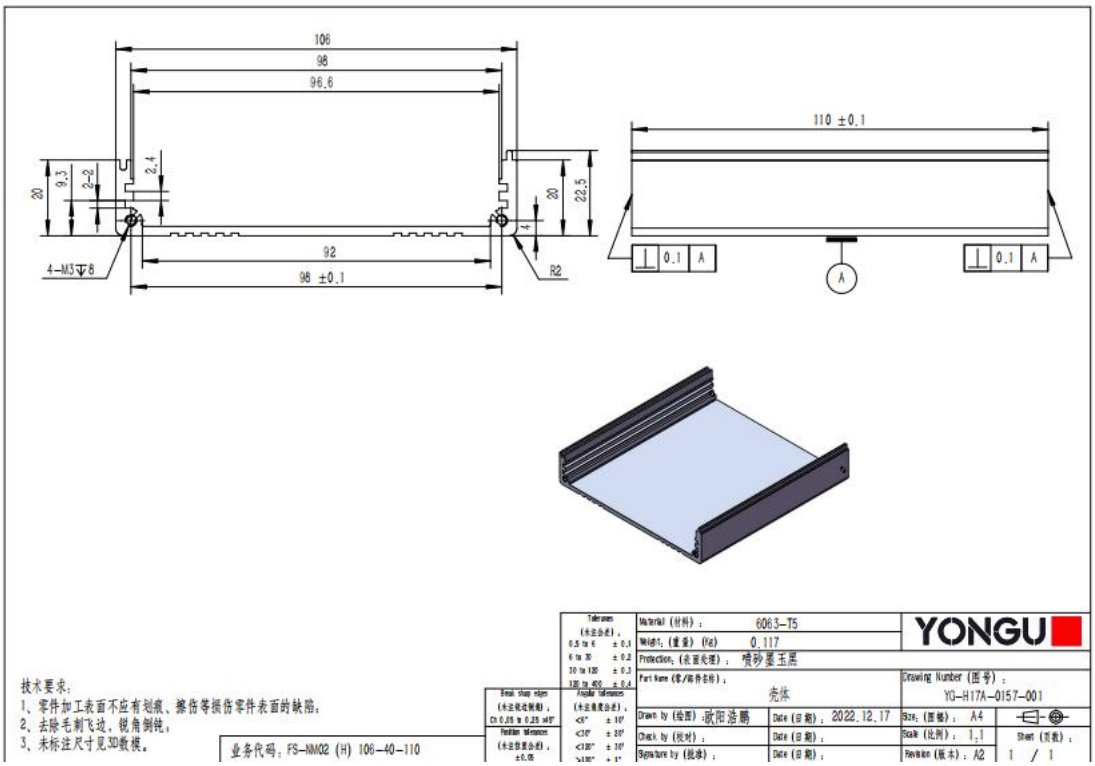
RS485-0	Interface 0
RS485-1	Interface 1
RS485-2	Interface 2
RS485-3	Interface 3

RS485-0	TX0	Green LED Blinking, RS485-0 Sending Data
	RX0	RED LED Blinking, RS485-0 Receiving Data
RS485-1	TX1	Green LED Blinking, RS485-1 Sending Data
	RX1	RED LED Blinking, RS485-1 Receiving Data
RS485-2	TX2	Green LED Blinking, RS485-2 Sending Data
	RX2	RED LED Blinking, RS485-2 Receiving Data
RS485-3	TX3	Green LED Blinking, RS485-3 Sending Data
	RX3	RED LED Blinking, RS485-3 Receiving Data

1.5 Product Size

	Length:110mm
	Width:106mm
	Height:40mm





1.6 Produc Pictures

2 Driver Install

2.1 Driver Download

Visit Below link for more information:
https://www.silabs.com/developers/usb-to-uart-bridge-vcp-drivers?tab=downloads

CP210x Universal Windows Driver v11.2.0 10/21/2022	https://www.silabs.com/documents/public/software/CP210x_Universal_Windows_Driver.zip
CP210x VCP Mac OSX Driver v6.0.2 10/27/2021	https://www.silabs.com/documents/public/software/Mac_OSX_VCP_Driver.zip
CP210x VCP Windows **v6.7 9/4/2020**	https://www.silabs.com/documents/public/software/CP210x_VCP_Windows.zip
CP210x Windows Drivers **v6.7.6 9/4/2020**	https://www.silabs.com/documents/public/software/CP210x_Windows_Drivers.zip
CP210x Windows Drivers with Serial Enumerator v6.7.6 9/4/2020	https://www.silabs.com/documents/public/software/CP210x_Windows_Drivers_with_Serial_Enumeration.zip
CP210x_5x_AppNote_Archive 9/4/2020	https://www.silabs.com/documents/public/software/CP210x_5x_AppNote_Archive.zip
CP210x_VCP_Win2K 9/4/2020	https://www.silabs.com/documents/public/software/CP210x_VCP_Win2K.exe
Linux 2.6.x VCP Revision History 9/4/2020	https://www.silabs.com/documents/public/release-notes/Linux_CP210x_VCP_2.6.x_Release_Notes.txt
Linux 3.x.x/4.x.x/5.x.x VCP Driver v3.x.x/4.x.x/5.x.x 1/29/2021	https://www.silabs.com/documents/login/software/Linux_3.x.x_4.x.x_VCP_Driver_Source.
VCP Driver for WinCE60 v2.1 9/4/2020	https://www.silabs.com/documents/public/software/VCP_WinCE60.zip
VCP Drivers for WinCE50 v2.1 9/4/2020	https://www.silabs.com/documents/public/software/VCP_WinCE50.zip

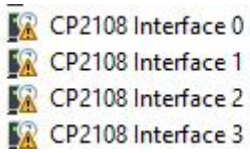
2.2 Install Guide For Windows

2.2.1 Windows 10/11

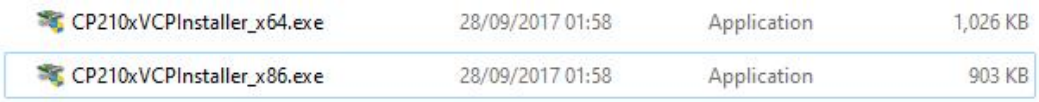
Dowload driver and extract:

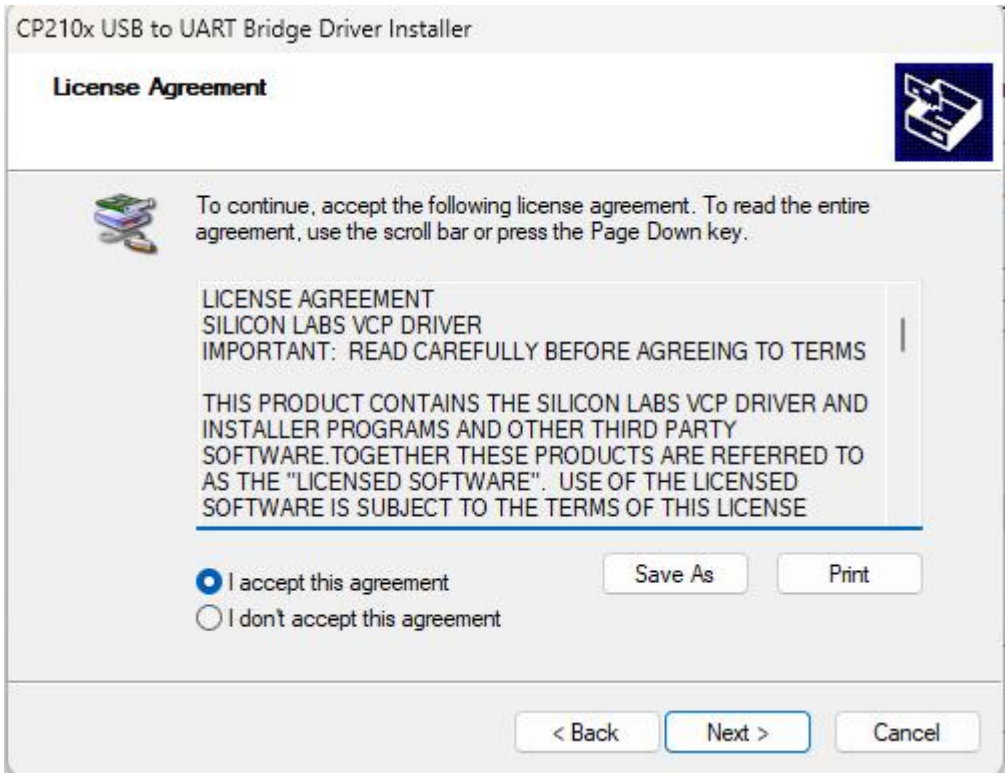
CP210x Windows Drivers **v6.7.6 9/4/2020**	https://www.silabs.com/documents/public/software/CP210x_Windows_Drivers.zip

When connect device to your computer, it shows as below from your **Device Manager**

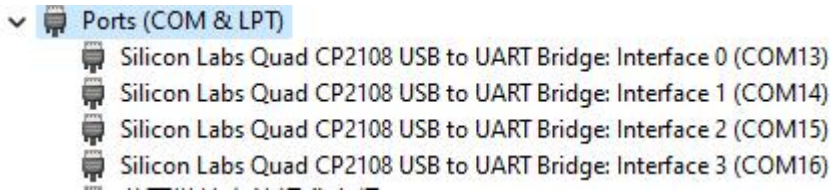


Selectethe x64 or x86 driver and Selectenext, accept





After install, the COMs show be display as below:



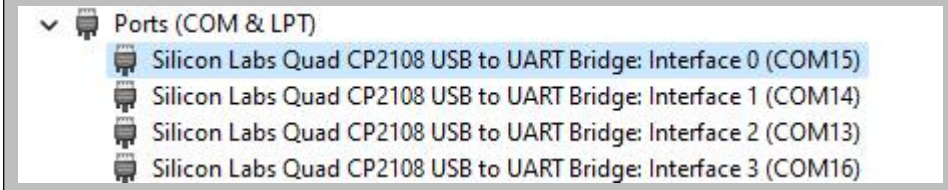
Normally after you install drivers, it should be:

RS485-0	Interface 0	COM(N)
RS485-1	Interface 1	COM(N+1)
RS485-2	Interface 2	COM(N+2)
RS485-3	Interface 3	COM(N+3)

N means the COM Number from your system.For example,

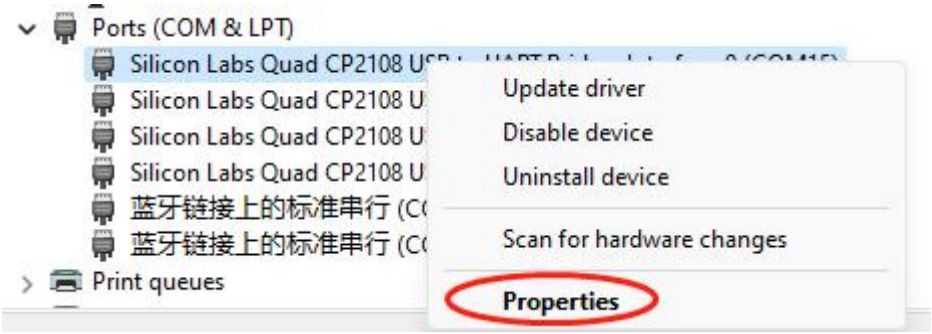
- When it starts from 0,it should be COM0,COM1,COM2,COM3;
- When it starts from 10,it should be COM10,COM11,COM12,COM13

Note: When you find the COM Number not in order ,like below,follow chanpter 2.2.2 solve it:

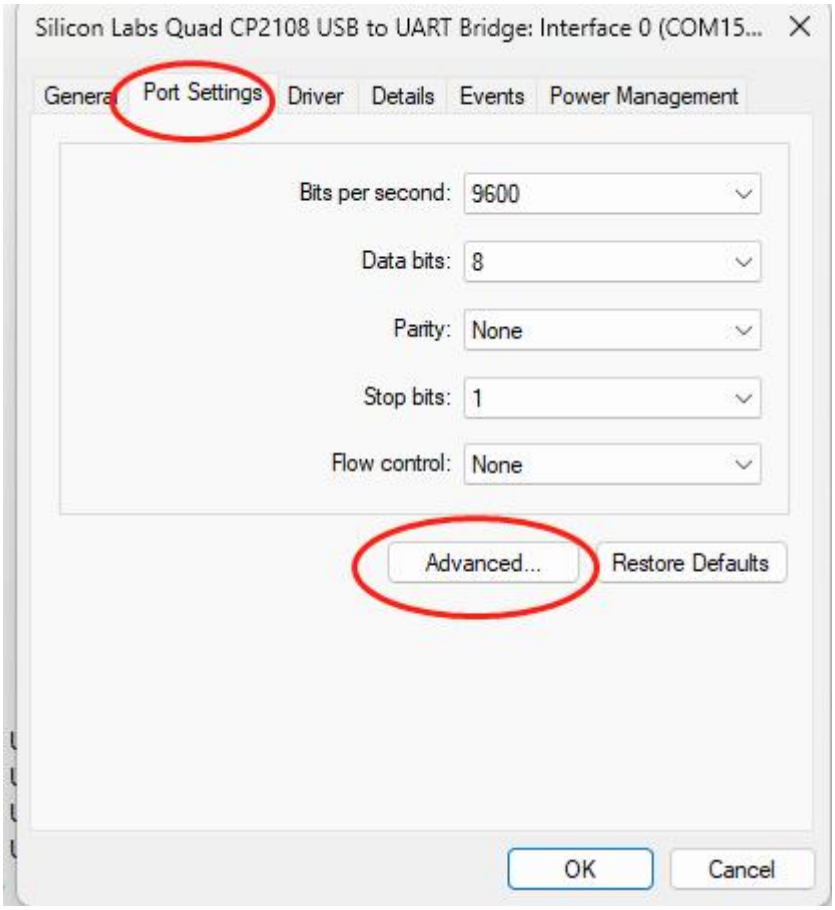


2.2.2 COM Order Number Change Reference

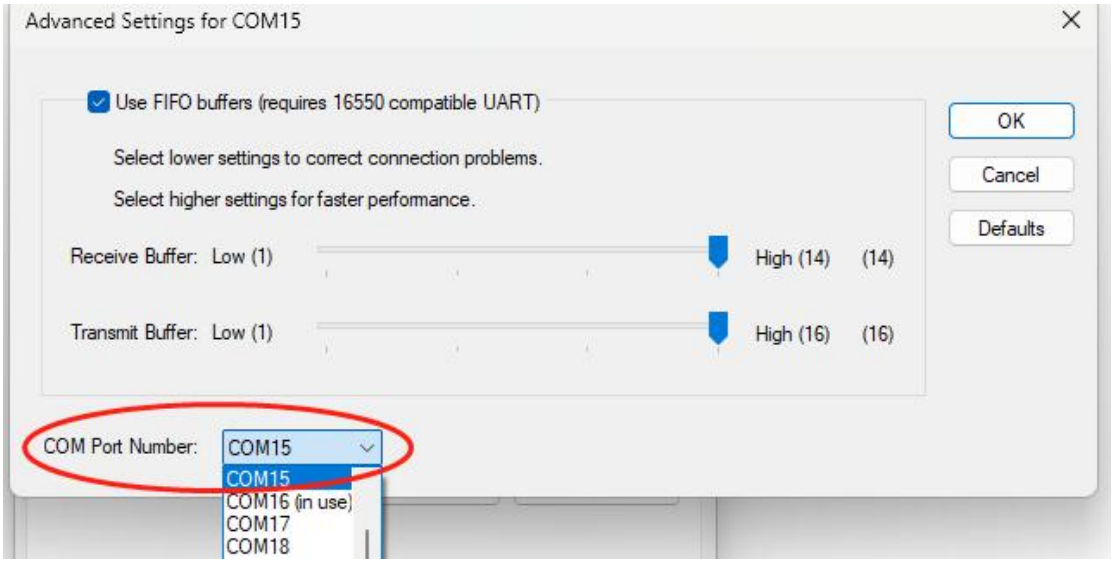
Selectethe COM port and click the right mouse button,SelecteProperties



Click Port Settings And SelecteAdvanced



Selectea New COM Number from COM Port number



Note: Must replug the usb cable after change port number

2.3 Install Guide For Linux

We take Ubuntu18.04 for example, not drivers needed above linux kernel 3.2
When you connect device to your linux computer, type:

```
~$ ls /dev/ttyUSB*
```

```
ubuntu18@ubuntu18-VirtualBox:~$ ls /dev/ttyUSB*
/dev/ttyUSB0  /dev/ttyUSB1  /dev/ttyUSB2  /dev/ttyUSB3
```

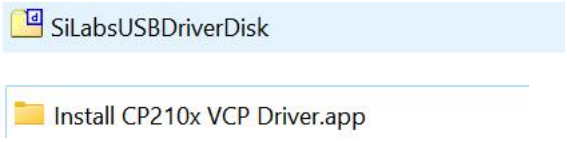
It shows ttyUSB0,ttyUSB1,ttyUSB2,ttyUSB3,

2.4 Install Guide For Mac Os

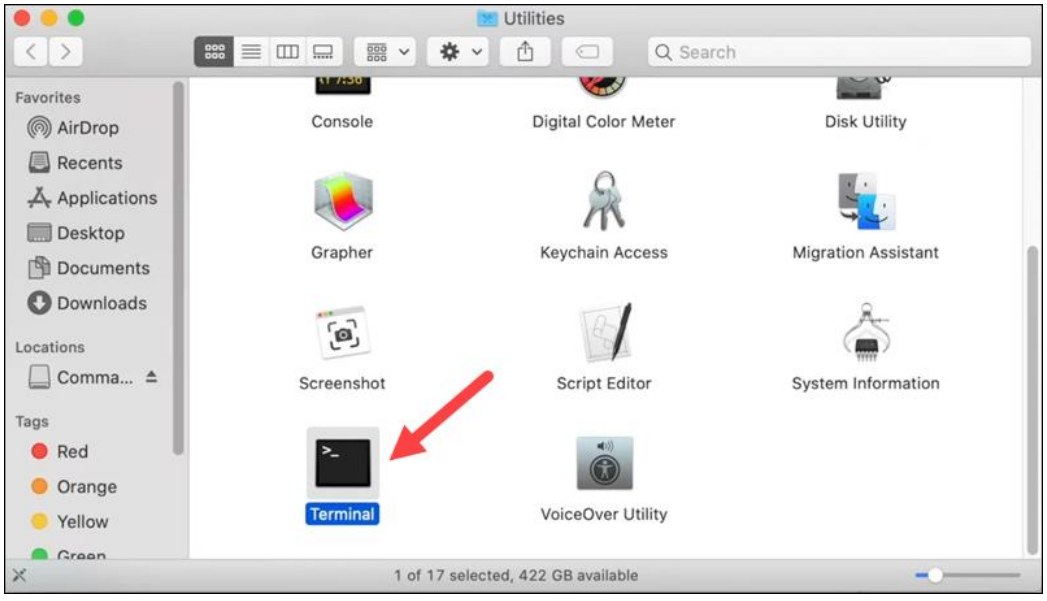
Dowload driver and extract

CP210x VCP Mac OSX Driver v6.0.2 10/27/2021	https://www.silabs.com/documents/public/software/Mac_OSX_VCP_Driver.zip

Extract and run SiLabsUSBDriverDisk.dmg, run Install CP210x VCP Driver.app

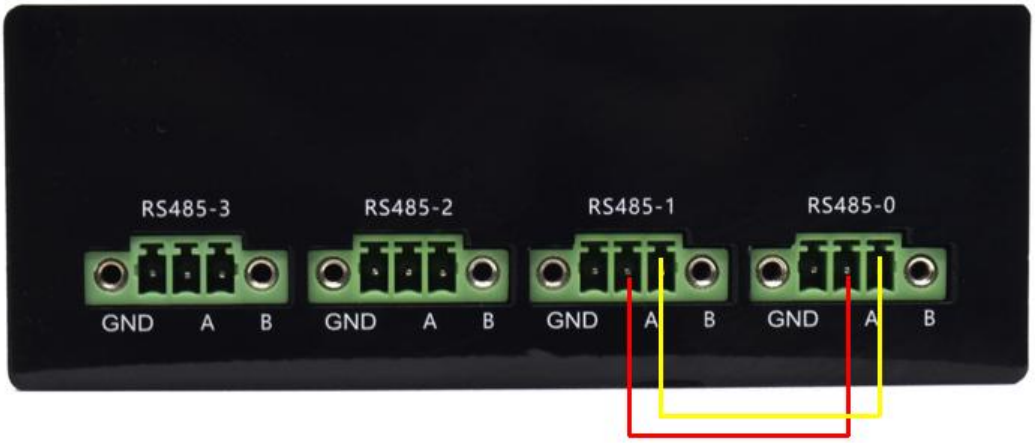


Use Terminal check status



3 Software Usage

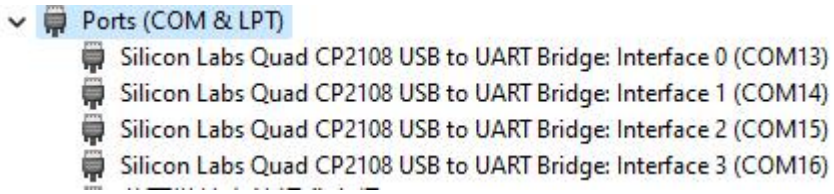
This chapter is samples of software usage for windows/linux/MacOs
Hardware Connection is as below, use high quality usb2.0 industrial cable connect Computers and Connect RS485-0,RS485-1 by fly-wire..



3.1 Usage For Windows

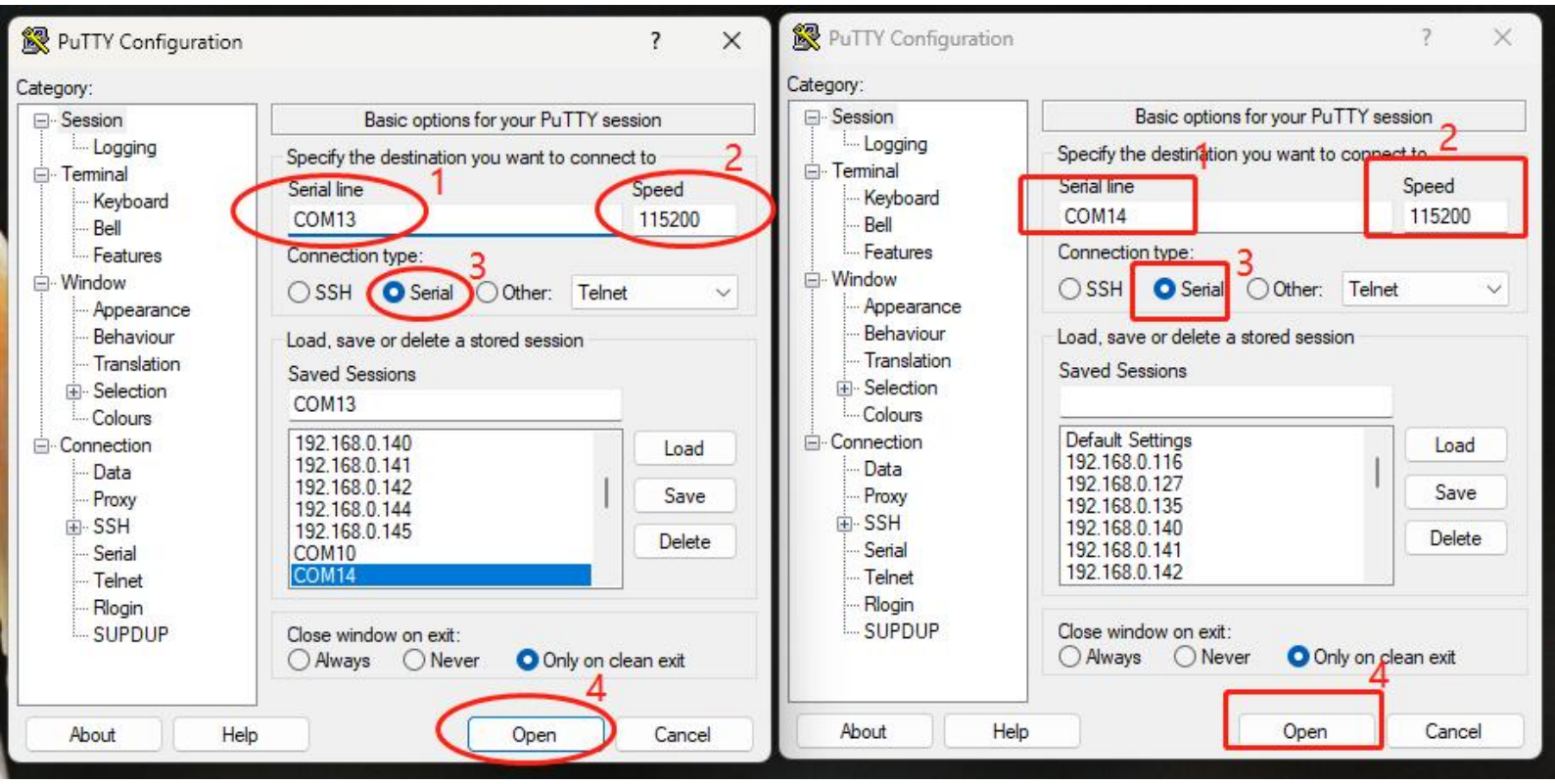
3.1.1 Check device status

check if the com port order is right, if not, refer to chapter 2.2.2.



3.1.2 Open 2 Putty windows

Setting is as below, one for RS485-0,one for RS485-1.
Here RS485-0 is COM13, RS485-1 is COM14



1	Com13 Or com14
2	Baud Rate 115200
3	Serial
4	Open Port

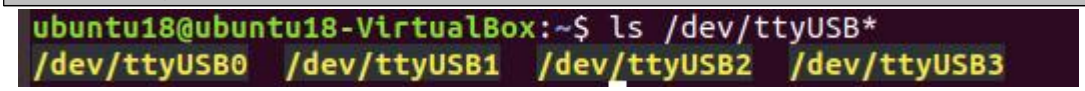
3.2.3 Send/Receive Data

3.2 Usage For Linux

3.2.1 Check device

Connect device to your linux computer, connect RS485-0 And RS485-1 with the cross-serial-cable

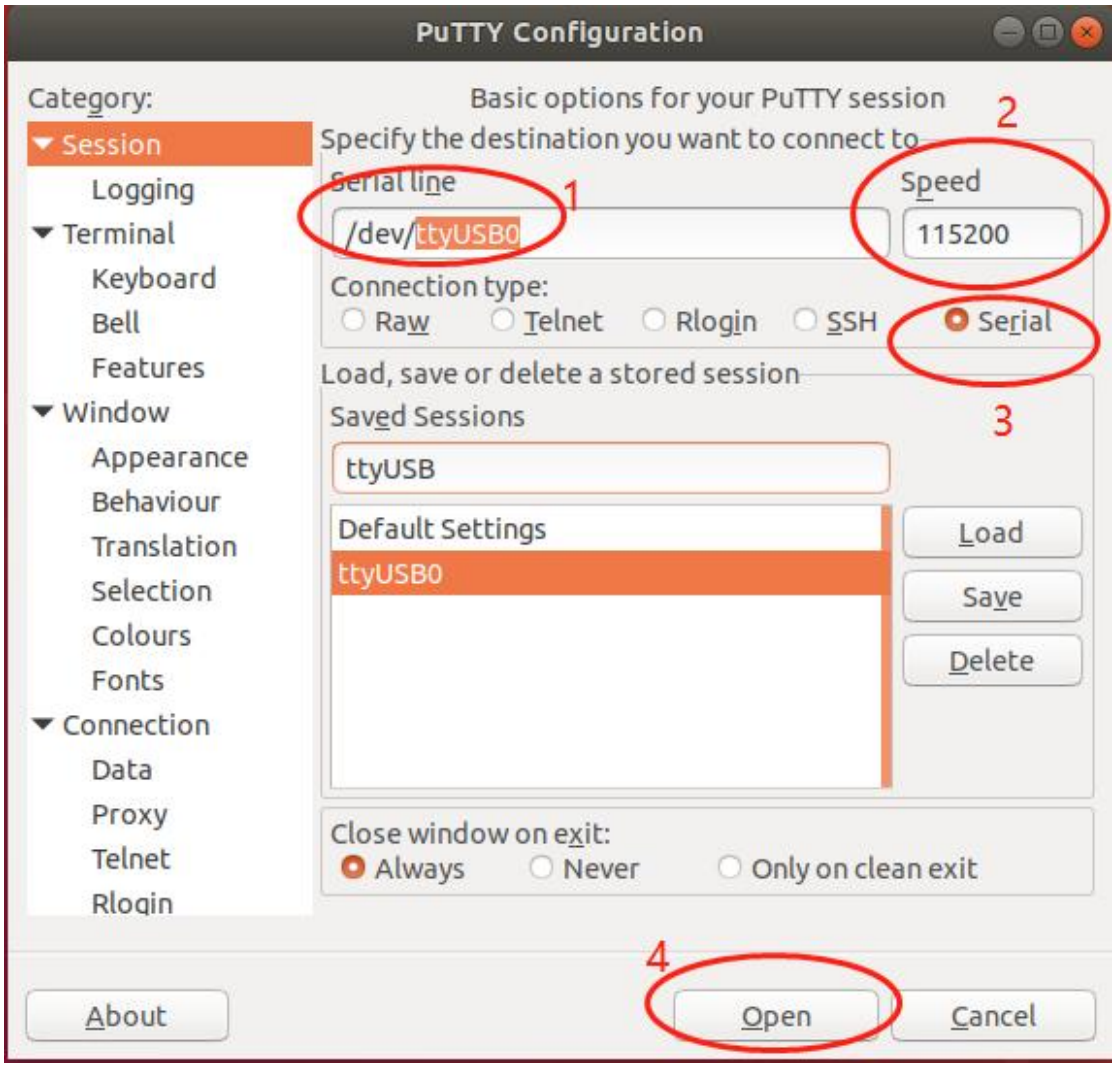
```
~$ ls /dev/ttyUSB*
```



3.2.2 Putty

Putty for one port

```
~$ sudo apt-get install putty
~$ sudo putty
```



Settings

1	ttyUSB0 (Accoring to your system com number)
2	115200
3	Choose serial
4	open

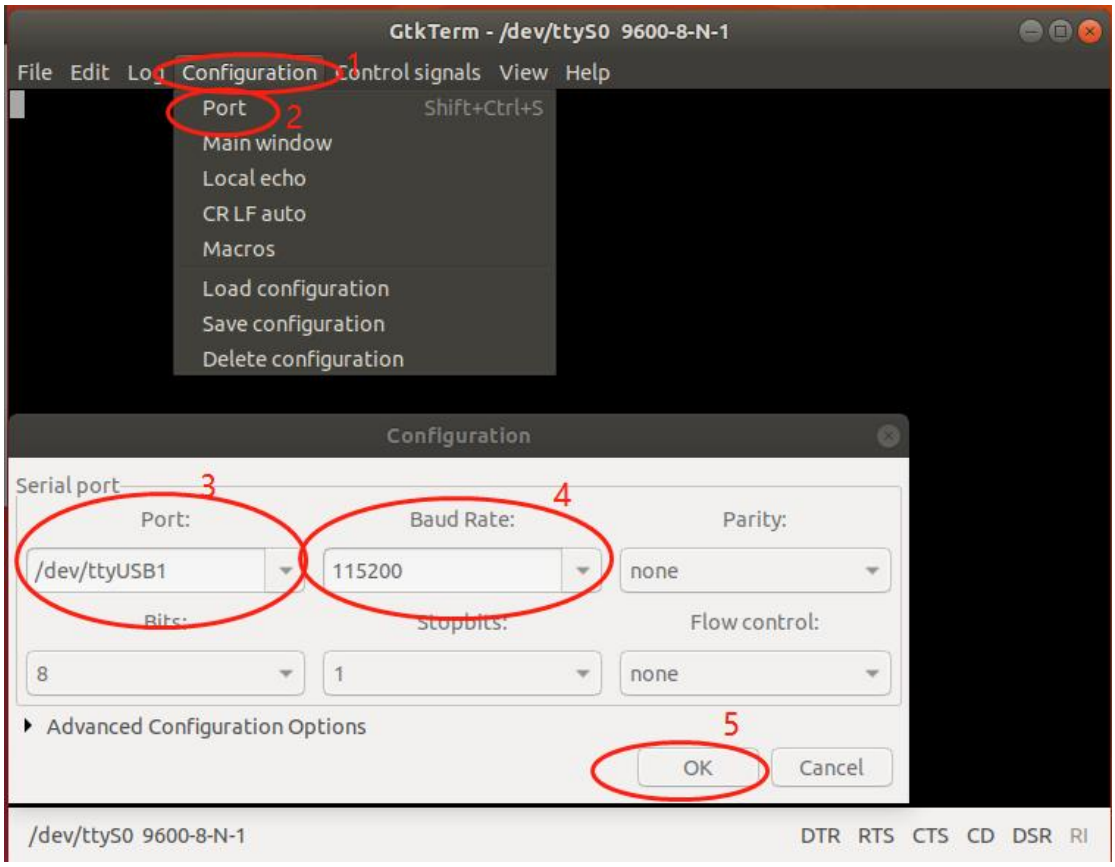
3.2.3 Gtkterm

Open new terminal window set Gtkterm for one port

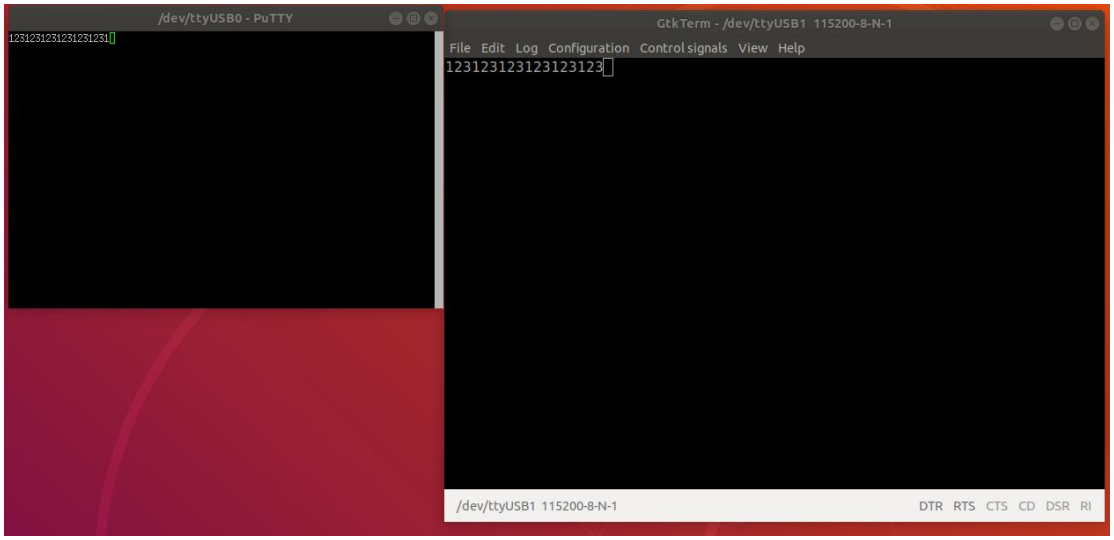
```
~$ sudo apt-get install gtkterm
```

```
~$ sudo gtkterm
```

Settings

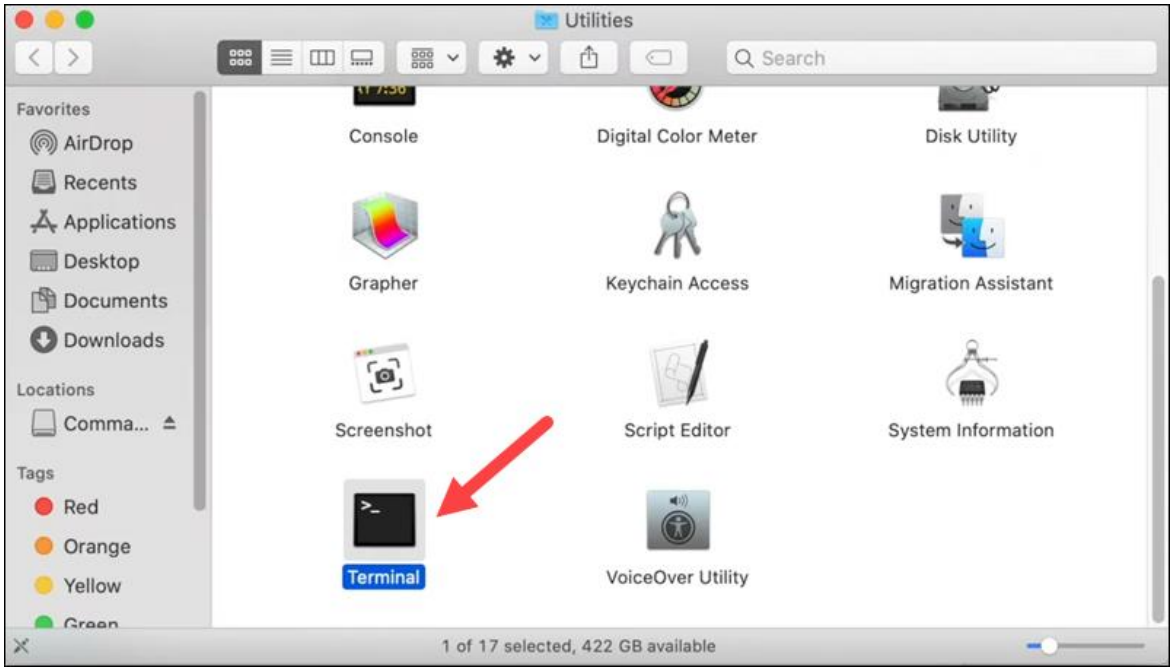


1	Selecteand click Configuration
2	Selecteand click Port
3	Set it as /dev/ttyUSB1 (According to you PC)
4	Set Baud Rate 115200
5	Click OK



3.3 Usage For Mac Os

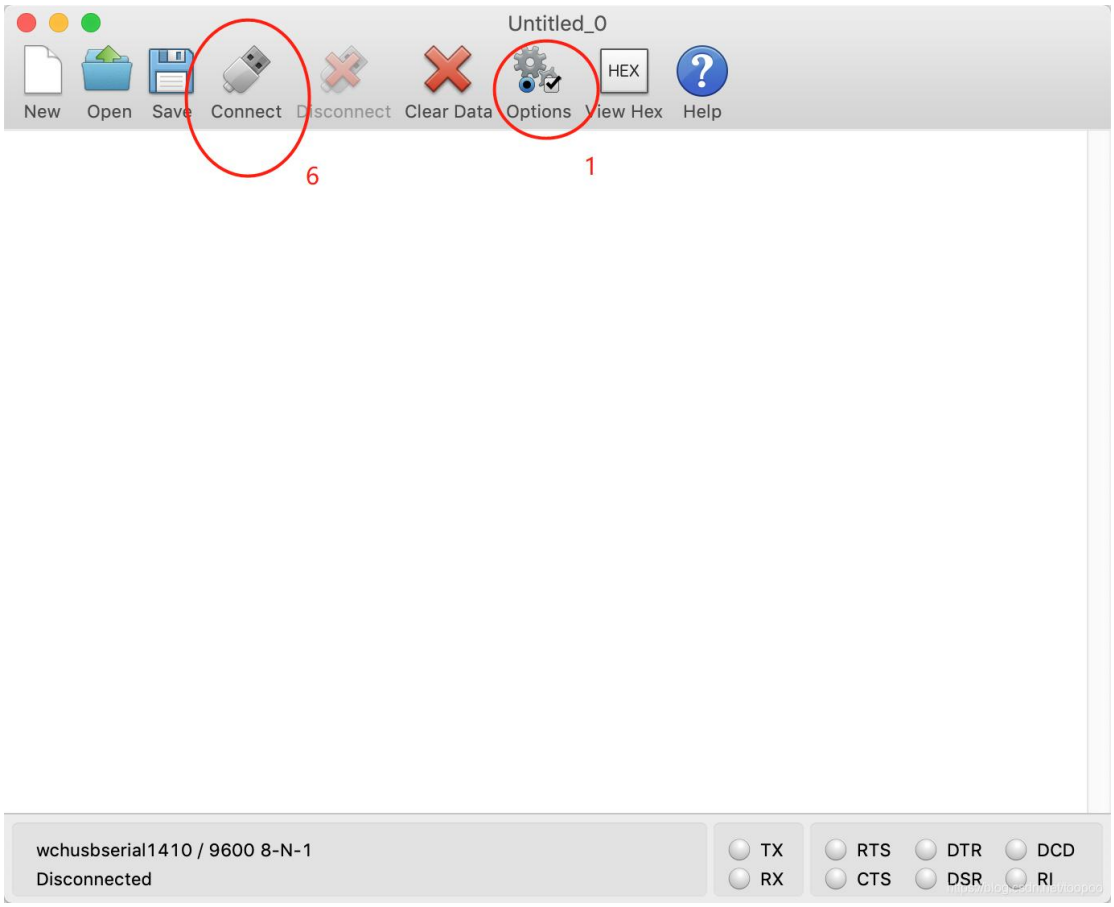
3.3.1 Check Status

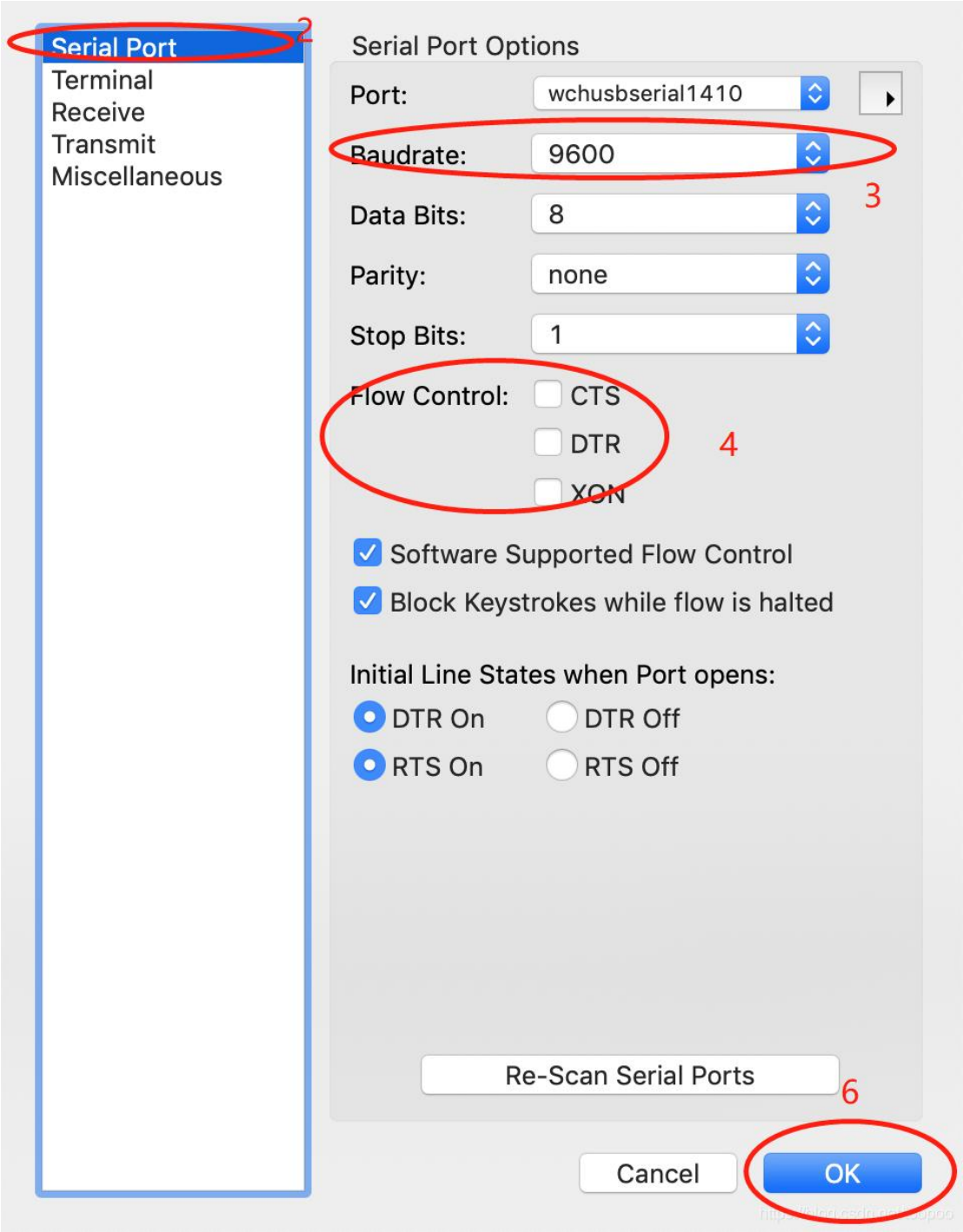



```
$ls /dev/tty.SLAB_USBtoUART*
```

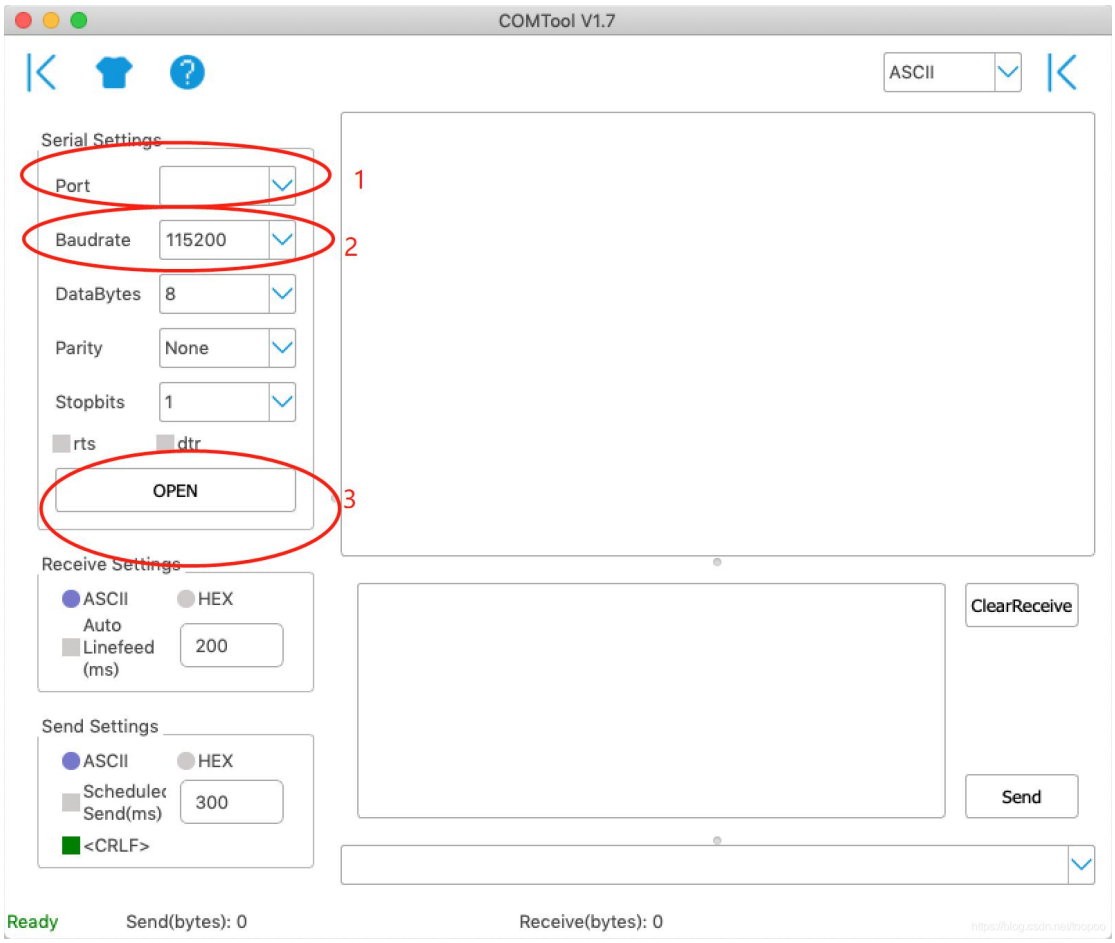
```
macdeMac:~ mac$ ls /dev/tty.SLAB_USBtoUART*
/dev/tty.SLAB_USBtoUART         /dev/tty.SLAB_USBtoUART22       /dev/tty.SLAB_USBtoUART23       /dev/tty.SLAB_USBtoUART24
```

3.3.2 Comtool


Untitled_0
New
Open
Save
Connect
Disconnect
Clear Data
Options
HEX
View Hex
Help
6
1
wchusbserial1410 / 9600 8-N-1
Disconnected
TX
RX
RTS
CTS
DTR
DSR
DCD
RI



3.3.3 CoolTerm



4 Technic Support And Warranty

4.1 Contact Information

www.emtop-tech.com	wiki.emtop-tech.com	github.com/emtop-tech
sales@emtop-tech.com	support@emtop-tech.com	ARM|DSP|FPGA|SOM|SBC|OEM|ODM

4.2 Warranty

EMTOP Technology provides its product with one-year free technical support including:

- Providing software and hardware resources related to the embedded products of EMTOP Technology;
- Helping customers properly compile and run the source code provided by EMTOP Technology;
- Providing technical support service if the embedded hardware products do not function properly under the circumstances that customers operate according to the instructions in the documents provided by EMTOP Technology;

www.emtop-tech.com	wiki.emtop-tech.com	github.com/emtop-tech
sales@emtop-tech.com	support@emtop-tech.com	ARM|DSP|FPGA|SOM|SBC|OEM|ODM

- Helping customers troubleshoot the products.