USB TO RS232/485/TTL User Manual

Overview

This is an industrial USB to RS232/485/TTL isolated converter with original FT232RL inside. It features embedded protection circuits such as power isolation, ADI magnetical isolation, and TVS diode, etc. What's more, the USB TO RS232/485/TTL comes with an aluminium alloy enclosure, make it solid and durable to work.

The USB TO RS232/485/TTL is very easy to use, fully automatic transceiving without delay. Due to its fast communication, stability, reliability, and safety, it is an ideal choice for industrial control equipments and/or applications with high communication requirement.

Features

- USB TO RS232, USB TO RS485, USB TO TTL (UART)
- Adopt original FT232RL, fast communicating, stable and reliable, better compatibility
- Onboard unibody power supply isolation, provides stable isolated voltage, needs no extra power supply for the isolated terminal
- Onboard unibody magnetical isolation, allows signal isolation, high reliability, strong anti-interference, low power consumption

- Onboard TVS (Transient Voltage Suppressor), effectively suppress surge voltage and transient spike voltage in the circuit, lightning-proof & anti-electrostatic
- Onboard self-recovery fuse and protection diodes, ensures the current/voltage stable outputs, provides over-current/over-voltage proof, improves shock resistance
- Fully automatic transceiver circuit with no delay, ensures the USB port communicates with different interfaces fastly and stably, without interfering each other
- Onboard TTL serial 3.3V/5V voltage translator, config the TTL level via switch
- Aluminium alloy enclosure with sand blasting and anodic oxidation, CNC process opening, solid and durable
- 3 LEDs for indicating the power and transceiver status
- High quality USB-B and RS232 connectors, smoothly plug/pul

Specifications

- Product type: industrial optically isolated converter
- Baudrate: 300-921600bps
- Host port: USB
- Device port: RS485/RS232/TTL
- USB:
  - Operating voltage: 5V
  - Connector: USB-B
  - Protection: 200mA self-recovery fuse, isolated output

- Transmission distance: ~5m

- RS485:
  - Connector: screw terminal
  - Pins: A+, B-, GND
  - Direction control: hardware automatic control
  - Protection: 600W lightning-proof and surge-suppress, 15KV ESD protection (reserved 120R balancing resistor solder pads)
  - Transmission distance: ~1200m
  - Transmission mode: point-to-multipoints (up to 32 nodes, it is recommended to use repeaters for 16 nodes or more)

- RS232:
  - Connector: DR9 male
  - Protection: TVS diode, surge protection, ESD protection
  - Transmission distance: ~15m
  - Transmission mode: point-to-point

- TTL (UART):
  - Operating voltage: 3.3V/5V
  - Connector: screw terminal
  - Pins: TXD, RXD, GND
  - Protection: clamp protection diode, over-voltage/negative-voltage proof, shock resistance
  - Transmission mode: point-to-point

- LED indicators:
  - PWR: red power indicator, light up when there is USB connection and voltage is detected
  - TXD: green TX indicator, light up when the USB port sends data
  - RXD: blue RX indicator, light up when the device ports send data back
- Operating environment:
  - Temperature: -15℃ ~ 70℃
  - Humidity: 5%RH ~ 95%RH
- Operating system: Windows 10 / 8.1 / 8 / 7 / XP

Note: There is a pad reserved for 120R balancing resistance. Recommend you to weld 120Ω resistors to the first and last devices if you connect many devices at the same time.

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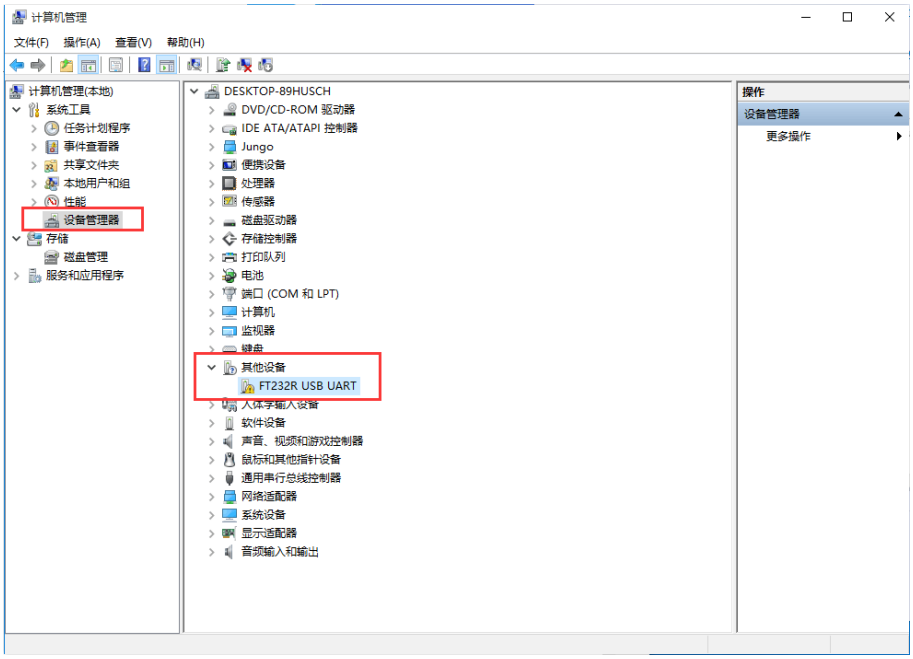
Driver Installation

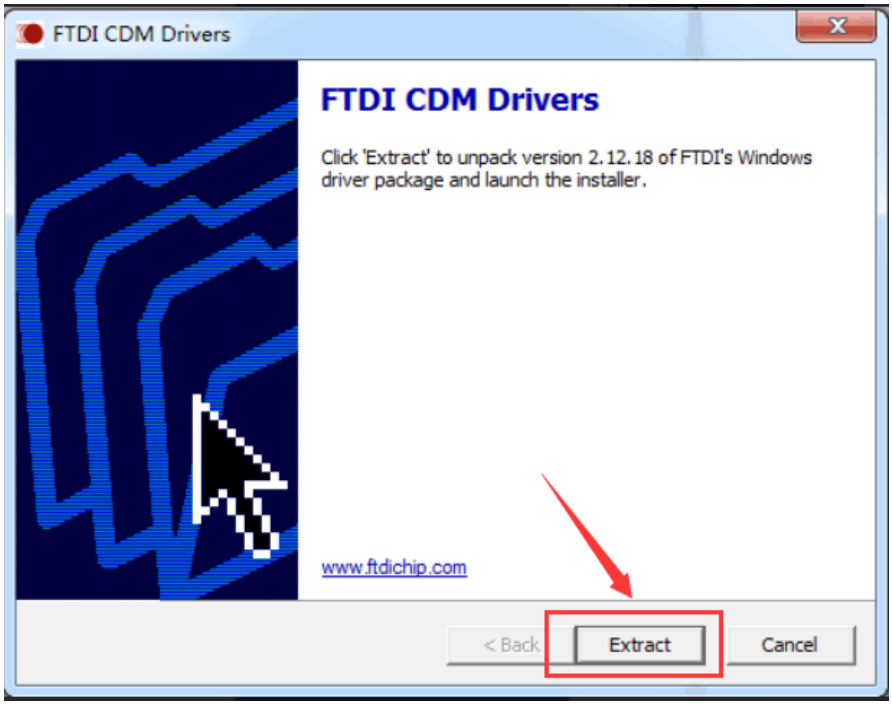
1. Connect module to PC, if you find that a yellow exclamation symbol occur as below, driver is required.



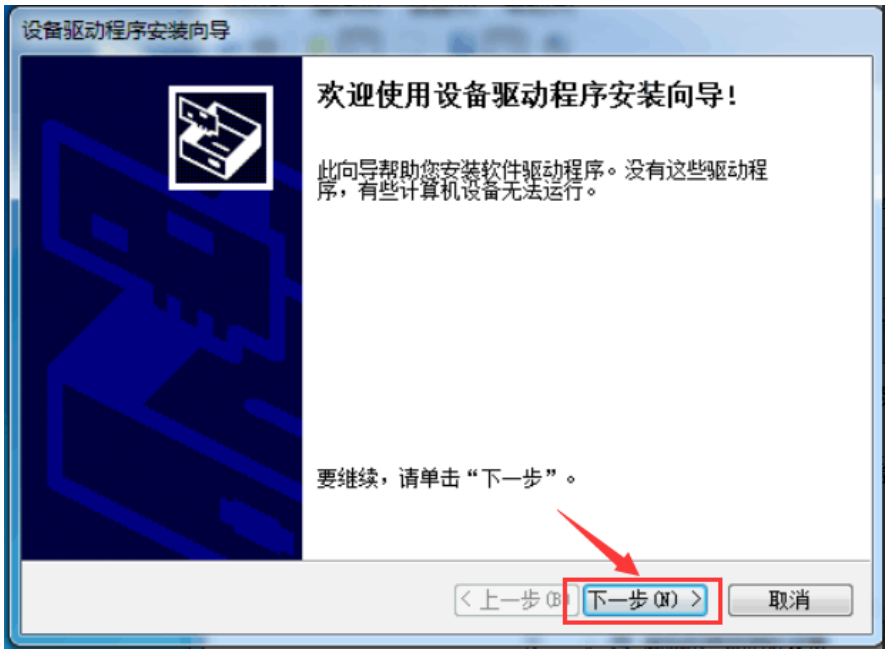
2. Download the driver from Waveshare Wiki

   https://www.waveshare.com/wiki/USB_TO_RS232/485/TTL#Resources

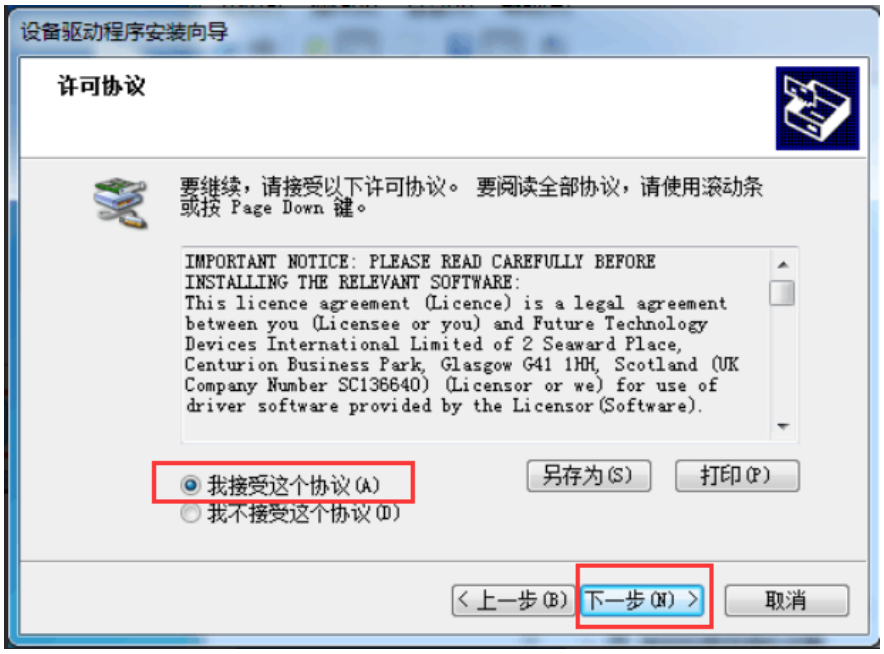
3. After downloading, extract and install it



4. Click Extract:



5. Click Next Step:


设备驱动程序安装向导
许可协议
要继续，请接受以下许可协议。 要阅读全部协议，请使用滚动条或按 Page Down 键。
IMPORTANT NOTICE: PLEASE READ CAREFULLY BEFORE INSTALLING THE RELEVANT SOFTWARE:
This licence agreement (Licence) is a legal agreement between you (Licensee or you) and Future Technology Devices International Limited of 2 Seaward Place, Centurion Business Park, Glasgow G41 1HH, Scotland (UK Company Number SC136640) (Licensor or we) for use of driver software provided by the Licensor (Software).
我接受这个协议(A)
我不接受这个协议(D)
另存为(S)
打印(P)
< 上一步(B)
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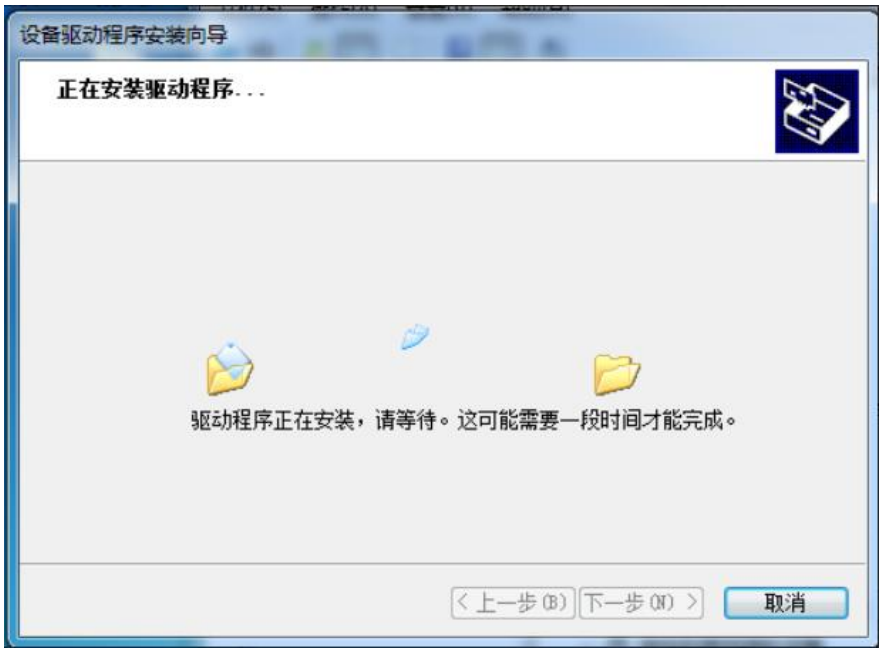
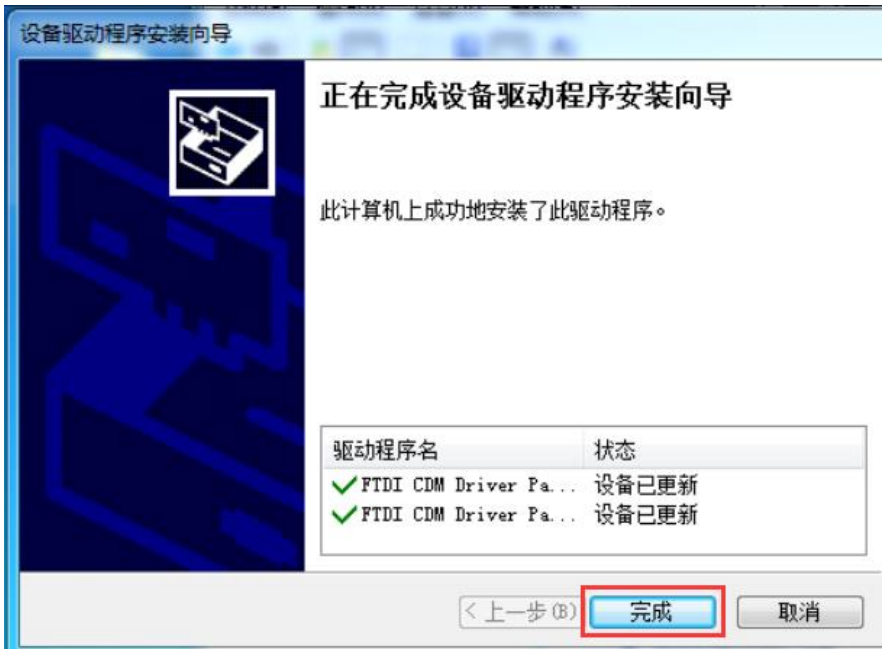
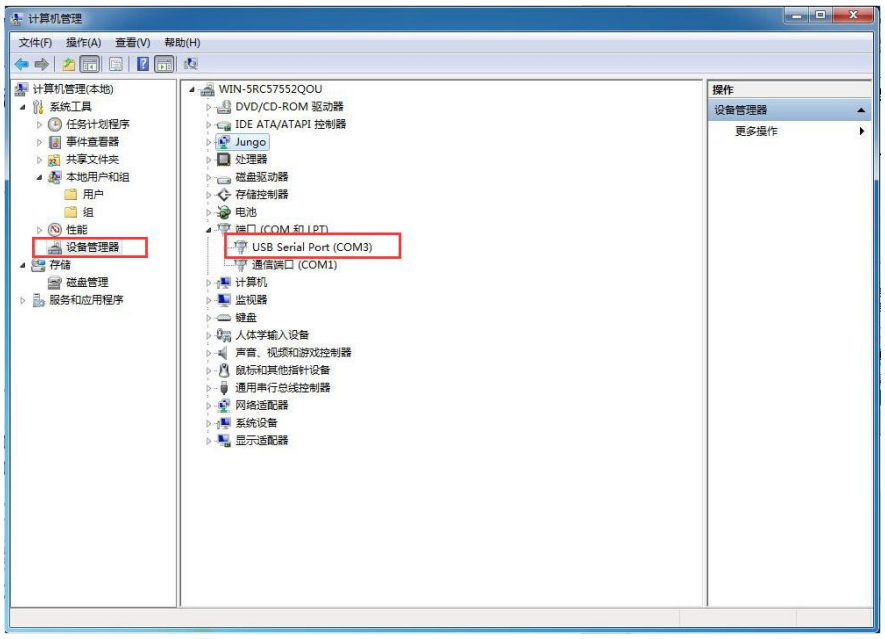
取消


设备驱动程序安装向导
正在安装驱动程序...
驱动程序正在安装，请等待。这可能需要一段时间才能完成。
< 上一步(B)
下一步(N) >
取消

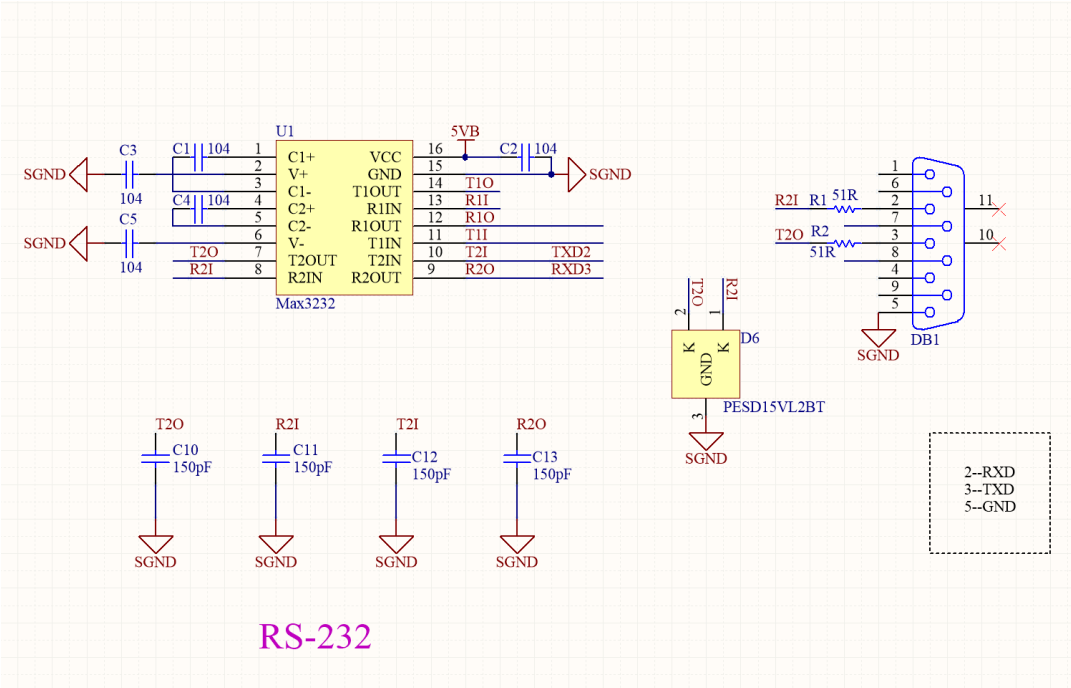


6. After installing, you can check if the yellow exclamation symbol disappear.



Testing

INTERFACES

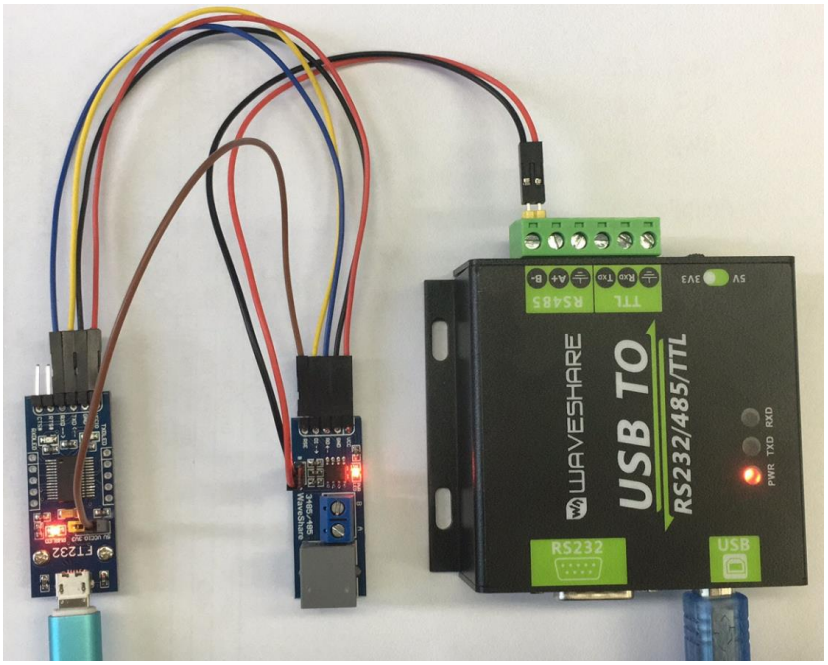


RS232

Connect RS232 and USB interface to PC. Open two Serial Assistance Software and set them with same baudrate, test them as below:

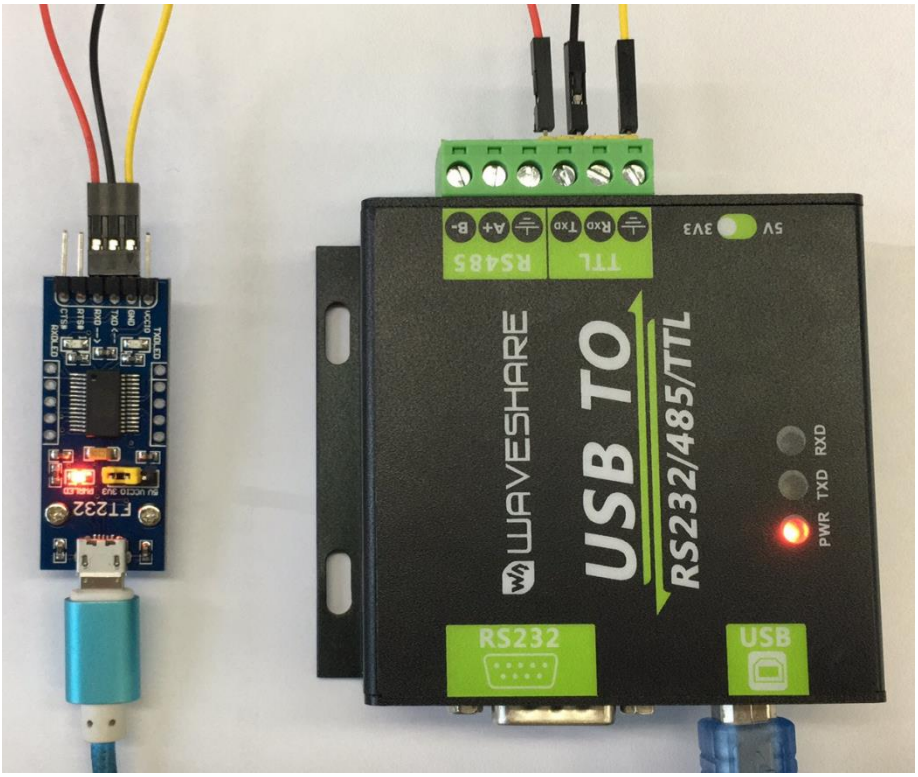
RS485

Connect RS485 interface to RS485 interface of target board (here we use our RS485 board to test), A to A and B to B. Open two Serial Software on PC and test it. （Note that RS485 Board should pull-high RSE to send data and pull0download it to receive）)



TTL

Connect TTL interface to other UART board and connect to PC, open two Serial software and test:



SSCOM V5.13.1 串口/网络数据调试器,作者:大虾丁丁,2...
通讯端口 串口设置 显示 发送 多字符串 小工具 帮助
PCB打样那家强?
清除窗口 打开文件 发送文件
端口号 COM16 USB Serial Port
关闭串口 更多串口设置
RTS DTR 波特率: 115200
AT
发 送
www.daxia.com S:0 R:793 COM16 已打开 115200bps,8,1,N
SSCOM V5.13.1 串口/网络数据调试器,作者:大虾丁丁,26...
通讯端口 串口设置 显示 发送 多字符串 小工具 帮助
PCB打样那家强?
清除窗口 打开文件 发送文件
端口号 COM22 USB Serial Port
关闭串口 更多串口设置
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www.daxia.com S:1053 R:192 COM22 已打开 115200bps,8,1,No