

USB TO RS232/485

From Waveshare Wiki

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Overview

USB TO RS232/485 is a USB to RS232/485 non-isolated serial port converter, featuring the original FT232RNL chip for improved stability and compatibility. It comes with a built-in self-recovering fuse, TVS protection circuit, etc. USB TO RS232/485 offers simple operation, zero-delay automatic transmission and reception conversion, and boasts characteristics such as fast, stable, reliable and safe communication.

Features

- Onboard Original FT232RNL chip. Fast communication, stable and reliable, better compatibility.
- Onboard TVS (Transient Voltage Suppressor), effectively suppresses surge voltage and transient spike voltage in the circuit, lightning-proof & anti-electrostatic.
- Onboard self-recovery fuse and protection diodes, ensure the current/voltage stable outputs, provide over-current/over-voltage proof, and improve shockproof performance.
- Onboard RS232/485 communication switching circuit, configured by switch.
- Onboard 120R terminal resistor on the RS485 interface, enabled/disabled via switch.
- 3x LEDs for indicating the power and transceiver status.

USB TO RS232/485



(<https://www.waveshare.com/usb-to-rs232-485.htm>)

RS232, RS485

- ABS case design, small in size, easy to use, portable and cost-effective.

Parameters

Model	USB to RS232/RS485	
Host Interface	USB	
Device Interface	RS232/RS485	
USB Interface	Operating Level	5V
	Interface	Type-A male
	Protection	200mA self-recovery fuse
	Transmission Distance	About 5m
RS232 Interface	Interface	Screw Terminal
	Transmission Distance	About 15m
	Transmission Mode	Point to Point
	Baud Rate	300 bps ~ 921600bps
RS485 Interface	Interface	Screw Terminal
	Direction Control	Hardware automatic control
	Protection	Provide TVS diode protection, anti-surge, and ESD protection (onboard 120R resistor)
	Transmission Distance	About 1200m (at low rate)
	Transmission Mode	Point to multi-point (up to 32 nodes, add the relay for up to 16 nodes)
	Baudrate	300 bps ~ 921600bps
Indicator	PWR	Red power indicator, connect to USB, light on when the voltage is detected
	TXD	Transmitting indicator, green light is on when data is sent from the USB interface
	RXD	Receiving indicator, blue light is on when the data is sent back from the device interface
Usage Environment	Temperature Range	-15°C ~ 70°C
	Humidity Range	5% ~ 95%RH
OS	Mac, Linux, Android, Windows 11 / 10 / 8.1 / 8 / 7	

Onboard Interface



① 120Ω resistor switch	enable or disable RS485 terminal 120Ω resistor
② RS232/485 switch	for switching RS232 for RS485 communication
③ RX_ B:	RS232 receive data / RS485 differential signal negative B-
④ TX_ A:	RS232 transmit data / RS485 differential signal positive A+
⑤ GND:	RS232/485 signal ground

(/wiki/File:USB_TO_RS232-485_Interface.png)

Dimensions

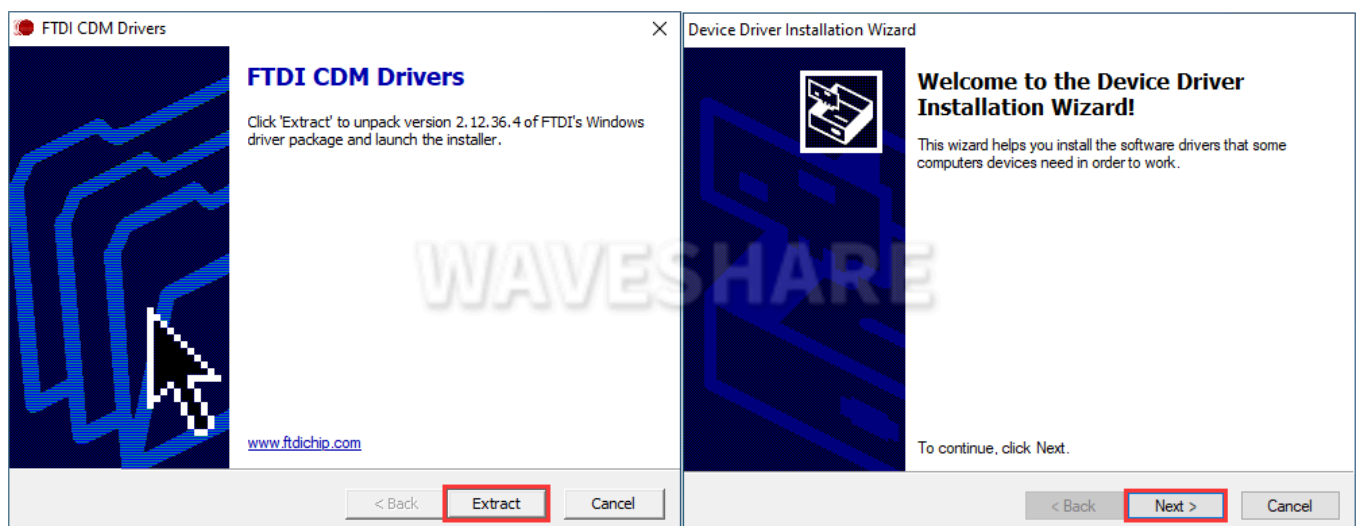


(/wiki/File:USB_TO_RS232-485_Dimensions.jpg)

Driver Installation

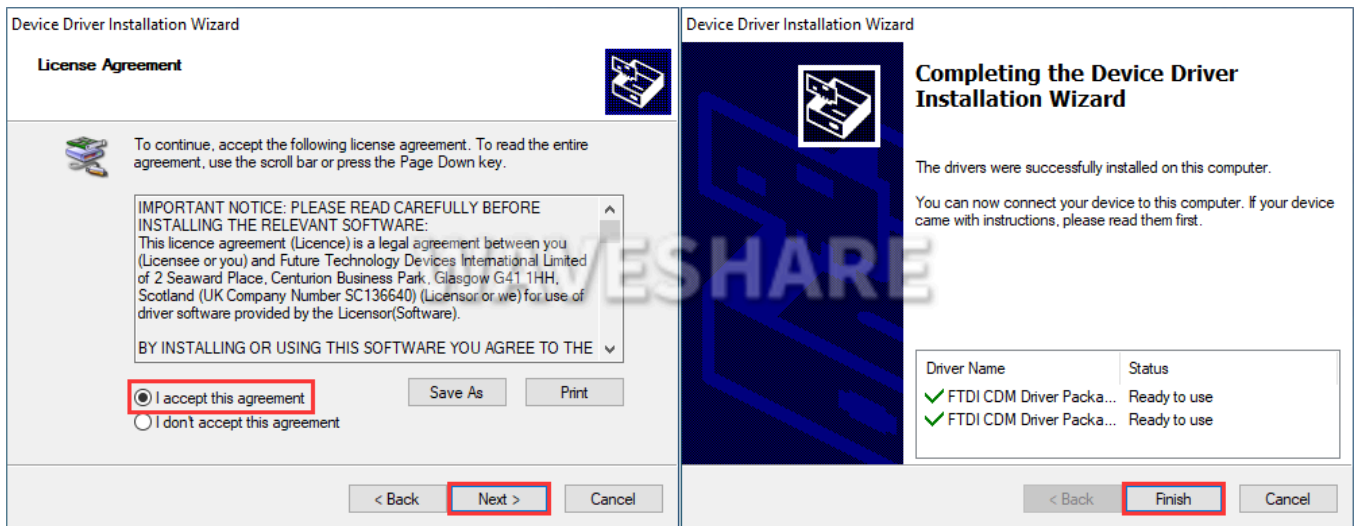
USB Driver Installation

- Download the VCP Driver (https://files.waveshare.com/wiki/USB-TO-RS232-485-%EF%BC%88B%29/CDM212364_Setup.zip).
- Double click on **CDM212364_Setup.exe** and install it.
- Click on **Extract**, and then "NEXT".



(/wiki/File:USB_TO_4CH_Serial_Converter_-03.png)

- Click on **I accept this agreement**, and then click on "NEXT", and click on "Finish".



(/wiki/File:USB_TO_4CH_Serial_Converter_-04.png)

- After connecting the PC, you can see the usable COM port number in the device manager.



(/wiki/File:USB_TO_RS232-485_Driver-3.jpg)

Hardware Test

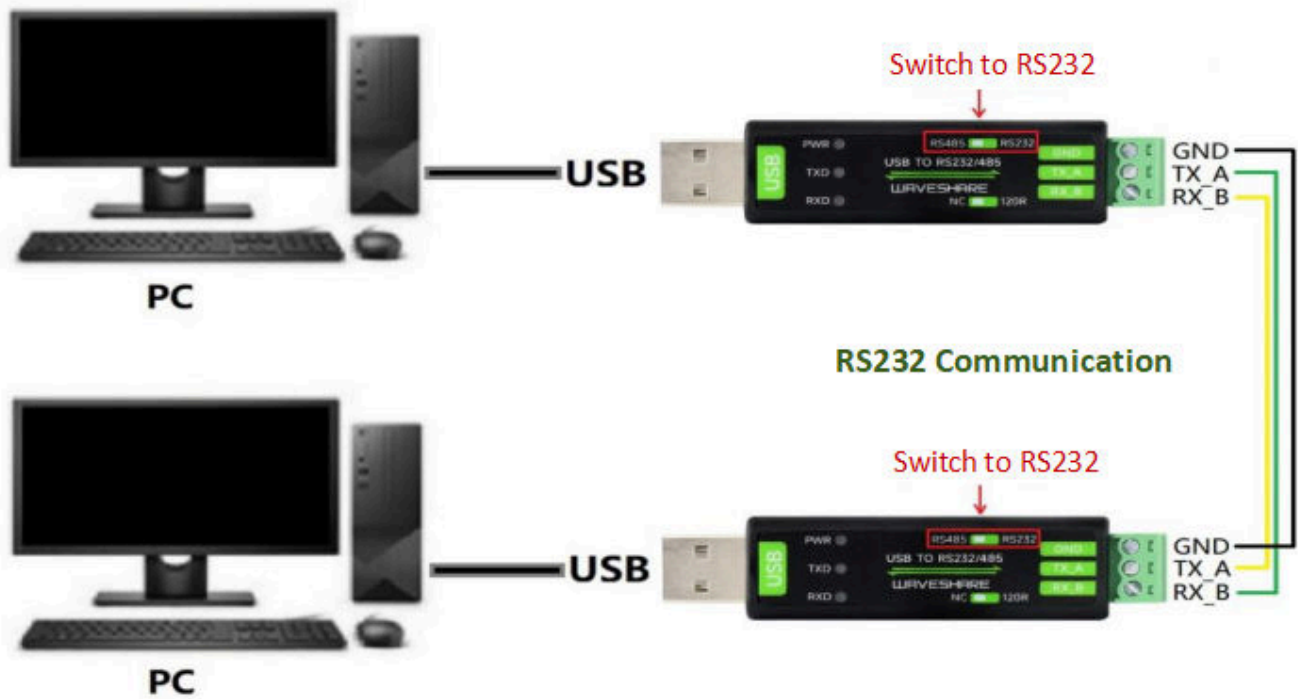
Test environment: PC (Windows)

Required accessories:

- USB TO RS232/485 x 2pcs
- USB-A male-to-female cable x 1 (or directly connect to the USB port of the computer)
- Wires

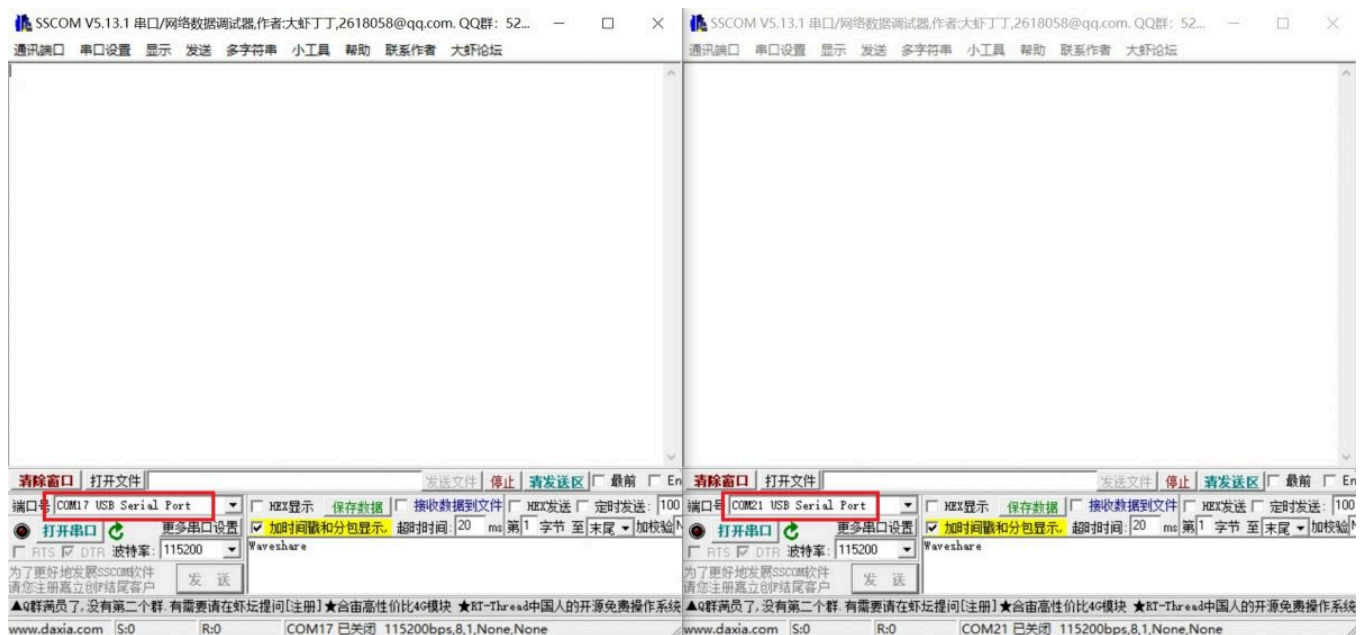
RS232 Test

- Connect the RS232 interface of the USB TO RS232/485 module to the RS232 interface, that is, RXD and TXD are connected in a staggered manner, GND and GND are connected, and the toggle switch on top of the module is switched to RS232, and the connection diagram is referenced as follows:



(/wiki/File:USB_TO_RS232_Test.png)

- Open two SSCOM windows and the corresponding COM port numbers.



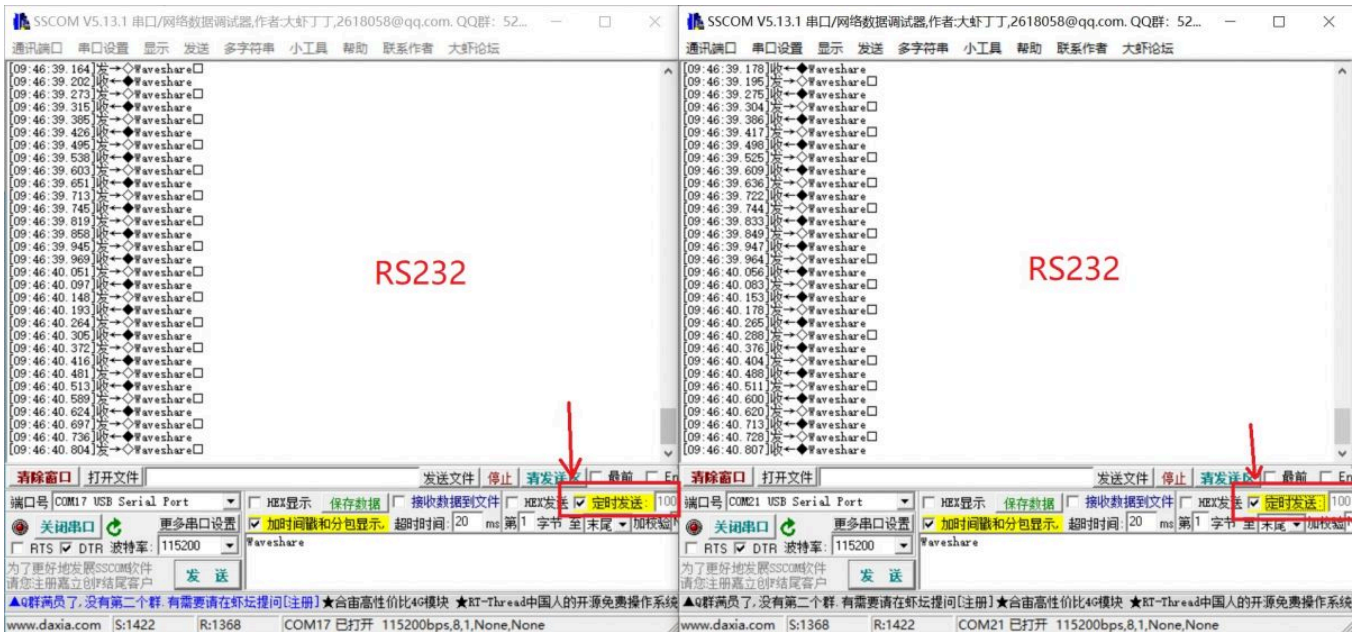
(/wiki/File:USB_TO_RS232_Test02.jpg)

- Select the baud rate as **115200**, input the characters to be sent, check **show time and package**, and click on **Open COM**:



(/wiki/File:USB_TO_RS232_Test03.jpg)

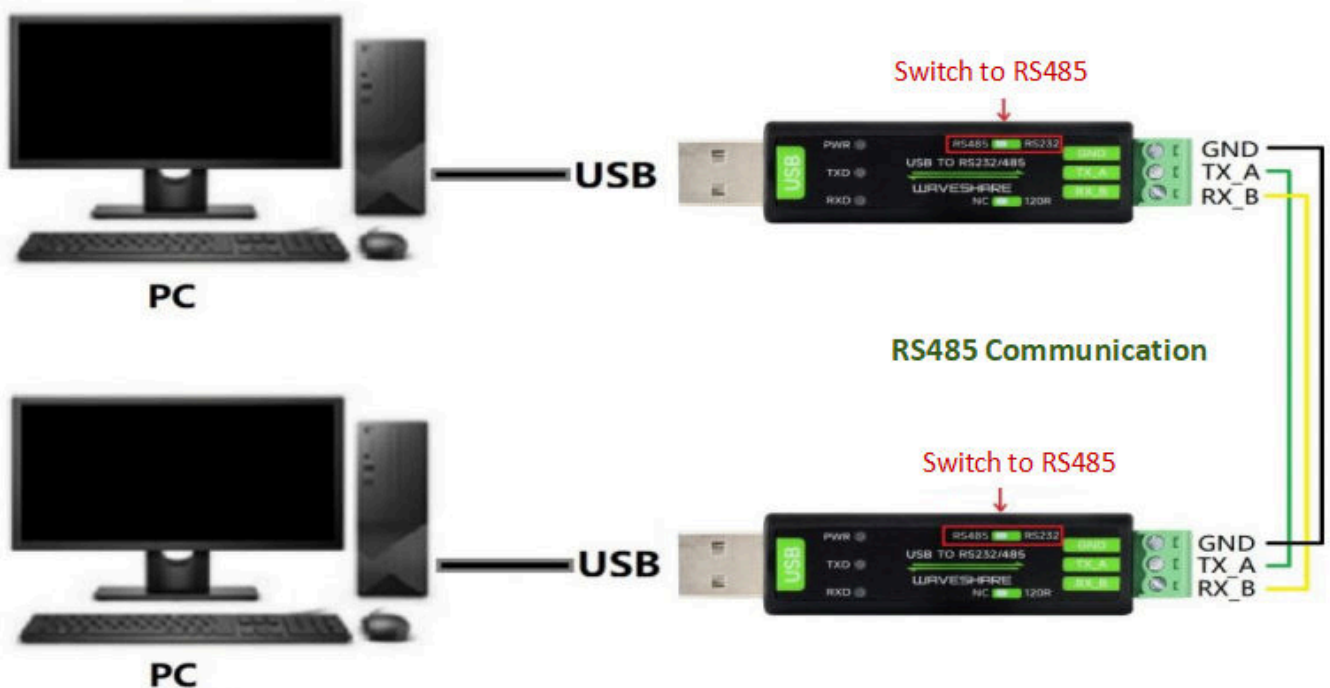
- Set the two SSCOM windows sending at 100ms intervals, and then you can see the 2 Windows send and receive data normally, the effect as shown below:



(/wiki/File:USB_TO_RS232_Test30.jpg)

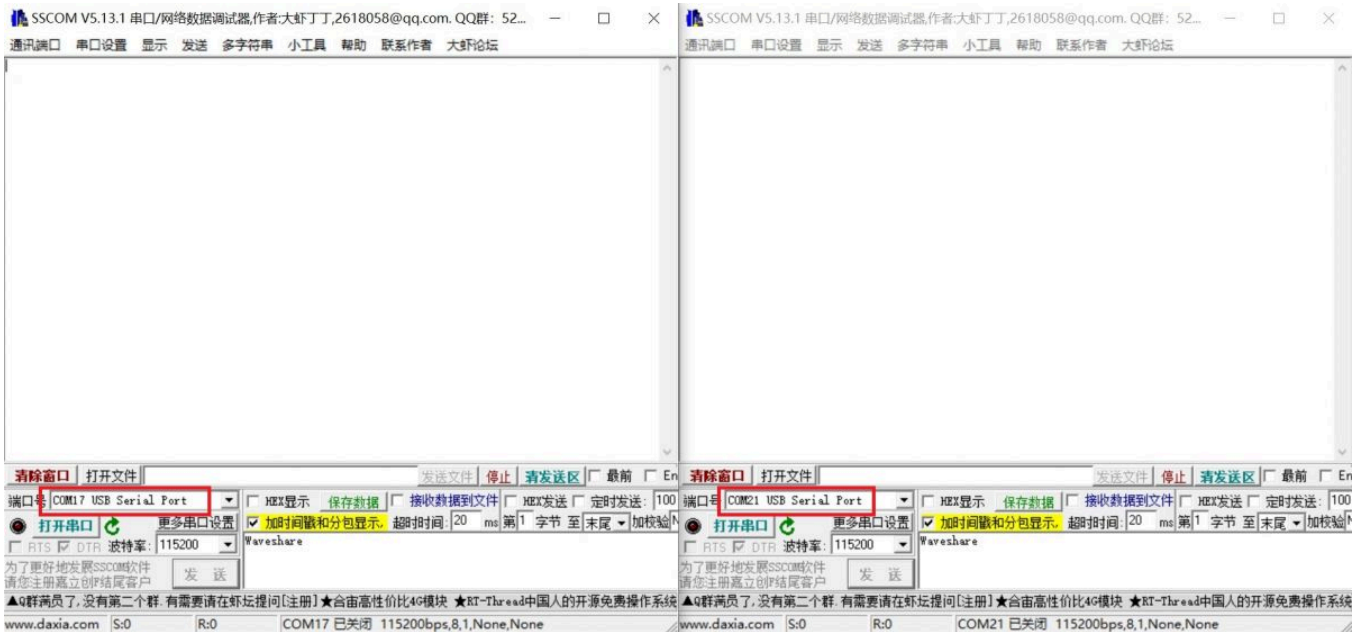
RS485 Test

- Connect the RS485 connector of the USB TO RS232/485 module, that is, A+ --> A+, B- --> B-, GND --> GND, and switch the toggle switch on it to RS485, the connection diagram is referenced below:



(/wiki/File:USB_TO_RS485_Test.png)

- Open two SSCOM windows on the PC and the corresponding COM ports:



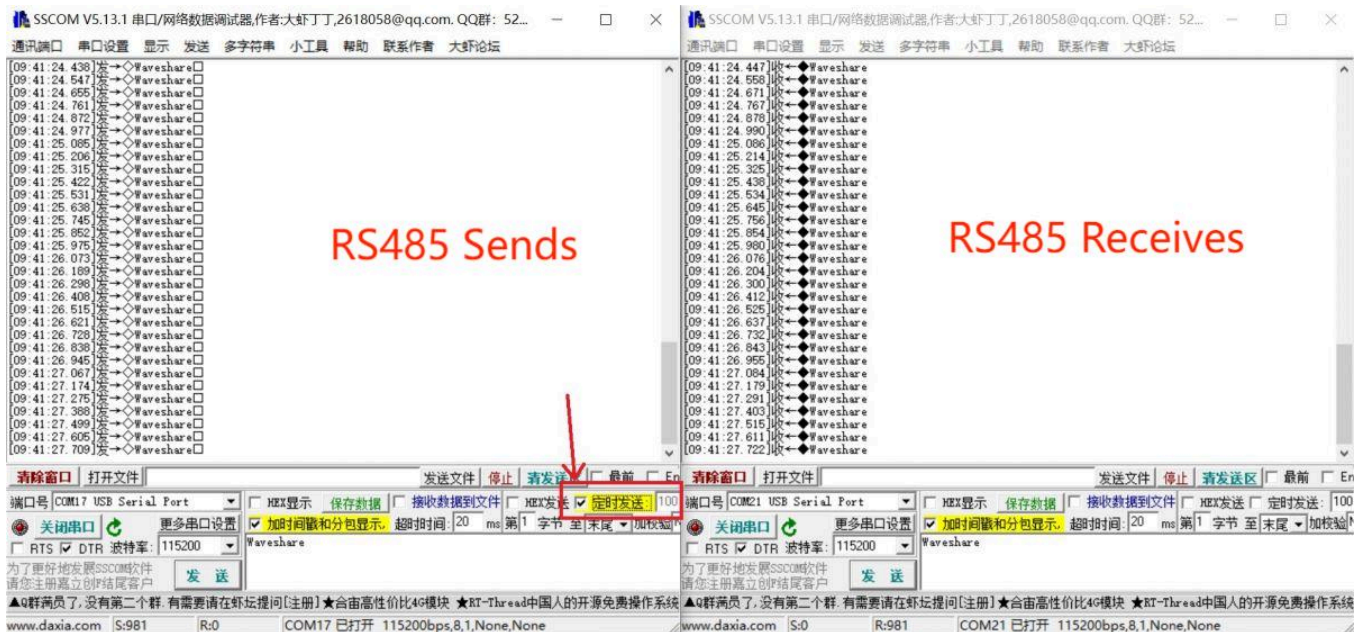
(/wiki/File:USB_TO_RS232_Test02.jpg)

- Select the baud rate as **115200**, input the characters to be sent, check **show time and package**, and **Open COM**.



(/wiki/File:USB_TO_RS232_Test03.jpg)

- Select one SSCOM, send it at 100ms intervals, and then you can the 2 Windows send and receive data as shown below:



(/wiki/File:USB_TO_RS232_485_test06.jpg)

Resource

Datasheet

- FT232RN (https://files.waveshare.com/upload/c/c5/DS_FT232RN.pdf)

Software & Driver

- VCP driver (https://files.waveshare.com/wiki/USB-TO-4CH-RS232-485/CDM212364_Setup.zip) (or you can download it from FTDI website (<https://ftdichip.com/drivers/vcp-drivers/>))
- Support Linux driver free.
- SSCOM (<https://files.waveshare.com/upload/2/20/Cktszsss32.zip>)

Support

Technical Support

If you need technical support or have any feedback/review, please click the **Submit Now** button to submit a ticket, Our support team will check and reply to you within 1 to 2 working days. Please be patient as we make every effort to help

Submit Now (<https://service.waveshare.com/>)

you to resolve the issue.

Working Time: 9 AM - 6 PM GMT+8

(Monday to Friday)

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