TTL TO RS232 (B)

From Waveshare Wiki
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Overview

TTL TO RS232 (B)

(https://www.waveshare.com/ttl-to-rs232-b.htm)

TTL To RS232
TTL, RS232

TTL TO RS232 (B) is an industrial-grade rail-mounted electrically isolated TTL-to-RS232 serial converter.

Feature

- Compatible with TTL/RS232 standard, converting the TTL signal into a balanced differential RS232 signal, supporting full-duplex communication.
- Compatible with 3.3V ~ 5V TTL signal level, with anti-reverse connection and anti-over-voltage circuit on the power supply side.
- Onboard unibody power supply isolation, provides stable isolated voltage and needs no extra power supply for the isolated terminal.
- Onboard unibody digital isolation, allows signal isolation, high reliability, strong anti-interference, and low power consumption.
- Onboard TVS (Transient Voltage Suppressor), effectively suppresses surge voltage and transient spike voltage in the circuit, and with lightning-proof and ESD protection.
- Onboard protection diodes, ensure the current/voltage stable outputs, provide over-current/over-voltage protection, and improve shock resistance.
- Onboard power supply screw terminal for 3.3V~5V DC input.

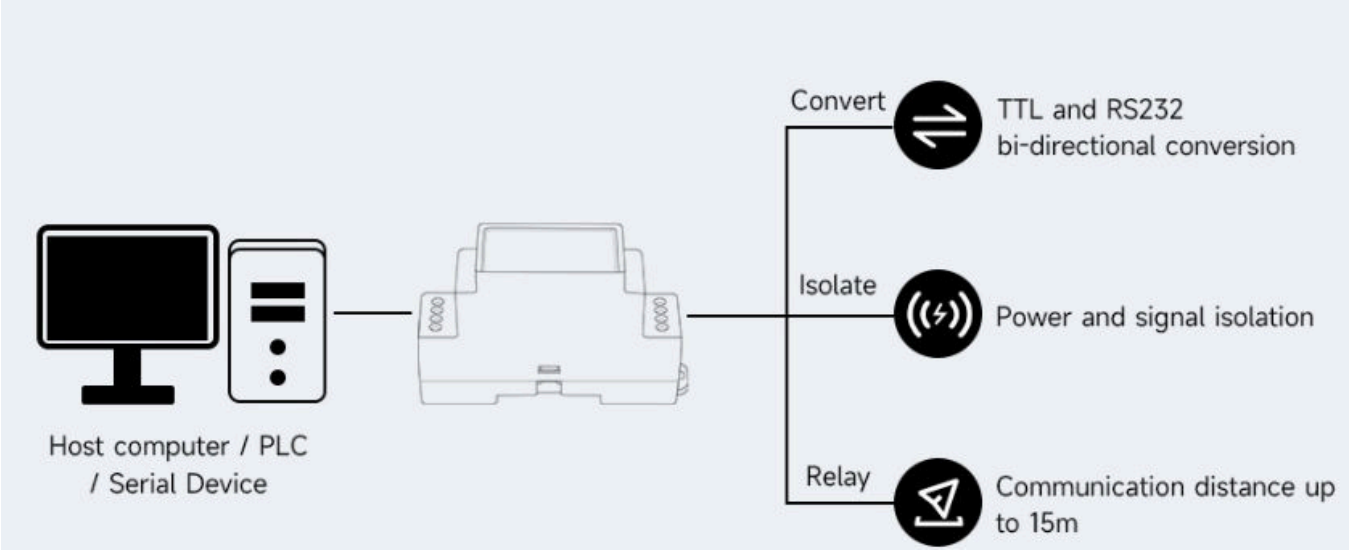
- Industrial rail-mount ABS case design, small in size, easy to install, and cost-effective.

Parameters

Model	Galvanic isolated TTL To RS232 converter	
Power Port	Power supply	3.3V ~ 5V
	Interface Protection	Anti-over-discharge, reverse-proof
Device interface	Compatible with TTL / RS232 standard	
TTL Interface	Interface	Screw terminal
	Transmission distance	Less than 10m
	Transmission model	Point to point
RS232 Interface	Interface	Screw terminal
	Protection	TVS diode protection, anti-surge and ESD protection, power and digital isolation
	Transmission Distance	About 15m
	Transmission Mode	Point-to-point
Indicator	PWR	Power indicator, lights up red when the input voltage is detected
	TXD	TX indicator, lights up when the TTL port sends data
	RXD	RX indicator, lights up when the TTL port receives data
Product Appearance	Case	Rail-mount ABS case, suitable for 35mm DIN rail
	Dimensions	91.6 × 58.7 × 23.3mm

Primary Function

Convert the TTL signal into RS232 signal, which can be used for interface conversion and can also be used to extend the communication distance.



(/wiki/File:TTL_TO_RS232_(B)_012.png)

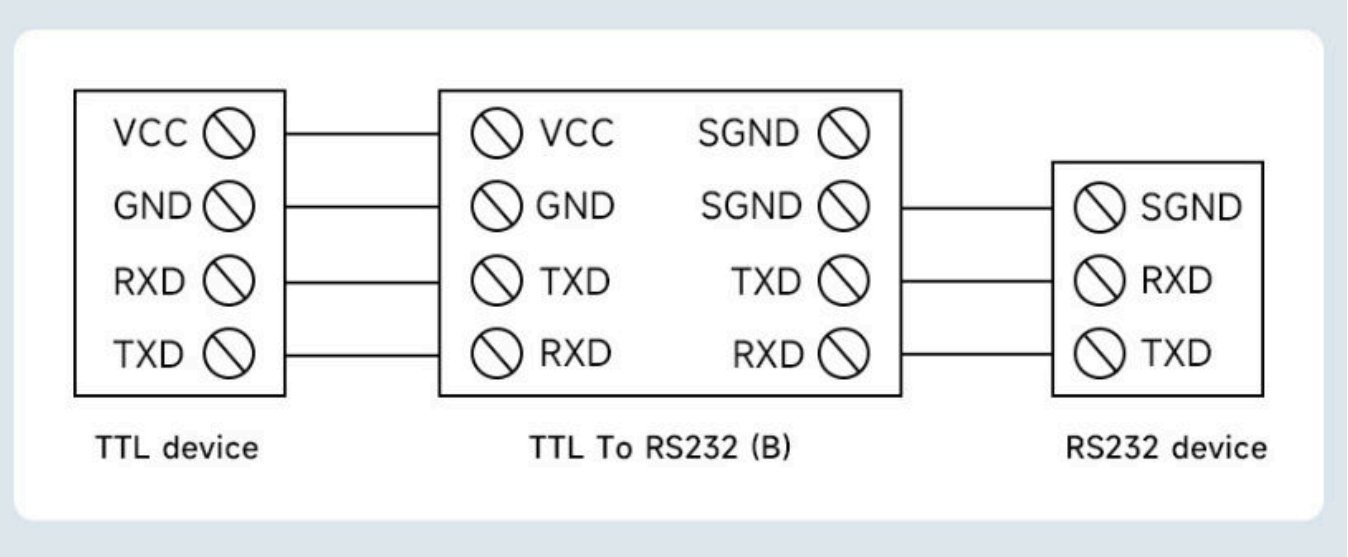
Interface Introduction

(/wiki/File:TTL_TO_RS232_(B)101.png)

TOP SIDE SCREW TERMINAL		BOTTOM SIDE SCREW TERMINAL	
VCC	Power Input DC 3.3V~5V power supply	**SGND**	RS232 Signal Ground
GND	Ground / TTL signal ground		
TXD	TTL transmit data pin	**TXD**	RS232 transmit data pin
RXD	TTL receive data pin	**RXD**	RS232 receive data pin

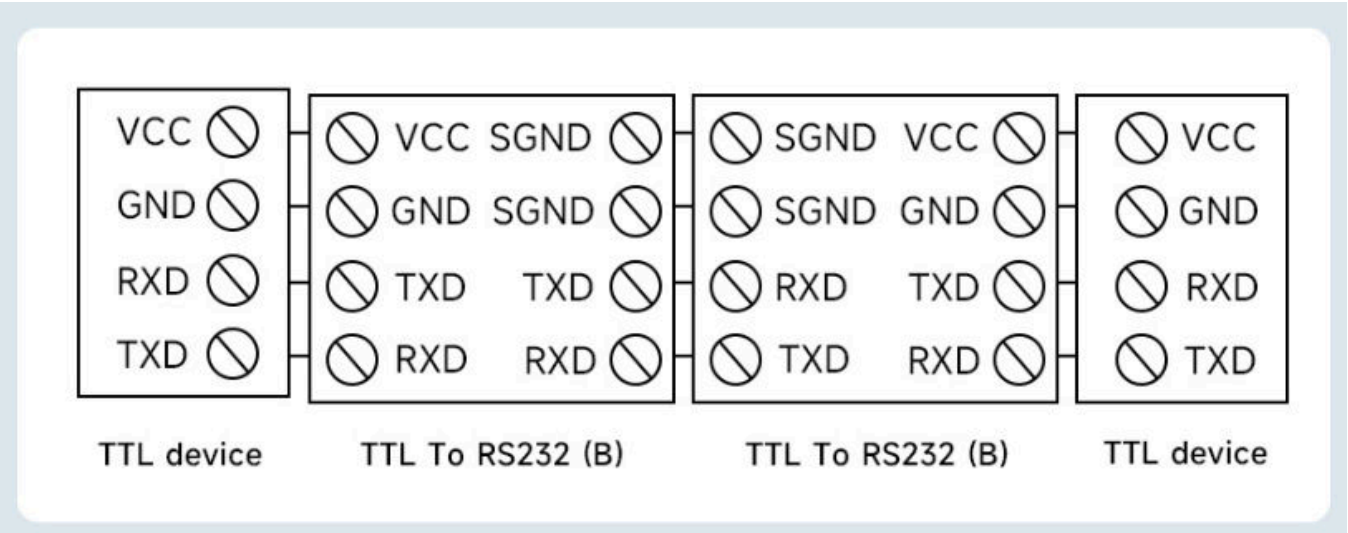
Communication Connection Diagram

TTL convert to RS232, point-to-point, full-duplex communication, suitable for interface conversion



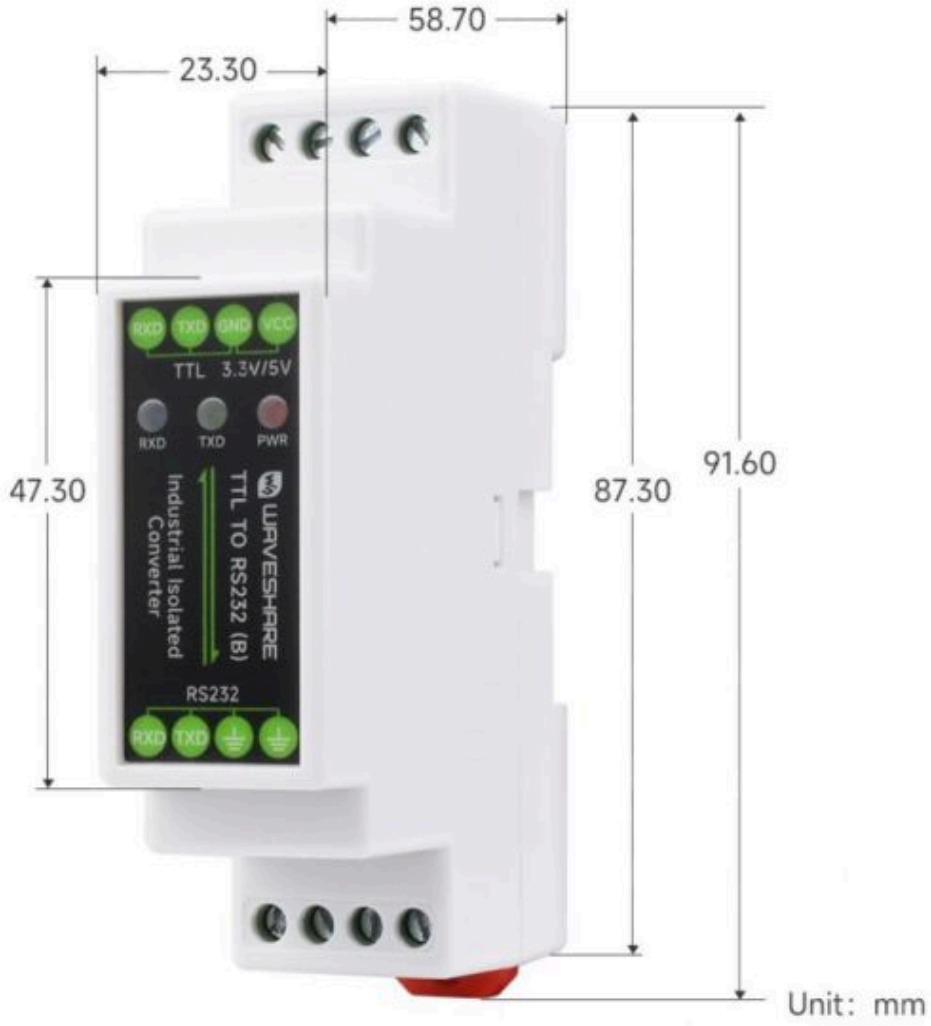
(/wiki/File:TTL_TO_RS232(B)017.png)

Two groups TTL To RS232 conversion, point-to-point, full-duplex communication, suitable for extending the communication distance of TTL



(/wiki/File:TTL_TO_RS232_(B)018.png)

Dimensions



(/wiki/File:TTL_TO_RS232_01.jpg)

Hardware Test

Test Note

Test Environment: PC (Windows).

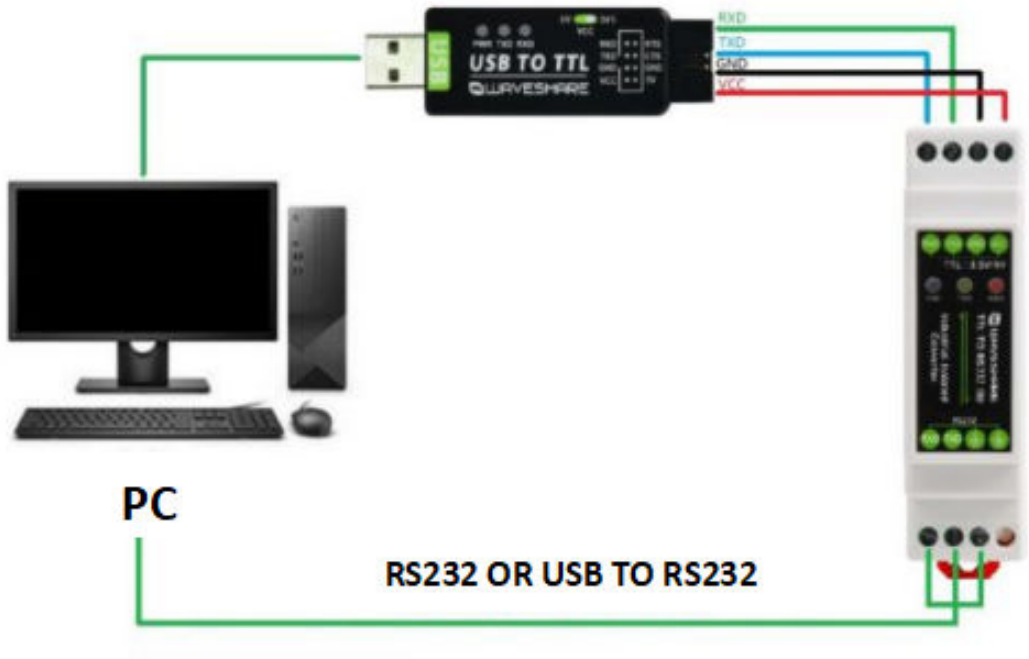
Accessories required for testing:

- TTL TO RS232 (B) —— This product
- USB TO TTL (https://www.waveshare.com/usb-to-ttl-b.htm) - not included
- PC (if your PC does not feature the RS232 interface, you can choose USB to RS232 (female socket male pin) for adapter test)

Test Hardware Connection

Connect the RS232 interface of TTL TO RS232 (B) to the PC through the serial port cable or the USB to RS232 cable, connect the TTL interface of TTL TO RS232 (B) to the TTL interface of USB TO TTL, and then connect the USB port of USB TO TTL to the same PC for the self-

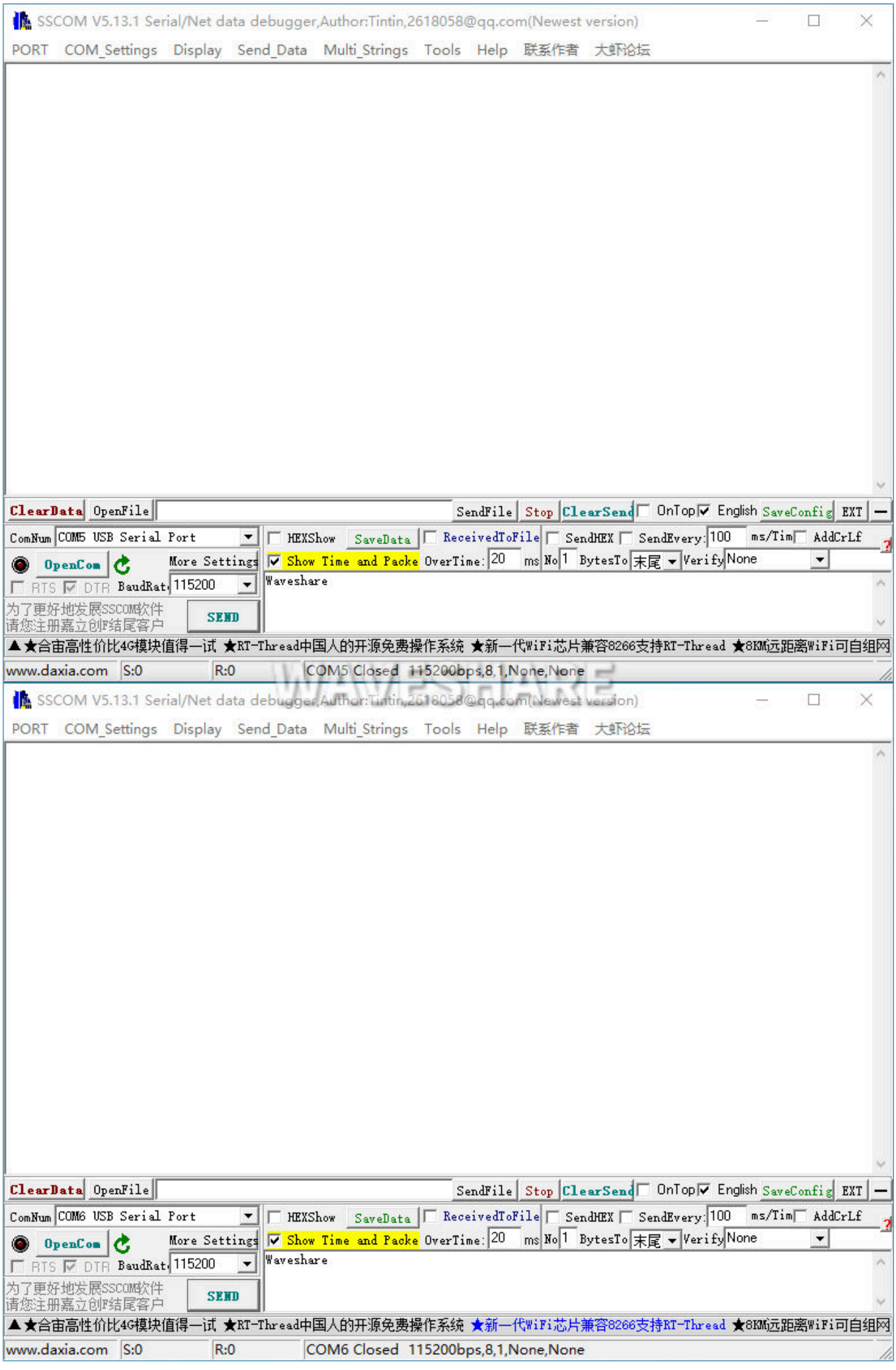
transmission test. The schematic diagram of the hardware connection is as follows:



(/wiki/File:TTL_TO_RS232_B_02.png)

Software Operation

- Open two SSCOM interfaces.
- Select two corresponding COM ports.


SSCOM V5.13.1 Serial/Net data debugger,Author:Tintin,2618058@qq.com(Newest version)
PORT COM_Settings Display Send_Data Multi_Strings Tools Help 联系作者 大虾论坛
ClearData OpenFile SendFile Stop ClearSend OnTop English SaveConfig EXT
ComNum COM5 USB Serial Port
HEXShow SaveData ReceivedToFile SendHEX SendEvery: 100 ms/Tim AddCrLf
OpenCom More Settings
Show Time and Packe OverTime: 20 ms No 1 BytesTo 末尾 Verify None
RTS DTR BaudRat 115200
Waveshare
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SEND
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www.daxia.com S:0 R:0 COM5 Closed 115200bps,8,1,None,None
SSCOM V5.13.1 Serial/Net data debugger,Author:Tintin,2618058@qq.com(Newest version)
PORT COM_Settings Display Send_Data Multi_Strings Tools Help 联系作者 大虾论坛
ClearData OpenFile SendFile Stop ClearSend OnTop English SaveConfig EXT
ComNum COM6 USB Serial Port
HEXShow SaveData ReceivedToFile SendHEX SendEvery: 100 ms/Tim AddCrLf
OpenCom More Settings
Show Time and Packe OverTime: 20 ms No 1 BytesTo 末尾 Verify None
RTS DTR BaudRat 115200
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请您注册嘉立创P结尾客户
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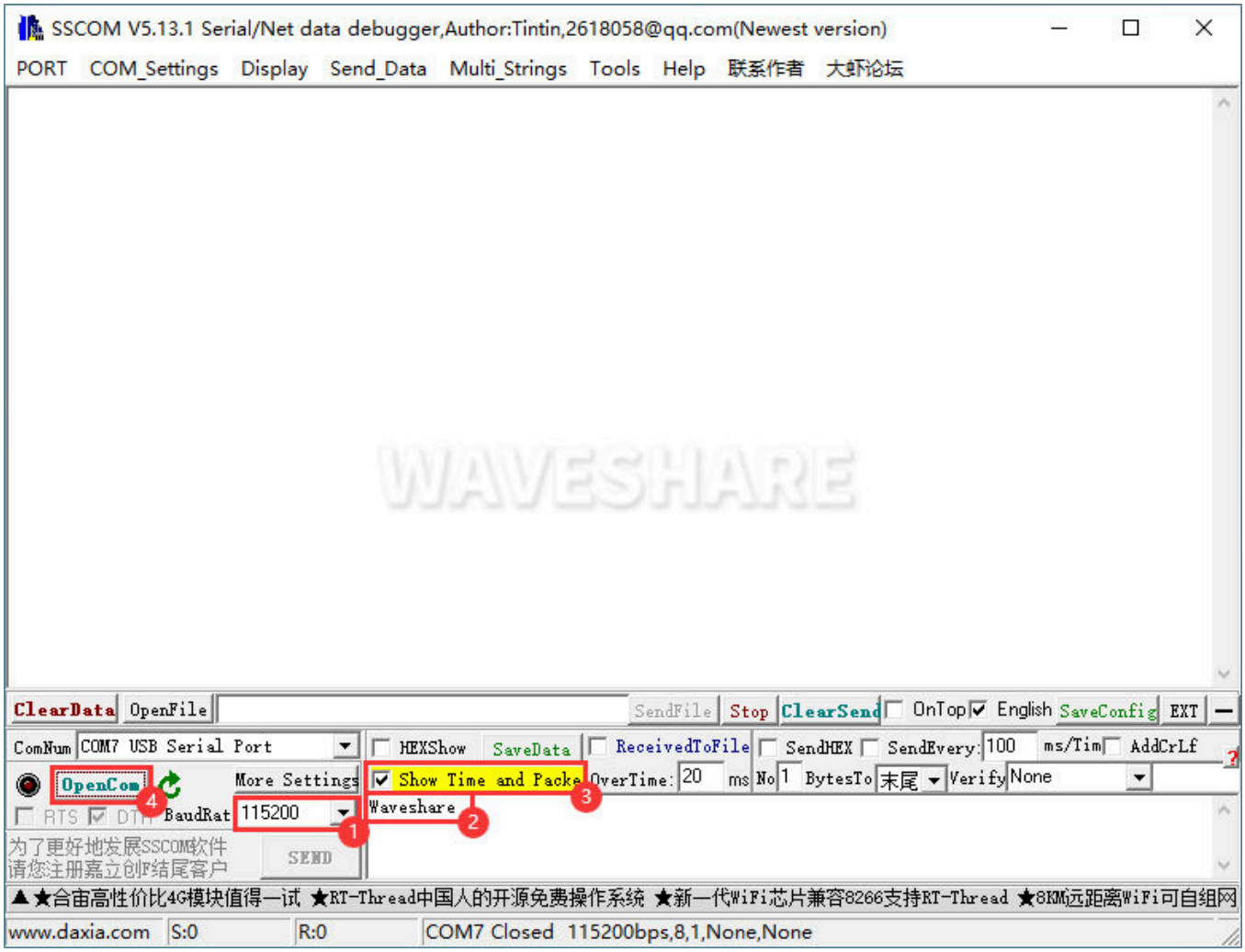
www.daxia.com S:0 R:0 COM6 Closed 115200bps,8,1,None,None

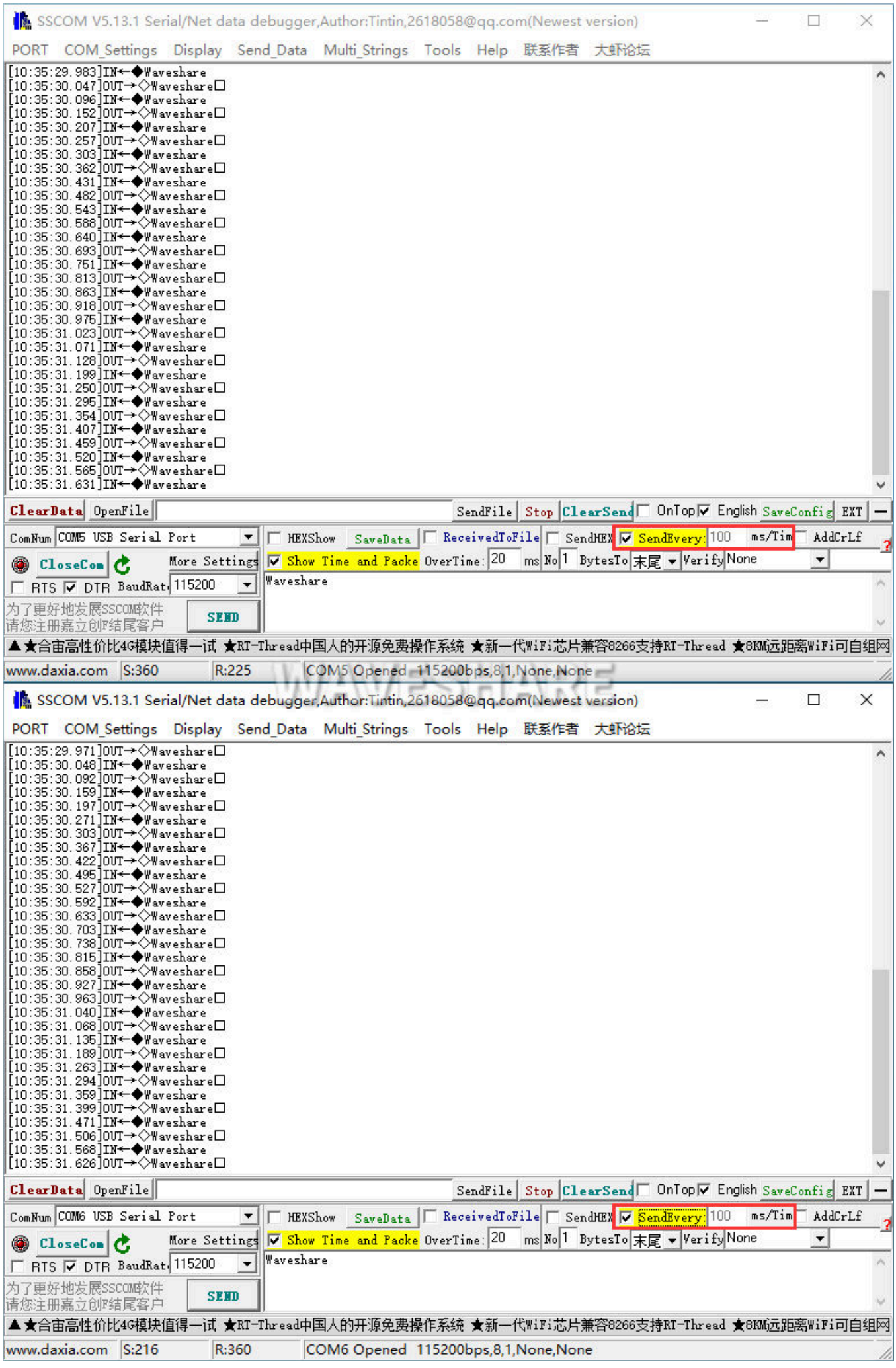
(/wiki/File:USB_TO_4CH_Serial_Converter_07.png)

- Select the baud rate as **115200**, input the characters to be sent, select "**Show Time and Packet**" to view it more intuitively, and then click on "**Open COM**".



(/wiki/File:USB_TO_4CH_Serial_Converter_21.png)

- In these two SSCOM interfaces, select **Send Every 100ms**, and you can see the effect.


SSCOM V5.13.1 Serial/Net data debugger,Author:Tintin,2618058@qq.com(Newest version)
PORT COM_Settings Display Send_Data Multi_Strings Tools Help 联系作者 大虾论坛
[10:35:29.983]IN←◆Waveshare
[10:35:30.047]OUT→◇Waveshare□
[10:35:30.096]IN←◆Waveshare
[10:35:30.152]OUT→◇Waveshare□
[10:35:30.207]IN←◆Waveshare
[10:35:30.257]OUT→◇Waveshare□
[10:35:30.303]IN←◆Waveshare
[10:35:30.362]OUT→◇Waveshare□
[10:35:30.431]IN←◆Waveshare
[10:35:30.482]OUT→◇Waveshare□
[10:35:30.543]IN←◆Waveshare
[10:35:30.588]OUT→◇Waveshare□
[10:35:30.640]IN←◆Waveshare
[10:35:30.693]OUT→◇Waveshare□
[10:35:30.751]IN←◆Waveshare
[10:35:30.813]OUT→◇Waveshare□
[10:35:30.863]IN←◆Waveshare
[10:35:30.918]OUT→◇Waveshare□
[10:35:30.975]IN←◆Waveshare
[10:35:31.023]OUT→◇Waveshare□
[10:35:31.071]IN←◆Waveshare
[10:35:31.128]OUT→◇Waveshare□
[10:35:31.199]IN←◆Waveshare
[10:35:31.250]OUT→◇Waveshare□
[10:35:31.295]IN←◆Waveshare
[10:35:31.354]OUT→◇Waveshare□
[10:35:31.407]IN←◆Waveshare
[10:35:31.459]OUT→◇Waveshare□
[10:35:31.520]IN←◆Waveshare
[10:35:31.565]OUT→◇Waveshare□
[10:35:31.631]IN←◆Waveshare
ClearData OpenFile SendFile Stop ClearSend OnTop English SaveConfig EXT
ComNum COM5 USB Serial Port
HEXShow SaveData ReceivedToFile SendHEX SendEvery: 100 ms/Tim AddCrLf
CloseCom More Settings
Show Time and Packe OverTime: 20 ms No 1 BytesTo 末尾 Verify None
RTS DTR BaudRat 115200
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www.daxia.com S:360 R:225 COM5 Opened 115200bps,8,1,None,None
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PORT COM_Settings Display Send_Data Multi_Strings Tools Help 联系作者 大虾论坛
[10:35:29.971]OUT→◇Waveshare□
[10:35:30.048]IN←◆Waveshare
[10:35:30.092]OUT→◇Waveshare□
[10:35:30.159]IN←◆Waveshare
[10:35:30.197]OUT→◇Waveshare□
[10:35:30.271]IN←◆Waveshare
[10:35:30.303]OUT→◇Waveshare□
[10:35:30.367]IN←◆Waveshare
[10:35:30.422]OUT→◇Waveshare□
[10:35:30.495]IN←◆Waveshare
[10:35:30.527]OUT→◇Waveshare□
[10:35:30.592]IN←◆Waveshare
[10:35:30.633]OUT→◇Waveshare□
[10:35:30.703]IN←◆Waveshare
[10:35:30.738]OUT→◇Waveshare□
[10:35:30.815]IN←◆Waveshare
[10:35:30.858]OUT→◇Waveshare□
[10:35:30.927]IN←◆Waveshare
[10:35:30.963]OUT→◇Waveshare□
[10:35:31.040]IN←◆Waveshare
[10:35:31.068]OUT→◇Waveshare□
[10:35:31.135]IN←◆Waveshare
[10:35:31.189]OUT→◇Waveshare□
[10:35:31.263]IN←◆Waveshare
[10:35:31.294]OUT→◇Waveshare□
[10:35:31.359]IN←◆Waveshare
[10:35:31.399]OUT→◇Waveshare□
[10:35:31.471]IN←◆Waveshare
[10:35:31.506]OUT→◇Waveshare□
[10:35:31.568]IN←◆Waveshare
[10:35:31.626]OUT→◇Waveshare□
ClearData OpenFile SendFile Stop ClearSend OnTop English SaveConfig EXT
ComNum COM6 USB Serial Port
HEXShow SaveData ReceivedToFile SendHEX SendEvery: 100 ms/Tim AddCrLf
CloseCom More Settings
Show Time and Packe OverTime: 20 ms No 1 BytesTo 末尾 Verify None
RTS DTR BaudRat 115200
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www.daxia.com S:216 R:360 COM6 Opened 115200bps,8,1,None,None

(/wiki/File:USB_TO_4CH_Serial_Converter_11.png)

Resource

- Sscom (https://www.waveshare.com/w/upload/5/5f/Sscom.7z)

FAQ

Question:What is the maximum baud rate for TTL to RS232 (B) communication?

Answer:

Tested to work stably with baud rate up to 1M.

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 you to resolve the issue.
Working Time: 9 AM - 6 PM GMT+8 (Monday to Friday)

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

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