TRP-C08

USB to RS232/422/485 Isolated Converter

User's Manual

Copyright

1. Introduction

The TRP-C08 allows you to connect your serial devices to systems by using a USB interface. With auto configuration in data format, baud rate and RS485 data flow direction control. TRP-C08 is able to automatically configure RS232, RS422 or RS485 signals to baud rate without external switch setting. TRP-C08 is equipped with 3000V DC of isolation and internal surge-protection on each data lines to protect the host computer and converter against high voltage spikes, as well as ground potential difference. TRP-C08 also features a high-speed 256 Kb/s transmission rate, and supports various O.S. The industry DIN rail and panel mounting design enable user a fast and professional installation.

1.1. Features

➢ Full compliance with the USB V1.0 and 2.0 specification.
➢ System gets 1 COM port when the converter is connected.
➢ Auto data format detecting.
➢ Auto direction flow control on RS485.
➢ Auto baud rate switching from 75 bps to 6M bps.
➢ 256 byte buffer for upstream and downstream data flow.
➢ Direct power from USB port , no external power necessary.
➢ 3000V DC isolated protection.
➢ Surge protection on RS422/485 data lines.
➢ Power/TX/RX mode LED indicator.
➢ DIN rail or panel mount support.
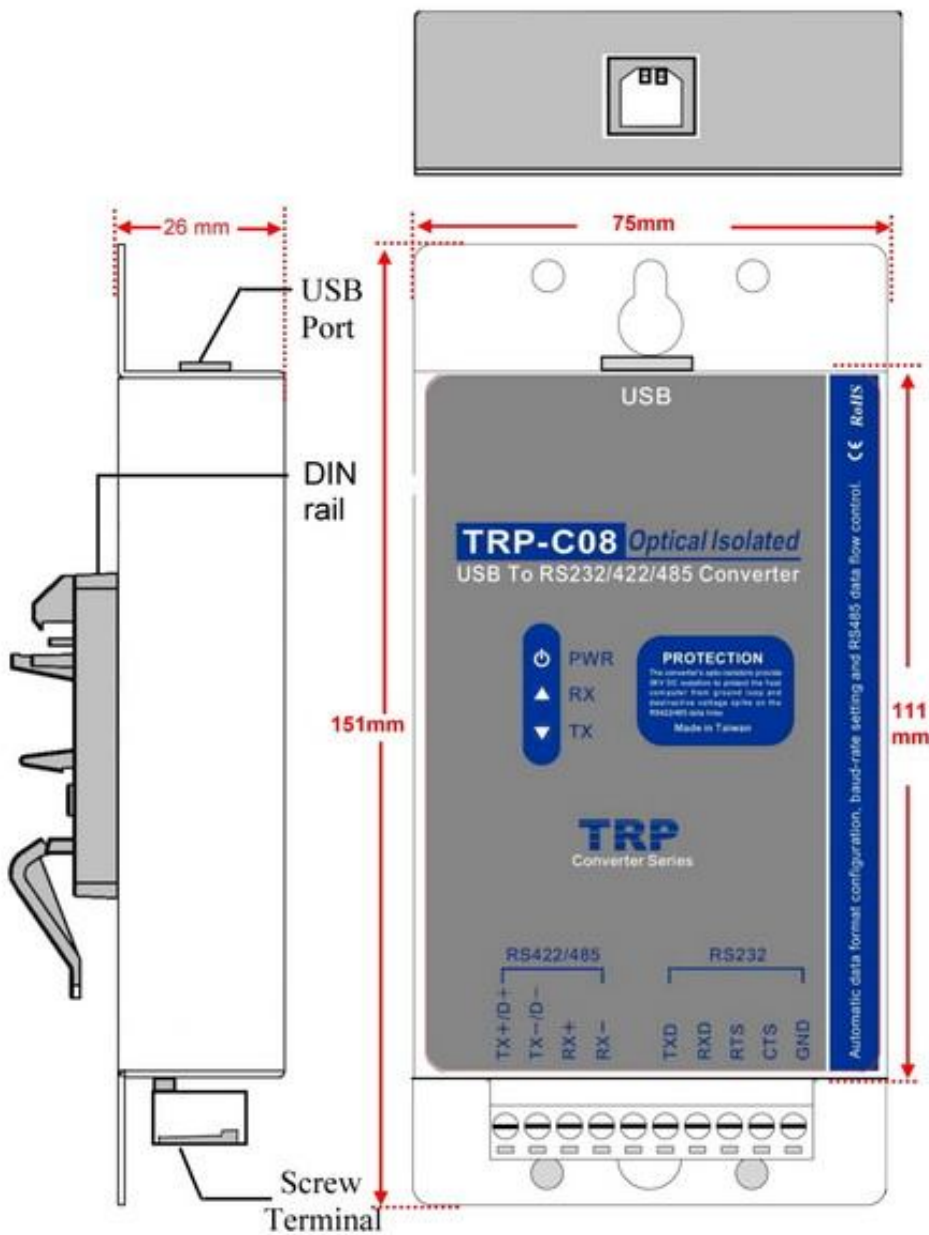➢ Driver support: WIN8/WIN7/WIN98/ME/2000/XP/CE3.0, and Linux, and Mac OS.

1-2. Specifications

➢ USB interface: Fully compliant with V1.0, 2.0 specifications.
➢ USB to serial bridge controller; Prolific PL2303 Series.
➢ RS232 signal: 5 full-duplex (TXD, RXD, CTS, RTS, GND).
➢ RS422 signal: Differential 4 full-duplex wires (TX+, RX+, TX-, RX-).
➢ RS485 signal: Differential 2 half-duplex wires (D+, D-).
➢ Data Format: Asynchronous data with all common combination of bits, parity, stop.
➢ Parity type: None, odd, even mark, space.
➢ Data bit: 5, 6, 7, 8.
➢ Stop bits: 1, 1.5, 2.
➢ Cable: USB type A to type B.
➢ Communication speed: form 75bps to 6M bps.
➢ RS422/485 line protection: Against surge, short circuit, and voltage peak.
➢ Transmission distance: RS422/485 Up to 4000ft (1200M).
➢ Connection type: Screw terminal accepts AWG #12~30 wires.
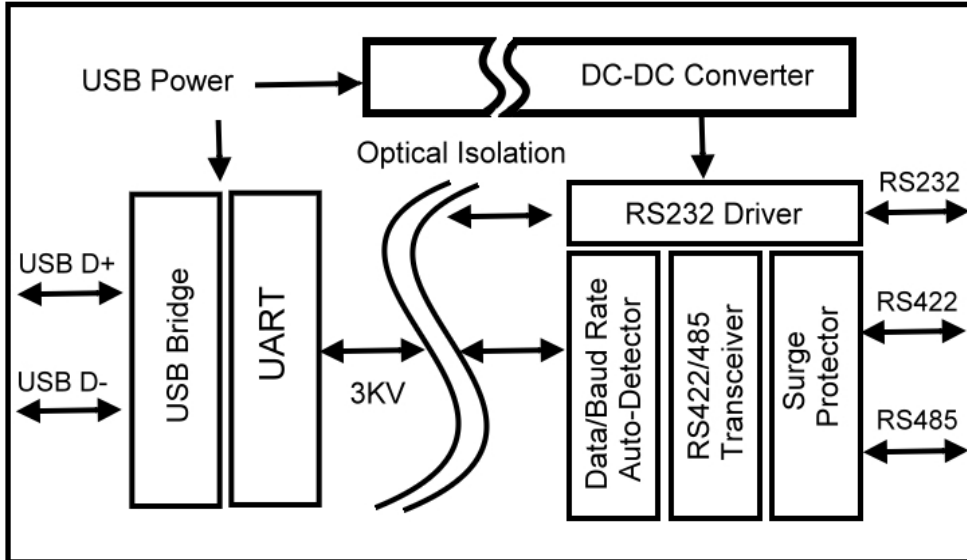➢ Signal LED: Power on, TX, RX.

- Direct power from USB port.
- Power consumption: 1.2W.
- Isolation voltage: 3000V DC.
- Operating environment: 0 to 60℃.
- Storage temperature: -20 to 70℃.
- Humidity: 10-90% non-condensing.
- Dimension: 151mm X 75mm X 26mm.
- Weight: 375g.

2. Hardware Description

2-1. Panel layout

2-2. Block diagram

2-3. LED Indictor

1**PWR LED**: System is ready.

RX LED: RS232/422/485 Receiving.

TX LED: RS232/422/485 Transmitting.

23. Install TRP-C08
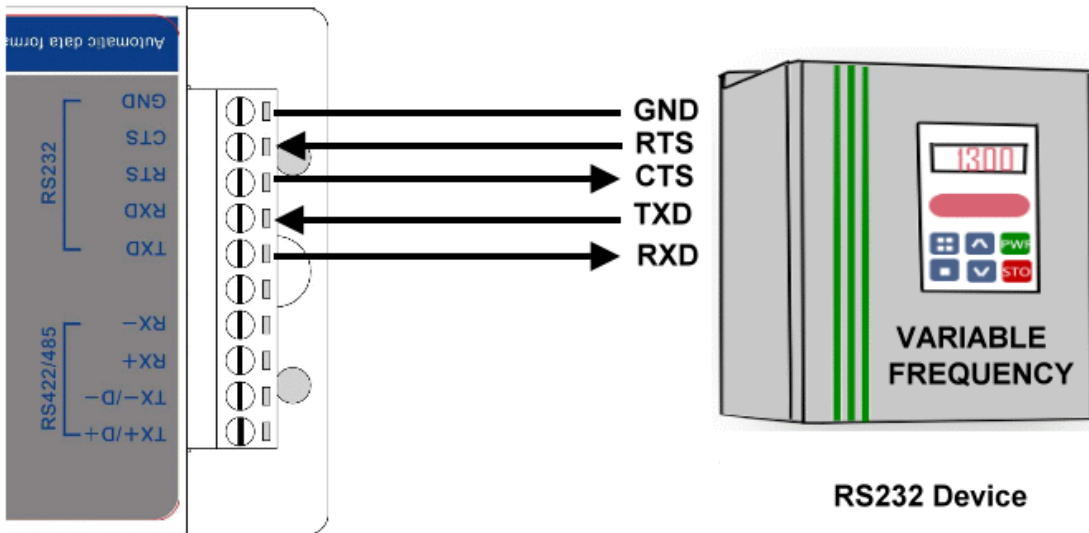
13-1. Power Connection (USB Internal Bus)

Direct power input from USB bus port, current 100mA/+5V, no external power necessary.

13-2. USB Connection

TRP-C08 use the standard A to B type USB cable between host and converter.
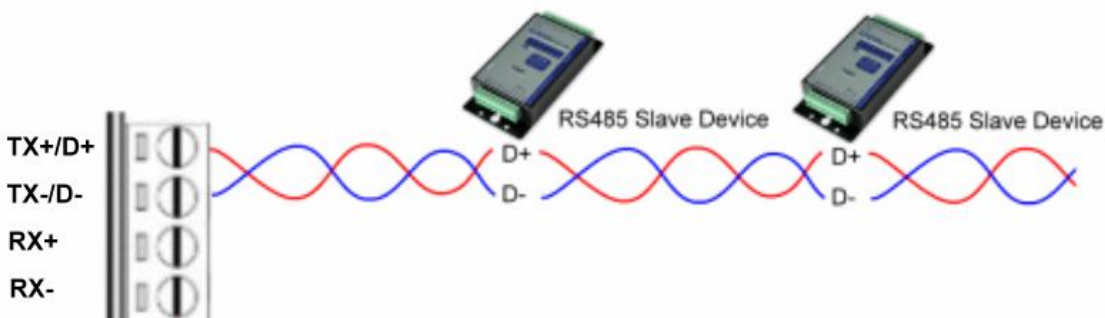
3-3. RS232 wiring connection

The RS232 supports 5 channels plus Signal Ground and is configured as DTE like a computer. Signals are single ended and referred to Ground. To use handshaking or flow control user must set Host PC's RTS/CTS during configuration. Refer to the pin assignment for connection as below.
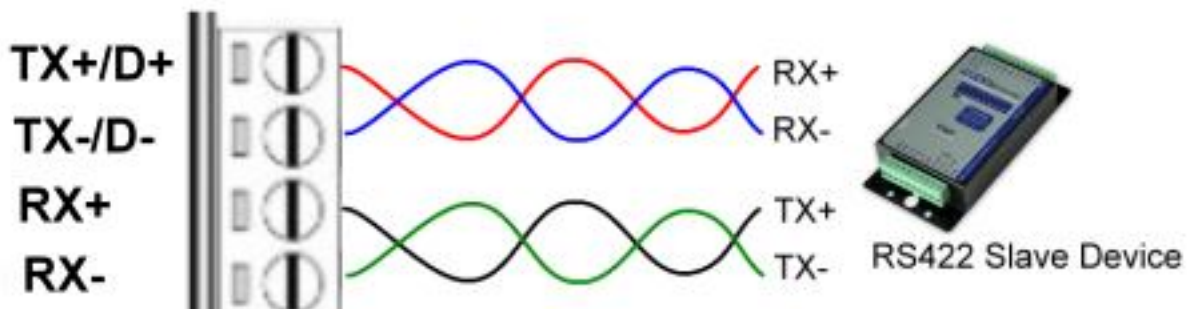
RS232 Device

2-6. RS485 Wiring connection

The RS485 mode supports the Transmit and Receive channels using 2-wire half-duplex operation. Refer to the pin assignment for connection as below.

2-7. RS422 wiring connection

The RS422 mode supports 4 channels with full duplex operation for Receive, Transmit, The data lines are in differential pairs. Refer to the pin assignment for connection as below.
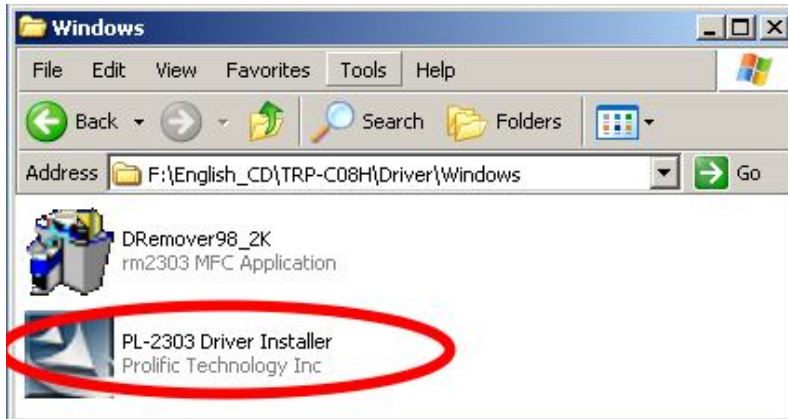

Notice: Due to the Hardware control problem will caused TRP-C08 under RS422/485 can't work, please take TRP-C08's RS232 screw terminal connector (RTS & CTS SHORT).
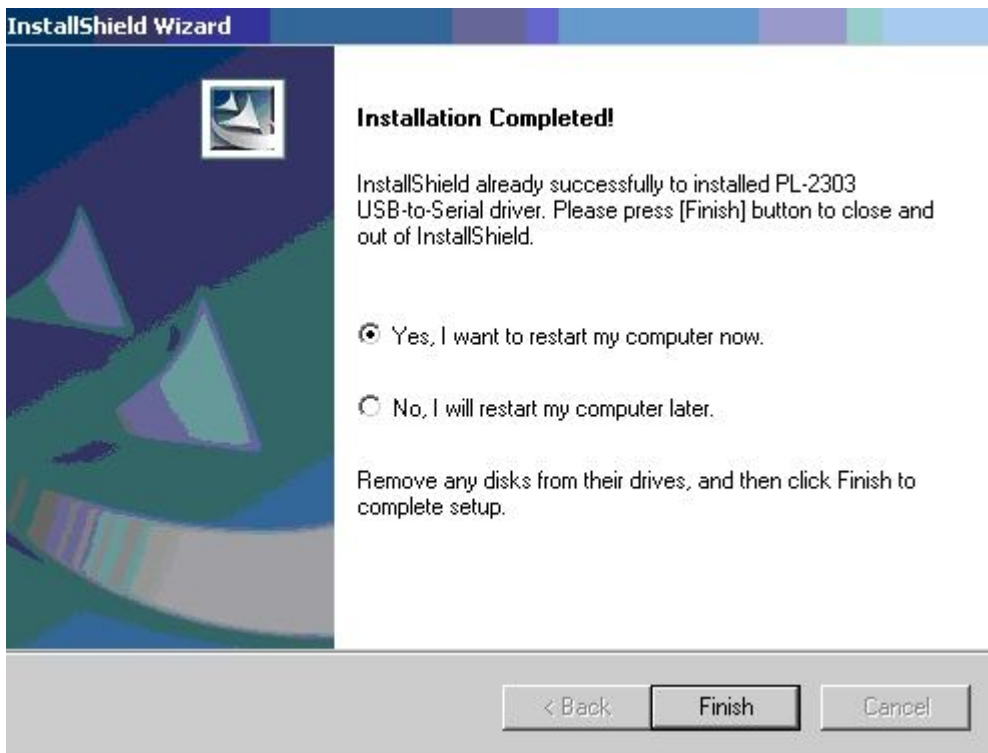
3. TRP-C08 Software Installation

1. Power on your computer and boot to Windows.
2. Install PL-2303 driver (See figure1, 2)

User may find the TRP-C08 PL2303 Driver Installer in Trycom support CD or download from Trycom web www.trycom.com.tw.

Step1. Double click PL2303 Driver Installer" the installShield Wizard screen will appear. The Wizard will guide you to complete the installation.

Step2. Connect TRP-C08 with your computer by USB cable.

Step3. Windows system will auto detect a "new USB devices" and complete TRP-C08 installation

5.After installation user may verify if TRP-C08 was properly installed by Click Start – Setting -- Control panel -- double click system icon – Hardware Device Manager -- Double click on ports (COM&LPT) .(See Figure 4)
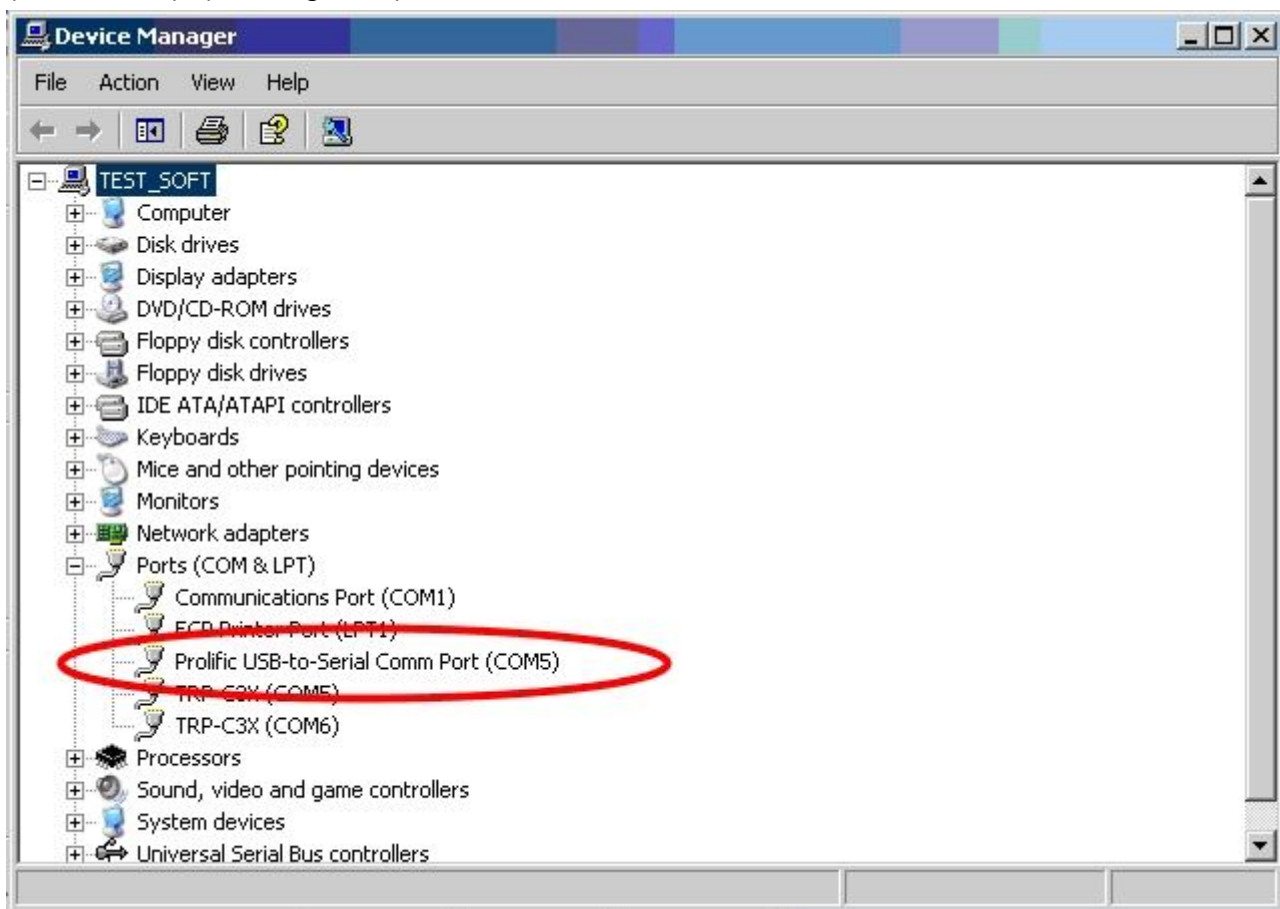

Fig.4

6. If the device was correctly installed you may see new COM devices listing. This means Windows has assigned the device to the COM# port.

*It could be difference COM port show on the windows Device Manager, The PL2303 driver will auto assigned COM number on your system.

4. Remove or update TRP-C08 Driver

It is necessary to update the driver when TRP-C08 adds new features or function. User may download the latest driver from Trycom web www.trycom.com.tw .

Use the **DRemover98_2k** to remove old version TRP-C08 driver**.** Double click **DRemover98_2k** If an older version of the TRP-C08 driver software existed in the system, the modify, repair or remove the program window will appear, select "Remove" to clean TRP-C08 driver completely. Once the software has been removed, install the new software.
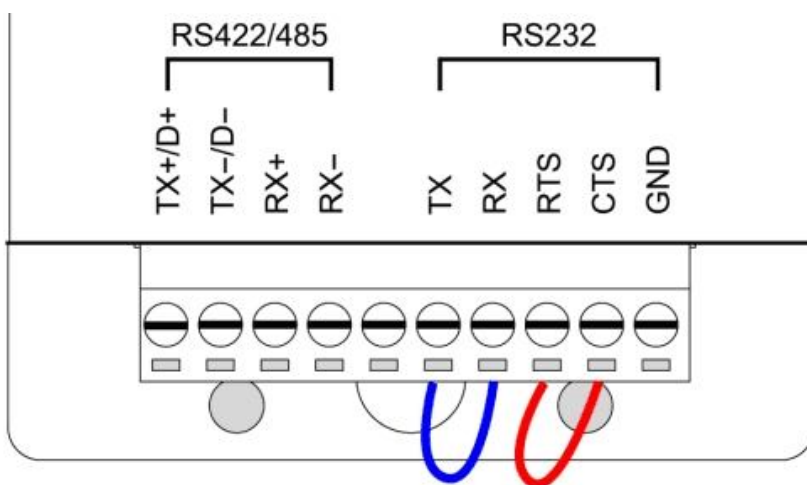

5. How to test TRP-C08

Trycom Technology Co.,Ltd offers test utility, this is utilities may help user to demo and test TRP-C08 fast and easily. User may find the utilities in Trycom support CD or download from Trycom web www.trycom.com.tw , direct to perform TRPCOM.exe from the directory.
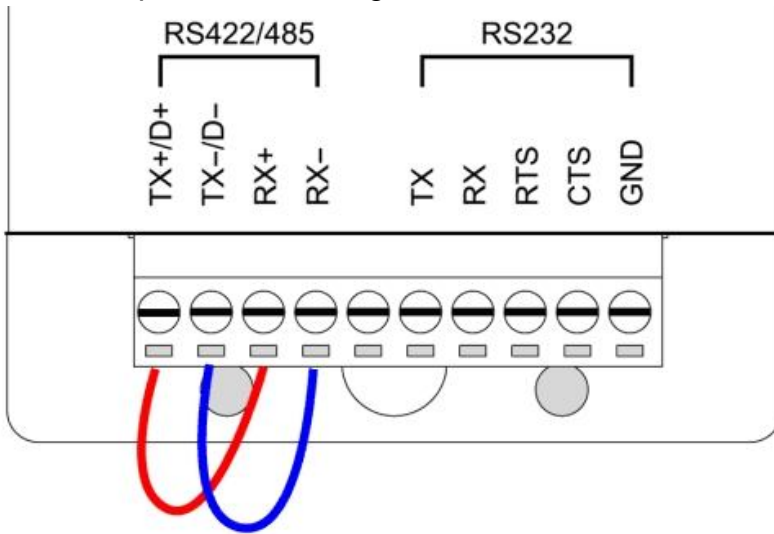
5-1.RS232 Loop Back Test

RS232 loop back test wiring connection.
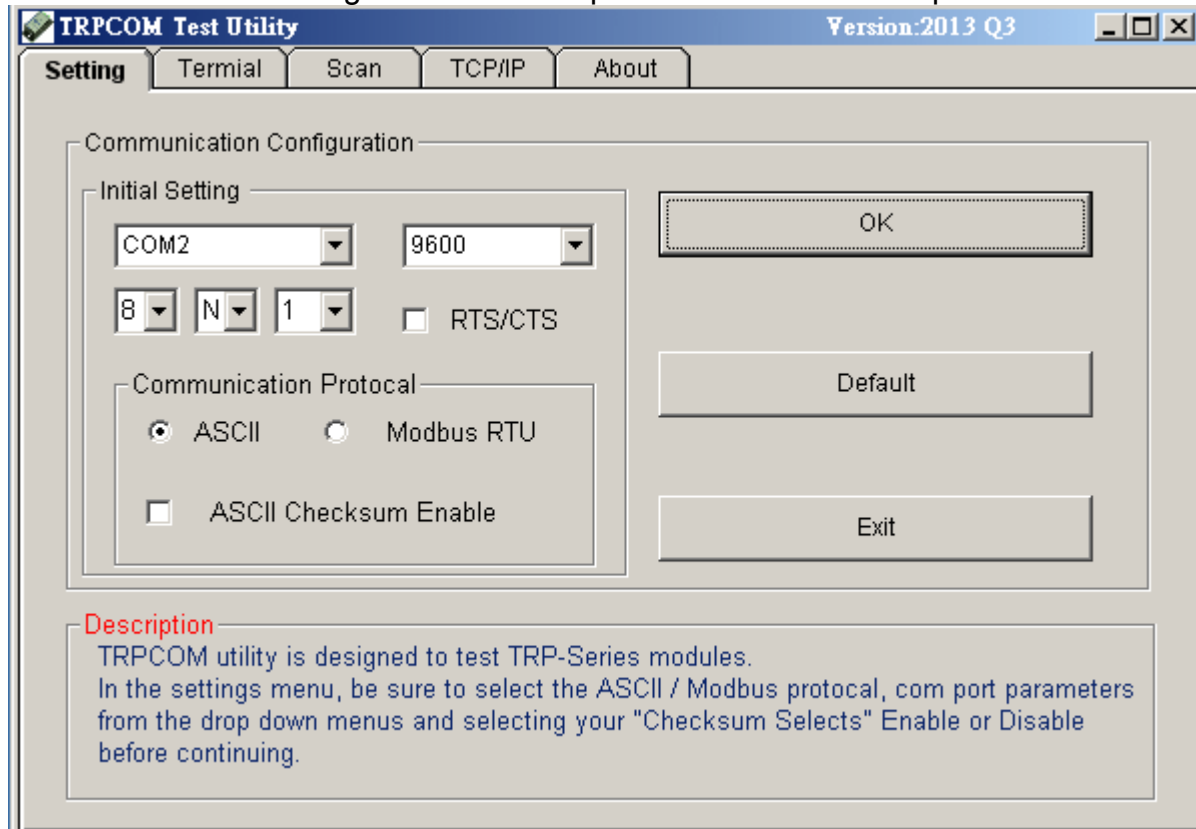
5-2.RS422 Loop Back Test
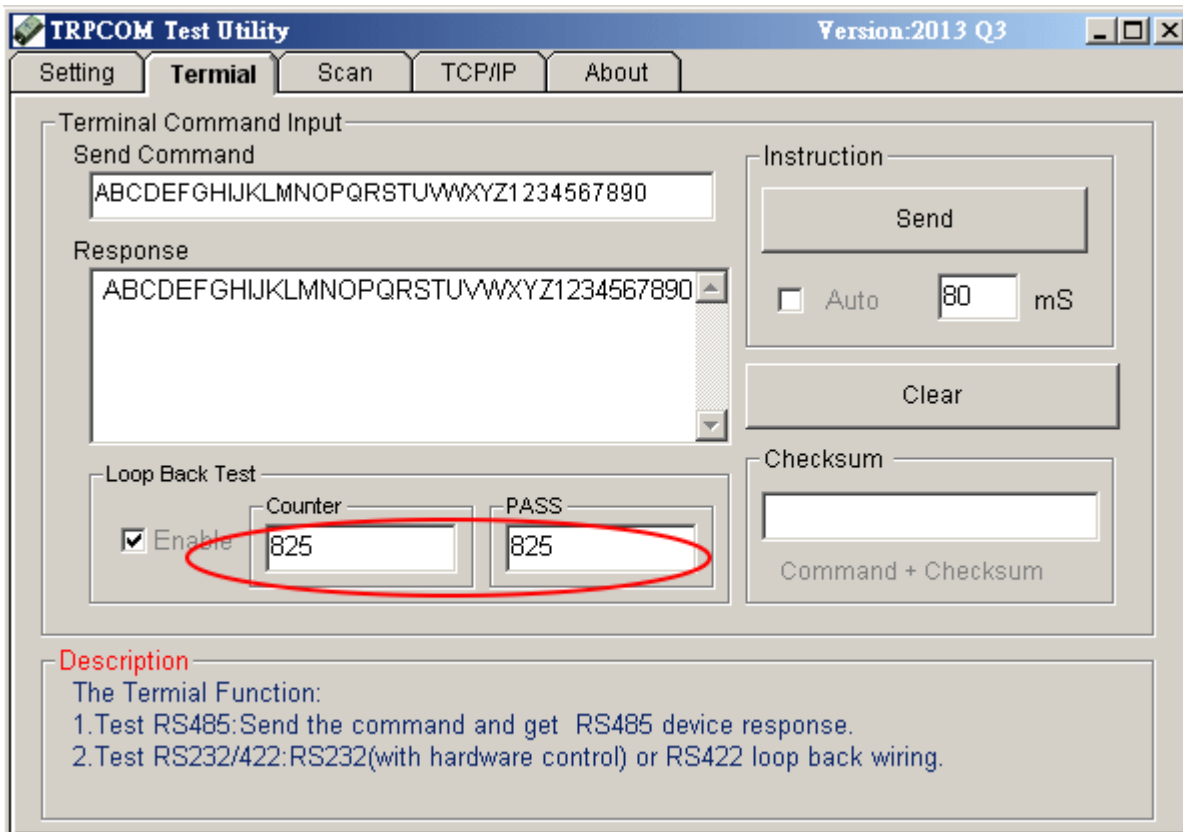RS422 loop back test wiring connection.

5-3.Loop Back Test Software
STEP1: Run the "TRPCOM.EXE" utility.
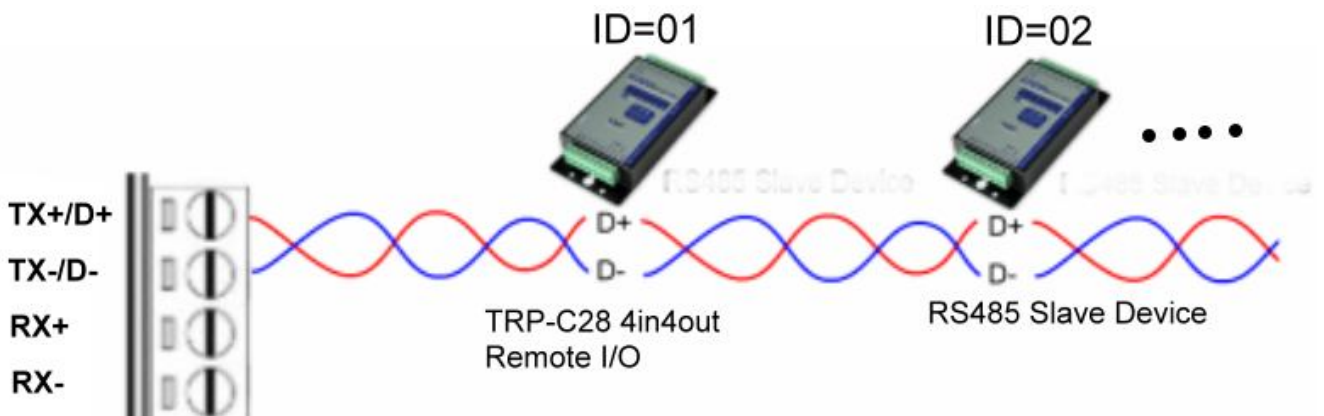**STEP2:** Click the "Setting" to set the com port and baud rate then press OK .

*Please note: "COM2" is an example of COM port number; the real COM number is assigned by user PC.

STEP3:. Click the "Terminal" then select Loop back enable, the counter value and pass value will be synchronized counts.
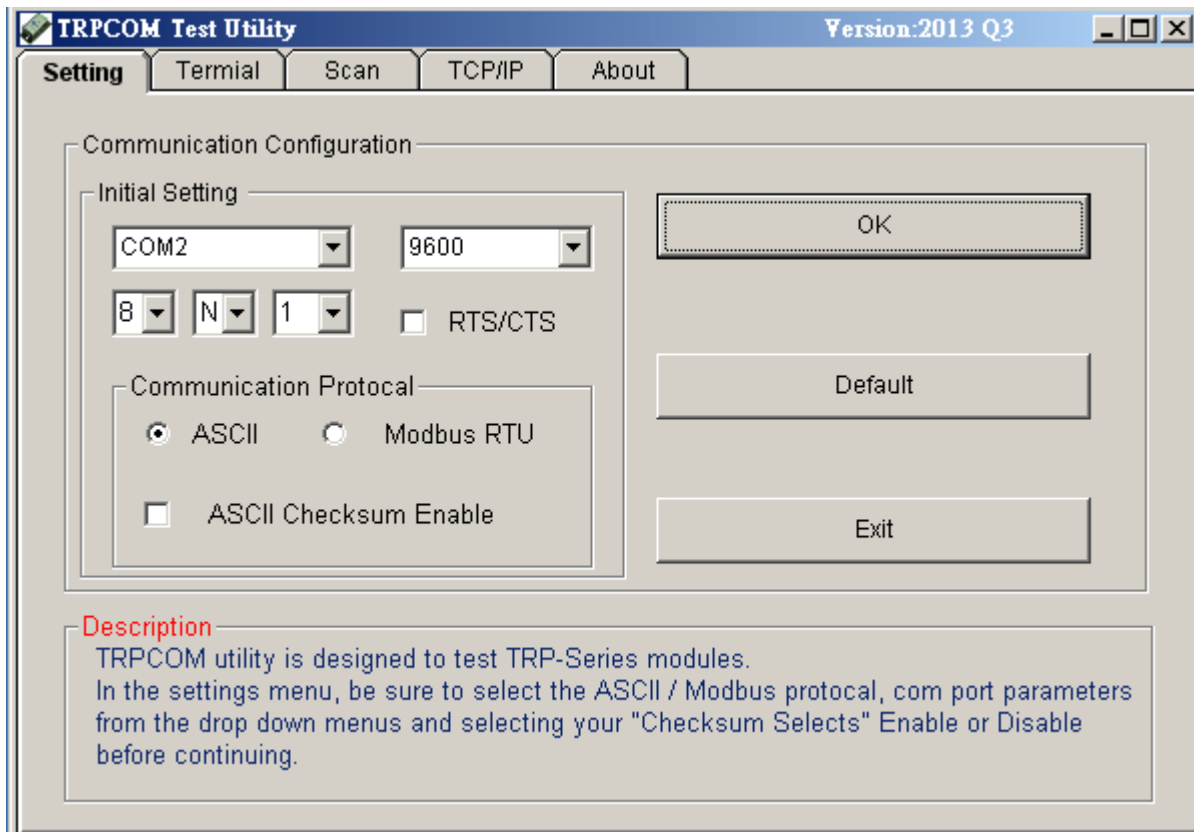
5-4. RS485 test

RS485 test mode, it can be connected to RS485 Device, such as connecting TRP-C28, send "$01M" instruction from the client side, when the TRP-C28 received command that will response "!01TRPC28" indicates execution completed.
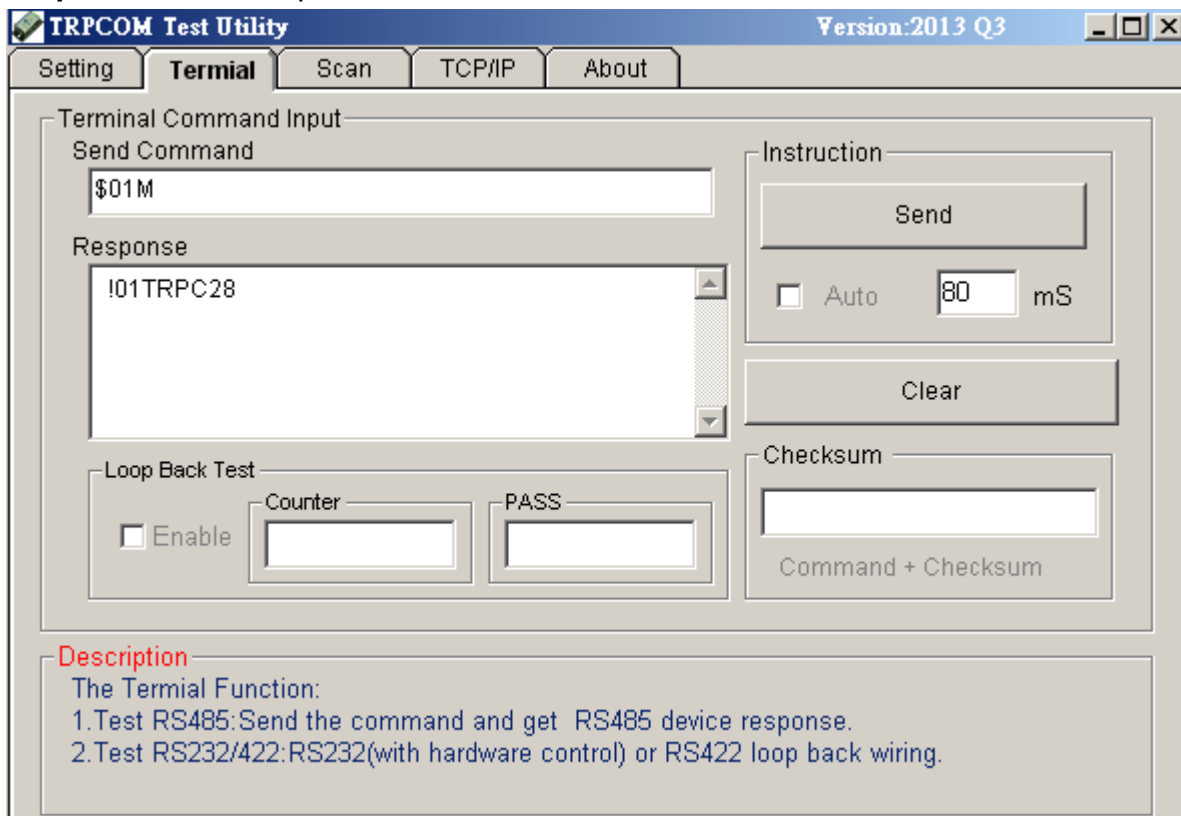

Step1. Run TRPCOM.exe utility.

Step2. Click the "Setting" to set the com port and baud rate then press OK.

Step3.Send command "$01M" and press "Send" button.

Step4. TRP-C28 response received.

6. TRP-C08 Application.