TRP-C08E

USB to 2 RS232 and 2 RS422/485 Industrial Converter

User's Manual

1. Introduction

  TRP-C08E can be stable running in the industrial environment.
It provides USB port protection when it detected unusual currents.
TRP-C08E provides RS422/485 line surge protection.
TRP-C08E can be easy to use, users have no worries about setting the serial data format and RS485 flow control, and how to wire RS422/485, everything is auto-detectable.

1-1. Features

● USB-2.0 device controller.
● Allow user custom adjust baud-rates.
● Each Port can impendent set up the baud-rate and data format.
● On-Chip 512-Byte FIFO for upstream and downstream data transfers for serial Port.
● System gets four serial port when the converter plug in.
● Auto switching RS422/485 detecting.
● Auto direction flow control on RS485.
● Auto baud rate switching from 300bps to 256 Kbps.
● Direct power from USB port , no need external power supply.
● Surge protection on RS422/485 data line.
● Power and TXA/RXA/TXB/RXB communication LED indicator
● Din-Rail (option)or panel mount Driver support:
● Driver Support: Android, Windows 2000/WIN 7/WIN10/WIN11 , and Linux 4.1 and Embedded Linux 5.5.

1-2. Specification.

● Input: USB 2.0 protocol.
● RS232 output: Standard 9 pin DTE full-duplex.
● RS422 output: Differential 4 full-duplex wires (TX+, RX+, TX-, RX-)
● RS485 output: 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 2.0 type A to type B cable.
● Communication speed: form 300bps to 256Kbps.
● RS-422/485 line protection: Against surge, short circuit,+/- 15KV ESD and voltage peak.
● RS-232 line protection: +/- 15KV ESD.
● Distance: RS-422/485 Up to 4000ft (1250M).
● Connection type: Screw terminal for maximum AWG #12~30 wire.
● DIN rail and panel mount support.
● Two power input: USB power.
● Power consumption: 260mA by USB power.
● Operating environment: 0 to 65℃.
● Storage temperature: -20 to 65℃.
● Dimension: 151mm X 75mm X 26mm.
● Weight: 395g.
● Humidity: 10-90% non-condensing.

2. Hardware Description

2-1. Panel layout
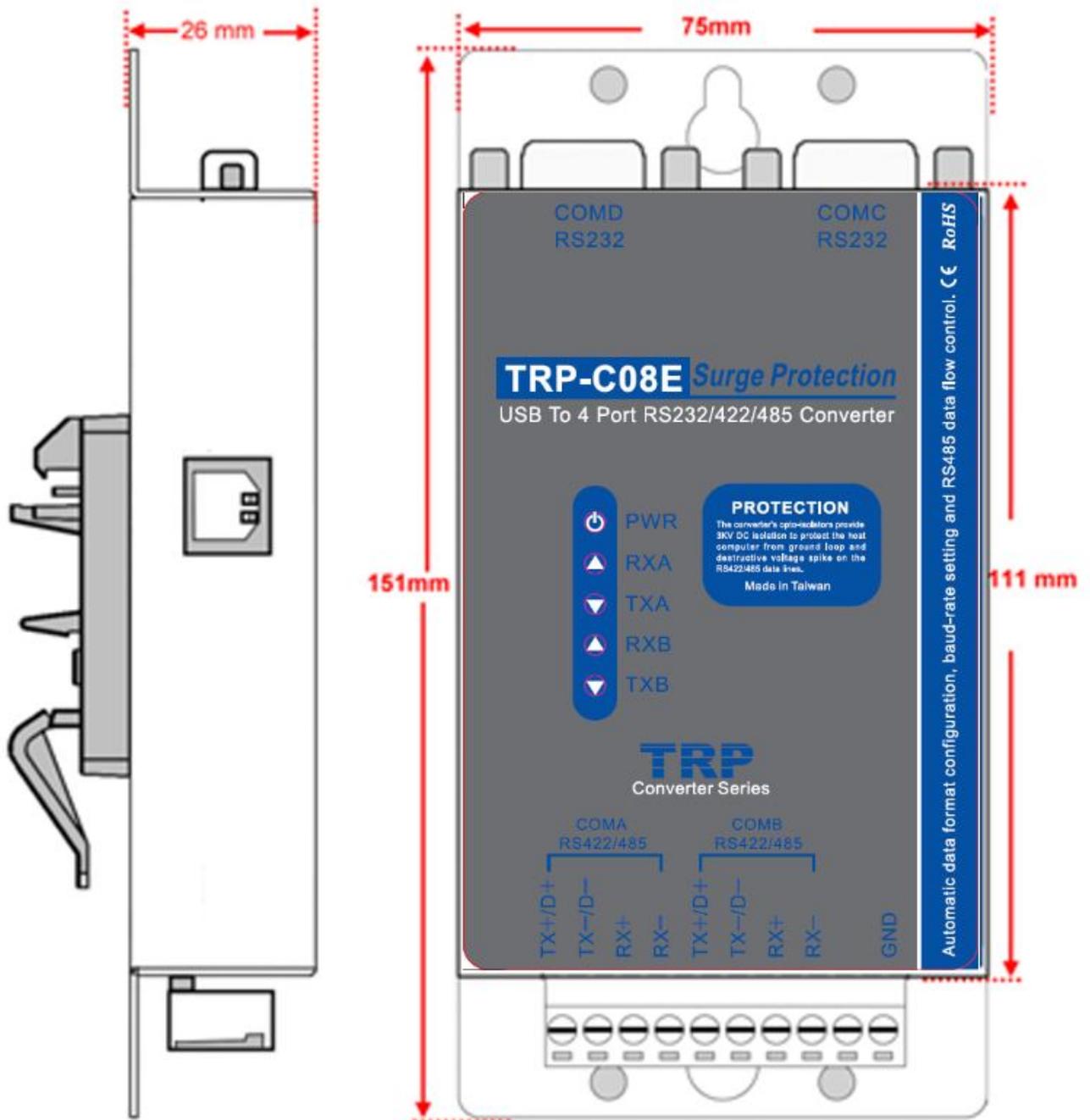
2-2. LED Indictor

PWR LED: System is ready.

RXA LED: COMA-RS422/485 Receiving.

TXA LED: COMA-RS422/485 Transmitting.

RXB LED: COMB-RS232 Receiving.

TXB LED: COMB-RS232 Transmitting.

2-3. Block Diagram
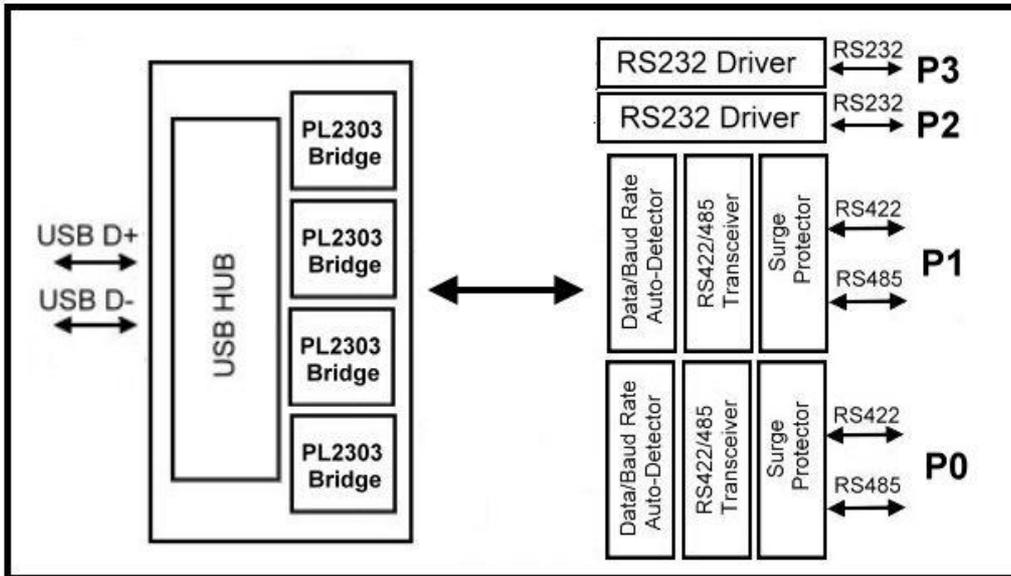
2-4. Serial Connection

The TRP-C08E has two DB-9 male connector and dual 4-PIN RS422/485 connector. The serial port is configured as a DTE (data terminal equipment) device. All PC COM ports are DTE ports. A null modem cable is required to make a connection between the PC COM port and the TRP-C08E serial port.

2-5. USB Connection

The TRP-C08E has a USB B-Type connector which is fully compliant with USB 2.0, the full rate speed up to 256Kbps.

*Please using the USB 2.0 cable ensures the TRP-C08E working fine.

2-6. RS485 Wiring

The RS-485 mode supports the Transmit and Receive channels using 2-wire half-duplex operation.
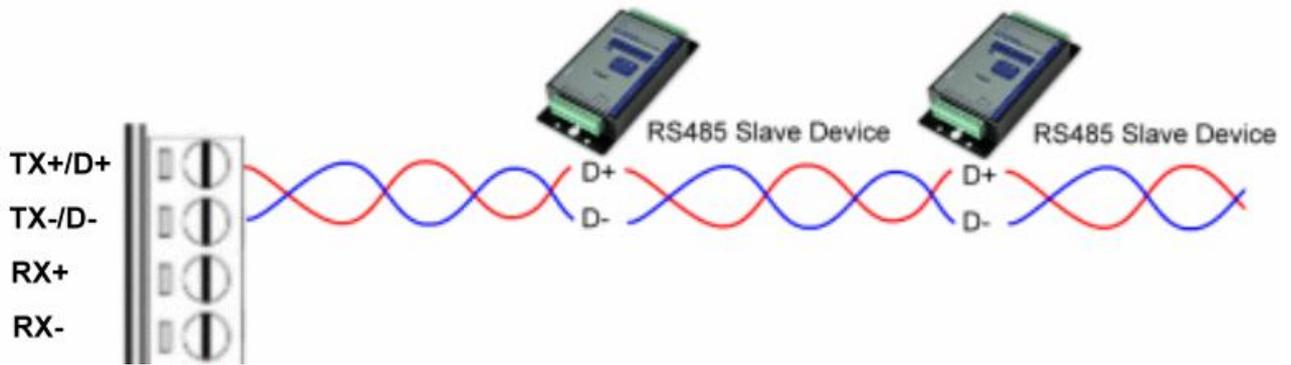
2-7. RS422 Wiring

The RS-422 mode supports 4 channels with full duplex operation for Receive, Transmit, the data lines are in differential pairs.
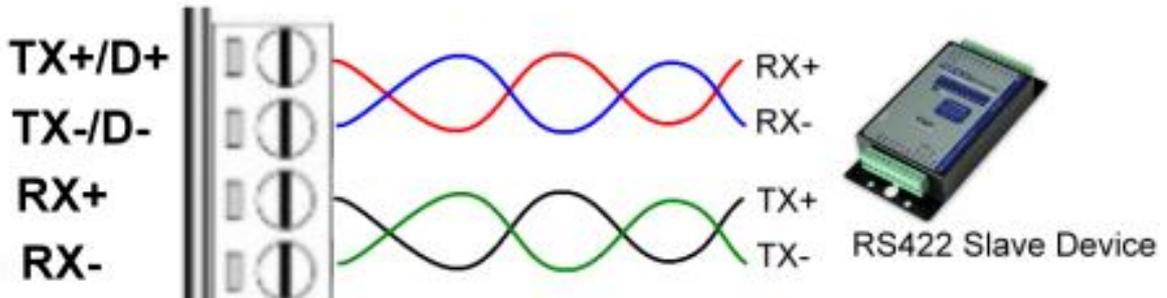
2-8. RS232 Wiring

The RS-232 supports 8 channels plus Signal Ground and is configured as DTE like a computer. Signals are single ended and referenced to Ground. To use handshaking, Flow Control must be set to RTS/CTS during configuration. Refer to the Pin out table for connections.
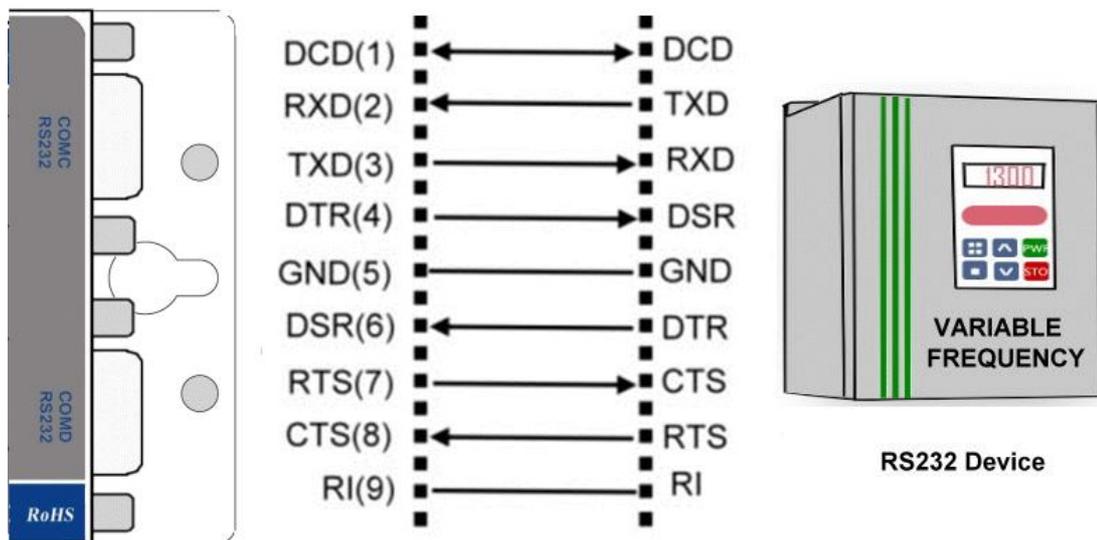
2-9. USB Cable Wiring

TRP-C08E is true USB 2.0 specification; it also supports USB V1.0, V1.1 standard. It is strongly to recommend user use the standard A to B type USB 2.0 cable if USB1.0 cable can not work properly.

3. TRP-C08E Software Installation.

Step1. Power on and plug USB cable to TRP-C08E.
Step2. Please download driver from http://www.trycom.com.tw/DOWNLOAD.htm. (See figure1)
Step3.Perform pl254x….exe.
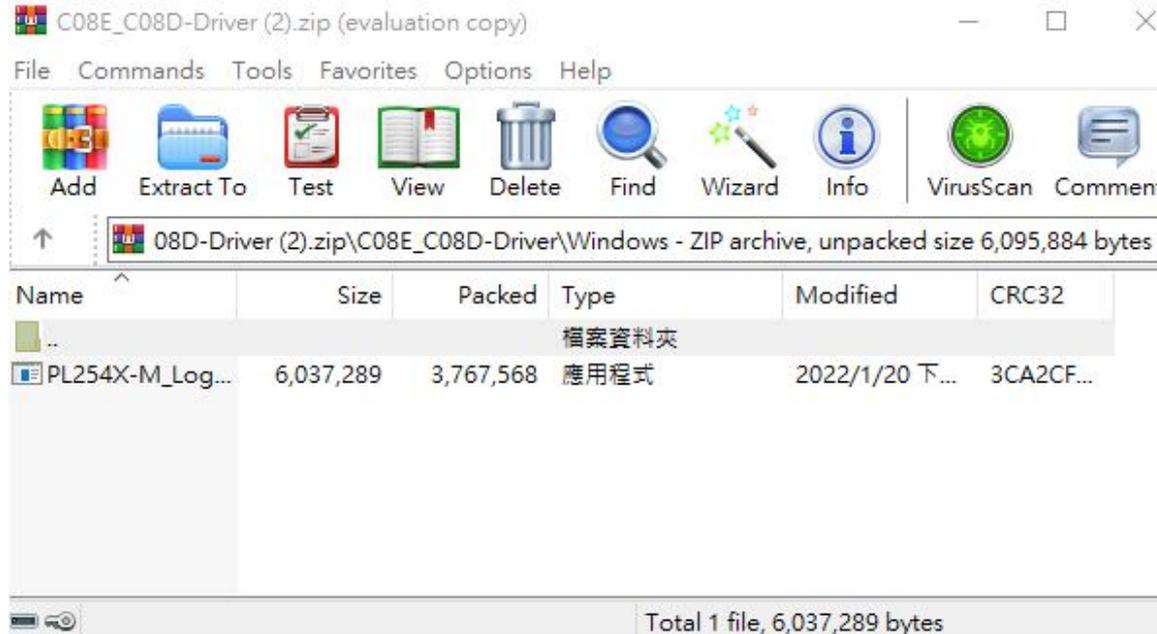
Fig.1

3-1-1.TRP-C08E Device Installation & Detection:

Connect TRP-C08E to the USB Host controller of the PC using a USB cable. The first time you plug-in the cable into the USB port, Windows will start installing the device driver software. You can see the installation status at the pop-up message of system tray. After installation, the pop-up message says "Your devices are ready to use", Device driver software installed successfully. TRP-C08E device detection can be confirmed by checking at the Device manager. Check for " High-Speed USB MultiSerial Compound Device" under Universal Serial Bus controllers and you will find "High-Speed USB Serial Port (ComX)" under the category Ports (COM). Here 'X' in 'ComX' represents the serial port number. You can see the same in the figure below.

TRP-C08E device detection can be confirmed by checking the Device manager. Check for "High-Speed USB Multi Serial Compound Device" under Universal Serial Bus Controllers and "High-Speed USB Serial Port (Com X)" under the category Ports.
Now the TRP-C08E Device is ready to use.
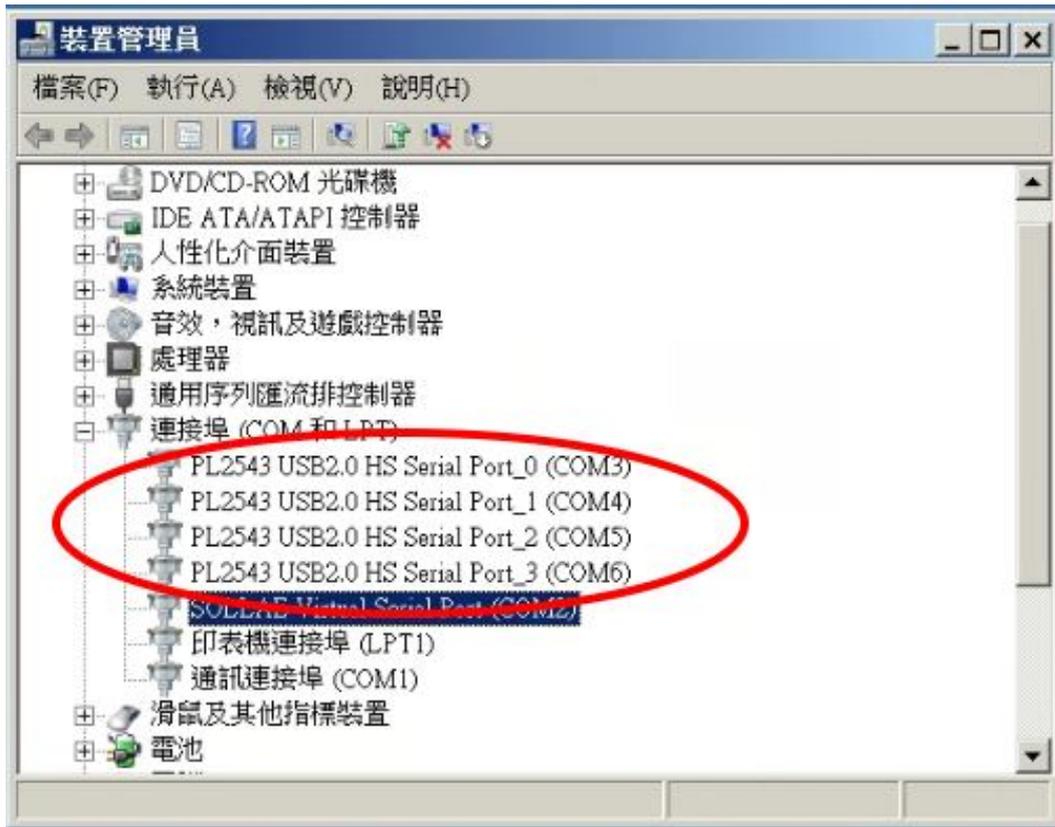
6. How to test TRP-C08E

Trycom Technology Co.,Ltd offers test utility, this is utilities may help user to demo and test TRP-C08E 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.

6-1 RS422 Loop Back Test
Hardware wiring connection for RS422 loop test.
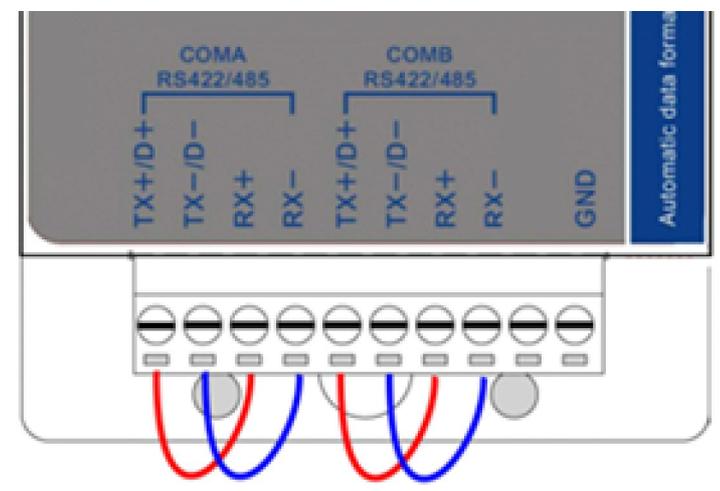
6-2 RS232 Loop Back Test
Hardware wiring connection for RS232 Loop Test.

Pin2,3 Short
Pin7,8 Short
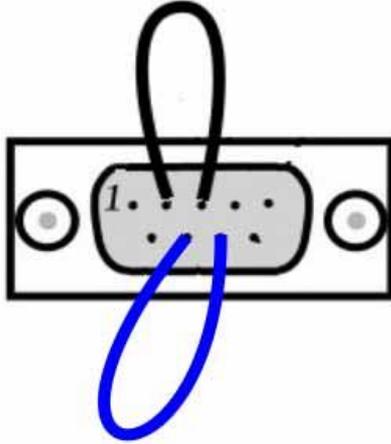
6-3.Loop Back Test Software
STEP1: Run the "TRPCOM.EXE" utility.
STEP2: Click the "Setting" to set the com port and baud rate then press OK .
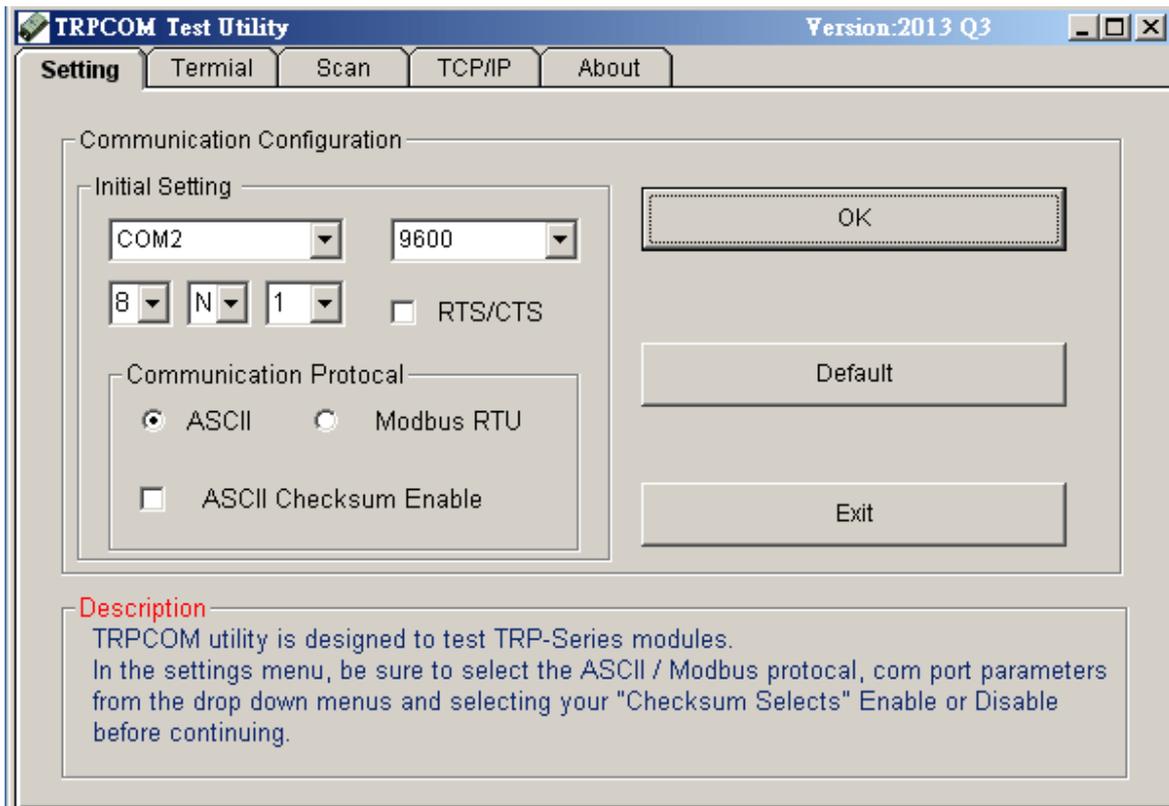
*Please note: "COM2" is an example of COM port number; the real COM number is assigned by user PC.

STEP3:. Click the "Terminal" then select Loop back enable, the counter value and pass value will be synchronized counts.
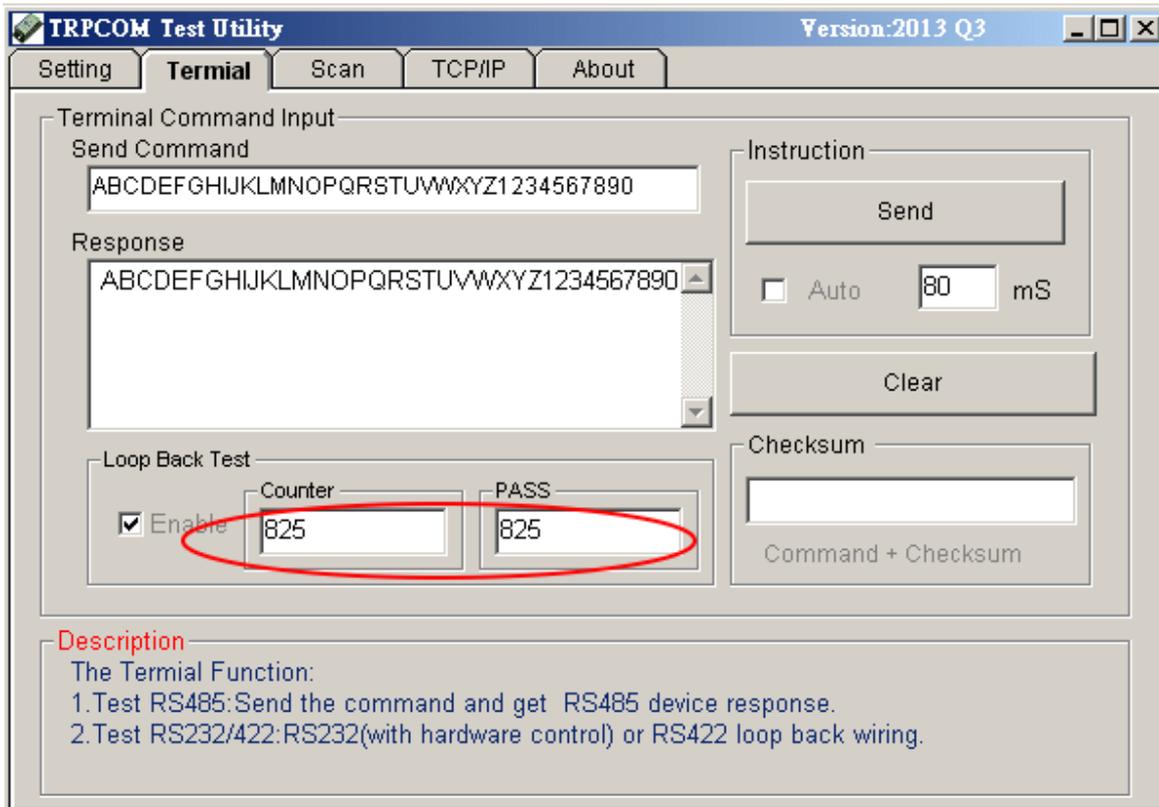
6-4. RS485 test

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.
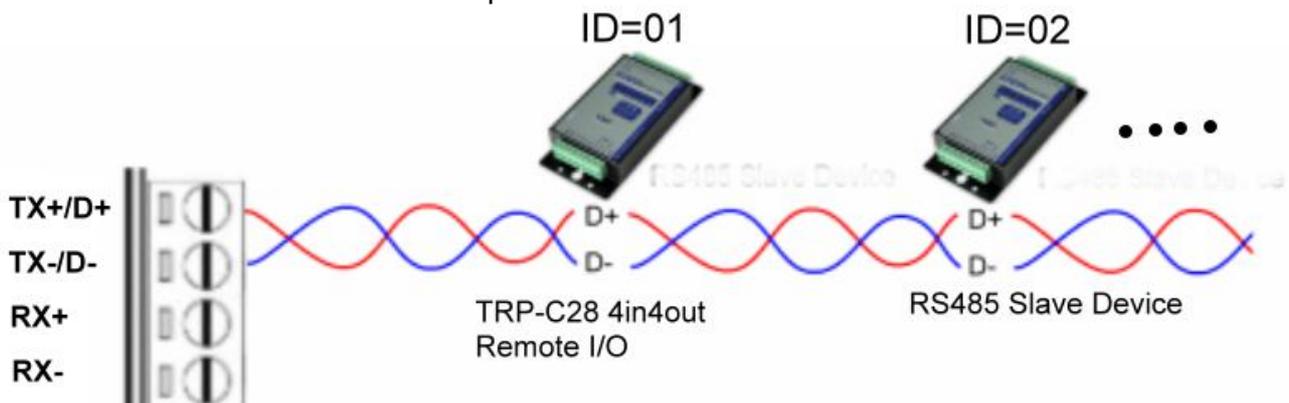
Step1. Run TRPCOM.exe utility.
Step2. Click the "Setting" to set the com port and baud rate then press OK.
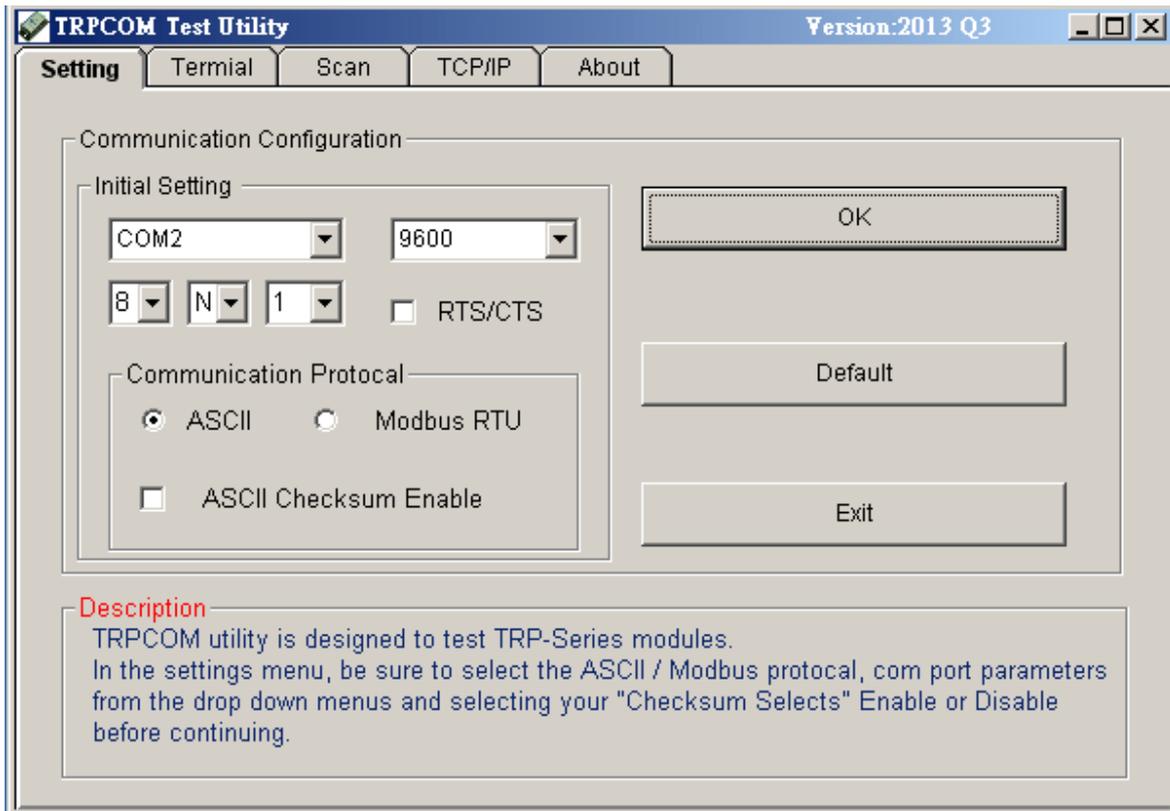
Step3.Send command "$01M" and press "Send" button.

Step4. TRP-C28 response received.

7. TRP-C08E Application.