TRP-C08E

USB to 2 RS232 and 2 RS422/485 Industrial Converter



User's Manual

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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° C.
- Storage temperature: -20 to 65°C.
- 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.

File Commands	Fools Favorit	es Options	Help	*	i			Ð
Add Extract To	o Test ver (2).zip\C08	View Delet BE C08D-Drive	e Find r\Windows -	Wizard ZIP archi	Info ve, unpacke	Virus ed size	sScan Cor 6,095,884	nmen bytes
Name	Size	Packed	Туре		Modified		CRC32	
			檔案資料夾					
PL254X-M_Log	6,037,289	3,767,568	應用程式		2022/1/20) 下	3CA2CF	
-			Tota	al 1 file, 6	i,037,289 by	ytes		

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 <u>www.trycom.com.tw</u>, 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.



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 .

STRPCOM Test Utility	¥ersion:2013 Q3 _□×
Setting Termial Scan TCP/IP About]
Communication Configuration	OK
Communication Protocal Communication Protocal	Default
ASCII Checksum Enable	Exit
Description TRPCOM utility is designed to test TRP-Series m In the settings menu, be sure to select the ASCII from the drop down menus and selecting your "Ch before continuing.	odules. / Modbus protocal, com port parameters lecksum Selects" Enable or Disable

*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.

FRPCOM Test Utility	¥ersion:2013 Q3
Setting Termial Scan TCP/IP About	
Terminal Command Input Send Command ABCDEFGHIJKLMNOPQRSTUWXYZ1234567890 Response ABCDEFGHIJKLMNOPQRSTUVWXYZ1234567890	Instruction Send Auto 80 mS
Loop Back Test Counter PASS Enable 825 825	Clear Checksum Command + Checksum
Description The Termial Function: 1.Test RS485:Send the command and get RS485 device 2.Test RS232/422:RS232(with hardware control) or RS422	response. loop back wiring.

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.

TRPCOM Test Utility	Version:2013 Q3	
Setting Termial Scan TCP/IP Abou	t	
Communication Configuration	ОК	
8 N 1	Default	
ASCII Modbus RTU ASCII Checksum Enable	Exit	
Description TRPCOM utility is designed to test TRP-Series In the settings menu, be sure to select the ASC from the drop down menus and selecting your " before continuing.	modules. II / Modbus protocal, com port parar Checksum Selects" Enable or Disab	neters le

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

tep4. TRP	-C28 re	sponse re	eceived.			
TRPCOM T	est Utility					¥ersion:2013 Q3
Setting	Termial 🛛	Scan	TCP/IP	About		
Terminal C Send Cor \$01M	command mmand	Input			_	Instruction
Respons	e					Send
!01TR	PC28				A	□ Auto <mark>80 mS</mark>
					-	Clear
-Loop B	ack Test —					Checksum
E	nable	ounter	PAS	s		Command + Checksum
- <mark>Descriptio</mark> The Term 1.Test R 2.Test R	n hial Functi S485:Sen S232/422:	ion: d the comn :RS232(wit)	nand and ge h hardware d	t RS485 d control) or F	evice RS422	response. ? loop back wiring.

7. TRP-C08E Application.

