USB TO RS485

USB⇔RS-485

Industrial Control Intelligent Converter

INSTRUCTION MANUAL

(2007-5-7)

USB To RS485 Serial Port Instruction Manual

Ⅰ. Product

Attention！

1. Pls read the manual carefully before using.
2. Before using the USB TO RS485,pls close your computer and put the equipment connecting point onto the ground to avoid the damage to your computer from static surging signal from telecom path. (Normal use no need to connect the ground).
3. USB port of USB to RSRS485 must connect computer not other equipments with USB port such as camara,scanner, or printer,etc.

Ⅱ. Product introduction

USB to RSRS422 is the industrial control intelligent converter from USB to RS-485/RS-RS422. It is the best solution to conduct telecommunication RS-485/RS-RS422 of through USB. Compared with common RS-232⇔RS-485/RS422 converter,USB to RS422 USB⇔RS-485 converter has such advantages as below:

Usually, we use RS-232 serial port of computer to connect RS-232⇔RS-485/RS422 converter to control RS-485/RS422 equipment.. Using this way, the programm realise the telecommunication through visiting vomputer's COM port. But there are some questions, mainly are : 1. RS-232 is outdated telecommunication agreement. But many new computer, for example, notebook computer don't have such interface. 2. RS232 is of low efficiency.(High-speed RS485 can realise the speed of 10Mbps,but RS-232 Port Baud rate of normal computer is max to 115kbps,which can't satisfy the demand of transmission speed. 3. In many occasion RS-232 to RS485/RS422 converter is needed, and converter need to get power from RS-232 port to normal use but may be lack of electricity.

But USB⇔RS-485/RS422 converter can satisfy above demands:1. USB(universal serial bus) is the most popular computer interface standard nowadays. Many computers have USB interface.2. Compared with RS-232, USB interface has a higher telecommunication speed. USB1.1 can reach to 12Mbps, USB2.0 can reach to the speed of 300Mbps，and there are many speed and telecommunication means which can totally satisfy the high-speed converter RS485's requirement. 3.USB interface has a strong power supply ability, so USB⇔RS-485/RS422 converter don't need get power through external(no problem of lacking of power.). And USB bus has other advantages, for example,hot wrap, convenient connection, hanging and connectiong many equipments.

So how USB to RS422 and USB⇔RS-485/RS422 converter realise the

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application software to RS-485/RS422 equipment? It is necessary for user to understand this process, and the exact principle is as below:

After USB to RS422 driver has been installed, one virtual serial COM port would creat automatically. For example,originally, there are two serial ports COM1,COM2, after USB to RS422 driver is installed, there will be a virtual COM3 port. (Usually, COM port no is distributed automatically by virtual driver programm.) If there is no RS232 port in your computer (e.g. new notebook computer),after the driver programm is installed, COM1 port would be automatically created. This COM port is the same with original COM port to the application software. If your application sodtware can map or choose this COM port,the RS232 equipment can be realised the telecommunication of RS-485 equipment. That means the transmission process from the virtual COM port dricer programm to USB and to RS-485 is transparent. And the user don't need to care this process but to consider the matter of serial port telecommunication.

Below charter can help you to understand this process:
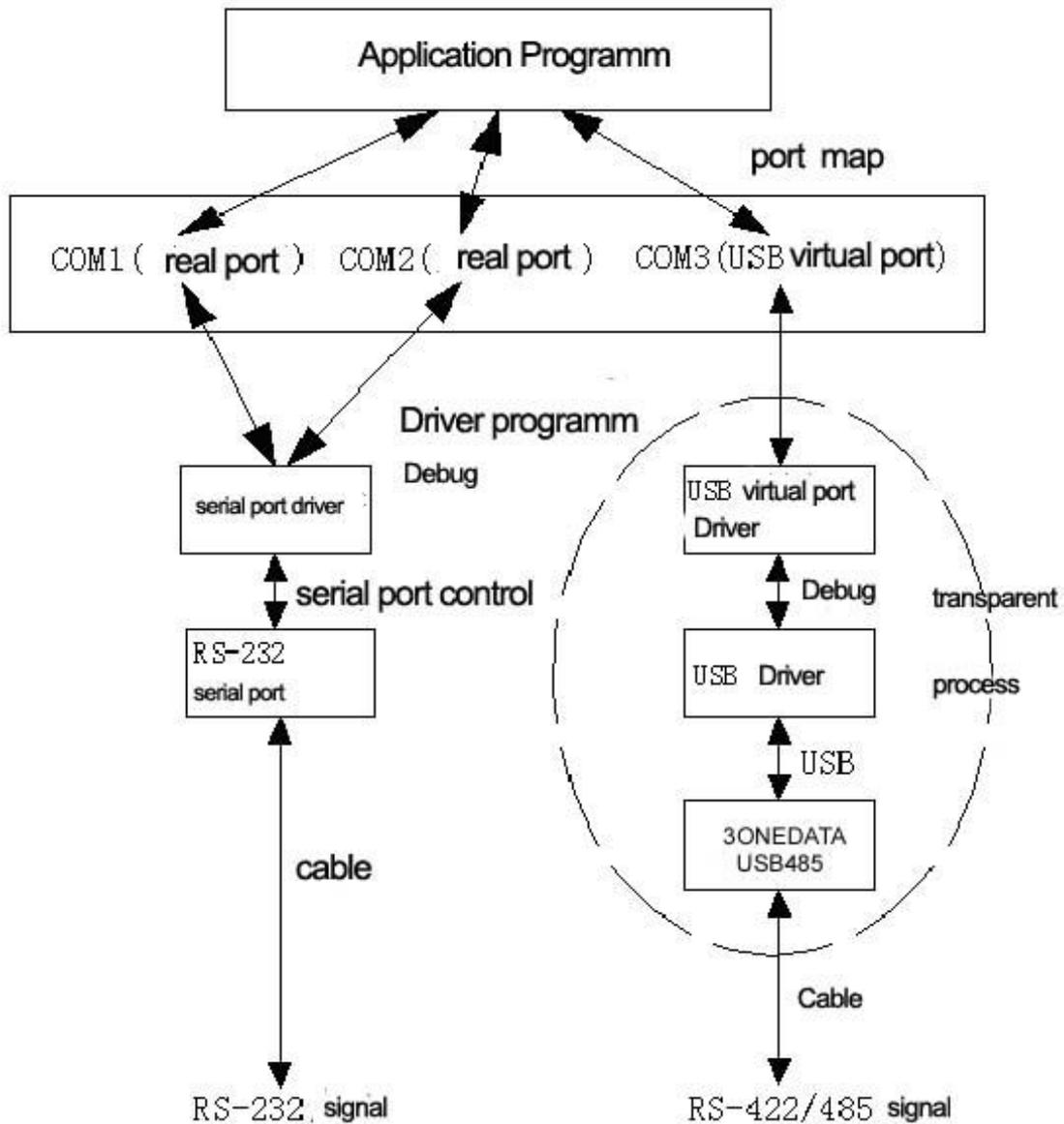
Remarks: In the range of dashed line, it is the transparant transmission, and user don't need to care the detail of this part.

Ⅲ. Application

Industrial control automatic system, code scanner,Palm,PLC&PLD, Palm computer PDA(WinCE system), Lable printer, POS system, Data collection control system,   Safe access control system, etc.

Ⅳ. Function and Feature

●Single-panel（ASIC）USB port to serial port telecom
●RS-485 port common mode insert voltage range:-7V~+12V
●Support Windows98/ME and Windows2000/XP

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● Support MAC Apple and Linux v5.0

●Totally compatible with USB v1.1 and USB CDC V1.1 requirement

●USB full-speed connection

●USB bus get the power directlly,no need to get eternal power.

●Support auto-handshake agreement

●The speed can reach 57.6kbps in the distance of 1200m(230kbps is available in the close distance)

●Accord with RS485 standard of TIA/EIA

●Support remote Remote Wake Up and power management

●Support point to points(RS-485 port can be hanged to 32 standard RS485 equipment.)

Attention!

1. The telecom speed of RS-485 of USB to RS422 is influenced by telecommunication distance. Usually, longer the distance,lower the telecom,the simple corresponding list is as below:

Telecommunication Distance	0~10m	300m	1200m	5000m
Speed(Max)	230kbps	115kbps	57.6kbps	9600bps

(Some data in the list is in the ideal condition. Accurate telecom speed is influenced by the actual environment, which maybe can't reach above data.)

2. RS-485 of USB to RS422 just can hang max to 32 standard RS-485 equipments according to the bus theory but actually the quantity of equipment can't reach 32.(usually >20pcs)

Ⅴ. Connection and signal

1.RS485/RSRS422（DB9M pin）Pin definition

DB9M	1	2	3	4	5	6	7	8	9
RSRS422	**T-/D-**	**T+/D+**	**R+**	**R-**	**GND**				

Remark: the pin no of DB9 pin/hole head is marked on connectors.

Ⅵ. System requirement

Before using USB to RS422，pls make sure whether your computer is compatible IBM PC and satisfy below system requirement:

● CPU of Intel compatible 486DX4-100 MHz or higher
● One standard USB interface (4-pin) and has this mark
● Run operation system is Windows 98/Me or Windows 2000/XP

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Ⅶ. Driver programm installation

Means 1: (Irecommend)

Enter in disk catalog to run USB to RS422_drv.exe to automatically install guide programm, and click: **next**

Installation guide would automatically install USB to RS422 driver programm.

Clcik: Finish. Now USB to RS422 equipment can be normally used after the installation is completed.

Means 2:

Pls install it following below process

1. Get through the power of the computer to connect USB to RS485 equipments and make sure the USB port to be connected has been started and normally worked.
2. Insert USB connection cable into USB port, Windows will detect the equipment and run the hardware-adding guide to help you to set the new equipment,

click :**Next:**
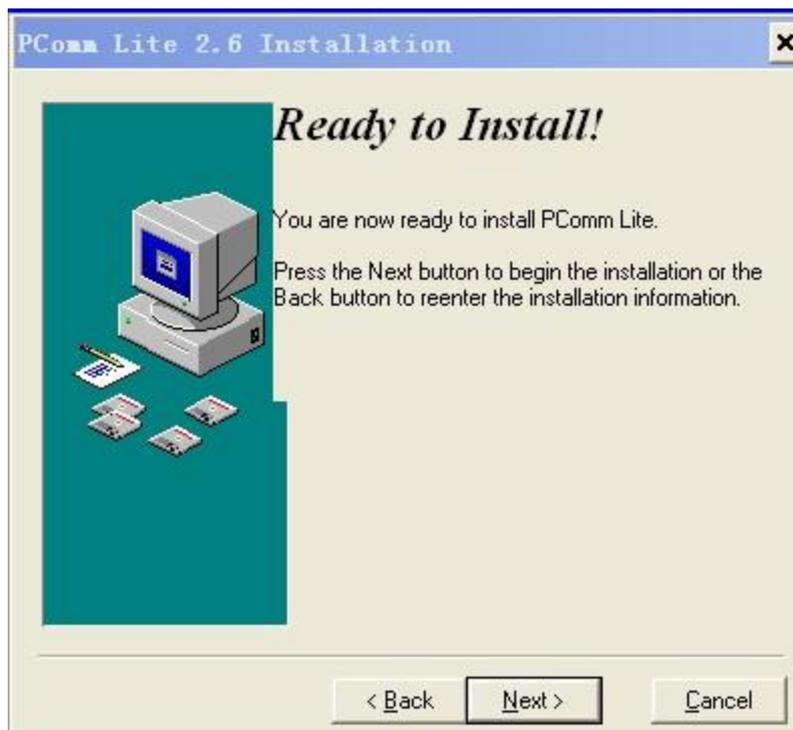
3. Insert USB to serial cable driver CD and click NEXT to continue. Choose to serach the newest driver programm for the hardware and click NEXT and choose to install from CD and click OK.
4. Designate to install as USB to RS422_drv
5. Windows will detect the installation infromation(Serwpl.INF) and show. USB <-> Serial equipment and click NEXT to contimue.

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6. Click FINISH, now you can normally use USB to RS422 profucts.

Remarks: PL-2303 showed in the dialog box is theUSB chipset used in USB to RS422, Prolific is the chip manufacturer trading mark.

Ⅷ. Deletion of Driver Programm

To delete the USB to serial port cable driver programm folloing the below process:

Means 1 :

1. To pull out the USB to serial port cable from your computer
2. To run DRemover98_2K.exe programm of USB to serial port driver and coninue as notices:

（or click right button "USB to Serial Port (COM3)"，and click"Delete""）
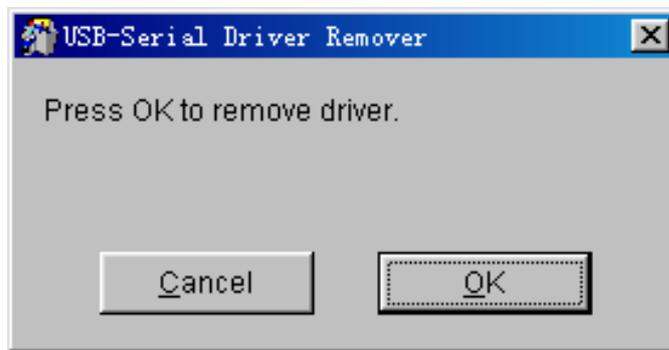
3. Clcik "OK" and there is a dialog box
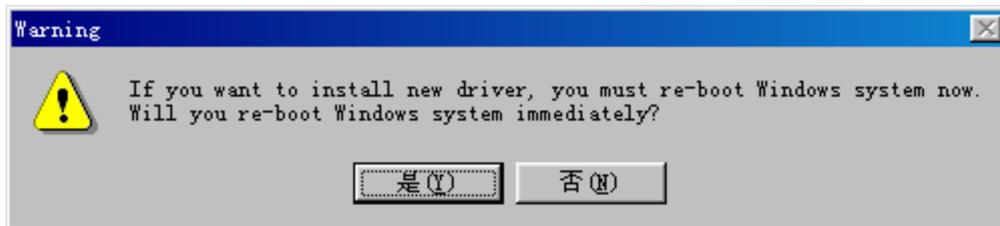
4. If you want to install new driver,click "YES",or "NO".
5. Then the deletion of driver is completed.

Means 2:

1. Enter in the disk to run USB to RS422 Installer.exe installation programmand choose " delete the driver" and click "NEXT".

1. The dialog box says "PL-2303 has been deleted",click "FINISH".

(Above is the installation process in windows98 and the similar in windows2000/XP)

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Any other questipn,pls contact HEXIN Engineer Dep.

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