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# USB/PPI+ Programming Cable Driver Procedure

## Setting Guideline

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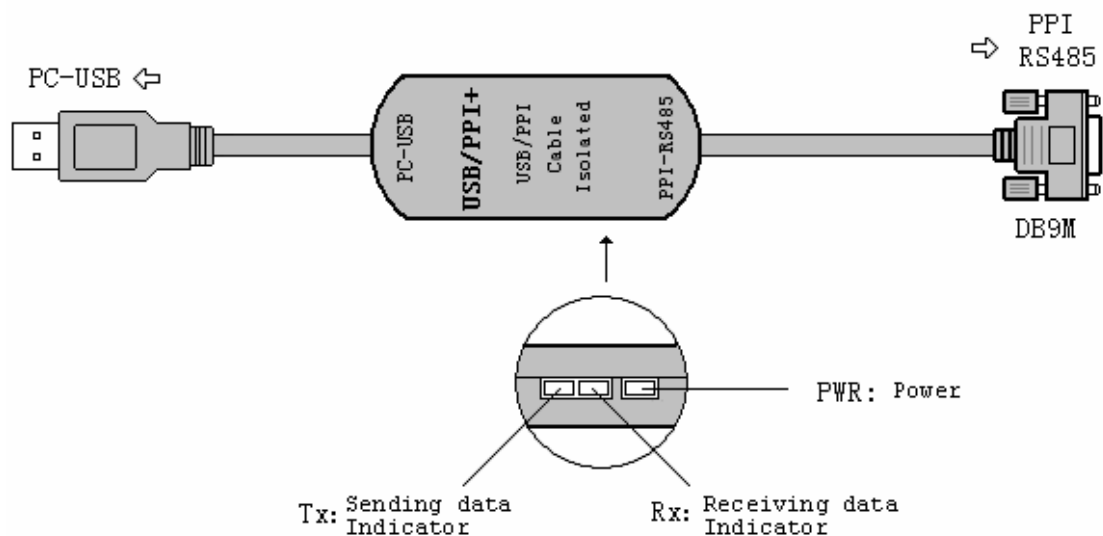
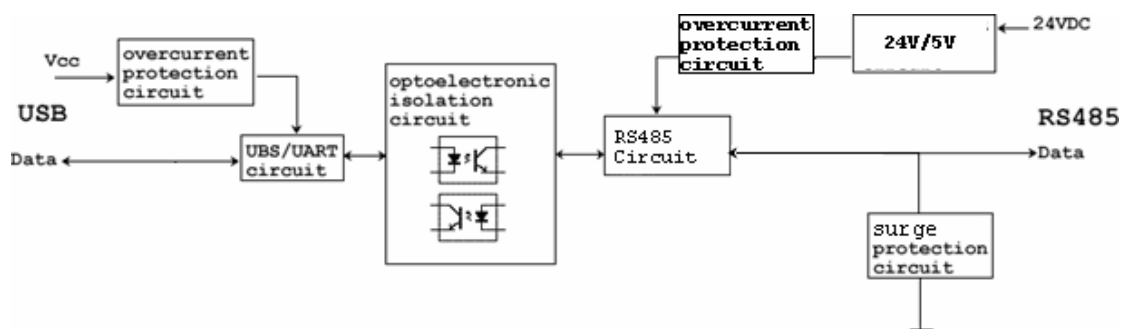
## Introduction

USB/PPI+ programming cable simulates USB port as traditional serial port (usually COM3), which enables existing programming software (STEP 7-MicroWin) to communicate through simulated traditional port and PLC devices.

The working power supply of this cable is from the USB port and PLC programming interface. The two-color LED on the converter box indicates data's transceiving status.

USB/PPI+ is optoelectronic isolated, suitable for Siemens S7-200 series PLC, especially for the strong interfere and easily damaged communication interface industry scene. The safeguard in the circuit guarantees the safely running of the system.

### USB/PPI+ principle and figure structure:



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<b>PIN</b>	<b>Signal</b>	<b>Description</b>
<b>3</b>	RxD/TxD+	Data signal B(RS485+)
<b>8</b>	RxD/TxD-	Data signal A(RS485-)
<b>7</b>	P24V	24V power positive
<b>2</b>	M24V	24V power negative(RS485 logic ground)

signals definition of the RS485-Block (DB9M) of the USB/PPI+

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## Functions

- Support Windows2000/Windows XP
- Support STEP7 Micro/WIN V3.2 and higher
- Fully compatible with USB V1.1 and USB CDC V1.1
- Power supply by USB bus and PLC programming port.
- Baud rate: 300 bps ~ 1Mbps automatically adapt to the standard baud rate.
- Support UART data format: data bits: 7-8; stop bit: 1, 2; check-bit: odd / even / no parity
- Support long distance communication up to 2000m(9600 bps).
- Working temperature -20~+75'C
- Length 3 meters.Color:black
- One pc supports one USB programming cable only

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## **System requirement**

Please make sure your PC is IBM PC compatible and has the following system requirements before using the USB programming cable.

- Intel is compatible with 586DX4-100MHz CPU or higher
- A standard USB port (4-pin A plug)
- Operating system is Windows2000 or Windows XP

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## The setting of driver procedure

Please set the driver procedure according to the following steps:

1. Turning on PC power that will connect the USB programming cable and make sure the USB port working well.
2. Put the USB programming cable into USB port and Windows will detect the device and help to add new hardware and jump to new device setting. Insert the driver CD and click “next” to continue, or select the driver on the hard disk.

If Windows does not show “Found New Hardware Wizard”, please click “Universal Serial bus controllers” in the hardware list of device manager, and choose the USB device with question mark. Click the right key of mouse and operate to update driver procedure.



If insert the driver CD, you should select the recommended item and click “Next”



If the driver is saved on the hard disk, you should select the second item and click "Next". You can find the driver on the "WIN" folder.



3. Windows will detect the setting information, and load the driver to install.

4. Continue to set up, copy the driver procedure files to your hard disk by Windows.



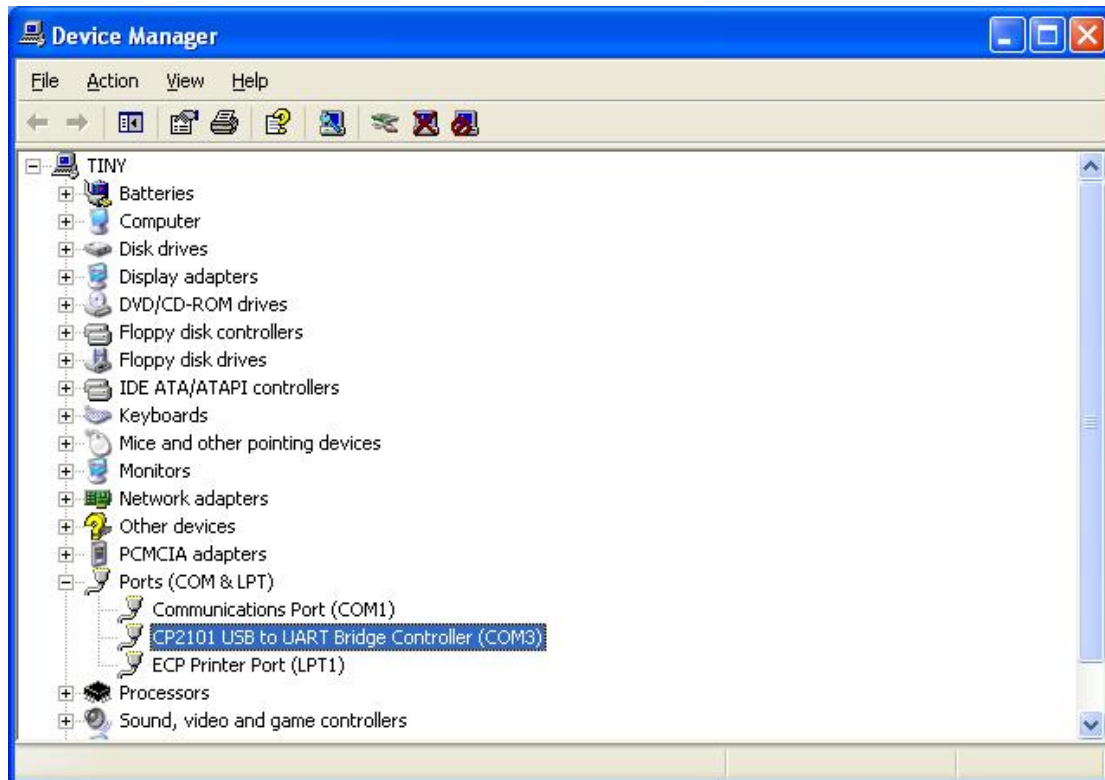
5. When Windows appears "Completing the Found New Hardware Wizard", click "finish" to end setting up.



6. After setting up, please make sure the "port (COM and LPT)" of "Start \ Settings \ Control Panel \ system \ hardware \ Device Manager" appears



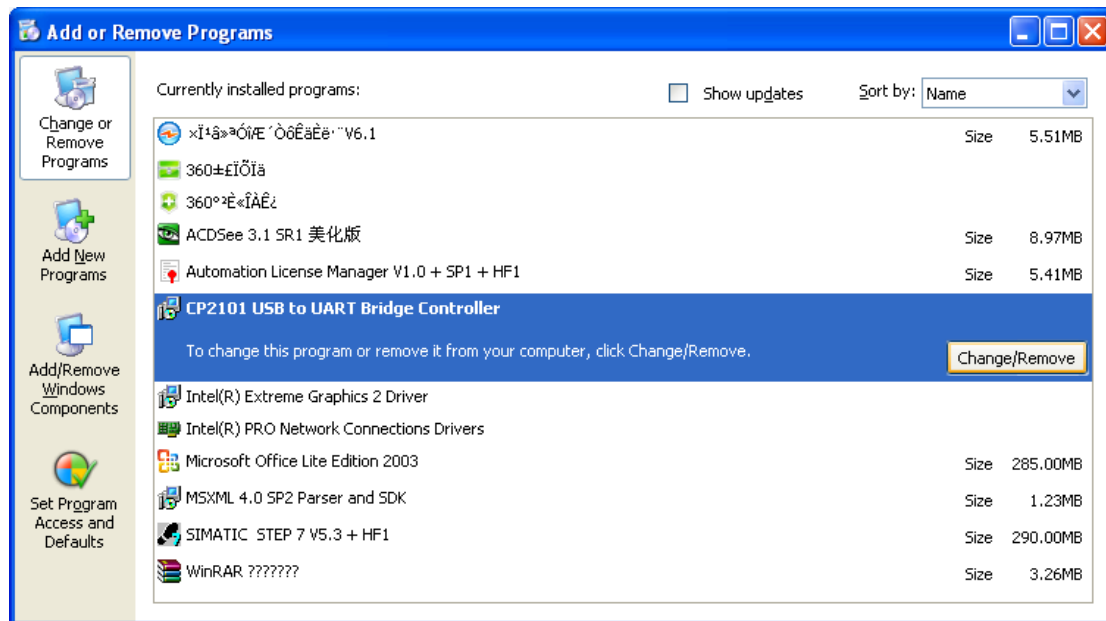
"CP2101 USB to UART Bridge Controller(COMx)". This COMx is the COM message of the USB programming cable. From then on, as long as you insert the programming cable, the COM port will appear. You just have to choose this COM port in application software such as programming software or communication software.



## The deletion of driver procedure

Deleting driver procedure is to discharge source of COM port so that other device can be used. When driver procedure has error, it should be deleted and reset up. Please delete the driver procedure as follows:

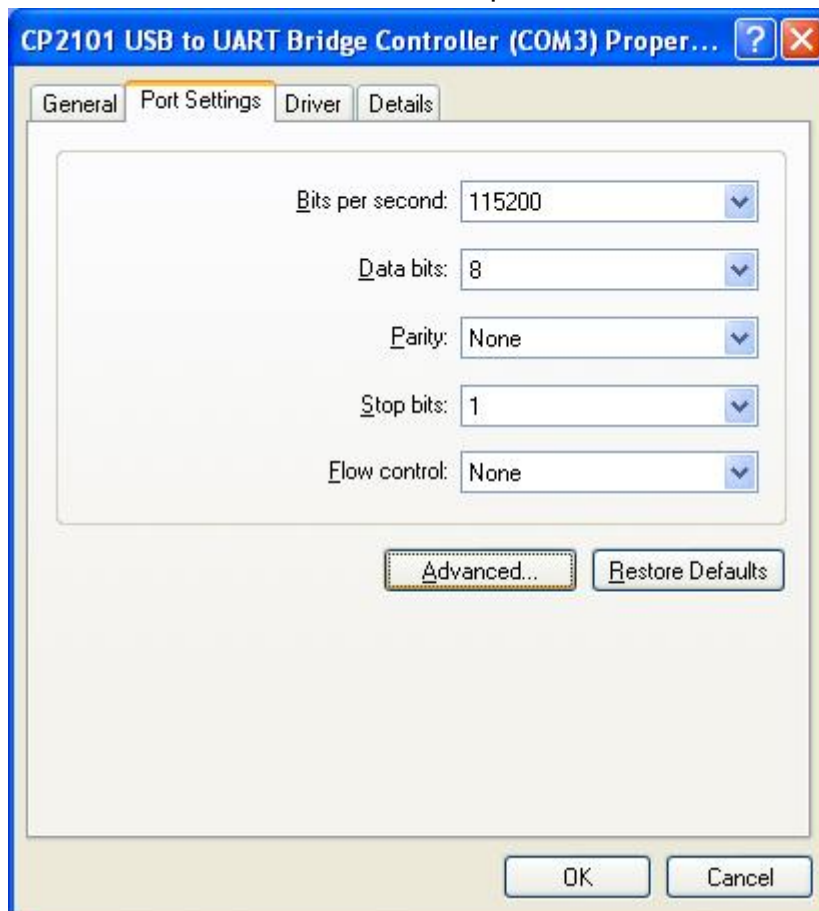
1. Unplug the USB programming cable from you PC.
2. Choose "USB Serial Converter Drivers" from "Add or Delete Programs" in operation panel, and click the "Change/Remove" button.

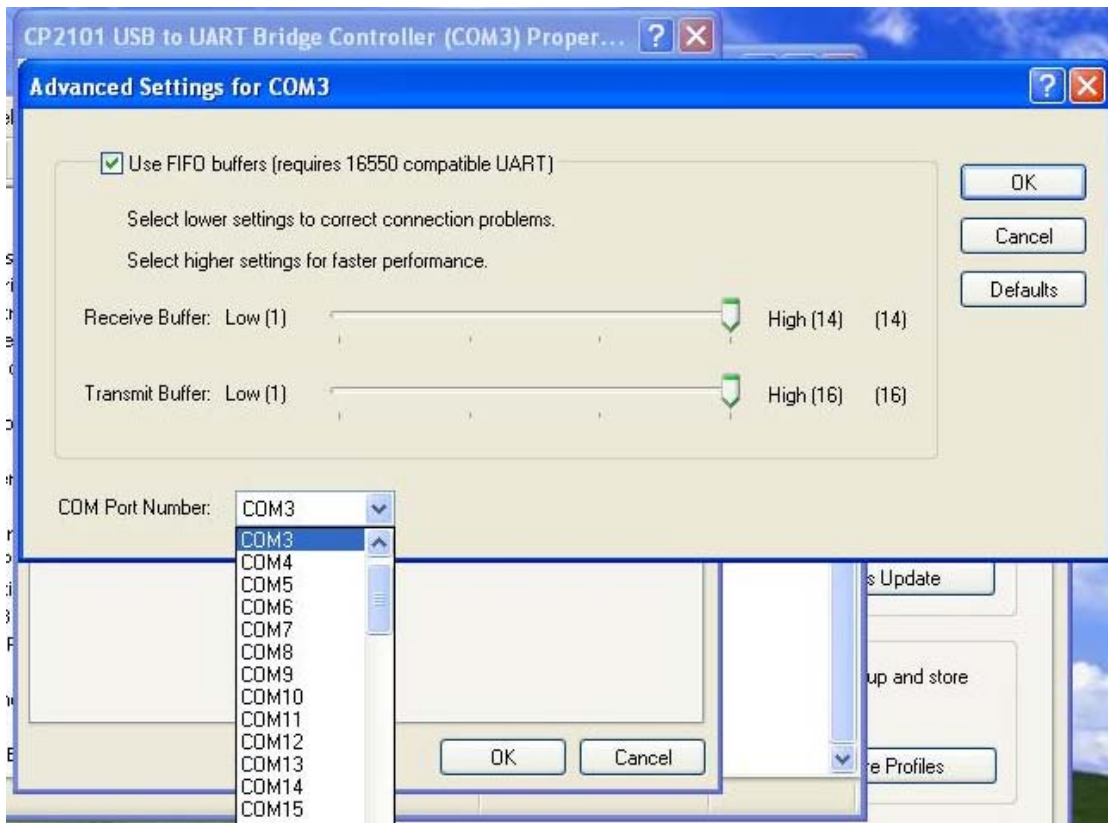


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## How to change COM setting

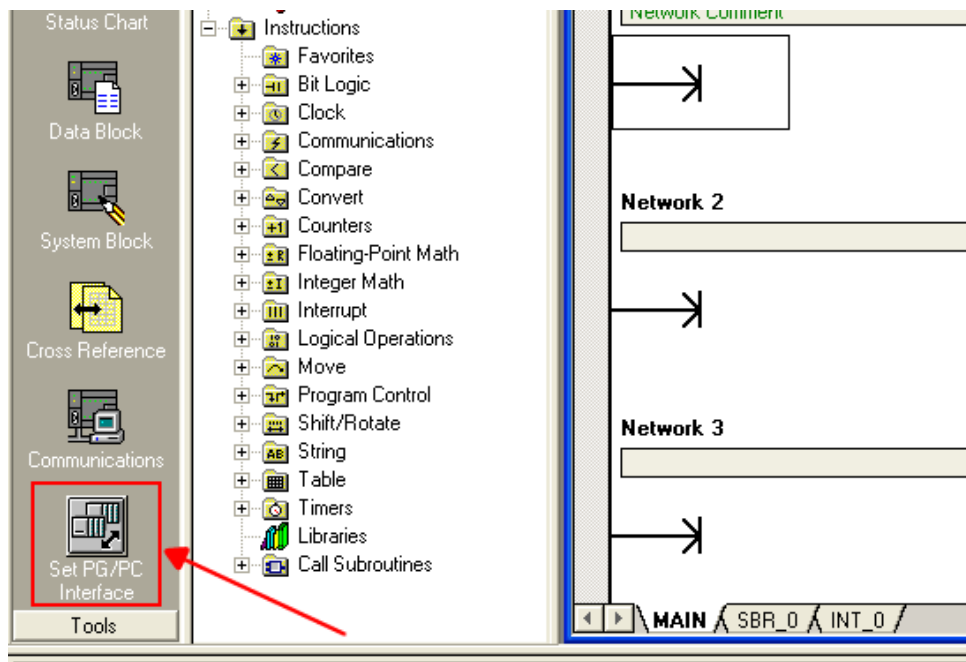
1. Delete the driver procedure of all USB to UART products to discharge COM port source, and reset up USB programming cable driver procedure. The device manager will display the cable address **COM3**.
2. In Windows 2000/XP the COM slogan can be changed directly. Please double click COM port device that is need changing in the device manager, and the device attribute information window will appear. Choose "port setting" as the picture shows. Click "Advanced" button, and the advanced setting information window will appear. Set the COM port to the serial number you want and click "OK" button to complete.



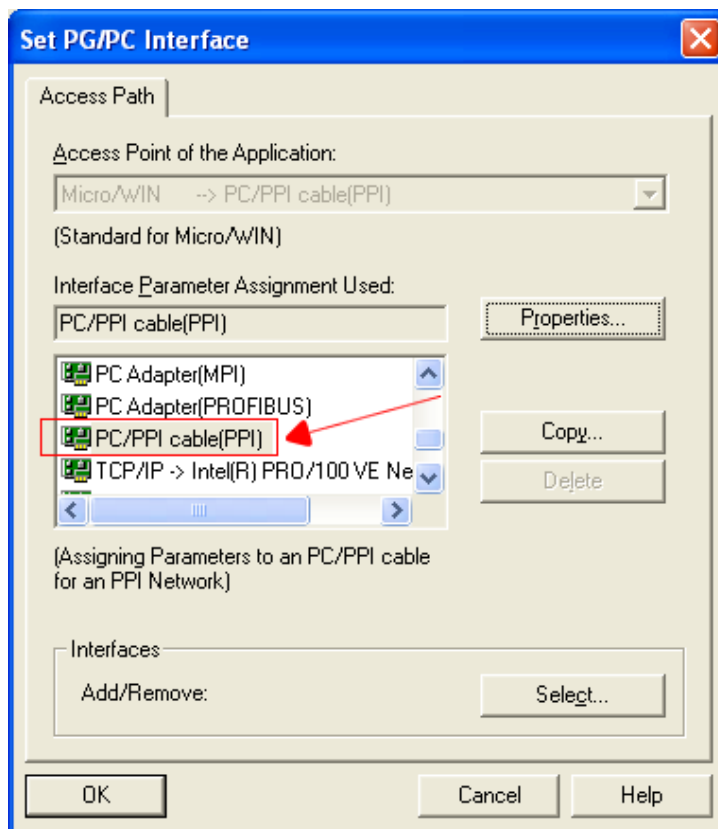


## Setting of Step 7-MicroWin

Open the main windows form(Step7-MicroWin), click “Set PG/PC Interface” of the left view and will appear PG/PC setting window.

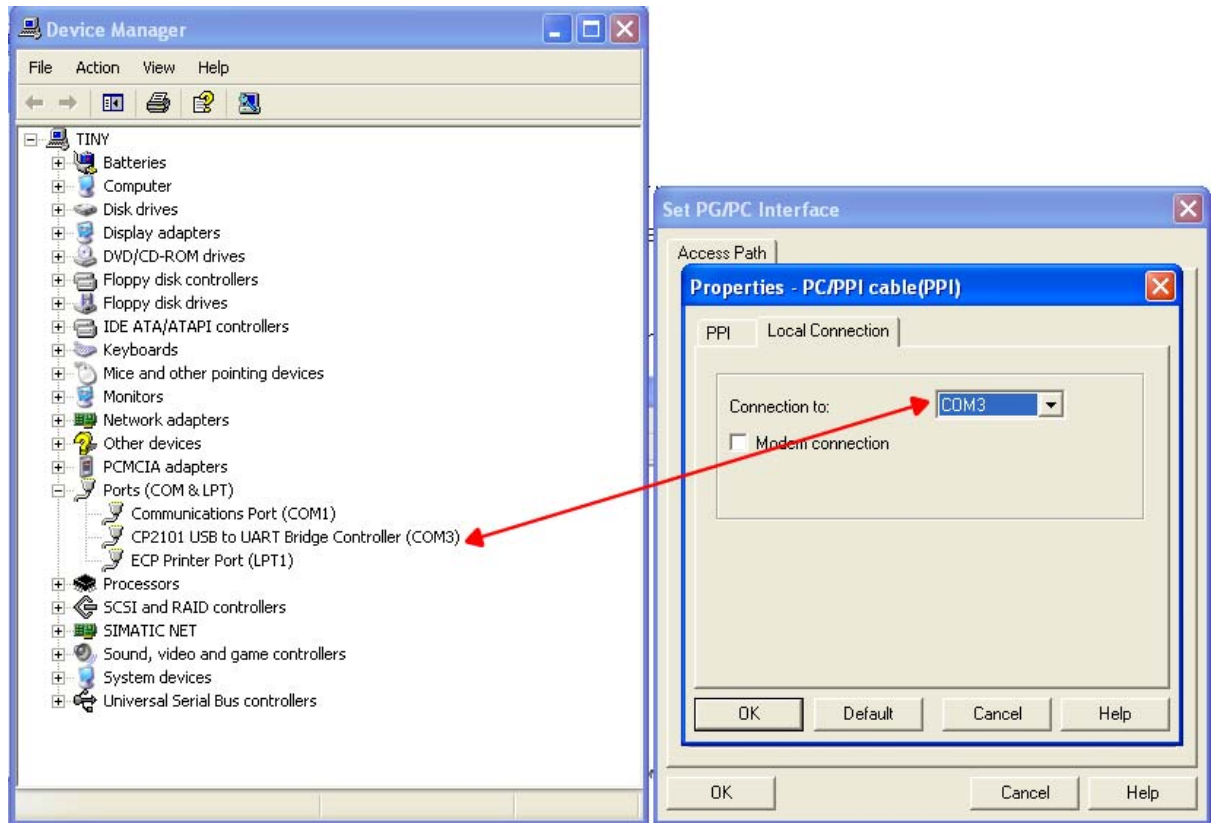


1. Double click “PC/PPI cable(PPI)” to open COM port and PPI port parameter setting dialog box.



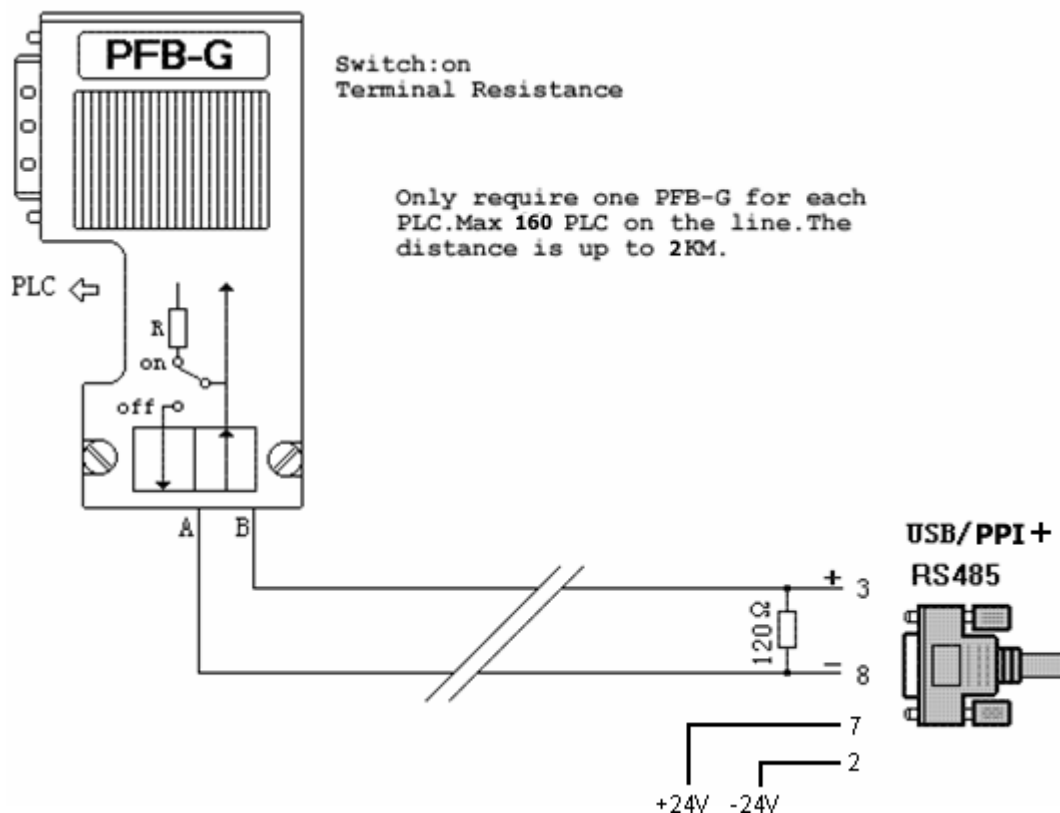
2. Click “Local Connection” to set COM port parameter, choose correctly

COM port in the device manager after install the driver, and set the transmission rate as 9600bps or 19200bps, which is both OK, then the USB/PPI+ will adapt the baud rate automatic.



## About Long Distance Communication

The largest communication distance is up to 2 kilometers (9600 bps), when external plus terminals 120 ohm resistance is needed to connect between the pin3 and pin8 of the RS485 port (DB9 Male) to eliminate signal reflection, and also a 24 VDC power between the pin2 and pin7. And a PFB-G Bus Isolator is needed to install at the end of PLC. 0.22 mm<sup>2</sup> or more shielded twisted pair is used. When the distance is over 2,000m, a RS485 repeater, can be installed in the bus for extending the distance.



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## Notes and Troubleshoot:

1. If the USB programming cable could not be detected when opening the PC, or some other outstanding issues occur, please replug it again.
2. USB to UART is plug and play USB device. When data are being transmitted, please don't disconnect it.
3. Sometimes when Windows System failures or outstanding issues when plug or unplug the USB cable occur, please restart the computer and PLC.
4. USB/PPI+ cable don't support "USB" interface in the Step7-MicroWin, so you should choose "COM" port.
5. If the COM port with "\*" symbol in the software, such as "\*COM3", it indicates this COM port is at fault, pls exit programming software and then replug the USB port or reinstall the USB driver.
6. It doesn't support 187.5Kbps baud rate.



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## **Rejection provision**

This document is to provide information, and the contents will not be noticed when revising. Because of the direct or indirect loss or errors caused by revised document, will not be the responsibility of the manufacturer.