

Application Note:

Connecting to a 2500 Series™ Processor using PLC Workshop

This application note will describe a step by step process for the three ways to connect to a 2500-CXXX with PLC Workshop. The three connection types are:

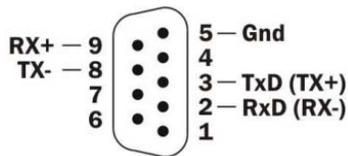
- RS-232
- USB
- Ethernet

Connecting to the RS232 port

Attach an standard 9-pin “null modem” cable from the comm. port of the PC to the RS-232 port on the PLC. A “null modem” cable swaps TxD/RxD pins on each end of the cable.

Serial Port Pinout

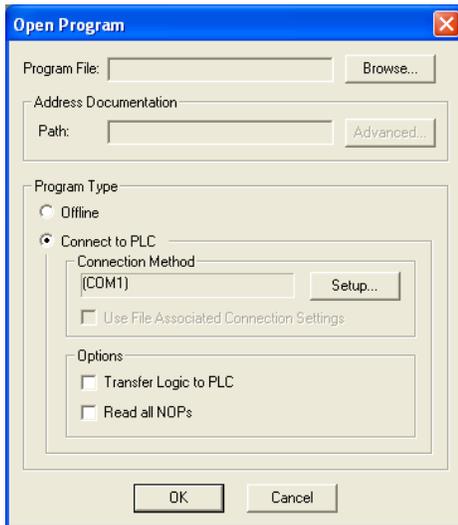
The serial port supports both the RS-232 and RS-422 electrical interface. The electrical interface in use is selected by a dipswitch setting (see Section 2.4 of the IO guide). The cable used with the Interface must connect to the correct pins used by the electrical interface. See the following pinout diagram.



For RS -232 the following pins are used:

Pin	Signal	Description
2	RxD	Received Data
3	TxD	Transmitted Data
5	GND	Signal Ground

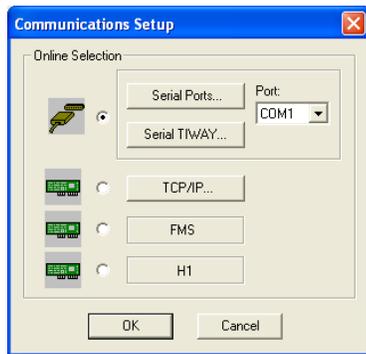
Open PLC Workshop and click on FILE – OPEN
Select CONNECT TO PLC – Select SETUP



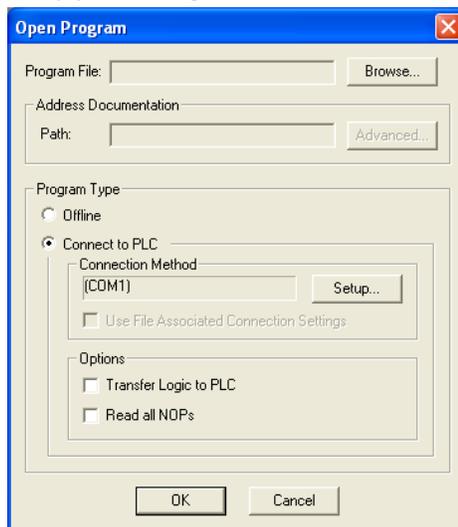
Control Technology Inc.

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Phone: +1.865.584.0440 Fax: +1.865.584.5720
www.controltechnology.com

Click the radio button for comm. ports – Select the port # - Click OK



Verify your settings and click OK



You should now be online with the PLC.

Connecting to the USB Port

The USB port connector is identical to the port you find on peripheral devices such as printers. You can connect your computer to this port using a standard USB cable. USB is often preferable to RS-232 because no user configuration or special cables are required. A special PC driver, which emulates a Windows COM port, is required in order to communicate via the USB port.

Installing the CTI USB Driver

Before you can use the USB port for programming, you must install the CTI-supplied driver on the PC. This driver provides an interface to the application program that emulates a standard COM port. Using this driver, Workshop can access the USB port in the same manner as the traditional serial port. CTI currently provides a driver for Windows XP. A driver for Windows Vista will be available at a future date.

Obtaining the Driver Installation File

You may obtain the USB driver by downloading the driver installation file from the CTI web site (www.controltechnology.com). The driver file can be stored on a removable device or copied directly to the hard drive on the PC where the driver will be installed.

Extracting the installation files

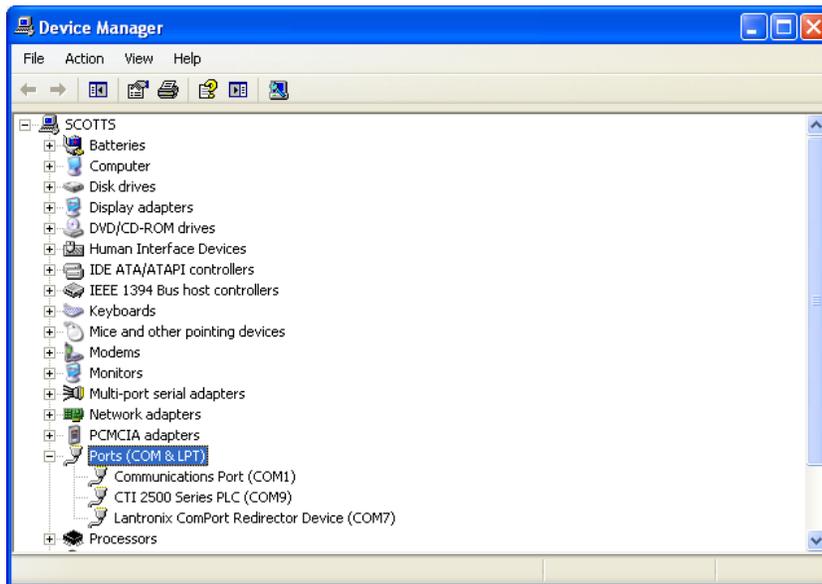
The driver installation file is a zip file that contains all the programs and files needed to install the CTI USB driver. To extract the installation elements, click on the file to initiate the extraction process. When the extraction begins, you will be able to choose the folder that will contain the extracted files.

Installing the USB driver

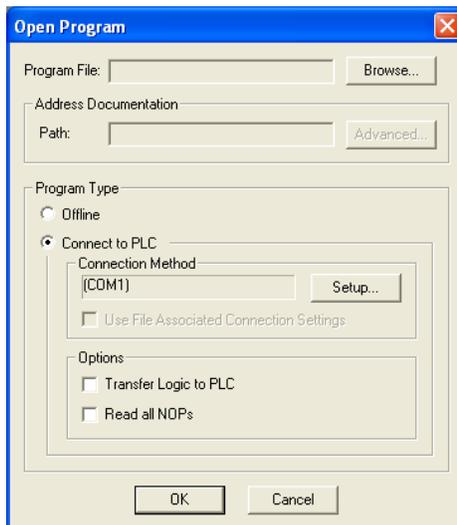
See the “Installation Instructions” file included with the extracted files to display information on installing and configuring the driver.

After installing the USB driver, connect a USB cable from the PC to the PLC. Now you can check what port number is assigned to the connection by doing the following.

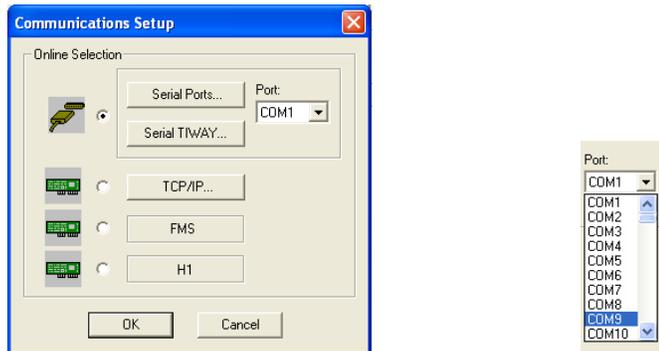
Go to Control Panel – System – Hardware tab – Device Manager – select Ports (COM & LPT). Look at what COM # the CTI 2500 Series PLC is set to. In this case it is COM9.



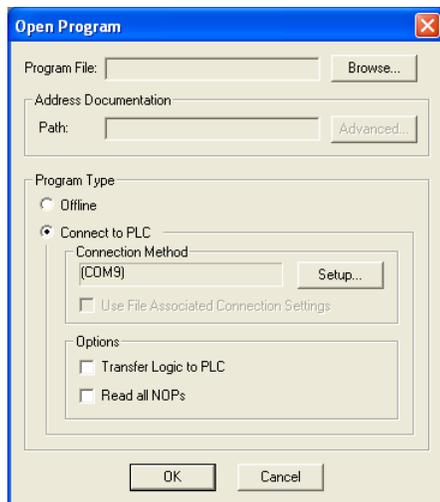
Open PLC Workshop and click on FILE – OPEN
Select CONNECT TO PLC – Select SETUP



Click the radio button for comm. ports – Select the port # - Click OK



Verify your settings and click OK



You should now be online with the PLC.

Connecting to the Ethernet Port

The CTI 2500 controller provides a means to attach the controller to a plant network via an integrated 10/100Mb Ethernet port. The port offers auto-crossover capability, which allows you to connect a standard cable directly from your PC to the Ethernet port for local programming.

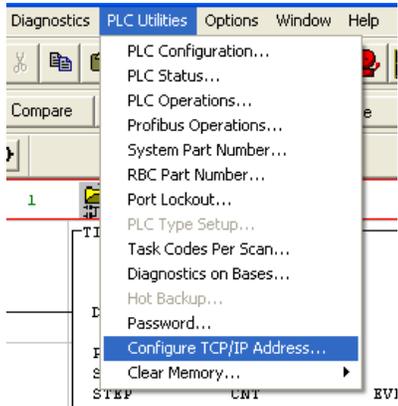
The port uses the TCP/IP protocol, which is widely supported by programming software and HMI software. Before you can use the port, you must set the IP address and related parameters. To do this, you can use Workshop Version 4.11 or greater or the CTI standalone utility program IPSET. You may obtain IPSET by downloading it from the CTI web site (<http://www.controltechnology.com/downloads/>)

Setting the IP Address with Workshop

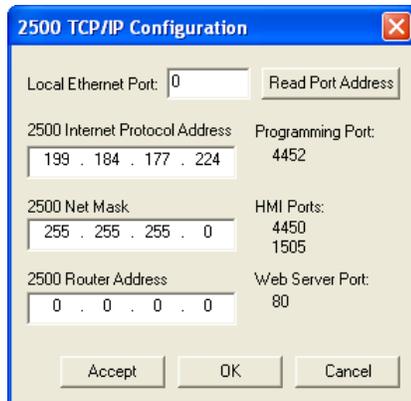
Connect to the PLC via the RS232 port or the USB port

Make sure that the PLC is in **PROGRAM Mode**

Select the PLC Utilities menu then Configure TCP/IP Address



Enter the IP Address, Subnet Mask and Router Address you want the PLC to have and click Accept



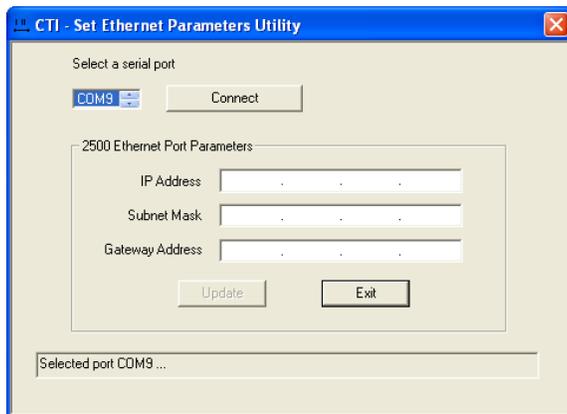
The 7 segment display on the front of the PLC should be cycling through the IP Address.

Setting the IP Address with IPSET

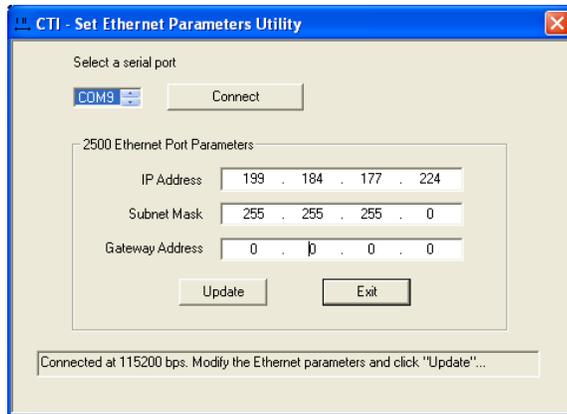
Connect to the PLC via the RS232 port or the USB port

Open the IPSET Program

Select the COM # you want to connect with and click Connect

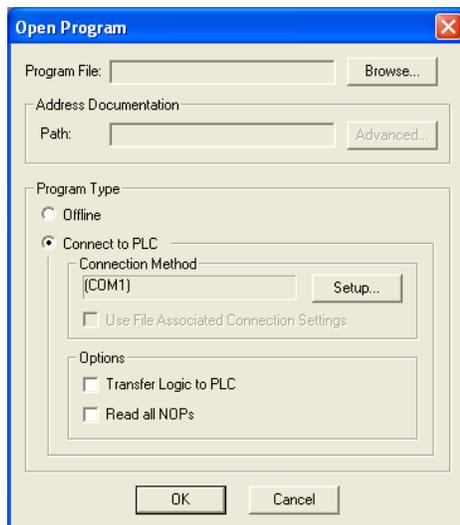


Enter the IP Address, Subnet Mask and Router Address you want the PLC to have and click Update



The 7 segment display on the front of the PLC should be cycling through the IP Address.

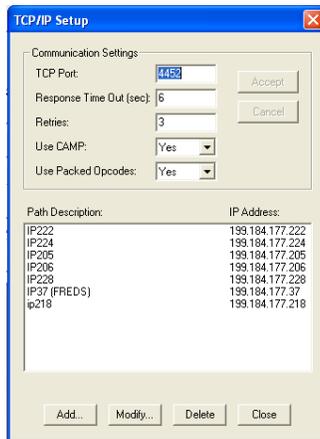
Now that the PLC has the IP address you want it's time to connect to the Ethernet port with Workshop.
Open PLC Workshop and click on FILE – OPEN
Select CONNECT TO PLC – Select SETUP



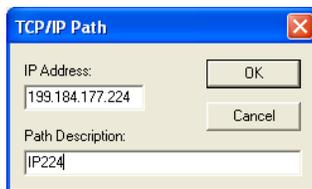
Click the radio button beside TCP/IP and then click the TCP/IP button



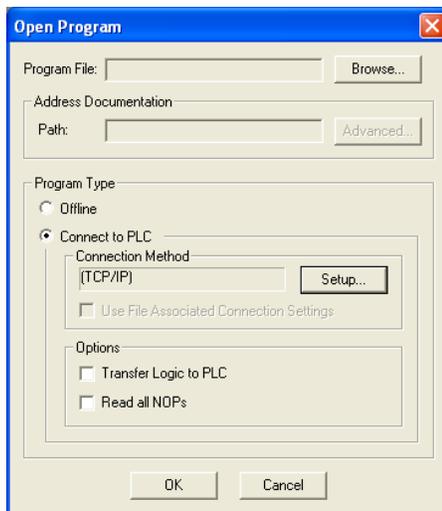
This is the TCP/IP Setup Window. Change TCP PORT to 4452 and click Accept. Click on Add... (NOTE: You can see that there are already some IP addresses in my setup. If you have previously setup your IP address it will already be in this list.)



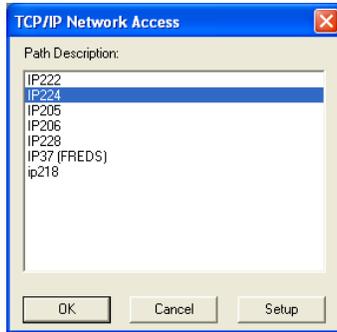
Enter the IP address and the path description and Click OK. The Path Description is just a text field used as a device identifier.



Select Close on the TCP Setup window
Select OK on the Communications Setup Window
Verify your settings and click OK



This window is where you select what address to connect to



Select the device you want to connect to and click OK
You should now be online with the PLC.