TECHTIP 40801

Using the Alternate IP Address in Windows® XP for easy connection to IOtech Ethernet-based Data Acquisition Systems

INTRODUCTION

There are many users of IOtech's portable Ethernet-based data acquisition systems who frequently switch between connecting their laptop computer to their company's Ethernet-based network and connecting their computer to an IOtech portable Ethernet-based data acquisition system. This is especially common with field service personnel and among applications such as in-vehicle testing. These types of applications typically present the need to connect a laptop computer to the company network for short periods of time to perform such tasks as sending and receiving email and transferring critical test data to a centralized data storage location on the network. The same computer is also used for portable data acquisition applications away from the office location.

This tech tip shows how to utilize the alternate IP configuration in Windows® XP to make switching between your network and Ethernet data acquisition device easier.
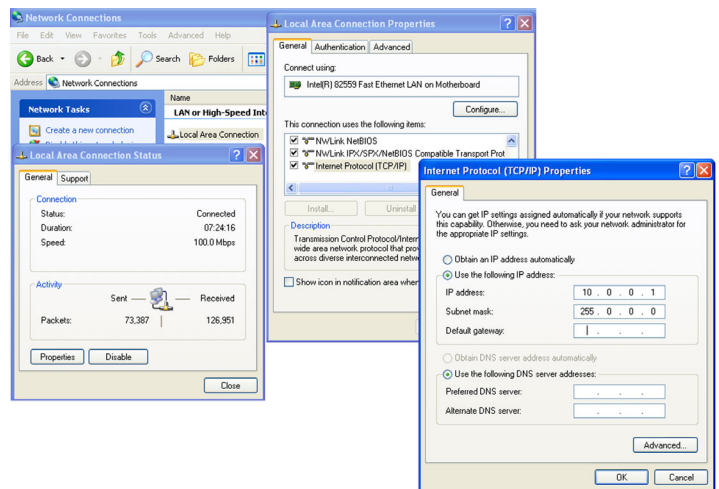
DISCUSSION

Let's review how to configure the PC Ethernet connection for point-to-point operation

In order to configure your computer to communicate point-to-point with an IOtech Ethernet data acquisition device such as the WaveBook/516E™ or the DaqBook/2000® series, you must first set the IP range of your computer to the same IP address range of the data acquisitions device. To do this, you are instructed to set the computer IP address to 10.0.0.1 with a subnet mask of 255.0.0.0 as shown below. These settings are accessible under the Windows XP control panel by selecting:

• Network Connections
• Local Area Connections
• Press the "Properties" button

• Highlight "Internet Protocol (TCP/IP)" and press the "Properties" button.
• Select "Use the following IP address"
• Enter 10.0.0.1 for the IP
• Enter 255.0.0.0 for the subnet mask
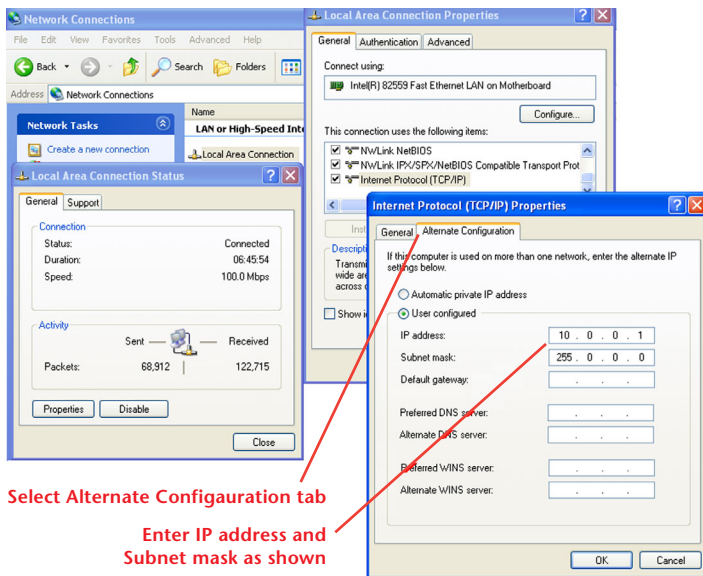• Close all open configuration windows using OK or CLOSE

The network connection configuration screen in Windows XP being configured to communicate with an IOtech Ethernet-based data acquisition system.

Users who frequently switch between connecting to the company network and connecting to data acquisition equipment using the same Ethernet port would normally be required to change their computer IP address settings each time they change from one to the other. Most DHCP based company networks will require that the above IP configuration be set to "Obtain an IP Address Automatically" in order for your computer to be correctly configured to log onto the company network.

Using the Windows® XP alternate IP setting

Windows XP users have the ability to configure a second IP address setting under the control panel which will allow Windows to pick the correct computer IP setting based on the device that it finds connected to the Ethernet port. Under this configuration your primary IP setting is configured for "Obtain IP Address Automatically" for connection to your company Network, and your secondary IP setting is configured for 10.0.0.1 with a subnet mask of 255.0.0.0 for connection to the IOtech Ethernet data acquisition system.

Use the following screen shots to properly configure the "Alternate Configuration" tab and the "General" tab located under the Windows XP network configuration screen located in the Windows XP control panel. This is the same configuration screen that we reviewed earlier for point-to-point configurations.

Select Alternate Configauration tab

Enter IP address and Subnet mask as shown

Configure the settings under the "Alternate Configuration" tab for proper connection to your IOtech Ethernet-based data acquisition device. The screen above shows the default configuration for connecting to IOtech Ethernet-based WaveBook and DaqBook systems.
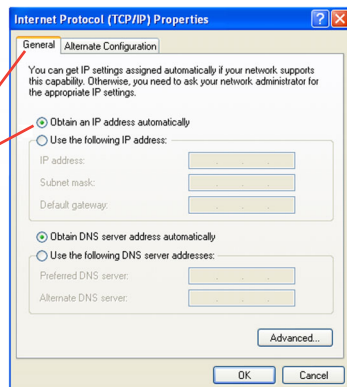

Configure the settings under the General tab as required to log onto your company network

Configure the settings under the "General" tab for proper connection to your company network. The screen above shows the most common configuration for connecting to DHCP networks.

Once you have this configuration in place your computer will look for the attached device on your Ethernet port during "Boot Up" or during a Windows "Log On" operation. If it sees a powered on IOtech Ethernet data acquisition system connected to the Ethernet port, it will automatically switch to using the secondary IP address. If the computer sees a DHCP network connected to the Ethernet port, it will use the primary IP configuration and negotiate an IP address with your company network as required.

SCENARIOS

- If you are in the office and you want to check your email: Plug in the Ethernet cable for your company's network connection into your computer and either power up your computer and log onto the network as you normally do, or if your computer is already powered on, perform a Windows "Log Off" and then a "Log On" and log onto your company network as you normally do.

- If you are working in the field with an IOtech portable Ethernet-based data acquisition system: Plug in the Ethernet cable from the data acquisition system into your computer and make sure that the data acquisition system is powered on. Then either power up your computer and bypass your network log on screens, or if your computer is already powered on, perform a "Log Off" and then a "Log On" and bypass your network logon screens.

Your computer is now properly configured to communicate with the data acquisition system.