



# Siemens CP1434-TCP User Manual

For all versions of the Simatic 505 Ethernet driver  
10/14/2003 Document v1.01

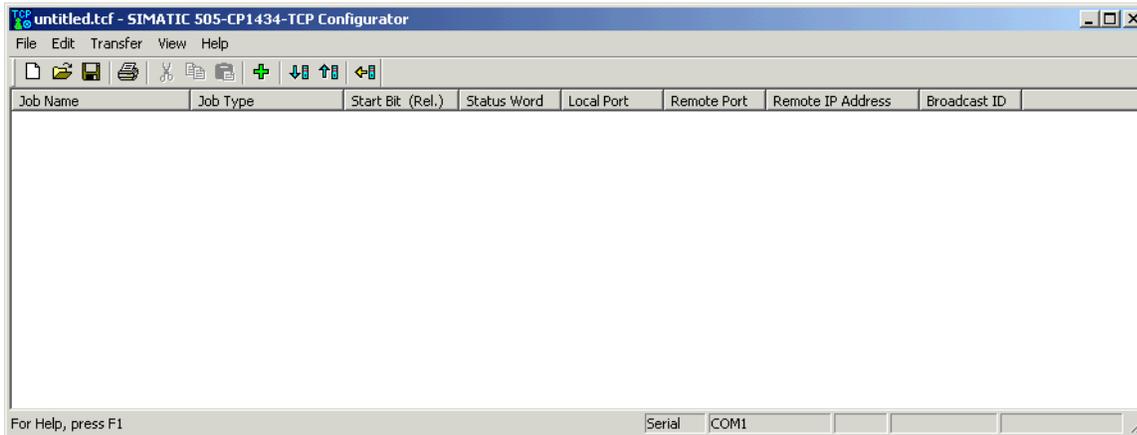
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## Overview

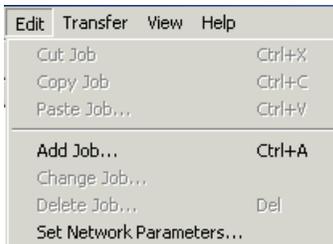
The following document is intended to show the basic process required to setup the Siemens 505-CP1434-TCP card to allow communications from our Simatic 505 Ethernet driver.

### *Configuring the Device*

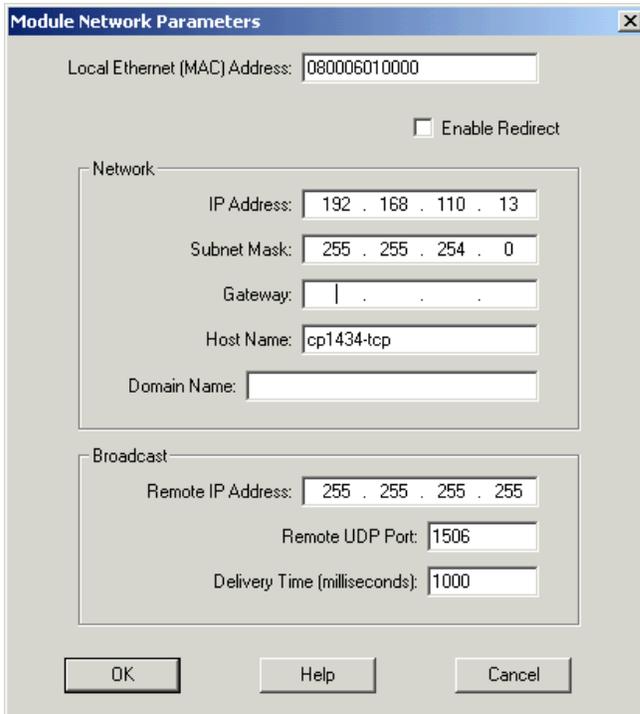
You will need to install the CP1434 configuration utility and start it.



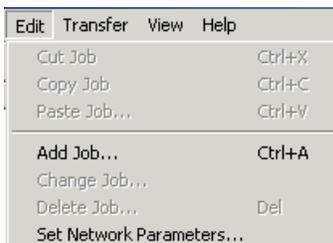
By default the utility opens a new configuration file. First we want to set the parameters for the network card by clicking on **Edit | Set Network Parameters...**



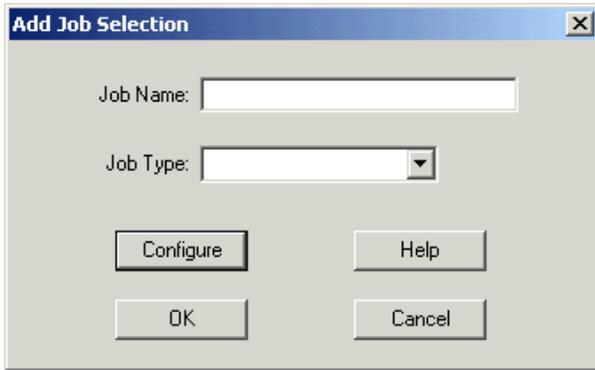
In the Module Network Parameters Window, set the IP address for the card and the Subnet Mask. If required, set the Gateway Address as well. For our purposes we will not set the Broadcast settings. Click **OK** when done.



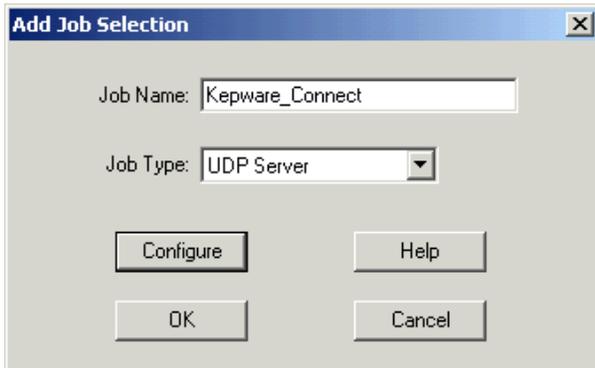
In the Configuration Utility menu select **Edit | Add Job...**



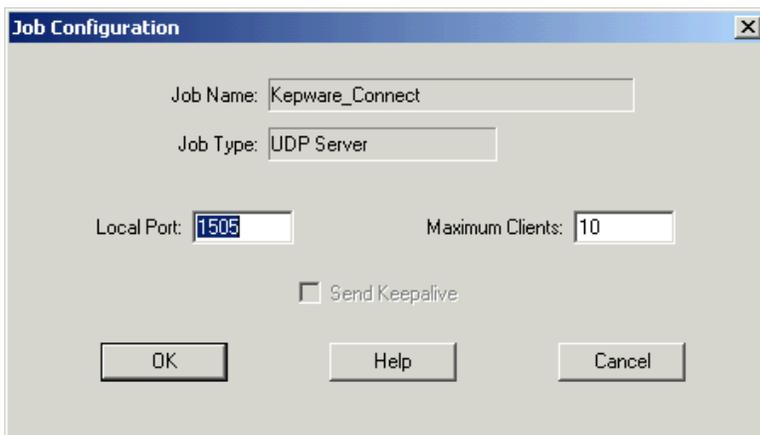
You will get the Add Job Selection dialog box.



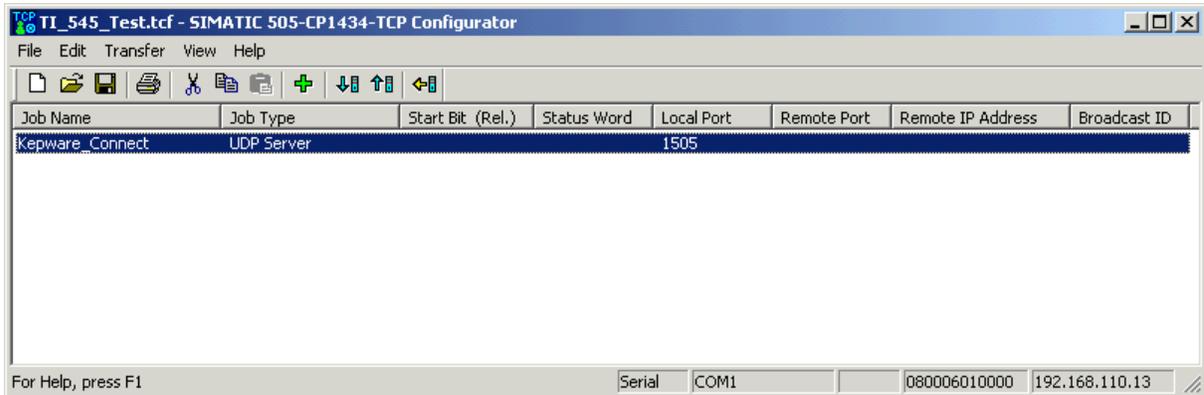
Enter a Job Name and select a Job Type of UDP Server from the drop down menu. Next, click the **Configure** button.



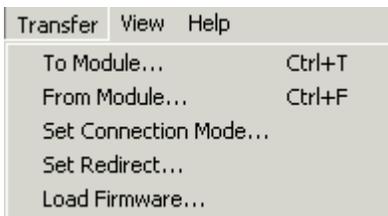
Next, enter the Local TCP/UDP port you want your applications to connect to and the maximum number of connections you will allow to the card. This Port number is the number you will use when setting up the Simatic 505 Ethernet driver in KepserverEx. When you have finished, click **OK**, and then click **OK** in the Add Job Selection dialog...



You should now see the job that you created in the Job Configuration job name space.

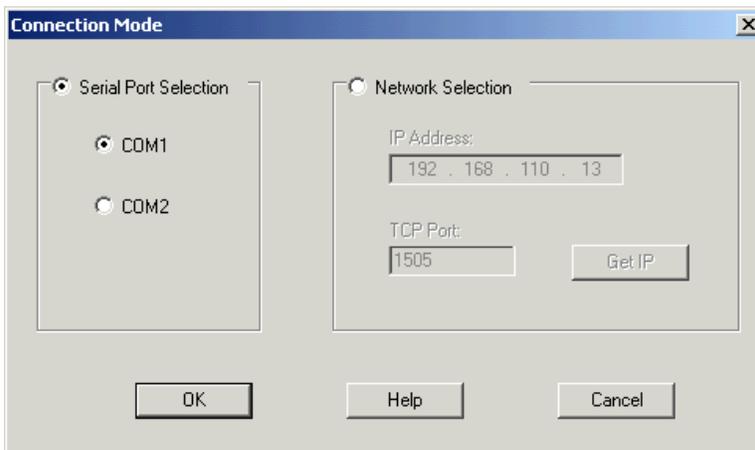


Now you need to transfer the Configuration to the card. To do this you will first have to establish the method by which you connect to the module to transfer it. To do this, click on **Transfer | Set Connection Mode...**



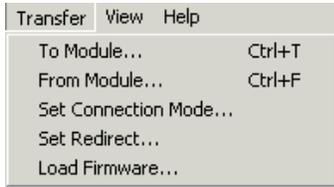
In the Connection Mode dialog, select whether you are connecting via serial port or IP address. If this is the first time you are configuring the card then you will have to connect serially to the programming port with a null modem cable. Once you have selected your connection click **OK** to close the dialog.

**Note:** Once you have configured the module you can connect to it via Ethernet if you need to do more configurations.

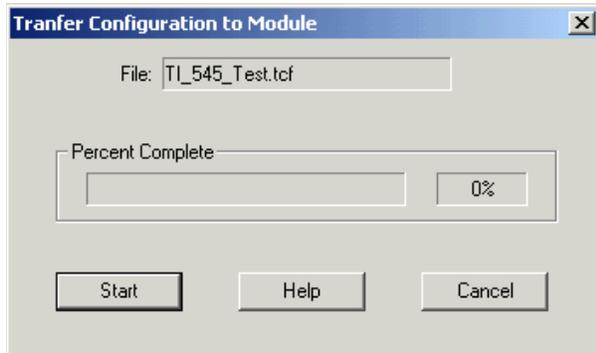


Click on **File | Save** in the main menu to save your configuration file.

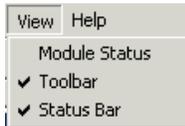
Next you will need to load the configuration to the Ethernet card. Select **Transfer | To Module...** from the Configurator main menu.



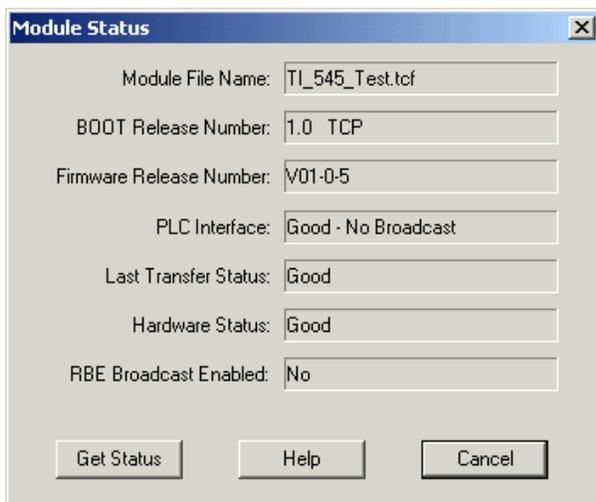
In the transfer dialog box, verify that the configuration file to transfer is the one that you created and click the **Start** button. The dialog box will close when the transfer is complete.



Once you have transferred the configuration, you will want to verify the transfer by going to **View | Module Status** in the Configurator Main menu.



When the dialog box opens you should see the configuration that you have loaded. If not, try pressing the **Get Status** button. If you still do not see good status on the module check the error lights on the card itself and check the manual for trouble shooting tips.

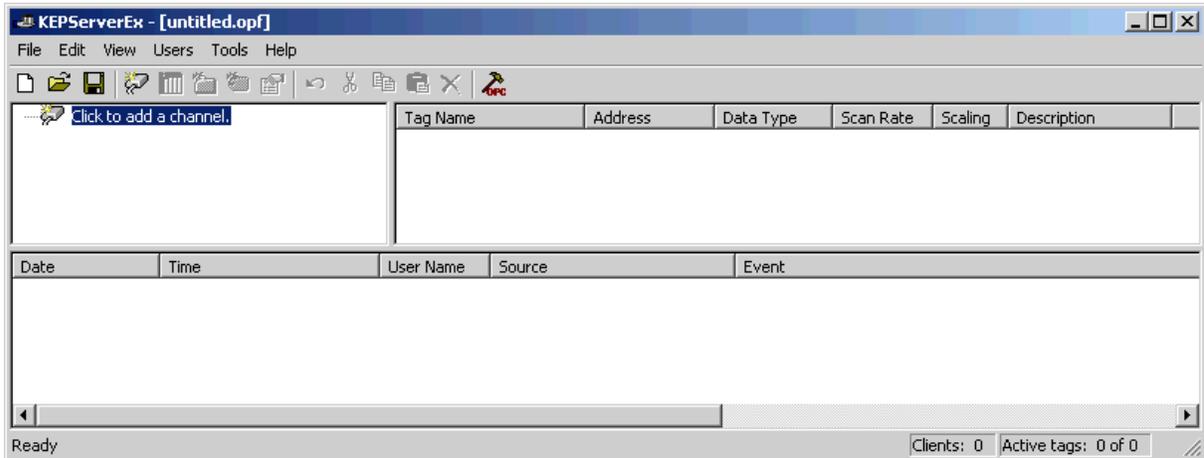


## Communicating with the KepserverEx

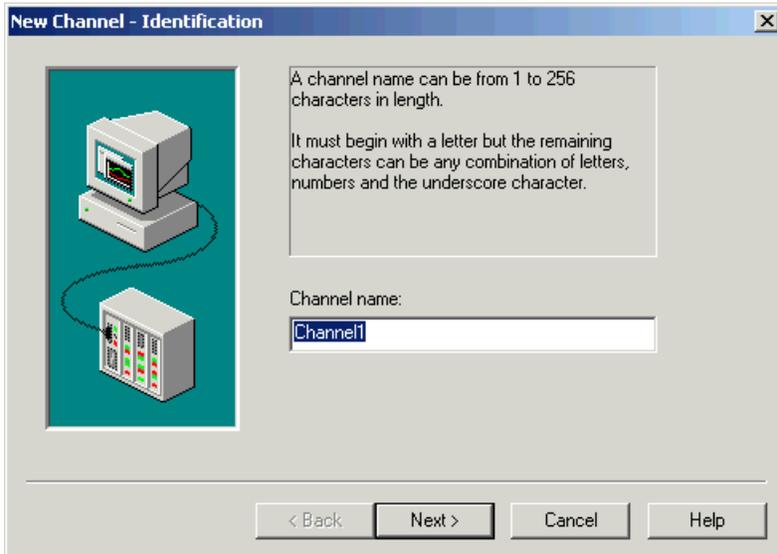
Now that you have configured the CP1434-TCP card, you will want to configure a server project to communicate with it. The following section explains how to do that. You can find more information on the different parameters in the KepserverEx and Simatic 505 Ethernet Driver help files.

### Create a Channel

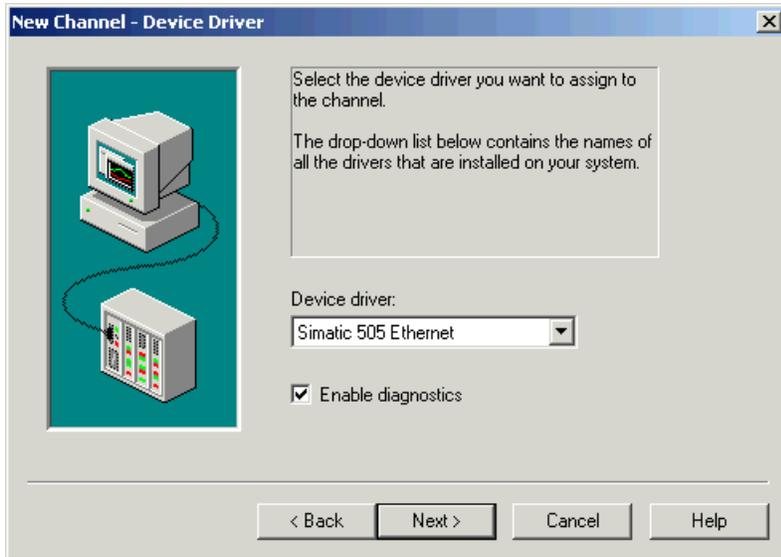
Start the server and add a channel. The channel represents the communications connection to the PLC or PLC's.



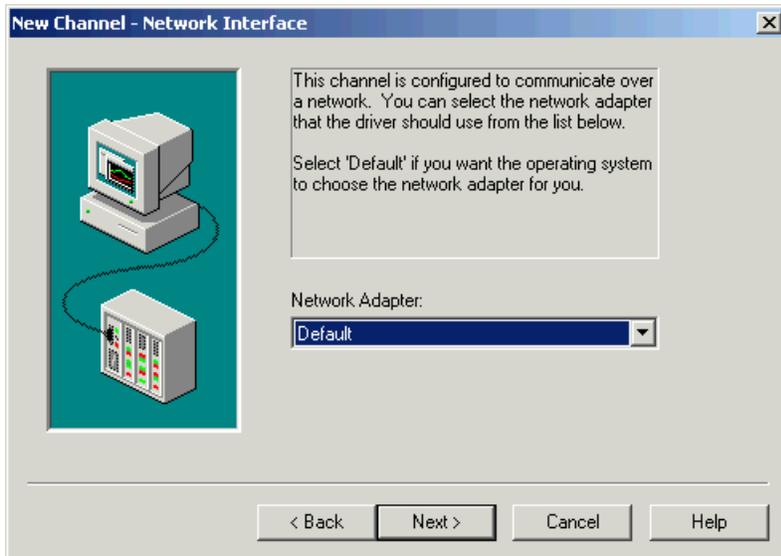
Add a new channel by selecting “Click to add a channel” to start the Add Channel Wizard. On the Channel Wizard page you can name the channel or click “Next” to accept the default.



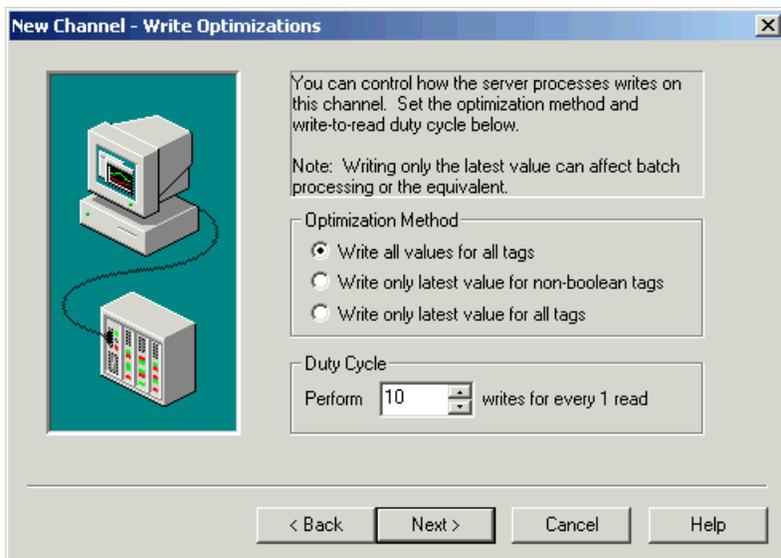
Next, you will select the driver that will be used on this channel. Click **Next** after selecting the driver.



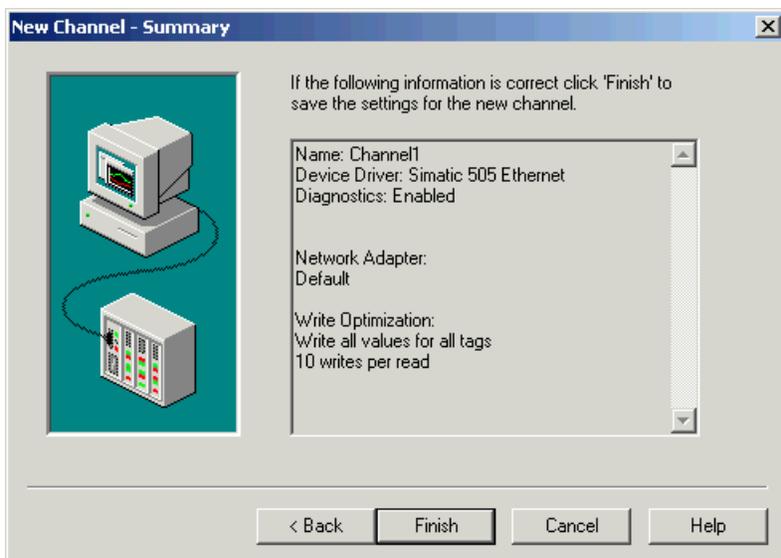
Some PC's will have two network cards, one for the normal LAN and one for the PLC's. If you have more than one card you will want to select the card that is connected to your PLC LAN, otherwise click **Next** to continue.



If you are doing a lot of writes to the PLC you may need to do some optimization for it. See the help file for more details. For now click **Next** to continue.

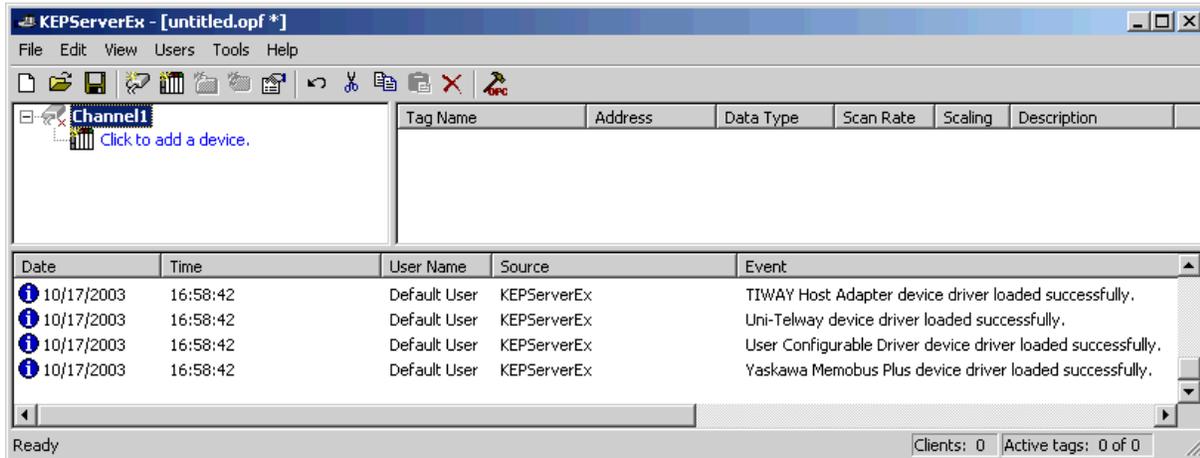


Verify in the summary page, the settings you have selected. You can go back and change them at any time later so click **Finish** and continue.

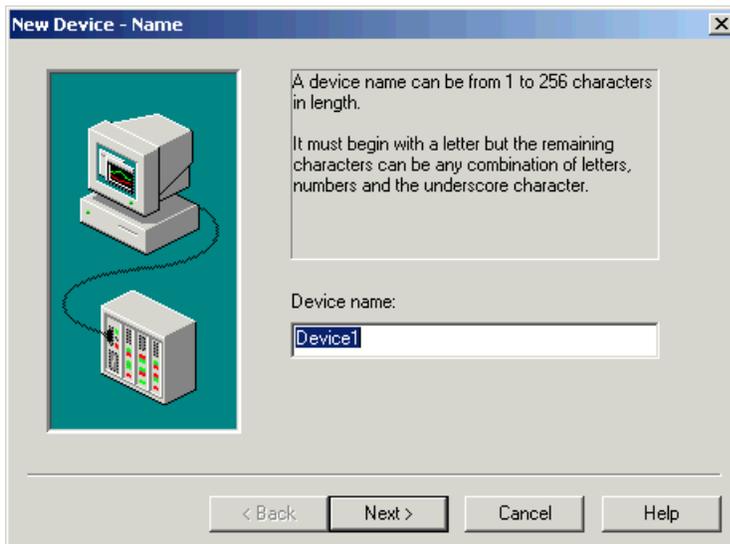


## Create a Device

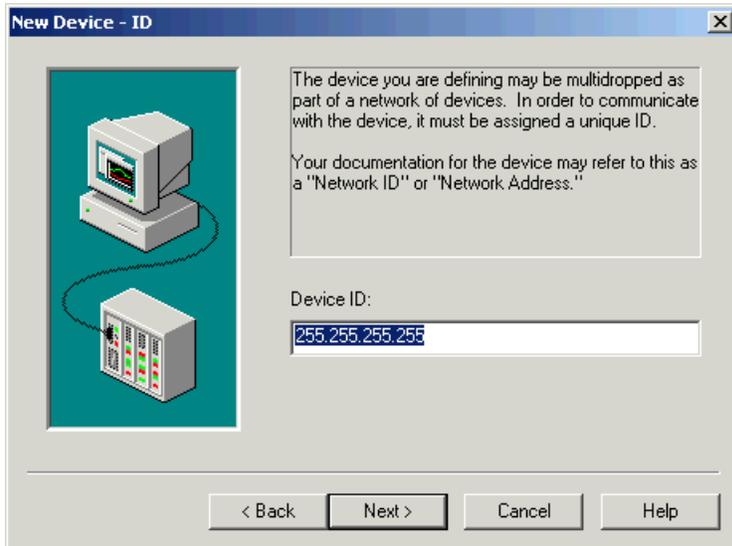
Now that you have created the communications interface, you will need to add a device to it. Select “**Click to add a device**”.



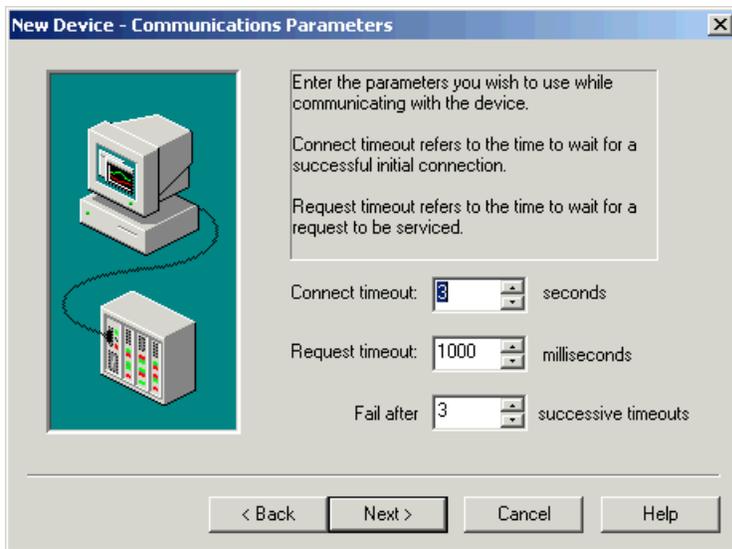
The first page of the Device Wizard is like that for the channel. Enter a name and click **Next** to continue.



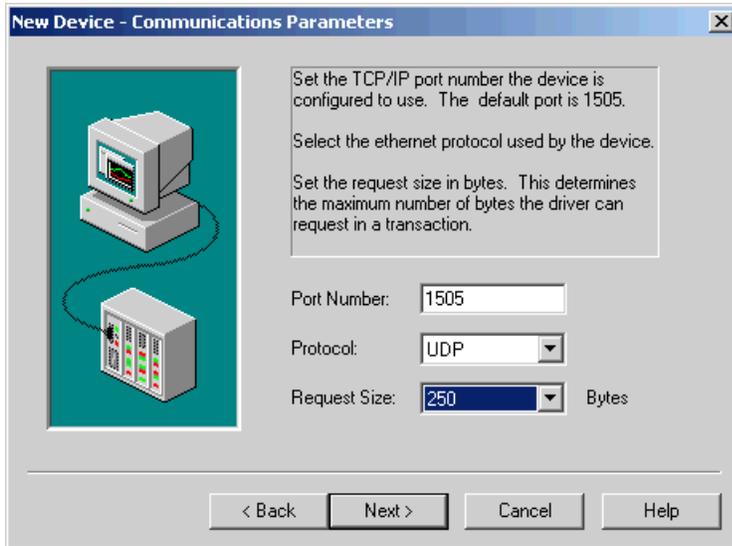
Add the IP address of the module you configured and click **Next** to continue.



For now, click **Next** to accept the default connection and timeout settings. You can change these settings later if you need to. See the help file for details on what they do.

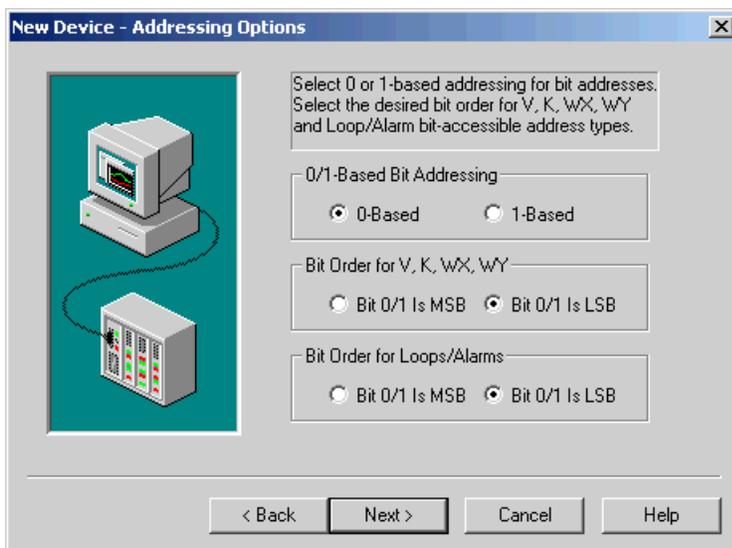


Enter the Port number you configured in the UDP Server Job in the CP1434. We have to connect via UDP as well. Lastly, set the Maximum size of Packet for each read request sent to the PLC. If you selected the defaults when configuring the card then the Default parameters here should match. Click **Next** to continue.



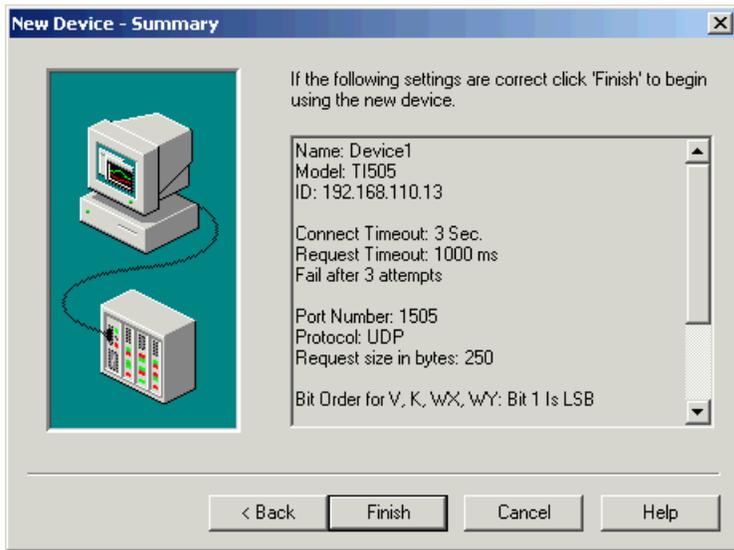
The dialog box titled "New Device - Communications Parameters" features a teal background on the left with an illustration of a computer monitor and a PLC connected by a cable. On the right, there are three text boxes with instructions: "Set the TCP/IP port number the device is configured to use. The default port is 1505.", "Select the ethernet protocol used by the device.", and "Set the request size in bytes. This determines the maximum number of bytes the driver can request in a transaction." Below these are three input fields: "Port Number" with the value "1505", "Protocol" with a dropdown menu set to "UDP", and "Request Size" with a dropdown menu set to "250" and the unit "Bytes". At the bottom, there are four buttons: "< Back", "Next >", "Cancel", and "Help".

This page allows you to configure the driver to present the data in different ways. Click **Next** to accept the defaults and continue (you can go back and change later if you need to).



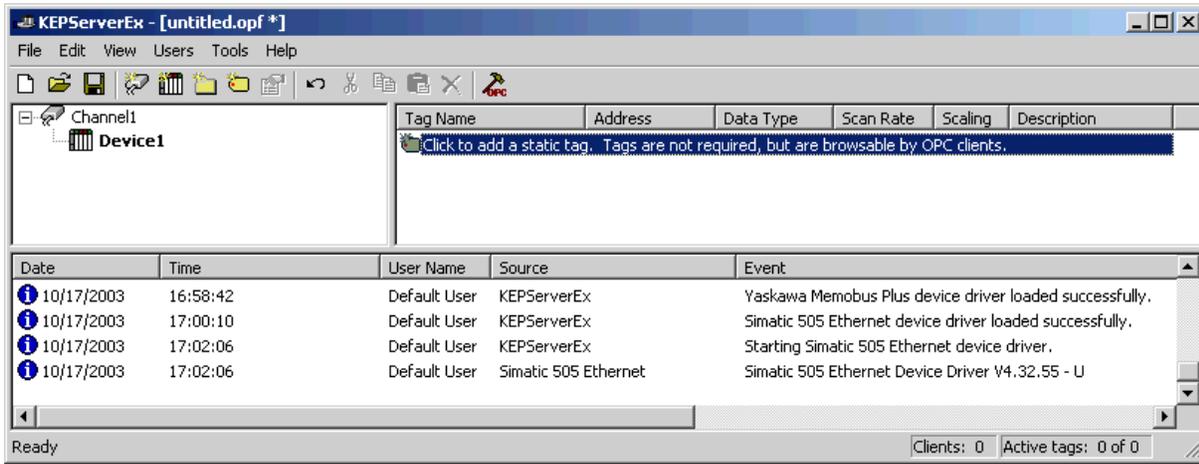
The dialog box titled "New Device - Addressing Options" features a teal background on the left with an illustration of a computer monitor and a PLC connected by a cable. On the right, there are three text boxes with instructions: "Select 0 or 1-based addressing for bit addresses.", "Select the desired bit order for V, K, WX, WY and Loop/Alarm bit-accessible address types.", and "Select the desired bit order for V, K, WX, WY and Loop/Alarm bit-accessible address types." Below these are three groups of radio buttons: "0/1-Based Bit Addressing" with "0-Based" selected, "Bit Order for V, K, WX, WY" with "Bit 0/1 Is LSB" selected, and "Bit Order for Loops/Alarms" with "Bit 0/1 Is LSB" selected. At the bottom, there are four buttons: "< Back", "Next >", "Cancel", and "Help".

Verify your selections and click **Next** to continue.

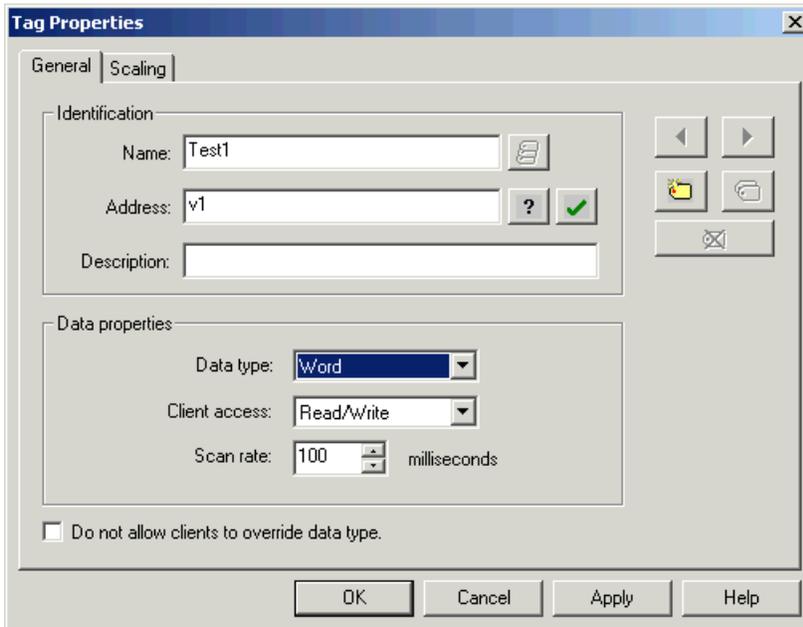


## Create a Tag

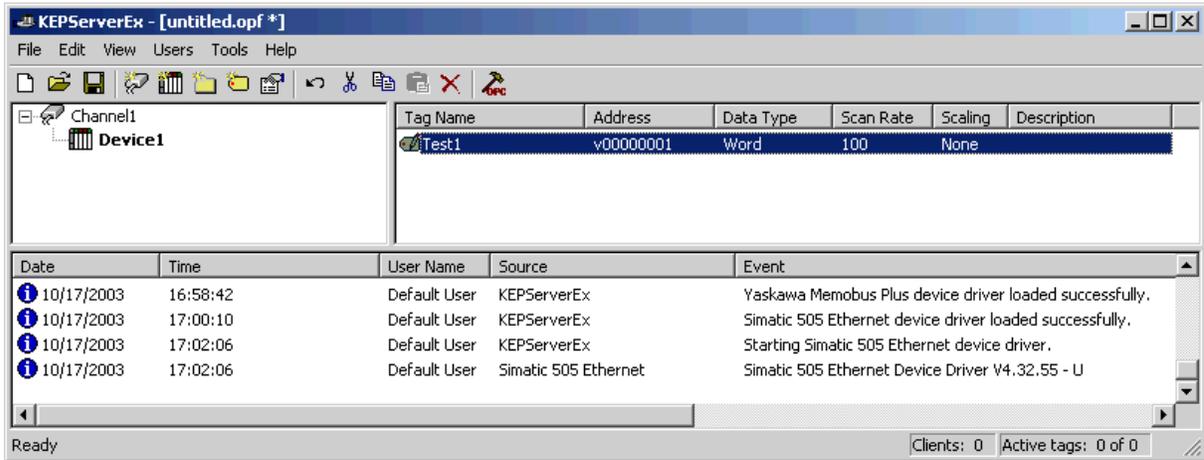
To read data from the PLC you will need to access a tag from the server using a client application. In this example we will add a tag in the server and browse for it in our OPC client.



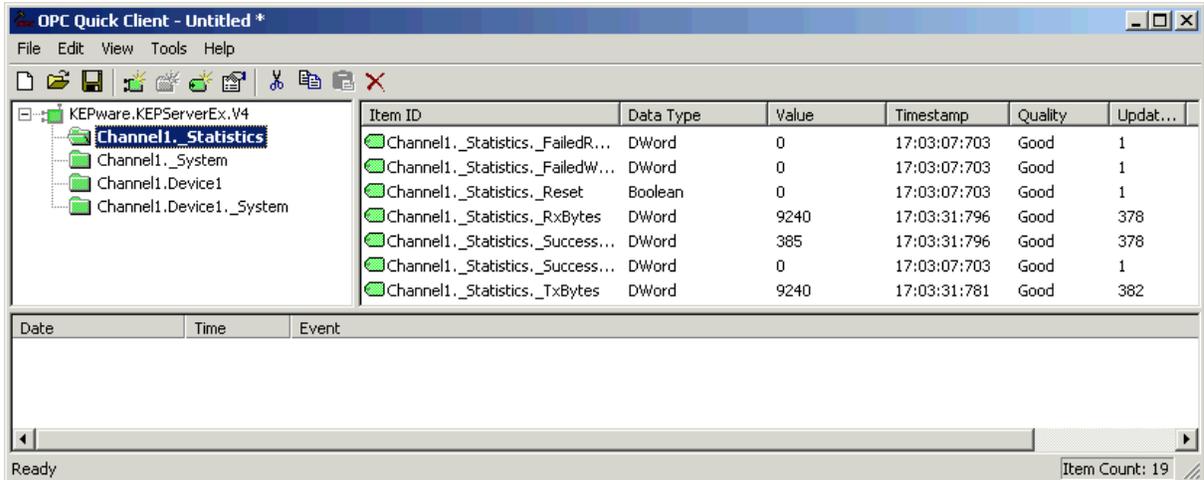
Enter a tag name and then select an address in the PLC. See the help file for valid addresses. You can select the data type or leave it at default for the server to assign. Click **OK** when done to add the tag to the server.



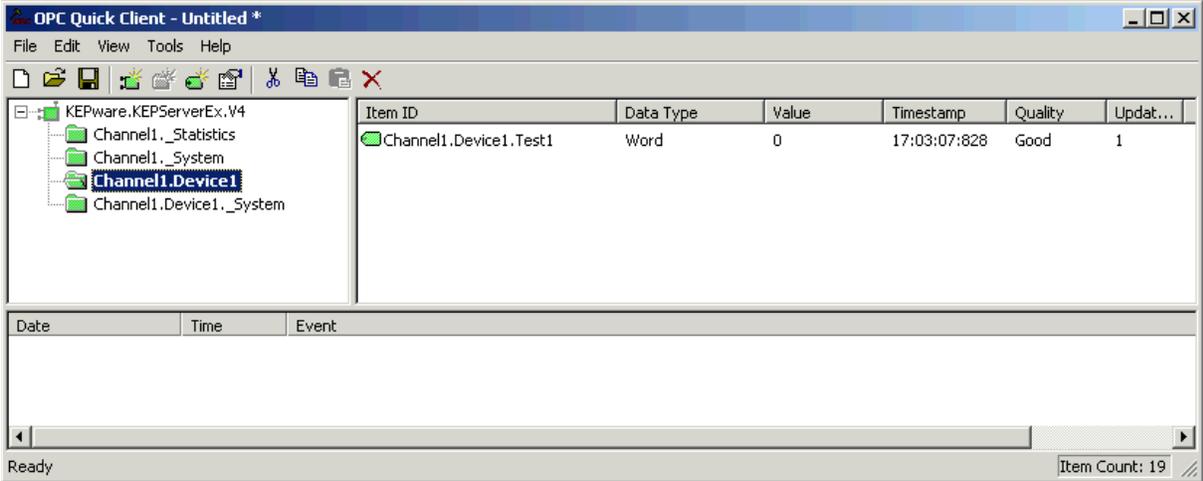
You should now see your tag in the server. You will still need to connect a client to the server to see the data and verify that you are communicating. Our OPC Quick Client is a good tool for this.



In the server, launch the OPC Quick Client by selecting the  button from the menu. It will automatically build a client project based on the server project. You will notice that it automatically sets the focus to the OPC group that has active items in it. In our example, the first group is the Statistics tags which are created because we enabled diagnostics in the project. These are system level tags and will always show a good quality. A good sign that you are communicating is if the successful read counter is going up. The best test is to select the group containing your device tag. In our example this is group Channel1.Device1.



As you can see, when we selected the group in our client project we see the tag we created and it has a value and the quality is good. If the quality was bad that would indicate that we were not getting good communications with the PLC.



At this point you should be getting good data.