

Using the Digi Etherlite with ServoCam® DNC

Introduction

This document describes the steps that need to be taken to configure a “Digi Etherlite”, Digi part number #70001427. For reference, these units can be purchased from “cdw.com”.

For this process, you will need to obtain a ‘static IP address’ from your Ethernet network administrator. A ‘static’ address is one that will always be assigned to this device. In contrast, ‘DHCP’ (dynamic) would assign only a temporary IP address. It is possible to have the DHCP server set aside an address that it will not use for temporary assignments, and so, it is possible to use static addresses in a network that typically uses only dynamic addresses.

Note on use of Digi Etherlite with ServoCam® DNC Server Software

The DNC server (at least as of version 1.10c) requires that the Etherlite be powered up, and fully functional **before** the server software starts. This is due to the fact that the DNC Server tries to open the communications channels exactly once. If the channel fails to open, it does not re-try. So, if there are troubles with the communications using the Etherlite, the first thing to try is to power off the Etherlite, stop the DNC Server, re-power the Etherlite, wait three minutes, then start the DNC Server.

Note: the DNC Server software runs as a ‘process’ on the computer, and so it will start anytime the computer is turned on. There are two ways to stop the DNC Server: 1) Turn the power off to the server PC, and 2) Use the ‘DNC Console’ application to access the ‘Stop Server’ command button.

Set-up and Installation

This remainder of this document contains three (3) primary sections:

Wiring to the Etherlite

Setting the IP address into the Etherlite

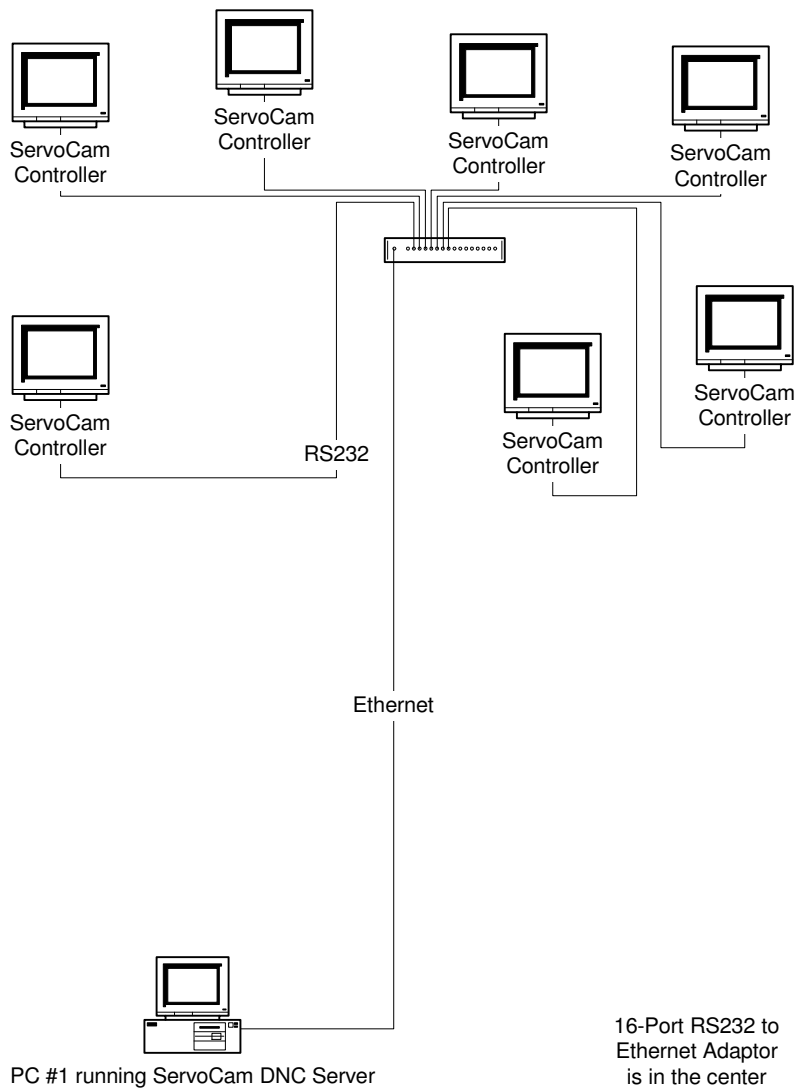
Installing Software Drivers to communicate with the Etherlite

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Wiring to the Etherlite

The RS232 wire connections into the Etherlite are based on a Digi specific pin-out of a standard RJ-style CAT5 ethernet cable. Please use the following information when connecting to the Etherlite.

For best results, the Etherlite device should be placed as close to the ServoCam® controllers as possible. This will provide the shortest wire lengths for the RS232 communications. The shorter the wire runs on RS232, the higher the communication speed that can be used. Typically the Ethernet connection can be extended using a 'hub' or 'switch' without loss of speed on that type of network. So, the typical best installation will have short RS232 lines, and whatever length of Ethernet that is required to get back to the server PC:



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Wire runs to each machine:

From each machine, you will need an “RJ CAT5 cable, straight through”.

<p>This is a typical Ethernet cable that should already be a familiar sight at any computer network installation.</p> <p>Standard 10/100 base-T straight through wiring: (RJpin numbers are left to right, looking at plug pin end, with pins down, and latch up.)</p>	RJpin	Wire Color
	1	ORG/WHT
	2	ORG
	3	GRN/WHT
	4	BLU
	5	BLU/WHT
	6	GRN
	7	BRN/WHT
	8	BRN

At each ServoCam® Controlled machine (DB9 to RJ8 converters):

At the ServoCam® Controller end of the wire run, you will need a converter that interfaces to the Cat5 cable. This is to provide a DB9-male connection that plugs into the DB9-female connection coming from the Sercocam® Controller. From ‘www.digikey.com’ the male converters are part number ‘046-0000-ND’ and the female converters are part number ‘046-0001-ND’.

RJ jack: thumb tab down (Pins on top side), pins left to right are 1 through 8:

Digi Pin	Function	DB9-RJ pin	DB9-RJ wire color	male DB9 pin [Digikey 046-0000-ND] (used at Sercocam Controller end of the run)	female DB9 pin [Digikey 046-0001-ND] (could be used to take the server end of the cable run directly into a laptop or PC serial port instead of into the Etherlite)
1	RTS (out)	1	blue	7	7
2	DSR (in)	2	orange	6	6
3	DCD (in)	3	black	1	1
4	RxD (in)	4	red	2	2
5	TxD (out)	5	green	3	3
6	GND	6	yellow	5	5
7	DTR (out)	7	brown	4	4
8	CTS (in)	8	white	8	8

Ethernet Connection to the Etherlite:

Network Option:

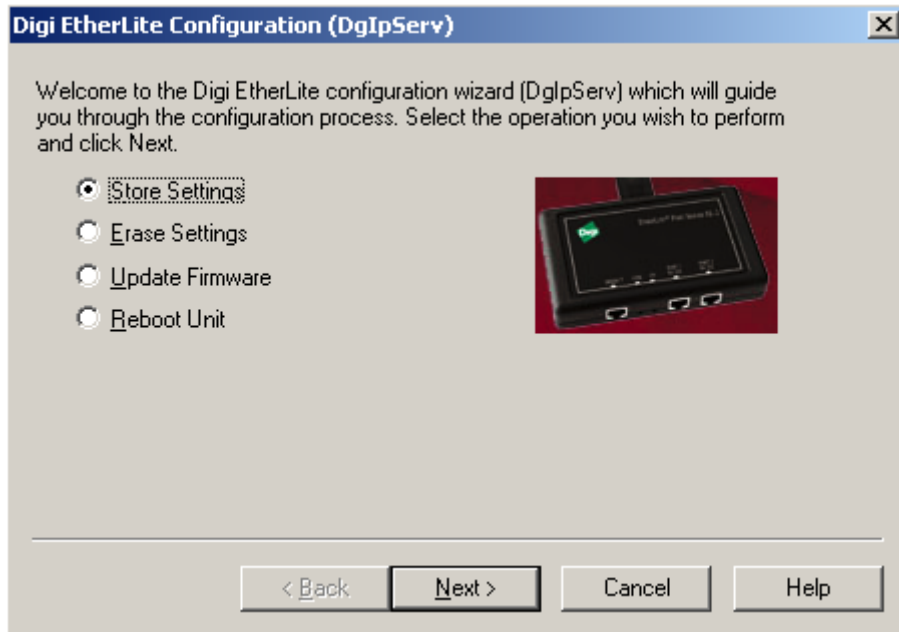
From the main company network, we will need one Ethernet connection (either 10 or 100 Mps) to the interface box, so that the computer that is serving the files is on that same network as the Etherlite. The computer that serves the files can be any computer on the company Ethernet network.

Direct PC Ethernet Connection Option:

It is possible to connect the Etherlite directly to a PC or laptop. In that case, a ‘crossover’ Ethernet cable should be used.

Setting the IP address into the Etherlite

1) Find the CD in Windows explorer, browse to the folder “software\windows\etherscsi\dgipserv”, and locate the program called “DgIpServ.exe”. Double click on the file name to launch the program. The following screen will appear:



With the ‘Store Settings’ button highlighted, click on the ‘Next’ button to proceed to the next step.

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2) Enter the MAC address that is found on the label on the device.

(THE NUMBERS SHOWN IN THIS SCREEN ARE FOR EXAMPLE ONLY).

A screenshot of a software dialog box titled "MAC Address". The dialog box has a blue title bar with a close button (X) on the right. The main area contains the following text: "Enter the EtherLite's MAC address in the Ethernet Address fields. You can find the address on the white sticker attached to the back or the bottom of the EtherLite. An example of a MAC address is 00 A0 E7 21 CB 90." Below this text, the label "Ethernet address:" is followed by six input fields, each containing a two-digit hexadecimal value: "00", "A0", "E7", "23", "88", and "32", separated by colons. At the bottom of the dialog box, there are four buttons: "< Back", "Next >", "Cancel", and "Help".

With the value entered, click on the 'Next' button to proceed to the next step.

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3) Enter the IP address that has been given to this device.

IP Address, Subnet, and Gateway

Enter the Internet Protocol (IP) settings you wish to assign to the EtherLite. You can obtain the IP settings from your network administrator or Internet service provider.

IP address: 192 . 168 . 1 . 102

Subnet mask: 255 . 255 . 0 . 0

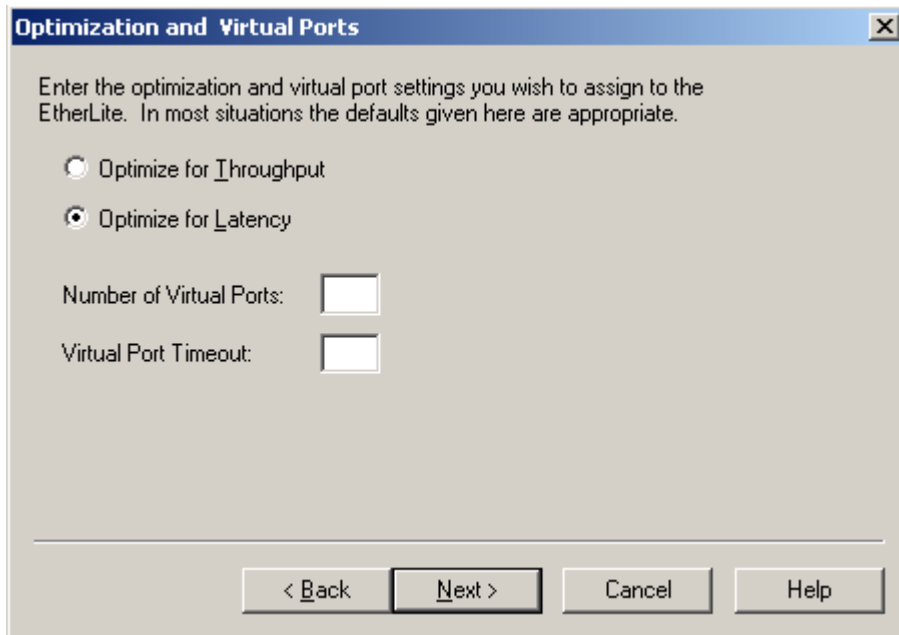
Default gateway: 0 . 0 . 0 . 0

< Back Next > Cancel Help

With the value entered, click on the 'Next' button to proceed to the next step.

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4) Choose the radio button for 'Optimize for Latency'.



With the choice selected, click on the 'Next' button to proceed to the next step.

5) Follow the on screen instructions to 'turn off power', and then click next, and then wait until told to apply power to the Etherlite, and then apply power, and wait for the configuration to complete.

6) When the settings are correct, click 'Finish'

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Installing Software Drivers to communicate with the Etherlite

1) Load the CD into the PC, and run 'setup.exe' (on some machines, this file will be automatically run by Windows.)

At the first screen, the *Operating System* should be filled in automatically. If not, then select the appropriate operating system from the drop down list.

Select the 'hardware' to be 'EtherLite – RealPort'.

Select the 'Software' to be 'RealPort'.

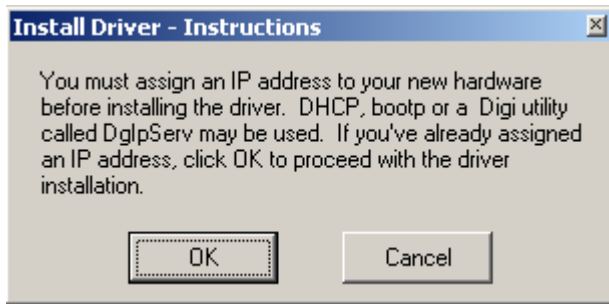


With the values selected, click on the 'Install Software' button to proceed to the next step.

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2) There will be a notice that pops-up, to explain that there must be an IP address assigned before proceeding. We already did that in the earlier steps, so click 'OK' to proceed to the next step.



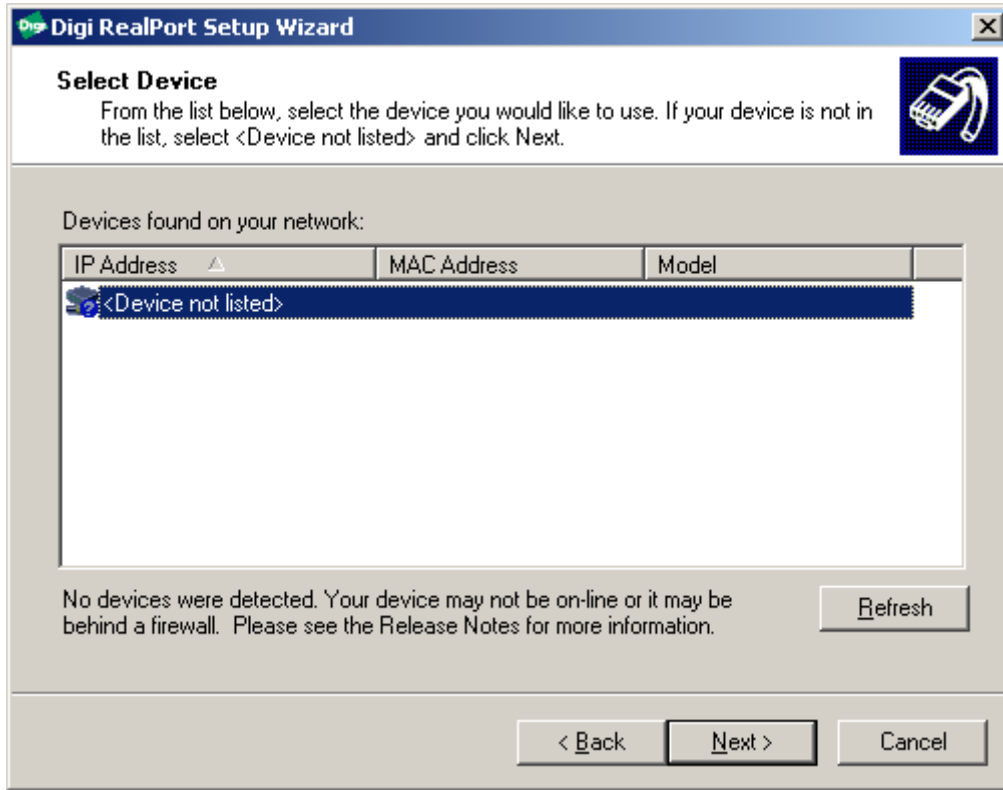
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3) When the *Setup Wizard* screen appears, click 'Next' to proceed to the next step.



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4) When the *Select Device* screen appears, highlight <Device not listed> and click 'Next' to proceed to the next step.



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5) When the *Describe the Device* screen appears, enter the following information:

Model Name	Standard RealPort Device
Serial Ports	16
IP Address	(use the same as earlier in this document)
TCP Port	771

Digi RealPort Setup Wizard

Describe the Device
Enter information for the device you would like to use.

1. Describe Your Device

Model Name: Standard RealPort Device

Serial Ports: 16

2. Enter its Network Settings

IP Address: 192.168.1.102

TCP Port: 771

3. Configure Additional Options

This Device Supports Encrypted RealPort

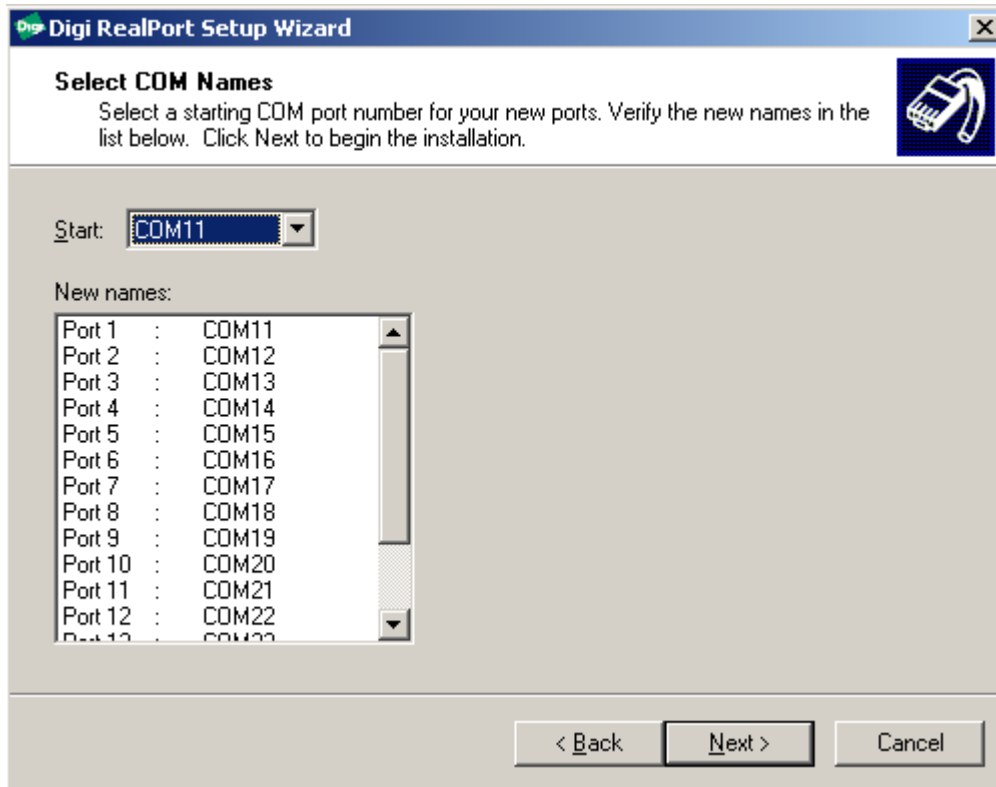
< Back Next > Cancel

With the values entered, click on the 'Next' button to proceed to the next step.

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6) When the *Select COM Names* screen appears, select a starting com port number for the device. It is usually convenient to choose COM11, since there are usually no com ports already configured up that high. This then assigns the com ports on the device (from left to right) as :

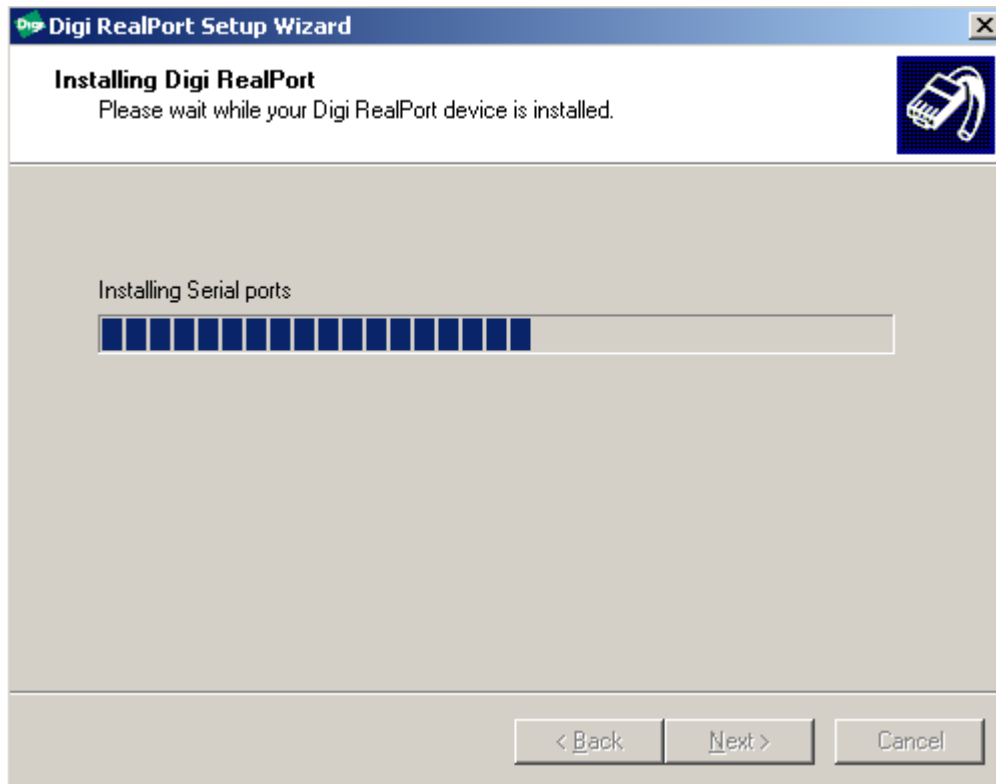


With your choice made, click on the 'Next' button to proceed to the next step.

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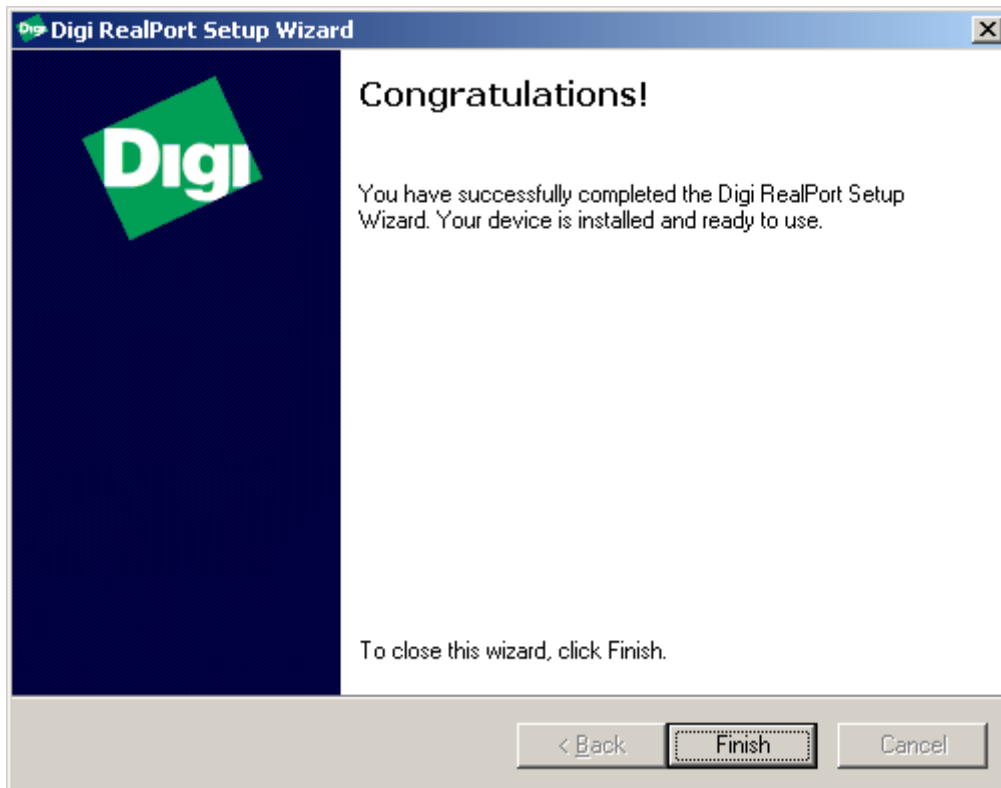
7) The screen will then show something like the following as it installs the software and drivers:



Wait until the installation process has completed.

(see next page)

8) The screen will then show something like the following to indicate that the process is complete:



Click 'Finish' and the Etherlite is now ready to use.

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