

# Sharing an Internet Connection with SatDirect Plus

# Contents

<i>Section 1:</i>	<b>Introduction.....</b>	<b>1</b>
<i>Section 2:</i>	<b>Physical Setup.....</b>	<b>2</b>
<i>Section 3:</i>	<b>Enabling Internet Connection Sharing on Windows XP.....</b>	<b>4</b>
	Enabling ICS On Windows XP As The Host	4
	Enabling ICS On Windows XP As The Client	11
<i>Section 4:</i>	<b>Enabling Internet Connection Sharing on Windows 2000.....</b>	<b>15</b>
	Enabling ICS On Windows 2000 As The Host	15
	Enabling ICS On Windows 2000 As The Client	17
<i>Section 5:</i>	<b>Enabling Windows 98SE or Me As The Host Computer.....</b>	<b>20</b>
<i>Section 6:</i>	<b>Configuring Windows 98SE or Me Client Computer.....</b>	<b>21</b>
<i>Section 7:</i>	<b>Enabling Auto Dial-up On Demand.....</b>	<b>26</b>

# 1 Introduction

A network is defined as two (2) or more computers sharing resources and information over a transmission media. See Figure 9-1 for an example of a Client/Server network using the ISAT satellite system for the reception of Internet requests.

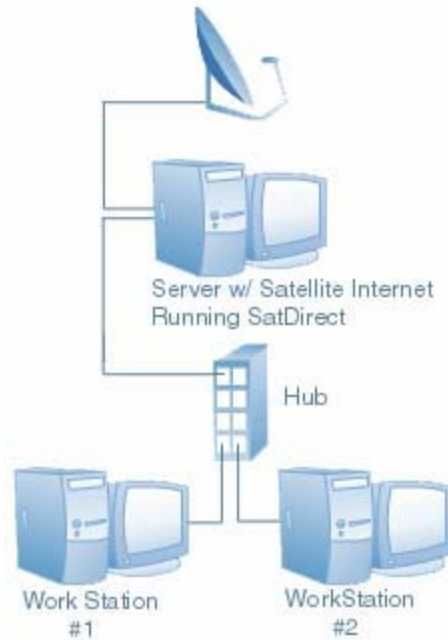


Figure 9-1

To create a simple network that connects several computers to an individual computer that has the satellite hardware installed, you will need to physically set up your network and configure your server and workstations.

Please remember the following steps can only be accomplished after you have completed all the required steps in your B2C2 Broadband Modem Users Guide.

**Note:** When setting up Internet Connection Sharing it is recommended that the computer that shares the Internet connection be either Windows 2000 or Windows XP. These operating systems have the sharing capabilities built into them. Older operating systems such as Windows 98SE and Windows Me do not.

**IMPORTANT NOTE:** While this document is being provided as a guideline for sharing the satellite Internet connection, due to the unique nature of networks, we will not be able to provide technical support for any specific network solutions. This document is to be used as a guideline when sharing a satellite Internet connection with network workstations.

## 2 Physical Setup

First you will need to designate one computer as the “Internet Server”. This computer will need to have the satellite modem installed with the SatDirect Plus software application. This “server” should have the satellite modem and an Ethernet Network Interface Card (NIC) installed. Preferably a 10/100 MB card that will accept an RJ-45 plug for a twisted pair network cable (Cat 5e or 6). See examples in Figure 9-2 of a NIC and Figure 9-3 for an RJ-45 with Cat 5e or 6 network cable.

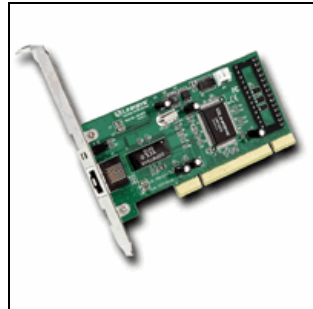


Figure 9-2

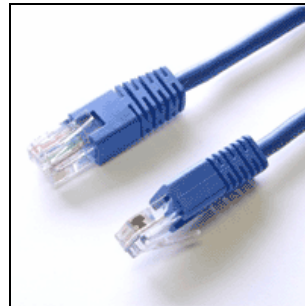


Figure 9-3

Each of the computers that will be sharing the broadband satellite connection will also need to have a network interface card (NIC) (Figure 9-2 above) installed in them as well. These will be referred to throughout this document as the “clients” or “workstations”.

Other hardware that you will need to establish the physical connections of your network will be:

- Quantity 1 of a Category 5e or 6 twisted pair RJ45 network patch cable per computer that will be on your network.
- Quantity 1 of a Hub or switch. A crossover cable may be used if only setting up one workstation with the server. A crossover cable is a Category 5e or 6 twisted pair network cable that has been specially wired to work between two network interface cards.

**Note: You will only need to have one of the three items; a hub, a switch or a crossover cable.**

Once all network interface cards have been installed with the correct drivers (see NIC and installation manual), you will connect one network cable from the NIC in your server to the number one port on your hub or switch, (see the hub or switch installation manual). You can see an example of a hub in Figure 9-4.

**Note:** If using a router, disable the Dynamic Host Communication Protocol (DHCP). Please refer to the router’s user manual for further information on how this is accomplished.



**Figure 9-4**

At this point you can begin connecting network cables from your workstations to your hub in the same manner that you connected your server.

**Note: To make tracing network cables easier at a later time, you may want to plug the first computer on your network into port one on your hub or switch, The second computer should plug into port two and so on until all workstations have been connected.**

If you are only connecting one workstation and are using a crossover cable, simply plug one end of the crossover cable into the NIC in the server and the other end into the NIC in the workstation.

The physical setup of your network is now complete.

## 3 Enabling Internet Connection Sharing on Windows XP

### Enabling ICS On Windows XP As The Host

The first step is to open the Control Panel. Click on **Start -> Control Panel**, or **Start -> Settings -> Control Panel**, depending on your Windows XP configuration. On the top left of the Control Panel screen, if you see a link to **Switch to Classic View**, click this link. You should now more icons on the right hand side, similar to Figure 9-5.

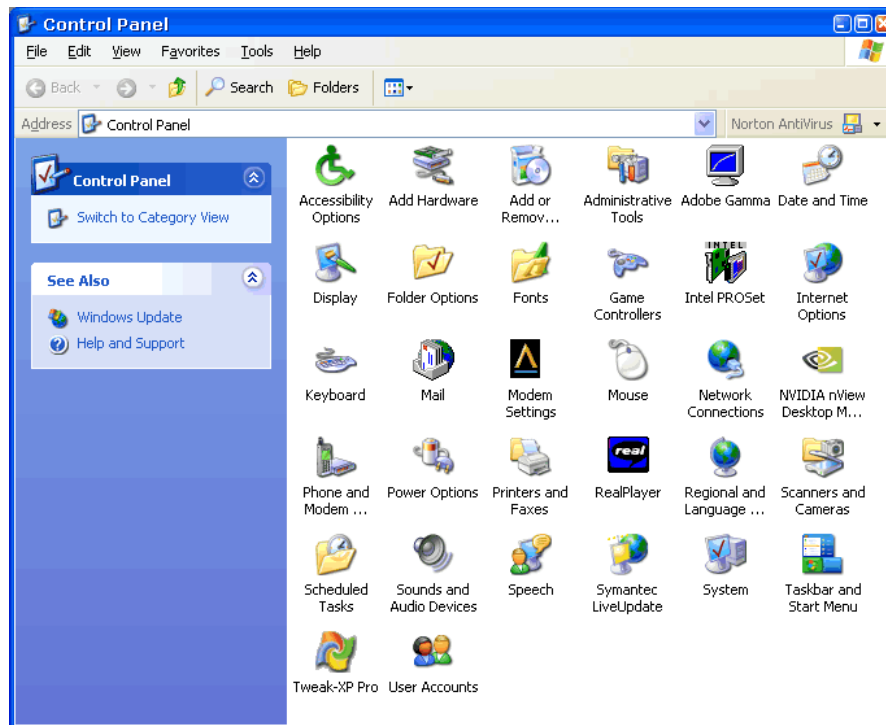


Figure 9-5

Find the icon labeled **Network Connections** and double click on it. This should bring you to a screen similar to Figure 9-6.

## Sharing an Internet Connection with SatDirect Plus

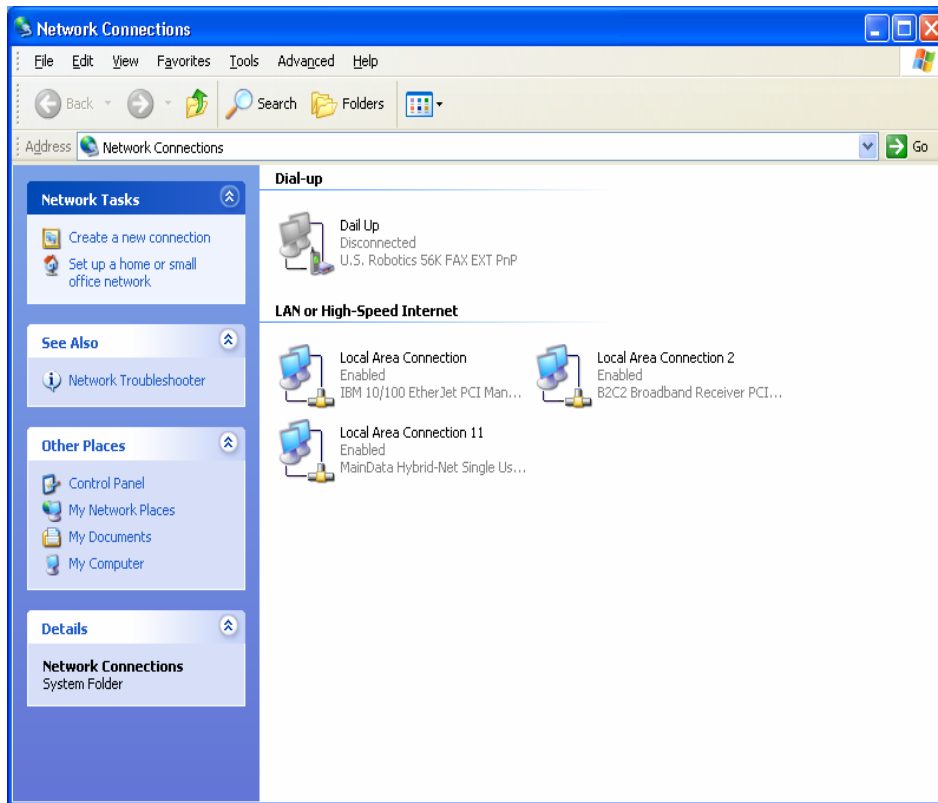


Figure 9-6

The icon you are looking for is called **MainData Hybrid-Net Single User Adapter**. This label will be displayed on the third (3<sup>rd</sup>) line underneath the title line. Right-click on this icon and then select **Properties**. You should now see a screen similar to Figure 9-7.

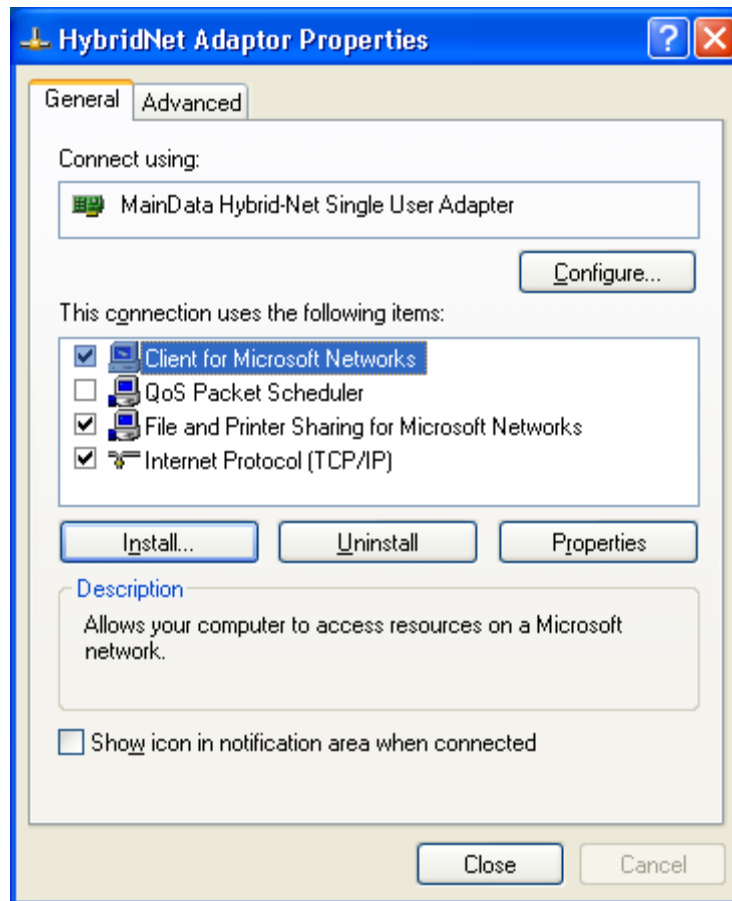


Figure 9-7

If **QoS Packet Scheduler** is listed under **This connection uses the following items:**, highlight it by clicking on it and then click on the **Uninstall** button and follow the instructions to uninstall this service. QoS must **NOT** be installed in order for the system to function properly.

Next, highlight **Internet Protocol (TCP/IP)** by clicking on it and then click on the **Properties** button. A screen should appear similar to the screen shown in Figure 9-8.

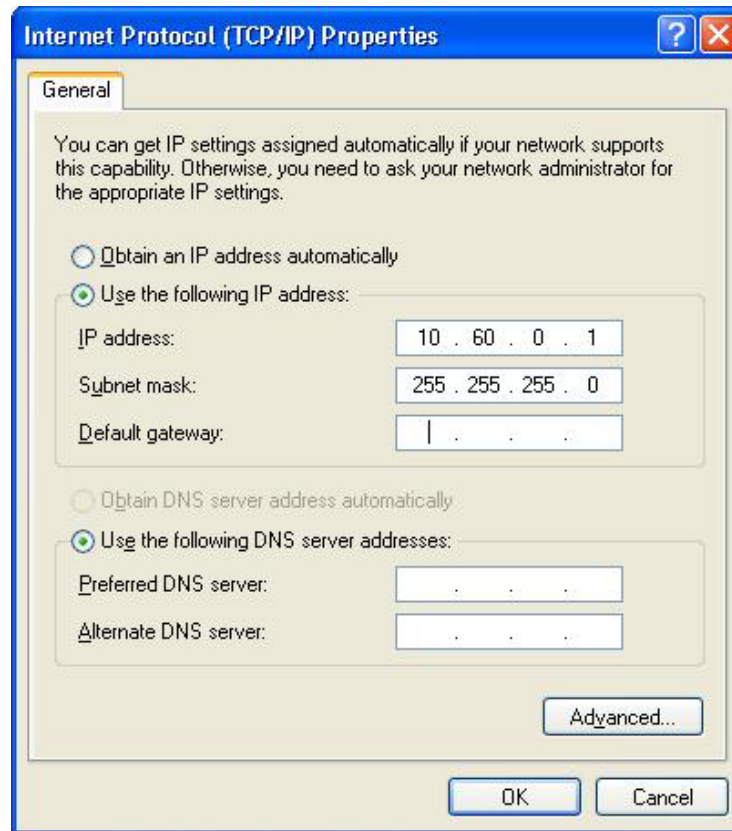


Figure 9-8

It is important to make sure that nothing is entered for the **Preferred** or **Alternate DNS server** addresses as in Figure 9-8 (Please note that the IP address shown in Figure 9-8 will vary according to the satellite connected machine's assigned IP address).

You should see two tabs at the top. Click on the **Advanced** tab on the top left. You should now see a screen similar to Figure 9-9.

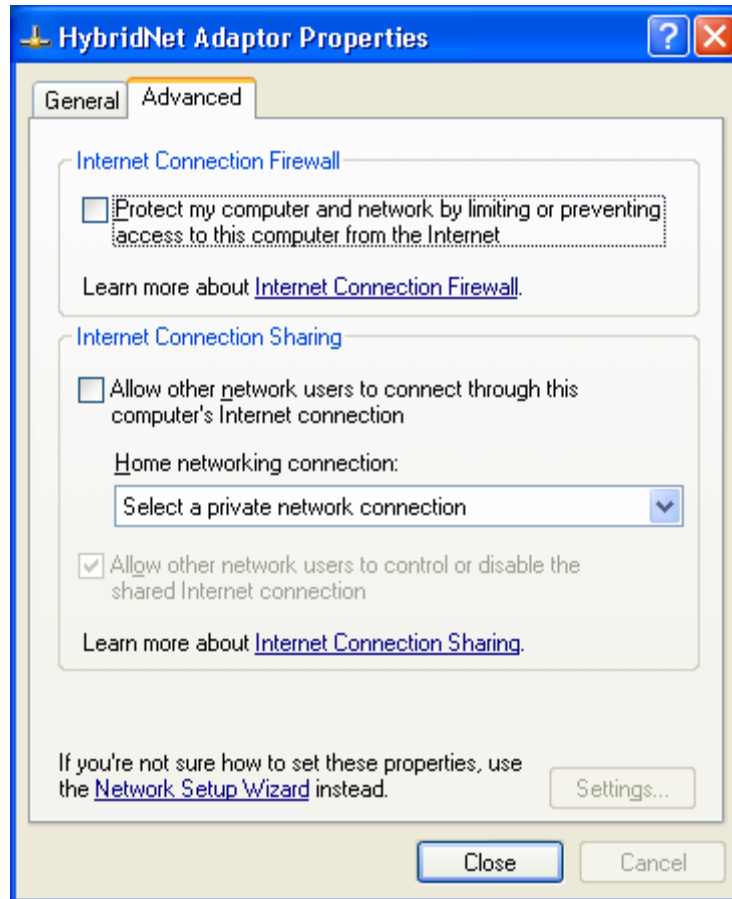


Figure 9-9

In the middle of this screen, there will be an **Internet Connection Sharing** section.

Place a check in the box next to **Allow other network users to connect through this computer's Internet connection** by clicking on the box.

In the drop down menu, select the network adapter you are using to network your computers.

Click the **Close** button to accept the changes.

## Sharing an Internet Connection with SatDirect Plus

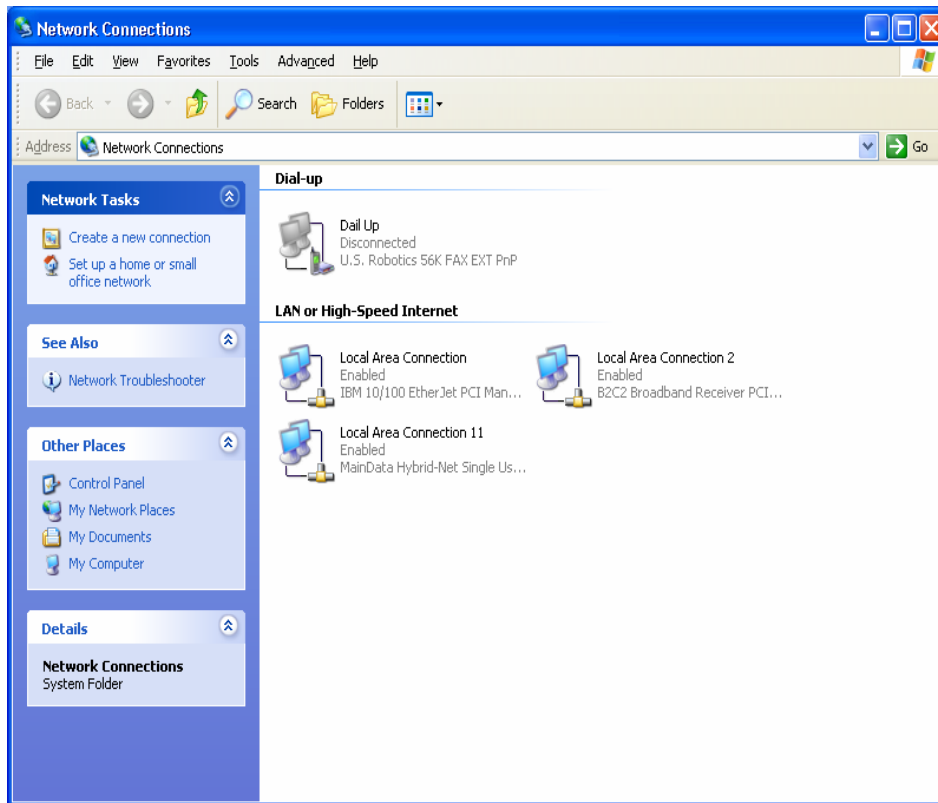
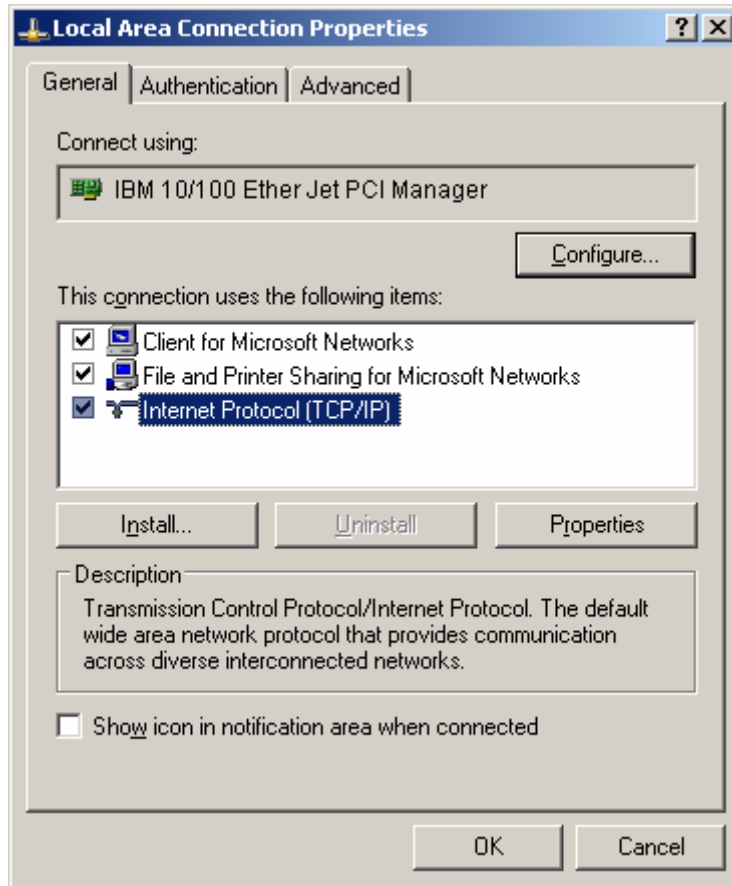


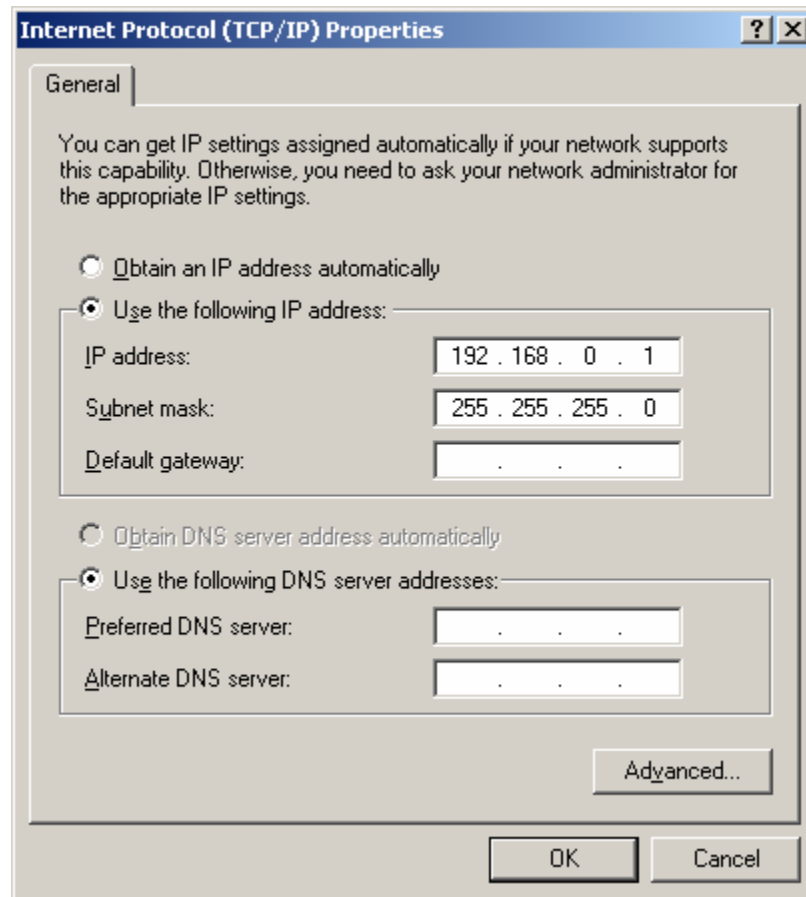
Figure 9-10

Now locate the icon for the network adapter that will be connecting to the hub. Right-click on this icon and then select **Properties**. You should now see a screen similar to Figure 9-11.



**Figure 9-11**

Next highlight **Internet Protocol (TCP/IP)** by clicking on it and then click on the **Properties** button. A screen should appear similar to the screen shown in Figure 9-12.



**Figure 9-12**

Insure that the adapter IP address has been set to 192.168.0.1 with a subnet mask of 255.255.255.0 as seen in Figure 9-12. Click the **OK** button.

### **Setting Up Windows XP As A Client**

The first step is to open the Control Panel. Click on **Start -> Control Panel**, or **Start -> Settings -> Control Panel**, depending on your Windows XP configuration. On the top left of the **Control Panel** screen, if you see a link to **Switch to Classic View**, click this link. You should now see more icons on the right hand side, similar to Figure 9-13.

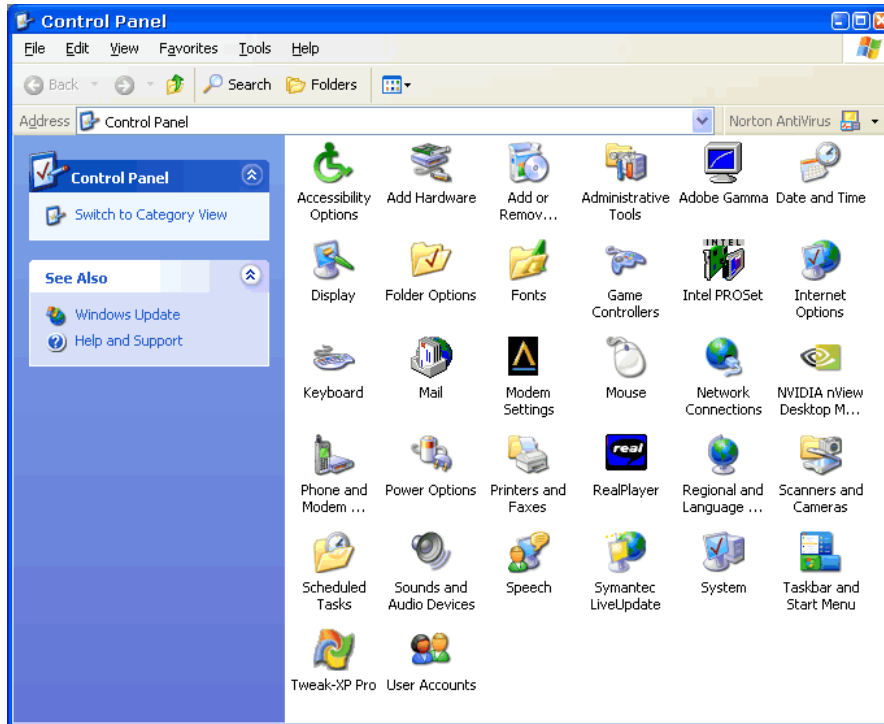


Figure 9-13

Find the icon labeled **Network Connections** and double click on it. This should bring you to a screen similar to Figure 9-14.

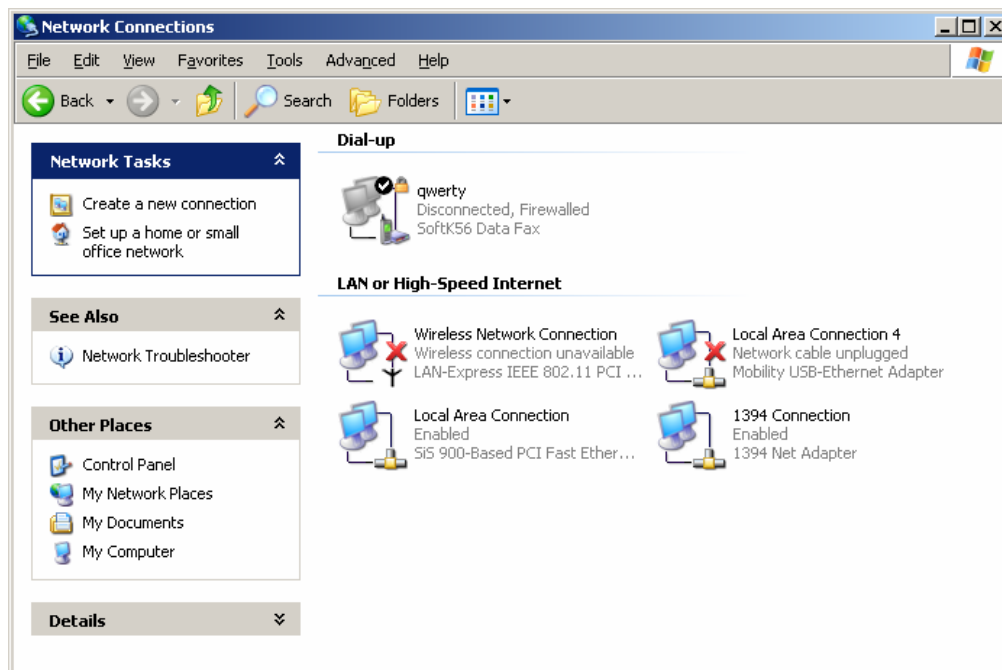


Figure 9-14

The icon you are looking for is the network adapter that will be connecting to the hub. Right-click on this icon and then select **Properties**. You should now see a screen similar to Figure 9-15.

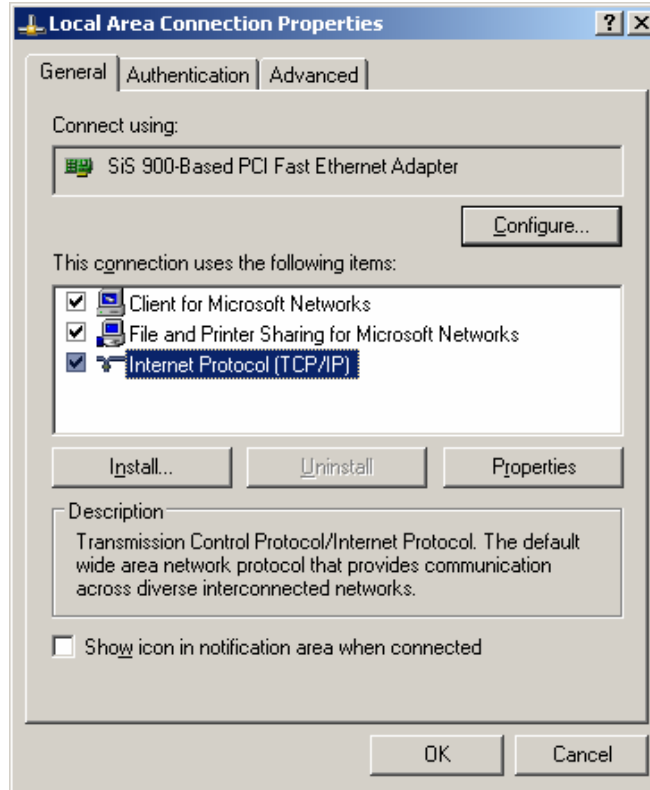


Figure 9-15

Next highlight **Internet Protocol (TCP/IP)** by clicking on it and then click on the **Properties** button. A screen should appear similar to the screen shown in Figure 9-16

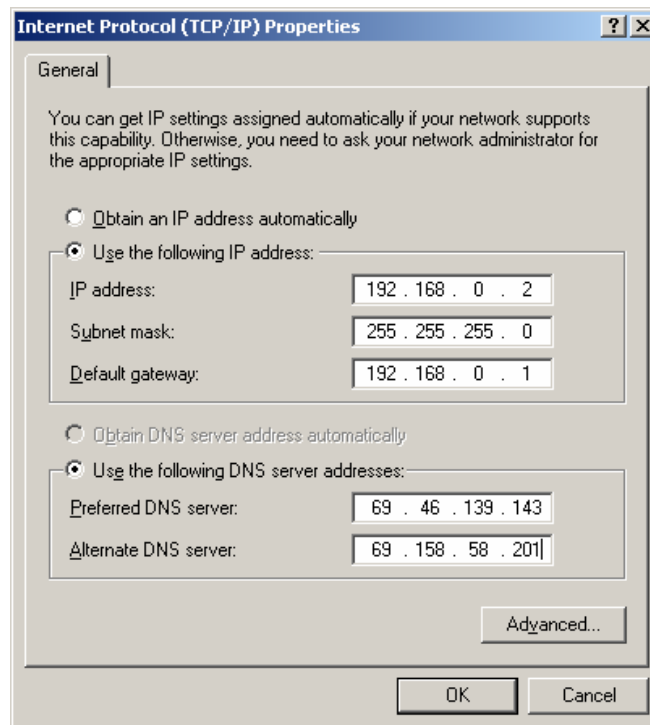


Figure 9-16

## Sharing an Internet Connection with SatDirect Plus

---

In the TCP/IP Properties, select **Specify an IP address**.

Assign the Class C, private IP address of **192.168.10.2 (Example Only)**

**NOTE: Each workstation on your network will have to have a unique address. The easiest way to accomplish this is to assign the first workstation the IP of 192.168.10.2. The next workstation 192.168.10.3 and so on until all workstations on your network have been assigned a unique IP address. The IP Addresses listed are Examples only.**

Enter the Subnet Mask of **255.255.255.0**.

Set the **Default gateway** to the IP address of the host (192.168.0.1 as assigned in the previous section)

Then select **Use the following DNS server addresses**. For the **Preferred DNS** server enter **69.46.139.143** and for the **Alternate DNS** server enter **64.158.58.201** as seen in Figure 9-20

Click the **OK** button to close the window. Your client computer is now configured to share the satellite Internet connection

## 4 Enabling Internet Connection Sharing on Windows 2000

### Enabling ICS on Windows 2000

The first step is to open up the Control Panel by clicking on **Start -> Settings -> Control Panel**. You should see a screen similar to Figure 9-17.

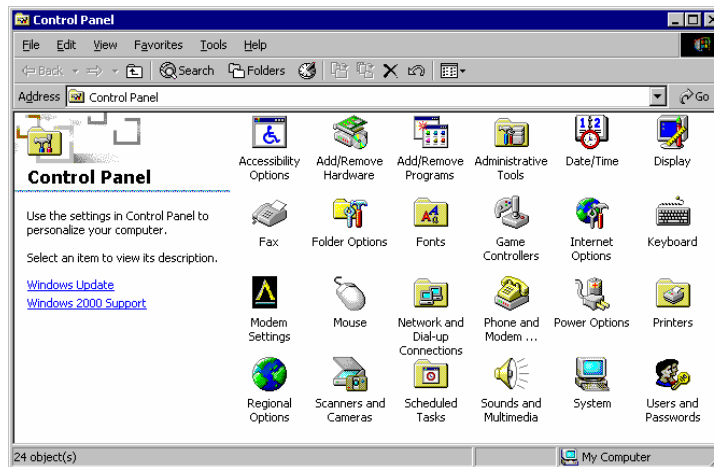


Figure 9-17

Find and double-click on the icon labeled **Network and Dial-Up Connections**. You should see a screen similar to Figure 9-18. You will want to select each adapter that is listed, one at a time, and read the detail for each on the left of the screen until you find the one that displays **MainData Hybrid-Net Single User Adapter**, as seen in Figure 9-18. Right click this icon, and select **Properties**.

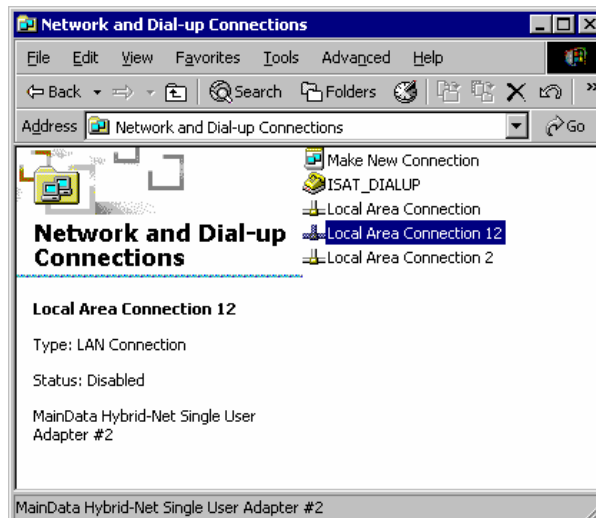
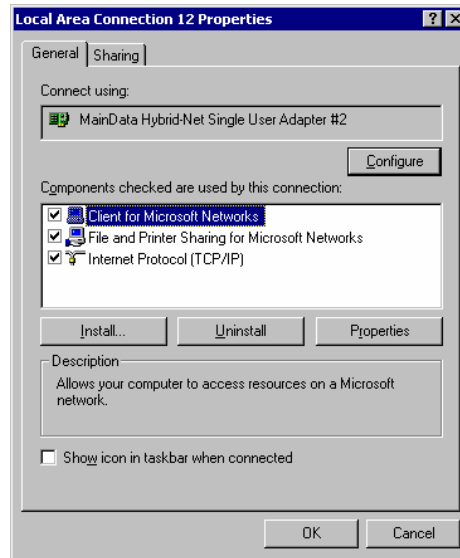


Figure 9-18

## Sharing an Internet Connection with SatDirect Plus

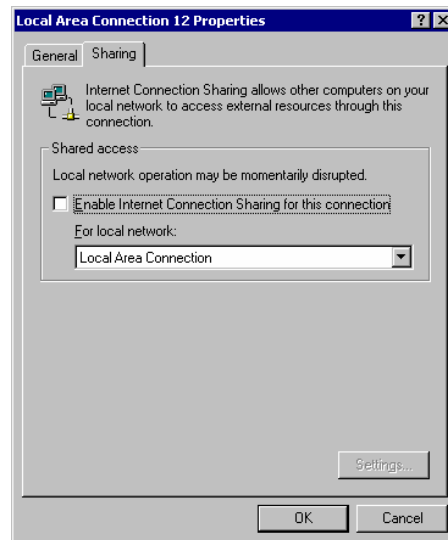
---

The adapter properties screen should now appear, as seen in Figure 9-19.



**Figure 9-19**

Click on the **Sharing** tab. You should see a screen as shown in Figure 9-20.



**Figure 9-20**

Place a check in **Enable Internet Connection Sharing for this connection**. In the drop down menu under **For local network:**, select the NIC you are using to connect to the Hub/Switch/Router. Your screen should now appear similar to Figure 9-21 . Click **OK** to accept the changes.

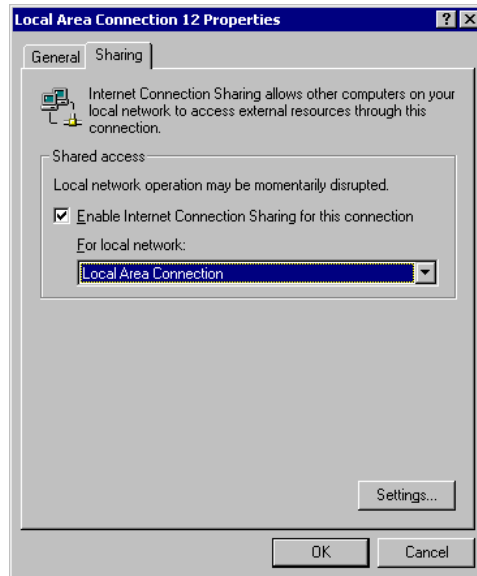


Figure 9-21

You are now configured to share the satellite Internet connection with multiple machines.

### Setting Up Windows 2000 As A Client

The first step is to open up the Control Panel by clicking on **Start -> Settings -> Control Panel**. You should see a screen similar to Figure 9-22.

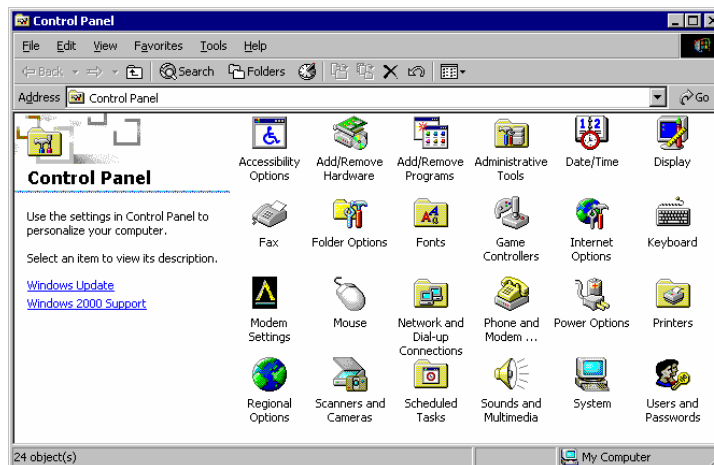


Figure 9-22

Find and double-click on the icon labeled **Network and Dial-Up Connections**. You are looking for the icon that is for your Ethernet Adapter that you will connect to the hub, as seen in Figure 9-23. Right click this icon, and select properties.

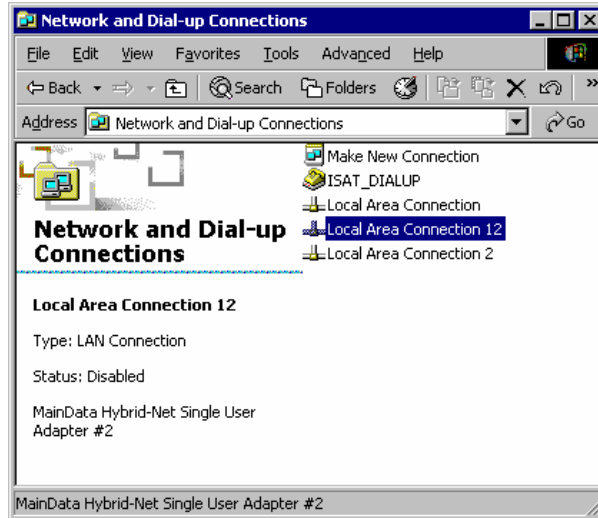


Figure 9-23

The adapter properties screen should now appear, as seen in Figure 9-24

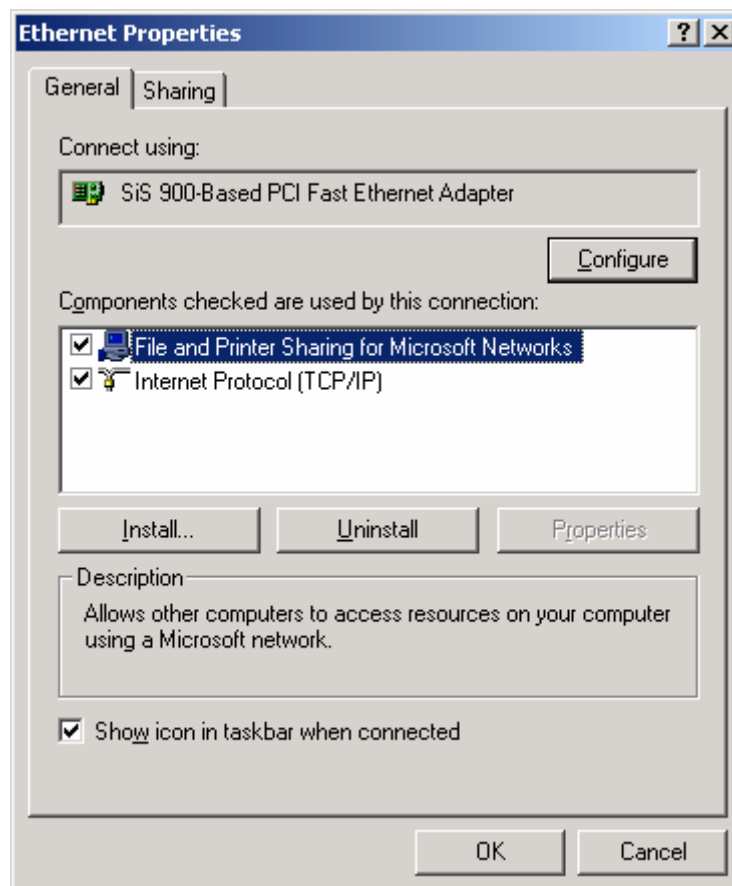


Figure 9-24

Highlight **Internet Protocol (TCP/IP)** and then click on the **Properties** button. This will load the Internet Protocol (TCP/IP) as seen in Figure 9-25.

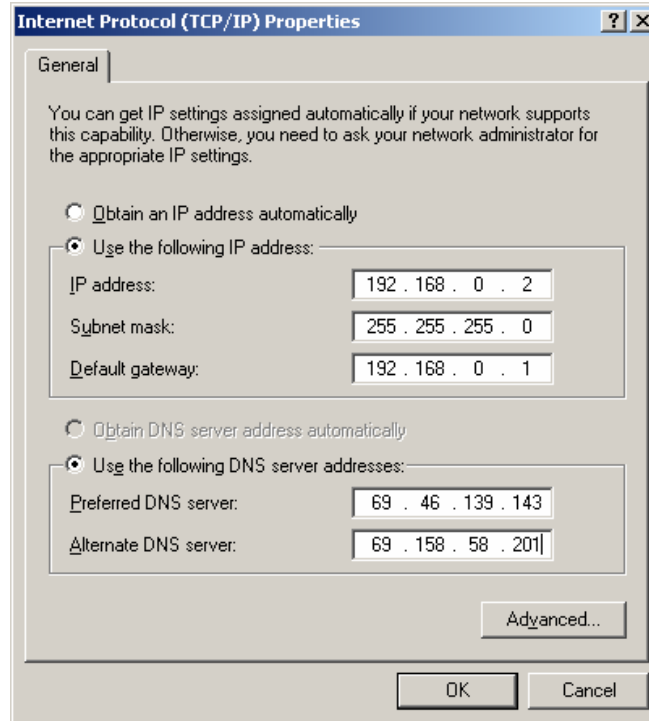


Figure 9-25

In the TCP/IP Properties, select **Use the following IP address**.

Assign the Class C, private IP address of **192.168.10.2** (Example Only)

**NOTE: Each workstation on your network will have to have a unique address. The easiest way to accomplish this is to assign the first workstation the IP of 192.168.10.2. The next workstation 192.168.10.3 and so on until all workstations on your network have been assigned a unique IP address. The IP Addresses listed are Examples only.**

Assign the Subnet Mask to be **255.255.255.0**.

Set the **Default gateway** to the IP address of the host (192.168.0.1 as assigned in the previous section)

Then select **Use the following DNS server addresses**. For the **Preferred DNS** server enter **69.46.139.143** and for the **Alternate DNS** server enter **64.158.58.201** also seen in Figure 9-25.

Click **OK** to close the window. Your client computer is now configured to share the satellite Internet connection

## **5 Enabling Windows 98SE Or Me As The Host Computer**

Older operating systems such as Windows 98SE and Windows Me, while having rudimentary Internet Connection Sharing (ICS) capabilities, they do not have the same capabilities as newer operating systems like Windows 2000 and Windows XP which were designed to handle high-speed Internet connections.

If an end-user insists on sharing the satellite Internet connection through a Windows 98SE or Windows ME machine, it is recommended that they use a 3<sup>rd</sup> party proxy agent such as WinRoute or WinProxy to bypass these limitations. These applications use a proxy environment rather than a true networking environment like ICS in Windows 2000 and XP. Technical support for these products should be obtained from the publisher of the 3<sup>rd</sup> party software. ISAT does not provide support for the use of these applications to share the satellite Internet connection.

## 6 Configuring The Windows 98 SE Or ME Client

The first step is to open up the Control Panel by clicking on **Start -> Settings -> Control Panel**. You should see a screen similar to Figure 9-26.

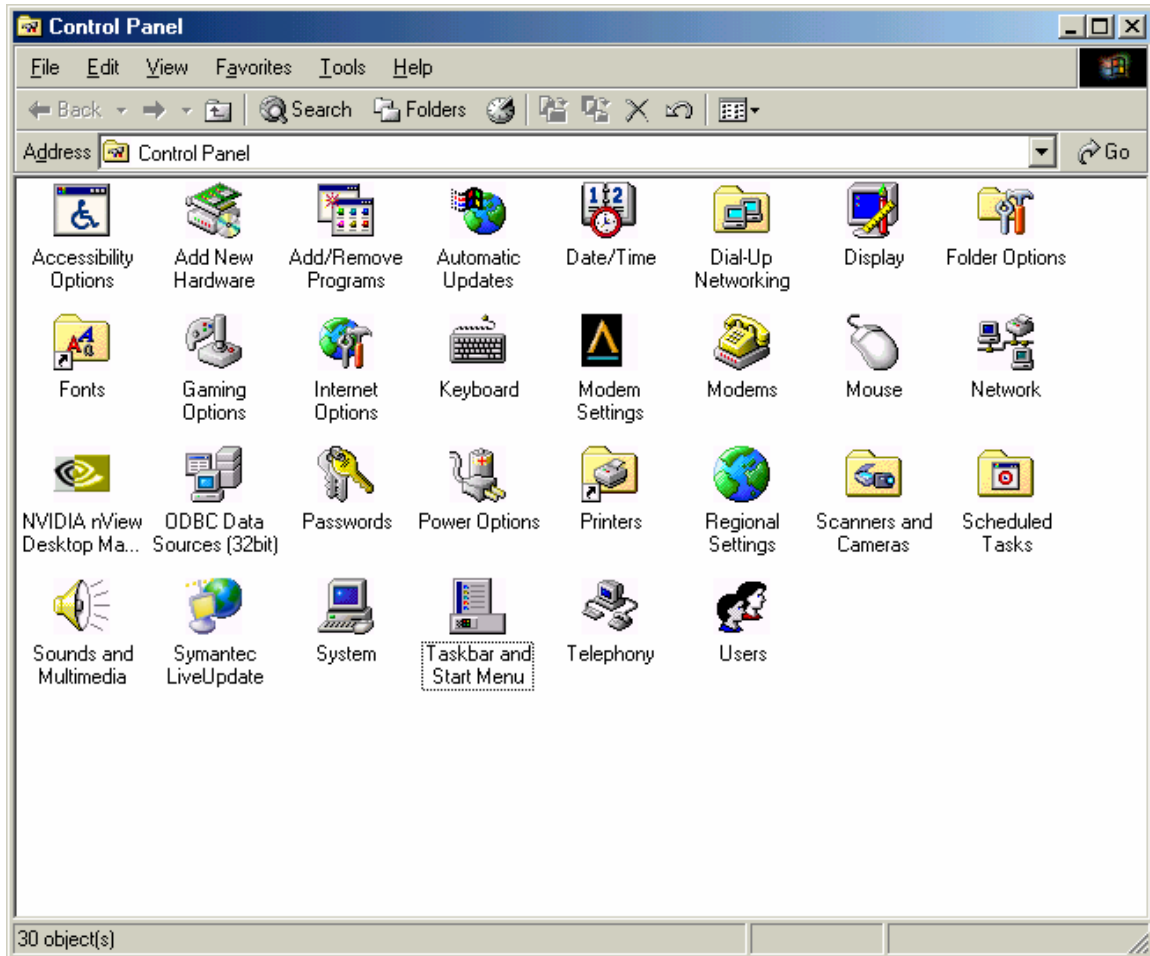


Figure 9-26

Find and double-click on the icon labeled **Network**. You should see a screen similar to Figure 9-27.

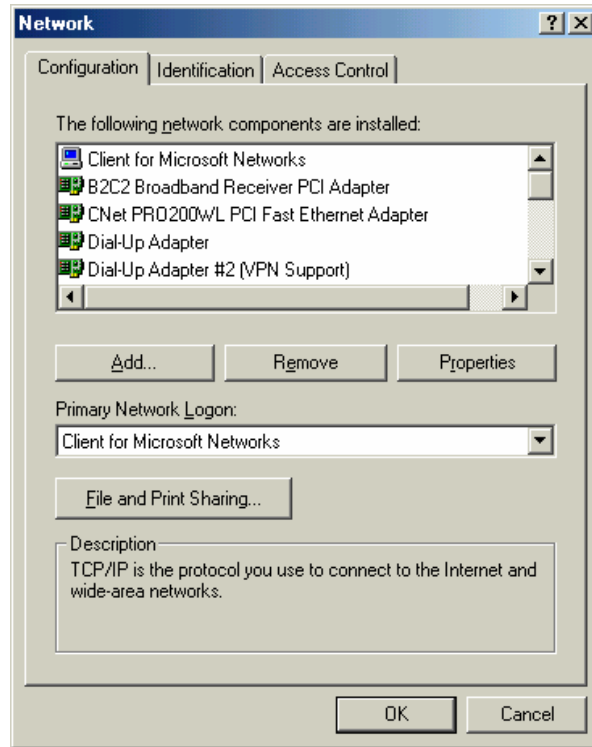


Figure 9-27

Scroll down and highlight **TCP/IP -> "Your Ethernet Adaptor Name"** as in Figure 9-28 and then click on **Properties**. This will load the Internet Protocol (TCP/IP) Properties as shown in Figure 9-29.

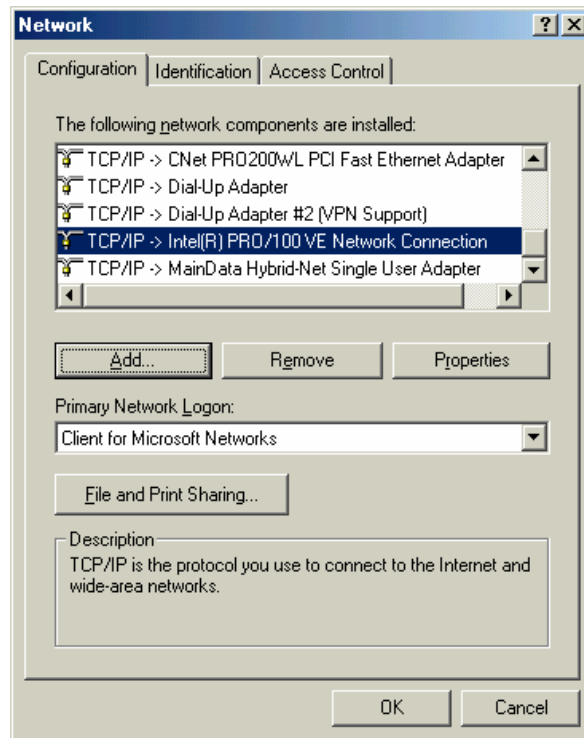


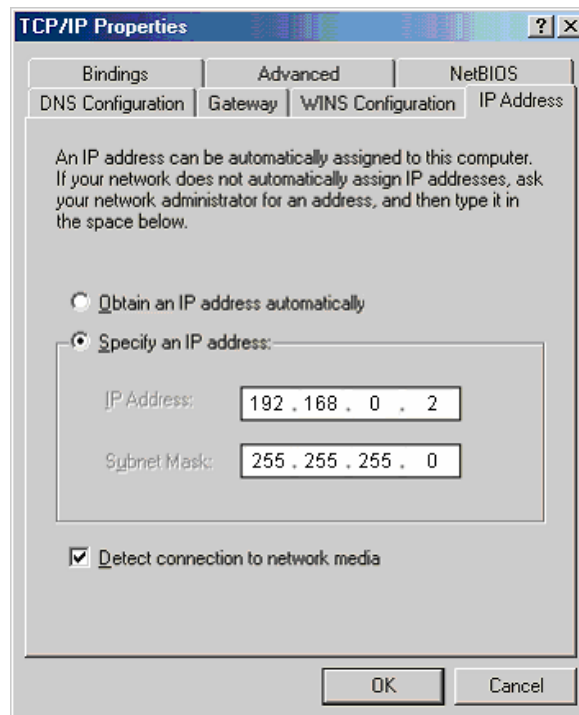
Figure 9-28

In the TCP/IP Properties, select **Specify an IP address**.

Assign the Class C, private IP address of **192.168.10.2 (Example Only)**

**NOTE: Each workstation on your network will have to have a unique address. The easiest way to accomplish this is to assign the first workstation the IP of 192.168.10.2. The next workstation 192.168.10.3 and so on until all workstations on your network have been assigned a unique IP address. The IP Addresses listed are Examples only.**

Enter the Subnet Mask of **255.255.255.0**.



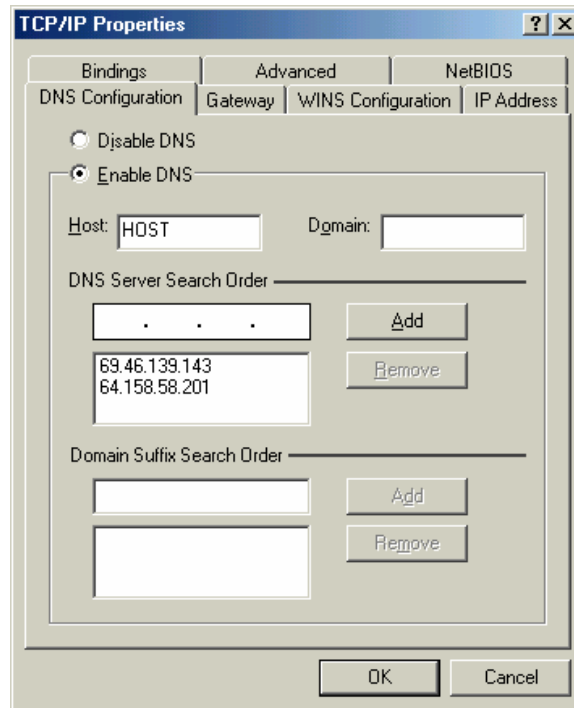
**Figure 9-29**

Click on the **DNS Configuration** tab also seen in Figure 9-29.

## Sharing an Internet Connection with SatDirect Plus

---

From the DNS tab Select **Enable DNS**. For **Host** type in **Host**. Then enter the following IP address below **DNS Server Search Order**, **69.46.139.143**, and click **Add**. Then enter **64.158.58.201** and click **Add**. Your window then should look similar to Figure 9-30.



**Figure 9-30**

Next, click on the **Gateway** tab.

Under the gateway tab, set the **New gateway** to the IP address of the host's IP of 192.168.0.1 and click the add button as shown in figure 9-31

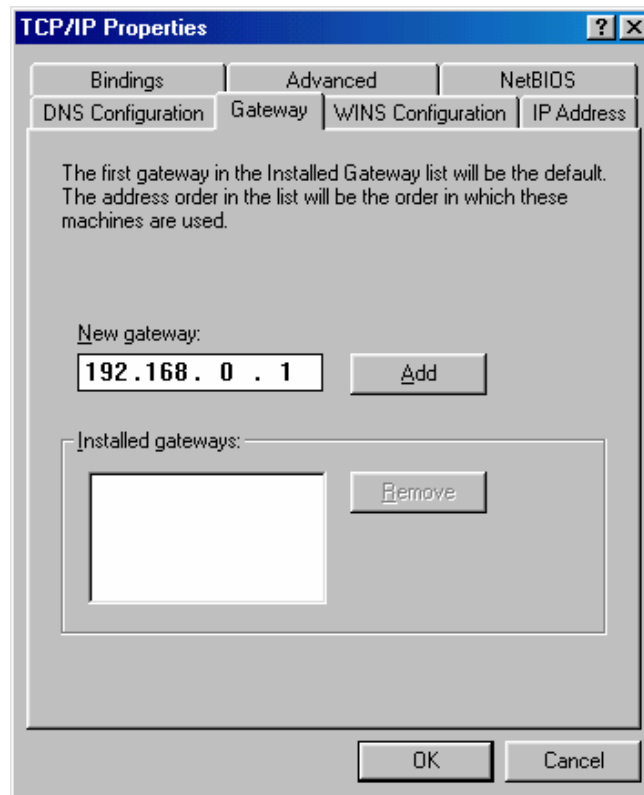


Figure 9-31


Click the **OK** button to close the window. Your client computer is now configured to share the satellite Internet connection.

## 7 Enabling Auto Dial-up On Demand

The **Auto Dial-up on Demand** feature allows end users working on a client station to dial-up to the Internet via the host computer from the client workstation. Once this is configured on the host system, whenever a get request is generated via a client computer, the host computer will automatically initiate a dial-up connection.

### Enabling Auto Dial-up On Demand



Open the **IP Connection Manager** window by clicking on the  icon (Figure 9-32)

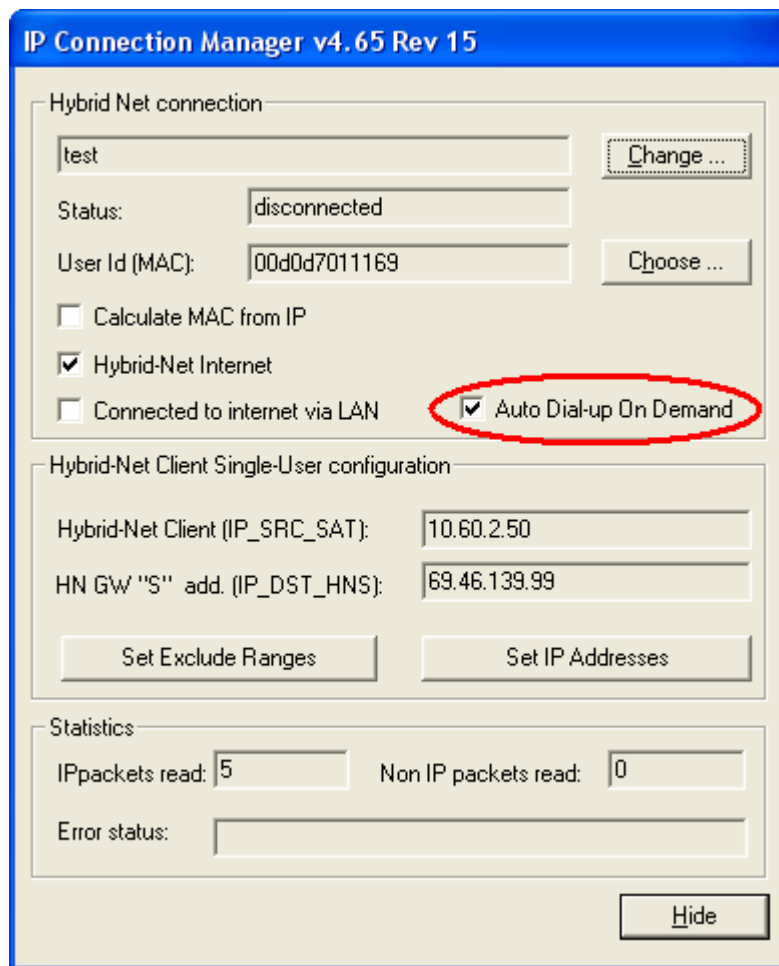


Figure 9-32

Place a check mark in the Auto Dial-up On Demand box also shown in Figure 9-32

## Sharing an Internet Connection with SatDirect Plus

---

A message window will appear explaining that **Auto Dial-up On Demand** has been enabled as shown in Figure 9-33

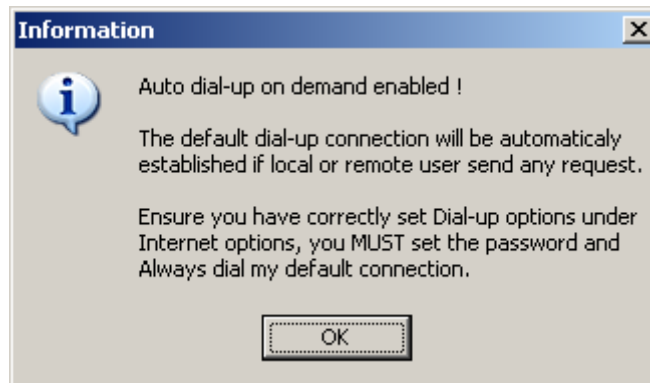


Figure 9-33

Click the **OK** button.

**Note:** Any changes made in the IP Connection Manager will require you to do the following.

Right click on the **Main Data Hybrid** icon  in the System Tray located at the lower right hand side of the Windows desktop.

Click on the **Exit** option and then click the **Yes** button as seen in Figure 9-34

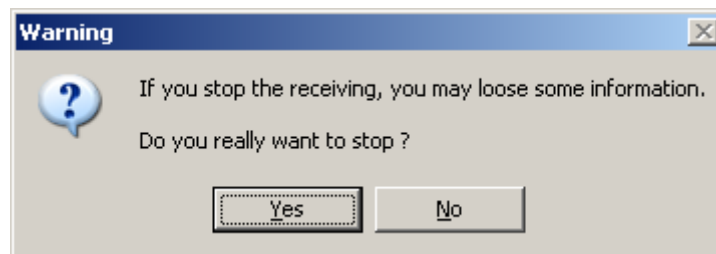


Figure 9-34

Double-click on the **DVBReceiver 4.65** icon on your Windows desktop (Figure 9-35) to restart the SatDirect Plus application.



Figure 9-35

## Setting The Dial-Up Options

Open up the Control Panel. (**Start > Settings > Control Panel** or for Windows XP, **Start > Control Panel**). You should see a screen similar to Figure 9-36.

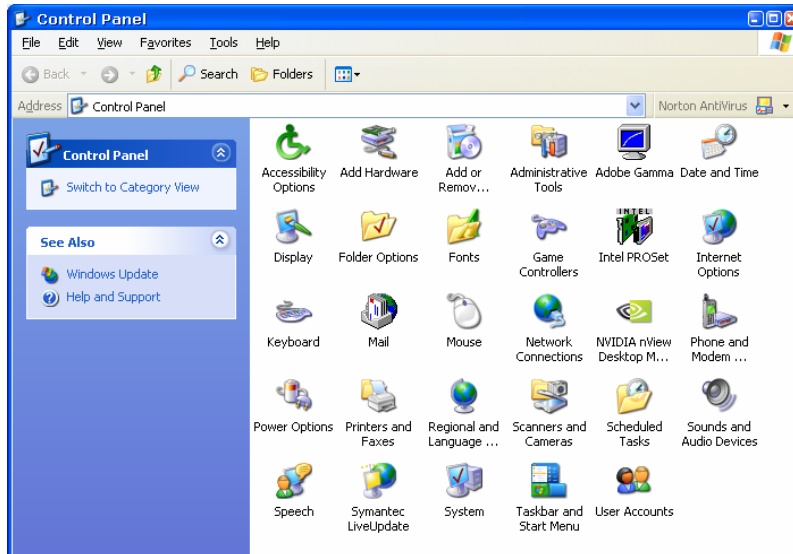


Figure 9-36

Double click on the **Internet Options** icon to open the **Internet Options** window, as shown in Figure 9-37.

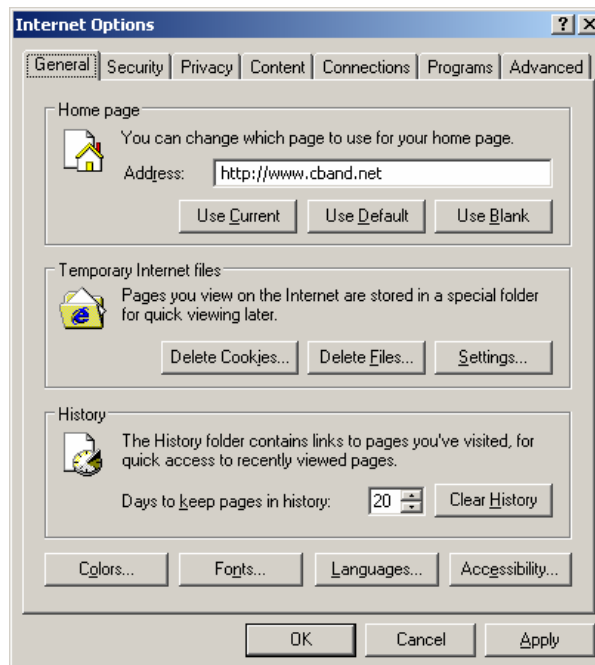
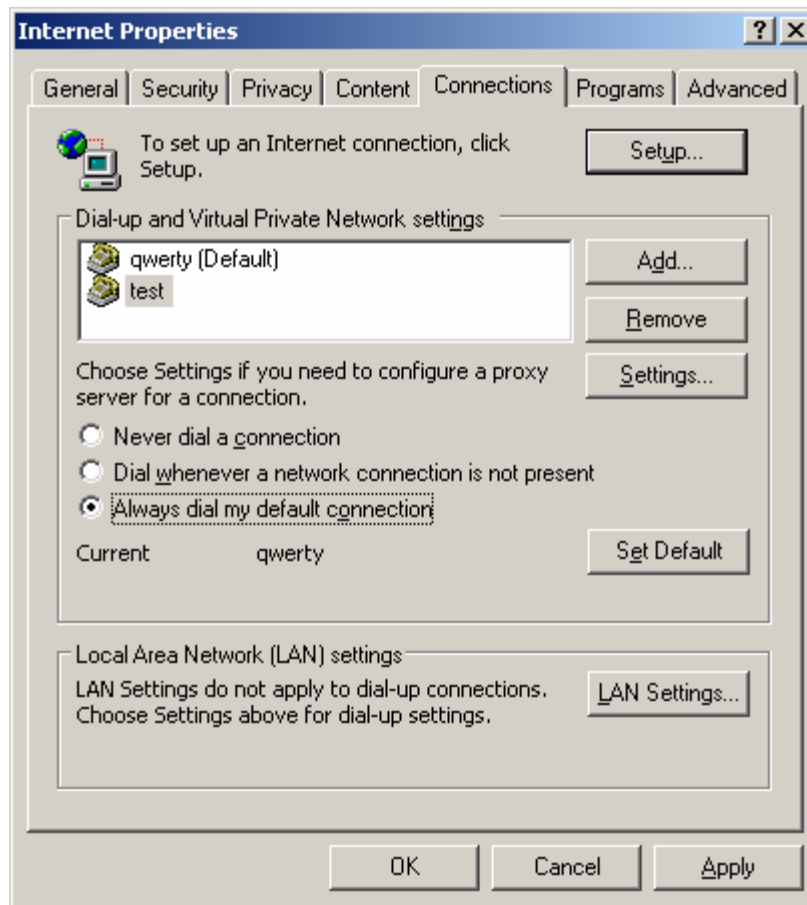


Figure 9-37

Choose the **Connections** tab. The window will look similar to Figure 9-38.



**Figure 9-38**

Under **Dial-up and Virtual Private Networking settings**, highlight the dial-up adapter that will be used with the satellite broadband service

Click the **Set Default** button as shown in Figure 9-38

Ensure that **Always dial my default connection** is selected. An example can also be seen in Figure 9-38.

Click the **Apply** button.

The **auto dial on demand** feature is now configured.