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# **SatStream™ Satellite Modem User's Guide**

**Version 3.2**



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# Overview

## SatStream Satellite Modem

Thank you for choosing the SatStream Satellite Modem.

The SatStream Satellite Modem utilizes technology that enables ultra high-speed connectivity to data-access, such as the Internet and video servers, via a satellite digital network.

Internet access based on dial-up modems is restricted due to the relatively narrow bandwidth of those modems.

The SatStream Satellite Modem overcomes this bottleneck by exploiting the fact that downstream traffic (data sent from the network to the computer) is much higher than upstream traffic. The downstream data is sent to the subscriber via satellite, bypassing the existing modem's bottleneck. The satellite system is actually an upgrade which allows you to access the Internet at accelerated speed.

The SatStream Satellite Modem is DVB<sup>TM1</sup> compliant.



**Note:** To use the system, an existing account with any Internet Service Provider needs to be in effect.

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<sup>1</sup>  Trademark of the DVB Digital Video Broadcasting Project (1707)

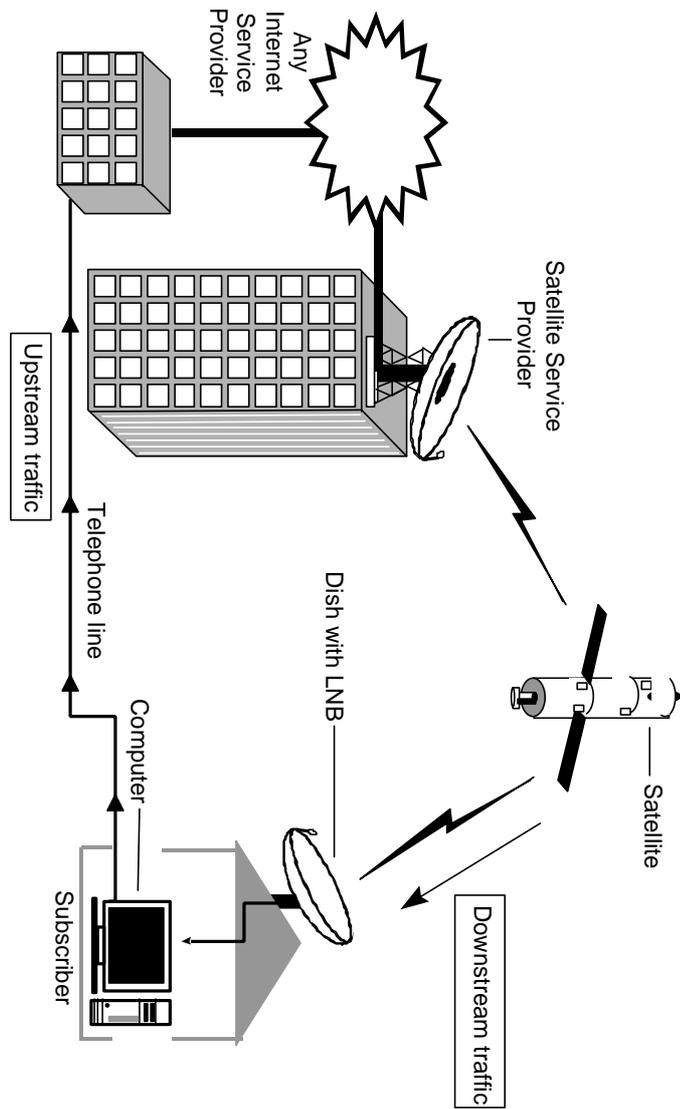


Figure 1. Downstream/upstream traffic, transmitted to and from the subscriber.

## Requirements

Before you begin installing the SatStream Satellite Modem, check that you have the required hardware and software:

Requirements	Description
Computer	<ul style="list-style-type: none"><li>◆ A Pentium PC that is 90MHz or higher</li><li>◆ 16 MB RAM</li><li>◆ An available PCI bus card expansion slot.</li></ul> <p><b>Note:</b> Refer to your computer documentation for a description of your computer.</p>
Operating System	Windows 95, Windows 98 or Windows NT
Receiving Equipment	Standard DTH receiving equipment (antenna and LNB) and Coaxial cables. For LNB requirements, refer to <i>Appendix B</i> , page 55.
Internet Access	Subscription to any Internet Service Provider.
Internet Software Web Browser	Any Internet software for communicating with the Internet, e.g., Microsoft Internet Explorer or Netscape Communicator.

From the SatStream Satellite Modem package, verify that you have:

- ◆ SatStream Satellite Modem Card.
- ◆ Software installation diskettes.
- ◆ This manual.

After verifying that you have all the necessary hardware and software, you are ready to establish a satellite connection.

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## Establishing a Satellite Connection

To establish a satellite connection it is necessary to install additional hardware and software into your computer. This section is organized into the following steps:

- ◆ Step 1: Hardware Installation, below.
- ◆ Step 2: Software Installation, page 8.
- ◆ Step 3: Connecting to Your Internet Service Provider, page 22.
- ◆ Step 4: SatStream Satellite Modem Configuration, page 23.
- ◆ Step 5: Connecting Via Satellite, page 39.

### Step 1: Hardware Installation

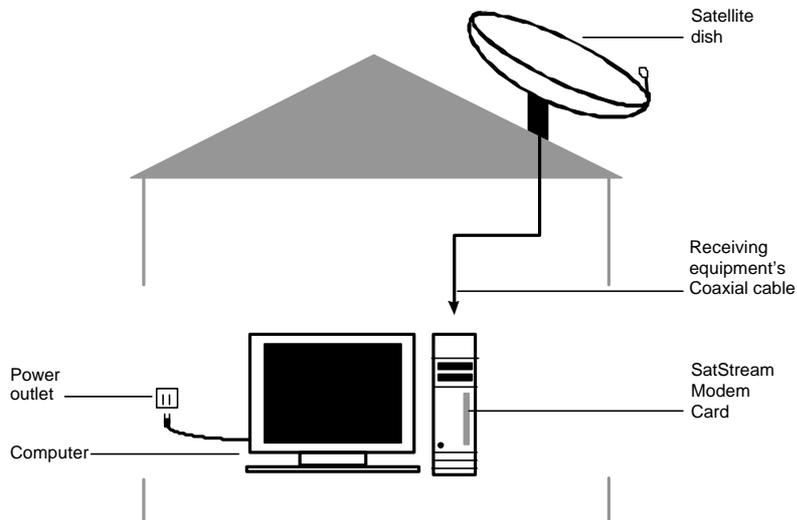
The SatStream Satellite Modem Card is installed inside your computer to enable a link between your computer and the receiving equipment (satellite dish). It is a Plug and Play card, meaning that Windows will automatically detect it and assign it the resources it requires.

This step describes how to install the SatStream Satellite Modem Card.

## Installing the SatStream Satellite Modem Card

The SatStream Satellite Modem Card has to be installed in an available PCI slot in your computer.

 **Note:** Before installing the SatStream Satellite Modem Card, position your computer within access of the receiving equipment's Coaxial cable and a power outlet, as shown below:





**To install the SatStream Satellite Modem Card in the computer:**

1. Shut down the computer.
2. Disconnect the power to the computer.
3. Remove the computer's cover and locate a free PCI expansion slot.



**Note:** Use the computer's documentation for assistance.

4. Remove the panel (if present) in front of the PCI expansion slot and insert the SatStream Satellite Modem Card in the slot.
5. Secure the SatStream Satellite Modem Card in the computer with a screw. Attach the receiving equipment's Coaxial cable to the SatStream Satellite Modem Card's connector.
6. Reinstall the computer cover.
7. Reconnect the power supply and restart the computer.



The SatStream Satellite Modem Card is installed in the computer. You are now ready to install the necessary software.

## Step 2: Software Installation

This step describes how to install the SatStream Modem Card software on **Windows 95**, **Windows 98** and **Windows NT** operating systems:

- ◆ Driver Installation (Windows 95), below.
- ◆ Driver Installation (Windows 98), page 11.
- ◆ Adapter Installation (Windows NT only), page 15.
- ◆ Modem Setup Application (Windows 95/98), page 18.

 **Note:** During the various stages of software installation, the operating system may prompt for its own CD-ROM. Please verify that you have the appropriate CD-ROM available before you start the software installation.

### Driver Installation (Windows 95)

 **Note:** Later versions of Windows 95 may behave in a similar way to Windows 98 when detecting and installing the Satellite Modem driver. If messages are displayed that are different from those described below, please follow the directions for *Driver Installation (Windows 98)*, page 10.

The SatStream Modem Card is a Plug and Play card, meaning that the driver installation process will be initiated automatically, after you install the SatStream Satellite Modem Card and restart your computer, as described on the following pages.

**To install the Windows 95 driver:**

1. After installing the SatStream Satellite Modem Card and restarting the computer, the *New Hardware Found* dialog automatically opens:



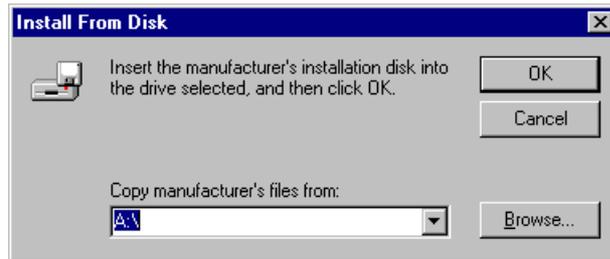
The **Driver from disk provided by hardware manufacturer** radio button is checked, by default.



**Note:** If you do not wish to install the driver now, you can select the **Do not install a driver** option. When you are ready to install this driver, you will need to begin the Windows autodetection procedure again. Refer to the first page of *Appendix A, Troubleshooting*, page 50, for instructions.

2. Click . The dialog closes and the *Install From Disk* window opens.

3. Insert the **SatStream Modem Installation Diskette** into your floppy disk drive and click .



The window closes.

 **Note:** In some Windows 95 versions, a dialog box may appear indicating that certain files could not be found on the Windows 95 CD-ROM. If this occurs, instruct Windows to use the **Satellite Modem Installation Diskette** as follows:

Enter **A:** and click **OK** to continue.

The Modem driver is installed. You can now install the **Modem Setup Application** as described on page 18.

## Driver Installation (Windows 98)

The SatStream Modem Card is a Plug and Play card, meaning that the driver installation process will be initiated automatically, after you install the SatStream Satellite Modem Card and restart your computer, as described below:



### To install the Windows 98 driver:

1. After installing the SatStream Satellite Modem Card and restarting the computer, the *Add New Hardware Wizard* window automatically opens:



2. Click  to begin the installation procedure. The Wizard prompts you to choose whether to search for the driver to be installed, or display a list of drivers in a specific location:



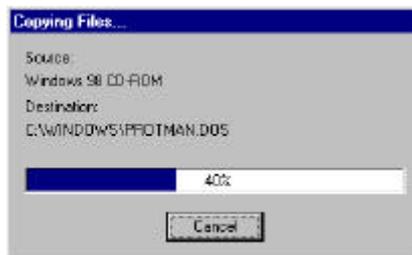
3. Select the default **Search for the best driver for your device (Recommended)** radio button. To continue, click . The following window opens:



4. Insert the **Installation Diskette** into your floppy disk drive and check the **Floppy disk drives** check box. Click . The following window opens:



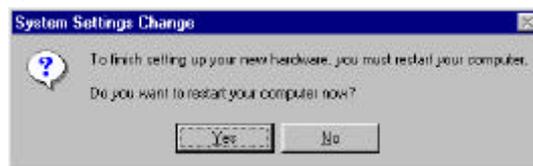
5. The Wizard locates and then installs the driver. Click . The *Copying Files* window opens and the new driver is copied to the system.



After the files have been copied, the *Copying Files* window closes and the following window opens, informing you that the installation procedure is complete:



6. Click . The *Systems Settings Change* window opens.



7. To finish setting up the new driver, it is necessary to restart your computer. Click  to restart the computer.

- 1/2  The Modem driver is installed. You can now install the **Modem Setup Application** as described on page 18.

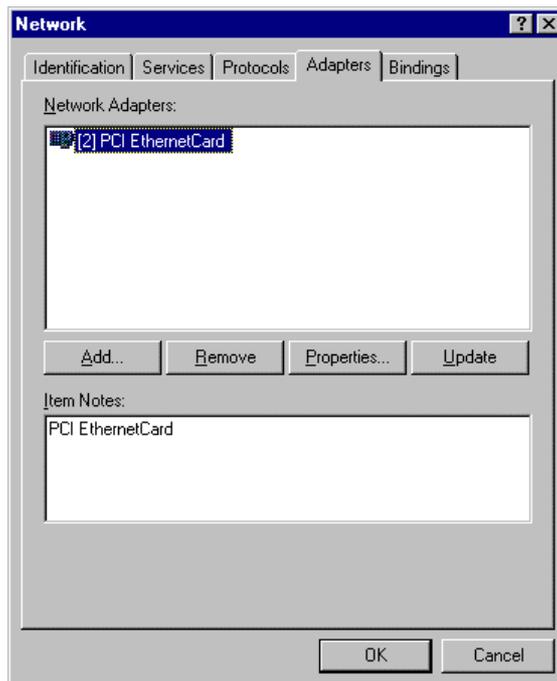
## Adapter Installation (Windows NT only)

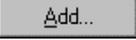
Although the SatStream Satellite Modem Card is a Plug and Play card, the driver installation process is not initiated automatically under Windows NT.

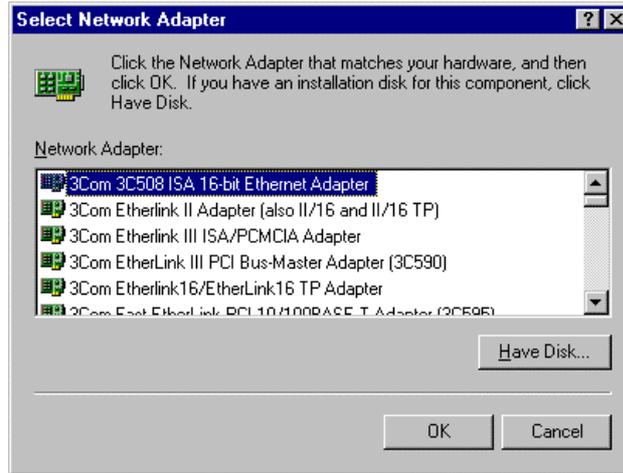


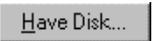
To install the network adapter:

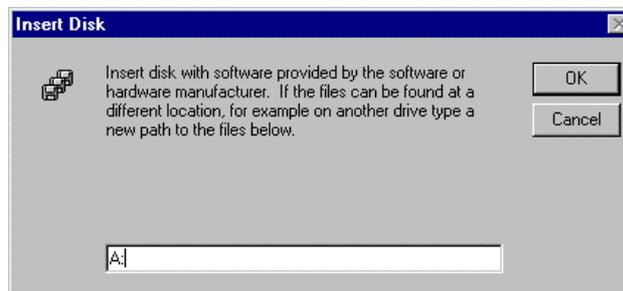
1. In the **Control Panel**, double-click the **Network** icon  . The *Network* window opens.
2. Click the *Adapters* tab. The *Adapters* window opens, as shown below:



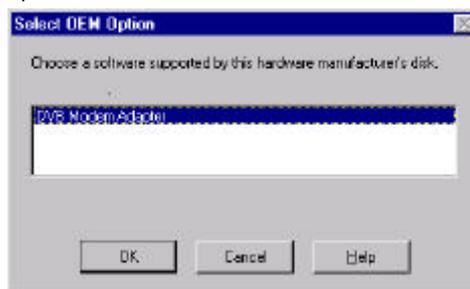
3. Click . The *Select Network Adapter* window opens, as shown below:

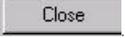


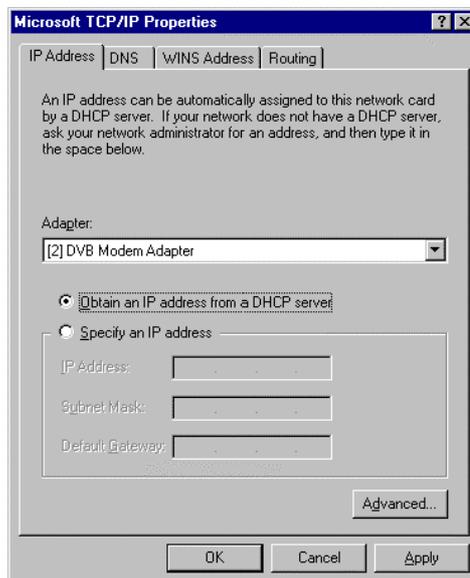
4. Click . The *Insert Disk* window opens, as shown below:



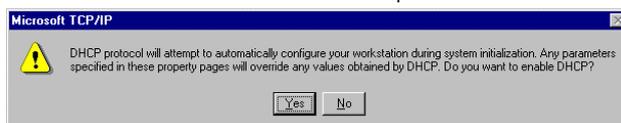
5. Insert **Installation Diskette Number 1** into the floppy disk drive and click . The *Select OEM Option* window opens, as shown below:



6. Select **DVB Modem Adapter** and click . The *Network* window reappears.
7. Click . The *Microsoft TCP/IP Properties* window opens.
8. Select the *IP Address* tab, as shown below:



- In the *Adapter* dropdown list, select **DVB Modem Adapter**.
- Click the **Obtain an IP address from a DHCP server** radio button. The *Microsoft TCP/IP* window opens, as shown below:



- Click . The window closes and the DHCP protocol configures the computer during system initialization.
- Restart the computer.

-  The adapter installation for Windows NT is complete. You can now install the **Modem Setup Application**.

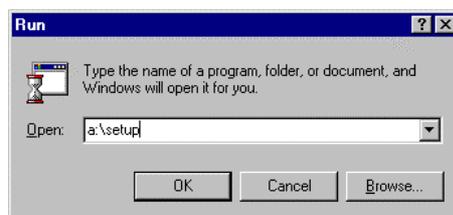
## Modem Setup Application

After you have installed the Modem driver, as described in the section *Software Installation*, on page 8, you can install the Modem software using the *Modem Setup Application Wizard*.



### To install the Modem Setup Application and the Wizard:

- Click the **Start** button on the **Task bar** and then select **Run**. The *Run* window opens.



- Enter **a:\setup** in the *Run* window.

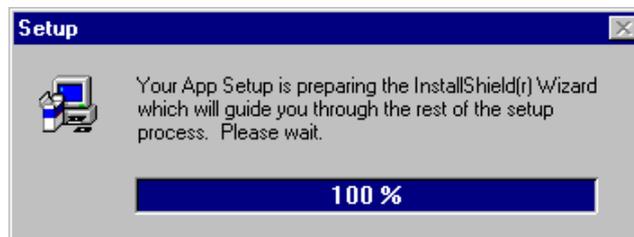
 **Note:** If you have inserted the diskette in another drive, specify the drive letter.

 **Note:** Insert the diskette called **Installation Diskette Number 1**.

3. Click  to close the window and invoke the Wizard. The *SatStream Setup* screen momentarily appears.



The *Setup* window opens and shows the progress of the Wizard installation process.



After the Wizard is installed, the *Setup* window closes and the *Welcome* screen opens.



4. Click  to continue. The *Choose Destination Location* window opens.



5. Choose a directory in which to install the *Modem Setup Application*.

Click  to install the *Modem Setup Application* in the default directory.

or

Click  to choose a specific directory and then click .

6. You will be asked whether you want to create a shortcut on your desktop. Click  to create a shortcut on the desktop, unless you prefer to launch the *SatStream Satellite Modem Application* from the *Start Menu* only.



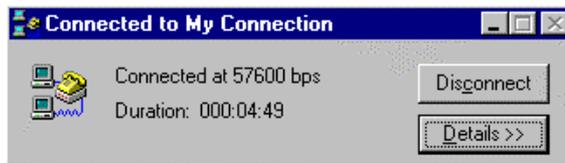
The *SatStream Satellite Modem Application* is now complete. The next step is to connect to the Internet, via your Internet Service Provider.

## Step 3: Connecting to Your Internet Service Provider

Establish a connection with your Internet Service Provider in the normal manner.



**Note:** The Internet dialer procedures may vary, depending on your dialing application. Your dialer may be launched automatically by your browser, in which case you do not need to dial again.



## Step 4: SatStream Satellite Modem Configuration (Windows 95/98/NT)

This step applies to Windows 95/98 and NT users and describes how to:

- Set the SatStream Satellite Modem's parameters, see below.
- Set the Central Control Unit (CCU) connection parameters, page 27.
- View the connection status, page 29.
- Configure the Proxy Server, page 35.

### Setting the SatStream Satellite Modem's Parameters

The SatStream Satellite Modem's parameters must be defined if there is no connection with the Central Control Unit (CCU). You can choose to make a connection with the CCU, in which case the modem parameters will be defined automatically by the CCU and you do not need to define them. See *Setting Central Control Unit Connection Parameters* on page 27, for further information.



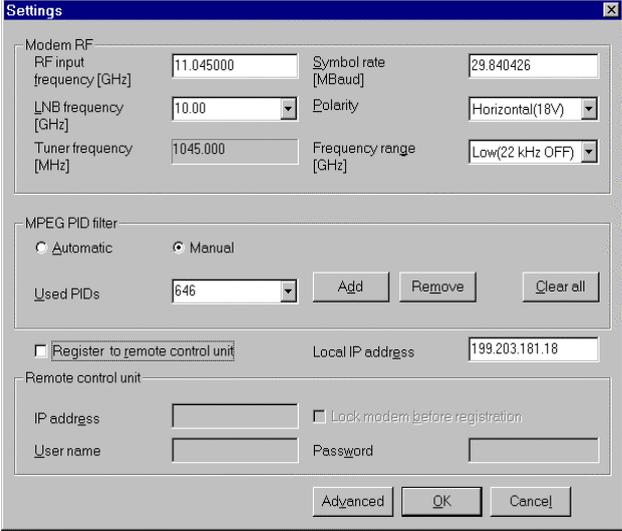
#### To specify the SatStream Satellite Modem's parameters:

1. Double-click the **SatStream Satellite Modem Application**



icon  in the **Satellite Modem** folder. The *SatStream* window appears. (See page 29 for a description of this window.)

If this is the first time you are running the SatStream Modem Application, the *Settings* window opens, enabling you to define modem parameters, as well as CCU connection parameters, if required.



 **Note:** The first time that the application is started after installation, the *Settings* window opens. Once the parameters have been set, the *SatStream Satellite Modem Application* continues with the initialization process.

2. In the *Settings* window, in the **Modem RF** area, define the modem parameters, as follows:

**RF input frequency [GHz]:** The RF input frequency of the demodulator.

**LNB frequency [GHz]:** Local Oscillator frequency of the LNB. Depending on the type of antenna you have, select the relevant frequency from the dropdown menu.

**Tuner frequency [MHz]:** This is a read-only field computed from the LNB and RF frequencies, as follows:

$$\text{Tuner-frequency} = (\text{RF frequency} - \text{LNB frequency}) * 1000$$

**Symbol rate [Mbaud]:** The symbol rate of the demodulator. The range is 3 - 30 Mbaud for hardware revisions A2 and below, and 1 - 45 Mbaud for hardware revisions above A2.

 **Note:** To view your hardware revision, refer to the *Status* window, page 32.

**Polarity:** The DC to DC output voltage, in volts. The DC to DC output voltage controls the LNB polarity (horizontal/ vertical), as follows:

**14** - vertical polarity

**18** - horizontal polarity

**Frequency range:** This field enables/disables a 22KHz tone which controls the LNB frequency range. It is relevant only with "universal" types of LNB, which include two Local Oscillators (L.O), one with low frequency and the second with eighth high frequency. There are two possible values:

**Low** - The LNB uses the low L.O and thus a low frequency range (950 - 1950MHz).

**High** - The LNB uses the high L.O and thus a high frequency range (1100 - 2150MHz).

3. In the **MPEG PID filter** area, specify the PIDs that will be used to filter data for the SatStream Satellite Modem.

 **Note:** If the modem is connected to the CCU, the PIDs will be set automatically by the CCU and you will receive notification of this in the MPEG PID filter area.

PID filters can be defined in one of two modes:

**Automatic:** The PIDs are defined automatically during the connection. Choosing this mode disables the other input fields in the MPEG PID filter area.

**Manual:** The PIDs are defined manually, as follows:

In the **Used PIDs** field, type in the required PID.

Click the **Add** button. The new PID will be added to the dropdown list of currently used PIDs in this field.

 **Note:** You can remove a PID from the list by selecting it and clicking the **Remove** button. You can clear all PIDs from the list by clicking the **Clear all** button.

3. Click . The *Settings* window closes **and** the SatStream initialization process starts.

 **Note:** If parameters are modified at any stage other than the first time setup, the SatStream Modem Application will prompt for a restart to enable the settings to take effect, as shown below:



4. Click . The application will restart with the new parameters.

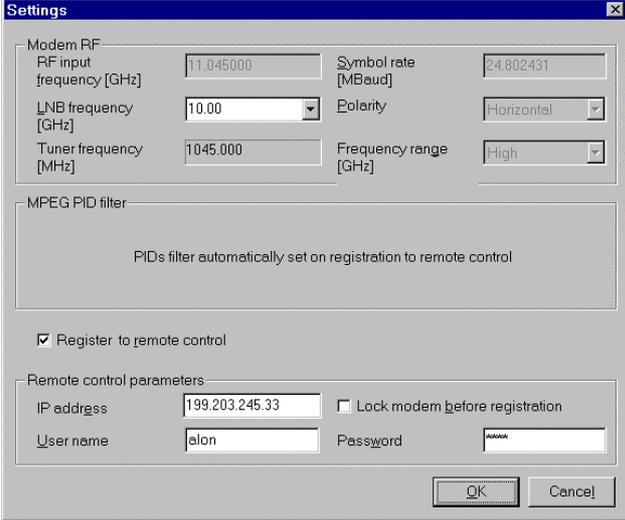
## **Setting Central Control Unit (CCU) Connection Parameters**

The **SatStream Satellite Modem** provides the option of connecting to a Central Control Unit (CCU). Selecting this option enables the SatStream Satellite Modem to automatically receive the connection parameters and establish a satellite connection **and** provides access to additional advanced satellite services.

If you intend to connect to the CCU, you need to set the parameters that enable this connection.

 **To connect to the CCU:**

1. In the *Settings* window, check the **Register to remote control** checkbox. The remote control parameters at the bottom of the *Settings* window are enabled. The **Modem RF** parameters at the top of the window are disabled (with the exception of the LNB frequency parameter), since these parameters are defined in the CCU. In addition, the PIDs are defined in the CCU. Therefore, the fields in this area are unavailable.



The screenshot shows a 'Settings' dialog box with the following sections:

- Modem RF:** RF input frequency [GHz] (11.045000), Symbol rate [MBaud] (24.802431), LNB frequency [GHz] (10.00), Polarity (Horizontal), Tuner frequency [MHz] (1045.000), Frequency range [GHz] (High).
- MPEG PID filter:** PIDs filter automatically set on registration to remote control.
- Register to remote control
- Remote control parameters:** IP address (199.203.245.33), Lock modem before registration (unchecked), User name (alou), Password (\*\*\*\*\*).

Buttons: OK, Cancel

2. Enter the following authentication parameters supplied by the Satellite Service Provider:  
**IP Address:** The IP address of the CCU.  
**User Name:** The authentication user name.  
**Password:** The authentication password.

3. If you do not have a telephone or LAN connection and are relying on a uni-directional connection in order to connect to the CCU, check the **Lock modem before registration** checkbox. In this case, you must define temporary modem and PID parameters. Your definitions will be used until connection with the CCU has been established, after which the parameters are reconfigured according to the parameters defined in the CCU.

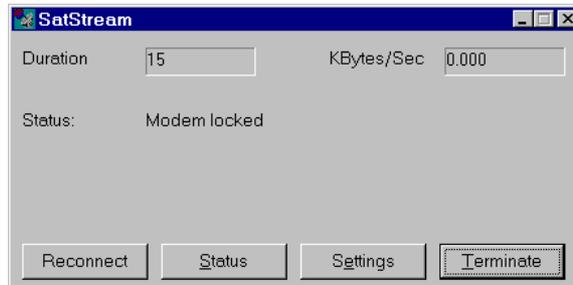
Please refer to your Satellite Service Provider for further information.

## Viewing the Connection Status

Summary information about the current status of the satellite connection can be viewed in the *SatStream* window, which is displayed when the SatStream Modem Application is started. More detailed information can be viewed in the *Status* window, which is accessed from the SatStream window. A description of each of these windows is provided below.

### The SatStream Window

The *SatStream* window is displayed when the SatStream Modem Application is started. It remains displayed until satellite connection is established.



The SatStream window displays general information about the current session, provides access to further details about connection status and parameters, and enables the reconnection and termination of the modem and CCU.

When successful connection has been established, the SatStream window is minimized and its icon appears in the system tray. The window can be re-displayed by clicking on its icon in the system tray.

The title bar of the SatStream window is displayed in different colors, depending on the status of the current connection, as follows:

**Green:** OK

**Yellow:** Initializing

**Red:** System failure. If there is a system failure, the *SatStream* window pops up on the screen.

Following is a description of the **SatStream** window:

**Duration:** The time that has elapsed since the start of the active satellite connection (lock). After each reconnection, this time is reset to zero.

**Kbytes/Sec:** The accumulated bytes passed on by the SatStream Modem for this session. The SatStream Modem may receive much more data but this data is filtered out if it has not been requested by an application.

**Status:** Displays a summary of the current status of the connection. For further status details, click the **Status** button.

**Reconnect Button:** Reconnects the modem and the CCU (if connected). If modem parameters are modified, it is necessary to reconnect in order for the modified parameters to be implemented. In addition, if the CCU is physically disconnected for any reason, you must reconnect so that the modem parameters can be re-implemented.

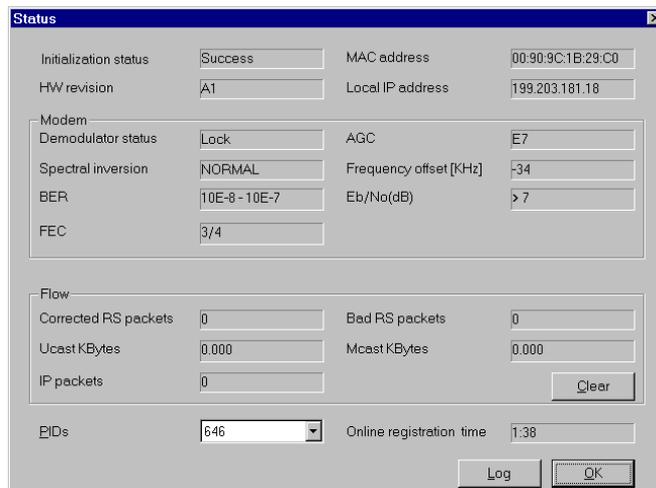
**Status Button:** Opens the *Status* window, which displays detailed information about the SatStream Satellite Modem's current status, as well as other information. The *Status* window is described in the following section.

**Settings Button:** Opens the Settings window, which enables you to define modem parameters (see page 23), and connect to the CCU (see page 27).

**Terminate Button:** Shuts down the SatStream Modem Application and terminates the CCU connection (if connected).

## The Status Window

The *Status* window is accessed by clicking the **Status** button in the *SatStream* window.



The screenshot shows the 'Status' window with the following fields and values:

Field	Value	Field	Value
Initialization status	Success	MAC address	00:90:9C:1B:29:C0
HW revision	A1	Local IP address	199.203.181.18
<b>Modem</b>			
Demodulator status	Lock	AGC	E7
Spectral inversion	NORMAL	Frequency offset [KHz]	-34
BER	10E-8 - 10E-7	Eb/No(dB)	> 7
FEC	3/4		
<b>Flow</b>			
Corrected RS packets	0	Bad RS packets	0
Ucast KBytes	0.000	Mcast KBytes	0.000
IP packets	0		
<input type="button" value="Clear"/>			
PIDs	646	Online registration time	1:38
<input type="button" value="Log"/> <input type="button" value="OK"/>			

The *Status* window displays detailed, read-only information about current modem status, IP level flow statistics, connection to the CCU and other general information.

Following is a description of the *Status* window:

**Initialization status:** Success/Fail status of initialization.

**HW revision:** The NIC hardware revision number.

**MAC address:** The MAC address of the NIC.

**Local IP address:** The IP address entered manually by the user in the *Settings* window, or the IP calculated automatically, if connected to the CCU.

### **Modem Status**

**Demodulator status:** The demodulator converts the Satellite QPSK analog signal into bit stream. The demodulator status is either **Locked** or **Unlocked**. If **Unlocked**, there is no active satellite connection and the demodulator will try to re-lock automatically.

**AGC:** The demodulator's estimate of the power level of the input signal. The lower the power level, the larger the gain-control of the demodulator to the RF input front-end (the tuner). Any 2-digit hexadecimal value other than 00 and FF indicates an acceptable level.

**Spectral inversion:** The demodulator's estimate of spectral inversion of the input signal. This value is either **NORMAL** or **INVERTED**. The demodulator automatically inverts the input signal polarity if it detects spectral inversion.

**Frequency offset:** The demodulator's estimation of the frequency offset (KHz) of the RF input signal.

**BER:** The bit error rate estimation of the demodulator. This is a rough estimate. For example, results are  $<10e-3$ ,  $<10e-4$ , and so on. The smaller the BER value, the better the input signal. Optimal values are in the range  $<10e-5$  and smaller ( $<10e-6$ ,  $10e-7$ , and so on).

**Eb/No:** The demodulator's estimate of the quality of the input signal. In modems, the quality of the input signal is more commonly measured in terms of Eb/No, which is the "bit energy" to "noise density" ratio. Optimal values are 7 and higher.

**FEC (Forward Error Correction):** The automatically detected redundancy factor of the bit stream, as set at the transmitter's site. The value indicates the number of bits used for data related to the total transmitted bits. A higher number indicates greater correction ability, but a lower data rate capability.

### **Flow Statistics**

**Corrected RS packets:** The demodulator number of Reed-Solomon transport stream packets that have been corrected.

**Bad RS packets:** The demodulator number of Reed-Solomon transport stream packets that could not be corrected. The smaller the number, the better the input signal.

**Ucast Kbytes:** The accumulated number of Kbytes of IP packets with a unicast IP address forwarded up by the NIC driver. This number is cleared each time the application is started or the user reconnects. It can be cleared manually by clicking the **Clear** button.

**Mcast Kbytes:** The accumulated Kbytes of IP packets with a multicast IP address forwarded to the TCP/IP stack by the NIC driver. This number is cleared each time the application is started or the user reconnects. It can be cleared manually by clicking the **Clear** button.

**IP packets:** The accumulated number of IP packets forwarded by the NIC driver. This number is cleared each time the application is started or the user reconnects. It can be cleared manually by clicking the **Clear** button.

**PIDS:** Provides a list of the currently used PID filters.

**Online registration time:** The time since startup of the SatStream Modem Application (*only when connected to the CCU*).

**Log Button:** Opens a display of the last 100 logged events.

**OK Button:** Closes the *Status* window.

## Proxy Server Configuration

A proxy server is an integral part of the SatStream Satellite Modem solution. Proxy servers are configured separately for each Internet application, via the application itself. Therefore, configuration procedures vary, depending on the specific application used.

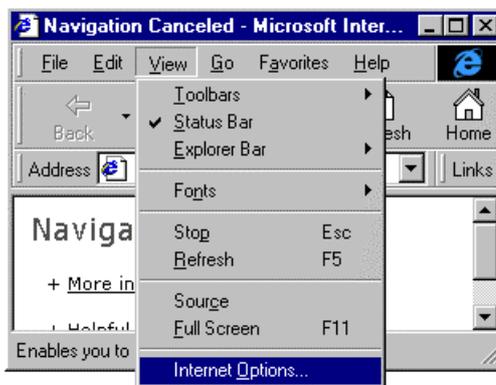
Although proxy servers may be used by various kinds of Internet applications, such as most Internet browsers and FTP clients, these are not all covered here. This section describes how to configure the proxy server in Netscape Navigator and Microsoft Explorer.

### Microsoft Explorer

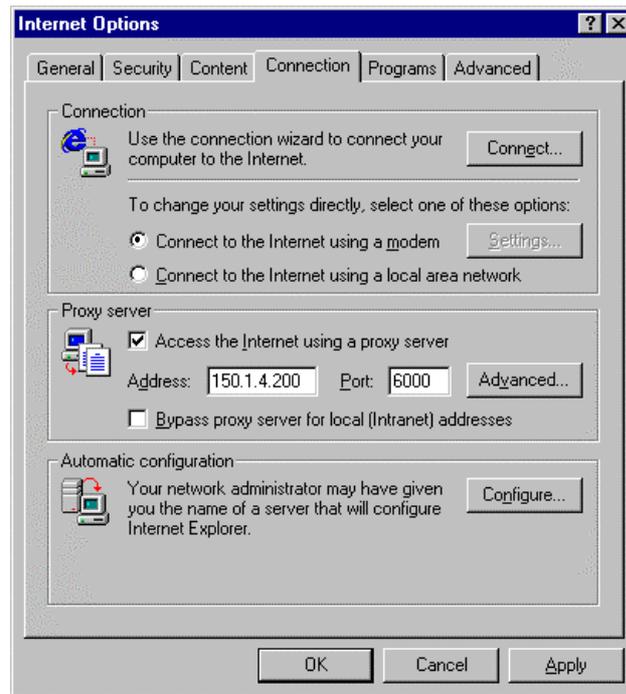


To configure a proxy server in Microsoft Explorer:

1. Launch **Microsoft Explorer**.
2. In the *View* menu, click on **Internet Options**.



The *Internet Options* dialog opens:



3. In the **Proxy server** area, check the box beside the **Access the Internet using a proxy server**.
4. Enter the Satellite Service Provider proxy address and port information in the **Address** and **Port** fields.

 **Note:** The Satellite Service Provider supplies you with the address and port number.

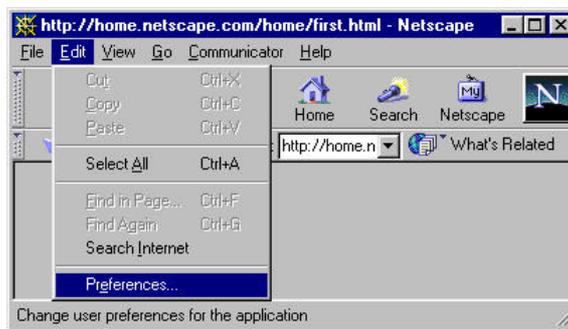
5. Click  to save the proxy configurations and to exit the dialog.

## Netscape Navigator



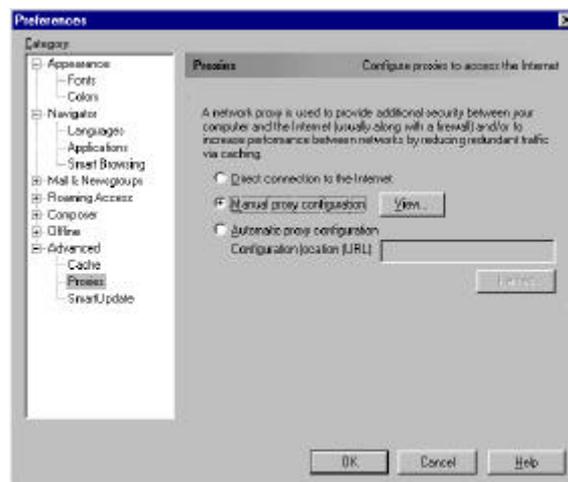
To configure a proxy server in Netscape Navigator:

1. Launch **Netscape Navigator**.
2. In the *Edit* menu, click on **Preferences**.

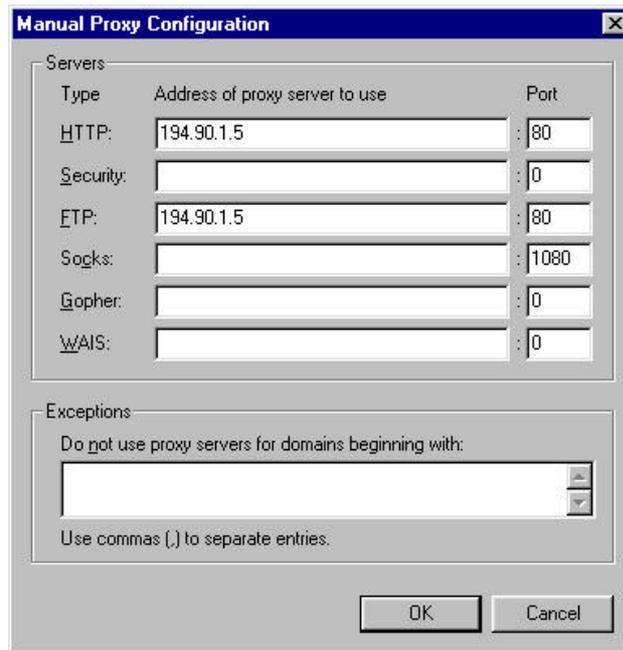


The *Preferences* window opens.

3. Select *Proxies* from the *Advanced* category in the **Categories** list.



4. Check the radio button beside **Manual Proxy Configuration** and click **View**.



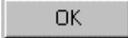
The image shows a dialog box titled "Manual Proxy Configuration" with a close button (X) in the top right corner. It contains two main sections: "Servers" and "Exceptions".

**Servers:** A table with three columns: "Type", "Address of proxy server to use", and "Port".

Type	Address of proxy server to use	Port
HTTP:	194.90.1.5	: 80
Security:		: 0
FTP:	194.90.1.5	: 80
Socks:		: 1080
Gopher:		: 0
WAIS:		: 0

**Exceptions:** A section with the text "Do not use proxy servers for domains beginning with:" followed by a text input field with a scroll bar. Below the field is the instruction "Use commas (,) to separate entries."

At the bottom of the dialog box are two buttons: "OK" and "Cancel".

5. Fill in the fields with the address and port numbers provided by the Satellite Service Provider and click . The window closes and the proxy is configured.
6. Click  to exit the *Preferences* window.

## Step 5: Connecting Via Satellite

This section describes how to establish a data connection via satellite.



**Note:** Make sure that you are already connected to your Internet Service Provider via your standard modem, as described in the previous step, *Connecting to Your Internet Service Provider*, page 22.



**To establish a data connection via satellite:**



**Note:** Procedures 1 and 2 are only necessary if the *SatStream* application is not already running.

1. In the *Programs* sub-menu, select **SatStream Modem**.  
Or

Double-click on the **SatStream Modem**  icon on your desktop. The *SatStream Modem Application* window opens.

2. The SatStream Modem Application automatically attempts to establish a connection to the Satellite Service Provider.

When a connection has been established, the message **Modem locked** appears in the **Status** area of the *SatStream* window, as shown below:



To view the quality of the connection from the satellite dish, click . For a description of the *Status* dialog, refer to page 32.

To change the authentication settings, click . See page 24 for further information.

If the quality of the reception needs to be improved, consult an authorized satellite antenna installer.

If the modem fails to establish a satellite connection, refer to *Appendix A: Troubleshooting*, page 50.

**IMPORTANT:** To maintain a connection, do not close the *Satellite Modem Application* window. You can, however, minimize the window. When the window is minimized, its icon appears in the **System Tray**.

Dial-up networking icon



Satellite connection icon

3. To access the Internet, open your browser.

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## Accessing the Internet Via a Standard Modem

Even though you installed your satellite connection, it is possible to access the Internet via your standard modem without having to uninstall the SatStream Modem.



### To access the Internet via your standard modem:

1. Access the *Proxy Server* area via your Internet browser application, as described in the section *Proxy Server Configuration*, on page 35.
2. Revert to your previous proxy server settings:  
If you previously used a proxy server, enter your previous proxy server Address and Port in the fields provided.  
If you previously bypassed a proxy server, uncheck the **Access the Internet using a proxy server** checkbox (Microsoft Explorer) or check the **No Proxies** radio button (Netscape Navigator).
3. Click  to save the changes and close the window.
4. Click  to close the Satellite Modem Application.

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## Uninstalling Satellite Access

The following sections describe the stages for uninstalling the SatStream Modem.

- ◆ Uninstalling the Modem Application (Windows 95/98/NT), below.
- ◆ Uninstalling the SatStream Modem Device Driver (Windows 95/98), page 45.
- ◆ Uninstalling the SatStream Network Adapter (Windows NT only), page 46
- ◆ Uninstalling the SatStream Modem Card, page 47.

## Uninstalling the Modem Application (Windows 95/98/NT)

The first stage is to uninstall the software.



**To uninstall the SatStream Modem software from your computer:**

1. Exit all applications.
2. Click the **Start** button on the **Task bar** and, from the *Programs* sub-menu, select **ComBox SatStream** and then **uninstallShield**.

Follow the screen instructions.



The SatStream Satellite software is removed from your system. You must now uninstall the satellite device driver.

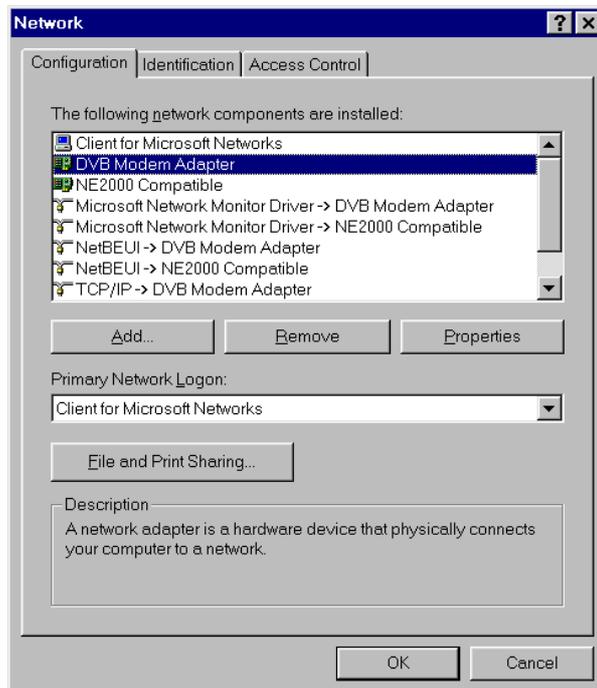
## Uninstalling the SatStream Satellite Modem Device Driver (Windows 95/98)

This section describes how to uninstall the SatStream Satellite Modem device driver.



### To uninstall the SatStream Satellite Modem driver:

1. Click the **Start** button on the **Task bar**, and from the *Settings* menu, select the *Control Panel* sub-menu. The *Control Panel* window opens.
2. Double-click the **Network** icon. The *Network* window opens:



3. Select **DVB Modem Adapter**.
4. Click .
5. Click  to close the *Network* window. The DVB Modem device driver is removed from your system.
6. In Windows 98, remove the **ProviderDVBDM.inf** file from the `windows\inf\other` directory.



The device driver has now been removed from your computer. You can now uninstall the SatStream Satellite Modem Card, as described on page 47.



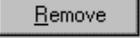
**Note:** In some Windows versions, you may be asked to reboot your computer. If so, select the **Reboot** option.

## Uninstalling the SatStream Network Adapter (Windows NT only)

This section describes how to uninstall the network adapter.



**To uninstall the network adapter:**

1. In the **Control Panel**, double-click the **Network** icon . The *Network* window opens.
2. Click the *Adapters* tab. The *Adapters* window opens.
3. Select **DVB Modem Adapter** and click . The *Warning* dialog opens.
4. Click **Yes** in the *Warning* dialog box.



The adapter has now been removed from your computer. You can now uninstall the SatStream Satellite Modem Card as described on page 47.

## Uninstalling the SatStream Satellite Modem Card

The final stage involves removing the SatStream Satellite Modem Card from your computer.



### To uninstall the SatStream Satellite Modem Card:

1. Exit all applications and turn off your computer.
2. Disconnect the power to the computer.
3. Remove the computer's cover and locate the SatStream Satellite Modem Card.
4. Remove the SatStream Satellite Modem Card from its slot.
5. Reinstall the computer cover.
6. Reconnect the power supply and turn on the computer.



**Note:** You may want to reconfigure your proxy settings, as described in the section *Accessing the Internet Via a Standard Modem*, page 42. The connection established is via your standard modem.

## Upgrading Software

Periodically, new software is released for the SatStream Satellite Modem Card. Upgrading the driver and Modem Application improves the performance and functionality of the Modem Card. This section describes how to upgrade a driver on Windows 95/98 and Windows NT.

Upgrading the software involves the following:

- ◆ Uninstalling the previous Modem Application and software  
Step 1: Hardware Installation, below.
- ◆ Restarting the computer Step 1: Hardware Installation, below.
- ◆ Installing the new driver and Modem Setup Application



### To upgrade the software:

1. Uninstall the previous SatStream Modem Application as described in the section *Uninstalling the Modem Application (Windows 95/98/NT)*, page 44.
2. Uninstall the previous driver as described in the section *Uninstalling the SatStream Satellite Modem Device Driver (Windows 95/98)*, page 45, or *Uninstalling the SatStream Network Adapter (Windows NT)*, page 46.

**Do not uninstall the SatStream Satellite Modem card.**

3. Restart the computer.
4. Install the new driver and software, as described in the section *Software Installation*, page 8. The new software is installed.



**Note:** The software bundle includes matching versions of the driver and SatStream Modem Application. Therefore, you must uninstall the previous version completely, including both the application and driver, and then install all the elements of the new version, as instructed.

## Upgrading Windows 95 to Windows 98

It is not necessary to obtain new software when upgrading the operating system from Windows 95 to Windows 98. The driver and Modem Application from the Windows 95 operating system maintain the same level of functionality and performance under Windows 98.

It is also not necessary to reinstall the SatStream Modem driver and application after upgrading to Windows 98, since the Windows 98 Upgrade is capable of adopting all previously installed devices and software.

Occasionally the Windows 98 Upgrade may fail to adopt the previous setup of the Satellite Modem. If the system does not accept the previous setup of the Satellite Modem Application, the software for the SatStream Satellite Modem Card needs to be reinstalled.



### To reinstall the software:

1. Uninstall the SatStream Modem Application, as described in the section *Uninstalling the Modem Application (Windows 95/98/NT)*, page 44.
2. Uninstall the driver, as described in the section *Uninstalling the SatStream Satellite Modem Device Driver (Windows 95/98)*, page 45, or *Uninstalling the SatStream Network Adapter (Windows NT)*, page 46.

#### **Do not uninstall the SatStream Satellite Modem card.**

3. Restart the computer.
4. Reinstall the driver and software, as described in the section *Software Installation*, page 8.

## Appendix A: Troubleshooting

This section is intended to assist you in problem solving. It describes how to overcome installation, connection or initialization problems. This section also includes the *Status* dialog, in which technicians can view modem status parameters, reception quality, the hardware status and some statistics.

### Installation Problems (Windows 95/98)

- ◆ The Satellite Modem Adapter does not appear in the Network Adapters section when you click Control Panel/System/Device Manager.

#### **Solution:**

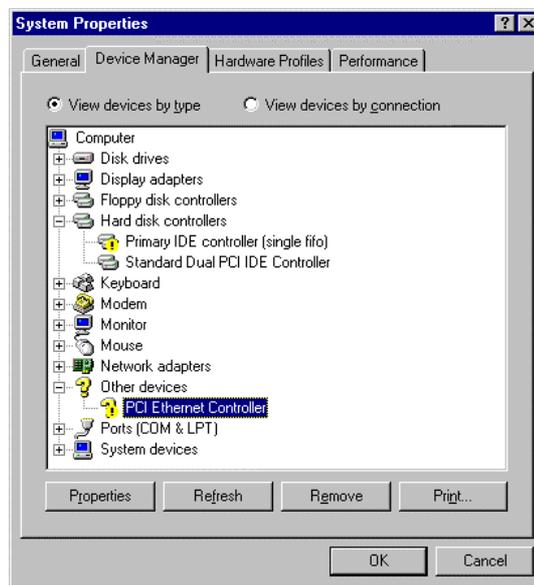
The solution depends on whether the **Satellite Modem Adapter** resides in the *Other Devices* section or not. If the **Satellite Modem Adapter** resides in *Other Devices* section (which will happen if you chose not to install the driver initially), the user first needs to remove it and then restart the PC. Let Windows find the card and install its drivers. If the Modem Card does not appear at all, check that the Modem Card is properly installed in the PCI extension slot.



#### **To remove a previously installed PCI Card:**

1. Click the **Start** button on the **Task bar** and, from the *Settings* menu, select the *Control Panel* sub-menu. The *Control Panel* window opens.

2. Double-click the **System** icon  in the *Control Panel* window. The *System Properties* window opens. Click the *Device Manager* tab.
3. Click **Other devices** and select **PCI Ethernet Controller**.



4. Click  to uninstall the controllers. A confirmation box is displayed. Click  to confirm the removal. The hardware is removed.
- ◆ When you select Control Panel/System/Device Manager, the Satellite Modem Adapter icon appears with an exclamation mark ! beside it, indicating an error.

**Solution:**

Open the *Properties* dialog and click on the *Resources* tab. Verify that there are no conflicts with the IRQ or other resource fields. Sometimes the Plug and Play mechanism fails to allocate a free IRQ (Interrupt ReQuest) to a new board. If this is the case, you can try to manually allocate the IRQs.

### Satellite Reception Problems (Windows 95/98/NT):

- ◆ The Satellite Application contains a Status button. Pressing it will cause a Status Window to appear. If the **Demodulator Status Field** shows **Unlock**, the SatStream modem does not detect a carrier.

#### Solutions:

Check to see that the dish is properly installed and that the cable is properly connected between the PC and the dish.

If the **Demodulator Status** field shows **Lock**, check that the **Eb/No** field shows a value higher than 7. Note that dB is the unit of measurement of this field.

If the **Demodulator Status** field shows **Unlock**, or the **Eb/No** shows a value lower than 5 dB, consult an authorized satellite-antenna installer.

### Connection Problems (Windows 95/98/NT):

- ◆ The connection with the CCU fails.

#### Solutions:

Make sure that you activate the Satellite Modem Application after you establish a connection to your ISP. Verify that the **CCU IP Address**, **User Name** and **Password** fields are correct.

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# Appendix B: Technical Specifications

## Hardware Specifications

RF Input Frequency, RF Level	950-2150 Hz, -65 to -20 dBm
LNB Power and Signaling	Switchable 14/18 VDC, up to 350mA, 22 KHz (automatically set)
LNB Requirements	Phase noise of: -57dBc/Hz @ 1KHz -75dBc/Hz @ 10KHz -95dBc/Hz @ 100KHz L.O stability of $\pm 1$ MHz over $-30^{\circ}\text{C}$ to $+60^{\circ}\text{C}$
Interface	Standard LNB output, F-type, 75 ohm
Modulation Type	QPSK (optional BPSK), DVB Compliant
Bit Rate	1 to 53 Mbps (depending on FEC Rate) 4 to 53 Mbps in SCPC applications continuously variable
FEC	Concatenated Convolutional Code and Shortened Reed-Solomon (188, 204)
Convolutional FEC Rates	1/2, 2/3, 3/4, 5/6, 6/7, 7/8
Encryption	Based on symmetrical keys, individually assigned
PC Interface	Internal PCI bus ver. 2.1
Dimensions	1/2 size PC card format

## Software Specifications

Operating System	Windows 95, Windows 98 and Windows NT
Installation Support	Plug and Play, Antenna Tune Support
Firmware	Supports SCPC, MCPC, 6 Simultaneous PIDs
Driver Support	NDIS Miniport Standard WINSOCK Compliant and WINSOCK2 Compliant
DVB Standard	Multi Protocol Encapsulation fully compliant
Protocol Support	TCP and UDP over IP Multicast addressing compliant
Throughput	Up to 1.5 Mbps in TCP/IP Mode

## Appendix C: FCC Declaration of Conformity

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a **Class B** digital device, pursuant to Part 15 of FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- ◆ Re-orient or relocate the receiving antennae.
- ◆ Increase the separation between the equipment and the receiver.
- ◆ Connect the equipment into an outlet on a circuit other than that to which the receiver is connected.

- ◆ Consult the dealer or an experienced radio/TV technician for help.

 **Note:** This unit was tested with shielded cables on the peripheral devices. Shielded cables must be used with the unit to insure compliance.

 **Note:** The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user's authority to operate the equipment.

## Customer Service

To obtain customer service, contact your local distributor.

