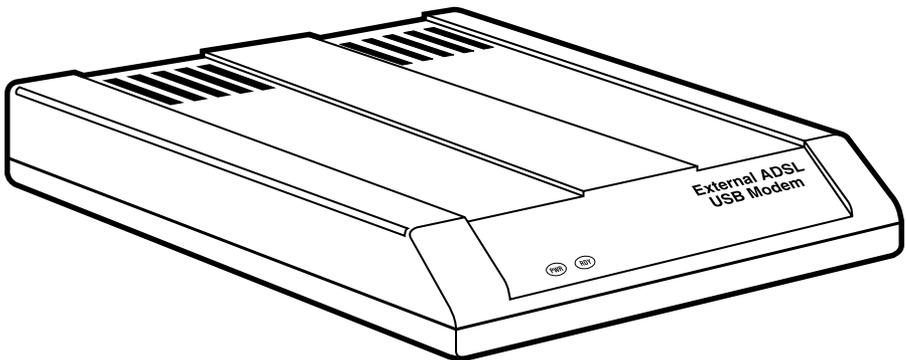




# External ADSL USB Modem Users' Manual



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**CUSTOMER  
SUPPORT  
INFORMATION**

Order **toll-free** in the U.S.: Call **877-877-BBOX** (outside U.S. call **724-746-5500**)  
FREE technical support 24 hours a day, 7 days a week: Call **724-746-5500** or fax **724-746-0746**  
Mailing address: **Black Box Corporation**, 1000 Park Drive, Lawrence, PA 15055-1018  
Web site: [www.blackbox.com](http://www.blackbox.com) • E-mail: [info@blackbox.com](mailto:info@blackbox.com)

**FEDERAL COMMUNICATIONS COMMISSION  
AND  
INDUSTRY CANADA  
RADIO FREQUENCY INTERFERENCE STATEMENTS**

This equipment generates, uses, and can radiate radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio communication. It has been tested and found to comply with the limits for a Class A computing device in accordance with the specifications in Subpart J of Part 15 of FCC rules, which are designed to provide reasonable protection against such interference when the equipment is operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user at his own expense will be required to take whatever measures may be necessary to correct the interference.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

*This digital apparatus does not exceed the Class A limits for radio noise emission from digital apparatus set out in the Radio Interference Regulation of Industry Canada.*

*Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A prescrites dans le Règlement sur le brouillage radioélectrique publié par Industrie Canada.*

**EUROPEAN UNION DECLARATION OF CONFORMITY**

This equipment complies with the requirements of the European EMC Directive 89/336/EEC.



## **FCC Requirements for Telephone-Line Equipment**

1. The Federal Communications Commission (FCC) has established rules which permit this device to be directly connected to the telephone network with standardized jacks. This equipment should not be used on party lines or coin lines.
2. If this device is malfunctioning, it may also be causing harm to the telephone network; this device should be disconnected until the source of the problem can be determined and until the repair has been made. If this is not done, the telephone company may temporarily disconnect service.
3. If you have problems with your telephone equipment after installing this device, disconnect this device from the line to see if it is causing the problem. If it is, contact your supplier or an authorized agent.
4. The telephone company may make changes in its technical operations and procedures. If any such changes affect the compatibility or use of this device, the telephone company is required to give adequate notice of the changes.
5. If the telephone company requests information on what equipment is connected to their lines, inform them of:
  - a. The telephone number that this unit is connected to.
  - b. The ringer equivalence number.
  - c. The USOC jack required: RJ-11C.
  - d. The FCC registration number.

Items (b) and (d) can be found on the unit's FCC label. The ringer equivalence number (REN) is used to determine how many devices can be connected to your telephone line. In most areas, the sum of the RENs of all devices on any one line should not exceed five (5). If too many devices are attached, they may not ring properly.

6. In the event of an equipment malfunction, all repairs should be performed by your supplier or an authorized agent. It is the responsibility of users requiring service to report the need for service to the supplier or to an authorized agent.

## Certification Notice for Equipment Used in Canada

The Industry Canada label identifies certified equipment. This certification means that the equipment meets certain telecommunications-network protective, operation, and safety requirements. Industry Canada does not guarantee the equipment will operate to the user's satisfaction.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. In some cases, the company's inside wiring associated with a single-line individual service may be extended by means of a certified connector assembly (extension cord). The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations.

Repairs to certified equipment should be made by an authorized maintenance facility—in this case, Black Box. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment.

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines, and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.

### CAUTION

**Users should not attempt to make such connections themselves, but should contact the appropriate electric inspection authority, or electrician, as appropriate.**

The LOAD NUMBER (LN) assigned to each terminal device denotes the percentage of the total load to be connected to a telephone loop which is used by the device, to prevent overloading. The termination on a loop may consist of any combination of devices, subject only to the requirement that the total of the load numbers of all the devices does not exceed 100.

**NORMAS OFICIALES MEXICANAS (NOM)  
ELECTRICAL SAFETY STATEMENT**

**INSTRUCCIONES DE SEGURIDAD**

1. Todas las instrucciones de seguridad y operación deberán ser leídas antes de que el aparato eléctrico sea operado.
2. Las instrucciones de seguridad y operación deberán ser guardadas para referencia futura.
3. Todas las advertencias en el aparato eléctrico y en sus instrucciones de operación deben ser respetadas.
4. Todas las instrucciones de operación y uso deben ser seguidas.
5. El aparato eléctrico no deberá ser usado cerca del agua—por ejemplo, cerca de la tina de baño, lavabo, sótano mojado o cerca de una alberca, etc..
6. El aparato eléctrico debe ser usado únicamente con carritos o pedestales que sean recomendados por el fabricante.
7. El aparato eléctrico debe ser montado a la pared o al techo sólo como sea recomendado por el fabricante.
8. Servicio—El usuario no debe intentar dar servicio al equipo eléctrico más allá a lo descrito en las instrucciones de operación. Todo otro servicio deberá ser referido a personal de servicio calificado.
9. El aparato eléctrico debe ser situado de tal manera que su posición no interfiera su uso. La colocación del aparato eléctrico sobre una cama, sofá, alfombra o superficie similar puede bloquea la ventilación, no se debe colocar en libreros o gabinetes que impidan el flujo de aire por los orificios de ventilación.
10. El equipo eléctrico deber ser situado fuera del alcance de fuentes de calor como radiadores, registros de calor, estufas u otros aparatos (incluyendo amplificadores) que producen calor.
11. El aparato eléctrico deberá ser conectado a una fuente de poder sólo del tipo descrito en el instructivo de operación, o como se indique en el aparato.

12. Precaución debe ser tomada de tal manera que la tierra física y la polarización del equipo no sea eliminada.
13. Los cables de la fuente de poder deben ser guiados de tal manera que no sean pisados ni pellizcados por objetos colocados sobre o contra ellos, poniendo particular atención a los contactos y receptáculos donde salen del aparato.
14. El equipo eléctrico debe ser limpiado únicamente de acuerdo a las recomendaciones del fabricante.
15. En caso de existir, una antena externa deberá ser localizada lejos de las líneas de energía.
16. El cable de corriente deberá ser desconectado del cuando el equipo no sea usado por un largo periodo de tiempo.
17. Cuidado debe ser tomado de tal manera que objetos líquidos no sean derramados sobre la cubierta u orificios de ventilación.
18. Servicio por personal calificado deberá ser provisto cuando:
  - A: El cable de poder o el contacto ha sido dañado; u
  - B: Objetos han caído o líquido ha sido derramado dentro del aparato; o
  - C: El aparato ha sido expuesto a la lluvia; o
  - D: El aparato parece no operar normalmente o muestra un cambio en su desempeño; o
  - E: El aparato ha sido tirado o su cubierta ha sido dañada.

### TRADEMARKS USED IN THIS MANUAL

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# 1. Specifications

**Data Rates:** Downloads: 8 Mbps; Uploads: 1 Mbps

**Data Standards:** ITU G.992.1 (G.DMT), G.992.2 (G.lite), ANSI T1.413 Issue 2

**Protocols:** RFC 1483 LLC SNAP, RFC 1483 VCMUX Bridged, RFC 1483 VCMUX Routed, RFC 2364 LLC, RFC 2364 VCMUX

**ATM Attributes:** AAL Type AAL5

**Bus Type:** USB

**Cables and Connectors:** (1) RJ-11 cable, (2) RJ-11 jacks, (1) USB cable

**Management:** Windows based DSL diagnostics tool for Microsoft® Windows® 98, 98 SE, 2000, and Me

**Operating System Support:** Windows 98, 98 SE, 2000, and Me

**Temperature Tolerance:** 32 to 120°F (0 to 50°C)

**Approvals:** FCC Part 15 and Part 68; IC CS03; CE Mark; UL® 1950

**Size:** 1"H x 4.3"W x 5.7"D (2.5 x 10.9 x 14.5 cm)

**Weight:** 9.8 oz. (278 g)

## 2. Introduction

### 2.1 About This Manual

This manual describes the installation, operation, and configuration of the External ADSL USB Modem. It also outlines the use of the Control Panel application program.

The following chapters are included in this manual:

- **Chapter 1**, Specifications, lists the specifications for the Modem.
- **Chapter 2**, Introduction offers a brief description of ADSL, protocol and device driver selection, features, and package contents of the Modem.
- **Chapter 3**, Software Installation, provides detailed steps for installing the three types of device drivers: WAN, LAN, and ATM.
- **Chapter 4**, Customizing Communication Settings, describes screen steps to change VPI, VCI, Encapsulation, and Modulation settings.
- **Chapter 5**, Control Panel Application, describes how to configure and check the performance of the Modem and the ADSL connection.
- **Chapter 6**, Software Uninstall, describes screen steps for removing Modem software.
- **Chapter 7**, Modifying TCP/IP Networking Options, presents screen steps for changing parameters like IP address, WINS, DNS, and gateway.
- **Chapter 8**, Troubleshooting, provides information about technical support and returning the Modem for repair.

## 2.2 Overview

### 2.2.1 ABOUT ADSL

Asymmetric Digital Subscriber Line (ADSL) technology provides high-speed data access across regular phone lines (copper wires) by making use of previously unused frequency bandwidth above the voice band. By placing the ADSL signal above the frequency of the voice signal, ADSL service is able to coexist on the same line with your telephone service. ADSL is asymmetric in the sense that it provides a higher data rate in the downstream (receive) direction than in the upstream (transmit) direction. Asymmetric operation is ideal for the home or small office because files and information are downloaded more frequently than uploaded.

There are several standard types of ADSL modulation techniques including Discrete Multitone (DMT) and Carrierless Amplitude and Phase (CAP). The External ADSL USB Modem supports the following DSL standards: ANSI T1.413 Issue 2, ITU G.992.1 (G.DMT), and ITU G.992.2 (G.lite).

### 2.2.2 PROTOCOL SELECTION

The External ADSL USB Modem can be easily connected to a USB port on the PC via a standard USB cable. The Modem is fully software upgradable so that new features and updates may be added by simply loading a new version of the device driver onto your PC.

ADSL modems employ ATM (Asynchronous Transfer Mode) framing. ATM is a protocol that divides packets into small fixed-sized cells for rapid transmission over high-speed networks. The ATM protocol allows various types of traffic (for example, data, voice, and video) to be securely and efficiently carried over the same network. ATM is being widely deployed by telecommunications carriers in their backbone networks. Two types of ATM connections are possible: PVC (Permanent Virtual Circuit) and SVC (Switch Virtual Circuit).

Several different protocols are used on top of ATM. The protocol required in your configuration depends on the equipment deployed by your DSL service provider. There are several possibilities:

1. Point to Point Protocol (PPP) Over ATM (RFC 2364): PPP provides session setup, user authentication (login), and encapsulation for upper-layer protocols such as IP (Internet Protocol). Using PPP makes the modem appear as a dial modem to the operating system. Dial-Up Networking is used to establish a connection. PPP is supported by either the WAN (Wide Area Network) driver or the ATM driver.

2. Bridged/Routed Ethernet/IP over ATM (RFC 1483): This protocol makes the modem appear as a local area network (LAN) device to the operating system.
3. RFC 1577: This is another local area network-like protocol for IP address and ATM address mapping.
4. Point to Point Protocol (PPP) Over Ethernet (RFC 2516): This protocol makes the modem appear as a local area network (LAN) device to the operating system. It allows multiple computer users on an Ethernet to share a common DSL connection to the Internet.

### 2.2.3 DEVICE DRIVER SELECTION

Three types of device drivers are provided for the External ADSL USB Modem: WAN, LAN, and ATM. All three drivers support ATM protocol. Also, the ATM driver works with ATM services that are available in recent Windows operating systems. The proper choice of driver depends on the combination of Windows operating system and protocol.

1. WAN driver: This driver causes the modem to resemble a dial-up modem. Calls are established via Dial-Up Networking. This driver supports RFC 2364 with PVC connections. You can use it with Windows 98, Windows 98 SE, Windows 2000, and Windows Me.
2. LAN (RFC 1483) driver: This driver makes the modem appear as a LAN or Ethernet device. It automatically establishes a connection. This driver supports RFC 1483 with PVC connections. Also, PPPoE is supported. You can use it with Windows 98, Windows 98 SE, Windows 2000, and Windows Me.
3. ATM driver: This driver works in conjunction with ATM services provided by Windows. Both RFC 1577 and RFC 2364 are supported. The ATM driver uses Dial-Up Networking to create a PVC or SVC connection to establish a PPP (RFC 2364) connection. You can use this driver with Windows 98 SE, Windows 2000, and Windows Me.

The device driver choices are summarized in Table 2-1.

**Table 2-1. Device driver choices.**

Driver	Protocol	Windows OS
LAN	RFC 1483	Windows 98 Windows 98 SE Windows 2000 Windows Me
WAN	RFC 2364	Windows 98 Windows 98 SE Windows 2000 Windows Me
ATM	RFC 1577 RFC 2364	Windows 98 SE Windows 2000 Windows Me

#### **2.2.4 PRODUCT DESCRIPTION**

The External ADSL USB Modem is an ADSL USB modem that supports up to 8-Mbps connections. Using existing phone lines and ADSL service, the Modem offers users up to 160 times faster connectivity than traditional access technologies. This modem is ideal for business or home users who require broadband for intensive applications like video conferencing, MP3, multimedia, and high-speed Internet or remote access.

#### **2.2.5 FEATURES**

- Download DMT data rate to 8 Mbps (125 times faster than standard 56-kbps modems)
- Upload DMT data rate to 1024 kbps
- Compatible with all T1.413, G.DMT, and G.lite compliant CO DSLAM equipment
- Always-on access eliminates wait time experienced with dial-up modems
- ATM driver supports up to sixteen simultaneous ATM virtual connections

- USB bus-powered; an external power supply is not required
- Supports three device drivers: Microsoft NDIS 4.0 WAN Miniport, NDIS 4.0 LAN Miniport, or NDIS 5.0 ATM Miniport
- Windows based ADSL diagnostics tool for viewing ADSL line information useful in troubleshooting, including modulation, link status, data rate, and data activity
- Splitterless mode allows users to install and configure without help from the phone company
- Support for Windows 98, Windows 2000, and Windows Me operating systems
- USB Interface: Compliant with Universal Serial Bus Specification Revision 1.1
- Data Standards: ITU G.992.1 (G.DMT) G.992.2 (G.lite), ANSI T1.413 Issue 2
- RFCs Protocols: RFC 1483 LLC SNAP, RFC 1483 VCMUX Bridged, RFC 1483 VCMUX Routed, RFC 2364 LLC, RFC 2364 VCMUX, RFC 1577
- Classical IP over ATM
- Supports third-party PPP over Ethernet (PPPoE) clients

## 2.3 What the Package Includes

Your Modem package should contain the following items:

- External ADSL USB Modem
- (1) RJ-11 cable
- (1) USB A/B cable
- (1) System CD (with software, manuals, readme files, Acrobat® Reader®, etc.)

If anything is missing or damaged, call Black Box at 724-746-5500.

## 3. Software Installation

WAN, LAN, and ATM software drivers are supported. WAN and LAN applications support the Microsoft Windows 98 First Edition, Windows 98 Second Edition, and Windows 2000 operating systems. ATM applications support the Microsoft Windows 98 Second Edition and Windows 2000 operating systems.

Follow the instructions provided for your PC's operating system.

The following information may be required for software installation. Contact your DSL service provider before proceeding with software installation.

- **Type of Driver to be Installed:** WAN, LAN, and ATM software drivers are supported. The choice depends upon your DSL service provider.
- **IP Address Settings:** The software installation process allows the server to assign IP Address settings dynamically. If your application requires static setting of specific address information, you will need to know:

IP Address

Subnet Mask (for Bridged Ethernet applications only)

Default Gateway (for Bridged Ethernet applications only)

- **Name Server Information:** The software installation process allows the server to assign Name Server Address settings dynamically. If your application requires static setting of specific address information, you will need to know:

Primary DNS Address

Secondary DNS Address

Primary WINS Address

Secondary WINS Address

- ATM Virtual Path ID (VPI)\*
- ATM Virtual Circuit ID (VCI)\*
- Encapsulation type\*
- Modulation type\*

### \*NOTE

Required if not using default values for driver type.

- User Name (for PPP applications only)
- Password (for PPP applications only)

## 3.1 Software Setup

Before starting the software setup process, close all Windows programs previously running on your PC.

1. Insert the installation CD into the CD drive. The installation wizard will be launched automatically. Click on the **Drivers** icon. The user can also launch the installation wizard by double clicking on the file "Setup.exe" in the root directory of the installation CD.
2. The "Welcome" window provides an opportunity to quit the setup process to exit all Windows programs before continuing. If the Windows programs were previously closed, click **Next**.
3. The "Select ISP" window allows you to specify your DSL service provider. A list of service providers is displayed. Default values for the Type of Driver, ATM Virtual Path ID (VPI), ATM Virtual Circuit ID (VCI), Encapsulation type and Modulation type are provided for each DSL service provider listed in the window.

If your DSL service provider is listed and you would like to accept the default values, highlight the provider's name and click **Next**. Continue with Step 5 on the next page.

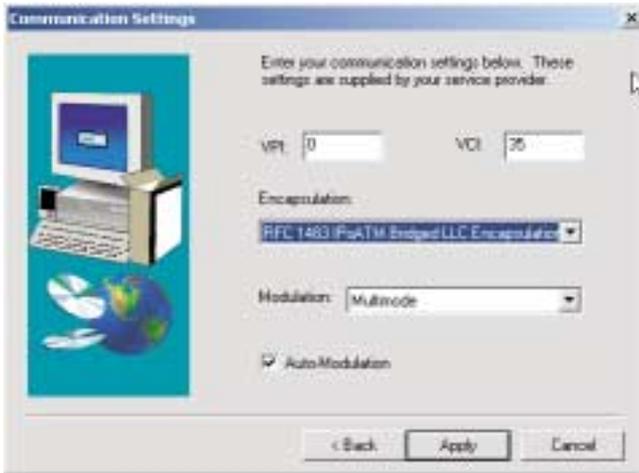
If your DSL service provider is listed and you would like to change the default values, highlight the provider's name and click **Customize**. Continue with Step 4a on the next page.

If your DSL service provider is not listed, select Other Service Provider and click **Next**. Continue with Step 4b on the next page.

- 4a. Select the type of driver to be installed from the “Select Driver Type” window and click **Next**.
- 4b. Enter the VPI, VCI, Encapsulation type, and Modulation type from the “Communication Settings” window and click **Next**.

### NOTE

Encapsulation types vary depending upon the application.



**Figure 3-1. Communications settings screen.**

5. The “Start Copying Files” window will be displayed. You may review the current settings and click **Customize** or **Back** to change the settings. Click **Next** to accept the current settings; a message will be displayed indicating that files are being copied.
6. For Windows 2000 applications, the “Digital Signature Not Found” window may appear warning that the installation software is not a digitally signed version. A digital signature is not necessary. Click **Yes** to allow the installation to continue.

7. Follow the on-screen prompts to complete the software installation. When finished, you will be prompted to plug in your modem. Continue with **Section 3.2**.

### NOTE

You may need the Windows CD-ROM to complete the installation.

## 3.2 Modem Installation

To install the External ADSL USB Modem:

1. Insert the rectangular end of a USB cable into the USB port of your PC.
2. Insert the square end of the USB cable into the USB port of the Modem.

### NOTE

The USB Modem will be detected and messages will be displayed as the modem software is installed.

3. For Windows 2000 applications, the “Digital Signature Not Found” window warn you that the installation software is not a digitally signed version. A digital signature is not necessary; the software has been tested with Windows 2000. Click **Yes** to allow the installation to continue. (A digitally signed version of the driver will be released in the near future.)
4. For Windows 2000 applications, the “Found New Hardware Wizard” window indicates that the modem has been installed and suggests rebooting the system to have new settings take effect. Click **Finish**.
5. A message ask you to confirm rebooting of the system; click **Yes**.

Once the PC has rebooted, Modem installation is complete.

## 4. Customizing Communication Settings

Once the Modem and software have been installed, you can easily update the communication settings by performing the following steps.

1. From your PC desktop click **Start, Programs, Black Box DSL Modem, Configure**. A notification message will indicate that the setup process has begun.
2. Click **Settings** from the “DSL Modem Installer” window.
3. The “Communication Settings” window will be displayed. Make the necessary changes to the VPI, VCI, Encapsulation type, and/or Modulation type. Click **Apply**.
4. The “Setup Complete” window indicates successful completion of the customization process. Select the **Yes, I want to restart my computer now** option, remove any disks from their drives, and click **Finish**. Your PC will reboot.

## 5. Control Panel Application

The External ADSL USB Modem control panel program provides a quick and easy way to configure and check the performance of the modem and the ADSL connection. When open, the monitor window updates every 2 seconds.

1. There are two methods to access the control panel:

- From the “Control Panel” window (**Start, Settings, Control Panel**), double click the **Black Box DSL Modem** icon, or
- From the PC desktop, double click the **Black Box DSL** icon in the system tray.

### NOTE

To access the **Black Box Control Panel**, the modem must be plugged in.

2. The “Physical Link” tab of the “Black Box DSL Modem” window (Control Panel) allows you to review the current state of the Black Box DSL Modem and connection. When the green indicator is on in the **Link Status** field, it indicates that a connection has been made. This indicator blinks while a connection is being established. The **Transmitting** and **Receiving** data activity are shown separately by individual flashing yellow indicators.

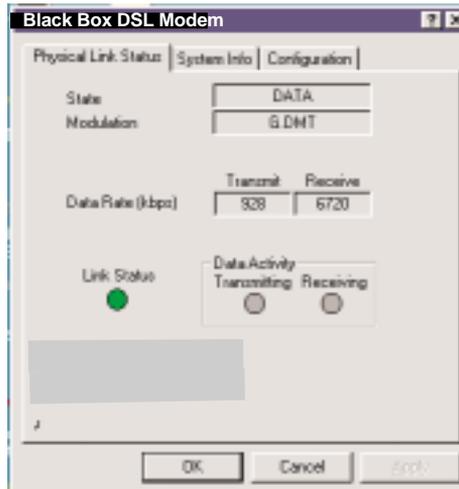
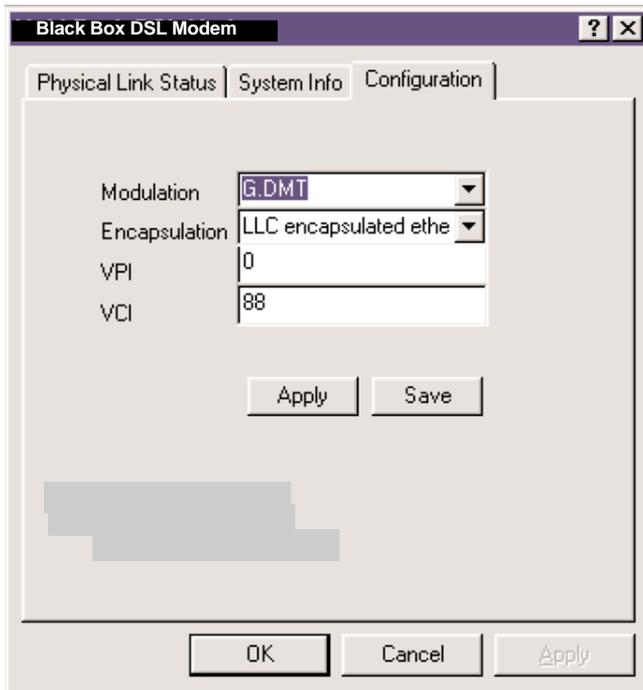


Figure 5-1. Black Box DSL Modem screen, Physical Link Status tab.

3. The “System Info” tab displays the release number of the Black Box DSL modem driver, the firmware release number, and the control panel version that you are currently using.
4. The “Configuration” tab offers driver appropriate Modulation, Encapsulation, and VPI and VCI values. If you are using a WAN or ATM driver, only the Modulation type will be displayed and may be modified. LAN driver applications will be able to view and modify the Modulation type, Encapsulation type, and VPI and VCI values.



**Figure 5-2. Black Box DSL Modem, Configuration tab.**

## 6. Software Uninstall

To remove the Black Box modem software drivers, perform the following steps.

### NOTE

**Do not unplug the USB cable until after you complete the uninstall process.**

1. From your PC desktop click **Start, Programs, Black Box DSL Modem, Uninstall**. A notification message will appear indicating that the setup process has begun.
2. Click **Remove** from the “DSL Modem Installer” window.
3. A message will ask you to confirm the removal of the ADSL USB modem software. Click **Yes**.
4. The “Information” window will be displayed reminding you not to unplug the USB cable until the uninstall process has been completed. Click **OK**.
5. A message will indicate that the software is being removed.
6. The “Setup Complete” window indicates successful completion of the uninstall process. Click **Finish**.

### NOTE

**The screen for Windows 2000 applications will not ask the user to reboot the system. Click Finish to complete the Uninstall process.**

7. Unplug the USB cable from the PC.

### NOTE

**You must unplug the USB cable before rebooting the system. For Windows 98 applications, unplug the cable immediately as the reboot process was begun in Step 6 above.**

# 7. Modifying TCP/IP Networking Options

## 7.1 WAN USB Driver

### 7.1.1 MICROSOFT WINDOWS 98, FIRST AND SECOND EDITIONS, WINDOWS ME

TCP/IP settings are automatically set up during the software installation process. The following procedure may be used to change TCP/IP settings, if necessary.

1. For Windows 98 users, double click the **My Computer** icon. From the “My Computer” window, double click the **Dial-Up Networking** icon. Skip to step #3.
2. For Windows Me users, open the Dial-Up Networking window (**Start, Settings, Dial-Up Networking**).
3. From the “Dial-Up Networking” window, right click on the **Black Box Dial-Up PPP Connection** icon and click **Properties**.

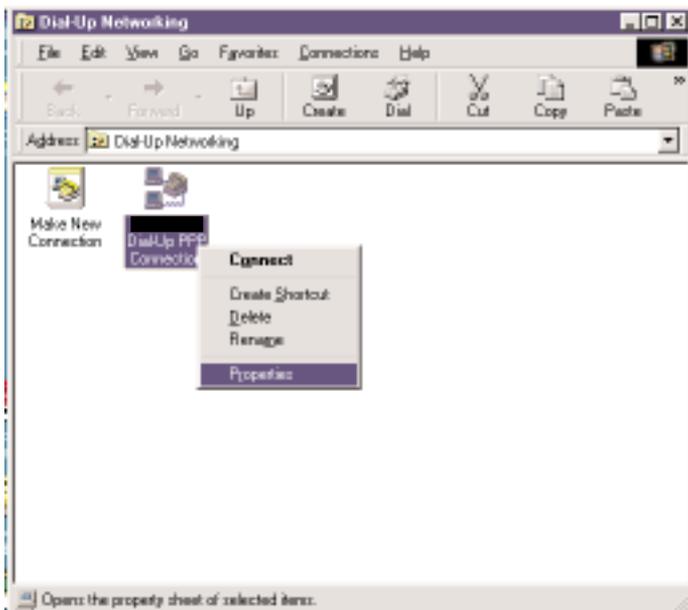


Figure 7-1. Dial-Up Networking screen.

- From the “Server Types” tab of the “Black Box Dial-Up PPP Connection” window, select **TCP/IP** (marked with a check in the box to the left) and click **TCP/IP Settings**. Click **OK**.

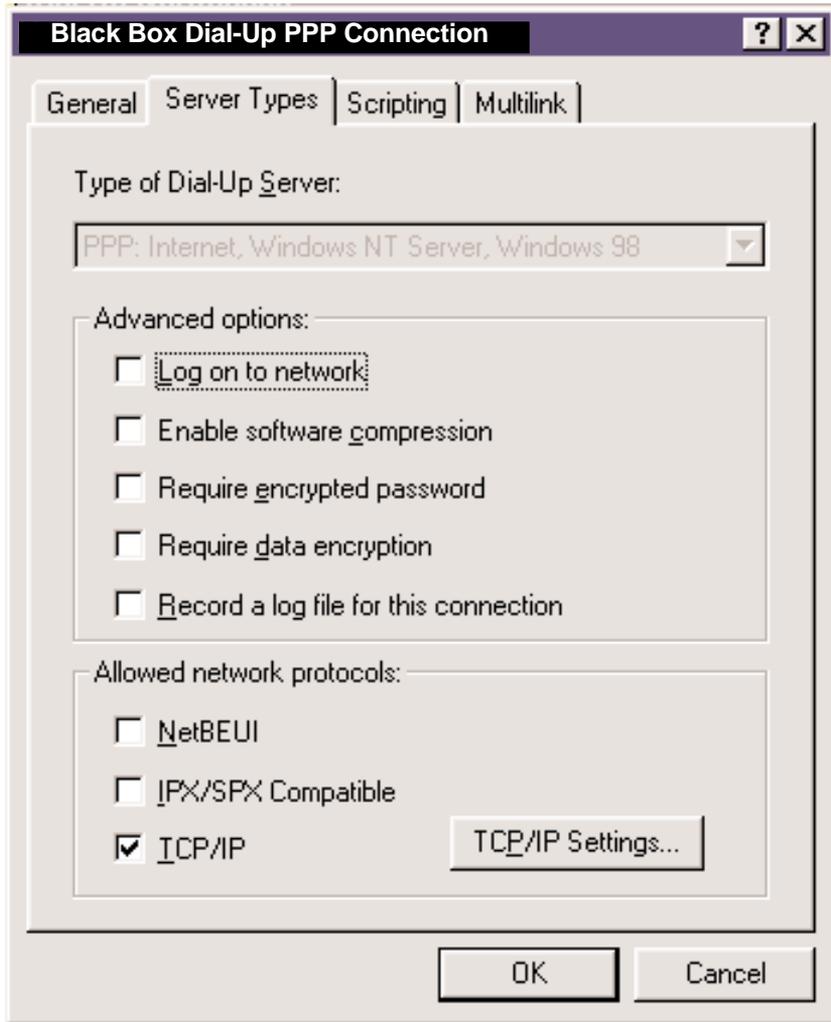
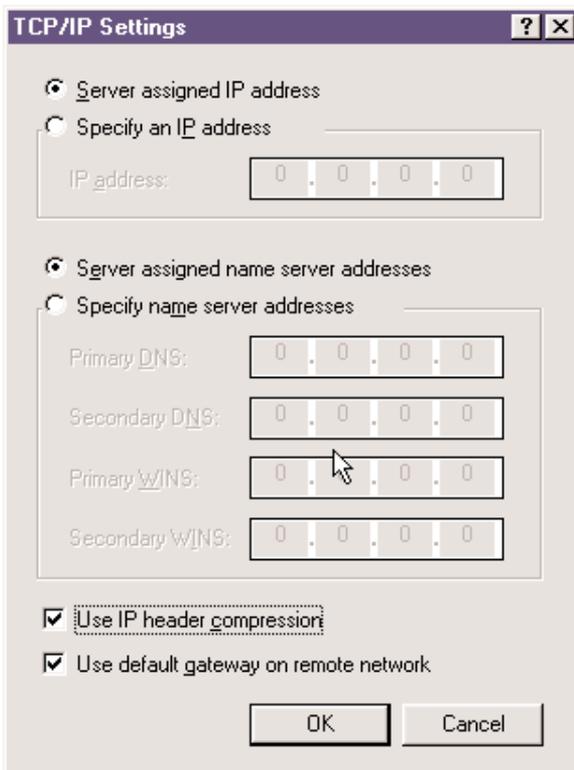


Figure 7-2. Black Box Dial-Up PPP Connection screen, Server Type tab.

5. The “TCP/IP Settings” window is used to modify the IP address, Name Server addresses and/or default gateway as follows:
- Change the IP address to a user-defined address by selecting “Specify an IP address” (click inside the circle to the left of it) and typing the address in the space provided
  - Change the Name Server addresses to user-defined addresses by selecting “Specify name server addresses” (click inside the circle to the left of it) and typing the addresses in the spaces provided
  - Change the default gateway by leaving the box blank to the left of “Use default gateway on remote network.”

Click **OK**.



**Figure 7-3. TCP/IP Settings.**

6. The “Black Box ADSL Connection” window will be redisplayed. Click **OK** to end the modifying TCP/IP options session.

### 7.1.2 MICROSOFT WINDOWS 2000

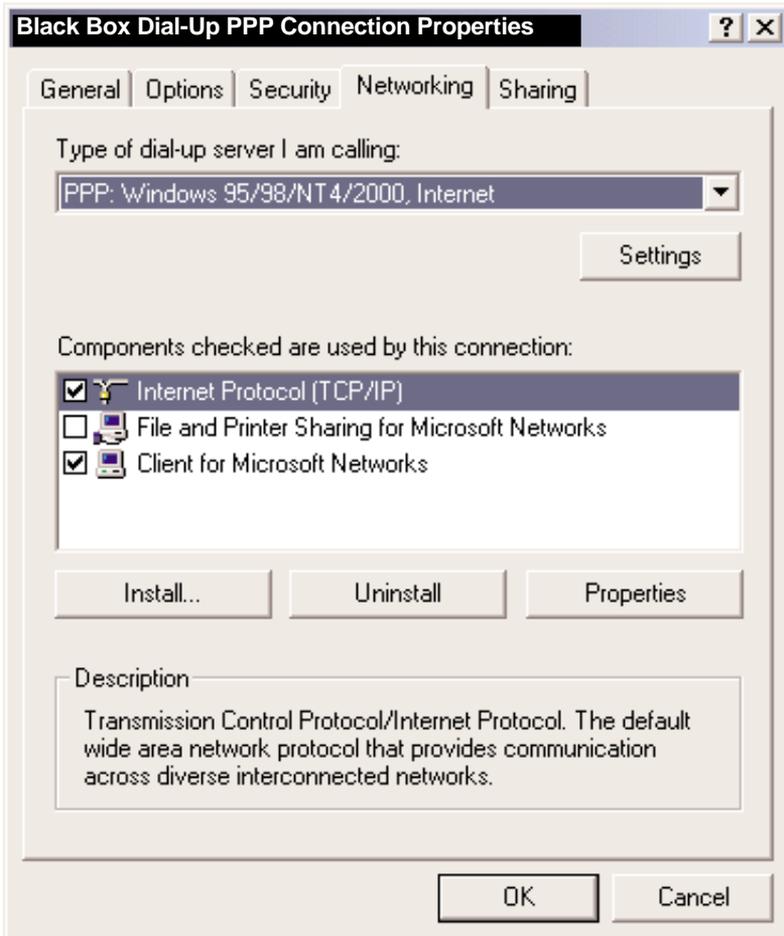
TCP/IP settings are automatically set up during the software installation process. The following procedure may be used to change TCP/IP settings, if necessary.

1. From your PC desktop, right click the **My Network Places** icon and select **Properties**.
2. From the “Network and Dial-Up Connections” window, right click on the **Black Box ADSL WAN Connection** icon and click **Properties**.

### NOTE

The icon name may differ from that specified above. The **Black Box** connection icon will be identified as “**Black Box ADSL WAN Modem**” in the **Device Name** column when details are viewed from the “**Network and Dial-Up Connections**” window (**View, Details**).

- From the “Networking” tab of the “Black Box Dial-Up PPP Connection Properties” window, select **Internet Protocol (TCP/IP)** and click **Properties**. Click **OK**.



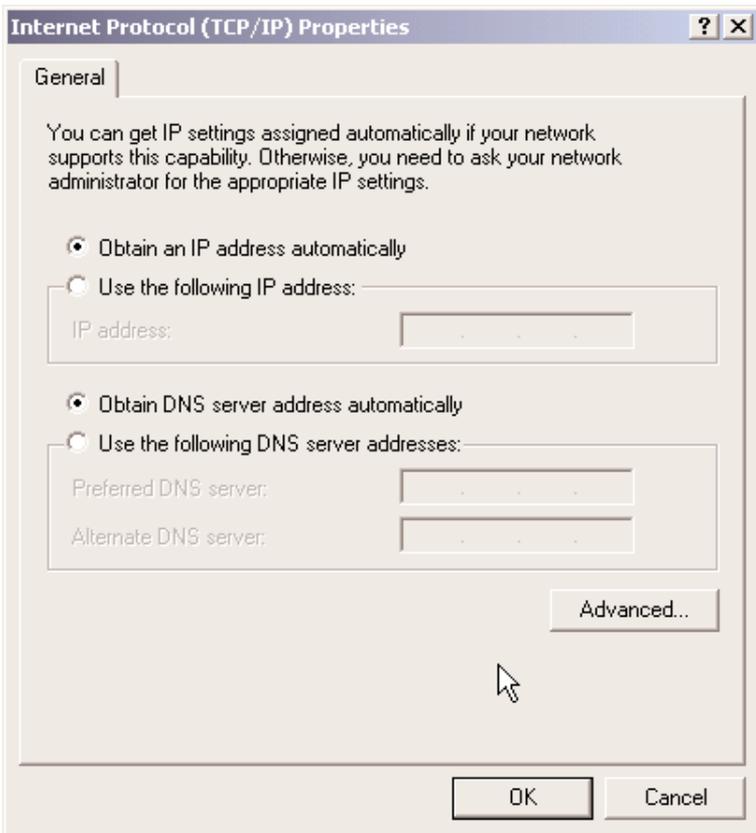
**Figure 7-4. Black Box Dial-Up PPP Connection Properties, Networking tab.**

- The “Internet Protocol (TCP/IP) Properties” window is used to modify the IP address and DNS Server addresses:
  - Change the IP address to a user-defined address by selecting “Use the following IP address” (click inside the circle to the left of it) and typing the address in the space provided

- Change the DNS Server addresses to user-defined addresses by selecting “Use the following DNS server addresses” (click inside the circle to the left of it) and typing the addresses in the spaces provided.

### NOTE

The “Advanced” button of the “Internet Protocol (TCP/IP) Properties” window may be used to alter DNS addresses, WINS addresses, and IP security settings.



**Figure 7-5. Internet Protocol (TCP/IP) Properties screen.**

5. Click **OK** from the “Internet Protocol (TCP/IP) Properties” window.
6. The “Black Box ADSL WAN Connection Properties” window will reappear. Click **OK** to end the modifying TCP/IP options session.

### 7.2 LAN USB Driver

#### 7.2.1 MICROSOFT WINDOWS 98, FIRST AND SECOND EDITIONS, WINDOWS ME

TCP/IP settings are automatically set up during the software installation process. The following procedure may be used to change TCP/IP settings, if necessary.

1. From the “Control Panel” window (**Start, Settings, Control Panel**) double click on the **Network** icon.
2. Select **TCP/IP -> Black Box USB ADSL LAN Modem** from the “Configuration” tab of the “Network” window. Click **Properties**. Click **OK**.

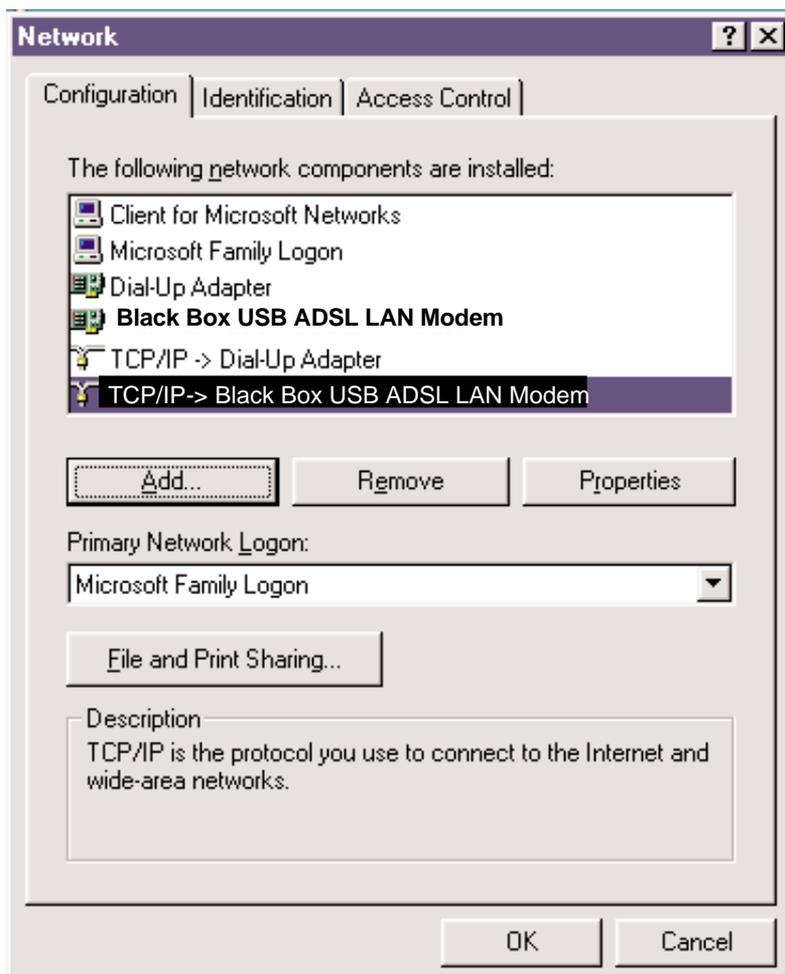
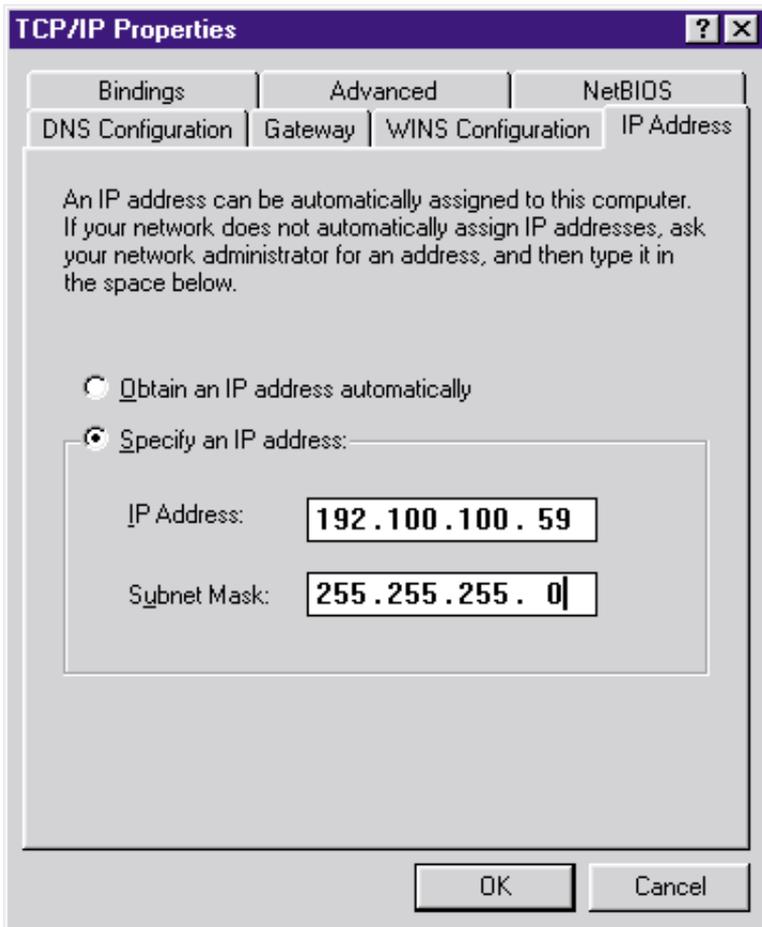


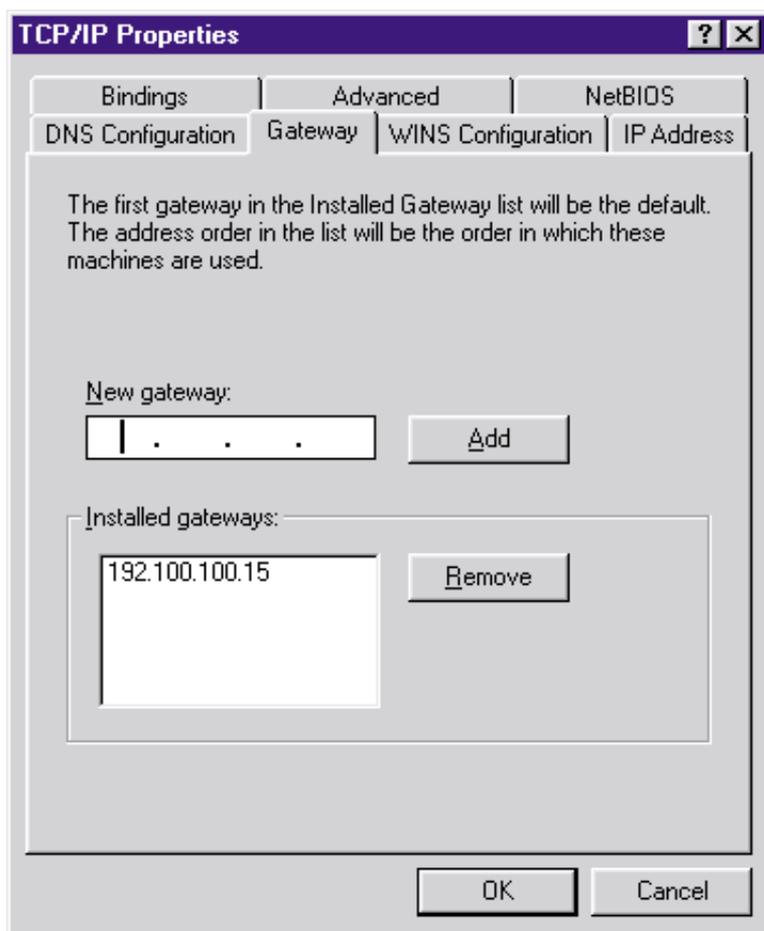
Figure 7-6. Network screen.

- From the “IP Address” tab of the “TCP/IP Properties” window, select either the “Obtain an IP address automatically” or “Specify an IP address” option, depending on your network setup. If you select “Specify an IP address,” type the IP Address and Subnet Mask in the spaces provided. Consult with your network administrator to determine which option best suits your individual needs.



**Figure 7-7. TCP/IP Properties screen, IP Address tab.**

- The “Gateway” tab allows you to add or remove gateways. Consult with your network administrator to determine the appropriate addresses for your individual needs.
- To add a new gateway, type the address in the “New gateway” field and click **Add**. The new gateway will appear in the Installed gateways list.
  - To remove a previously installed gateway, highlight the entry to be removed in the “Installed gateways” list and click **Remove**. The gateway will no longer appear in the “Installed gateways” list.



**Figure 7-8. TCP/IP Properties, Gateway tab.**

5. Click **OK** from the “TCP/IP Properties” window.
6. The “Network” window will reappear. Click **OK** to end the modifying TCP/IP options session.
7. If you have made changes to TCP/IP properties, you will be asked to restart/reboot your PC. Click **Yes**, and your PC will restart.

### 7.2.2 MICROSOFT WINDOWS 2000

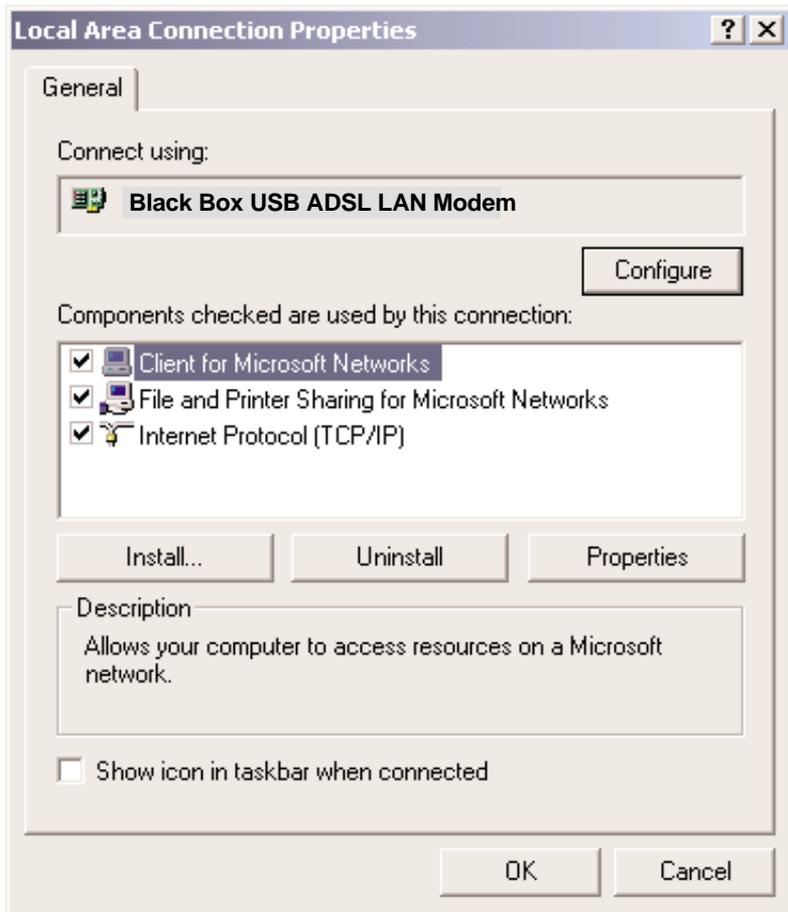
TCP/IP settings are automatically set up during the software installation process. The following procedure may be used to change TCP/IP settings, if necessary.

1. From the PC desktop, right click the **My Network Places** icon and select **Properties**.
2. Double click the **Local Area Connection** icon from the “Network and Dial-Up Connections” window.

### NOTE

The icon name may differ from that specified above. The connection icon will be identified as “Black Box USB ADSL LAN Modem” in the Device Name column when details are viewed from the “Network and Dial-Up Connection” window (View, Details).

3. Select **Internet Protocol (TCP/IP)** from the “General” tab of the “Local Area Connection” window. Click **Properties**.

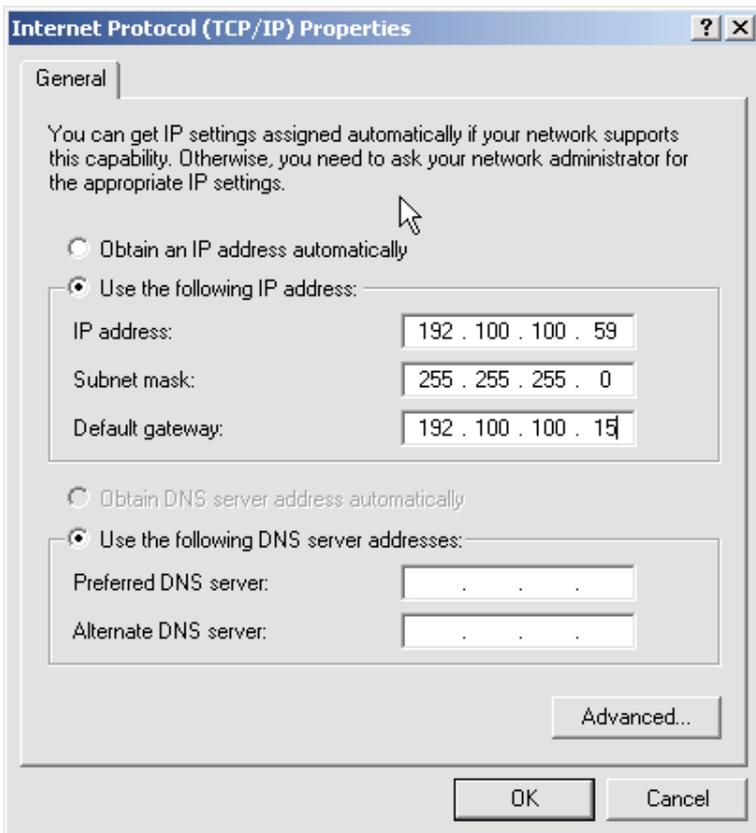


**Figure 7-9. Local Area Connection Properties screen.**

4. The “Internet Protocol (TCP/IP) Properties” window is used to modify the IP addresses and DNS server addresses:
  - Change the IP address to a user-defined address by selecting “Use the following IP address” option (click inside the circle to the left of it) and typing the addresses in the spaces provided.
  - Change the DNS Server addresses to user-defined addresses by selecting “Use the following DNS server addresses” (click inside the circle to the left of it) and typing the addresses in the spaces provided.

### NOTE

The **Advanced** button of the “Internet Protocol (TCP/IP) Properties” window may be used to alter IP settings, DNS server addresses, WINS addresses, IP security options, and TCP/IP filtering options.



**Figure 7-10. Internet Protocol (TCP/IP) Properties screen.**

5. Click **OK** from the “Internet Protocol (TCP/IP) Properties” window.
6. The “Black Box Local Area Connection Properties” window will reappear. Click **OK** to end the modifying TCP/IP options session.

### 7.3 ATM USB Driver

#### 7.3.1 MICROSOFT WINDOWS 98 SECOND EDITION, WINDOWS ME

TCP/IP settings are automatically set up during the software installation process. The following procedure may be used to change TCP/IP settings, if necessary.

1. For Windows 98 users, double click the **My Computer** icon. From the “My Computer” window, double click the **Dial-Up Networking** icon. Skip to step #3.
2. For Windows Me users, open the Dial-Up Networking window (**Start, Settings, Dial-Up Networking**).

3. From the “Dial-Up Networking” window, right click on the **Black Box Dial-Up PPP Connection** icon and click **Properties**.

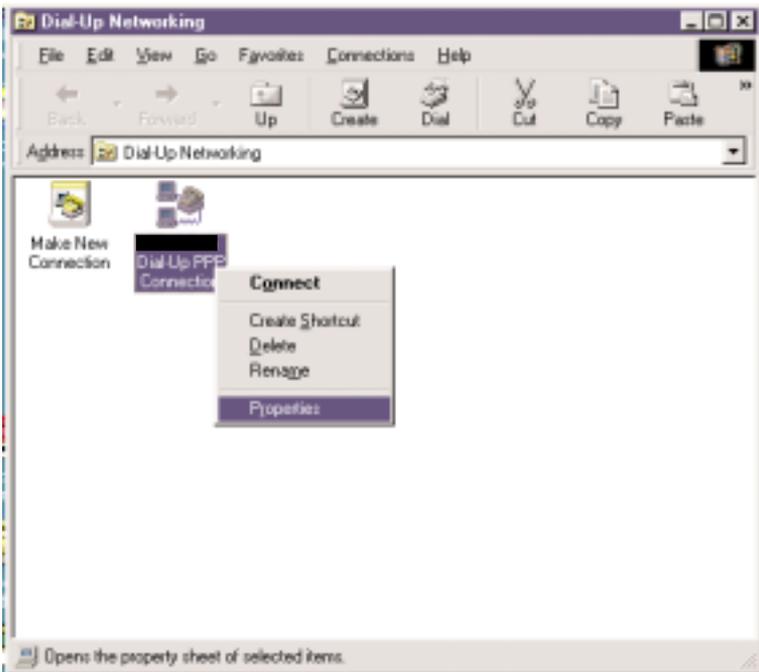
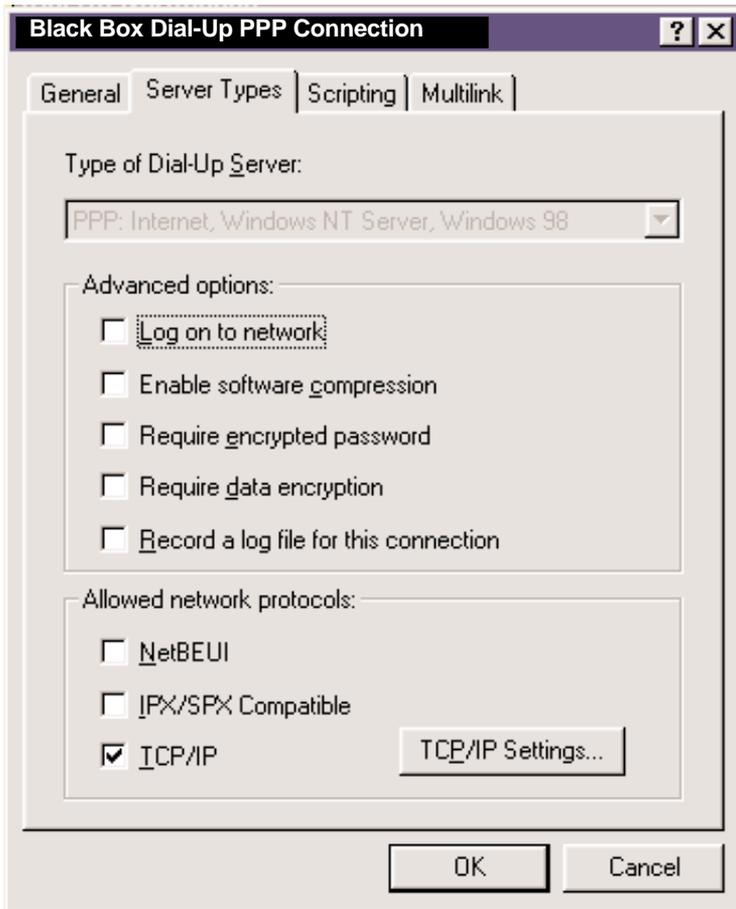


Figure 7-11. Dial-Up Networking screen.

4. From the “Server Types” tab of the “Black Box ADSL Connection” window, select **TCP/IP** (marked with a check in the box to the left) and click **TCP/IP Settings**.

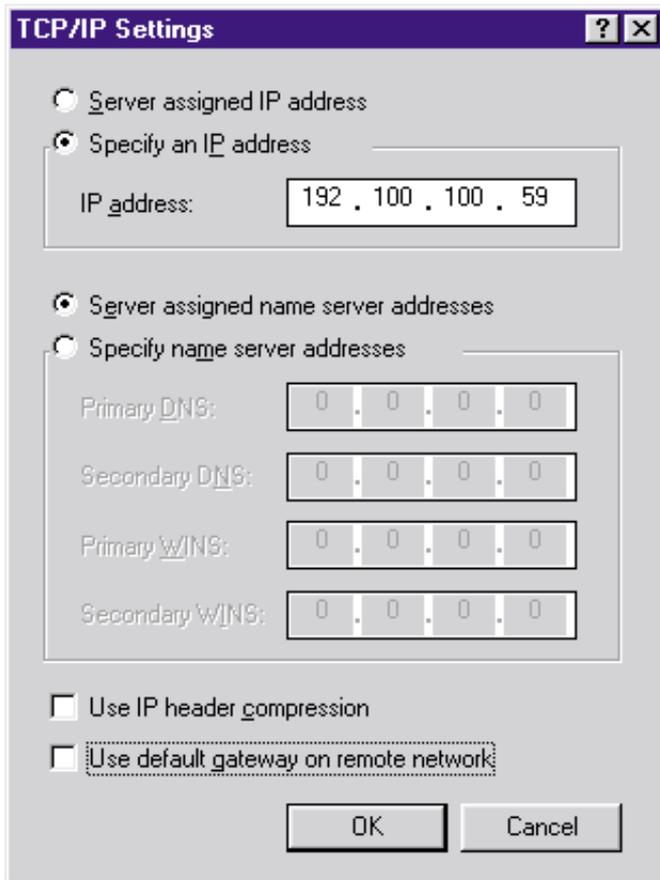


**Figure 7-12. Dial-Up PPP Connection screen, Server Types tab.**

5. The “TCP/IP Settings” window is used to modify the IP address, name server addresses, and/or default gateway as follows:
  - Change the IP address to a user-defined address by selecting “Specify an IP address” (click inside the circle to the left of it) and typing the address in the space provided.

- Change the name server addresses to user-defined addresses by selecting “Specify name server addresses” (click inside the circle to the left of it) and typing the addresses in the spaces provided.
- Change the default gateway by leaving the box blank to the left of “Use default gateway on remote network.”

Click **OK**.



**Figure 7-13. TCP/IP Settings screen.**

6. The “Black Box ADSL Connection” window will be redisplayed. Click **OK** to end the modifying TCP/IP options session.

### 7.3.2 MICROSOFT WINDOWS 2000

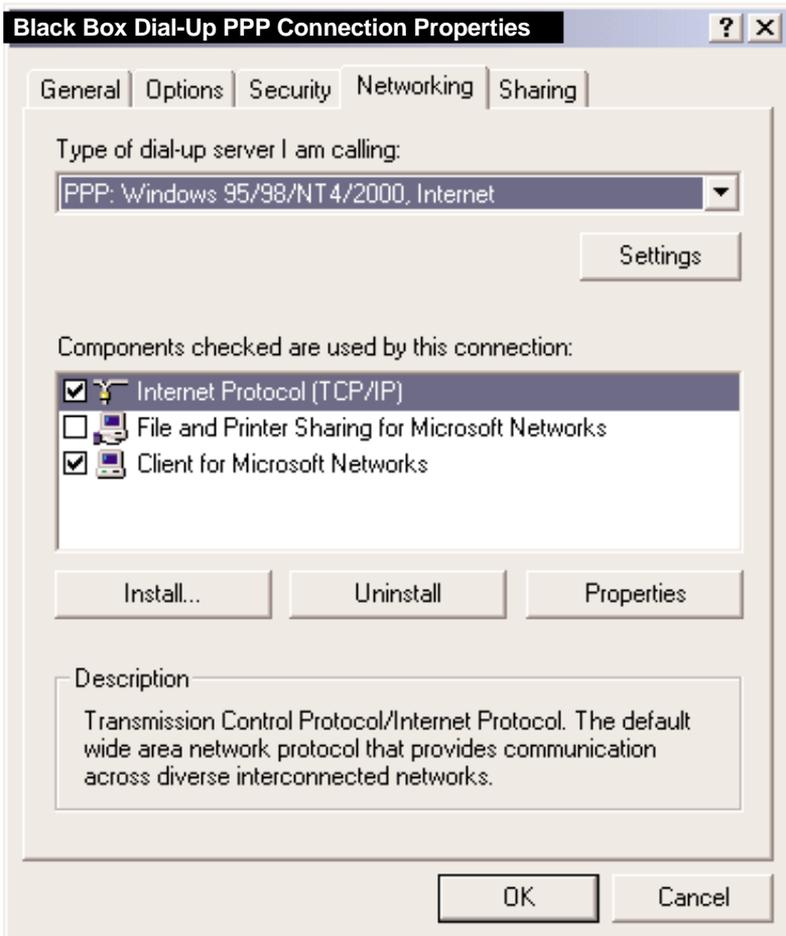
TCP/IP settings are automatically set up during the software installation process. You can use the following procedure to change TCP/IP settings, if necessary.

1. From your PC desktop, right click the **My Network Places** icon and select **Properties**.
2. From the “Network and Dial-Up Connections” window, right click on the **Black Box Dial-Up PPP Connection** icon and click **Properties**.

### NOTE

The icon name may differ from that specified above. The connection icon will be identified as “Black Box USB ADSL Modem” in the Device Name column when details are viewed from the “Network and Dial-Up Connections” window (View, Details).

- From the “Networking” tab of the “Black Box ADSL ATM Connection Properties” window, select **Internet Protocol (TCP/IP)** and click **Properties**.



**Figure 7-14. Dial-Up PPP Connection Properties screen, Networking tab.**

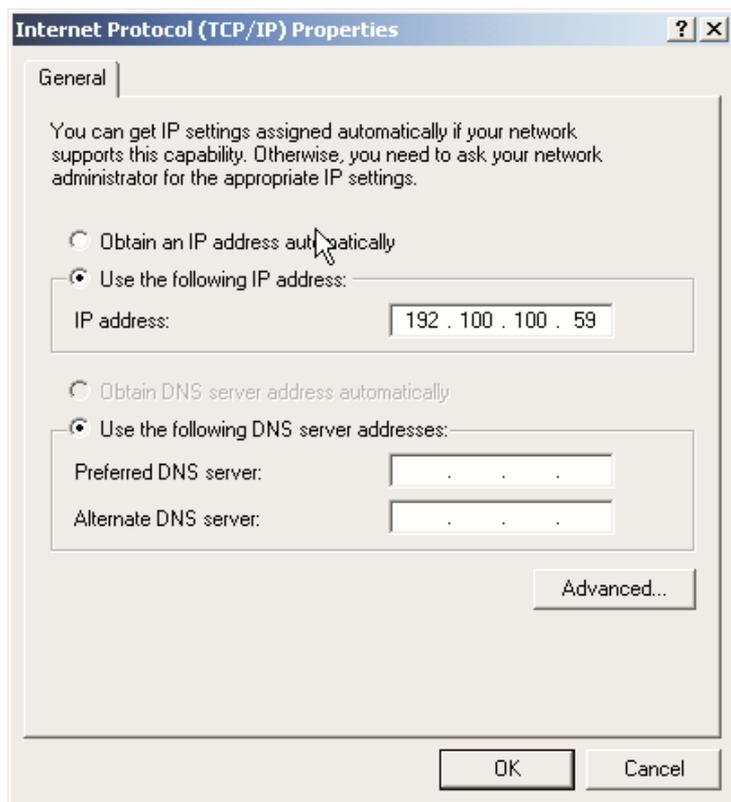
4. The “Internet Protocol (TCP/IP) Properties” window is used to modify the IP address and DNS server addresses as follows:

- Change the IP address to a user-defined address by selecting “Use the following IP address” (click inside the circle to the left of it) and typing the address in the space provided.
- Change the DNS server addresses to user-defined addresses by selecting “Use the following DNS server addresses” (click inside the circle to the left of it) and typing the addresses in the spaces provided.

### NOTE

The “Advanced” button of the “Internet Protocol (TCP/IP) Properties” window may be used to alter DNS address, WINS address, and IP security settings.

- Click **OK** from the “Internet Protocol (TCP/IP) Properties” window.
- The “Black Box ADSL ATM Connection Properties” window will reappear. Click **OK** to end the modifying TCP/IP options session.



**Figure 7-15. Internet Protocol (TCP/IP) Properties screen.**

# 8. Troubleshooting

## 8.1 Calling Black Box

If you determine that your External ADSL USB Modem is malfunctioning, do not attempt to alter or repair the unit. It contains no user-serviceable parts. Contact Black Box at 724-746-5500.

Before you do, make a record of the history of the problem. We will be able to provide more efficient and accurate assistance if you have a complete description, including:

- the nature and duration of the problem.
- when the problem occurs.
- the components involved in the problem.
- any particular application that, when used, appears to create the problem or make it worse.

## 8.2 Shipping and Packaging

If you need to transport or ship your External ADSL USB Modem:

- Package it carefully. We recommend that you use the original container.
- If you are shipping the Modem for repair, make sure you include everything that came in the original package. Before you ship, contact Black Box to get a Return Authorization (RA) number.



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