

TOSHIBA

PCX4500

Wireless Cable Modem Gateway
Owner's Manual



Warning:

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Table of Contents

Introduction.....	5
Features.....	5
System Requirements	5
Contact Information	5
Important Rules for Safe Operation	6
Installation.....	6
Use and Maintenance.....	7
Service	7
Overview.....	8
How does the PCX4500 work?.....	8
How does the PCX4500 connect to a computer?	8
How does the PCX4500 differ from a stand-alone DOCSIS cable modem?.....	8
What is DOCSIS?	8
Getting Started	9
Contacting your Cable Provider	9
Package Contents for the PCX4500 Wireless Cable Modem Gateway	9
PCX4500 Front and Rear View	9
How to adjust the built-in antenna	10
CD-ROM Contents.....	10
Viewing the Owner's Manual	10
Setting Up Your PCX4500 and Computers	10
Installing the PCX4500	10
How to Use Stand.....	13
Configuring Your Computers.....	14
Installing the Ethernet Connections.....	14
Installing the USB Drivers.....	14
Configuring the Computer for Wireless Operation	16
Windows Network Configuration	17
Universal Plug and Play	17
Network Configuration for Windows 98SE and Windows Me:	22
Network Configuration for Windows 2000:	23
Network Configuration for Windows XP:.....	24
Macintosh Ethernet and Wireless Network Configuration.....	25
Macintosh OS 9 Configuration Ethernet Settings	25
Macintosh OS 9 AirPort Settings	26
Macintosh OS X Configuration Ethernet Settings.....	27
Macintosh OS X AirPort Settings.....	28
Configuring the PCX4500 Gateway	29
Accessing Web-based Management.....	30
Your Home Network Map.....	30
Left Sidebar.....	32
Navigational Aids	33
Managing Lists	34
PCX4500 WAN Device Configuration	35
Configuring the WAN Ethernet Device	36
PCX4500 LAN Device Configuration.....	38
Configuring the LAN Device	39
PCX4500 Wireless Configuration.....	41
Configuring the Wireless Interface setting	41
Configuring the WEP setting	42

Configuring the Station Filter setting.....	43
Security	44
Security Level Setting	44
Adding Access Controls	46
Local Servers	48
User-defined Service	51
Designating a Demilitarized (DMZ) Host	52
Controlling Remote Access to PCX4500	53
Firewall Log	54
Restriction	56
Advanced	58
Managing the DNS	59
View or Modify the DNS Table	59
Managing the DHCP Server	61
DHCP Server Summary	61
Editing DHCP Server Settings	62
DHCP Connections	63
Users	64
Setting the Local Date and Time	66
System Settings	67
Residential Gateway Services	67
ICMP Echo Test	68
Restoring Default Settings	69
Restart	69
Viewing Technical Information	70
System Monitoring	71
Monitoring Connections	71
Traffic Statistics	71
System Log	72
System Up Time	72
Appendix	73
Frequently Asked Questions	73
LED Diagnostics	76
Specifications	77
Regulatory	78
Glossary	78
STANDARD LIMITED WARRANTY	81
End-User License Agreement	82

Introduction

Congratulations on your new purchase!

Your new Toshiba DOCSIS Wireless Cable Modem Gateway will provide you with high-speed access to the Internet through your cable TV (CATV) network, allowing you to access your favorite sites at a fraction of the time it takes traditional telephone modems. In addition, your service will be always connected and Internet access may be shared with multiple computers. Those two features give you the information you want, when you want it, and your telephone line is kept free.

The PCX4500 is one product that contains a Cable Modem, Router, NAT/NAPT, Firewall and Wireless Access Point. The integration of all these devices allows you to install a secure home computer network at a minimal cost and effort.

Features

- DOCSIS Certified Cable Modem
- Ethernet Switch with one 10BASE-T/100BASE-TX interface
- 802.11b Wireless interface with:
 - Built-in antenna
 - Encryption based on 64, 128 and 256 bit WEP key
- USB Interface for Microsoft Windows 98SE, 2000, Me and XP
- Built-in Configurable Firewall and Router with:
 - Network Address Translation (NAT)
 - Network Address Port Translation (NAPT)
 - Stateful Packet Inspection
 - DMZ Support
 - Access Controls, Local Servers Functionality for Networked Applications
- DHCP Server for up to 253 Clients
- UPnP Support
- Embedded HTTP Management and Administration Interface
- Compatible with Microsoft Windows 98SE, 2000, Me and XP; MAC OS 9 and OS X
- Free Technical Support
- 5 Year Warranty

System Requirements

- 100-120V 50/60Hz AC Power Source
- Microsoft Windows 98SE, 2000, Me and XP; MAC OS 9 or OS X based computer(s)
- A CD ROM Drive in one computer with a 10/100 Ethernet or USB Interface
- One of the following in each networked computer:
 - 10/100 Ethernet Interface
 - USB Interface (Windows OS only)
 - 802.11b Wireless Interface

Contact Information

Support Information

Phone: (949) 583-3223

Fax: (949) 583-3597

Web: http://toshibacablemodems.buscom.net/form_techsetup.html

Sales Information

Phone: (949) 461-4840

email: cablesales@networks.toshiba.com

Web Page

<http://networks.toshiba.com>

Important Rules for Safe Operation



In addition to the careful attention devoted to quality standards in the manufacture of your Toshiba PCX4500, safety is a major factor in the design of every product. However, safety is your responsibility, as well. This section lists important information that will help assure your enjoyment and proper use of the PCX4500 and accessory equipment. Please read it carefully before operating and using your modem.

Installation

Read and Follow Instructions - You should read all the safety and operating instructions before operating the modem. Follow all operating instructions.

Retain Instructions - You should save all the safety and operating instructions for your future reference.

Heed Warnings - Comply with all warnings on the PCX4500 and in the operating instructions.

Use the Recommended AC Adapter - You must use the adapter that comes with your Toshiba PCX4500.

Check Power Sources - The AC adapter for your Toshiba PCX4500 must be used with a AC100V-120V 50Hz/60Hz supply outlet. If you are not sure of the type of power supplied to your home, consult your dealer or local power company.

Be Careful of Overloading - Do not overload wall outlets or extension cords, as this can result in a risk of fire or electric shock. Overloaded AC outlets, extension cords, frayed power cords, damaged or cracked wire insulation, and broken plugs are dangerous. Periodically examine the cord, and if its appearance indicates damage or deteriorated insulation, have it replaced by your service technician.

Protect Power Cords - Route power supply cords so that they are not likely to be walked on or pinched by items placed upon or against them. Pay particular attention to cords where they are attached to plugs and convenience receptacles, and examine the point where the power cord attaches to the PCX4500.

Check Ventilation - Slots and openings in the enclosure are provided for ventilation to ensure reliable operation of the PCX4500 and to protect it from overheating. Do not block or cover these openings. Never block these openings by placing the PCX4500 on a bed, sofa, rug, or other similar surface. Never place the PCX4500 near or over a radiator or heat register, or any other heat source (including amplifiers). Do not place the PCX4500 in a built-in installation, such as a bookcase or equipment rack, unless you provide proper ventilation.

Do Not Use Accessories - Do not use attachments, unless they are recommended by Toshiba, as they may cause electrical or fire hazards.

Do Not Use Near Water - Do not use the PCX4500 near water - for example, near a bathtub, sink or laundry tub, in a wet basement or near a swimming pool.

Do Not Place Near a High Temperature Source - Do not use the PCX4500 near a source of heat such as a kitchen range, a fireplace or a radiator.

Use Caution in Mounting the PCX4500 - Do not place the PCX4500 on an unstable surface. The PCX4500 may fall, causing serious injury to a child or adult, as well as serious damage to the PCX4500.

Do Not Use Near Medical Equipment - Do not operate the modem near equipment that is susceptible to electrical interference, or is used for medical purposes. Do not use the modem near a pacemaker or a patient care area in the hospital.

Ground the Cable Systems - Be sure that the outside cable system is grounded to provide some protection against voltage surges and built-up static charges.

Section 810 of the national Electric Code, ANSI/NFPA No. 70-1984 (Section 54 of the Canadian Electrical Code, Part 1) provides information with respect to proper grounding of the cable systems.



Important Information!

- **Do not disconnect the RF cable from your PCX4500 while the power to your modem is on.**
- **Wait at least 10 seconds between disconnecting and reconnecting the PCX4500 with the AC power adapter.**
- **Unplug the PCX4500 from the wall outlet carefully, as the AC adapter may be hot.**

Use and Maintenance

Unplug Power Before Cleaning - Do not use liquid or aerosol cleaners. Use a damp cloth for cleaning.

Keep Objects Out of Openings - Never push objects of any kind into the PCX4500 through openings such as the ventilation holes, as they may touch high voltage circuits and "short-out" parts, which could result in a fire or electric shock. Never spill liquid on the PCX4500.

Protect From Lightning – Unplug the PCX4500 during a lightning storm, or when leaving it unattended and unused for a long period. Remove the power adapter from the wall outlet, and disconnect the cable system. This will prevent damage to the PCX4500 due to lightning and power line surges. Take care not to touch the metal portion of PCX4500 or cables in a lightning storm.

Service

Do Not Remove Covers - Do not attempt to service the PCX4500 yourself, as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel. **Removing the cover will VOID your warranty.**

Refer Servicing to Qualified Service Personnel under the Conditions Listed Below

- If the power supply cord or plug is damaged.
- If liquid has been spilled or objects have fallen into the PCX4500.
- If the PCX4500 has been exposed to rain or water.
- If the PCX4500 does not operate normally as per the operating instructions.
- If the PCX4500 has been dropped or the case has been damaged.
- When the PCX4500 exhibits a distinct change in operation, such as the inability to complete its self-test.

Require Safety Check - Upon completion of any service or repairs to the PCX4500, ask the service technician to perform the recommended safety checks to verify that the PCX4500 is in a safe operating condition.

Security Precautions

The PCX4500 provides your home network with the highest level of security. However, no product can provide you with absolute protection against a determined effort to break into your system. We recommend using additional security precautions, such as encrypting files and folders to protect highly valuable or sensitive information.

If you are using the wireless access capability of the PCX4500 and the wireless security options (encryption and access control) are disabled, an unauthorized user can penetrate your computers with a remote wireless device. See the section "**PCX4500 Wireless Configuration**" in this manual to set the appropriate wireless security parameters.

Range of Wireless Communication

The range of the wireless signal may vary according to the actual radio conditions at the location where the wireless LAN product is installed. The range of wireless devices may be affected by metal surfaces and high-density materials such as concrete walls. Range is also impacted due to "obstacles" in the signal path of the radio that may either absorb or reflect the radio signal.

Overview

The PCX4500 provides you with high-speed data communications over the television cable network by following the widely accepted DOCSIS standard. This standard, as defined by CableLabs™, offers a combination of high performance and interoperability among all major cable system operators in North America.

How does the PCX4500 work?

Digital signals are represented by high and low electrical voltage levels. The speed of how fast these levels can switch and still be transmitted is determined by the "bandwidth" of the transmission system. The pair of wires used in a telephone connection has a greatly limited bandwidth because of their electrical characteristics. When a device called a modem is connected between the computer output and the phone line, it generates an electrical wave whose strength and phase change in step with the highs and lows of the computer's digital output. It is because of the "smoothness" of the resultant signal that a higher data rate can be transmitted.

A cable modem "modulates" and "demodulates" electrical signals in the same way that the telephone modem does. However, since coaxial cable can transmit much higher frequencies, cable modems are far more complex. None of the activity caused by the PCX4500 disturbs your regular cable TV reception.

How does the PCX4500 connect to a computer?

The 10/100 Ethernet connection, USB connection and 802.11b wireless connection used in this device are emerging as the most popular means of networking computers together and to the Internet.

How does the PCX4500 differ from a stand-alone DOCSIS cable modem?

The standalone cable modem is designed to connect one computer. The PCX4500 is designed to connect multiple computers using 10/100 Ethernet, USB and 802.11b wireless interface. For standalone cable modems, you typically need to purchase an additional networking device called a router to connect more than one computer to the cable modem. With the PCX4500, all of your computers can share your high-speed connection.

The PCX4500 also includes advance security features such as a Stateful Inspection firewall that can protect your personal information and your equipment from malicious damage by hackers. The PCX4500 Stateful Inspection firewall is intelligent enough to know what applications should be allowed to access your network, and those that should be excluded.

What is DOCSIS?

Data Over Cable Service Interface Specifications. DOCSIS defines interface requirements for cable modems involved in high-speed data distribution over a cable television network. On November 17, 1997, Cable Television Laboratories, Inc. (CableLabs) and its members established a formal path of certification for cable modem equipment suppliers to obtain an interoperability seal for their products based on the DOCSIS specification. This certification process provides cable modem equipment suppliers with a fast, market-oriented method for attaining cable industry acknowledgment of compliance with DOCSIS.

Getting Started

Contacting your Cable Provider

Please keep in mind that you will need to notify your cable internet provider before using the new Toshiba PCX4500, even if you have a cable modem that is currently functioning with your computer.

Package Contents for the PCX4500 Wireless Cable Modem Gateway

Make sure that you have received the following items. Contact your dealer immediately if any item is missing or damaged,

- One Toshiba PCX4500 Wireless Cable Modem Gateway
- One Stand
- One 10BASE-T/100BASE-TX LAN Cable (6 feet)
- One USB Cable (5 feet)
- One AC Power Adapter
- One CD-ROM containing:
- One Warranty Statement
- One Quick Guide

PCX4500 Front and Rear View

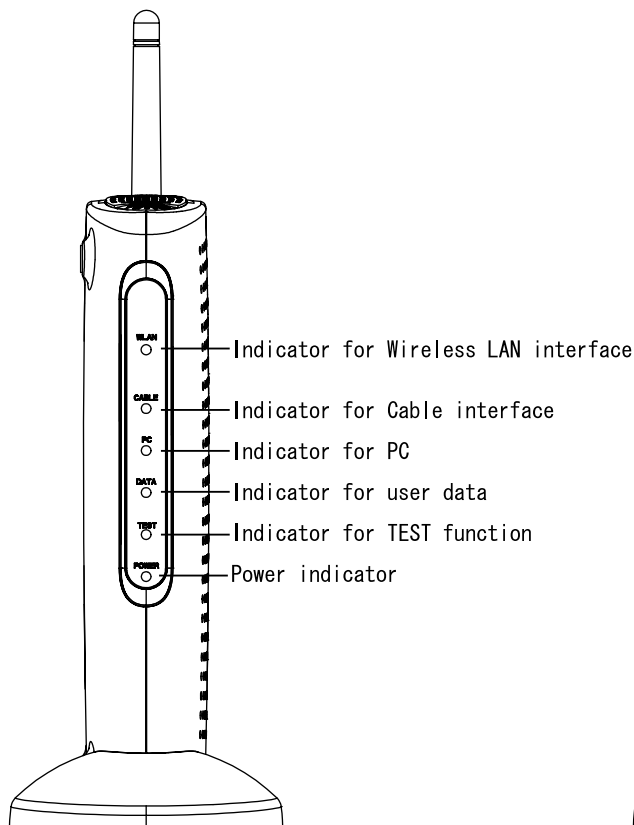


Figure 1: Front View

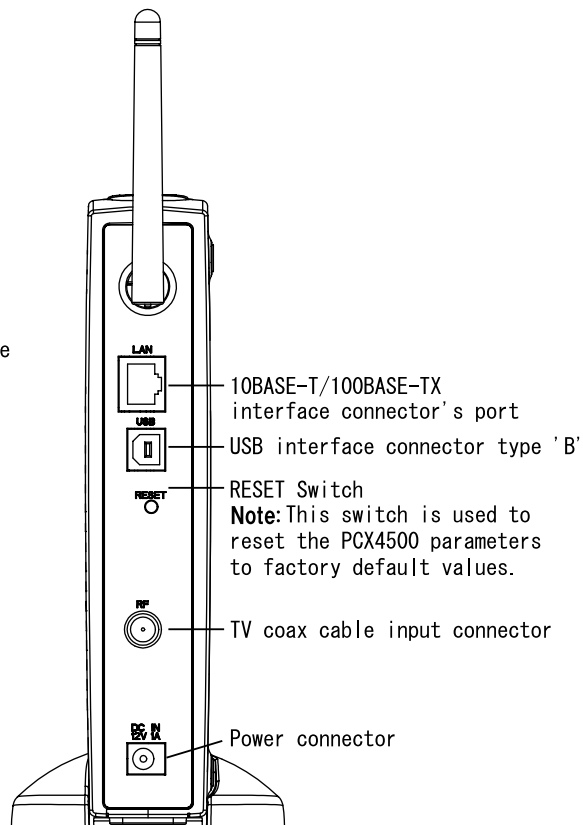


Figure 2: Rear View

How to adjust the built-in antenna

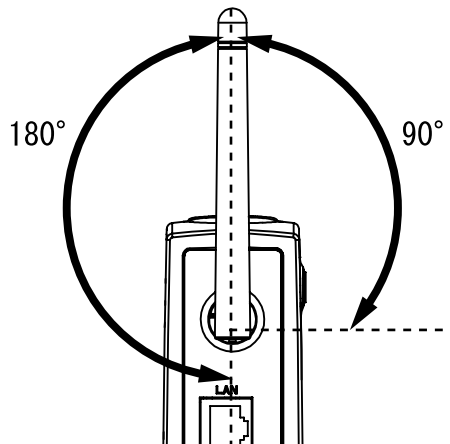


Figure 3: Rear View

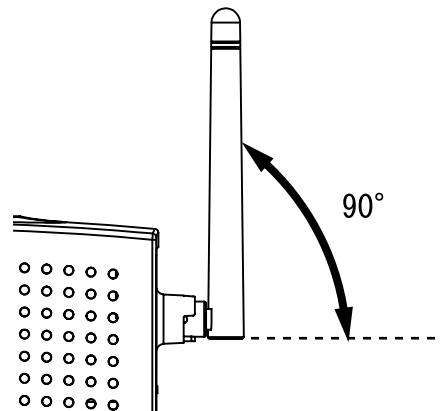


Figure 4: Side View

CD-ROM Contents

The included CD-ROM contains:

- Owner's Manual (PDF)
- USB Drivers for Windows 98SE, 2000, Me and XP
- Acrobat® Reader™ Software

This CD-ROM is readable by Windows and Macintosh computers.



Important Information!

DO NOT insert this CD-ROM into a music CD player, as that may cause damage to your ears or the music CD player.

Viewing the Owner's Manual

This owner's manual is in the PDF format. To view this manual, perform the following steps:

Insert the CD-ROM into your computer's CD drive.

Open the file "**PCX4500.pdf**" in the folder "**Manual**".

The Adobe Acrobat® Reader™ Software should launch automatically. The Acrobat Reader must already be installed on your computer.

Setting Up Your PCX4500 and Computers

The steps for connecting your PCX4500 to your home computer network are as follows:

Install the PCX4500 in your cable TV and home computer network.

Configure your computers' Ethernet, USB or wireless interfaces.

Configure your computers' TCP/IP network settings.

Configure the PCX4500 for operating in your environment.

Installing the PCX4500

To avoid overheating problems, do not place any objects on top of the PCX4500. Do not block the ventilation holes on the top of the unit. The top of the unit should be at least four inches from any obstruction.

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Connect the PCX4500 using the following steps, referring to figure 5.

1. Turn off the TV and computer.
2. Connect the cable TV coax cable to the input connector of a signal splitter.
3. Connect a coaxial cable from one of the output connectors of the splitter to the input connector of the television set.
4. Connect a coaxial cable from the other output connector of the splitter to the cable TV coax input connector (marked "RF") on the PCX4500 rear panel.
5. Connect the 10/100 Ethernet and/or USB cable(s) from your computer(s) to the 10/100 Ethernet and/or USB connector(s) on the PCX4500 rear panel.

You can use any combination of the following three ways to connect your computer(s) to the PCX4500.

- Ethernet (up to one computer directly connected)
 - USB (one computer)
 - Wireless (up to 32 computers)
6. Connect the AC power adapter to the DC IN 12V 1A jack on the PCX4500 rear panel. Then plug in the AC power adapter to the wall electrical outlet.

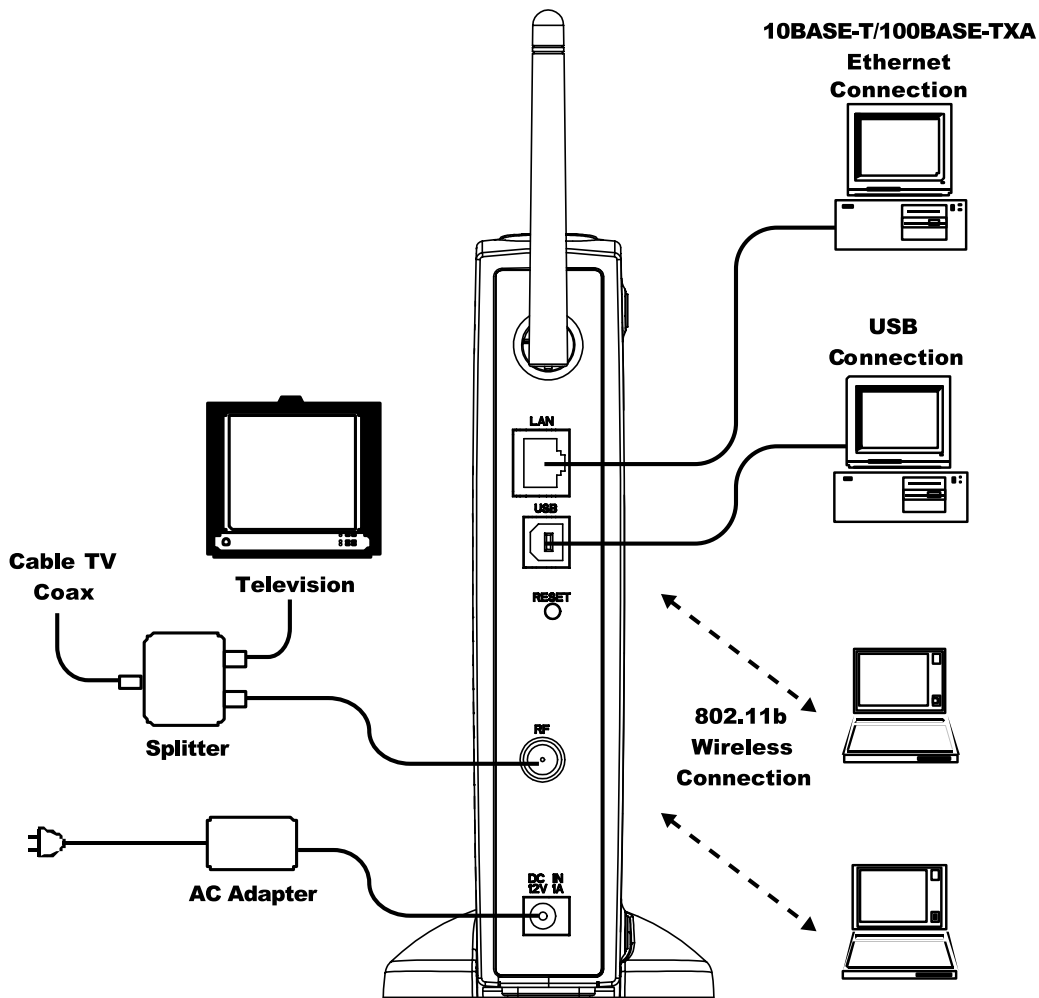
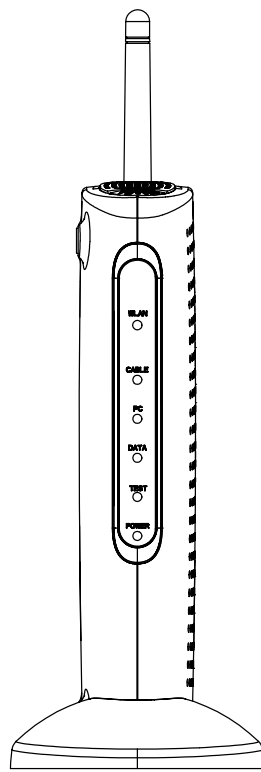


Figure 5: PCX4500 to Computer Connection

Once the AC adapter is connected to the modem, the power indicator LED on the PCX4500 front panel will light. The PCX4500 will start operating once power is connected. No additional operator intervention is required. The PCX4500 will perform its self-test, and then automatically find the data channel and register itself on the cable provider's system. The front panel indicators (LEDs) show that the PCX4500 is operating properly when they are in the following condition (refer to figure 5):



WLAN	– On: Wireless Station is registered and ready to transfer data. – Off: No Wireless Station is connected.
CABLE	– On
PC	– On: Carrier to/from PC is present – Off: No carrier to/from PC is present or power off
DATA	– Flashing: User data is going through the PCX4500. – Off: No user data is going through the PCX4500.
TEST	– Off
POWER	– On

Figure 6: PCX4500 Front Panel

If the PCX4500 front panel LEDs are not operating as described by the notes above, you may refer to the “**Diagnostics LEDs**” section in the appendix of this manual for more information.

If the PCX4500 appears to be operating correctly, you may now proceed to the next step.

7. If you are using the USB interface, install the USB driver following the instructions described in the “**Installing the USB Drivers**” section of this manual before proceeding to the “**Windows Network Configuration**” sections.

If you are connecting to the PCX4500 via the Ethernet connections, and already have the Ethernet hardware configured on your computers, you may power up your computers and proceed to the “**Windows Network Configuration**” or “**Macintosh Ethernet and Wireless Network Configuration**” section.

If you plan to use a wireless connection, please refer to “**PCX4500 Wireless Configuration**” sections of this manual before proceeding to the section, “**Windows Network Configuration**” or “**Macintosh Ethernet and Wireless Network Configuration**” section.

8. Once you have completed these steps, you should be able to connect to the Internet at high speed. If you are still having problems making your connection, please refer to the Q&A section at the end of this owner's manual.

How to Use Stand

Please attach the stand to the front of the PCX4500, referring to the figure below.

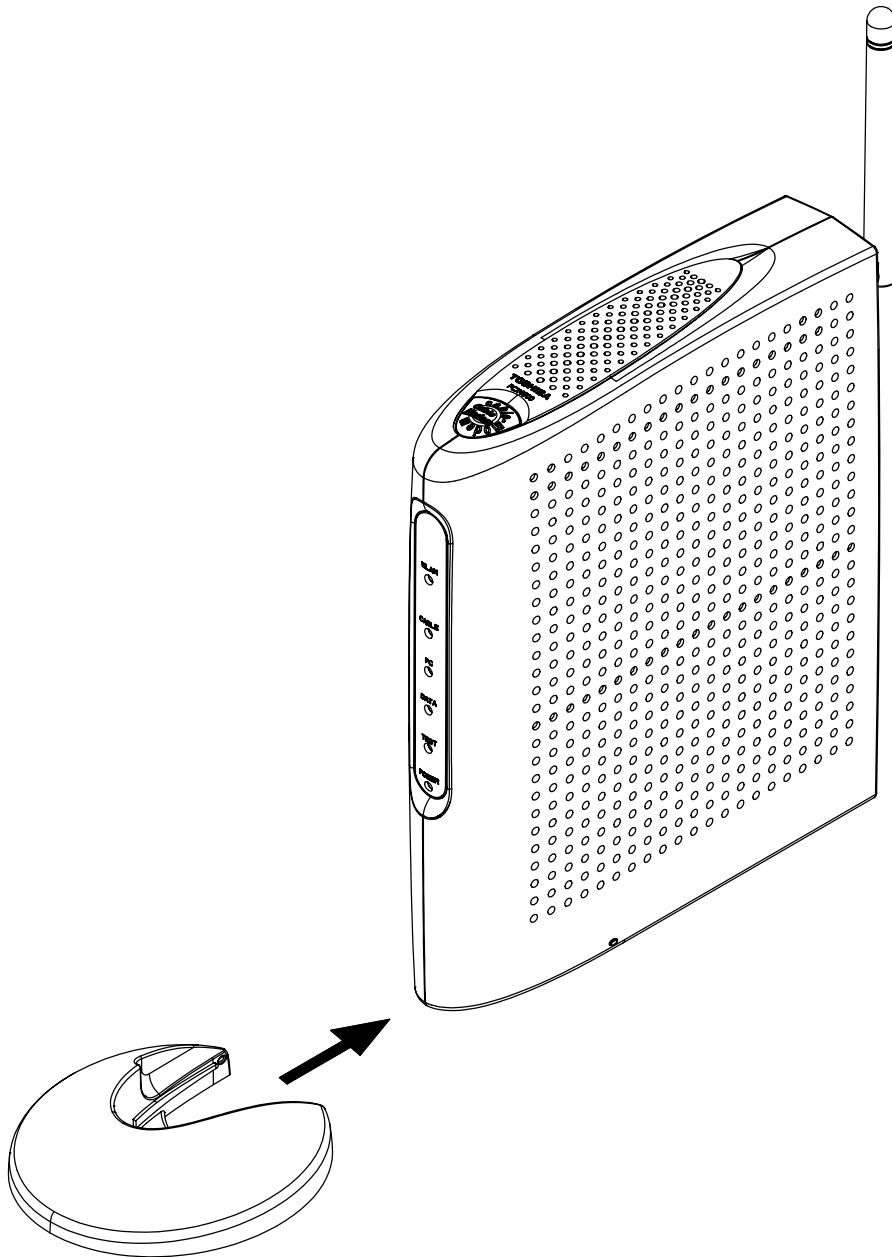


Figure 7: PCX4500 Stand

Configuring Your Computers

The following sections describe the typical steps needed to configure your computer network to communicate with the PCX4500. These procedures apply to all of the interfaces (Ethernet, USB, and wireless), which you will connect to the PCX4500.

Examples of the network configuration steps for Windows 98SE, Me, 2000 and XP are explained with screen shots in the “**Windows Network Configuration**” section. Macintosh configurations for OS 9 and OS X are explained in the “**Macintosh Ethernet and Wireless Network Configuration**” section. These procedures instruct you on how to set up your computer to obtain an IP address automatically.

Before proceeding to the network setting section for your Windows or Macintosh computer, please verify you have correctly installed and configured the networking interfaces for Ethernet, USB or wireless 802.11b. **Macintosh users please note that the PCX4500 does not support a USB connection for the Macintosh computer.** Macintosh users must use an Ethernet or wireless (AirPort) connection.

Installing the Ethernet Connections

The PCX4500 has one 10BASE-T/100BASE-TX Ethernet port that can be connected directly to a computer.

The port can be shared with more than one computer by connecting an Ethernet hub or switch in between the PCX4500 and multiple computers. Each computer must have an Ethernet port or card to connect directly or indirectly to the PCX4500.

Note that the PCX4500 is a stand-alone device and requires no special Ethernet driver to be installed on your computers.

Your computer may already be configured with a built-in Ethernet port, or you may need to use an add-in card. In either case, verify your Ethernet port is working correctly and your computer is correctly configured for the TCP/IP protocol. Follow the instructions in the “**Windows Network Configuration**” section for your operating system. If you do not have an entry for an Ethernet adapter or TCP/IP protocol in the “**Network**” panel window, refer to your computer or Ethernet card adapter documentation. You may need to reinstall your Ethernet adapter card, drivers and TCP/IP protocol.

Macintosh users should refer to the “**Macintosh Ethernet and Wireless Network Configuration**” section to configure their network settings.

Once you have completed the network settings for your computer, you should be able to access the Internet at high speed with the Ethernet interface. If you are still having problems making a connection, please refer to the Frequently Asked Questions section in the appendix at the end of this owner's manual.

Installing the USB Drivers

If you are using the USB (Universal Serial Bus) interface to connect the PCX4500 to your Windows PC via the USB, you must install the “**USB Driver**” in your computer. The USB Driver for your operating system is located in the CD-ROM shipped with the PCX4500.

Please note that these USB Drivers only support a computer running Microsoft Windows 98SE, 2000, Me and XP. These drivers are not supported on the following operating systems: Windows 98 First Edition; Windows 95 or any earlier version of Microsoft Windows or DOS OS; Macintosh; Unix/Linux; and IBM OS/2.

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Before installing and using these drivers, please be sure to read the "**End-User License Agreement**" which is enclosed in appendix of this owner's manual. You will be deemed to agree to this agreement if you use these drivers.

Preparation

1. Confirm the PCX4500 is ready by verifying the status panel LEDs. (See "PCX4500 Front Panel - figure 7")
Insert the USB Drivers CD-ROM into your CD-ROM drive.
Plug the "Type B" end of the USB cable into the back of the PCX4500.
Plug the "Type A" end of the USB cable into the USB port of your computer.
2. Turn on your computer.

Installing the USB Drivers

After following the instructions described in "**Preparation**" on this page, your Windows PC should finish its boot process and display a window identifying the PCX4500 as a new device and requesting its driver.

In general, follow these steps for installing the USB drivers.

Select "**Search for the Best Driver**" for your device" and click the **Next** button.

Select "**CD-ROM drive**" and click the **Next** button.

Windows should then begin installation.

Click the **Finish** button to complete the installation.

The following is an example for Windows XP. Windows 98SE, Me and 2000 operating systems should operate in the same way.

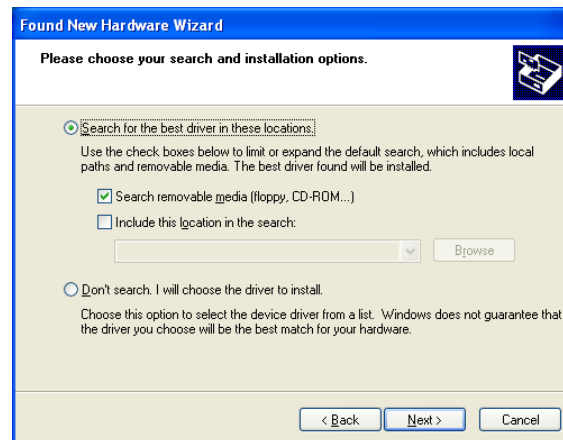
Windows XP USB Driver Installation Example

Step1: Shortly after plugging the USB cable into the USB port, "**Welcome to the Found New Hardware Wizard**" will prompt you through the driver install process.

Select "**Install from a list or specific location (Advanced)**", and click the **Next** button.

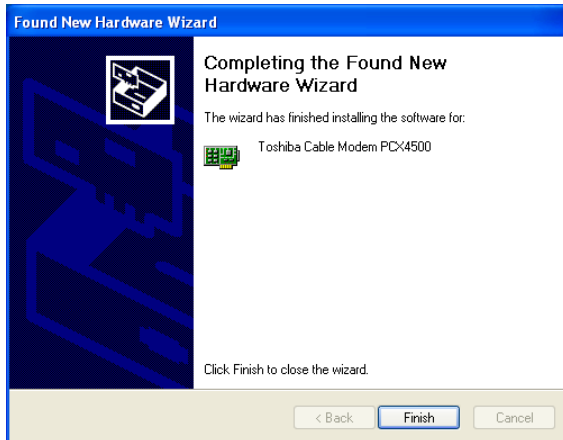


Step 2: The next set of windows will prompt you to specify the location of the driver. Select "**Search for the best driver in these location**", and select "**Search removable media (floppy, CD-ROM...)**". Click the **Next** button.



Step 3: Windows will search the CD-ROM drive for the USB driver, and install "**Toshiba Cable Modem PCX4500**".

When the installation is complete, you should see the following window.



Step 4: Click the **Finish** button.

Your may now proceed to the "**Windows Networking Configuration**" section.



Important Information!

If you have trouble installing the USB drivers for your new PCX4500, you may have inadvertently installed the USB Composite Device Driver that Windows 98SE automatically loads. To correct this problem, please execute the following instructions:

USB Composite Driver Removal

1. Make sure that the USB cable is plugged into your computer.
2. Restart your computer.
3. At the Windows desktop, click the **Start** button and then select "**Control Panel**".
4. From inside the "**Control Panel**", choose "**Printer and Other Hardware**".
5. Choose the "**System**" from the left of The *Printer and Other Hardware* screen.
6. Choose the tab on the top of the screen for "**Hardware**", and then click the **Device Manager** button.
7. Click the **+** button next to "**Network adapters**".
8. Click "**Toshiba Cable Modem PCX4500**" to select it and choose "**Uninstall**".
9. In the *Confirm Device Removal* screen, click the **OK** button.
10. Once the USB Composite Device is removed, restart your computer and follow the instructions starting with the "**Preparation**" section of this page.

Configuring the Computer for Wireless Operation

Please refer to the specific configuration instructions included with your wireless device for installation instruction. Wireless device must be 802.11b(Wi-Fi) compliant to be used with the PCX4500. These devices can be a PCI card, a PCMCIA card, or USB-based wireless access device.

The default settings for your wireless device to communicate with the PCX4500 are as follows.

Wireless: **Enabled** or **On**

Wireless Network Name (also called the ESSID): **PCX4500**

Encryption: **Disabled**

Channel: **6**

Mode: **Infrastructure**

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Your wireless device may have more settings. Refer to your device documentation for the default settings and configure up your wireless device appropriately.

Detailed instructions for the Macintosh AirPort wireless card are provided in the “Macintosh Ethernet and Wireless Network Configuration” section of this manual.

Windows Network Configuration Universal Plug and Play

What is Universal Plug and Play?

Universal Plug and Play is a networking architecture that provides compatibility among networking equipment, software and peripherals. UPnP™ enabled products can seamlessly connect and communicate with other Universal Plug and Play enabled devices, without the need for user configuration, centralized servers, or product-specific device drivers. This technology leverages existing standards and technologies, including TCP/IP, HTTP 1.1 and XML, facilitating the incorporation of Universal Plug and Play capabilities into a wide range of networked products for the home.

Universal Plug and Play technologies are being rapidly adopted and integrated into widely-used consumer products such as Windows XP and Windows Me. There-fore it is critical that today's Residential Gateways be UPnP compliant. PCX4500 -powered Gateways are at the forefront of this development, offering a complete software platform for UPnP devices. This means that any UPnP-enabled control point (client) can dynamically join the network, obtain an IP address and exchange information about its capabilities and those of other computers on the network, including PCX4500, with these other computers. They can subsequently communicate with each other directly, thereby further enabling peer-to-peer networking.

And this all happens automatically, providing a truly zero-configuration network.

Universal Plug and Play on PCX4500

If your computer is running an operating system that supports UPnP, such as *Windows Me* or *Windows XP*, you can easily add the computer to your home network and access the Management Console directly from within Windows.

- To add a UPnP-enabled computer to the home network:
 1. Connect the PC to PCX4500 as described in the previous chapter.

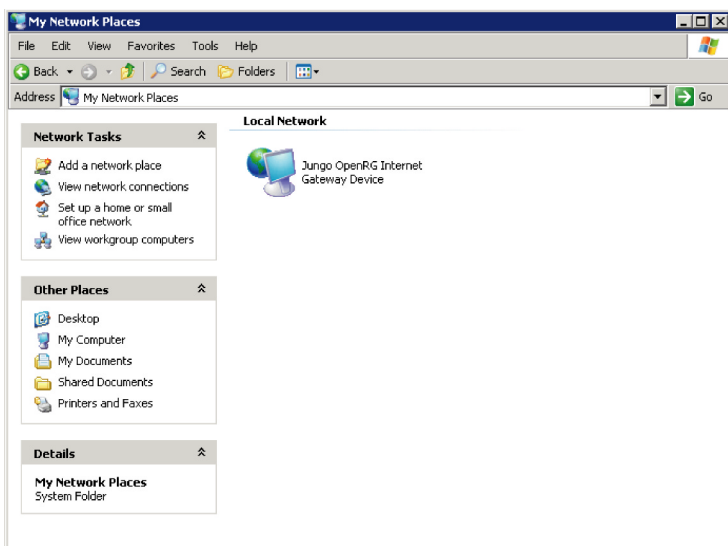


Figure 8: My Network Places

2. The PC will be automatically recognized and added to the home network. PCX4500 will be added to " My Network places" as the Internet Gateway Device and will allow configuration via standard Windows interface.
 3. A message will appear on the notification: area of the Taskbar notifying that the PC has been added to the network.
- To access the Management Console directly from Windows:
 1. Open the *My Network Places* window by double-clicking on its desktop icon.
 2. Double-click the **Internet Gateway Device** icon (see figure 8). The *Login* screen of the Management Console will appear.

If your computer is running *Windows XP* you may also view and configure some network parameters directly from within Windows. The actions that you can perform are listed below. Each of them can also be performed from within the Management Console (see references to the relevant sections of this user manual).

You may:

- Monitor the status of the connection between PCX4500 and the Internet
- Enable and Disable the connection to the Internet
- Select services provided by computers in the home network that you would like to make available to computers on the Internet. For example, you may designate a PC in your home network to act as a Web server, allowing computers on the Internet to request pages from it. Or a game that you want to play over the Internet may require that specified ports be opened to allow communication between your PC and other players. See P48 ("Local Servers") for more information.
- To monitor the status of the connection between PCX4500 and the Internet:
 1. Open the **Network Connections** control panel.
 2. Right-click **Internet Connection** and choose **Status**. The *Internet Connection Status* screen will appear (see figure 9).

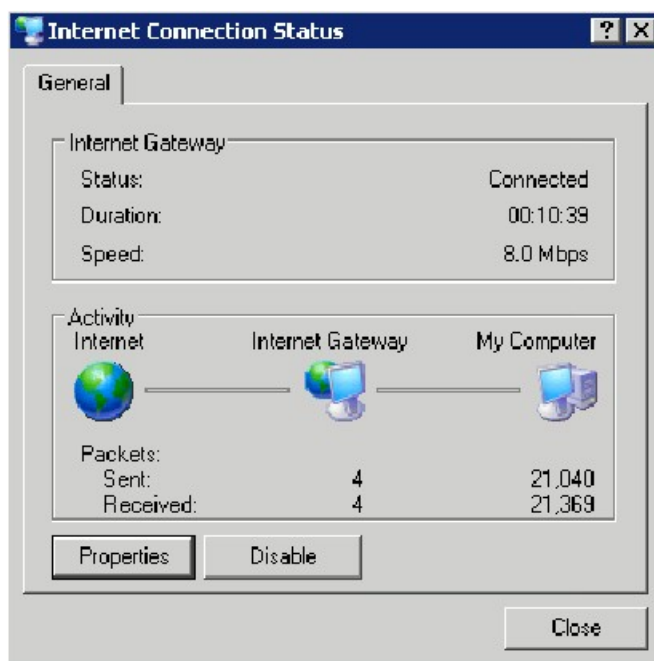


Figure 9: Internet Connection Status

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- To disable the Internet connection:
 1. Open the **Network Connections** control panel.
 2. Right-click **Internet Connection** and choose **Disable**. This will disconnect all computers in the home network from the Internet.
 3. Click the **Close** button to close the window.

Note: If the Internet connection is disabled, choose **Enable** to allow computers in the home network to access the Internet.
- To make local services available to computers on the Internet:
 1. Open the **Network Connections** control panel.
 2. Right-click **Internet Connection** and choose **Properties**. The *Internet Connection Properties* screen will appear (see figure 10).

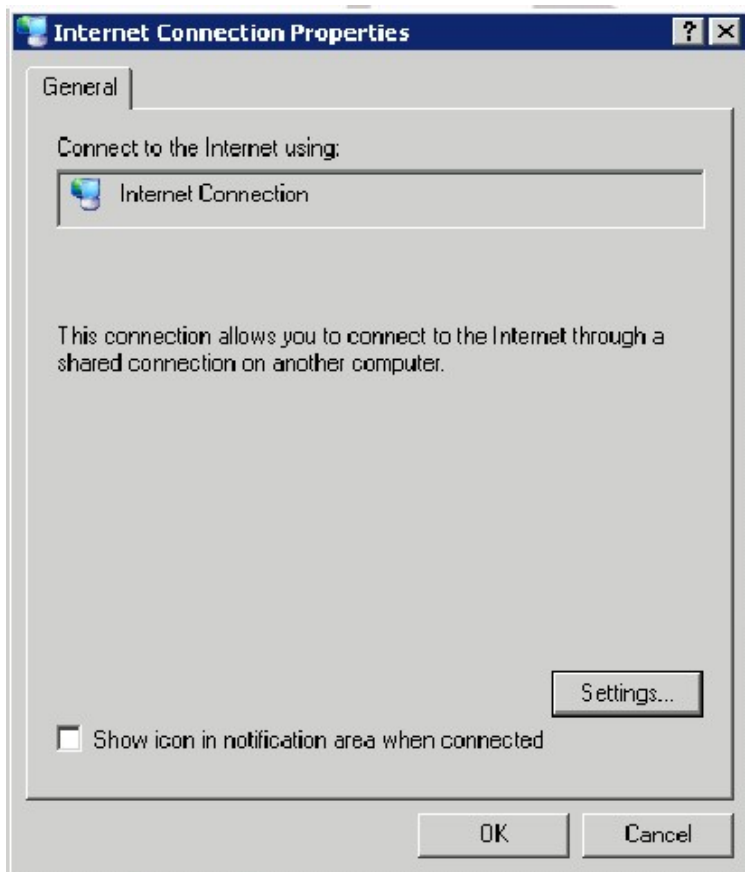


Figure 10: Internet Connection Properties

3. Click the **Settings** button. The *Advanced Settings* screen will appear (see figure 11).

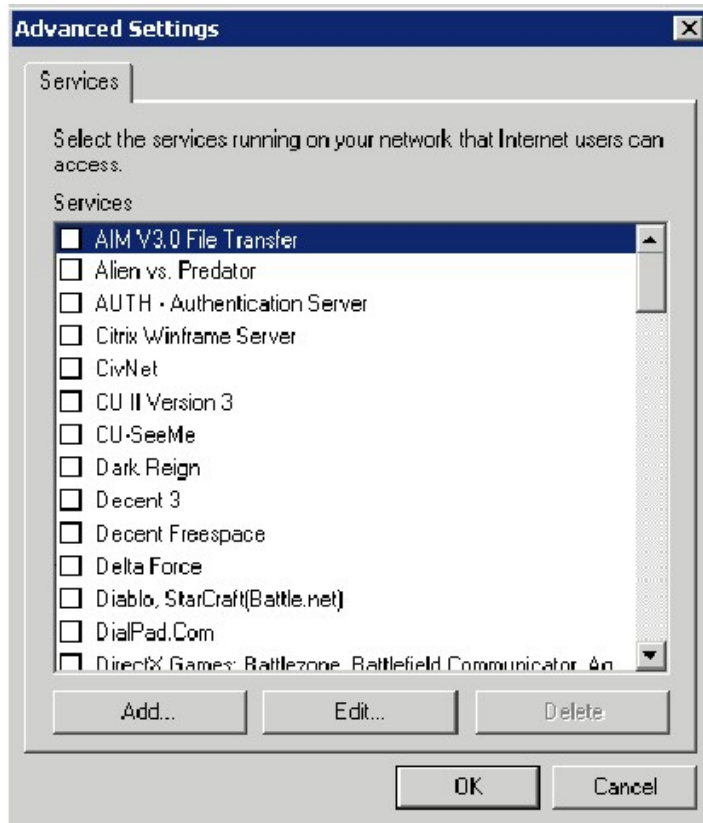


Figure 11: Advanced Settings

4. Select a local service that you would like to make available to computers on the Internet. The *Service Settings* screen will automatically appear (see figure 12).

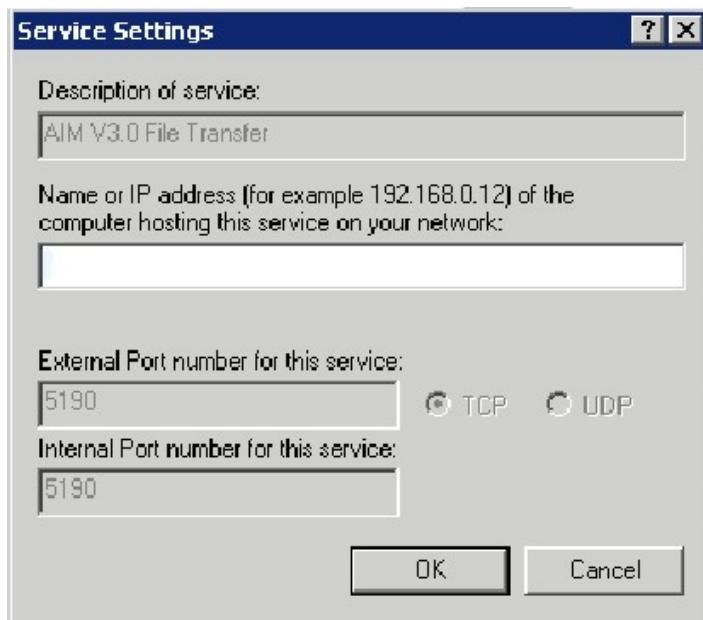
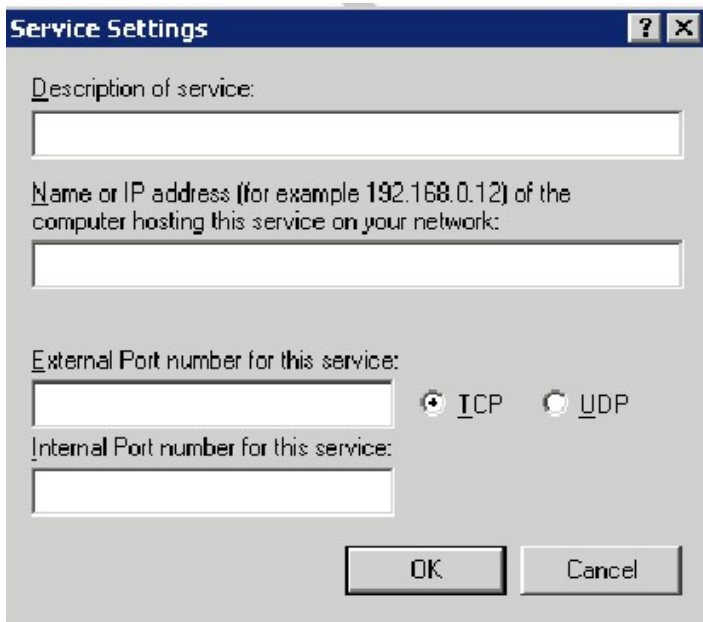


Figure 12: Service Settings: Edit Service

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5. Enter the local IP address of the computer that is providing this service and click the **OK** button.
 6. Select other services as desired and repeat the previous step for each. If a service that you wish to enable is not in the list, see below.
 7. Click the **OK** button, then click the **OK** button again to close open windows and return to the **Network Connections** control panel.
- To add a local service that does not appear in the *Advanced Settings* screen:
 1. Follow step3 of Page20.
 2. Click the **Add** button. The **Service Settings** screen will appear (see figure 13).



The screenshot shows a dialog box titled "Service Settings" with a blue header bar containing a question mark and a close button. The dialog has a light gray background and contains the following fields and controls:

- A text box labeled "Description of service:".
- A text box labeled "Name or IP address (for example 192.168.0.12) of the computer hosting this service on your network:".
- A text box labeled "External Port number for this service:".
- Two radio buttons: "TCP" (selected) and "UDP".
- A text box labeled "Internal Port number for this service:".
- Two buttons at the bottom: "OK" and "Cancel".

Figure 13: Service Settings: Add Service

3. Complete the fields as indicated in the screen.
4. Click the **OK** button to close the window and return to the *Advanced Settings* screen. The service will be selected.
5. Click the **OK** button, then click the **OK** button again to close open windows and return to the **Network Connections** control panel.

Network Configuration for Windows 98SE and Windows Me:

The following is an example of how to configure a Windows 98SE and Me PC for TCP/IP network settings:

Step 1: At the Windows Desktop, click **Start**, then select **Settings**, and click **Control Panel** as shown in the screen below. The *Control Panel* window will appear.



Step 2: At the Control Panel window, select and double click the **Network** icon.



Step 3: In the Network panel window, scroll down to the TCP/IP network adapter in your computer. Select the "TCP/IP" line item and click the **Properties** button.



Step 4: In the TCP/IP Properties panel, choose the **Obtain an IP address automatically** button and then click the **OK** button.



Step 5: Once you have completed the steps above, a notice to restart your computer will come up. Restart your computer.

Step 6: You should now be able to access the PCX4500 configuration pages.

Launch the browser and open location:

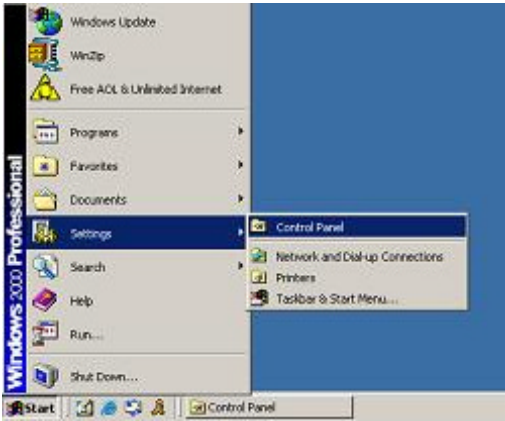
["http://192.168.100.1"](http://192.168.100.1)

Proceed to the "**Configuring the PCX4500 Gateway**" section of this manual.

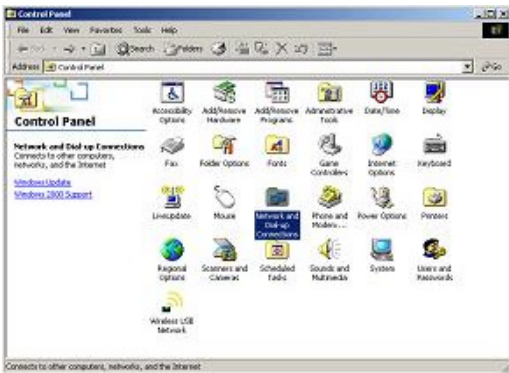
Network Configuration for Windows 2000:

The following is an example of how to configure the Windows 2000 TCP/IP network settings:

Step 1: At the Windows 2000 Desktop, click **Start**, then select **Settings**, and click **Control Panel** as shown in the screen below.



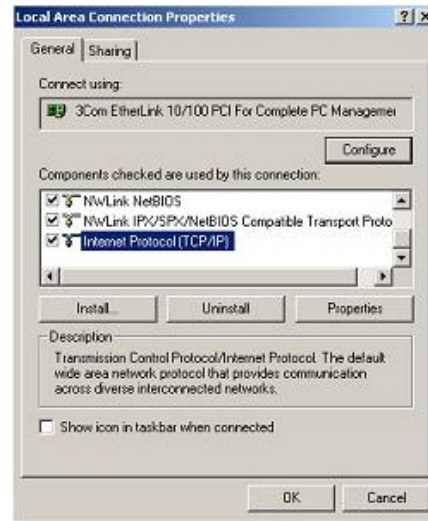
Step 2: At the Control Panel window, select and double click the **Network and Dial-up Connections** icon.



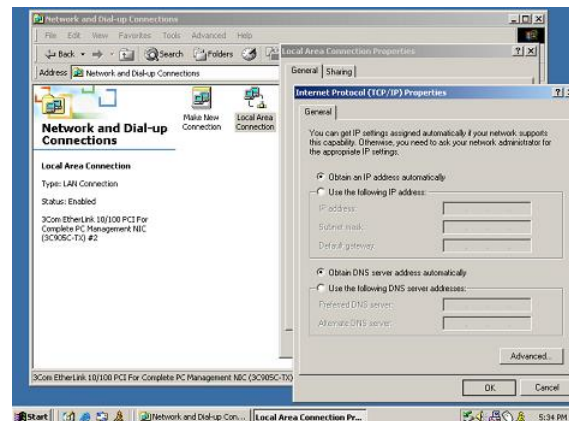
Step 3: In the Network and Dial-up Connections panel window, select and right click the **Local Area Connections** icon, then select and click the **Properties** menu item.



Step 4: In the Local Area Connection Properties panel, select the “**Internet Protocol (TCP/IP)**” item and then click the **Properties** button.



Step 5: In the Internet Protocol (TCP/IP) Properties panel, select “**Obtain an IP address automatically**”. Close each panel by clicking the **OK** button.



Step 6: You should now be able to access the PCX450 configuration pages. Launch your browser and open location: <http://192.168.100.1>. Proceed now to the “**Configuring the PCX450 Gateway**” section of this manual,

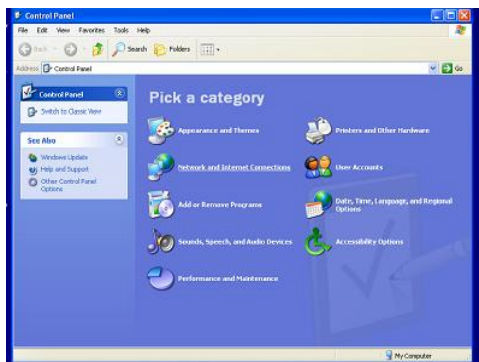
Network Configuration for Windows XP:

The following is an example of how to configure the Windows XP TCP/IP network settings:

Step 1: At the Windows XP Desktop, click **Start**, then select and click the **Control Panel** item as shown in the screen below.



Step 2: At the Control Panel window, select and double click the **Network and Internet Connections** icon.



Step 3: In the Network and Internet Connections window, click the **Network Connections** icon located in the lower right corner of the window.

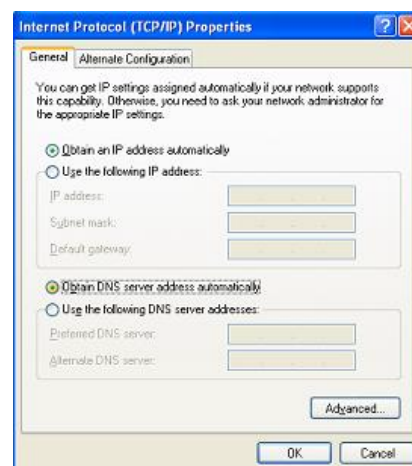


Step 4: In the Network Connections window, click the **Local Area Connection** icon for your Ethernet adapter.

Then click the **Properties** button in the Local Area Connection Status panel. In the Local Area Connections Properties panel, select the **Internet Protocol (TCP/IP)** item and then click the **Properties** button.



Step 5: In the Internet Protocol (TCP/IP) Properties panel, select **Obtain an IP address automatically**. Click the **OK** button at the bottom of the panel. Close each panel by clicking the **OK** buttons.



Step 6: You should now be able to access the PCX4500 configuration pages. Launch the browser and open location:

["http://192.168.100.1"](http://192.168.100.1)

Proceed to the **Configuring the PCX4500 Gateway** section of this manual.