This section describes how to configure each of the customer’s computers to be able to communicate with the Internet.

**Configuring the Computers**

The following sections describe the typical steps needed to configure the computer network to communicate with the PCX5000. These procedures apply to all of the interfaces (Ethernet, USB, and Wireless), which will connect to the PCX5000.

*Note:* Before proceeding to the network setting section for the Windows or Macintosh computer, verify the networking interfaces for Ethernet, USB or Wireless 802.11b have been correctly installed and configured. Macintosh users please note that the PCX5000 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 PCX5000 has four 10/100 Ethernet ports that can be used to connect directly to a total of four computers. Each port can be shared with more than one computer by connecting an Ethernet hub or switch in between the PCX5000 and multiple computers. Each computer must have an Ethernet port or card to connect directly or indirectly to the PCX5000.

*Note:* The PCX5000 is a stand-alone device and requires no special Ethernet driver to be installed on the computers.

The computer may already be configured with a built-in Ethernet port, or an add-in card may need to be used. In either case, verify the Ethernet port is working correctly and the computer is correctly configured for the TCP/IP protocol. If there is not an entry for an Ethernet adapter or TCP/IP protocol in the Network panel window, refer to the computer or Ethernet card adapter documentation. The Ethernet adapter card, drivers, and TCP/IP protocol may need to be reinstalled. Macintosh users should refer to Macintosh OS X Configuration Ethernet Settings to configure their network settings.
Once the network settings for the computer have been completed, the Internet
should be able to be accessed at high speed with the Ethernet interface. If there
are still problems making a connection, refer to FAQs.

**Back to Top**

**Installing the USB Drivers**

If using the USB interface to connect the PCX5000 to the Windows PC via the
USB, install the USB Driver in the computer. The USB Driver for the operating
system is located in the CD-ROM shipped with the PCX5000.

**Note:** These USB Drivers only support a computer running Microsoft Windows
98SE, 2000, Me, and XP.

To prepare for installing the USB drivers, complete the following steps:

1. Confirm the PCX5000 is ready by verifying the status panel LEDs.
2. Insert the USB Drivers CD-ROM into the CD-ROM drive.
3. Plug the "Type B" end of the USB cable into the back of the PCX5000.
4. Plug the "Type A" end of the USB cable into the USB port of the computer.
5. Turn on the computer.

To install the USB drivers, complete the following steps:

1. After following the above instructions, the Windows PC should finish its
   boot process and display a window identifying the PCX5000 as a new
device and requesting its driver.
2. Select Search for the Best Driver for the device and click the Next button.
3. Select CD-ROM drive and click the Next button.
4. Windows should then begin installation.
5. Click the Finish button to complete the installation.

**Back to Top**

**USB Composite Driver Removal**

To remove a USB driver, complete the following steps:

1. Make sure the USB cable is plugged into the computer.
2. Restart the computer.
3. At the Windows desktop, click on the Start button, select Settings and then
   Control Panel.
4. From inside the Control Panel, choose System.
5. Choose the tab on the top of the screen for Device Manager.
6. Click the "+" next to Universal Serial Bus Controllers.
7. Click USB Composite Device to select it and choose Remove.
8. Once the USB Composite Device is removed, restart the computer and follow the instructions starting with preparing for USB installation to reinstall.

Back to Top

Configuring the Computer for Wireless Operation

Refer to the specific configuration instructions included with the wireless device for installation instruction. The wireless device must be 802.11b(Wi-Fi) compliant to be used with the PCX5000. The following devices can be used; PCI card, a PCMCIA card, or USB-based wireless access device. The default settings for the wireless device to communicate with the PCX5000 are as follows:

- Wireless: Enabled or On
- Wireless Network Name (also called the ESSID): PCX5000
- Encryption: Disabled
- Channel: 6
- Mode: Infrastructure

The wireless device may have more settings. Refer to the device documentation for the default settings and how to configure the wireless device appropriately.

Back to Top

Configuration of TCP/IP Protocol

Follow these instructions to install the TCP/IP protocol on one of the PCs only after a network card has been successfully installed inside the PC.

Network Configuration for Windows 98SE and Windows Me:

To configure Windows 98SE and Me PC for TCP/IP network settings, complete the following steps:

1. At the Windows Desktop, click the Start button, then select Settings, and click Control Panel. The Control Panel window will appear.
2. At the Control Panel window, select and double click on the Network icon.
3. In the Network panel window, scroll down to the TCP/IP network adapter in the computer. Select the TCP/IP line item and click on the Properties button.

4. In the TCP/IP Properties panel, choose the Obtain an IP address automatically button and then press the OK button.

5. A notice to restart the computer will come up. Restart the computer.

6. The PCX5000 configuration pages should now be accessible. Launch the browser and open location: http://192.168.100.1.

**Back to Top**

**Network Configuration for Windows 2000:**

To configure Windows 2000 for TCP/IP network settings, complete the following steps:

1. At the Windows 2000 Desktop, click the Start button, then select Settings, and click on the Control Panel button.

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

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

4. In the Local Area Connection Properties panel, select the Internet Protocol (TCP/IP) item and then click on the Properties button.

5. In the Internet Protocol (TCP/IP) Properties panel, select Obtain an IP address automatically. Close each panel by pressing the OK button.

6. The PCX5000 configuration pages should now be accessible. Launch the browser and open location: http://192.168.100.1.

**Back to Top**

**Network Configuration for Windows XP:**

To configure Windows XP for TCP/IP network settings, complete the following steps:

1. At the Windows XP Desktop, click the Start button, then select and click on the Control Panel item.

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

3. In the Network and Internet Connections window, click on the Network Connections icon located in the lower right corner of the window.
4. In the Network Connections window, click on the Local Area Connection icon for the Ethernet adapter.

5. Click on 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 on the Properties button.

6. 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 pressing the OK buttons.

7. The PCX5000 configuration pages should now be accessible. Launch the browser and open location: http://192.168.100.1.

Network Configuration for Macintosh, Ethernet, and Wireless

To configure Macintosh, Ethernet, and Wireless for TCP/IP network settings, complete the following steps:

1. At the Macintosh desktop, click the Apple icon at the top left of the screen, select Control Panel, and then click on the TCP/IP listing on the side panel.

2. In the TCP/IP (Setup Ethernet) panel, select the Ethernet port used to connect the Macintosh to the PCX5000 in the Show choice box. The default port is Built-in Ethernet. Select Using DHCP Server in the Configure choice box. Close the panel by clicking on the top left corner. A prompt to save the configuration will appear.

3. The PCX5000 Configuration Pages should now be accessible. Launch the browser supplied with the Macintosh and open location: http://192.168.100.1.

Macintosh OS 9 AirPort Settings

Note: If using the AirPort wireless connection, first verify the PCX5000 wireless link is turned on.

To configure the Macintosh OS 9 AirPort settings, complete the following steps:

1. Using the same procedure described previously to set the Ethernet TCP/IP configuration, navigate to the TCP/IP (Setup Ethernet) panel and select AirPort in the Connect via choice box. Select Using DHCP Server in the Configure choice box. A prompt to save the changes will appear.

2. At the Macintosh Desktop, double click on the Macintosh HD icon, and navigate to the AirPort Setup Assistant icon located in the
Applications/Utilities/Assistants folder. Launch the AirPort Setup Assistant application by double clicking the icon. Select Set up the computer to join an existing AirPort network. Press the right arrow button to continue.

The Setup Assistant will scan for nearby 802.11b wireless base stations. If the PCX5000 is in range, it will respond with a message announcing it has joined the network. If the AirPort Assistant cannot find a wireless network, verify the Macintosh is in range of the PCX5000 and that the PCX5000 has had the wireless option turned on.

3. If the AirPort Setup Assistant is successful in finding the PCX5000 wireless base station, it will display a panel stating the following: The AirPort Assistant is now ready to configure the computer to access the network “PCX5000”. Press the Go Ahead button to proceed.

4. After several seconds, a notification that the AirPort Assistant was successful will appear. Press the Connect Now button. After pressing the Connect Now button, the browser should launch automatically.

5. The Internet should now be accessible. Immediately enable wireless encryption. With a 10/100 Ethernet connection, open location: http://192.168.100.1.

**Back to Top**

**Macintosh OS X Configuration Ethernet Settings**

To configure the Macintosh OS X Ethernet settings, complete the following steps:

1. At the Macintosh desktop, select the Apple icon at the top left of the screen, click on System Preferences, then select and click on the Network icon at the top of the panel.

2. In the Network panel, Select Active Network Ports in the Show choice box to verify the networking interfaces (Built-in Ethernet, Add-on Ethernet, or AirPort) are active.

3. Select the Ethernet port using to connect the Macintosh to the PCX5000 in the Show choice box. The default port is Built–in Ethernet. Click on the TCP/IP tab and select Using DHCP in the Configure choice box.

4. Click the Apply Now button at the bottom right corner of the menu.

5. The PCX5000 configuration pages should now be accessible. Launch the browser supplied with the Macintosh and open location: http://192.168.100.1.

**Back to Top**
Macintosh OS X AirPort Settings

Note: If using the AirPort wireless connection, first verify the PCX5000 wireless link is turned on.

To configure the Macintosh OS 9 Air Port settings, complete the following steps:

1. In the Macintosh OS X toolbar (located at the top of the desktop) select the AirPort broadcast icon and choose Turn AirPort On.
2. At the Macintosh desktop, double click on the Macintosh HD icon, and navigate to the AirPort Setup Assistant icon located in the Applications/Utilities folder. Launch the AirPort Setup Assistant application by double clicking the icon. Select Set up the computer to join an existing AirPort network. Press the Continue button.

The Setup Assistant will scan for nearby 802.11b wireless base stations. If the PCX5000 is in range, it will respond with a message announcing it has joined the network. If the AirPort Assistant cannot find a wireless network, verify the Macintosh is in range of the PCX5000 and that the PCX5000 has had the wireless option turned on.

3. At the Macintosh desktop, select the Apple icon at the top right of the screen, click on System Preferences, and select and click on the Network icon at the top of the panel. Then select AirPort in the Show choice box. Select the TCP/IP tab and select Using DHCP in the Configure choice box.

4. While in the Network Panel, select the AirPort tab. Verify the Wireless Network Name of the PCX5000 (default is "PCX5000") in the Preferred Network: text entry box. The PCX5000 should be listed as one of the available networks recognized by the AirPort card.

5. The Internet should now be accessible. Immediately enable wireless encryption. With a 10/100 Ethernet connection, open location: http://192.168.100.1.

Back to Top

PCX5000 Wireless Configuration

The following sections describe how to configure the network and security settings for the PCX5000. Once the Ethernet or USB installation for the computer has been completed, these settings should be accessible. In most cases, the default settings of the PCX5000 will not need to be changed.

If planning to use the wireless access capability of the PCX5000, refer to PCX5000 Wireless Configuration to set the security parameters. The default settings do not protect the home network from an attack by an unauthorized wireless user. The PCX5000 contains an embedded Web server that allows its
configuration to be changed. The PCX5000 configuration web pages may be accessed through any Internet browser such as Microsoft Internet Explorer (5.0 or later recommended). These web pages are password protected to prevent unauthorized changes.

The PCX5000 configuration options are available in the following web page locations:

<table>
<thead>
<tr>
<th>Configuration Option</th>
<th>PCX5000 Web Page Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turn the firewall On/Off (default: On)</td>
<td>Security-&gt;Firewall Web Page</td>
</tr>
<tr>
<td>Setup access rules</td>
<td>Security-&gt;Allow</td>
</tr>
<tr>
<td>Setup DMZ (Demilitarized Zone)</td>
<td>Security-&gt;DMZ</td>
</tr>
<tr>
<td>Setup host name</td>
<td>System-&gt;Internet-&gt;Advanced Setup</td>
</tr>
<tr>
<td>Setup fixed IP addresses for modem, PC’s</td>
<td>System-&gt;Internet-&gt;Advanced Setup</td>
</tr>
<tr>
<td>Change modem’s DHCP server settings</td>
<td>System-&gt;My Network</td>
</tr>
<tr>
<td>Change modem’s password</td>
<td>System-&gt;Password</td>
</tr>
<tr>
<td>Upgrade firewall security</td>
<td>System-&gt;Upgrade</td>
</tr>
<tr>
<td>Enable wireless encryption</td>
<td>Wireless</td>
</tr>
</tbody>
</table>

The following table details the PCX5000 status:

<table>
<thead>
<tr>
<th>Configuration Option</th>
<th>PCX5000 Web Page Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>View firewall report</td>
<td>Security-&gt;Report</td>
</tr>
<tr>
<td>Internet statistics</td>
<td>Security-&gt;Report</td>
</tr>
<tr>
<td>Modem Status</td>
<td>Status</td>
</tr>
</tbody>
</table>

To access the PCX5000 Web page, complete the following steps:

1. Launch Web browser (IE 5.0 or later recommended) on a computer connected to the PCX5000.
2. Go to address: http://192.168.100.1. The PCX5000 Welcome page will appear.

Back to Top
PCX5000 Administration Pages

This section describes how to access the PCX5000 settings through the browser interface.

When logging in for the first time, complete the following steps:

1. If accessing the PCX5000 for the first time, or have reset the modem to its factory defaults, a prompt for a login password will appear. Enter the password of the choice into the dialog box. Retain this password for future reference. The password will need to be entered to access the PCX5000 internal settings.

   **Note:** It is highly recommended the Division establish a common Login and Password for all installations.

   **Note:** If the password is forgotten, reset the PCX5000 to factory defaults using the Reset button. The Reset button is located behind the PCX5000 and should be pressed for at least 10 seconds until the modem reboots.

2. If the PCX5000 configuration page has been accessed before, enter the password and click OK.

   **Note:** You will be automatically logged off after 10 minutes if no user input is received. Re-enter the password in order to access the PCX5000 administration pages.

3. Once the correct password has been entered, each of the PCX5000 administration pages may now be accessed.

The following figure illustrates the Main Menu Side bar on the PCX5000 Welcome screen:

<table>
<thead>
<tr>
<th>TOSHIBA</th>
<th>Welcome – The initial start-up screen</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Security – Firewall configuration pages</td>
</tr>
<tr>
<td></td>
<td>System – Router and password configuration and status</td>
</tr>
<tr>
<td></td>
<td>Wireless – Wireless access point configuration</td>
</tr>
<tr>
<td></td>
<td>Status – PCX5000 status information</td>
</tr>
<tr>
<td></td>
<td>Help – Simple references</td>
</tr>
<tr>
<td></td>
<td>Logout – Exit the PCX5000 administration site</td>
</tr>
</tbody>
</table>

The Main Menu Side Bar, located on the left side of the web page, is used to navigate to a particular configuration section. The following sections detail the fields on the Side Bar.

Back to Top
Security/Firewall Page

The Firewall page displays the state of the firewall. The default setting for the firewall is On. This setting is recommended for connecting to the Internet for most typical home installations. When the firewall is turned On, the following is true:

- The Stateful Inspection firewall engine will be enabled.
- The PCX5000 will operate in “router” mode, which will enable the internal DHCP Server.
- The PCX5000 will enable NAT (network address translation). The PCX5000 automatically obtains a single IP address from the CSP (Cable Service Provider) and shares this IP address with all of the computers on the home network.

If the firewall is turned Off, the following is true:

- The Stateful Inspection firewall engine will be disabled.
- The PCX5000 will operate in “bridge” mode, which will disable the internal DHCP Server and NAT.

Note: It is not recommended to turn the firewall off unless a firewall appliance or router that is installed in between the PCX5000 and the computers is present.

Note: Turning off the firewall will leave the computer vulnerable to an attack. When the firewall is turned on/off, power off and on PCX5000 and reboot the PC after the PCX5000 starts.

Security/Allow Page

The Security/Allow page is used to allow network applications to work with the firewall.

PCX5000 utilizes a Stateful Inspection Firewall that in most cases will recognize those applications that need access through the firewall, and will automatically configure the modem appropriately. If problems with network access in using an application are experienced, refer to the application documentation for port numbers and protocols that are used by that application. Enter the port and protocol information, as well as the IP address of the computer running the application.

Back to Top

Security/DMZ Page

The Security/DMZ page is used to allow unlimited access from the Internet to a computer in the home network. The default setting for this page is all computers are protected.
Security/DMZ IP Address Page
The DMZ IP Address is used to identify a single computer on the network that will reside outside of the firewall and allow for unlimited access to and from the Internet.

Note: If the IP Address of a computer is entered, the Firewall will not protect this computer.

Security/Reports Page
The Security/Reports page provides the Firewall statistics.
By clicking the Show me more button, more information regarding the enhanced firewall functionality, available through the SofaWare, upgrade will be provided. The SofaWare upgrade provides more detailed reports on intrusion statistics for the firewall.

Systems/Internet Page
The Systems/Internet page shows the current Internet connection status. If successfully connected to the Internet, the Status field should display Connected and the IP address of the PCX5000 will be displayed.
With a Windows PC, the host name of the computer may be identified by right clicking the Start button in the tool bar, selecting Explore, and clicking on the Network Neighborhood icon (Windows 98SE or Me) or My Network Places icon (Windows 2000, XP).
If a host name is required, click the Advanced Setup button on the PCX5000 System/Internet page. The Get configuration automatically (using DHCP) check box should be left checked.

Systems/My Network Page
The Systems/My Network page is used to assign the IP addresses for the LAN if using the DHCP function in the PCX5000. The default setting for the DHCP server is Enabled.
The DHCP server works only when the Firewall/NAT is turned On as described in the Security/Firewall web page. If a DHCP server is already on the LAN, set the DHCP server setting to Disabled.
If using a different address with the DHCP server, enter that internal network address in the My Network fields.
Note: If changing Internal Network address to ‘xxx.yyy.zzz.*’, the IP address will always be ‘xxx.yyy.zzz.254’. Regardless of the Internal Network Address setting, the IP address of PCX5000 configuration Web pages will remain 192.168.100.1.

Systems/Password Page

The System/Password page is used to change the login password for accessing the PCX5000 configuration Web pages.

Back to Top

Wireless Page

The Wireless Settings page is used to set the parameters needed for a wireless network. The following table details the fields on the Wireless page:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wireless Enabled Checkbox</td>
<td>When checked, the wireless 802.11b network is on. When unchecked, the wireless 802.11b network is off.</td>
</tr>
</tbody>
</table>
| Wireless Net Name Entry Box  | Also called the ESSID, the Wireless Net Name is the unique name shared by all devices on the wireless network. All wireless devices on the network MUST use the same Wireless Net Name to communicate with each other and the access point. The name can be up to 32 characters long. By default, the PCX5000 uses PCX5000 as the Wireless Net Name.  
**Note:** The Division should set a common ESSID for use in all installations. |
| Exclude Other Nets Checkbox  | When checked, the PCX5000 will only recognize wireless devices whose network name exactly matches the one entered into the Wireless Net Name entry box. Wireless devices whose network name does not match will not be allowed to connect to the network. When unchecked, the PCX5000 allows wireless devices whose network name matches and wireless devices whose network name is ‘ANY’ to connect. All other network names will be rejected. |
| Wireless Channel Selection Box | Selects the wireless channel to use. Valid selections are 1 to 11. The default is 6.  
**Note:** When other wireless devices or access points exist in adjacent area, the Wireless Channel number may be changed. |
| Enable Wireless Encryption Checkbox | When unchecked, wireless encryption is disabled. When checked, the PCX5000 will utilize encryption to secure the wireless connection. Enabling wireless encryption will |
**Field** | **Description**
--- | ---
Expand the Wireless Settings configuration page. 
*Note:* Time Warner Cable policy is that WEP is mandatory setting for all installations – Enable Feature. When wireless encryption is enabled, the Wireless Settings page expands to include encryption options.

Exclude Unencrypted Checkbox | When checked, only wireless devices with matching encryption keys will be allowed to connect to the PCX5000. When unchecked, wireless devices with matching encryption keys and wireless devices with no encryption will be allowed to connect. For security reasons, it is strongly recommended to check this box.

Key Entry Type Selection Box | Selects the type of encryption to use (64-bit or 128-bit). 128-bit encryptions offer stronger security, but may slow down the connection. 
*Note:* Time Warner Cable policy is that all Installation technicians must utilize 128-Bit Encryption for all installations.

Key Entry Mode Selection Box | Encryption keys may be entered as alphanumeric characters (select Key Entry Mode “Alpha”) or Hexadecimal numbers (use entry mode “Hex”).

Encryption Key Entry Box | The PCX5000 can decrypt up to four separate encryption keys. Enter up to four encryption keys in these entry boxes. Typically, only one key is used. This key may be entered into any entry box.

Transmit Using Key Selection Box | Select the encryption key to use when transmitting. 
*Note:* When using the encryption options, if the encryption keys for the computer’s wireless access card and the PCX5000 do not exactly match, there will be no connection. 
*Note:* When an Encryption Key of PC corresponds with one of 4 Encryption Keys of PCX5000, PC can access PCX5000.

**Back to Top**

**Status Page**

The Status page summarizes basic information useful for installation and diagnostics. The following table details the Status page fields:

<table>
<thead>
<tr>
<th><strong>PCX5000 Information</strong></th>
<th><strong>Hardware and software version information</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>RF MAC Address</td>
<td>MAC address of the RF interface.</td>
</tr>
<tr>
<td><strong>PCX5000 Information</strong></td>
<td><strong>Hardware and software version information</strong></td>
</tr>
<tr>
<td>-------------------------------</td>
<td>----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>USB MAC Address</td>
<td>MAC address for the USB interface.</td>
</tr>
<tr>
<td>LAN MAC Address</td>
<td>MAC address used for router functions.</td>
</tr>
<tr>
<td>802.11b MAC Address</td>
<td>MAC address of the 802.11b wireless interface.</td>
</tr>
<tr>
<td>Serial Number</td>
<td>The serial number of the unit.</td>
</tr>
<tr>
<td>Operational Status</td>
<td>The current status of the PCX5000.</td>
</tr>
<tr>
<td>Uptime</td>
<td>The time since the last PCX5000 reset.</td>
</tr>
<tr>
<td>Last Status - prior reboot</td>
<td>The status of the PCX5000 prior to the last reboot.</td>
</tr>
<tr>
<td>Power Level Received</td>
<td>The power of the downstream signal in dBmV.</td>
</tr>
<tr>
<td>Power Level Transmitted</td>
<td>The power of the upstream signal in dBmV.</td>
</tr>
<tr>
<td>Received SNR</td>
<td>The signal-to-noise ratio of the downstream signal in dB.</td>
</tr>
<tr>
<td>Frequency Downstream</td>
<td>The frequency of the downstream signal.</td>
</tr>
<tr>
<td>Frequency Upstream</td>
<td>The frequency of the upstream signal.</td>
</tr>
</tbody>
</table>

*Back to Top*