

CardBus 10M HomePNA Network Card

User's Manual

REGULATORY STATEMENTS

Part15, Class B

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

1. This device may not cause harmful interface, and
2. This device must accept any interface received, including interface that may cause undesired operation. This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
 - Reorient or relocate the receiving antenna.
 - Increase the distance between the equipment and receiver.
 - Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

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

FCC Part 68 Registration

This equipment complies with Part 68 of the FCC Rules. On the bottom of this equipment is label that contains, among other information, the FCC registration Number and Ringer equipment Number (REN) for the equipment. If requested, this information must be given to the Telephone Company.

The REN is useful to determine the quantity of devices you may connect to your telephone line and still have all of those devices ring when your telephone number is called. In most, but not all areas, the sum of the REN's of all devices connected to one line should not exceed five (5.0). To be certain of the number of devices you're local telephone company to determine the maximum REN for you're calling area. If your telephone equipment cause harm to the telephone network, the Telephone Company may discontinue your service temporarily. If possible, they will notify you in advance. But if advance notice isn't practical, you will be informed of your right to file a complaint with the FCC.

Your telephone company may changes in its facilities, equipment, operations or procedures that could affect the proper functioning of your equipment. If they do, you will be notified in advance to given you and opportunity to maintain uninterrupted telephone service. If you experience trouble with this telephone equipment, please contact the following address and phone number for information on obtaining service or repairs. The telephone company may ask that your disconnect this equipment from the network until the problem has been corrected or until you are sure that the equipment is not malfunctioning. This equipment may not be used on coin service provide by the telephone company. Connection to party lines is subject to state tariffs.

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Introduction

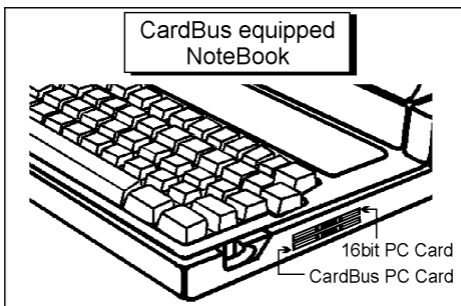
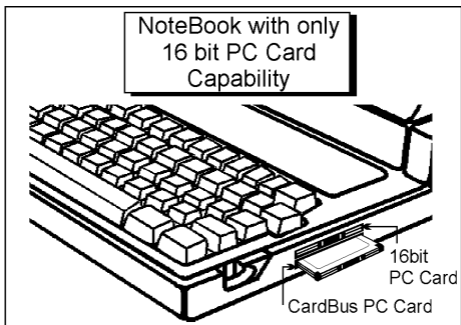
Introduction to CardBus

CardBus is the next generation 32-bit version issued by PCMCIA PC Card standard. In addition to supporting a wider bus (32 bits instead of 16 bits), CardBus also supports bus mastering and operation speeds up to 33 MHz. The 132MBytes bus transfer rate (compares with legacy 16-bit I/O PC Card, 20MByte) provides the mobile user to enjoy the high-bandwidth network connection.

A mobile computer, which equipped with CardBus and properly configured is the fundamental requirement to use the CardBus HPNA 2.0 32bit PC Card. To make sure about this point, please follow the guideline listed below:

- CardBus is designed to support both 16-bit and CardBus Card. But the legacy 16-bit PC Card slot couldn't accept the CardBus PC Card. In order to prevent the wrong operation, CardBus is thus developed with particular mechanical consideration to prevent it fit into the legacy 16-bit PC Card Slot. If you can't insert the CardBus HPNA 2.0 32bit PC Card into the slot firmly reaching the bottom, your notebook probably hasn't the capability to support

CardBus technology. Please check your notebook manual for detail information.



- Due to variant design of notebook computers, some models implement a setting in the Computer's BIOS to switch between CardBus and 16-bit PC Card modes. You could consult the User's Guide of your notebook and properly set on the **CardBus** or **Auto_Detect** mode.

The CardBus HPNA 2.0 32bit PC Card

The CardBus HPNA 2.0 32bit PC Card is a device designed with HomePNA 2.0 specification. You can simply plug the cord into a standard phone jack and enjoy faster, inexpensive Internet access. It is the ideal solution for the entire family and the rising number of households with more than one PC. With the device, you can go to the Internet and talk on the telephone simultaneously.

Like the first-generation HomePNA products, it uses your existing phone lines, but it can operate at speeds up to 10 Mbps. Unlike Ethernet, HomePNA doesn't require a hub; each PC simply connects to the nearest telephone jack. It is easy to install, work well, and cost less. Furthermore, it is interoperable and backward-compatible with the older 1-Mbps solutions.

Features

- Builds a network using your existing telephone line -- no additional hubs or network cables needed
- Most convenient way to share the internet, files, printers and peripherals in Home
- Up to 10Mbps transfer rate over telephone

lines

- Backward compatible with 1Mbps HomePNA 1.1 specification
- PC Card CardBus standard with high performance 32-bit PCI-like bus master architecture
- Hot Swap-- Insert or remove from PC without powering off
- Works with any CardBus-equipped PC
- Supports Microsoft Windows 98/2000/ME/XP
- Supports two RJ-11 modular telephone ports
- 3 easy-to-read LED status indicators
- Connects up to 30 computers together on your Phonewire Network up to 1000 feet

System Requirements

- All IBM compatible notebook computer with CardBus supported socket
- Drivers and utilities provided with this product
- Windows 98/2000/ME/XP preinstalled

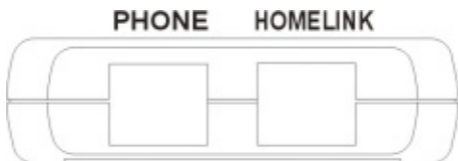
Package Contents

- One CardBus 10M HomePNA Network Card
- One Driver Floppy Disk
- One User's Manual

Getting to Know Your Network Device

The Device's Ports

- **PHONE:** connects to a telephone using a RJ-11 cable
- **HOMELINK:** connects to the phone jack on the wall using a RJ-11 cable



The Device's LEDs

- **Rx:** blinks green when receiving data
- **Tx:** blinks green when transmitting data
- **Link:** lights green when properly connected to a phoneline network



Hardware Installation

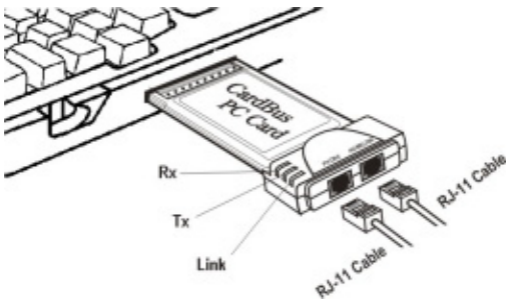
Overview

The following instructions show you how to install your CardBus 10M HomePNA Network Card. After you install the device, you must install the device's driver on your PC and configure your PC to access your HomeLink phoneline network.

Driver installation and PC configuration instructions follow these hardware installation instructions.

Installing the CardBus Network Device & Cabling

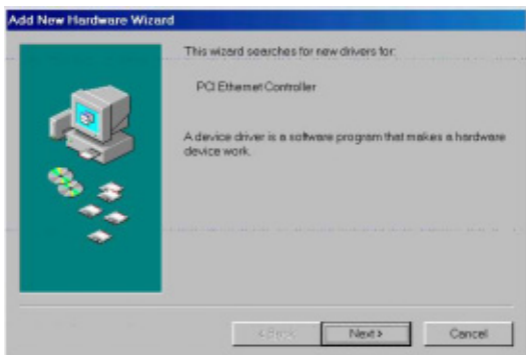
1. Insert CardBus 10M HomePNA Network Card into the CardBus slot of your system.
2. Connect one end of the telephone cable to the **HOMELINK** port and the other end to the phone jack on the wall.
3. Connect one end of the telephone cable to the **PHONE** port and the other end to a telephone set.



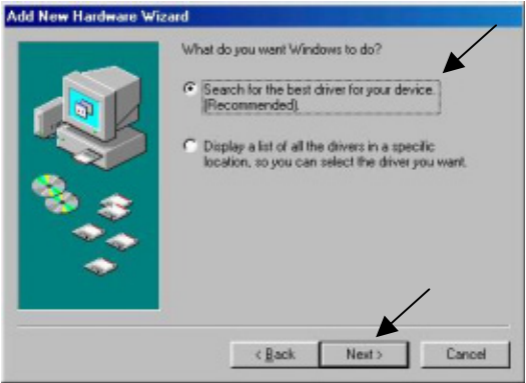
Software Installation

Windows 98 Installation

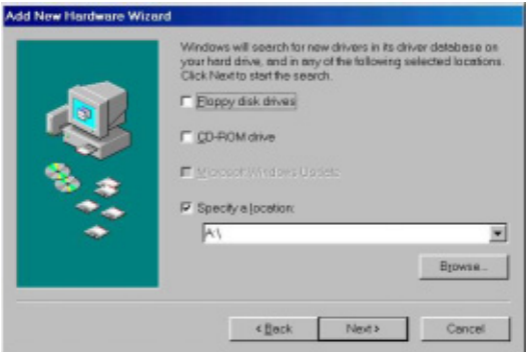
1. Insert the network device into the CardBus slot of your system. Windows 98 will automatically detect the device and prompt you with the following message. Click **Next**.



2. Select **Search for the best driver for your device (Recommended)** and click **Next**.



3. Load the device driver disk onto your disk drive and select **Specify a location**. Windows 98 will start searching for the suitable driver for the device. Click **Next**.



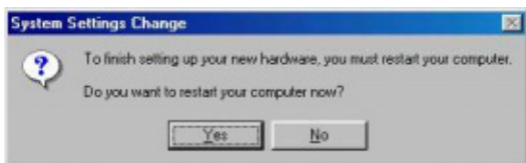
4. Click **Next**. Windows 98 will copy necessary files onto your system.



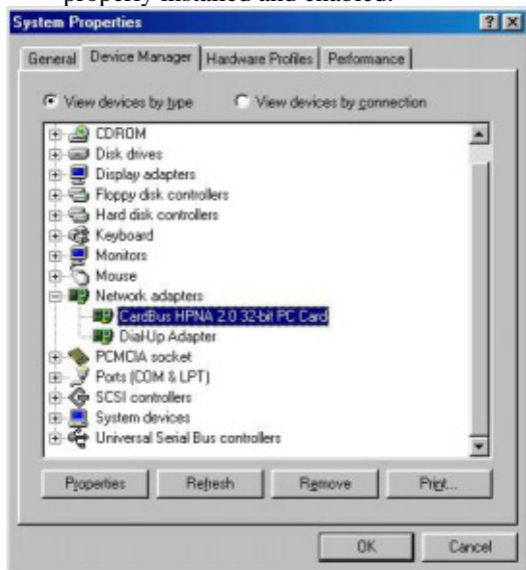
5. Click **Finish** to complete software installation.



6. When asked to restart your computer, click **Yes** to activate the device.



- To verify if the device exists in your computer and is enabled, go to **Start → Settings → Control Panel → System**. Click the **Device Manager** tab. If the **CardBus HPNA 2.0 32bit PC Card** is found, it means that your device is properly installed and enabled.



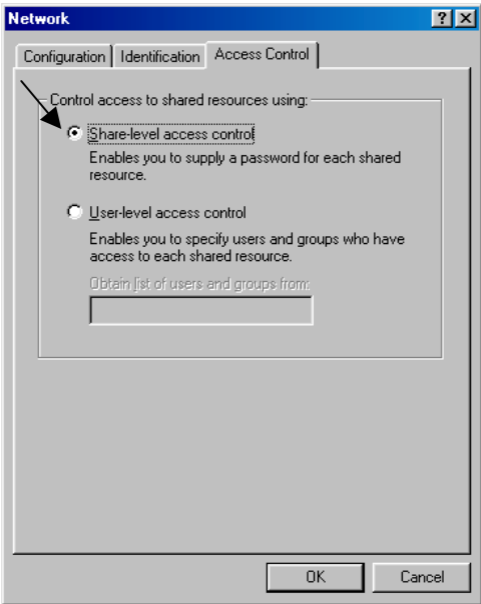
Network Component Configuration

- Once the driver has been installed, you must make some changes in your network settings. Click **Start → Settings → Control Panel → Network** and make sure that you have all the following components installed.
 - Client for Microsoft Networks**

- **CardBus HPNA 2.0 32bit PC Card**
- **NetBEUI**
- **TCP/IP**

If any components are missing, click the **Add** button to add them in. All the protocols and clients required and listed above are provided by Microsoft. After you click **Add**, highlight the component you need, click **Add**, highlight Microsoft, then double-click on the item you want to add.

2. If you are using Windows 95 or Windows 98 network, enable the File and Printer Sharing to make your computer visible on the network.
3. Click the **Identification** tab. Type the name of your computer in the **computer name** box. Make up a name that is unique among the computers names on your network.
4. Type the name of your workgroup in the **workgroup** box. The name you type should be the same workgroup name in use by all of the other PCs on the network.
5. Click the **Access Control** tab. Make sure that **Shared-level access control** is selected. If connecting to a NetWare server, share level can be set to **User-level access control**.

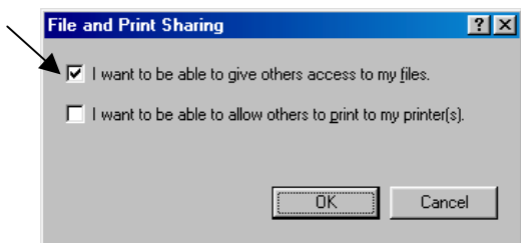


6. When finished, remove all disks from your computer and restart your computer to activate the new device.
7. Once the computer has restarted and Windows 98 has booted up, a **Logon** window will appear requiring you to enter a **username** and **password**. Make up a username and password, enter them, and click **OK**. Do not click the **Cancel** button, or you won't be able to log onto the network.
8. When you are at the Windows 98 desktop, double-click the **Network Neighborhood** icon. You should see the names of the other

PCs on the network that have enabled file and printer sharing.

Using File And Printer Sharing

1. Click **Start**→**Settings**→**Control Panel**. Double-click **Network**.
2. Click the **Configuration** tab, followed by the **File and Printer Sharing** button. The **File and Printer Sharing** window will appear.



- If you'd like others to be able to access the files on your computer's hard drive, select I want to be able to give others access to my files.
 - If you'd like to share your printer with other users on the network, select I want to be able to allow others to print to my printer.
3. Click **OK**. File and Printer Sharing for Microsoft Networks should now appear on the list of installed components. Click **OK**. When asked to restart your computer, choose to do so.

Enabling File Sharing

1. Double-click **My Computer**. A window of available disk drives will appear.
2. Right-click once the drive or folder that you want to make available to other users.
3. Click **Sharing**, followed by the Sharing tab. Click **Share As**. In the Share Name box, enter a name for the drive or folder you are sharing, (e.g.: C-Drive, CD-ROM, Bob, etc.).



Next, decide on the access type that you want to give other users.

- Read-Only access lets other users view the files on your PC.
- Full access lets users create, change, or delete files on your PC.
- Depends on Password lets users have Read-Only and/or Full access, depending

on the password that you decide to give them.

Use your mouse to select the access type that you want other users to have. If you want to assign access password(s), type them into the Password box (es).

If you are sharing a cable modem or DSL broadband connection that you will be using to access the Internet, you should protect all of your shared drives and printers with private passwords.

When finished, click **Apply**, followed by **OK**.

Enabling Printers Sharing

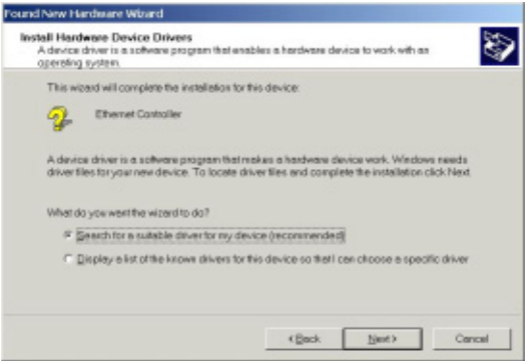
1. Click **Start**→**Settings**→ **Printers**. A window of available printers will appear.
2. Right-click the printer that you want to share with other users. Click **Sharing**, followed by the Sharing tab. Click **Share As**. In the Share Name box, give a name to the printer you're about to share (Jack's HP4, for example). If you want to assign a password to the printer so only certain users can access it, type a password in the Password box. When you're done, click **Apply**, followed by **OK**. Your printer(s) are now shared.

Windows 2000 Installation

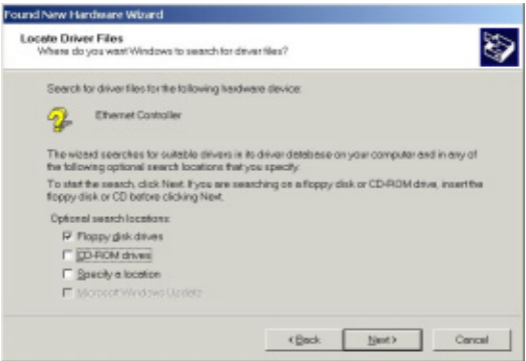
1. Insert the network device into the CardBus slot of your system. Windows 2000 will automatically detect the device and prompt you with the following message. Click **Next**.



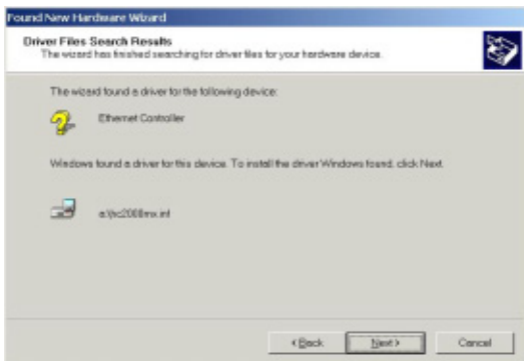
2. Select **Search for a suitable driver for my device (Recommended)** and click **Next**.



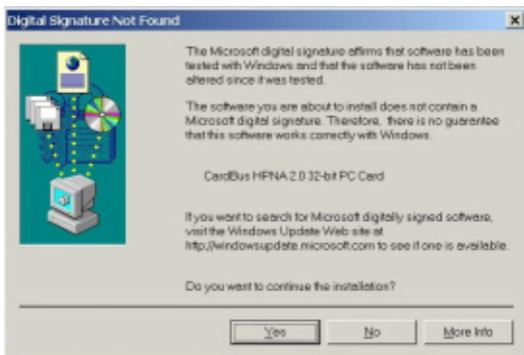
3. Load the device driver disk onto your disk drive, select **Floppy disk drives** and click **Next**. Windows 2000 will start searching for the suitable driver for the device.



4. Click **Next**. Windows 2000 will copy necessary files onto your system.



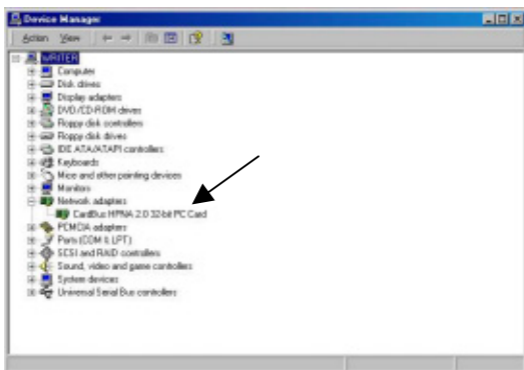
5. Click **Yes** to continue.



6. Click **Finish** to complete software installation.

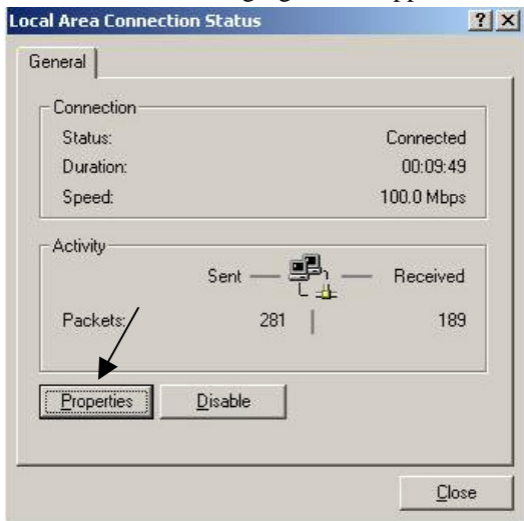


7. To verify if the device exists in your computer and is enabled, go to **Start → Settings → Control Panel → System → Hardware**. Click the **Device Manager** button. If the **CardBus HPNA 2.0 32bit PC Card** is found, it means that your device is properly installed and enabled.



Network Component Configuration

1. Go to **Start → Settings → Control Panel → Network and Dial-up Connections.**
2. Double-click the **Local Area Connection** icon, the following figure will appear.



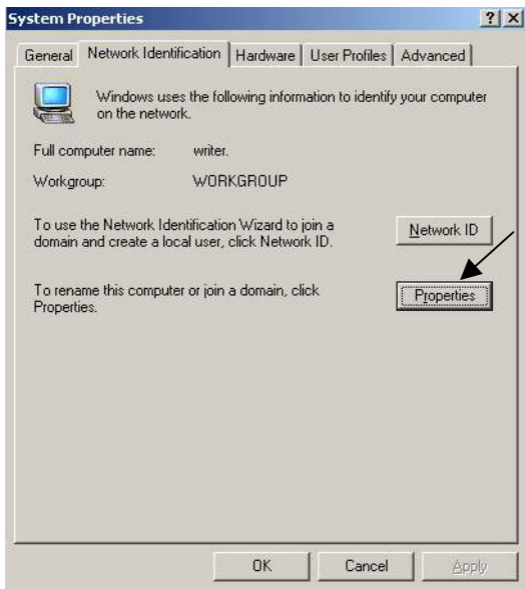
3. Click the **Properties** button. Make sure the following components are installed.
 - **Client for Microsoft Networks**
 - **File and Printer Sharing for Microsoft Networks**
 - **NetBEUI Protocol**
 - **Internet Protocol (TCP/IP)**

If any components listed above are missing, click the **Install** button to add them in

manually. Click **Close** to exit.

4. Go to
Start → Settings → Control Panel → System.

Open the **Network Identification** tab and click the **Properties** button.



5. Type the name of your computer in the **computer name** box. Make up a name that is unique among the computers names on your network.
6. Type the name of your workgroup in the **workgroup** box. The name you type should be the same workgroup name in use

- by all of the other PCs on the network.
7. When finished, remove all disks from your computer and restart your computer to activate the new device.
 8. Once the computer has restarted and Windows 2000 has booted up, a **Logon** window will appear requiring you to enter a username and password. Make up a username and password, enter them, and click **OK**. Do not click the **Cancel** button, or you won't be able to log onto the network.
 9. When you are at the Windows 2000 desktop, double-click **My Network Places** → **Computers Near Me**. You should see the names of the other PCs on the network that have enabled file and printer sharing.

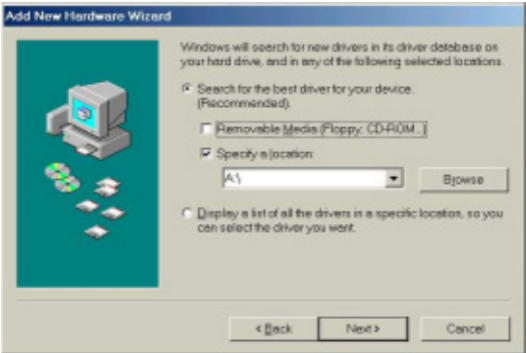
***Note:** To use **File And Printer Sharing** and to know more about the details, please refer to the related sections in Windows 98.*

Windows ME Installation

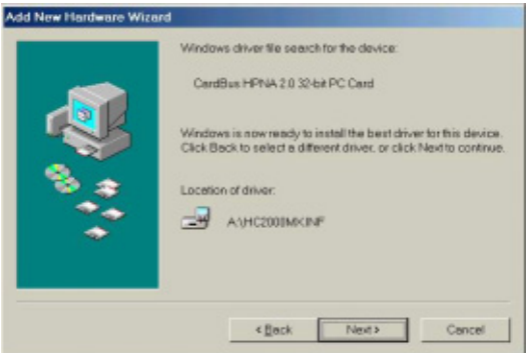
1. Insert the network device into the CardBus slot of your system. Windows ME will automatically detect the device and prompt you the following message. Select **Specify the location of the driver (Advanced)** and click **Next**.



2. Load the device driver disk into your disk drive. Click **Specify a Location** when the following picture appears. Click **Next**.



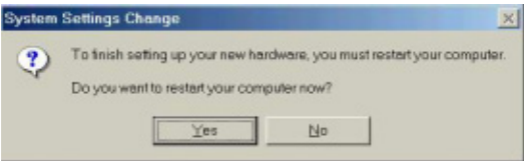
3. Click **Next**. Windows ME will copy necessary files onto your system.



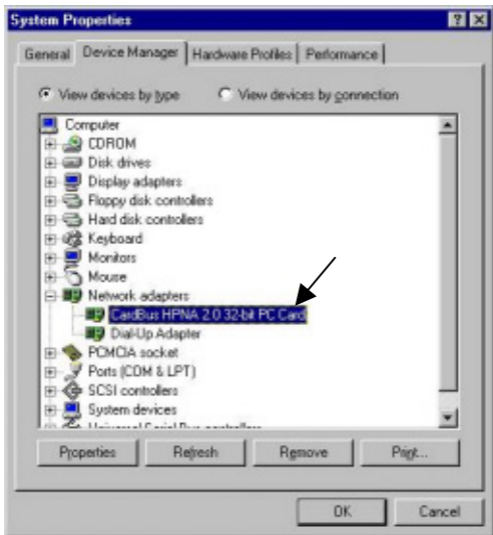
4. Click **Finish** to complete software installation.



5. When asked to restart your computer, click **Yes** to activate the device.



6. To verify if the device exists in your computer and is enabled, go to **Start → Settings → Control Panel → System**. Click the **Device Manager** tab. If the **CardBus HPNA 2.0 32bit PC Card** is found, it means that your device is properly installed and enabled.

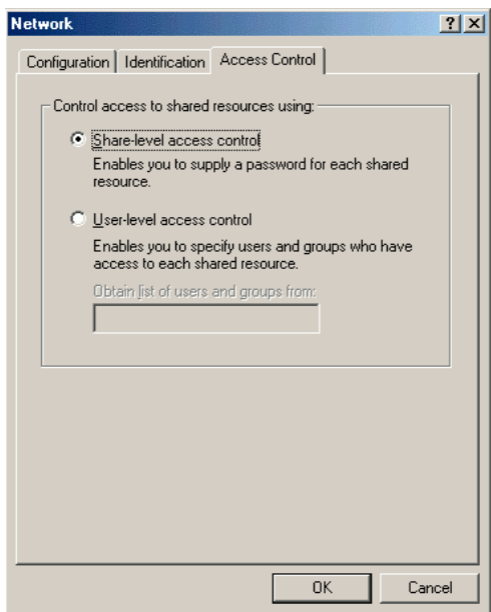


Network Component Configuration

1. Once the driver has been installed, you must make some changes on your network settings. Click **Start**→**Settings**→**Control Panel**→**Network** and make sure that you have all the following components installed.
 - **Client for Microsoft Networks**
 - **CardBus HPNA 2.0 32bit PC Card**
 - **NetBEUI**
 - **TCP/IP**

If any components are missing, click the **Add** button to include the missing components. All the protocols and clients required and listed above are provided by Microsoft. After you click **Add**, highlight the component you need, click **Add** again, highlight **Microsoft**, and then double-click on the item you want to include.

2. Enable the File and Printer Sharing to make your computer visible on the network.
3. Click the **Identification** tab. Type the name of your computer in the **Computer Name** field. Make up a name that is unique among the computers names on your network.
4. Type the name of your workgroup in the **Workgroup** box. The name you type should be the same workgroup name in use by all of the other PCs on the network.
5. Click the **Access Control** tab. Make sure that **Shared-level access control** is selected. If connecting to a NetWare server, the share level can be set to **User-level access control**.



6. When finished, remove all disks from your computer and restart your computer to activate the new device.
7. Once the computer has restarted and Windows ME has booted up, a **Logon** window will appear requiring you to enter a **username** and **password**. Make up a username and password, enter them, and click **OK**. Do not click the **Cancel** button, or you won't be able to log onto the network.
8. When you are at the Windows ME desktop, double-click the **My Network Places**

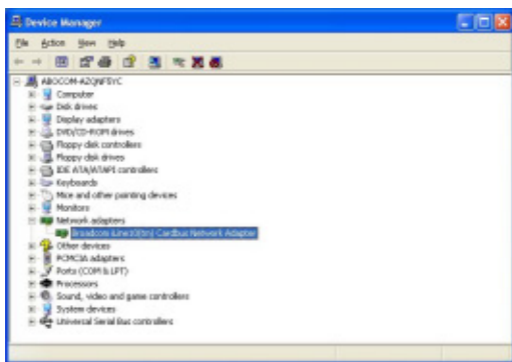
icon. You should see the names of the other PCs on the network that have enabled file and printer sharing.

***Note:** To use **File And Printer Sharing** and to know more about the details, please refer to the related sections in Windows 98.*

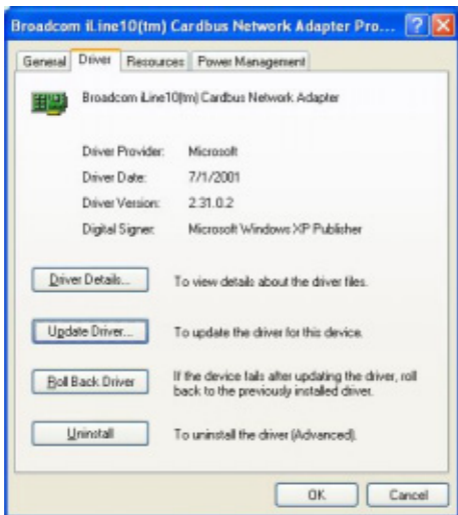
Windows XP Installation

Restart the computer system after the network device is properly plugged into the CardBus slot of your computer. Windows XP will automatically detect the device.

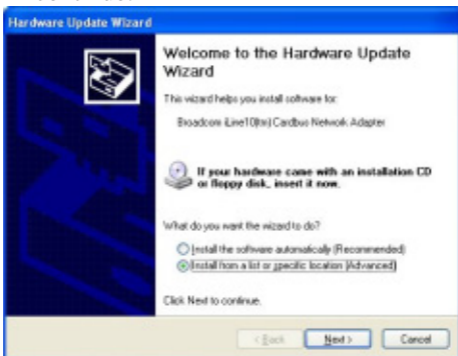
1. Go to **Control Panel** → **System** → **Hardware** → **Device Manager**. When Windows prompt the following picture, Right-click **Broadcom iLine10(tm) Cardbus Network Adapter** (or any other adapter existed in your system). Select **Properties**.



2. When you see the following picture, select **Driver**. Then click **Update Driver...** button.

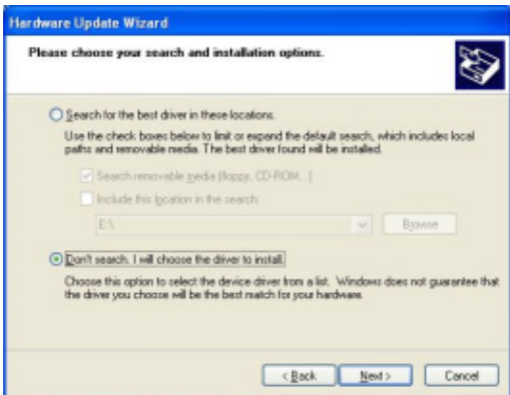


3. Load the device driver disk into your disk drive and select **Install from a list of specific location (Advanced)** when you see the following picture. Click **Next** to continue.

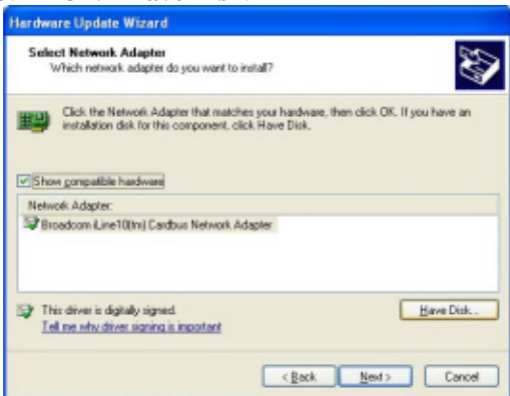


4. Select **Don't search. I will choose the**

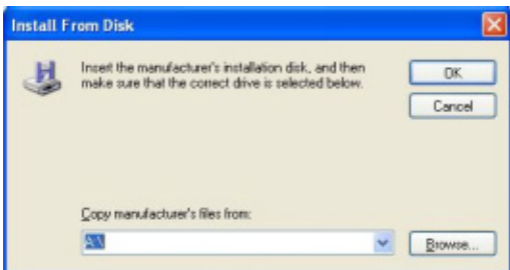
driver to install. Click Next.



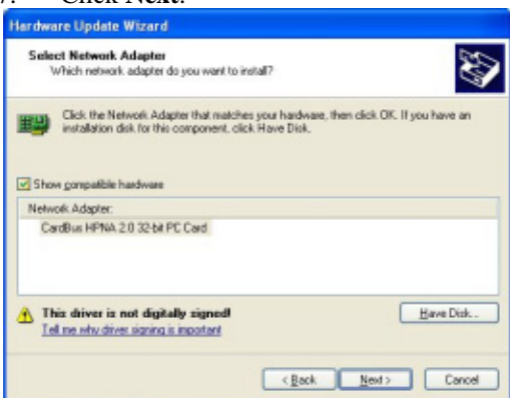
5. Click Have Disk.



6. Click OK



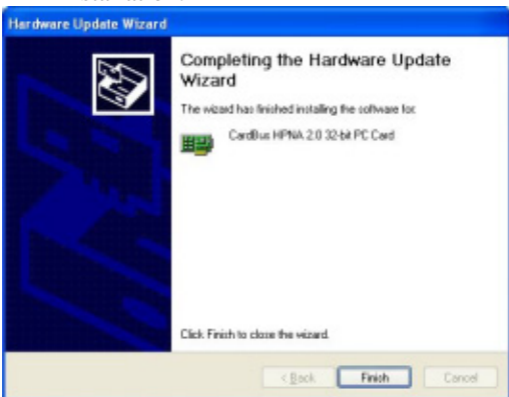
7. Click **Next**.



8. Click **Continue Anyway** when the following picture appears.



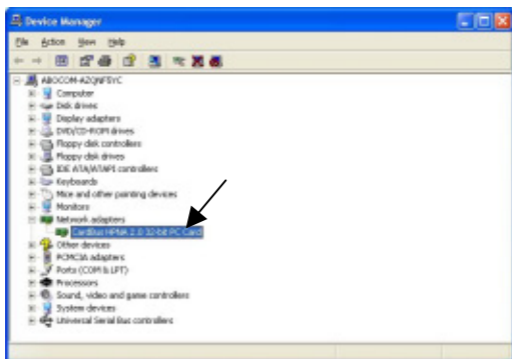
9. The installation program will proceed automatically.
10. Click **Finish** to complete the software installation.



11. Click **Close**.

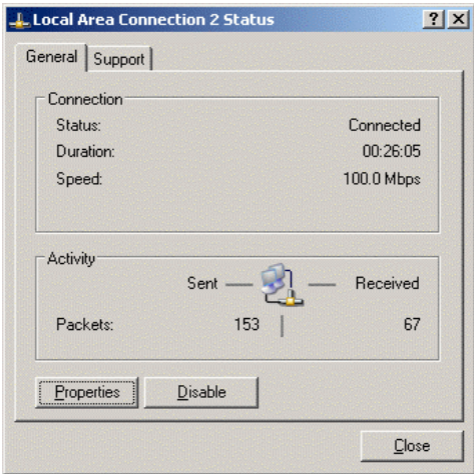


12. To verify if the device exists in your computer and is enabled, go to **Start** → **Control Panel** → **System**. Click the **Device Manager** tab. If the **CardBus HPNA 2.0 32bit PC Card** is found, it means that your device is properly installed and enabled.



Network Component Configuration

1. Go to **Start → Settings → Control Panel → Network and Dial-up Connections.**
2. Double-click the **Local Area Connection** icon, the following figure will appear.

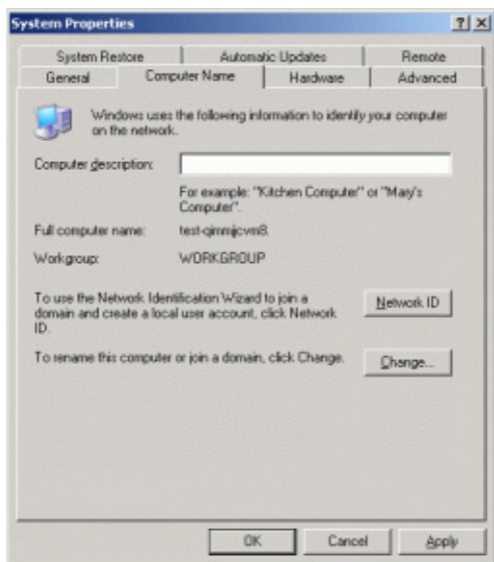


3. Click the **Properties** button. Make sure the following components are installed.

- **Client for Microsoft Networks**
- **File and Printer Sharing for Microsoft Networks**
- **NetBEUI Protocol**
- **Internet Protocol (TCP/IP)**

If any components listed above are missing, click the **Install** button to add them in manually. Click **Close** to exit.

4. Go to **Start → Control Panel → System**, the following figure will appear.



5. Type the name of your computer in the **Computer Name** box. Make up a name that is unique among the computers names on your network.
6. Type the name of your workgroup in the **Workgroup** box. The name you type should be the same workgroup name in use by all of the other PCs on the network.
7. When finished, remove all disks from your computer and restart your computer to activate the new device.
8. Once the computer has restarted and Windows XP has booted up, a **Logon** window will appear requiring you to enter a username and password. Make up a

username and password, enter them, and click **OK**. Do not click the **Cancel** button, or you won't be able to log onto the network.

9. When you are at the Windows XP desktop, double-click

My Network Places → Local Network.

You should see the names of the other PCs on the network that have enabled file and printer sharing.

***Note:** To use **File And Printer Sharing** and to know more about the details, please refer to the related sections in Windows 98.*

Appendix

Specification

- **Standards:**
HomePNA v1.0, 1.1 and 2.0 compatible
PCMCIA CardBus PC Card standard
- **Protocol:**
CSMA/CD
- **Ports:**
2 x RJ-11 standard modular telephone
ports
- **Cabling type:**
Standard copper telephone cable
- **Speed:**
1Mbps for HomePNA 1.0, 1.1 compliant
devcies
4Mbps to 10Mbps for HomePNA 2.0
compliant devices
- **LEDs:** Rx, Tx, Link