



AirConnect Network Interface Card User Guide

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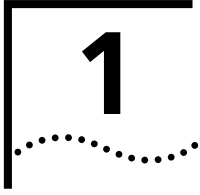
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BEFORE YOU BEGIN

Features

The AirConnect wireless network offers performance comparable to Ethernet networks, but without the restraints of network cables. The AirConnect product family includes the 3CRWE737A PC Card described in this manual.

AirConnect adapters use IEEE 802.11HR direct-sequence-based technology to extend the range and versatility of a network. They provide a high-capacity link across multiple access points within large or small indoor environments.

AirConnect product-family features include:

- Bridging architecture allows communication between wired network devices and mobile devices.
- Compliance with IEEE 802.11 HR specification. This open architecture allows AirConnect devices to communicate with wireless devices from other manufacturers.
- Extended roaming allows mobile devices to roam throughout large facilities while remaining connected to the LAN.

AirConnect PC Card operating features include:

- Low-power operation for battery-powered devices with PC Card slots.
- Support for standard NDIS (Network Driver Interface Specification) and drivers.
- Support for Windows 2000, Windows 98, Windows 95B, and Windows NT 4.0 (with Service Pack 3.0 or greater).
- Card and Socket Services support, including SystemSoft, CardSoft, and CardWizard.
- Plug and Play support.
- Power management.

AirConnect Wireless LAN adapters support a maximum data rate of 11 Mbps. (The data rate drops back to 5.5, 2, or 1 Mbps when the adapter cannot establish or maintain an 11 Mbps association.) Factors that can affect the data rate include:

- A separation or change in signal strength between the Access Point and the wireless client
- The ratio of packets transmitted to transmissions attempted falling below a preset threshold
- The wireless client finding and switching to another Access Point with a higher transmit rate

Roaming means the AirConnect PC Card will maintain your network connection as you roam between Access Points in the same subnet. You can also roam across routers, depending on how your Extended Roaming configuration is set. When configured for Extended Roaming, the wireless client retains its network address as it moves between subnets, between Ethernet segments, or from an Ethernet segment to a wireless LAN. See “Easy Setup” on page 17 for details.

The wireless LAN PC Card supports *Continuous Active* and *Power Save Polling* power-management modes.

- In *Continuous Active Mode*, the radio that establishes and maintains the link to the network remains on. Continuous Active mode is not recommended for battery powered devices.
- *Power Save Polling* conserves power by suspending the adapter's communication with an associated access point. The access point saves data for transmission to the wireless client when it wakes at given intervals. When the adapter wakes to check for data, it switches back into *Continuous Active Mode* until it is ready to suspend communications again.

Installation Overview

Installing the AirConnect wireless network PC card involves these tasks:

- Running the Setup program from the *End User Utilities CD*. See “Installing the Drivers” on page 9.
- Installing the card in a PC Card slot on your computer. Do not install the card until instructed to do so by the setup software. The procedure for installing the card is described in “Installing the PC Card” on page 23.
- Installing the software, including the drivers for the card and the AirConnect software utilities. See “Installing the Card Software” on page 10.

If you are reading this manual from the CD and want to install it on your hard disk for easier access, see “Installing the Documentation” on page 10.

- The card installation procedure covers basic configuration. For advanced configuration options, or to explore the utilities available for managing and configuring the card, see “Software Tools and Utilities” on page 17.

Disk Factory

If you are installing the software on a computer that does not have a CD-ROM drive, or if you choose to install the drivers manually, you will have to make diskettes from the *End User Utilities CD*. The setup application includes Disk Factory, a utility for creating disks from CD. To use disk factory, you need access to a computer with a CD-ROM drive and a floppy drive.

- 1 For a transfer of the driver software to a diskette, prepare a diskette labeled *Drivers*.

For a transfer of the application software to diskette, prepare three disks labeled as follows:

AirConnect Application Disk 1
AirConnect Application Disk 2
AirConnect Application Disk 3

- 2 Put the *End User Utilities CD* in the CD-ROM drive. The SETUP program should start automatically. If it does not start, you can run it manually by selecting *Run* from the Start menu.
- 3 Select *Create Diskettes*.
- 4 In the Disk Factory window, click *Next*.
- 5 Select the software you want to transfer to diskette. If you select *All*, you will need four floppy diskettes.
- 6 Select the action, for example, *Create and Verify Disks*, and click *Next*.
- 7 When you are ready to install the application software from diskette, put *AirConnect Application Disk 1* in the floppy drive and run SETUP.

If you are installing the drivers manually, use the Drivers diskette when the setup wizard for your operating system prompts for drivers supplied by the manufacturer.

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SOFTWARE INSTALLATION

Use the procedures described in this chapter to install the AirConnect PC Card software and drivers under Windows 2000, Windows 98, and Windows 95.

Windows 95 users should note that the AirConnect PC card runs under Windows 95 version B or higher. If you do not know which version of Windows 95 is installed on your computer, follow these steps:

- 1 In the Control Panel, double-click *System* to display the System Properties dialog box.
- 2 Click the *General Tab* to display the Windows 95 version information. Version B (also known as OSR 2) is identified as 4.00.950b.

Windows NT 4.0 users should refer to the driver installation instructions described in "Installing Windows NT Drivers" on page 13.

For drivers for other operating systems, refer to the 3Com customer support Web site at <http://support.3com.com>.

Before Installing the Drivers

Before installing the driver, you will need a copy of the Windows 98 installation media supplied with your computer or operating system. On many systems, instead of a CD, the installation files are archived on the hard disk in C:\WINDOWS\OPTIONS\CABS.

You will also need the AirConnect *End User Utilities CD* supplied with your AirConnect PC card. Along with other utilities, the *End User Utilities CD* installs the AirConnect *Network Configuration Properties Application* in the Control Panel on your system. Use this application to view and edit AirConnect WLAN adapter settings.

If your site requires installation using diskettes, see "Disk Factory" on page 6. Where the driver installation procedure mentions the *End User Utilities CD* and a CD-ROM drive, use the diskettes and the floppy drive instead.

Installing the Drivers

- 1 Turn on your computer.
- 2 Put the *End User Utilities CD* in the CD-ROM drive.
The setup program should start automatically. If it does not start, you can run it manually by selecting *Run* from the Start menu.
- 3 From the 3Com AirConnect WLAN Installer, select *Install AirConnect WLAN Adapter*. Follow the instructions as they appear.

- 4 When prompted to insert the AirConnect PC card, insert the PC Card into the PC slot as described in "Installing the PC Card" on page 23.

The driver installation procedure will guide you through the steps standard for your operating system. If you are unfamiliar with driver installation procedures, refer to the *AirConnect Network Interface Card User Guide* for details. You will be asked to supply CDs or directory path information for the *End User Utilities CD* and your operating system software.

As part of the driver installation process, the setup program will install and open the Network application in the Control Panel.

- 5 Enter the name of the Wireless LAN Service Area of the wireless network to which your computer will connect. The name you enter here must match exactly the name assigned to the access point. Characters, capitalization, and spacing must be identical.
- 6 Save the configuration settings and exit by clicking *OK*.
- 7 Restart your computer.

Installing the Card Software

When the system reboots, restart the setup program and install any other components required.

3Com recommends that you install the wireless LAN applications so you can access the utilities described in the *AirConnect Network Interface Card User Guide*.

Restart your computer for changes to take effect.

Installing the Documentation

If you are reading this manual from the CD, you may want to install it on your hard disk using the following procedure:

- 1 Put the *End User Utilities CD* in the CD-ROM drive. The Setup program will start automatically.

If the Setup program does not start, use Start/Run to run the *SETUP.EXE* program from CD-ROM drive.

- 2 Select *View/Install Documentation*.

You can view the manuals in from the CD or from on your hard disk.

- 3 To install the manuals on your hard disk, select *Install User Documentation*. Follow the instructions on the screen to complete the installation.

- 4 Exit the setup program.

You can open the manuals from the AirConnect program group.

Product Registration and Support

To register this product with 3Com, go to the following Web page:

<http://www.3com.com/productreg/index.html>

For support information and pointers to the latest drivers and utilities available for the AirConnect network interface card, go to the following Web page:

<http://support.3com.com>

Uninstalling the Card

If the card installation is unsuccessful for any reason, your best course may be to completely uninstall the AirConnect PC Card and its software and repeat the installation procedure.

Previous installations or interrupted installation attempts sometimes leave problems that affect card operation. Possible problems include:

- The card functions not working.
- Windows 98 not detecting the card.
- The system issuing a warning tone at startup.

You can remove the card and driver files using the procedures below.

Removing Card Software

Open Control Panel/System/Device Manager. Select the AirConnect WLAN PC card components and click *Remove*.

Using the Device Manager to remove the card will uninstall the driver files.

Removing the Card

When removing the card, use the release lever or button on your card slot to release the card. When pulling out the card, do not pull on the antenna. Refer to "Removing the PC Card" on page 25



CAUTION: *Exit any networking applications before removing the card.*

Troubleshooting

Symptom	Solution
Weak signal or intermittent connection.	<p>Try reorienting the antenna. The PC Card antenna is attached to the end of the PC Card. For best use of the antenna:</p> <ul style="list-style-type: none"> ■ Keep the area around the antenna clear from materials that could block radio transmission, such as metal objects, electronic devices, and cordless telephones. ■ If your signal is weak, change the direction of the antenna slightly. ■ If necessary, move your notebook computer a few inches to find a better signal. Depending on your environment, a difference of one or two inches can mean the difference between a strong and a weak signal. See "Status" on page 14 for details. <p>Use the Signal Strength display in the AirConnect Status application to determine the best location and orientation for a network connection. See "Connection" on page 15 for information on monitoring your AirConnect connection.</p>
Windows does not recognize the adapter when installed.	<p>Verify that PCMCIA support is installed.</p> <p>Check whether the computer has a Plug and Play BIOS.</p> <p>Check whether an AirConnect adapter is already in use.</p>
Driver fails to load.	<p>A resource conflict could exist. Use the Device Manager to resolve resource conflicts. Select <i>System</i> from the Control Panel, then click on the Device Manager tab.</p>
Workstation cannot attach to the network.	<p>Verify that the adapter Wireless LAN Service Area ID matches the access point ID. See "Easy Setup" on page 17</p> <p>Verify that the adapter Data Rate is configured properly for the access point.</p>
Network drive mappings disappear when the laptop suspends or the adapter is removed then reinserted.	<p>Windows 98 will not restore NetWare network drive mappings under these conditions. Log out and log in again, or restart the machine to restore the connections.</p>
Nonfunctioning PCI adapter LEDs.	<p>Verify that the Card Type parameter is set to PCI.</p> <p>Verify that the Wireless LAN Service Area ID matches the access point ID.</p>

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INSTALLING WINDOWS NT DRIVERS

Before Installing the Driver

Before installing the driver, you will need a copy of the Windows NT 4.0 installation media supplied with your computer or operating system.

You will also need the AirConnect *End User Utilities CD* supplied with your AirConnect PC card. Along with other utilities, the *End User Utilities CD* installs the AirConnect *Network Configuration Properties Application* in the Control Panel on your system. Use this application to view and edit AirConnect WLAN adapter settings.

If your site requires installation using diskettes, see “Disk Factory” on page 6. Where the driver installation procedure mentions the *End User Utilities CD* and a CD-ROM drive, use the diskettes and the floppy drive instead.



NOTE: For Windows NT 4.0 installation, you must have Service Pack 4 or later installed on your computer. After installation, you may need to reinstall the Service Pack software to update NT network files and eliminate error messages in the Event Viewer. Contact your Network Administrator or Microsoft if you do not have the current Service Pack.

Installing the Driver

Point-enabler installation is a basic, manual installation procedure that will work on nearly all configurations, including systems with third-party card and socket services installed.

- 1 Install the card as described in “Installing the PC Card” on page 23.
- 2 Power up the system.
- 3 When the Windows NT Setup dialog box appears, click *Select from list* for Network Adapters.
- 4 In the Select Network Adapters dialog box, click *Have Disk*.
- 5 Put the *End User Utilities CD* in the CD-ROM drive. Make sure the path to the CD-ROM drive is indicated and click OK.
- 6 When the Select OEM option dialog box appears, select the AirConnect WLAN PC Card and click OK.
- 7 At the Windows NT Setup dialog box, click *Next* to continue.
- 8 When the Windows NT Setup dialog box appears, select the appropriate Network Protocols and Network Services. If you are unsure about what to select, ask your MIS representative.
- 9 Click *Next*, and *Next* again to start the network installation.
- 10 Click *Next* to start the installed network configuration.

Setup With Networking Installed

If networking is already installed on your system:

- 1 Power up and log into the system.
- 2 Open the Control Panel.
- 3 Double-click *Network* and select the Adapters tab.
- 4 Select the AirConnect PC card and click *Update*.
- 5 Put the *End User Utilities CD* in the CD-ROM drive.
- 6 Click *OK* to select the default path to the driver files.
When prompted, remove the installation disk. Click *OK* to continue.
- 7 Click *Close* to exit the Network applet.
- 8 Remove the *End User Utilities CD* and click *Yes* to restart the system.

Setup with No Networking Installed

Before beginning this procedure, note that you must have Administrator group privileges to install network components.

- 1 Open the Control Panel and double-click the Network icon.
- 2 The Network Configuration dialog box prompts for Windows NT Networking installation, click *Yes*.
- 3 Check *Wired to the network* when the Network Setup Wizard dialog box appears. Click *Next* to continue.
- 4 When the Network Setup Wizard dialog box prompts for a network installation, click *Select from list*.
- 5 From the Adapter dialog box, click *Have Disk*.
- 6 Put the *End User Utilities CD* in the CD-ROM drive, specify the path to the CD-ROM drive, and click *OK*.
- 7 Select the AirConnect PC Card and click *OK*.
- 8 When the Network Setup Wizard reappears, click *Next*.
- 9 The Protocols display shows protocol choices. Select the protocols that apply and click *Next*.
- 10 Click *Next* to scroll through the next two dialog boxes.
The Network Setup Wizard displays the Windows NT Setup dialog box requesting Windows NT files.
- 11 Enter the path name of the Windows NT distribution files (E:\ for CD-based installation), click *Next*.

Configuring the Adapter

Configure the adapter using the Easy Configuration dialogue box. Before configuring the adapter, you will need ask your MIS department for the Wireless LAN Service Area ID for your access point network.

- 1 Open the Control Panel and double-click the Network application.
- 2 Select the 3Com WLAN Adapter and select *Properties*.
- 3 Set the Wireless LAN Service Area ID to the desired network access point.
- 4 Click *Advanced* .

- 5 Select the WLAN Adapter tab from the AirConnect WLAN Advanced Properties dialog box.
- 6 Configure the hardware and radio link parameters for the AirConnect WLAN adapter.
- 7 Save the configuration settings by clicking *OK* before you exit.

Troubleshooting

Symptom	Solution
Weak signal or intermittent connection.	<p>Try reorienting the antenna. The PC Card antenna is attached to the end of the PC Card. For best use of the antenna:</p> <ul style="list-style-type: none"> ■ Keep the area around the antenna clear from materials that could block radio transmission, such as metal objects, electronic devices, and cordless telephones. ■ If your signal is weak, change the direction of the antenna slightly. ■ If necessary, move your notebook computer a few inches to find a better signal. Depending on your environment, a difference of one or two inches can mean the difference between a strong and a weak signal. See "Status" on page 14 for details. <p>Use the Signal Strength display in the AirConnect Status application to determine the best location and orientation for a network connection. See "Connection" on page 15 for information on monitoring your AirConnect connection.</p>
A resource conflict (usually IRQ or I/O base address) caused the driver not to load.	<p>Check Service Monitor entries in the System Log to look for the conflicts.</p> <p>Use the Windows NT Diagnostics program to locate a free resource.</p>
No resource conflicts were detected, but the system does not attach to the network.	<p>Verify that the adapter's Wireless LAN Service ID matches that of the access point. Use the <i>Network Configuration Properties Application</i> in the Control Panel to modify the Wireless LAN Service ID.</p> <p>Verify the Mandatory BSSID setting of the adapter is set to 0 or matches the BSSID of the Access Point. Use the Easy Setup Advanced options to modify the ID. See "Easy Setup" on page 17.</p> <p>Verify the adapter data rate is configured properly for the access point.</p>

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SOFTWARE TOOLS AND UTILITIES

The AirConnect PC Card software includes three groups of utilities. The best way to familiarize yourself with the software, the information it provides, and the options you can change, is to open and browse through the applications themselves. If you hold the cursor over an icon or item, a popup window will identify it for you. Help is available throughout the applications.

Easy Setup

Easy Setup lets you set common configuration parameters for the AirConnect PC card.

- 1 Open the Control Panel and double-click the Network application.
- 2 Select the 3Com WLAN Adapter and select *Properties*.
 - *Wireless LAN Service Area* lets you specify the ID for the Access Point you will connect to.
 - *Advanced Properties* lets you set more advanced options in their WLAN adapter configuration:

You can also access the Advanced Properties settings through the Network application located in the control panel. Advanced Properties include:

- *Wireless Client* lets you set the two most common settings for the WLAN adapter, Wireless LAN Service Area, and Power Management settings.

Wireless LAN Service Area is equivalent to the 802.11 parameter ESSID. The initial value was set when you ran the 3Com Wireless Easy Setup application.
- *Power Management* is a slider that controls how you trade off performance and power management for the adapter. The system polls the other wireless devices on the network to determine if any traffic exists for this PC. To save power the interval between polls is increased.
- *Mobile IP* lets you enable and configure extended roaming between routers.

To enable Extended Roaming, check the Mobile IP check box. When this box is checked, the Home Agent IP Address, Mobile Home MD5 Key, Registration Timeout, and Delay Time fields are enabled.

Home Agent IP Address lets you register your Wireless Client with your Home Access Point through a Foreign subnet Access Point (commonly called a Foreign Agent) and tell the Foreign Access Point where your home access point is located.

Mobile Home MD5 Key is a password that protects your registration packets from being tampered with by others while they are being forwarded to your home access point. It should match the MD5 key on the Access Point of your home subnet.

Registration Timeout (5 to 3600 seconds) tells the Wireless Client how often it needs to reregister with the Home Agent. When a Wireless Client registers with the Home Agent through a Foreign Agent the registration has an expiration time associated with it. The Registration Timeout value The default value is 60 seconds. If the Wireless Client does not reregister in the time allowed, the Home Agent will remove the Wireless Client from its list of registered Wireless Clients when the time expires.

Delay Time is the amount of time (1 to 10 seconds) that the Wireless Client will wait for a response from a foreign subnet access point when trying to register with that access point. The Wireless Client will try to register a maximum of three times.

WLAN Adapter lets you set specific hardware parameters that effect the operation of the WLAN adapter. This tab has different views depending on the operating system. In Windows NT 4, the tab displays hardware resource information and lets you change the settings. In Windows 95 and Windows 98, the tab does not display this information because it is set by Plug and Play.

Card Type lets you specify the card currently installed. For the selected card, you can review or change:

Interrupt Number is displayed only in the Windows NT environment. This field lets you select an Interrupt Request Number (IRQ) to use with this card.

I/O Port Address is displayed only in the Windows NT environment. This field lets you select an I/O Port Address to use with this card.

Memory Base Address is displayed only in the Windows NT environment. This field lets you select an Memory Base Address to use with this card.

Status

The AirConnect Status application displays status information about the current signal strength and provides access to 3Com WLAN application tools, including Settings, Connection, and Adapter Information utilities.

Start the Status application by clicking the 3Com icon in the tool tray in the lower right-hand corner of the Windows desktop.

- Settings launches the 3Com AirConnect Settings application in another window.
- Connection launches the 3Com AirConnect Connection application in another window. The signal status display is constantly updated to show the status of the wireless signal. The signal is rated as follows: no adapter installed, no connection, no signal, poor signal, fair signal, average signal, good signal, and excellent signal.
- Adapter Information launches the 3Com AirConnect Adapter Information application in another window.

Settings The Settings application displays information about the current card settings. It also lets you change the configuration of the card without rebooting your system. The application lets you set parameters such as Wireless Service Area and Power Mode settings.

- *Wireless LAN Service Area* displays the name of the access point with which the wireless PC Card is associated. You can enter a new name in this field or select a name from the drop-down list.
- *Power Mode* lets you select the power mode to use and specify when power-save options are in effect.

Continuous access does not use power save polling and disables it.

Power save polling uses Power Save Polling at all times.

Switch based upon active power source causes the system to switch the power mode based upon whether the system is using AC or battery power. In this mode, the system use continuous polling mode with an AC power source and power save polling with battery power.

The Power Save Polling slider lets you balance network performance against power consumption. When the slider is set to lowest power, the adapter checks network traffic less frequently, reducing power consumption used. When the slider is set to highest performance, the adapter tries to maintain constant contact with the network, increasing network performance but consuming correspondingly more power. If you check *Let the adapter manage power usage*, the card will use the best setting available at any given time. The polling interval is based on whether the system has received data recently. If no data is being received, the polling interval becomes less frequent over time, gradually decreasing power consumption.

Connection The Connection application allows more detailed checks of card performance than is possible with the AirConnect Status application. Signal strength is displayed over time, which lets you check the performance of the wireless link.

- *Signal Strength* tracks the signal strength in real time and displays a graph showing the historical trend.
- *Link Performance* lets you run a ping test between the wireless client and another IP device on the network. When the ping test is run to another wireless device, the round trip ping time can give an idea of what the upper limit is for connection speed.

Start Test starts a ping test using the information provided in the Test Count and Host Address fields.

Test Count lets you select the number of pings to perform in testing link performance.

Host Address lets you enter the IP address or host name of the system to perform the ping test.

Link Performance displays the results of the ping test specified on this tab. A graph indicating the round trip ping time of each ping and timing statistics are shown.

Adapter Information

The Adapter Information application lets you perform a wide range of adapter configuration and monitoring tasks from a single user interface. The application lets you configure the adapter, monitor performance, diagnose problems, and set up system logging. Each screen has a category list that lets you select which information is to be displayed in the window.

- *Adapter* provides basic information about the adapter and the current hardware settings

Signal Quality updates in real time to indicate the current signal strength.

Adapter Information displays basic adapter information.

Hardware Properties indicate the hardware resources being used by the PC, and hardware characteristics of the WLAN adapter (Hardware Revision, MAC Address, and Adapter Type).

- *Known Access Points* shows which access points your adapter can sense and displays basic statistics for each. The display shows the access point addresses, channel, a type/status indicator, noise, and signal. The access point is indicated by a graphic of an access point transmitting on the left hand side of the list.
- *Association* displays statistics on the performance of the adapter related to adapter to access point associations and roaming.

Association Statistics include the current number of associations, access point counts, number of full scans, number of partial scans, and the current access point that the adapter is associated with.

Roaming Reasons list the reason that the adapter roamed from access point to access point.

Miscellaneous Statistics lets you see if the adapter is experiencing transmission problems.

Reset Statistics clears and restarts all statistics counters.

- *Transmit and Receive Statistics* are concerned with the quality of the wireless connection between the PC Card and the access point.

Transmit Statistics include the total host packets transmitted, information on non-directed packets, information on directed packets, and the total number of bytes transmitted.

Receive Statistics include the total host packets received, information on non-directed packets, information on directed packets, and the total number of bytes received.

The transmit and receive graph displays a histogram of the directed and non-directed traffic at varying data rates.

- *Diagnostics* panel lets you perform low level tests to determine if the WLAN hardware is functioning.

Select Function lets you choose a self-test or reset the adapter.

Execute Function performs the selection.

Results shows the results of the diagnostics.

- *Options* lets you save adapter performance information in a file.

Enable Logging starts or stops logging to a group of HTML files on the system.

Log File Path is the current path to store the log files. The field is disabled when logging is not turned on. Use *Browse* to select a Log File Path.

View Log Files selects the log file to view in the default browser.

Firmware Upgrade

The Adapter Firmware Upgrade tool lets you download and install firmware updates that you have downloaded from the 3Com Customer Support Web site at <http://support.3com.com>.

To run the Card Upgrade utility:

- 1 Open the Start menu.
- 2 Select *Programs*.
- 3 Select *3Com AirConnect*.
- 4 Select *AirConnect Upgrade Utility*.

The Upgrade Utility lets you view information on the current firmware version of the currently installed card and install firmware updates by selecting a firmware and CIS file downloaded from the 3Com Web site.

- *Firmware loaded in adapter* displays the version information for the current firmware on the adapter.
- *Primary Firmware Filename* lets you specify a new firmware binary to load on the adapter.
- *Pbrowse* opens a browser so you can select a primary firmware file. The new selection updates the Firmware Filename field.
- *Secondary Firmware Filename* lets you specify a new firmware binary to load on the adapter.
- *Sbrowse* opens a browser so you can select a secondary firmware file. The new selection updates the Firmware Filename field.
- *CIS Filename* lets you specify a new CIS binary to load on the adapter.
- *Cbrowse* opens a browser so you can select a CIS file. The new selection updates the Firmware Filename field.
- *Update* initiates the update of the firmware on the adapter based using the Firmware and CIS files specified.

5

INSTALLING THE PC CARD

Installing the PC Card



- 1 Insert the PC Card into the PC slot. Arrows on the front of the PC Card indicate the insertion point to the slot.
- 2 Slide in the PC Card until it seats snugly.



CAUTION: *Align the card properly before putting it in the slot. Insert the card firmly without forcing. Forcing a misaligned card into the slot can damage the computer or the card.*

AirConnect Adapter LEDs

The WLAN adapter LEDs (see ① and ② in the figure below) perform identical functions when indicating the operational status of the card.

- If there is no access point associated with the PC Card, the LEDs are off.
- If the card is attempting to associate with an access point, the LEDs blink slowly.
- If the card is exchanging data with an associated access point, the LEDs blink rapidly. The higher the data rate, the faster the blinking.

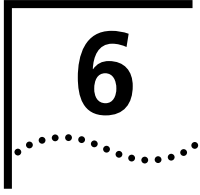


Removing the PC Card

When removing the card, use the release lever or button on your card slot to release the card. When pulling out the card, do not pull on the antenna.



CAUTION: *The antenna on the PC Card is not removable. If you try to remove the card by pulling on the antenna, you may break the antenna and permanently damage the card.*



TECHNICAL SUPPORT

Online Technical Services

3Com offers worldwide product support 24 hours a day, 7 days a week, through the following online systems:

- World Wide Web site
- 3Com FTP site
- 3Com Bulletin Board Service (3Com BBS)
- 3Com FactsSM automated fax service

World Wide Web Site

Access the latest networking information on the 3Com Corporation World Wide Web site by entering the URL into your Internet browser:

`http://www.3com.com/`

This service provides access to online support information such as technical documentation and software library, as well as support options ranging from technical education to maintenance and professional services.

3Com FTP Site

Download drivers, patches, software, and MIBs across the Internet from the 3Com public FTP site. This service is available 24 hours a day, 7 days a week.

To connect to the 3Com FTP site, enter the following information into your FTP client:

- Hostname: **`ftp.3com.com`** (or **`192.156.136.12`**)
- Username: **`anonymous`**
- Password: **`<your Internet e-mail address>`**



A user name and password are not needed with Web browser software such as Netscape Navigator and Internet Explorer.

3Com Bulletin Board Service

The 3Com BBS contains patches, software, and drivers for 3Com products. This service is available through analog modem or digital modem (ISDN) 24 hours a day, 7 days a week.

To reach the service by modem, set your modem to 8 data bits, no parity, and 1 stop bit. Call the telephone number nearest you:

Country	Data Rate	Telephone Number	Country	Data Rate	Telephone Number
Australia	Up to 14,400 bps	61 2 9955 2073	Japan	Up to 14,400 bps	81 3 3345 7266
Brazil	Up to 14,400 bps	55 11 5181 9666	Mexico	Up to 28,800 bps	52 5 520 7835
France	Up to 14,400 bps	33 1 6986 6954	P.R. of China	Up to 14,400 bps	86 10 684 92351
Germany	Up to 28,800 bps	4989 62732 188	Taiwan, R.O.C.	Up to 14,400 bps	886 2 377 5840
Hong Kong	Up to 14,400 bps	852 2537 5601	U.K.	Up to 28,800 bps	44 1442 438278
Italy	Up to 14,400 bps	39 2 27300680	U.S.A.	Up to 53,333 bps	1 847 262 6000

ISDN users can dial in to the 3Com BBS using a digital modem for fast access up to 64 Kbps. To access the 3Com BBS using ISDN, use the following number:

1 847 262 6000

3Com Facts Automated Fax Service

The 3Com Facts automated fax service provides technical articles, diagrams, and troubleshooting instructions on 3Com products 24 hours a day, 7 days a week.

Call 3Com Facts using your Touch-Tone telephone:

1 408 727 7021

Support from Your Network Supplier

If additional assistance is required, contact your network supplier. Many suppliers are authorized 3Com service partners who are qualified to provide a variety of services, including network planning, installation, hardware maintenance, application training, and support services.

When you contact your network supplier for assistance, have the following information ready:

- Product model name, part number, and serial number
- A list of system hardware and software, including revision levels
- Diagnostic error messages
- Details about recent configuration changes, if applicable

If you are unable to contact your network supplier, see the following section on how to contact 3Com.

Support from 3Com

If you are unable to obtain assistance from the 3Com online technical resources or from your network supplier, 3Com offers technical telephone support services. To find out more about your support options, please call the 3Com technical telephone support phone number at the location nearest you.

When you contact 3Com for assistance, have the following information ready:

- Product model name, part number, and serial number
- A list of system hardware and software, including revision levels
- Diagnostic error messages
- Details about recent configuration changes, if applicable

Below is a list of worldwide technical telephone support numbers:

Country	Telephone Number	Country	Telephone Number
Asia Pacific Rim			
Australia	1 800 678 515	P.R. of China	10800 61 00137 or 021 6350 1590
Hong Kong	800 933 486	Singapore	800 6161 463
India	61 2 9937 5085	S. Korea	
Indonesia	001 800 61 009	From anywhere in S. Korea:	82 2 3455 6455
Japan	0031 61 6439	From Seoul:	00798 611 2230
Malaysia	1800 801 777	Taiwan, R.O.C.	0080 611 261
New Zealand	0800 446 398	Thailand	001 800 611 2000
Pakistan	61 2 9937 5085		
Philippines	1235 61 266 2602		
Europe			
From anywhere in Europe, call:	+31 (0)30 6029900 phone +31 (0)30 6029999 fax		
From the following European countries, you may use the toll-free numbers:			
Austria	06 607468	Netherlands	0800 0227788
Belgium	0800 71429	Norway	800 11376
Denmark	800 17309	Poland	0800 3111206
Finland	0800 113153	Portugal	05 05313416
France	0800 917959	South Africa	0800 995014
Germany	0130 821502	Spain	900 983125
Hungary	00800 12813	Sweden	020 795482
Ireland	1 800 553117	Switzerland	0800 55 3072
Israel	177 3103794	U.K.	0800 966197
Italy	1678 79489		
Latin America			
Argentina	AT&T +800 666 5065	Mexico	01 800 CARE (01 800 2273)
Brazil	0800 13 3266	Peru	AT&T +800 666 5065
Chile	1230 020 0645	Puerto Rico	800 666 5065
Colombia	98012 2127	Venezuela	AT&T +800 666 5065
North America			
	1 800 NET 3Com (1 800 638 3266)		

Returning Products for Repair

Before you send a product directly to 3Com for repair, you must first obtain a Return Materials Authorization (RMA) number. Products sent to 3Com without RMA numbers will be returned to the sender unopened, at the sender's expense.

To obtain an RMA number, call or fax:

Country	Telephone Number	Fax Number
Asia, Pacific Rim	65 543 6500	65 543 6348
Europe, South Africa, and Middle East	+ 44 1442 435860	+ 44 1442 435718
From the following European countries, you may call the toll-free numbers; select option 2 and then option 2:		
Austria	06 607468	
Belgium	0800 71429	
Denmark	800 17309	
Finland	0800 113153	
France	0800 917959	
Germany	0130 821502	
Hungary	00800 12813	
Ireland	1800553117	
Israel	177 3103794	
Italy	1678 79489	
Netherlands	0800 0227788	
Norway	800 11376	
Poland	00800 3111206	
Portugal	05 05313416	
South Africa	0800 995014	
Spain	900 983125	
Sweden	020 795482	
Switzerland	0800 55 3072	
U.K.	0800 966197	
Latin America	1 408 326 2927	1 408 326 3355
U.S.A. and Canada	1 800 NET 3Com (1 800 638 3266)	1 408 326 7120

WARRANTY AND REGULATORY COMPLIANCE

3Com Corporation Limited Warranty

This warranty applies to customers located in the United States, Australia, Canada (except Quebec), Ireland, New Zealand, U.K., and other English language countries, and countries for which a translation into the local language is not provided

3COM AIRCONNECT 11MBPS WIRELESS LAN

HARDWARE

3Com warrants to the end user ("Customer") that this hardware product will be free from defects in workmanship and materials, under normal use and service, for the following length of time from the date of purchase from 3Com or its authorized reseller:

Three (3) years

Spare Parts and Spares Kits are warranted for ninety (90) days

3Com's sole obligation under this express warranty shall be, at 3Com's option and expense, to repair the defective product or part, deliver to Customer an equivalent product or part to replace the defective item, or if neither of the two foregoing options is reasonably available, 3Com may, in its sole discretion, refund to Customer the purchase price paid for the defective product. All products that are replaced will become the property of 3Com. Replacement products or parts may be new or reconditioned. 3Com warrants any replaced or repaired product or part for ninety (90) days from shipment, or the remainder of the initial warranty period, whichever is longer. 3Com's sole obligation under this express warranty shall be, at 3Com's option and expense, to repair the defective product or part, deliver to Customer an equivalent product or part to replace the defective item, or if neither of the two foregoing options is reasonably available, 3Com may, in its sole discretion, refund to Customer the purchase price paid for the defective product. All products that are replaced will become the property of 3Com. Replacement products may be new or reconditioned. 3Com warrants any replaced or repaired product or part for ninety (90) days from shipment, or the remainder of the initial warranty period, whichever is longer.

SOFTWARE

3Com warrants to Customer that each software program licensed from it, except as noted below, will perform in substantial conformance to its program specifications, for a period of ninety (90) days from the date of purchase from 3Com or its authorized reseller. 3Com warrants the media containing software against failure during the warranty period. No updates are provided. 3Com's sole obligation under this express warranty shall be, at 3Com's option and expense, to refund the purchase price paid by Customer for any defective software product, or to replace any defective media with software which substantially conforms to applicable 3Com published specifications. Customer assumes responsibility for the selection of the appropriate applications program and associated reference materials. 3Com makes no warranty or representation that its software products will meet Customer's requirements or work in combination with any hardware or applications software products provided by third parties, that the operation of the software products will be uninterrupted or error free, or that all defects in the software products will be corrected. For any third party products listed in the 3Com software product documentation or specifications as being compatible, 3Com will make reasonable efforts to provide compatibility, except where the non-compatibility is caused by a "bug" or defect in the third party's product or from use of the software product not in accordance with 3Com's published specifications or user manual.

The site survey software is licensed "AS IS".

THIS 3COM PRODUCT MAY INCLUDE OR BE BUNDLED WITH (1) THIRD PARTY SOFTWARE, OR (2) 3COM SOFTWARE WHICH IS USED WITH THE LINUX OPERATING SYSTEM, THE USE OF WHICH IS GOVERNED BY A SEPARATE END USER LICENSE AGREEMENT. THIS 3COM WARRANTY DOES NOT APPLY TO SUCH THIRD PARTY SOFTWARE OR 3COM LINUX SOFTWARE. FOR THE APPLICABLE WARRANTY, PLEASE REFER TO THE END USER LICENSE AGREEMENT GOVERNING THE USE OF SUCH SOFTWARE OR THE ACCOMPANYING DOCUMENTATION RELATING TO SUCH SOFTWARE

YEAR 2000 WARRANTY

In addition to the Hardware Warranty and Software Warranty stated above, 3Com warrants that each product sold or licensed to Customer on and after January 1, 1998 that is date sensitive will continue performing properly with regard to such date data on and after January 1, 2000, provided that all other products used by Customer in connection or combination with the 3Com product, including hardware, software, and firmware, accurately exchange date data with the 3Com product, with the exception of those products identified at 3Com's Web site, <http://www.3com.com/products/yr2000.html>, as not meeting this standard. If it appears that any product that is stated to meet this standard does not perform properly with regard to such date data on and after January 1, 2000, and Customer notifies 3Com before the later of April 1, 2000, or ninety (90) days after purchase of the product from 3Com or its authorized reseller, 3Com shall, at its option and expense, provide a software update which would effect the proper performance of such product, repair such product, deliver to Customer an equivalent product to replace such product, or if none of the foregoing is feasible, refund to Customer the purchase price paid for such product.

Any software update or replaced or repaired product will carry a Year 2000 Warranty for ninety (90) days after purchase or until April 1, 2000, whichever is later.

OBTAINING WARRANTY SERVICE

Customer must contact a 3Com Corporate Service Center or an Authorized 3Com Service Center within the applicable warranty period to obtain warranty service authorization. Dated proof of purchase from 3Com or its authorized reseller may be required. Products returned to 3Com's Corporate Service Center must be pre-authorized by 3Com with a User Service Order (USO) number (or a Return Material Authorization (RMA) number or a Service Repair Order (SRO) number, whichever was issued) marked on the outside of the package, and sent prepaid and packaged appropriately for safe shipment, and it is recommended that they be insured or sent by a method that provides for tracking of the package. Responsibility for loss or damage does not transfer to 3Com until the returned item is received by 3Com. The repaired or replaced item will be shipped to Customer, at 3Com's expense, not later than thirty (30) days after 3Com receives the defective product, and 3Com will retain risk of loss or damage until the item is delivered to Customer.

3Com shall not be responsible for any software, firmware, information, or memory data of Customer contained in, stored on, or integrated with any products returned to 3Com for repair, whether under warranty or not.

Dead- or Defective-on-Arrival. In the event a product completely fails to function or exhibits a defect in materials or workmanship within the first forty-eight (48) hours of installation but no later than thirty (30) days after the date of purchase, and this is verified by 3Com, it will be considered dead- or defective-on-arrival (DOA) and a replacement shall be provided by advance replacement, but only if Customer provides a purchase order number, credit card number, or other method of payment acceptable to 3Com, to be used if 3Com needs to charge Customer for the replacement, as explained below. The replacement product will normally be shipped not later than three (3) business days after 3Com's verification of the DOA product, but may be delayed due to export or import procedures. The shipment of advance replacement products is subject to local legal requirements and may not be available in all locations. When an advance replacement is provided and Customer fails to return the original product to 3Com within fifteen (15) days after shipment of the replacement, 3Com will charge Customer for the replacement product, at list price.

INCLUDED SERVICES: Telephone Support, with coverage for basic troubleshooting only, will be provided for ninety (90) days from the date of purchase, on a commercially reasonable efforts basis. Telephone support is available from 3Com only if Customer purchased this product directly from 3Com, or if Customer's reseller is unable to provide telephone support. Please refer to the Technical Support appendix in the User Guide for telephone numbers.

WARRANTIES EXCLUSIVE

IF A 3COM PRODUCT DOES NOT OPERATE AS WARRANTED ABOVE, CUSTOMER'S SOLE REMEDY FOR BREACH OF THAT WARRANTY SHALL BE REPAIR, REPLACEMENT, OR REFUND OF THE PURCHASE PRICE PAID, AT 3COM'S OPTION. TO THE FULL EXTENT ALLOWED BY LAW, THE FOREGOING WARRANTIES AND REMEDIES ARE EXCLUSIVE AND ARE IN LIEU OF ALL OTHER WARRANTIES, TERMS, OR CONDITIONS, EXPRESS OR IMPLIED, EITHER IN FACT OR BY OPERATION OF LAW, STATUTORY OR OTHERWISE, INCLUDING WARRANTIES, TERMS, OR CONDITIONS OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, SATISFACTORY QUALITY, CORRESPONDENCE WITH DESCRIPTION, AND NON-INFRINGEMENT, ALL OF WHICH ARE EXPRESSLY DISCLAIMED. 3COM NEITHER ASSUMES NOR AUTHORIZES ANY OTHER PERSON TO ASSUME FOR IT ANY OTHER LIABILITY IN CONNECTION WITH THE SALE, INSTALLATION, MAINTENANCE OR USE OF ITS PRODUCTS.

3COM SHALL NOT BE LIABLE UNDER THIS WARRANTY IF ITS TESTING AND EXAMINATION DISCLOSE THAT THE ALLEGED DEFECT OR MALFUNCTION IN THE PRODUCT DOES NOT EXIST OR WAS CAUSED BY CUSTOMER'S OR ANY THIRD PERSON'S MISUSE, NEGLIGENCE, IMPROPER INSTALLATION OR TESTING, UNAUTHORIZED ATTEMPTS TO OPEN, REPAIR OR MODIFY THE PRODUCT, OR ANY OTHER CAUSE BEYOND THE RANGE OF THE INTENDED USE, OR BY ACCIDENT, FIRE, LIGHTNING, POWER CUTS OR OUTAGES, OTHER HAZARDS, OR ACTS OF GOD.

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TO THE FULL EXTENT ALLOWED BY LAW, 3COM ALSO EXCLUDES FOR ITSELF AND ITS SUPPLIERS ANY LIABILITY, WHETHER BASED IN CONTRACT OR TORT (INCLUDING NEGLIGENCE), FOR INCIDENTAL, CONSEQUENTIAL, INDIRECT, SPECIAL, OR PUNITIVE DAMAGES OF ANY KIND, OR FOR LOSS OF REVENUE OR PROFITS, LOSS OF BUSINESS, LOSS OF INFORMATION OR DATA, OR OTHER FINANCIAL LOSS ARISING OUT OF OR IN CONNECTION WITH THE SALE, INSTALLATION, MAINTENANCE, USE, PERFORMANCE, FAILURE, OR INTERRUPTION OF ITS PRODUCTS, EVEN IF 3COM OR ITS AUTHORIZED RESELLER HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES, AND LIMITS ITS LIABILITY TO REPAIR, REPLACEMENT, OR REFUND OF THE PURCHASE PRICE PAID, AT 3COM'S OPTION. THIS DISCLAIMER OF LIABILITY FOR DAMAGES WILL NOT BE AFFECTED IF ANY REMEDY PROVIDED HEREIN SHALL FAIL OF ITS ESSENTIAL PURPOSE.

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Some countries, states, or provinces do not allow the exclusion or limitation of implied warranties or the limitation of incidental or consequential damages for certain products supplied to consumers, or the limitation of liability for personal injury, so the above limitations and exclusions may be limited in their application to you. When the implied warranties are not allowed to be excluded in their entirety, they will be limited to the duration of the applicable written warranty. This warranty gives you specific legal rights which may vary depending on local law.

GOVERNING LAW

This Limited Warranty shall be governed by the laws of the State of California, U.S.A. excluding its conflicts of laws principles and excluding the United Nations Convention on Contracts for the International Sale of Goods.

3Com Corporation
5400 Bayfront Plaza
Santa Clara, CA 95054
(408) 326-5000
January 3, 2000

Regulatory Compliance Information

RADIO FREQUENCY INTERFERENCE REQUIREMENTS

This device has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of the Federal Communications Commissions Rules and Regulation. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

However, there is no guarantee that interference will not occur in a particular installation. If the equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Re-orient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

CANADA

CE MARKING AND EUROPEAN UNION COMPLIANCE

This Class A digital apparatus meets the requirements of the Canadian Interference-Causing Equipment Regulations.

Products intended for sale within the European Union are marked with the CEMark which indicates compliance to applicable Directives and European Normes (EN), as follows. Amendments to these Directives or ENs are included: Normes (EN), as follows.

Applicable Directives:

- Electromagnetic Compatibility Directive 89/336/EEC
- Low Voltage Directive 73/23/EEC

Applicable Standards:

- EN 55 022 - Limits and Methods of Measurement of Radio Interference Characteristics of Information technology Equipment
- EN 50 082-1 - Electromagnetic Compatibility - Generic Immunity Standard, Part 1: Residential, commercial, Light Industry
- IEC 801.2 - Electromagnetic Compatibility for Industrial Process Measurement and Control Equipment Part 2: Electrostatic Discharge Requirements
- IEC 801.3 - Electromagnetic Compatibility for Industrial Process Measurement and Control Equipment Part 3: Radiated Electromagnetic Field Requirements
- IEC 801.4 - Electromagnetic Compatibility for Industrial Process Measurement and Control Equipment Part 4: Electrical Fast Transients Requirements
- EN 60 950 + Amd 1 + Amd 2 - Safety of Information Technology Equipment Including Electrical Business Equipment
- EN 60 825-1 (EN 60 825) - Safety of Devices Containing Lasers

3Com End User Software License Agreement

IMPORTANT: Read Before Using This Product

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GOVERNING LAW: This License Agreement shall be governed by the laws of the State of California as such laws are applied to agreements entered into and to be performed entirely within California between California residents and by the laws of the United States. You agree that the United Nations Convention on Contracts for the International Sale of Goods (1980) is hereby excluded in its entirety from application to this License Agreement.

LIMITED WARRANTY; LIMITATION OF LIABILITY: All warranties and limitations of liability applicable to the Software are as stated on the Limited Warranty Card or in the product manual, whether in paper or electronic form, accompanying the Software. Such warranties and limitations of liability are incorporated herein in their entirety by this reference.

SEVERABILITY: In the event any provision of this License Agreement is found to be invalid, illegal or unenforceable, the validity, legality and enforceability of any of the remaining provisions shall not in any way be affected or impaired and a valid, legal and enforceable provision of similar intent and economic impact shall be substituted therefor.

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3Com Corporation, 5400 Bayfront Plaza, P.O. Box 58145, Santa Clara, CA 95052-8145. (408) 326-5000