

Xircom



CardBus Ethernet 10/100
+Modem 56

User's Guide

August 1998

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Windows 95, 98 and NT Online Documentation

See the Help file HELPDOCS.HLP on the Xircom CD-ROM for additional information. After installation, access this file from the Xircom program group under CardBus Help Docs.

Windows 3.x Installation Utility

For Windows 3.x environments, run the Installation Program SETUP.EXE from the Xircom CD-ROM. For additional configuration information, see the Windows Help file WIN3X.HLP on the Xircom CD-ROM. After installation, access this file from the Xircom program group.

IBM OS/2 installation

For IBM OS/2 installation instructions, see the Windows Help file WIN3X.HLP on the Xircom CD-ROM.

CHAPTER 1

Hardware Installation

The Xircom CardBus Ethernet 10/100+Modem 56 supports both 10Mbps and 100Mbps Ethernet networks and modem speeds up to 56Kbps for high-performance connectivity in any environment. It plugs into your computer's Type II PC Card slot to connect to an Ethernet LAN and to the telephone network.

Installation Overview

Follow the instructions in this chapter to install the CardBus Ethernet 10/100+Modem 56 hardware and network and modem cabling. Then proceed to the software installation chapter for your operating system environment, as follows:

Chapter 2. Windows 95 and 98 Installation

Chapter 3. Windows NT Installation

Chapter 4. Diagnostics and Troubleshooting

Additional documentation for Windows 95, 98 and NT is supplied in the file HELPDOCS.HLP on the Xircom CD-ROM. For Windows 3.x, run SETUP.EXE from the Xircom CD-ROM.

The CardBus Ethernet 10/100+Modem 56 provides access to both 10Mbps and 100Mbps networks with a single adapter cable, and auto-negotiates 10Mbps or 100Mbps network speed.

Category 5 (data grade) unshielded twisted pair (UTP) cabling is required for 100Mbps or Category 3 or 5 for 10Mbps.

Additional Features

Power-Saving Modes

The CardBus Ethernet 10/100+Modem 56 includes Xircom BatterySave™ technology for maximum battery life on the road. When the LAN cable is detached, the adapter senses the change and enters low-power mode. Normal power is restored when the cable is reattached.

Optional Digital Wireless Connection Kit (Worldwide)

The Xircom GSM Connection Kit™ (for digital wireless systems in Europe, Asia, and the Americas) enables data transmission from your mobile phone using the CardBus Ethernet 10/100+Modem 56. Popular mobile phones using the following standards are supported: GSM 900, 1800, 1900; DCS 1800; and PCS 1900. Visit the Xircom website at www.xircom.com for additional information.

Optional Analog Cellular Kit (U.S. and Canada only)

The Xircom Cellular Connection Kit™ (for analog cellular systems in the U.S. and Canada) enables data transmission by cellular phone using the CardBus Ethernet 10/100+Modem 56. Popular mobile phones using AMPS analog cellular technology are supported. Visit the Xircom website at www.xircom.com for additional information.

Hardware Installation

Check Package Contents:

- Xircom CardBus Ethernet 10/100+Modem 56
- Ethernet adapter cable with a 16-pin PC Card connector at one end and a female RJ-45 connector at the other
- Modem cable with a 26-pin PC Card connector at one end and a female RJ-11 modular telephone connector at the other
- RJ-11 modular telephone cable
- Software and online documentation on CD-ROM
- CardBus Ethernet 10/100+Modem 56 *Quick Install Card* and *User's Guide*
- Product registration card

Please fill out the Product Registration Card and mail or fax it immediately to the Xircom office indicated on the card.

Other Requirements

To install the Xircom CardBus Ethernet 10/100+Modem 56, you need the following:

- 1 A portable PC with a CardBus PC Card slot.
- 2 A local area network supporting 10 or 100Mbps Ethernet, as required, and a network operating system supported by the CardBus Ethernet 10/100+Modem 56.

Since the CardBus Ethernet 10/100+Modem 56 automatically detects the speed of the network to which it is connected, it may be safely connected to either a 100Base-TX or 10Base-T network, as specified in items 3 and 4 below.

- 3 For connection to a 100Base-TX 100Mbps Ethernet network, a **Category 5** (data grade) unshielded twisted pair (UTP) network cable terminating in a male RJ-45 connector and connected to a 100Mbps hub or switch.
- 4 For connection to a 10Base-T twisted pair Ethernet network, a network cable terminating in a male RJ-45 connector and connected to a 10Mbps hub or switch.
- 5 For **modem** operations: an analog telephone line, RJ-11 modular telephone cable (supplied), and if needed, an RJ-11 adapter for the local telephone system. Communications software is also required for modem and fax operations.

Do not connect to a digital telephone line or digital PABX system. In case of inadvertent connection to a digital line, the Xircom Digital Shield™ will protect your modem.

Determine System Requirements

During installation of the Xircom CardBus Ethernet 10/100+Modem 56 hardware, the computer should be ON and your standard operating software should be loaded. If configured to do so, your system will detect the CardBus Ethernet 10/100+Modem 56. For details on how to install driver software, see the chapter for your operating system environment.

The CardBus Ethernet 10/100+Modem 56 hardware is compatible with Types II and III PC Card slots that support CardBus technology. Installation and removal procedures may vary on different computers.

Installing the Hardware

Insert the CardBus Ethernet 10/100+Modem 56

- 1 Grasp the CardBus by the edges with the Xircom label facing upward and the wide PC Card connector next to the insert slot.
- 2 Insert the card into a CardBus slot and push it in until it is firmly seated.

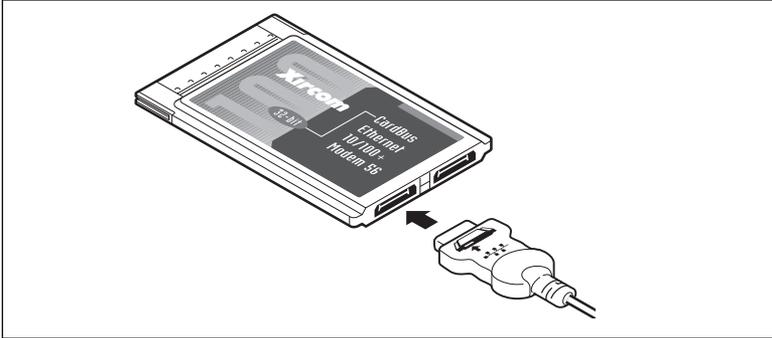
The CardBus adapter can only be used in CardBus-compliant PC Card slots.



Inserting the CardBus into the Computer

Connecting the LAN Adapter Cable to the Card

- Attach the 16-pin connector at the end of the Xircom adapter cable to the matching receptacle on the **left side** of the CardBus Ethernet 10/100+Modem 56. Press the connector gently into the receptacle on the card until it's firmly in place. Do not force the connection.



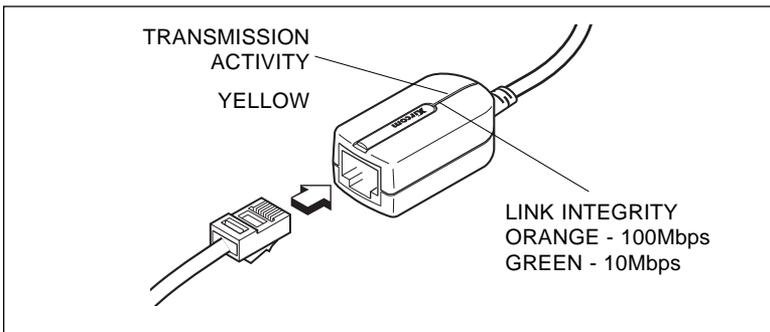
Connecting the LAN Adapter Cable to the CardBus

Disconnecting Adapter Cable from the Card

- Grasp the small connector with the thumb and forefinger and gently pull it free of the card.

Connecting the Network Cable to the LAN Adapter Cable

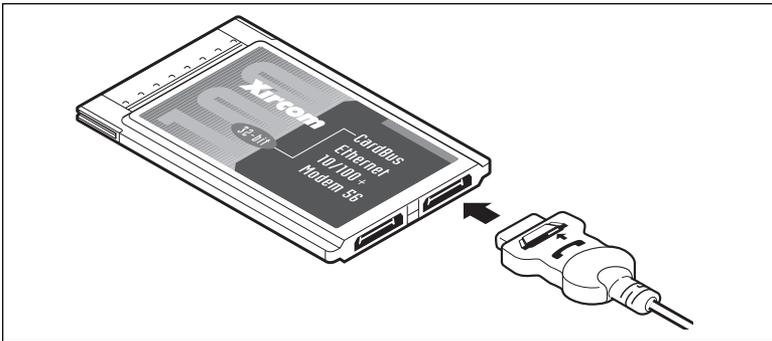
- Plug the network cable into the female RJ-45 connector, as shown in the figure.



Connecting to the Network Cable to LAN Adapter Cable

Connecting the Modem Cable to the CardBus

- Attach the 26-pin connector at the end of the Xircom modem cable to the matching receptacle on the **right side** of the CardBus Ethernet 10/100+Modem 56. Press the connector gently into the receptacle on the card until it's firmly in place. Do not force the connection.



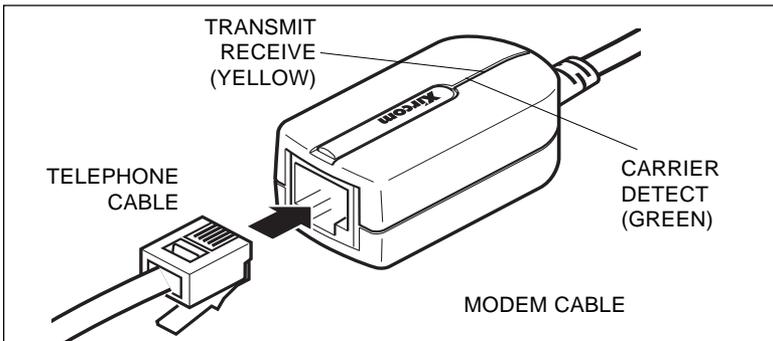
Attaching the Modem Cable to the CardBus

Disconnecting Modem Cable from the Card

- Grasp the small connector with the thumb and forefinger and gently pull it free of the card.

Connecting the Modem Cable to the Telephone Line

- Plug one end of the RJ-11 modular telephone cable into the RJ-11 receptacle on the modem cable, and the other end into an analog (single-line) RJ-11 telephone wall jack.



Connecting the Telephone Cable to the Modem Cable

Windows 95 and 98 Installation

Plug and Play Installation

Plug and play installation of the Xircom CardBus Ethernet 10/100+Modem 56 is supported under Windows 98 and Windows 95 version 950b (OSR2) and later. Installation with these versions of Windows is described in this chapter. For information on Windows 95 versions 950/950a, see the README file on the Xircom CD-ROM.

Drivers Available

The following drivers for Windows 95 and 98 are supplied with the CardBus Ethernet 10/100+Modem 56:

- NDIS3 (CBE.SYS)
- NDIS4 (CBEN4.SYS)
- 32-bit ODI (CBE.LAN) with promiscuous support

The NDIS3 driver CBE.SYS is installed by default using the procedures in this chapter. For NDIS4 instructions, see the README file on the Xircom CD-ROM.

32-Bit ODI Driver

If your environment requires use of the 32-bit ODI client driver under Windows 95 (as indicated by your network administrator), see the Windows Help file HELPDOCS.HLP on the Xircom CD-ROM for instructions.

Installing under Windows 95 OSR2 and 98

Notes on Installation under Windows 95 OSR2 and Later

Windows 95 OSR2 (version 950b) and later has limited support for CardBus multifunction (LAN+modem) devices. The CardBus Ethernet 10/100+Modem 56 includes Xircom software which enhances support for CardBus multifunction devices. See the README file on the Xircom CD-ROM for additional information on this software and for complete details on installation under OSR2.

Prompt for Updated Files

During installation, the Xircom software may display a message stating that certain Windows 95 VXD files need to be updated. See the README file on the Xircom CD-ROM for additional information on these files.

COM Port Assignment under Windows 95 and 98

COM5 is automatically assigned to the modem when the CardBus Ethernet 10/100+Modem 56 is installed under Windows 95 or 98. TAPI-compatible Windows applications support the COM5 setting. For applications that do not support COM5, you can change the COM port assignment after installation by running the Xircom COM Port Selector from the Xircom program group.

How to Create Floppy Disks for Software Installation

To create a set of floppy disks for use in installation, as an alternative to using the Xircom CD-ROM, run MAKEDISK.BAT from the Xircom CD-ROM to copy the required installation files to two blank floppy disks.

Installing the CardBus

- 1 With Windows running, insert the CardBus Ethernet 10/100+Modem 56 into the CardBus PC Card slot and connect cables as shown in **Chapter 1. Hardware Installation**. Proceed to step 2.

Plug and Play Installation (Versions 950b and later)

- 2 When Windows displays the New Hardware Found window, type the path to the Xircom CD-ROM and follow the instructions on the screen to complete the installation. No further steps are necessary. Xircom files will be copied from the Xircom CD-ROM and network and modem functionality will be installed. If prompted again for network drivers, type the path to the Xircom CD-ROM and click OK.
- 3 After installation, reboot the system if prompted to do so.

If you are using Windows 95 and the New Hardware Found window does not appear, you are probably using Windows 95 version 950 or 950a. For information on installation under Windows 95 versions 950/950a, see the README file on the Xircom CD-ROM.

Xircom CountrySelect and Registration Software

- 4 After the computer restarts and Windows reloads, Xircom CountrySelect and online registration software will launch. Make a country selection (U.S.A. is the default) and complete the registration.

Troubleshooting Modem Installation

Review this section if any of the following problems occur:

- Modem initialization errors occur when attempting to dial-out using a communications application.
- Connection fails or other problems occur.

It may be necessary to define a modem type within your communications application. If the Xircom modem is not listed, choose a "Generic Hayes compatible" device.

If your computer is equipped with an infrared communications port, you may need to disable this port. These ports often use COM port resources required for other communications devices.

Disable the infrared port both in the computer's CMOS or BIOS setup program and the Windows 95 Device Manager, as follows:

- 1** Some computers use a hardware setup utility to configure the infrared port in the BIOS. See your computer documentation.
- 2** To disable the infrared communications port in Windows 95, go to Device Manager tab under System in the Control Panel.
- 3** Double-click the Ports (COM & LPT) entry and the IR Serial Port entry. Remove the check mark under Device Usage. (Note: In Windows 95 version 950b or later check the Disable in this Hardware Profile option to disable the device.)

Use the Modem Diagnostics Tool to verify the computer-to-modem interface.

- 1** In the Modems option in Control Panel, click Diagnostics.
- 2** In Diagnostics properties, highlight the COM port associated with the Xircom modem and click the More Info button. This causes Windows to send commands to and read responses from the modem and display information about the modem and its COM port. The Port Information box should display the following information:
 - The IRQ and I/O address of the modem's COM port. These should match the physical configuration of the port or modem adapter.
 - Modem responses to various AT commands. The Xircom modem may return ERROR for some AT commands that are not supported. This does not indicate a failure.

- 3** A log file can be useful to help identify modem problems by recording modem commands and responses. Windows 95 and 98 have slightly different procedures for creating and maintaining a log file:
- In **Windows 95**, go to Control Panel, Modems, Properties, Connection, Advanced. In the Advanced Connection Settings window, place a check mark in the Record a log file option box. A MODEMLOG.TXT file will be created in the C:\WINDOWS directory the next time the modem is used.
 - **Windows 98** creates a log file by default in the Windows directory, using a filename based on the modem device identifier, with a .LOG extension, such as "Xircom_CardBus_modem.log" (or a shortened version in MS-DOS). To continue adding information to the log file, place a check mark in the Append to Log option box in the Advanced Connection Settings window (see the Windows 95 instructions above for the complete path to this window).

Windows 95 and 98 Driver Parameters

CBE.SYS and CBEN4.SYS Driver Settings

CBE.SYS is an NDIS3 driver. CBEN4.SYS is an NDIS4 driver. Both conform to the Microsoft Network Driver Interface Specification (NDIS).

Required files for using CBE.SYS with Windows 95 and 98 include:

NETCBE.INF	Installation file for Windows 95 and 98
CBE.SYS	NDIS3 driver for Windows 95 and 98

There are user-configurable parameters to the CBE.SYS and CBEN4.SYS drivers which can be modified using the Network Control Panel built into Windows 95 and 98. This applet queries the user for parameter selections and sets the corresponding parameters in the registry. User-configurable parameters follow:

Parameter	Valid Values	Reg. Value
CableDetect	OFF	0
	ON	1
DirectEnable	AutoDetect	0
	OFF	1
	ON	2
EarlyTransmit	OFF	0
	ON	1
InterruptStyle	AutoDetect	0
	PCI-IRQ	1
	ISA-IRQ	2
LineSpeed	AutoDetect	0
	10 Mbps	1
	100 Mbps	2
LineMode	AutoDetect	0
	Half-Duplex	1
	Full-Duplex	2
Network Address	<i>See Network Administrators note below.</i>	
Socket	AutoDetect	0
	1, 2, 3, 4	1, 2, 3, 4

For Network Administrators Only. The network node address can be modified by specifying a value for Network Address such as 0080C7112233. If the user does NOT specify a Network Address, then the CBE.SYS driver uses the network node address contained in the CardBus Ethernet 10/100+Modem 56 Card Information Structure.

For definitions of the keywords above, see the Keyword Reference in Chapter 4. Diagnostics and Troubleshooting.

Windows NT 4.0 Installation

The CardBus Ethernet 10/100+Modem 56 supports manual installation under Microsoft Windows NT 4.0. Plug and Play installation and hot swapping of CardBus adapters are not directly supported by Windows NT.

Drivers Available

The following drivers for Windows NT can be found on the Xircom CD-ROM:

- CBE.SYS - NDIS3 driver
- CBEN4.SYS - NDIS4 driver
- CBMODEM.SYS - modem enabler

The NDIS3 driver CBE.SYS is installed by default using the procedures in this chapter. For NDIS4 instructions, see the README file on the Xircom CD-ROM.

For the latest information on CardBus support in Windows NT, review the README file on the Xircom CD-ROM.

Installing under NT 4.0

- 1** Insert the CardBus Ethernet 10/100+Modem 56 into the CardBus PC Card slot, as described in **Chapter 1. Hardware Installation**.
- 2** With the CardBus Ethernet 10/100+Modem 56 in the PC Card slot, click Start, click Settings, and select the Control Panel. The Control Panel opens.
- 3** Double-click the Network icon. The Network Settings window opens.

- 4 Click the Adapters tab. The Network Adapters window opens.
- 5 Click Add. The Select Network Adapter window opens.
- 6 Click Have Disk and type the path to the Xircom CD-ROM.
- 7 Click OK. The Select OEM Option window opens.
- 8 Click OK. The Windows NT Setup window briefly displays.
- 9 The Xircom CardBus 10/100+Modem 56 Settings window opens, displaying the default settings.

In most circumstances, the default settings will properly operate the adapter. However, consult the README file on the Xircom CD-ROM for the latest recommendations.

- 10 Click OK. The Network Settings window redisplay.
- 11 Click Close. If any dialog boxes appear related to setting up network protocols, click Cancel, and contact your Network Administrator.
- 12 When the Network Settings Change window opens, click Yes to restart the computer.

Modem Setup

- 13 After the computer has been restarted, select Modems from the Control Panel.
- 14 At the Install New Modem screen make sure that the *Don't detect my modem; I will select it from a list* checkbox is NOT checked. Click Next. NT will query the COM ports to find the Xircom modem. Click Next. If a *Standard Modem* is found, click Change. On the next screen, click Have disk. Type the path to the Xircom CD-ROM. Verify that the Xircom CardBus modem is selected, then click OK.
- 15 CountrySelect and online registration software will launch. Make a country selection (U.S.A. is the default) and complete the registration.
- 16 At the Install New Modem screen click Finish.
- 17 At the Modems Properties screen click Dialing Properties... to set up dialing properties (not necessary if a modem had been previously installed). Click Close.

Windows NT Driver Parameters

CBE.SYS and CBEN4.SYS driver parameters can be modified using the Windows NT Network Control Panel. This applet uses the OEMSETNT.INF file to set the corresponding parameters in the registry.

For definitions of the keywords listed, see Keyword Reference in Chapter 4. Diagnostics and Troubleshooting.

Parameter	Valid Values	Registry Value
CableDetect	OFF	0
	ON	1
EarlyReceive	OFF	0
	ON	1
EarlyTransmit	OFF	0
	ON	1
InterruptNumber	3 - 15	same
InterruptStyle	AutoDetect	0
	PCI IRQ	1
	ISA IRQ	2
IOBaseAddress	0x1000-0xF800	same
LEDEnabled	OFF	0
	ON	1
LineMode	AutoDetect	0
	Half-Duplex	1
	Full-Duplex	2
LineSpeed	AutoDetect	0
	10 Mbps	1
	100 Mbps	2

Windows NT Driver Parameters (continued)

Parameter	Valid Values	Registry Value
LinkIntegrity	OFF	0
	ON	1
MemoryBaseAddress	0xC0000-B000C000	same
MemoryMode	OFF	0
	ON	1
RXBUFFERSIZE	0-100	
Socket	AutoDetect	0
	1	1
	2	2
	3	3
TXBUFFERSIZE	0-100	

For Network Administrators Only. To modify the network node address manually, select Run, type regedit and press Return. Select HKEY_LOCAL_MACHINE, System, CurrentControlSet, Services, CBE. Click the Edit menu, select New, String Value. Rename the new value NetworkAddress (no spaces, case sensitive), press Enter. Double-click NetworkAddress and enter the 12 digit address (no spaces) in the "Value Data" box, click OK.

Diagnostics and Troubleshooting

This chapter contains supplementary diagnostics and troubleshooting information for the CardBus Ethernet 10/100+Modem 56. For information specific to your operating environment, see the appropriate installation chapter. This supplementary information is intended for users or network administrators who are already familiar with the CardBus Ethernet 10/100+Modem 56 and its user documentation, and who have run into difficulties **after having completed the appropriate installation and troubleshooting procedures for their operating environment.**

For additional troubleshooting information, see the Windows Help file HELPDOCS.HLP on the Xircom CD-ROM.

Additional Sources of Information

Consult your computer and network documentation as needed. For the latest technical notes on the CardBus Ethernet 10/100+Modem 56, see the **README** file on the Xircom CD-ROM, or visit the Xircom World Wide Web site at **www.xircom.com**.

See **Appendix A** in this User's Guide for Xircom support services access information.

Diagnostic Self Tests

Xircom provides both a Windows-based and DOS-based diagnostics program. These programs test several CardBus Ethernet 10/100+Modem 56 functions and report test results, the serial number of the unit, and the node address. For additional information and instructions, see the Help features in the utilities.

Write down the CardBus Ethernet 10/100+Modem 56 model and serial numbers for reference.

CBEDIAG.EXE For Windows 95, 98, and NT. Found on the Xircom CD-ROM.

CBETEST.EXE For MS-DOS and Windows 3.x. Found on the Xircom CD-ROM.

Executing the Windows 95, 98, and NT Diagnostic Program

- 1** Verify that the CardBus Ethernet 10/100+Modem 56 has been installed and configured to work in your version of Windows.
- 2** Insert the Xircom CD-ROM.
- 3** Select Start, Run, **[path]CBEDIAG.EXE**, where [path] is the drive containing the Xircom CD-ROM.
- 4** Navigate through the diagnostic program by clicking the appropriate tab. When finished, click OK to exit.

Executing the MS-DOS/Windows 3.x Diagnostic Program

CBETEST can only be run from the MS-DOS command line. It cannot be run from a DOS box within Windows.

- 1** Install the CardBus Ethernet 10/100+Modem 56 according to the instructions contained in **Chapter 1. Hardware Installation**.
- 2** Power down and restart the computer from MS-DOS. DO NOT load a network driver.
- 3** Run the diagnostic test by typing **[path]CBETEST** at the MS-DOS prompt, where [path] is the drive containing the Xircom CD-ROM, then press Enter.

Do not run CBETEST with a network driver loaded. Loading a network driver before running CBETEST may cause unpredictable results when exiting the test utility.

Main Screen

The program consists of several function buttons and a view pane. Pressing or invoking a function will bring up the corresponding screen in the view pane. This view remains until another is selected. To exit CBETEST type x or push the Exit button.

When a function is active, the button appears to remain down or pushed. Once the button pops up, the function is completed and the screen is a passive results display.

Nine functions can be invoked by pushing the associated button on the main screen, using the highlighted letter indicated on the button, or the left mouse button. Online help is provided.

Troubleshooting Checklist

- Review the README file on the Xircom CD-ROM.
- Be sure you have the current drivers for your adapter. Check the Xircom website at **<http://www.xircom.com>**.
- When loading drivers or running the test utility, keep the LAN adapter cable attached to the CardBus.
- Under Novell, ensure that the FRAME TYPE you are using is the same as that of the file server. The server frame type should be specified as the first frame type in the NET.CFG.
- In a twisted pair environment, try plugging directly into the hub or concentrator.
- Plug in to a known working network connection.
- Try using the Xircom adapter on a different computer.
- Try another Xircom adapter if available.
- Test the Xircom adapter without loading Card and Socket Services to prevent conflicts between the Xircom adapter and Card and Socket Services. The interrupt, memory address location, and I/O address for Card and Socket service drivers must match the Xircom configurations in NET.CFG or PROTOCOL.INI (if used).
- Make sure that the interrupt, memory address, and I/O address for the Xircom device do not conflict with other

installed hardware (such as sound cards, CD-ROM drives and PEN devices).

- Try loading the CardBus drivers at different memory locations (i.e.: C800, CC00, D400, D800).
- Try using different interrupt locations (i.e.: 5, 10, 11).
- Try using different port addresses (i.e.: 280, 290, 310, 320).

Keyword Reference (All Drivers)

CABLEDETECT turns the automatic cable detect feature on or off. When on, cable detect senses when there is no LAN cable attached to the card, and puts the adapter into a low-power mode. Normal power is restored when the cable is reattached.

CACHE sets system cache line size on the CardBus bridge. Values are system dependent and may include only 0 (cache disabled), 4, 8, 16, or 32. Changes could affect network performance.

DIRECTENABLE (32-bit NDIS3 Driver CBE.SYS) forces the method used by driver to determine if a Xircom CardBus adapter is present. Valid parameters are AutoDetect, Off, and On. AutoDetect allows the driver to determine if the CardBus bridge has already been set up by another enabler such as Socket and Card Services. If so, driver will use the current configuration. On forces the driver to enable the CardBus bridge without checking its current state.

DRIVERNAME=XIRCOM\$ required as first item in the XIRCOM section of the PROTOCOL.INI file for the CBENDIS driver.

EARLYRECEIVE see NOEARLYRX.

EARLYTRANSMIT see NOEARLYTX.

ERT specifies Advanced Look-ahead Pipelining threshold. Valid settings are LOW, MEDIUM, and HIGH. Changing this value will affect network performance, depending on the computer system.

INT, INTERRUPTNUMBER see IRQ.

INTERRUPTSTYLE (For 32-bit NDIS3 Driver CBE.SYS only)

forces the driver to use ISA IRQ routing or PCI IRQ routing. Some CardBus bridges have the capability of supporting both PCI and ISA style IRQ routing. Valid parameters are AutoDetect, PCI-IRQ, and ISA-IRQ.

IOADDRESS, IOBASEADDRESS specifies the base I/O address of the Xircom adapter I/O ports, in hexadecimal notation. The Xircom CardBus adapter requires 128 contiguous I/O addresses if run in I/O mode. If using memory-mapped I/O mode, no I/O ports are necessary. If not used, driver will detect an I/O port automatically.

I/O PORT see IOADDRESS

IRQ specifies a hardware interrupt for the adapter. If PCI interrupts are used on the CardBus bridge, this parameter is ignored (unless the ISAIRQ keyword is used as an override). If this parameter is not specified the driver will detect an IRQ automatically.

ISAIRQ use this keyword to force ISA IRQ routing. Some CardBus bridges have the capability of supporting both PCI and ISA style IRQ routing. The driver automatically determines the best choice for this option unless this keyword is used as an override.

LATENCY specifies the latency timer for the CardBus Bridge. This parameter affects the bus mastering capabilities of the CardBus adapter. Changing this parameter may affect system performance. The range is a decimal number between 1 and 255. The latency should be lowered if more than one peripheral device, such as a modem, is being used. If the CardBus Ethernet 10/100+Modem 56 is the only peripheral being used, use a higher latency, such as 255.

LINEMODE (For 16-bit DOS Drivers) selects either half-duplex or full-duplex mode for the network. Valid parameters are AUTO, HALF or FULL. Selecting full-duplex enables the CardBus Ethernet 10/100+Modem 56 to send and receive data simultaneously when connected to a full-duplex hub.

LINEMODE (For 32-bit NDIS3 Driver CBE.SYS) selects either half-duplex or full-duplex mode for the network. Valid parameters are AutoDetect, Half Duplex, and Full-Duplex. Selecting full-duplex enables the CardBus Ethernet 10/100+Modem 56 to send

and receive data simultaneously when connected to a full-duplex hub.

LINESPEED (For 16-bit DOS Drivers) forces operation to 10 or 100Mbps. If the keyword is not present the line speed will be automatically detected.

LINESPEED (For 32-bit NDIS3 Driver CBE.SYS) forces operation to 10 or 100Mbps. Valid parameters are AutoDetect, 10Mbps, and 100Mbps.

LINKDISABLE disables link integrity for non-IEEE 10BASE-T networks such as StarLAN 10. Without this keyword in the driver command line, the driver defaults to link integrity ENABLED.

MEM, MEMORY specifies the host PC memory location for the Xircom adapter in hexadecimal notation, when MODE MEMORY (memory-mapped I/O) is being used (see MODE). The memory block occupies 4 Kbytes of host memory.

MODE when set to IO disables requests for memory-mapped mode on systems that only support an I/O-driven card. The MEMORY setting provides increased performance on computers that allow simultaneous availability of memory and I/O resources.

NETWORKADDRESS allows user to override adapter's unique network node address by specifying a different node address.

NOBURST disables burst mode reads on the CardBus Ethernet 10/100+Modem 56. Using this keyword will force the adapter to initiate a bus-master request for each read, negatively impacting performance

NOCHECK disables verification of adapter resources. If the driver detection and verification code is causing problems when loading, this keyword can be used to turn the feature off.

NODEADDRESS *see* NETWORKADDRESS.

NOEARLYRX disables Advanced Look-ahead Pipelining features of the adapter. This keyword may be used to troubleshoot systems that have inexplicable network problems. Using this keyword may negatively impact performance.

NOEARLYTX disables early transmit capability of the Adapter. This keyword may be used to troubleshoot systems with inexplicable network problems. Keyword could negatively impact performance.

NOLED turns off LED indicators to conserve power.

NOPREFETCH disables prefetching in memory-mapped I/O mode by turning off this capability on the CardBus bridge. Using this keyword may negatively impact performance.

NOWRITEPOST disables write posting by turning off this capability on the CardBus bridge. Using this keyword may negatively impact performance.

PCIRQ forces the driver to use PCI IRQ routing. Some CardBus bridges have the capability of supporting both PCI and ISA style IRQ routing. The driver automatically determines the best choice for this option unless this keyword is used as an override.

PORT (ODI driver) *see* IOADDRESS.

RXBUFFERSIZE sets size of the adapter receive packet buffer. This is a number in decimal in the range 1 - 30 for 16-bit drivers and 1 - 100 for the 32-bit ODI driver. Each packet adds approximately 1520 bytes to the resident size of the driver.

SINT (Packet Driver) is a number from hexadecimal 60 to 80 designating a software interrupt.

SOCKET (16-bit DOS Drivers) identifies number of host computer PC Card slot into which the Xircom CardBus adapter is inserted. If a socket number is specified, only the specified socket is checked for the Xircom adapter. If no socket is specified, all sockets are searched until the Xircom adapter is found.

SOCKET (For 32-bit NDIS3 Driver CBE.SYS) identifies the number of the host computer's PC slot or socket into which the Xircom CardBus adapter is inserted. Valid parameters are AutoDetect, 1, 2, 3, and 4. If a socket number is specified, only the

specified socket is checked for the Xircom adapter. Under AutoDetect, the driver will automatically check all slots for the Xircom CardBus adapter.

TXBUFFERSIZE sets the size of the adapter transmit packet buffer. This is the number of transmit packets in decimal in the range 1 - 10 for 16-bit drivers and 1 - 100 for the 32-bit ODI driver. Each packet adds approximately 1520 bytes to the resident size of the driver.

VERBOSE displays additional configuration information when the driver loads, including information about the CardBus controller on the PCI to CardBus bridge on the host computer.

APPENDIXES

Appendix A. Support Services

Service and Support

Xircom offers an extensive family of service and support programs, including world-class phone support, software updates, plus 24-hour access to our BBS, World Wide Web, and other electronic facilities.

Warranty Service Procedures

For details on warranty coverage and service, see the Appendix entitled **Lifetime Limited Warranty**. If you think there is a problem or defect with your Xircom product, your point of contact will be

In the U.S.A.

Xircom's Customer Support department at **(805) 376-9200**.

Outside the U.S.A.

Contact your local Xircom supplier or Xircom regional office.

Software and Driver Updates

World Wide Web

To download drivers (subject to the terms of the Xircom Software License Agreement) from the Xircom website, go to:

www.xircom.com

Bulletin Board System (BBS)

Set your modem to its maximum speed, no parity, 8 data bits, 1 stop bit to connect at up to 56,000 bps in the U.S. and Europe, 33,600 bps elsewhere.

To download drivers, go to the Main Menu, select **F**ile Menu and **S**earch by filename or keyword (e.g., Windows 95) or **L**ist files by area. Follow the instructions to select and download current versions of Xircom *released* drivers (subject to the terms of the Xircom Software License Agreement).

Xircom Worldwide Access

Americas Customer Support

Xircom, Inc.

2300 Corporate Center Drive
Thousand Oaks, California 91320-1420

Direct Line to Customer Support

(805) 376-9200	Customer Support
(6 a.m. to 5 p.m. Monday through Friday U.S. Pacific time)	
(805) 376-9100	Fax to Customer Support

Online or Automated Access (24 hours, 7 days a week)

(805) 375-5280	BBS (up to 56Kbps)
(805) 376-9130	BBS (up to 33.6Kbps)
cs@xircom.com	Internet E-mail
www.xircom.com	World Wide Web

Europe, Middle East, and Africa Customer Support

Xircom Europe N.V.

King Square, Veldkant 39
2550 Kontich, Belgium

Direct Line to Customer Support

+32/(0)70 233 307	Telephone English language
+32/(0)70 233 852	Telephone Dutch language
+32/(0)70 233 851	Telephone French language
+32/(0)70 233 850	Telephone German language
(9:00 to 18:00 Monday through Friday)	
+32/(0)70 233 306	Fax to Technical Support

Online or Automated Access (24 hours, 7 days a week)

+32/(0)70 233 163	BBS (up to 56Kbps)
eurots@xircom.com	Internet E-mail

Asia Pacific Customer Support

Xircom Asia Pacific (Pte) Ltd.

76 Shenton Way

Unit #06-01

Singapore 079119

+65 323 1511

+65 323 3404 Customer Support

+65 224 3313 Fax

+65 323 0455 BBS (up to 33.6Kbps)

asiats@xircom.com Internet E-mail

Xircom Australia

Level 15, 99 Walker Street

North Sydney, NSW

Australia 2060

+61 (02) 9911 7794 Customer Support

+61 (02) 9911 7796 Fax

+61 (02) 9911 7758 BBS (up to 33.6Kbps)

aunzts@xircom.com Internet E-mail

Xircom Japan Customer Support

KDD Otemachi Bldg. /21F

1-8-1, Otemachi, Chiyoda-ku

Tokyo 100-0004

+81 (03) 3243 1129 Customer Support

+81 (03) 3243 1019 Fax

japan_ts@xircom.com E-mail

Additional International Access

Contact your local reseller or distributor

www.xircom.com World Wide Web

Please fill out and return the Product Registration Card supplied with the product. Your information will be entered into our support database.

Appendix B. Specifications

General Specifications

Model CBEM56G-100

Cable: 100Base-TX unshielded twisted pair for use on Category 5 (data grade) cabling; 10Base-T unshielded twisted pair (UTP)

Connector: RJ-45

Operating Distance: 328 ft (100 m)

Ethernet specifications

Ethernet IEEE 802.3 for 10 Mbps, 802.3u for 100 Mbps

Type II CardBus PC Card

10/100 Mbps full-duplex

Size: 3.37 in (86 mm) x 2.13 in (54.0 mm) x 0.20 in (5.0 mm) excluding adapter cable and network connection

Weight: 0.85 oz (24 g)

Power Requirements:

10Base-T 3.3V DC, 110 mA typical

100Base-TX 3.3V DC, 160 mA typical

Modem 3.3V DC, 240 mA typical (connected)
3.3V DC, 40 mA typical (sleep mode)

100Base-T+Modem 3.3V DC, 280 mA typical

100Base-TX+Modem 3.3V DC, 340 mA typical

Power Management:

Supports ACPI, CardBus Power Management Specification, MagicPacket™ WAKE-UP Technology, Wake on LAN

Temperature Range:

Operating: 32°F to 131°F (0°C to 55°C)

Storage: -4°F to 149°F (-20°C to 65°C)

Humidity: 95% max. noncondensing

LEDs: Link integrity, transmission activity

Certification: FCC Part 15, Class B, CE Mark (EN 55022, Class B, EN50082)

Modem Specifications

Data modulation:	K56flex/V.90 up to 56000 bps; V.34 from 33,600 down to 2400 bps; V.32terbo at 19200 and 16800 bps; V.32bis at 14400, 12000, 9600, and 7200 bps, uncoded at 4800 bps; V.32 at 9600 bps, uncoded at 4800 bps; V.23 at 1200/75 and 75/1200 bps; V.22bis at 2400 bps; V.22 at 1200 bps; Bell 212A at 1200 bps
Fax modulation:	V.17 at 14400, 12000, 9600, 7200, and 4800 bps; V.29 at 9600, 7200, and 4800 bps; V.27ter at 4800 and 2400 bps
Fax support:	Group 3, EIA/TIA Class 1
Error control:	V.42 Error Control, MNP Levels 2-4 Error Detection
Data compression:	V.42bis (4:1) or MNP Level 5 (2:1)
Diagnostics:	Power-up self tests of program RAM, data RAM, and nonvolatile memory.
Nonvolatile RAM:	1 user definable profile; 2 thirty-six digit telephone numbers; LAN Adapter ID and serial number
Command set:	Hayes and Microcom compatible AT commands
Data interface:	PCMCIA Release 2.1 compliant, 68-pin CardBus connector
Analog interface:	RJ-11C modular telephone connector
DTE speeds:	1200, 2400, 4800, 7200, 9600, 14400, 19200, 37400, 57600, and 115200 bps

Appendix C. Lifetime Limited Warranty

Warranties

As the original purchaser, you receive these warranties from Xircom:

Hardware

Your CardBus Ethernet 10/100+Modem 56 (collectively, "Products"), will be free from defects in material and workmanship and will perform in substantial compliance with your user documentation accompanying the Products for as long as you own and properly use the Products.

Software

Software accompanying these Products (including driver, utility software, etc.) and the magnetic media containing the software are warranted to perform in substantial compliance with the specifications contained in your user documen-

tation for two years from your purchase date. Our warranty does not cover or provide you with rights to upgrades or updates.

You are responsible for your choice of applications programs or related reference materials. Given the wide range of third party hardware and applications software products you might use our software with, you understand that Xircom does not warrant the compatibility or the uninterrupted or error free operation of our software.

Upon our confirmation of a covered defect or failure, at our option we will repair or replace the affected item or will refund your purchase price if repair or replacement is not possible or practical. At our option, replacement products or repaired items may be a new, refurbished, or functionally equivalent item. Our warranty on items serviced under warranty will be lifetime for **hardware** and, for **software**, 90 days from return to you of software/magnetic media or the remainder of the original warranty, whichever is longer. Repair, replacement, or refund are the exclusive remedies available to you from Xircom for products and software.

Your Obligations

Your warranty rights will be honored provided you

- 1 Read and follow your user documentation for installation, setup, software setup, and operating guidelines,
- 2 Use the Products and software only in suitable physical or operating environments as described in your user documentation and for purposes for which the Products and software are intended.

Warranty Service

If you think there is a problem or defect with your purchased item, your point of contact will be

In the U.S.A.

Xircom's Technical Support department at **(805) 376-9200**.

Outside the U.S.A.

Contact your local Xircom supplier or Xircom regional office.

Your Xircom contact will discuss your problem to confirm the defect. If warranty or return service is needed, you'll receive a *Return Material Authorization* (RMA) number. Replacement Product will be shipped when the original Product has been received by Xircom. (**U.S. only:** advance shipment of replacement Product is available with a credit card deposit.)

Ship your return Product prepaid, **with the RMA number clearly visible on the outside of the shipping package**, to:

From the U.S.A.

Xircom Service Department
2101 Corporate Center Drive
Thousand Oaks, CA 91320-1422

From outside the U.S.A.

Contact your local Xircom supplier or Xircom regional center for shipping instructions.

Returned Products may need to include, if requested by Xircom, all other components from your original package, including the Product and any cables, connectors, software media, and user documentation. Be sure to enclose a copy of your purchase receipt or other proof of purchase confirming that you are the original purchaser.

Limitations

Our warranty is subject to the following limitations:

- a** We do not cover or accept liability for any injury, damage or failure caused by misuse, abuse, acts of Nature, accidents (e.g., dropping the Products or software media), electrical mishaps, causes beyond our control, or claims by other than the original purchaser.
- b** We will not honor, and will consider our warranty voided, if there has been any (1) tampering with the Product's external label or serial number, (2) attempt to open the Product's case, or (3) attempted or actual repair by anyone other than an authorized Xircom technician.

Disclaimer

THIS LIMITED WARRANTY IS THE ONLY WARRANTY WE MAKE FOR THE PRODUCT AND SOFTWARE. TO THE EXTENT ALLOWED BY LAW, NO OTHER WARRANTY APPLIES, WHETHER EXPRESS, IMPLIED, OR STATUTORY, INCLUDING ANY WARRANTY OF MERCHANTABILITY, OF FITNESS FOR A PARTICULAR PURPOSE, OR OF NON-INFRINGEMENT. XIRCOM WILL NOT BE LIABLE OR RESPONSIBLE FOR ANY INCIDENTAL, CONSEQUENTIAL, OR SPECIAL DAMAGES (e.g., LOST PROFITS, LOSS OF OR DAMAGE TO ANY COMPUTER EQUIPMENT OR RELATED DATA).

Additional Rights

Some states or countries do not allow exclusion or limitation of incidental or consequential damages, or limitations on the length of an implied warranty, so the above limitations or exclusions may not apply to you. Our warranty gives you specific legal rights, and you may also have other rights which vary from state to state or country to country.

International Notice

Due to differing national regulations and approval requirements, certain Xircom products are designed for use only in specific countries, and may not function properly in a country other than the country of designated use. As a user of these products, you are responsible for ensuring that the products are used only in the countries for which they were intended.

For information on specific products, contact Xircom's nearest regional center:

Xircom Corporate (U.S.A.)

(800) 438-4526

Xircom Europe

+32/(0)3 450.08.11

Xircom Asia Pacific

+65 323 1511

Unauthorized Applications

Xircom's products are not designed or authorized for use as a component in any life support, life safety, or other comparable application. Our products should not be used in any application where the failure or faulty performance of the product might create a risk of personal injury or death. Buyer assumes all risk of loss, damage or injury alleged to arise from the failure or faulty performance of a Xircom product in any unauthorized application. Buyer agrees to indemnify and hold harmless Xircom, and its officers, directors, employees, agents, representatives, and sales partners, from and against any and all claims, costs, damages, losses and expenses (including reasonable attorney fees) which arise from or are alleged to have been caused by any claim for personal injury or death connected with Buyer's use of a Xircom product in any unauthorized application, including claims which allege that Xircom has been negligent in connection with the design or manufacture of the product.

Appendix D. Regulatory Agency Notices

FCC Regulations - Part 15

Declaration of Conformity (DoC)

Xircom, Inc. declares that the equipment described in this document is within the requirements of the Code of Federal Regulations listed below:

Title 47 Part 15, Subpart B, Class B for a digital device.

This declaration is based upon compliance of the Xircom CardBus Ethernet 10/100+Modem 56 model CBEM56G-100 to the above standards. Xircom has determined that model CBEM56G-100 has been shown to comply with the applicable technical standards if no unauthorized change is made in the equipment and if the equipment is properly maintained and operated.

These units are identical to the units tested and found acceptable with the applicable standards. Records maintained by Xircom continue to reflect that units being produced under this Declaration of Conformity, within the variation that can be expected due to quantity production and tested on a statistical basis, continue to comply with the applicable technical standards.

Authorized Signature:



R.W. Bass

Vice President, Operations

Xircom, Inc.

2300 Corporate Center Drive

Thousand Oaks, California 91320 U.S.A.

FCC Rules and Regulations - Part 15

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

The Xircom CardBus Ethernet 10/100+Modem 56 complies with the FCC Rules for a Class B digital device. As required by FCC Rules and Regulations, the following Class B information is provided for the guidance of the user.

WARNING: This equipment has been tested and found to comply with the limits for Class B digital devices 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 the equipment 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 separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications to the digital device not expressly approved by Xircom Inc. could void the user's authority to operate the equipment.

It is suggested that only shielded and grounded cables be used with the equipment to ensure compliance with FCC rules.

FCC Regulations - Part 68

To comply with the Federal Communications Commission (FCC) Rules and Regulations, Parts 68, these instructions must be followed:

- 1** Your modem must not be connected to a party line or coin-operated telephone.
- 2** If a problem occurs on the telephone line, your modem must be disconnected from the telephone line until it has been determined that your modem is not the cause of the problem.
- 3** All repairs to your modem must be made by Xircom, Inc. Unauthorized or unorthodox repair methods can alter the modem's radio frequency emissions and other characteristics sufficiently to void your authority to operate the modem over a public telephone network.
- 4** If requested, you must be prepared to provide the telephone company with the following information:

A-10 CardBus Ethernet 10/100+Modem 56 User's Guide

Equipment Manufacturer:	Xircom, Inc. 2300 Corporate Center Drive Thousand Oaks, CA 91320-1420 U.S.A.
Model:	CBEM56G-100
FCC Registration Number:	See the unit.
Ringer Equivalency Number:	See the unit.

This equipment complies with Part 68 of the FCC Rules. On the back of the CardBus Ethernet 10/100+Modem 56 is a label that contains, among other information, the FCC Registration Number and Ringer Equivalency Number (REN) for this equipment. You must, upon request, provide this information to your telephone company.

The REN is useful to determine the quantity of devices you may connect to your telephone line and still have all those devices ring when your telephone number is called. In most but not all areas, the sum of the RENs of all devices connected to one line should not exceed five (5.0). To be certain of the number of devices you may connect to your line, as determined by the REN, you should contact your local telephone company to determine the maximum REN for your calling area.

If your telephone equipment causes 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 is not practical, you will be notified as soon as possible. You will be informed of your right to file a complaint with the FCC.

Your telephone company may make 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 give you an opportunity to maintain uninterrupted telephone service.

If you experience trouble with this telephone equipment, please contact Xircom, Inc. at (805) 376-9200 for information on obtaining service or repairs. The telephone company may ask that you disconnect this equipment from the network until the problem has been corrected or until you are sure that the equipment is not malfunctioning.

There are no user serviceable parts contained in this equipment.

This equipment may not be used on coin service provided by the telephone company. Connection to party lines is subject to state tariffs.

The Telephone Consumer Protection Act of 1991 makes it unlawful for any person to use a computer or other electronic devices, including fax machines, to send any message unless such message clearly contains in a margin at the top or bottom of each transmitted page or on the first page of the transmission, the date and time it is sent and an identification of the business or other entity, or other individual sending the message and the telephone number of the sending machine or such business, other entity, or individual. (The telephone

number provided may not be a 900 number or any other for which charges exceeds local or long-distance transmission charges.)

In order to program this information into your fax software, you should refer to the manual of the Fax software being used.

Canadian Department Of Communications

Industry Canada (IC) Notice

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de Classe B prescrites dans le règlement sur le brouillage radioélectrique édicté par le Ministère des Communications du Canada.

NOTICE: The Industry Canada (IC) label identifies certified equipment. This certification means that the equipment meets telecommunications network protective, operational and safety requirements as prescribed in the appropriate Terminal Equipment Technical Requirements document(s). The department does not guarantee the equipment will operate to the user's satisfaction.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations.

Repairs to certified equipment should be coordinated by a representative designated by the supplier. Any repairs or alterations made by a user to this equipment, or equipment malfunctions, may give the telephone communications company cause to request the user to disconnect the equipment.

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

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

NOTICE: The Ringer Equivalence Number (REN) assigned to each terminal device provides an indication of the maximum number of terminals allowed to be connected to a telephone interface. The termination on an interface may consist of any combination of devices subject only to the requirement that the sum of the Ringer Equivalence Numbers of all the devices does not exceed 5.

REN: See back of unit.

Warranty and Repair Service Center:

Xircom, Inc.
2300 Corporate Center Drive
Thousand Oaks, CA 91320-1420 U.S.A.
Phone: (805) 376-9200

European Community - CE Mark

Declaration of Conformity

Xircom, Inc. declares that the equipment described in this document is in conformance with the requirements of the European Council Directive listed below:

73/23/EEC	Low Voltage Directive with Amendment 93/68/EEC
89/336/EEC	EMC Directive with Amendments 92/31/EEC and 93/68/EEC
91/263/EEC	Telecommunications Terminal Equipment Directive with Amendment 93/68/EEC

This declaration is based upon compliance of the product to the following standards:

EN 55022 (CISPR 22B)	RF Emissions Control
EN 50082-1 (IEC 801-2, 3, 4)	Immunity to Electromagnetic Disturbance
Product Description:	CardBus Ethernet 10/100+Modem 56 Model CBEM56G-100

Authorized Signature:



R.W. Bass,
Vice President, Operations
Xircom, Inc.
2300 Corporate Center Drive
Thousand Oaks, California 91320
U.S.A.

Safety Notices

This card is intended for use with UL 1950/EN60950/IEC950 (or other NRTL) listed ITE computers that contain operator-accessible PCMCIA card slots.

United Kingdom (BABT)

See "Regulatory Notices" under Appendixes in the file HELPDOCS.HLP on the Xircom CD-ROM.

New Zealand Telepermit Compliance Notes

General

The grant of a Telepermit for any item of terminal equipment indicates only that Telecom has accepted that the item complies with minimum conditions for connection to its network. It indicates no endorsement of the product by Telecom, nor does it provide any sort of warranty. Above all, it provides no assurance that any item will work correctly in all respects with another item of Telepermitted equipment of a different make or model, nor does it imply that any product is compatible with all of Telecom's network services.

This equipment is not capable, under all operating conditions, of correct operation at the higher speeds for which it is designed. Telecom will accept no responsibility should difficulties arise in such circumstances.

This equipment shall not be set up to make automatic calls to the Telecom '111' Emergency Service.

Important Notice

Under power failure conditions, this telephone may not operate. Please ensure that a separate telephone, not dependent on local power, is available for emergency use.

Some parameters required for compliance with Telecom's Telepermit requirements are dependent on the equipment (PC) associated with this device. The associated equipment shall be set to operate within the following limits for compliance with Telecom's Specification:-

- 1 (a) There shall be no more than 10 call attempts to the same number within any 30 minute period for any single manual call initiation, and
(b) The equipment shall go on-hook for a period of not less than 30 seconds between the end of one attempt and the beginning of the next attempt.
- 2 Where automatic calls are made to different numbers, the equipment shall go on-line for a period of not less than 5 seconds between the end of one attempt and the beginning of the next attempt.
- 3 The equipment shall be set to ensure that calls are answered between 3 and 30 seconds of receipt of ringing.

Appendix E. Software License Agreement

Xircom grants you a non-exclusive license to use the copies of software programs supplied with this product on the following terms:

You may:

- a** Use the software program on any computer or network but only in conjunction with any Xircom hardware product;
- b** Permit any other individuals to use the software program either directly or on a computer network, but only if there is no more than one user for each Xircom hardware product in use in conjunction with such use;
- c** Make only those number of backup and archival copies of the software program in machine readable form as are essential to backup use of the software program, provided that you reproduce all proprietary notices on each copy.

You may not:

- a** Modify, translate, reverse engineer, decompile, disassemble, create derivative works based on, or copy (except for archival purposes) the program or the accompanying documentation;
- b** Rent, transfer, sublicense or grant any rights in the program or accompanying documentation (including any time-sharing arrangement) in any form to any other person without the prior written consent of Xircom;
- c** Remove any proprietary notices, labels, or marks on the program and accompanying documentation.

Failure to comply with any of the above restrictions will terminate this license. This is not a sale. Title and copyrights to the program and accompanying documentation and any copies remain with Xircom, except that title to software programs shipped by Xircom through an agreement with another manufacturer is owned and retained by the original manufacturer, and no title to the intellectual property contained in such programs is transferred hereunder. The human readable code of the software program (source code), including the source code of programs shipped by Xircom through an agreement with another manufacturer, is not sublicensed hereunder.

U.S. Government Restricted Rights

The SOFTWARE and documentation are provided with RESTRICTED RIGHTS. Use, duplication, or disclosure by the Government is subject to restrictions as set forth in subparagraph (c)(1)(ii) of the Rights in Technical Data and Computer Software clause at DFARS 252.227-7013, or subparagraphs (c)(1) and (c)(2) of the Commercial Computer Software-Restricted Rights at 48 CFR52.227-19, as applicable. Contractor/manufacturer is Xircom, Inc., 2300 Corporate Center Drive, Thousand Oaks, CA 91320-1420.

This Agreement is governed by the laws of the State of California.