



10/100 EtherJet CardBus Ready Port Adapter with 56K Modem

Installation and Planning Guide

OPTIONS
by IBM

Note:

Before using this information and the product it supports, be sure to read the general information in Appendix C, "Notices."

First Edition (May 1999)

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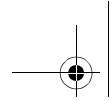
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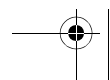
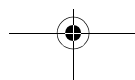
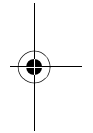
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About This Manual

This manual explains how to install and configure the 10/100 EtherJet™ CardBus Ready Port Adapter with 56K Modem referred to in this manual as the EtherJet CardBus Ready Port Adapter with Modem.

Who Should Read This Manual

This manual is intended for use by installation technicians, network administrators, and service personnel.

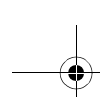
How This Manual is Organized

Chapter 1, "Hardware Installation," describes how to install and connect the EtherJet CardBus Ready Port Adapter with Modem.

Chapter 2, "Windows 95 and Windows 98 Installation," describes how to install the EtherJet CardBus Ready Port Adapter with Modem under Windows 95 and 98 operating systems.

Chapter 3, "Windows NT 4.0 Installation," describes how to install the EtherJet CardBus Ready Port Adapter with Modem under the Windows NT operating system.

Chapter 4, "Diagnostics and Troubleshooting," describes how to troubleshoot and diagnose problems with the EtherJet CardBus Ready Port Adapter with Modem.



Protection and Security

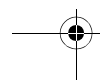
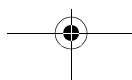
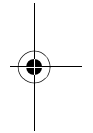
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Safety Information



Danger: Before you begin to install this product, read the safety information in *Caution: Safety Information—Read This First*, SD21-0030. This booklet describes safe procedures for cabling and plugging in electrical equipment.



Gevarr: Voodrat u begint met de installatie van dit produkt, moet u eerst de veiligheidsinstructies lezen in de brochure *PAS OP! Veiligheidsinstructies—Lees dit eerst*, SD21-0030. Hierin wordt beschreven hoe u elektrische apparatuur op een veilige manier moet bekabelen en aansluiten.



Danger: Avant d'installer le présent produit, consultez le livret Attention : Informations pour la sécurité — Lisez-moi d'abord, SD21-0030, qui décrit les procédures à respecter pour effectuer les opérations de câblage et brancher les équipements électriques en toute sécurité.



Perigo: Antes de começar a instalar deste produto, leia as informações de segurança contidas em *Cuidado: Informações Sobre Segurança—Leia Primeiro*, SD21-0030. Esse folheto descreve procedimentos de segurança para a instalação de cabos e conexões em equipamentos elétricos.



危險：安裝本產品之前，請先閱讀
"Caution: Safety Information—Read
This First" SD21-0030 手冊中所提
供的安全注意事項。這本手冊將會說明
使用電器設備的纜線及電源的安全程序。



Opasnost: Prije nego što počnete sa instalacijom produkta, pročítajte naputak o pravilima o sigurnom rukovanju u Upozorenje: Pravila o sigurnom rukovanju - Prvo pročítaj ovo, SD21-0030. Ovaj privitak opisuje sigurnosne postupke za priključivanje kabela i priključivanje na električno napajanje.



Upozornění: než zahájíte instalaci tohoto produktu, přečtete si nejprve bezpečnostní informace v pokynech „Bezpečnostní informace“ č. SD21-0030. Tato brožurka popisuje bezpečnostní opatření pro kabeláž a zapojení elektrického zařízení.



Fare! Før du installerer dette produkt, skal du læse sikkerhedsforskrifterne i *NB: Sikkerhedsforskrifter – Læs dette først* SD21-0030. Vejledningen beskriver den fremgangsmåde, du skal bruge ved tilslutning af kabler og udstyr.



Gevarr: Voordat u begint met het installeren van dit produkt, dient u eerst de veiligheidsrichtlijnen te lezen die zijn vermeld in de publikatie *Caution: Safety Information - Read This First*, SD21-0030. In dit boekje vindt u veilige procedures voor het aansluiten van elektrische apparatuur.



VARRA: Ennen kuin aloitat tämän tuotteen asennuksen, lue julkaisussa *Varoitus: Turvaohjeet–Lue tämä ensin*, SD21-0030, olevat turvaohjeet. Tässä kirjasessa on ohjeet siitä, mitensähkölaitteet kaapeloidaan ja kytketään turvallisesti.



Vorsicht: Bevor mit der Installation des Produktes begonnen wird, die Sicherheitshinweise in Achtung: Sicherheitsinformationen — Bitte zuerst lesen, IBM Form SD21-0030 lesen. Diese Veröffentlichung beschreibt die Sicherheitsvorkehrungen für das Verkabeln und Anschließen elektrischer Geräte.



Κίνδυνος: Πριν ξεκινήσετε την εγκατάσταση αυτού του προϊόντος, διαβάστε τις πληροφορίες ασφάλειας στο φυλλάδιο *Caution: Safety Information-Read this first*, SD21-0030. Στο φυλλάδιο αυτό περιγράφονται οι ασφαλείς διαδικασίες για την καλωδίωση των ηλεκτρικών συσκευών και τη σύνδεσή τους στην πρίζα.



Vigyázat: Mielőtt megkezdi a berendezés üzembe helyezését, olvassa el a *Caution: Safety Information—Read This First*, SD21-0030 könyvecskében leírt biztonsági információkat. Ez a könyv leírja, miyen biztonsági intézkedéseket kell megtenni az elektromos berendezés huzalozásakor illetve csatlakoztatásakor.



Pericolo: prima di iniziare l'installazione di questo prodotto, leggere le informazioni relative alla sicurezza riportate nell'opuscolo *Attenzione: Informazioni di sicurezza—Prime informazioni da leggere*, SD21-0030 in cui sono descritte le procedure per il cablaggio ed il collegamento di apparecchiature elettriche.



危険： 導入作業を開始する前に、安全に関する小冊子SD21-0030 の「最初にお読みください」(Read This First)の項をお読みください。
この小冊子は、電気機器の安全な配線と接続の手順について説明しています。



위험: 이 제품을 설치하기 전에 반드시
"주의: 안전 정보-시작하기 전에"
(SD21-0030) 에 있는 안전 정보를
읽으십시오.



ОПАСНОСТ

Пред да почнете да го инсталирате овој продукт, прочитајте ја информацијата за безбедност:
"Предупредување: Информација за безбедност: Прочитајте го прво ова", SD21-0030.
Оваа брошура опишува безбедносни процедури за каблирање и вклучување на електрична опрема.



Fare: Før du begynner å installere dette produktet, må du lese sikkerhetsinformasjonen i *Advarsel: Sikkerhetsinformasjon – Les dette først*, SD21-0030 som beskriver sikkerhetsrutinene for kabling og tilkobling av elektrisk utstyr.



Uwaga:
Przed rozpoczęciem instalacji produktu należy zapoznać się z instrukcją: "Caution: Safety Information - Read This First", SD21-0030.
Zawiera ona warunki bezpieczeństwa przy podłączaniu do sieci elektrycznej i eksploatacji.



Perigo: Antes de iniciar a instalação deste produto, leia as informações de segurança *Cuidado: Informações de Segurança–Leia Primeiro*, SD21-0030. Este documento descreve como efectuar, de um modo seguro, as ligações eléctricas dos equipamentos.



ОСТОРОЖНО: Прежде чем установить этот продукт, прочтите Инструкцию по технике безопасности в документе "Внимание: Инструкция по технике безопасности -- Прочтите в первую очередь", SD21-0030. В этой брошюре описаны безопасные способы каблирования и подключения электрического оборудования.



Pozor: Preden začnete z instalacijo tega produkta preberite poglavje: "Opozorilo: Informacije o varnem rokovanju-preberi pred uporabo," SD21-0030. To poglavje opisuje pravilne postopke za kabliranje.



Peligro: Antes de empezar a instalar este producto, lea la información de seguridad en *Atención: Información de Seguridad—Lea Esto Primero*, SD21-0030. Este documento describe los procedimientos de seguridad para cablear y enchufar equipos eléctricos.



Varning — livsfara: Innan du börjar installera den här produkten bör du läsa säkerhetsinformationen i dokumentet *Varning: Säkerhetsföreskrifter – Läs detta först*, SD21-0030. Där beskrivs hur du på ett säkert sätt ansluter elektrisk utrustning.



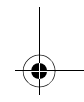
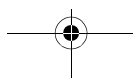
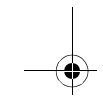
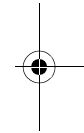
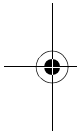
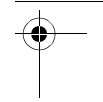
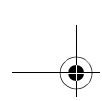
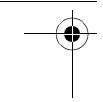
危險：

開始安裝此產品之前，請先閱讀安全資訊。

注意：

請先閱讀 - 安全資訊 SD21-0030

此冊子說明插接電器設備之電纜線的安全程序。



Chapter 1. Hardware Installation

The IBM EtherJet™ CardBus Ready Port Adapter with Modem provides access to both 10-Mbps and 100-Mbps networks with a single cable, and auto-negotiates 10-Mbps or 100-Mbps network speed. Modem speeds up to 56 kbps are supported, using either the V.90 or K56flex standard.

The EtherJet CardBus Ready Port Adapter with Modem plugs into a Type III or dual Type II PC Card slot.

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

Installation Overview

Follow the instructions in this chapter to install the EtherJet CardBus Ready Port Adapter with Modem hardware and network cabling. Then proceed to the software installation chapter for your operating system environment, as follows:

- Chapter 2, "Windows 95 and Windows 98 Installation."
- Chapter 3, "Windows NT 4.0 Installation."
- Chapter 4, "Diagnostics and Troubleshooting."

Notes:

1. Some computers may require that you configure the BIOS or control program to enable the use of CardBus adapters. Refer to your computer's users guide for configuration information.
2. Additional documentation for Microsoft® Windows 95, Windows 98 and Windows NT®, IBM OS/2®, 32-bit ODI, and Windows 3.x is supplied in the file HELPDOCS.HLP on the IBM CD-ROM.

Viewing HELPDOCS.HLP

You can view the HELPDOCS.HLP file in one of the following ways from the IBM CD-ROM:

- From Windows 95, Windows 98, and Windows NT:
 1. Select the **Helpdocs** icon.
- From Windows 3.x:
 1. Select **File** from the Program Manager.
 2. Select **Run**.
 3. In the Run window, enter *path/helpdocs.hlp*, where *path/* is the drive containing the IBM CD-ROM.
 4. Select **OK** to view the help file.
- From OS/2:
 1. Select **OS/2 System** icon.
 2. Select **Command Prompts** icon.
 3. Select **Win-OS/2 Full Screen** icon or **Windows/3.1** icon. This opens Windows' Program Manager.
 4. Select **File** from the Program Manager.
 5. Select **Run**.
 6. In the Run window, enter *path/helpdocs.hlp*, where *path/* is the drive containing the IBM CD-ROM.
 7. Select **OK** to view the help file.

IBM Utilities

IBM Utilities and online documentation will be installed when executing SETUP.EXE from the IBM CD-ROM. Follow the Windows 95, Windows 98, and Windows NT 4.0 installation instructions in the *Installation and Planning Guide*.

To view online documentation:

Select **Start→Programs→IBM Utilities**.

The following utilities and documentation are installed after running SETUP.EXE from the IBM CD-ROM:

- 10/100 EtherJet CardBus Diagnostic Utility
- IBM COM Port Selector
- IBM Modem Test
- Online Help Documentation
- Readme

Power-Saving Modes

The EtherJet CardBus Ready Port Adapter with Modem is designed for very low power consumption, minimizing the computer's battery drain. When the network cable is detached, the EtherJet CardBus Ready Port Adapter with Modem senses the change and enters low-power mode. Normal power is restored when the cable is reattached.

Before Installing Hardware

Check Package Contents

- 10/100 EtherJet CardBus Ready Port Adapter with 56K Modem (XWIN/002)
- RJ-11 telephone line cord
- *Quick Install card*
- Software and online documentation on CD-ROM
- *CAUTION: Safety Information – Read This First*

Verify Other Required Equipment

For connection to a 100BASE-TX Ethernet network, you will need:

- A Category 5 (data grade) unshielded twisted pair (UTP) network cable terminating in a male RJ-45 connector and connected to a 100-Mbps hub or switch.

For connection to a 10BASE-T Ethernet network you will need:

- A network cable terminating in a male RJ-45 connector and connected to a 10-Mbps hub or switch.

For modem operations you will need:

- An analog telephone line (not provided)
- One RJ-11 modular telephone cable (supplied)
Note: You might need an RJ-11 adapter for your local telephone system (not provided).
- Communications software is required for modem and fax operations.

The two RJ-11 ports on the EtherJet CardBus Ready Port Adapter with Modem are identical: use one to connect the modem to the telephone line, use the other for an approved telephone set.

Some countries prohibit or restrict use of two RJ-11 connections.

Inserting the EtherJet CardBus Ready Port Adapter with Modem

Follow these instructions to insert the EtherJet CardBus Ready Port Adapter with Modem:

1. Hold the EtherJet CardBus Ready Port Adapter with Modem by the edges with the IBM label facing upward and the wide PC Card connector next to the insertion slot.
2. Insert the card into the PC Card slot.

Note: The EtherJet CardBus Ready Port Adapter with Modem can only be used in CardBus-compliant PC Card slots.

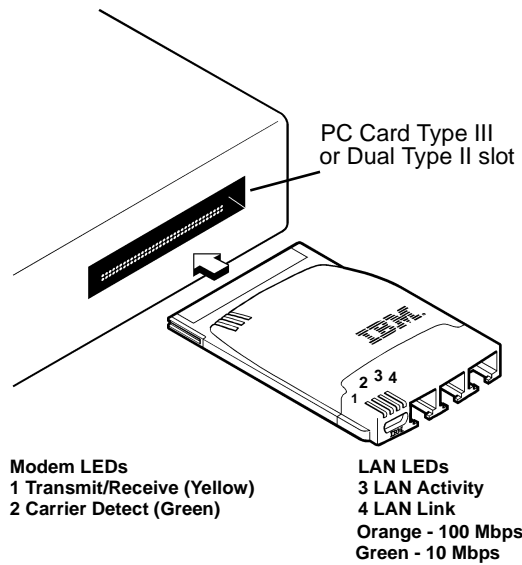


Figure 1-1. Inserting the EtherJet CardBus Ready Port Adapter with Modem

Connecting to a LAN

To connect to a 100BASE-TX or 10BASE-T LAN, attach the RJ-45 connector to the female receiver of the EtherJet CardBus Ready Port Adapter with Modem as shown in Figure 1-2.

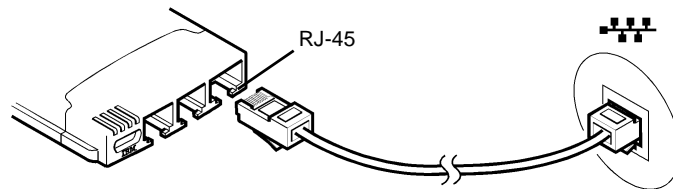


Figure 1-2. Connecting to a 100BASE-TX or 10BASE-T LAN (RJ-45)

Connecting to the Telephone Network

Follow these instructions to connect to the telephone network:

Step 1. Attach an RJ-11 connector to the female receiver of the EtherJet CardBus Ready Port Adapter with Modem as shown in Figure 1-3.

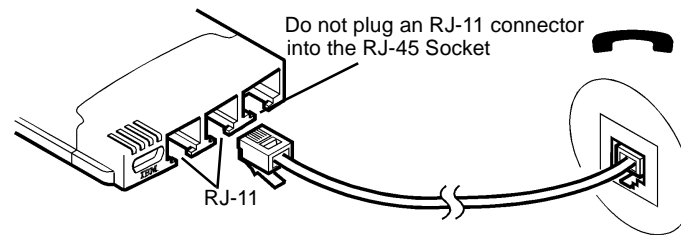


Figure 1-3. Connecting Modem to the Telephone Network (RJ-11)

Step 1. Attach another RJ-11 connector to the second female receiver located on the EtherJet CardBus Ready Port Adapter with Modem as shown in Figure 1-4.

Note: The RJ-11 female receivers on the EtherJet CardBus Ready Port Adapter with Modem are identical: use one for the modem link and the other for an approved telephone. Some countries prohibit or restrict the use of a second RJ-11 connection.

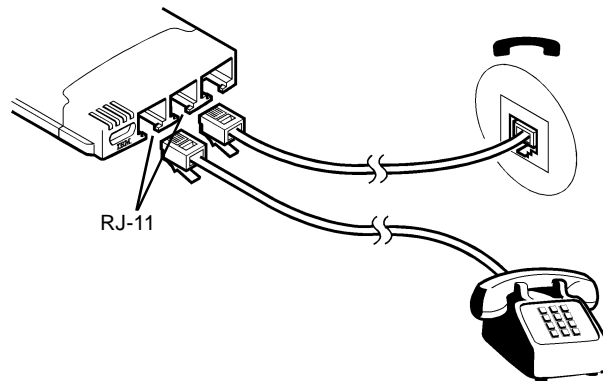
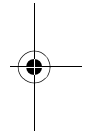
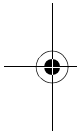
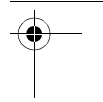
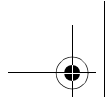
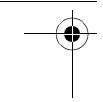
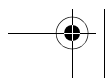
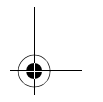
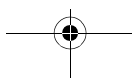
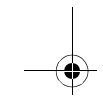


Figure 1-4. Connecting an Approved Telephone (RJ-11)



1-8 EtherJet CardBus Ready Port Adapter with Modem



Chapter 2. Windows 95 and Windows 98 Installation

Plug and Play Installation

Plug and play installation of the EtherJet CardBus Ready Port Adapter with Modem is supported under Windows 98 and Windows 95 Version 950b (OSR2) and later. Installation with these versions of Windows is described in this chapter.

Note: Windows 95 Version 950/950a are not supported with the EtherJet CardBus Ready Port Adapter with Modem due to limitations for CardBus multifunction (LAN and Modem) devices.

Drivers Available

The following drivers for Windows 95 and 98 are supplied with the EtherJet CardBus Ready Port Adapter with Modem:

- NDIS3 driver (IBMC.SYS)
- NDIS4 driver (IBMCN4.SYS)
- 32-bit ODI driver (IBMC.LAN) with promiscuous support

The NDIS3 driver IBMC.SYS is installed by default when you use the procedures in this chapter. For NDIS4 instructions, see the README file on the IBM 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 IBM CD-ROM for instructions.

Installing under Windows 95 OSR2 and Windows 98

Windows 95 OSR2 (Version 950b) and later has limited support for CardBus multifunction (LAN+modem) devices. The EtherJet CardBus Ready Port Adapter with Modem includes IBM software which enhances support for CardBus multifunction devices. See the README file on the IBM CD-ROM for additional information on this software and for complete details on installation under OSR2.

Prompt for Updated VXD Files

On some machines, the program will detect that particular VXD files from Microsoft may be out of date. If this happens, you will be informed that it may be necessary to obtain more recent versions of these files if the adapter does not work after you reboot. The window message will read "One or more of your system files are out of date. If after rebooting the adapter does not work, it may be necessary to upgrade these files." If the EtherJet CardBus Ready Port Adapter with Modem works after rebooting your system it is not necessary to load the later Microsoft files. The specific files are CBSS.VXD, PCI.VXD, and PCCARD.VXD. A self-extracting installer named CBMFI2.EXE is available on the IBM CD-ROM.

Select **Start→Run**. Then type *path/CBMFI2*, where *path/* is the drive containing the IBM CD-ROM.

This installer will copy the CBSS.VXD Version 4.00.1118, PCCARD.VXD Version 4.00.1119, PCI.VXD Version 4.00.1121 into the C:\Windows\System Directory. See the README file on the IBM CD-ROM for additional information on these files.

How to Create Diskettes for Software Installation

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

Installing the EtherJet CardBus Ready Port Adapter with Modem

1. With Windows running, insert the EtherJet CardBus Ready Port Adapter with Modem into the CardBus PC Card slot and connect cables as shown in Chapter 1, "Hardware Installation."
2. When Windows displays the New Hardware Found window, type the path to the IBM CD-ROM and follow the instructions on the screen to complete the installation.

IBM files will be copied from the IBM CD-ROM and network and modem functionality will be installed. If you are prompted again for network drivers, type the path to the IBM CD-ROM and select **OK**.

- Note:** 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. Windows 95 Version 950 or 950a are not supported with the EtherJet CardBus Ready Port Adapter with Modem due to limitations for CardBus malfunction (LAN and Modem) devices.
3. After installation, select **No** if you are prompted to reboot.
 4. Select **Start→Run**. Type path/SETUP.EXE, where path/ is the drive containing the IBM CD-ROM. IBM utilities and online documentation will be installed in a program group on your hard drive.
 5. When you are prompted to reboot, select **Yes**. After the computer restarts and Windows reloads, IBM CountrySelect will launch. Make a country selection (U.S.A. is the default).

COM Port Assignment under Windows 95 and Windows 98

COM5 is automatically assigned to the modem when the EtherJet CardBus Ready Port Adapter with Modem 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 IBM COM Port Selector from the IBM program group.

To run the IBM COM Port Selector:

1. Select **Start** from the desktop.
2. Select **Programs**→**IBM Utilities**→**IBM Com Port Selector**.

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 IBM modem is not listed, select 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:

Note: Some computers use a hardware setup utility to configure the infrared port in the BIOS. See your computer documentation.

1. To disable the infrared communications port in Windows 95, go to **Control Panel**→**System**→**Device Manager** tab.

2. Select 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, select **Diagnostics**.
2. In Diagnostics properties, highlight the **COM port** associated with the IBM modem and select 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 IBM modem may return ERROR for some AT commands that are not supported. This does not indicate a failure.

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:

1. In Windows 95, go to **Control Panel→Modems→Properties→Connection→Advanced**.
2. In the Advanced Connection Settings window, place a check mark in the **Record a log file** option box.

Note: A file named MODEMLOG.TXT 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 file name based on the modem device identifier, with a .LOG extension, such as "IBM CardBus 56K Modem.log" (or a shortened version in MS-DOS, such as IBM CAR~1.LOG).

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 (in the path **Control Panel→Modems→Properties→Connection→Advanced**).

Windows 95 and Windows 98 Driver Parameters

IBMC.SYS is an NDIS3 driver. IBM CN4.SYS is an NDIS4 driver. Both conform to the Microsoft Network Driver Interface Specification (NDIS).

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

- NETIBMC.INF installation file for Windows 95 and 98
- IBMC.SYS NDIS3 driver for Windows 95 and 98

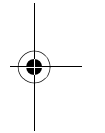
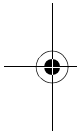
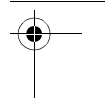
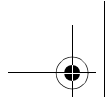
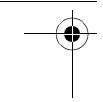
There are user-configurable parameters to the IBMC.SYS and IBM CN4.SYS drivers that you can modify using the Network Control Panel built into Windows 95 and 98. This applet queries you for parameter selections and sets the corresponding parameters in the registry. User-configurable parameters follow:

Parameter	Valid Values	Regular Value
CableDetect	OFF	0
	ON	1
DirectEnable	AutoDetect	0
	OFF	1
	ON	2
EarlyTransmit	OFF	0
	ON	1

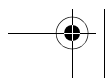
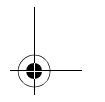
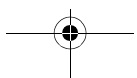
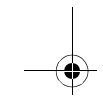
Parameter	Valid Values	Regular Value
InterruptStyle	AutoDetect	0
	PCI-IRQ	1
	ISA-IRQ	2
LineSpeed	AutoDetect	0
	10 Mbps	1
	100 Mbps	2
LineMode	AutoDetect	0
	Half-Duplex	1
	Full-Duplex	2
Network Address	Network Administrators (See note)	
Socket	AutoDetect	0
	1	1
	2	2
	3	3

Note: The network node address that you can modify by specifying a value for Network Address such as 0080C7112233. If the you do **not** specify a Network Address, then the IBMC.SYS driver uses the network node address contained in the EtherJet CardBus Ready Port Adapter with Modem Card Information Structure.

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



2-8 EtherJet CardBus Ready Port Adapter with Modem



Chapter 3. Windows NT 4.0 Installation

The EtherJet CardBus Ready Port Adapter with Modem supports manual installation under Microsoft Windows NT 4.0. Plug and Play installation and hot swapping of the EtherJet CardBus Ready Port Adapter with Modem is not directly supported by Windows NT.

Drivers Available

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

- IBMC.SYS - NDIS3 driver
- IBMCN4.SYS - NDIS4 driver
- IBMMODEM.SYS - modem enabler

The NDIS3 driver IBMC.SYS is installed by default when you use the procedures in this chapter. For NDIS4 instructions, see the README file on the IBM CD-ROM.

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

Card and Socket Services

Before installing the EtherJet CardBus Ready Port Adapter with Modem under Windows NT 4.0, see the README file on the IBM CD-ROM or visit the product Web site at:

<http://www.networking.ibm.com/support>

Installing Under Windows NT 4.0

Insert the EtherJet CardBus Ready Port Adapter with Modem into the CardBus PC Card slot, as described in Chapter 1, "Hardware Installation."

1. With the EtherJet CardBus Ready Port Adapter with Modem in the PC Card slot, select **Start→Settings→Control Panel**. The Control Panel opens.
2. Select the **Network** icon. The Network Settings window opens.
3. Select the **Adapters** tab. The Network Adapters window opens.
4. Select **Add**. The Select Network Adapter window opens.
5. Select **Have Disk** and type the path to the IBM CD-ROM.
6. Select **OK**. The OEM Option window opens.
7. Select **OK**. The Windows NT Setup window briefly displays.

The EtherJet CardBus Ready Port Adapter with Modem Settings window opens, displaying the default settings.

In most circumstances, the default settings will properly operate the EtherJet CardBus Ready Port Adapter with Modem. However, consult the README file on the IBM CD-ROM for the latest recommendations.

8. Select **OK**. The Network Settings window redisplay.
9. Select **Close**. If any dialog boxes appear related to setting up network protocols, select **Cancel**, and contact your Network Administrator.
10. When the Network Settings Change window opens, select **Yes** to restart the computer.

Modem Setup

1. After the computer has been restarted, select **Modems** from the Control Panel.
2. On the Install New Modem panel, make sure that the check-box:
Don't detect my modem; I will select it from a list is **not** checked.
3. Select **Next**. Windows NT will query the COM ports to find the IBM modem.
4. Select **Next** if the modem was found as IBM CardBus 56K Modem. If a standard modem is found, select **Change**.
5. On the Install New modem panel, select **Have disk** and type the path to the IBM CD-ROM.
6. Verify that the "IBM CardBus 56K Modem" is selected and then select **OK**.
7. On the Install New Modem panel, select **Next**.
8. On the Install New Modem panel, select **Finish**.
9. On the Modems Properties panel select **Dialing Properties** to set up dialing properties (not necessary if a modem had been previously installed). Select **Close**.
10. Select **Start→Run**. Type *path/SETUP.EXE*, where *path/* is the drive containing the IBM CD-ROM. IBM utilities and online documentation will be installed in a program group on your hard drive.
11. When prompted to reboot, select **Yes**. After the computer restarts and Windows reloads, IBM CountrySelect will launch. Make a country selection (U.S.A. is the default).

Windows NT Driver Parameters

You can modify the IBMC.SYS and IBMCN4.SYS driver parameters using the Windows NT Network Control Panel. This applet uses the OEMSETNT.INF file to set the corresponding parameters in the registry.

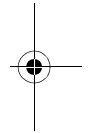
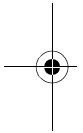
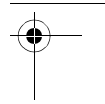
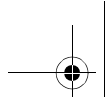
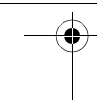
For definitions of the keywords listed, see Chapter 4, "Diagnostics and Troubleshooting."

Parameter	Valid Values	Regular 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
LineSpeed	AutoDetect	0
	10 Mbps	1
	100 Mbps	2
LineMode	AutoDetect	0
	Half-Duplex	1
	Full-Duplex	2
LinkIntegrity	OFF	0
	ON	1
MemoryBaseAddress	OFF	0
	ON	1
RXBUFFERSIZE	0–100	

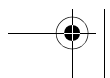
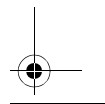
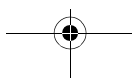
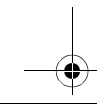
Parameter	Valid Values	Regular Value
Socket	AutoDetect	0
	1	1
	2	2
	3	3
Network Address	Network Administrators (See Note)	

Note: To modify the network node address manually:

1. Select **Run**, type **regedit**, and press **Return**.
2. Select **HKEY_LOCAL_MACHINE**→**System**→**CurrentControlSet**→**Services**→**IBM**.
3. Select **Edit**→**New**→**String Value**.
4. Rename the new value **NetworkAddress** (no spaces, case sensitive) and press **Enter**.
5. Select **NetworkAddress** and enter the 12-digit address (no spaces) in the "Value Data" box.
6. Select **OK**.



3-6 EtherJet CardBus Ready Port Adapter with Modem



Chapter 4. Diagnostics and Troubleshooting

This chapter contains supplementary diagnostics and troubleshooting information for the EtherJet CardBus Ready Port Adapter with Modem. 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 EtherJet CardBus Ready Port Adapter with Modem and its user documentation, and who have run into difficulties after having completed the appropriate installation and troubleshooting procedures for their operating environment.

Additional Sources of Information

Consult your computer and network documentation as needed. For the latest technical information on the EtherJet CardBus Ready Port Adapter with Modem, see the README file on the IBM CD-ROM, or visit the product Web site at:

<http://www.networking.ibm.com/support>

See Appendix A, "Product Support Services," for IBM support services access information.

Diagnostic Self-Tests

IBM provides both a Windows-based and a DOS-based diagnostics program on the CD-ROM.

- IBMCDIAG.EXE for Windows 95, 98, and NT
- IBMCTEST.EXE for MS-DOS and Windows 3.x

These programs test several EtherJet CardBus Ready Port Adapter with Modem 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 EtherJet CardBus Ready Port Adapter with Modem model and serial numbers for reference.

Executing Windows 95, 98, and NT Diagnostic Program

1. Verify that the EtherJet CardBus Ready Port Adapter with Modem has been installed and configured to work in your version of Windows.
2. Insert the IBM CD-ROM.
3. Select **Start→Run**. Type *path/EJETDIAG.EXE*, where *path/* is the drive containing the IBM CD-ROM.
4. Navigate through the diagnostic program by selecting the appropriate tab. When finished, click **OK** to exit.

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

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

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

1. Install the EtherJet CardBus Ready Port Adapter with Modem 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/IBMCTEST* at the MS-DOS prompt, where *path/* is the drive containing the IBM CD-ROM, then press **Enter**.

Main Panel

The panel consists of several function buttons and a view window. Pressing or invoking a function will bring up the corresponding in the view window. This view remains until another is selected. To exit IBMCTEST type **x** or select 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 panel, 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 IBM CD-ROM.
- Be sure you have the current drivers for your EtherJet CardBus Ready Port Adapter with Modem. Check the product Web site at:
<http://www.networking.ibm.com/support>
- When loading drivers or running the test utility, keep the network cable attached to the EtherJet CardBus Ready Port Adapter with Modem.
- 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 EtherJet CardBus Ready Port Adapter with Modem on a different computer.
- Try another EtherJet CardBus Ready Port Adapter with Modem, if available.
- Test the EtherJet CardBus Ready Port Adapter with Modem without loading Card and Socket Services to prevent conflicts between the EtherJet CardBus Ready Port Adapter with Modem and Card and Socket Services. The interrupt, memory address location, and I/O address for Card and Socket service drivers must match the IBM configurations in NET.CFG or PROTOCOL.INI (if used).

- Make sure that the interrupt, memory address, and I/O address for the IBM 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 (for example: C800, CC00, D400, D800).
- Try using different interrupt locations (for example: 9, 10, 11).
- Try using different port addresses (for example: 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 EtherJet CardBus Ready Port Adapter with Modem 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 can include only 0 (cache disabled), 4, 8, 16, or 32. Changes could affect network performance.

DIRECTENABLE

(32-bit NDIS3 Driver IBMC.SYS) Forces the method used by driver to determine if a EtherJet CardBus Ready Port Adapter with Modem 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, the driver will use the current configuration. On forces the driver to enable the CardBus bridge without checking its current state.

DRIVERNAME=IBM\$

Required as first item in the IBM section of the PROTOCOL.INI file for the IBMCNDIS 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 IBMC.SYS only) Forces the driver to use ISA IRQ routing or PCI IRQ routing. Some CardBus bridges can support 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 EtherJet CardBus Ready Port Adapter with Modem I/O ports, in hexadecimal notation. The EtherJet CardBus Ready Port Adapter with Modem requires 128 contiguous I/O addresses if run in I/O mode. If you are 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 EtherJet CardBus Ready Port Adapter with Modem. 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 EtherJet CardBus Ready Port Adapter with Modem. Changing this parameter may affect system performance. The range is a decimal number from 1 to 255. The latency should be lowered if more than one peripheral device, such as a modem, is being used. If the EtherJet CardBus Ready Port Adapter with Modem 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 EtherJet CardBus Ready Port Adapter with Modem to send and receive data simultaneously when connected to a full-duplex hub.

LINEMODE

(For 32-bit NDIS3 Driver IBMC.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 EtherJet

CardBus Ready Port Adapter with Modem to send and receive data simultaneously when connected to a full-duplex hub.

LINESPEED

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

LINESPEED

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

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 EtherJet CardBus Ready Port Adapter with Modem in hexadecimal notation, when MODE MEMORY (memory-mapped I/O) is being used (see MODE). The memory block occupies 4 KB 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 EtherJet CardBus Ready Port Adapter with Modem's unique network node address by specifying a different node address.

NOBURST

Disables burst mode reads on the EtherJet CardBus Ready Port Adapter with Modem. Using this keyword will force the EtherJet CardBus Ready Port Adapter with Modem to initiate a bus-master request for each read, negatively impacting performance.

NOCHECK

Disables verification of EtherJet CardBus Ready Port Adapter with Modem 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 EtherJet CardBus Ready Port Adapter with Modem. 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 EtherJet CardBus Ready Port Adapter with Modem. You can use this keyword 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.

PCIIRQ

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 EtherJet CardBus Ready Port Adapter with Modem 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

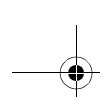
(Packet Driver) A number from hexadecimal 60 to 80 designating a software interrupt.

SOCKET

(16-bit DOS Drivers) Identifies the number of the host computer PC Card slot into which the EtherJet CardBus Ready Port Adapter with Modem is inserted. If a socket number is specified, only the specified socket is checked for the EtherJet CardBus Ready Port Adapter with Modem. If no socket is specified, all sockets are searched until the EtherJet CardBus Ready Port Adapter with Modem is found.

SOCKET

(For 32-bit NDIS3 Driver IBMC.SYS) Identifies the number of the host computer's PC slot or socket into which the EtherJet CardBus Ready Port Adapter with Modem 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 EtherJet CardBus Ready Port Adapter with Modem. Under AutoDetect, the driver will automatically check all slots for the EtherJet CardBus Ready Port Adapter with Modem.

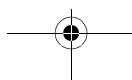
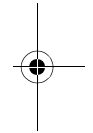


TXBUFFERSIZE

Sets the size of the EtherJet CardBus Ready Port Adapter with Modem 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.



Appendix A. Product Support Services

Help Files

The HELPDOCS.HLP file on the IBM CD-ROM provides detailed information about the EtherJet CardBus Adapter with Modem.

Topics include:

- Windows 95, Windows 98, and Windows NT Help
- IBM OS/2 Help
- 32-Bit ODI Help
- Windows 3.x Help
- Modem Reference
- IBM Product Support

IBM Product Support

You can download the latest drivers, related code, technical tips, and product information from the 10/100 EtherJet CardBus Adapter with Modem Web site at:

<http://www.networking.ibm.com/support>

For information about other IBM Networking Products, visit the IBM Networking Home page at:

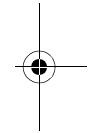
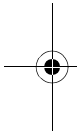
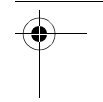
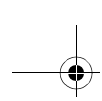
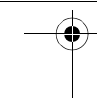
<http://www.networking.ibm.com>

IBM Product Support

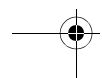
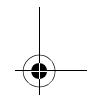
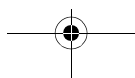
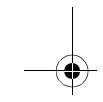
- 1 800 772-2227 for IBM HelpCenter
- 1 800 565-3344 for HelpPC (Canada)

Warranty Service Procedures

For details about warranty coverage and service, see Appendix C, "Notices."



A-2 EtherJet CardBus Ready Port Adapter with Modem



Appendix B. Specifications

General Specifications

Model XWIN/002

Cabling:

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

Connector: RJ-45

Operating Distance: 100 m (328 ft.)

Ethernet Specifications

Type III CardBus PC Card

Ethernet: IEEE 802.3 10 Mbps Ethernet; 802.3u 100 Mbps

Connectors: RJ-45 (100BASE-TX/10BASE-T Ethernet), RJ-11 (modem), RJ-11 (phone set pass-through)

Size: 86.0 mm x 54.0 mm x 10.5 mm
(3.37 in. x 2.13 in. x 0.413 in.)

Weight: 36 g (1.3 oz)

Temperature Range:

Operating: 32°F to 149°F (0°C to 65°C)

Storage: -4°F to 185°F (-20°C to 85°C)

Humidity: 95% maximum noncondensing

Memory: 4 MB memory for dual V.90 and K56flex operation

Power Requirements:

10BASE-T 3.3 V DC, 74 mA idle, 130 mA active, 110 mA typical

100BASE-TX 3.3 V DC, 150 mA idle, 165 mA active, 160 mA typical

Modem only 3.3 V DC, 40 mA sleep, 240 mA active

10BASE-T+Modem 3.3V DC, 280 mA active

100BASE-TX+Modem 3.3V DC, 340 mA active

Power Management:

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

Approvals: FCC Part 15, Part 68, Industry Canada, CE Mark

Modem Specifications

Data modulation: V.90/K56flex 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-on 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 connector

Analog interface: RJ-11C modular telephone connector

DTE speeds: 1200, 2400, 4800, 7200, 9600, 14400, 19200, 37400, 57600, and 115200 bps

Appendix C. Notices

This information was developed for products and services offered in the U.S.A. IBM may not offer the products, services, or features discussed in this document in other countries. Consult your local IBM representative for information on the products and services currently available in your area.

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Safety Notices

Telecommunications Safety Requirements in the United Kingdom

This IBM product is made to high safety standards. It complies inherently with telecommunications safety standard BS 6301. It is not designed to provide protection from excessive voltages appearing externally at its interfaces. Therefore, when this product is connected to a public telecommunications network via any other equipment, and you connect to this product items not supplied by IBM United Kingdom Ltd., you must comply with mandatory telecommunications safety requirements.

Statement of Compliance with the United Kingdom Telecommunications Act 1984

This apparatus is approved under approval number NS/G/1234/J/100003 for indirect connections to the public telecommunications systems in the United Kingdom.

Telepermit Compliance Notes for New Zealand

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

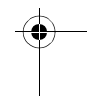
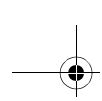
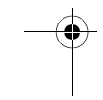
IMPORTANT NOTICE

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.

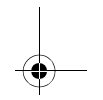
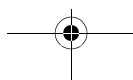
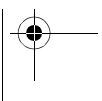
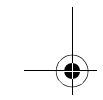
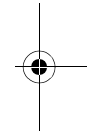
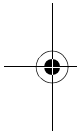
Some parameters required for compliance with Telecom's Telepermit requirements are dependent on the equipment (PC) associated with this device. The associated equipment shall be set to operate within the following limits for compliance with Telecom's Specifications:

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.

C-4 EtherJet CardBus Ready Port Adapter with Modem



3. The equipment shall be set to ensure that calls are answered between 3 and 30 seconds of receipt of ringing.



Electronic Emission Notices

Federal Communications Commission (FCC) Statement

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning 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 receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult an IBM authorized dealer or service representative for help.

Properly shielded and grounded cables and connectors must be used in order to meet FCC emission limits. Proper cables and connectors are available from IBM authorized dealers. IBM is not responsible for any radio or television interference caused by using other than recommended cables and connectors or by unauthorized changes or modifications to this equipment. Unauthorized changes or modifications could void the user's authority to operate the equipment.

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.

Responsible Party:

International Business Machines Corporation
New Orchard Road
Armonk, NY 10504
Telephone 1-919-543-2193

Industry Canada Class B Emission Compliance Statement

This Class B digital apparatus complies with Canadian ICES-003.

Avis de conformité aux normes d'Industrie Canada

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

European Norm (EN) Statement

This product is in conformity with the protection requirements of EU Council Directive 89/336/EEC on the approximation of the laws of the Member States relating to electromagnetic compatibility. IBM cannot accept responsibility for a failure to satisfy the protection requirements resulting from a non-recommended modification of the product, including the fitting of non-IBM option cards.

This product has been tested and found to comply with the limits for Class B Information Technology Equipment according to CISPR 22/European Standard EN 55022. The limits for Class B equipment were derived for typical residential environments to provide reasonable protection against interference with licensed communication devices.

Zulassungsbescheinigung laut dem Deutschen Gesetz über die elektromagnetische Verträglichkeit von Geräten (EMVG) vom 30. August 1995 (bzw. der EMC EG Richtlinie 89/336).

Dieses Gerät ist berechtigt in Übereinstimmung mit dem Deutschen EMVG das EG-Konformitätszeichen - CE - zu führen.

Verantwortlich für die Konformitätserklärung nach Paragraph 5 des EMVG ist die IBM Deutschland Informationssysteme GmbH, 70548 Stuttgart.

Informationen in Hinsicht EMVG Paragraph 3 Abs. (2) 2:

Das Gerät erfüllt die Schutzanforderungen nach EN 50082-1 und EN 55022 Klasse B.

EN 50082-1 Hinweis

"Wird dieses Gerät in einer industriellen Umgebung betrieben (wie in EN 50082-2 festgelegt), dann kann es dabei eventuell gestört werden. In solch einem Fall ist der Abstand bzw. die Abschirmung zu der industriellen Störquelle zu vergrößern."

Anmerkung

Um die Einhaltung des EMVG sicherzustellen, sind die Geräte, wie in den IBM Handbüchern angegeben, zu installieren und zu betreiben.

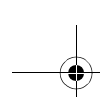
Japanese Voluntary Control Council for Interference (VCCI) Statement

This product is a Class B Information Technology Equipment and conforms to the standards set by the Voluntary Control Council for Interference by Technology Equipment (VCCI). This product is aimed to be used in a domestic environment. When used near a radio or TV receiver, it may become the cause of radio interference. Read the instructions for correct handling.

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準に基づくクラスB情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。
取扱説明書に従って正しい取り扱いをして下さい。

Korean Statement

Please note that this device has been certified for residential use and may be used in any environment.



European Union CTR 21 Notices

On July 20, 1998, the Council of the European Union approved Common Technical Regulation (CTR) 21. This new type of regulation establishes an EU-wide standard for connection of telecommunications equipment such as your IBM modem to public switched telephone networks (PSTNs). Traditional country-specific modem approval requirements are being replaced by CTR 21, so that once a modem is CTR 21 approved, it can be used in any EU country without further testing or approval. The regulation became effective on July 21, 1998, with notification of the EU member countries.

How Do I Know If My Modem Is Approved?

CTR 21 approval is indicated on your IBM modem by the CE Mark logo on the back of the card. Country-specific approval numbers are no longer required. The CE Mark logo indicates that the IBM product has been tested and found to be compliant with CTR 21, and therefore can be used in any of the countries of the EU. The table on the back of this insert indicates possible limitations on the use of a CTR 21-approved modem in a particular EU country.

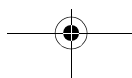
These regulations do not affect GlobalACCESS features of the IBM modem, including use on networks of countries outside the European Union.

Addendum to the CE Mark Declaration of Conformity

“Directive 98/13/EC relating to telecommunications terminal equipment and satellite earth station equipment, including the mutual recognition of their conformity.”

Compliance Notice

The equipment has been approved in accordance with Council Decision 98/482/EC for pan-European single terminal connection to the public switched telephone network (PSTN). However, due to differences between the individual PSTNs provided in different



countries, the approval does not, of itself, give an unconditional assurance of successful operation on every PSTN network termination point.

In the event of problems, you should contact your equipment supplier in the first instance.

International Business Machines Corporation
 New Orchard Road
 Armonk, New York 10504 USA

declares its awareness of the Advisory Notes contained in ETSI Guides EG 201 120 and EG 201 121, including any amendments thereto, and indicates in the table below the networks with which the product XWIN/002 is designed to work and any notified networks with which it may have interworking difficulties.

This product is designed to work on PSTNs in the following countries:

PSTN	Product designed to work with this PSTN*
Austria	X
Belgium	X
Denmark	X
Finland	X
Germany	X
Iceland	X
Ireland	X
Italy	X
Luxembourg	X
Norway	X
Sweden	X
Switzerland	X
The Netherlands	X
United Kingdom	X

*Use the IBM CountrySelect software supplied with the product to configure your modem for these countries.

Users may experience interworking difficulties when using this product on PSTNs in the following countries: Greece, Portugal, Spain.

Avis CTR 21 de l'Union Européenne

Le 20 juillet 1998, le Conseil de l'Union Européenne a approuvé la réglementation CTR 21 (Common Technical Regulation ou Réglementation Technique Commune). Ce nouveau type de réglementation définit une norme commune pour la connexion d'équipements de télécommunications, tels que votre modem IBM, aux réseaux téléphoniques commutés publics. Les réglementations spécifiques à chaque pays dans ce domaine sont remplacées par la CTR 21. Ainsi, une fois un modem déclaré conforme à la CTR 21, il peut être utilisé dans n'importe quel autre pays de l'UE sans autre formalité. Cette réglementation est entrée en vigueur le 21 juillet 1998 et tous les pays membres en ont été avisés.

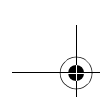
Comment déterminer si mon modem est homologué ?

La conformité à la CTR 21 est indiquée sur votre modem IBM par le logo CE, au dos de la carte. Les numéros d'homologation de chaque pays ne sont plus exigés. Le logo CE indique que votre produit IBM ayant été testé et déclaré conforme à la CTR 21, il peut être utilisé dans n'importe quel pays de l'UE. Le tableau au verso indique les restrictions éventuelles applicables à l'utilisation d'un modem conforme à la CTR 21 dans un pays membre particulier.

Remarque: cette réglementation ne concerne pas les fonctionnalités GlobalACCESS du modem IBM, notamment l'utilisation sur les réseaux de pays situés hors de l'Union Européenne.

Addendum à la Déclaration de conformité

"Directive 98/13/CE relative aux terminaux de télécommunications et aux équipements terrestres de communication par satellite, ainsi qu'à la reconnaissance mutuelle de leur conformité."



Avis de conformité à la CTR 21

Cet équipement a été homologué conformément à la Déclaration du Conseil 98/482/CE relative à la connexion paneuropéenne de terminaux simples aux réseaux téléphoniques commutés publics. Toutefois, en raison de certaines différences entre les réseaux de chaque pays, cette homologation ne garantit pas, en soi, le bon fonctionnement sur tous les points de connexion.

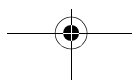
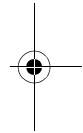
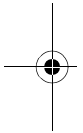
En cas de problème, contactez d'abord le fournisseur de votre équipement.

Déclaration de compatibilité avec le réseau

Le constructeur :

International Business Machines Corporation
New Orchard Road
Armonk, New York 10504 USA

déclare avoir pris connaissance des Avis figurant dans les Guides ETSI EG 201 120 et EG 201 121, y compris des éventuelles modifications, et indique dans le tableau ci-dessous quels sont les réseaux pour lesquels le produit XWIN/002 est conçu et ceux sur lesquels des difficultés d'interconnexion peuvent se présenter.



Ce produit est conçu pour fonctionner sur les réseaux téléphoniques publics commutés dans les pays suivants:

Réseau téléphonique public commuté	Produit conçu pour fonctionner sur ce réseau téléphonique public commuté*
Allemagne	X
Autriche	X
Belgique	X
Danemark	X
Finlande	X
France	X
Islande	X
Irlande	X
Italie	X
Luxembourg	X
Norvège	X
Suède	X
Suisse	X
Pays-Bas	X
Royaume Uni	X

*Exécutez le programme CountrySelect de IBM fourni avec le produit pour configurer votre modem selon le pays où vous l'utilisez.

Les utilisateurs risquent de connaître des problèmes d'interopérabilité lors de l'utilisation de ce produit sur les réseaux téléphoniques publics commutés des pays suivants: Espagne, Grèce, Portugal.

EG-Vorschrift CTR 21

Am 20. Juli 1998 wurde vom Rat der Europäischen Gemeinschaft die Common Technical Regulation (CTR) 21 als allgemeine technische Rechtsvorschrift beschlossen. Diese neue Vorschriftenart ist Grundlage einer EG-weiten Norm für den Anschluß von Telekommunikationsanlagen, wie beispielsweise Ihr IBM-Modem, an öffentliche Fernsprechwählnetze. Die CTR 21 ersetzt länderspezifische Zulassungsvorschriften für Modems, so daß ein gemäß CTR 21 zugelassenes Modem in jedem beliebigen EG-Mitgliedstaat ohne weitere Prüfungen oder Zulassungsverfahren benutzt werden darf. Die Vorschrift trat mit der Benachrichtigung aller EG-Mitgliedstaaten am 21. Juli 1998 in Kraft.

Wie stelle ich fest, ob mein Modem zugelassen ist?

Die Zulassung Ihres IBM-Modems gemäß CTR 21 wird durch das CE-Kennzeichen auf der Kartenrückseite bescheinigt. Länderspezifische Zulassungsangaben sind nicht mehr erforderlich. Das CE-Kennzeichen besagt, daß dieses IBM-Produkt geprüft wurde und den Bestimmungen der EG-Vorschrift CTR 21 entspricht, und daher in jedem beliebigen EG-Mitgliedstaat benutzt werden darf. Auf der Rückseite dieser Karte finden Sie eine Tabelle, die mögliche Einschränkungen bezüglich der Benutzung eines gemäß CTR 21 zugelassenen Modems in bestimmten Ländern der EG enthält.

HINWEIS: Diese Vorschriften berühren nicht die GlobalACCESS-Funktionen des IBM-Modems, einschließlich der Benutzung von Netzwerken in Ländern außerhalb der EG.

Anhang zur EG-Konformitätserklärung

“Richtlinie 98/13/EG für Fernmeldeeinrichtungen und Satellitenempfangsanlagen, einschließlich der wechselseitigen Anerkennung ihrer Konformität.”

Hinweis zur Erfüllung der CTR 21

Dieses Gerät besitzt die Zulassung gemäß der Ratsentscheidung 98/482/EG über Einzelanschlüsse an das öffentliche Fernsprechwahlnetz innerhalb Europas. Aufgrund der Unterschiede zwischen den Fernsprechwahlnetzen in den einzelnen Ländern bedeutet diese Zulassung an sich jedoch noch keine uneingeschränkte Garantie für den erfolgreichen Betrieb an jeder Anschlußstelle eines Fernsprechwahlnetzes.

Wenden Sie sich bei Problemen daher bitte zunächst an den jeweiligen Händler.

Kompatibilitätserklärung

Der Hersteller:

International Business Machines Corporation
New Orchard Road
Armonk, New York 10504 USA

erklärt in Kenntnis der Empfehlungen zu den ETSI-Richtlinien EG 201 120 und EG 201 121, einschließlich entsprechender Zusatzartikel, daß in der nachfolgenden Tabelle alle Netzwerke aufgeführt sind, für die der Einsatz dieses Gerätes XWIN/002 vorgesehen ist, sowie alle Netzwerke, bei denen der Gerätebetrieb unter Umständen zu Problemen führen kann.

Dieses Produkt ist für den Betrieb mit den öffentlichen Fernsprechwählnetzen folgender Länder vorgesehen:

Fernsprechwählnetz	Der Betrieb ist mit diesen Fernsprechwählnetzen vorgesehen.*
Belgien	X
Dänemark	X
Deutschland	X
Finnland	X
Frankreich	X
Großbritannien	X
Island	X
Irland	X
Italien	X
Luxemburg	X
Niederlande	X
Österreich	X
Schweden	X
Schweiz	X

*Benutzen Sie die zum Lieferumfang dieses Gerätes gehörende IBM CountrySelect Software, um Ihr Modem für das jeweilige Land zu konfigurieren.

In folgenden Ländern können beim Betrieb dieses Produkts mit dem öffentlichen Fernsprechwählnetz Probleme auftreten: Griechenland, Portugal, Spanien.

Normative CTR 21 dell'Unione Europea

Il 20 luglio 1998, il Consiglio dell'Unione Europea ha approvato la Regolamentazione tecnica comune (Common Technical Regulation-CTR) 21. Queste nuove norme stabiliscono uno standard europeo per la connessione di attrezzature per le telecomunicazioni come il modem IBM alle reti telefoniche pubbliche (PSTN). Le tradizionali normative riguardanti i modem ed appartenenti alle singole nazioni verranno sostituite dalle norme CTR 21, quindi è sufficiente che un modem rechi il marchio di approvazione CTR 21 perché possa essere utilizzato in qualsiasi paese europeo senza ulteriori test od approvazioni. Queste norme sono divenute effettive il 21 luglio 1998, con notifica delle nazioni appartenenti all'Unione Europea.

Come capire se il modem è approvato?

Un modem IBM approvato CTR 21 reca il logo del Marchio CE sulla parte posteriore della scheda. I numeri di approvazione specifici per ciascuna singola nazione non sono più necessari. Il logo del Marchio CE indica che il prodotto IBM è stato verificato e ritenuto conforme alle norme CTR 21, ed è quindi utilizzabile in qualsiasi nazione dell'Unione Europea. La tabella sul retro di questo inserto mostra le possibili limitazioni nell'uso di un modem con approvazione CTR 21 in particolari nazioni dell'Unione Europea.

NOTA: Queste norme non influiscono sulle funzioni GlobalACCESS del modem IBM, compreso il relativo utilizzo su reti di paesi non appartenenti all'Unione Europea.

Addendum alla dichiarazione di conformità del Marchio CE

“Direttiva 98/13/EC riguardante attrezzature terminali per telecomunicazioni ed attrezzature di comunicazione satellite-terra, compreso il riconoscimento reciproco della loro conformità.”

Conformità CTR 21

Questa attrezzatura è stata riconosciuta conforme in base alla Decisione del consiglio (Council Decision) 98/482/EC per la connessione a terminale singolo in Europa alla rete telefonica pubblica (PSTN). Tuttavia, a causa delle differenze riscontrate nelle reti PSTN delle singole nazioni, l'approvazione non fornisce, di per se stessa, la certezza della riuscita dell'operazione su qualsiasi punto di terminazione della rete PSTN.

In caso di problemi, contattare innanzitutto il proprio fornitore.

Dichiarazione di compatibilità di rete

Il produttore :

International Business Machines Corporation
New Orchard Road
Armonk, New York 10504 USA

Dichiara di essere a conoscenza delle Note di avvertimento (Advisory Notes) presenti nelle Guide ETSI EG 201 120 e EG 201 121, compreso qualsiasi emendamento alle stesse, ed indica nella sottostante tabella le reti con cui il prodotto XWIN/002 funziona correttamente e qualsiasi rete per cui sono state notificate possibili difficoltà di funzionamento.

Questo prodotto è progettato per operare su reti PSTN nelle seguenti nazioni:

PSTN	Prodotto progettato per operare con questa rete PSTN*
Austria	X
Belgio	X
Danimarca	X
Finlandia	X
Francia	X
Germania	X
Islanda	X
Irlanda	X
Italia	X
Lussemburgo	X
Norvegia	X
Svezia	X
Svizzera	X
Olanda	X
Gran Bretagna	X

*Configurare il proprio modem per queste nazioni utilizzando il software CountrySelect di IBM in dotazione con il prodotto.

Gli utenti potrebbero riscontrare problemi di funzionamento utilizzando questo prodotto su reti PSTN nelle seguenti nazioni: Grecia, Portogallo, Spagna.

Avisos de la CTR 21 de la Unión Europea

El 20 de julio de 1998, el Consejo de la Unión Europea aprobó la CTR 21 (Ley Técnica Comunitaria). Este nuevo tipo de reglamento establece una norma de ámbito comunitario para conexiones de equipos de telecomunicaciones, tales como su módem IBM, a la red telefónica pública conmutada (RTPC). Los requisitos específicos de homologación de módems de cada país están siendo reemplazados por la CTR 21, por lo que una vez homologado un módem de acuerdo con este reglamento, podrá utilizarse en cualquier país de la Unión Europea sin necesidad de posteriores homologaciones o pruebas. La ley entró en vigor el 21 de julio de 1998 tras su publicación en los estados miembros de la Unión Europea.

Cómo saber si mi módem está homologado

La homologación CTR 21 aparece indicada en su módem IBM con el logotipo de la marca CE en la parte posterior de la tarjeta. Los números de homologación específicos de cada país, ya no serán necesario a partir de ahora. El logotipo de la marca CE significa que el producto IBM se ha sometido a prueba y es conforme a la CTR 21 y, por lo tanto, puede utilizarse en cualquier país de la Unión Europea. La tabla de la parte posterior de este documento indica las posibles limitaciones de uso de un módem homologado según la CTR 21 en un país concreto de la UE.

NOTA: Esta normativa no afecta a las características GlobalACCESS de un módem IBM, incluido su uso en las redes de los países no pertenecientes a la Unión Europea.

Apéndice de la declaración de conformidad de la marca CE

«Directiva 98/13/CE sobre equipos terminales de telecomunicaciones y equipos para estaciones de satélite terrestres que incluye el reconocimiento mutuo de conformidad de ambos.»

Aviso de cumplimiento de la CTR 21

El equipo ha sido homologado conforme a la decisión del Consejo 98/482/CE para conexión paneuropea de un único terminal a la red telefónica pública conmutada (RTPC). Sin embargo, debido a las diferencias entre las distintas RTPC de los diferentes países, la homologación por sí misma no asegura incondicionalmente el funcionamiento satisfactorio en cada punto de terminación de red RTCP.

En el caso de que surjan problemas, debe ponerse en contacto con el proveedor de su equipo como primera medida.

Declaración de compatibilidad de red

El fabricante :

International Business Machines Corporation
New Orchard Road
Armonk, New York 10504 USA

declara estar al corriente de las notas informativas de las guías EG 201 120 y 201 121 de ETSI, incluida cualquier enmienda y señala en la siguiente tabla las redes para las que el producto XWIN/002 ha sido diseñado y las redes con las que puedan existir problemas de interconexión.

Este producto se ha diseñado para funcionar en redes telefónicas públicas conmutadas (RTPC) de los países siguientes:

PSTN	Producto diseñado para funcionar con esta RTPC*
Alemania	X
Austria	X
Bélgica	X
Dinamarca	X
Finlandia	X
Francia	X
Islandia	X
Irlanda	X
Italia	X
Luxemburgo	X
Noruega	X
Suecia	X
Suiza	X
Países Bajos	X
Reino Unido	X

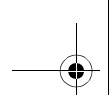
*Utilice el software IBM CountrySelect suministrado con el producto para configurar el módem en estos países.

Los usuarios pueden experimentar problemas de interfuncionamiento cuando utilicen este producto en RTPC de los siguientes países: España, Grecia y Portugal.

Telecommunication Notices

Federal Communications Commission (FCC) and Telephone Company Requirements

- 1) This adapter complies with Part 68 of the FCC rules. A label is affixed to the adapter that contains, among other things, the FCC registration number and Ringer Equivalency Number (REN) for this equipment. If these numbers are requested, provide this information to your telephone company.
- 2) The REN is useful to determine the quantity of devices you may connect to your telephone line and still have those devices ring when your number is called. In most, but not all areas, the sum of the RENs of all devices 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 call your local telephone company to determine the maximum REN for your calling area.
- 3) If the adapter causes harm to the telephone network, the telephone company may discontinue your service temporarily. If possible, they will notify you in advance; if advance notice is not practical, you will be notified as soon as possible. You will be advised of your right to file a complaint with the FCC.
- 4) Your telephone company may make changes in its facilities, equipment, operations, or procedures that could affect the proper operation of your equipment. If they do, you will be given advance notice to give you an opportunity to maintain uninterrupted service.
- 5) If you experience trouble with this product, contact your Authorized Reseller, or call IBM. In the United States, call IBM at 1 800 772-2227. In Canada, call IBM at 1 800 565-3344. You may be required to present proof of purchase. The telephone company may ask you to disconnect the adapter from the network until the problem has been corrected, or until you are sure the adapter is not malfunctioning.



- 6) No customer repairs as possible to the adapter. If you experience trouble with the adapter, contact your Authorized Reseller or see Appendix A for information.
- 7) This adapter may not be used on coin service provided by the telephone company. Connection to party lines is subject to state tariffs. Contact your state public utility commission or corporation commission for information.
- 8) When ordering network interface (NI) service from the local Exchange Carrier, specify service arrangement USOC RJ11C.

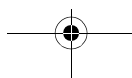
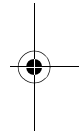
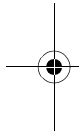
Industry Canada Information

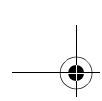
NOTICE: The Industry Canada Label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective, operational and safety requirements. Industry Canada does not guarantee the equipment will operate to the user's satisfaction.

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. In some cases, the company's inside wiring associated with a single line individual service may be extended by means of a certified connector assembly (telephone extension cord). 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 made by an authorized Canadian maintenance facility designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications 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.





ATTENTION:

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

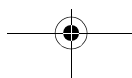
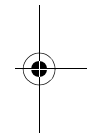
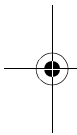
NOTICE: The Ringer Equivalence Number (REN) assigned to each terminal device provides an indication of the maximum number of terminals allowed to be connected to a telephone interface. The termination on an interface may consist of any combination of devices subject only to the requirement that the sum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

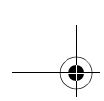
The Ringer Equivalence Number for the Adapter is 0.5

AVIS : L'étiquette d'Industrie Canada permet d'identifier un équipement homologué. Cette homologation signifie que cet équipement satisfait certaines exigences en matière de protection, d'exploitation et de sécurité du réseau de télécommunications. Industrie Canada n'offre aucune garantie que le fonctionnement de cet équipement soit à la satisfaction de l'utilisateur.

Avant d'installer cet équipement, l'utilisateur doit s'assurer qu'il a la permission de le raccorder aux installations de l'entreprise de télécommunications. L'installation de cet équipement doit aussi se faire selon un mode de raccordement acceptable. Dans certains cas, le câblage interne de l'entreprise associé au service individuel offert par une ligne d'abonné peut être prolongé au moyen d'un connecteur homologué (prolongateur de téléphone). Le client devrait être informé que la conformité de son équipement aux conditions susmentionnées n'est pas une prévention contre la dégradation du service dans certaines situations.

Toute réparation d'un équipement homologué devrait être effectuée par un service de maintenance canadien autorisé qui a été désigné par le fournisseur. Toute réparation ou modification d'équipement faite par l'utilisateur, ou tout mauvais fonctionnement, pourrait entraîner la déconnexion de cet équipement par l'utilisateur à la demande de l'entreprise de télécommunications.



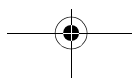
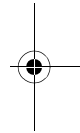
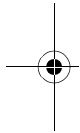


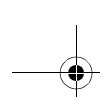
Pour sa protection personnelle, l'utilisateur devrait s'assurer que les mises à la terre des services publics électriques, des lignes téléphoniques et du système interne des canalisations d'eau à tuyaux métalliques, advenant leur présence, sont interconnectées. Dans les zones rurales, il s'agit-là d'une précaution particulièrement importante à prendre.

ATTENTION : Toute tentative de connexion par l'utilisateur est à déconseiller. Il est préférable de communiquer avec le responsable de l'inspection en électricité ou un électricien, selon le cas.

AVIS : L'indice d'équivalence de la sonnerie (IES) assigné à chaque dispositif terminal indique le nombre maximal de terminaux qui peuvent être raccordés à une interface. La terminaison d'une interface téléphonique peut consister en une combinaison de quelques dispositifs, à la seule condition que la somme d'indices d'équivalence de la sonnerie de tous les dispositifs n'excède pas 5.

L'indice d'équivalence de la sonnerie pour l'adaptateur est 0.5.



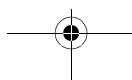
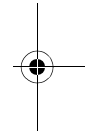


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International Business Machines Corporation Armonk, NY 10504

Statement of Limited Warranty

The warranties provided by IBM in this Statement of Limited Warranty apply only to Machines you originally purchase for your use, and not for resale, from IBM or your reseller. The term "Machine" means an IBM machine, its features, conversions, upgrades, elements, or accessories, or any combination of them. Unless IBM specifies otherwise, the following warranties apply only in the country where you acquire the Machine. If you have any questions, contact IBM or your reseller.

Machine IBM 10/100 EtherJet CardBus Ready Port Adapter with 56K Modem

Warranty Period* Lifetime

**Contact your place of purchase for warranty service information.*

Production Status

Each Machine is manufactured from new parts, or new and used parts. In some cases, the Machine may not be new and may have been previously installed. Regardless of the Machine's production status, IBM's warranty terms apply.

The IBM Warranty for Machines

IBM warrants that each Machine 1) is free from defects in materials and workmanship and 2) conforms to IBM's Official Published Specifications. The warranty period for a Machine is a specified, fixed period commencing on its Date of Installation. The date on your receipt is the Date of Installation, unless IBM or your reseller informs you otherwise.

During the warranty period, IBM or your reseller, if authorized by IBM, will provide warranty service under the type of service designated for the Machine and will manage and install engineering changes that apply to the Machine.

For IBM or your reseller to provide warranty service for a feature, conversion, or upgrade, IBM or your reseller may require that the Machine on which it is installed be 1) for certain Machines, the designated, serial-numbered Machine and 2) at an engineering-change level compatible with the feature, conversion, or upgrade. Many of these transactions involve the removal of parts and their return to IBM. You represent that all removed parts are genuine and unaltered. A part that replaces a removed part will assume the warranty service status of the replaced part.

If a Machine does not function as warranted during the warranty period, IBM or your reseller will repair it or replace it with one that is at least functionally equivalent, without charge. The replacement may not be new, but will be in good working order. If IBM or your reseller is unable to repair or replace the Machine, you may return it to your place of purchase and your money will be refunded.

If you transfer a Machine to another user, warranty service is available to that user for the remainder of the warranty period. You should give your proof of purchase and this Statement to the user. However, for Machines which have a lifetime warranty, this warranty is nontransferable.

Warranty Service

To obtain warranty service for the Machine, you should contact your reseller or call IBM. In the United States and Canada, call IBM at 1-800-IBM-SERV (1-800-426-7378). You may be required to present proof of purchase.

IBM or your reseller will provide certain types of repair and exchange service, either at your location or at IBM's or your reseller's service center, to restore a Machine to good working order.

When a type of service involves the exchange of a Machine or part, the item IBM or your reseller replaces becomes its property and the replacement becomes yours. You represent that all

removed items are genuine and unaltered. The replacement may not be new, but will be in good working order and at least functionally equivalent to the item replaced. The replacement assumes the warranty service status of the replaced item. Before IBM or your reseller exchanges a Machine or part, you agree to remove all features, parts, options, alterations, and attachments not under warranty service. You also agree to ensure that the Machine is free of any legal obligations or restrictions that prevent its exchange.

You agree to:

1. obtain authorization from the owner to have IBM or your reseller service a Machine that you do not own;
and
2. where applicable, before service is provided—
 - a. follow the problem determination, problem analysis, and service request procedures that IBM or your reseller provide,
 - b. secure all programs, data, and funds contained in a Machine, and
 - c. inform IBM or your reseller of changes in a Machine's location.

IBM is responsible for loss of, or damage to, your Machine while it is 1) in IBM's possession or 2) in transit in those cases where IBM is responsible for the transportation charges.

Extent of Warranty

IBM does not warrant uninterrupted or error-free operation of a Machine.

The warranties may be voided by misuse, accident, modification, unsuitable physical or operating environment, improper maintenance by you, removal or alteration of Machine or parts identification labels, or failure caused by a product for which IBM is not responsible.

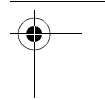
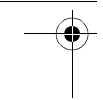
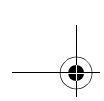
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Limitation of Liability

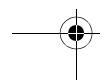
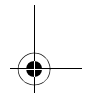
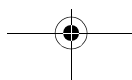
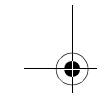
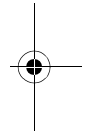
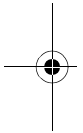
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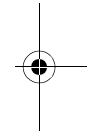
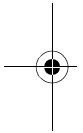
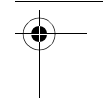
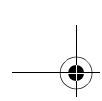
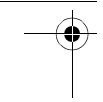
1. damages for bodily injury (including death) and damage to real property and tangible personal property; and
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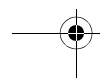
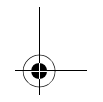
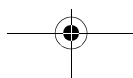
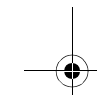


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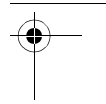
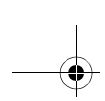
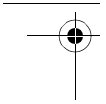
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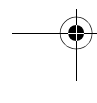
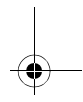
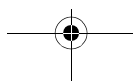
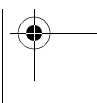
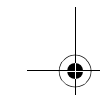
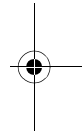
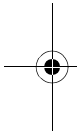
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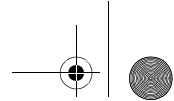
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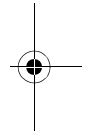
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