

**Note**

Before using this information and the product it supports, be sure to read the general information under Appendix C, "Notices" on page 67.

## First Edition (June 1995)

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## Safety Notices



**Danger:** Before you begin to install this product, read the safety information in *Caution: Safety Information—Read This First*, SD21-0030-02. This booklet describes safe procedures for cabling and plugging in electrical equipment.



**Varning — livsfara:** Innan du börjar installera den här produkten bör du läsa säkerhetsinformationen i dokumentet *Varning: Säkerhetsföreskrifter—Läs detta först*, SD21-0030-02. Där beskrivs hur du på ett säkert sätt ansluter elektrisk utrustning.



**Fare:** Før du begynner å installere dette produktet, må du lese sikkerhetsinformasjonen i *Advarsel: Sikkerhetsinformasjon — Les dette først*, SD21-0030-02 som beskriver



**Fare!** Før du installerer dette produkt, skal du læse sikkerhedsforskrifterne i *NB: Sikkerhedsforskrifter—Læs dette først* SD21-0030-02. Vejledningen beskriver den fremgangsmåde, du skal bruge ved tilslutning af kabler og udstyr.



**Gevaar:** Voordat u begint met de installatie van dit product, moet u eerst de veiligheidsinstructies lezen in de brochure *PAS OP! Veiligheidsinstructies—Lees dit eerst*, SD21-0030-02. Hierin wordt beschreven hoe u elektrische apparatuur op een veilige manier moet bekabelen en aansluiten.



**Vorsicht:** Bevor mit der Installation des Produktes begonnen wird, die Sicherheitshinweise in *Achtung: Sicherheitsinformationen—Bitte zuerst lesen*, IBM Form SD21-0030-02. Diese Veröffentlichung beschreibt die Sicherheitsvorkehrungen für das Verkabeln und Anschließen elektrischer Geräte.



危険： 導入作業を開始する前に、安全に関する小冊子SD21-0030-02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。



**Danger :** Avant d'installer le présent produit, consultez le livret *Attention : Informations pour la sécurité — Lisez-moi d'abord*, SD21-0030-02, qui décrit les procédures à respecter pour effectuer les opérations de câblage et brancher les équipements électriques en toute sécurité.



**Danger:** Avant de procéder à l'installation de ce produit, lisez d'abord les consignes de sécurité dans la brochure *ATTENTION: Consignes de sécurité—A lire au préalable*, SD21-0030-02. Cette brochure décrit les procédures pour câbler et connecter les appareils électriques en toute sécurité.



**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* in cui sono descritte le procedure per il cablaggio ed il collegamento di apparecchiature elettriche.



**Perigo:** Antes de iniciar a instalação deste produto, leia as informações de segurança *Cuidado: Informações de Segurança — Leia Primeiro*, SD21-0030-02. Este documento descreve como efectuar, de um modo seguro, as ligações eléctricas dos equipamentos.



**Peligro:** Antes de empezar a instalar este producto, lea la información de seguridad en *Atención: Información de Seguridad — Lea Esto Primero*, SD21-0030-02. Este documento describe los

procedimientos de seguridad para cablear y enchufar equipos eléctricos.



**Perigo:** Antes de começar a instalar este produto, leia as informações de segurança contidas em *Cuidado: Informações Sobre Segurança—Leia Isto Primeiro*, SD21-0030-02. Esse folheto descreve procedimentos de segurança para a instalação de cabos e conexões em equipamentos elétricos.



**VAARA:** Ennen kuin aloitat tämän tuotteen asennuksen, lue julkaisussa *Varoitus: Turvaohjeet—Lue tämä ensin*, SD21-0030-02, olevat turvaohjeet. Tässä kirjasessa on ohjeet siitä, miten sähkölaitteet kaapeloidaan ja kytketään turvallisesti.



위험: 이 제품을 설치하기 전에 반드시  
"주의: 안전 정보-시작하기 전에"  
(SD21-0030-02)에 있는 안전 정보를  
읽으십시오.

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## UL Notices

Never install telephone jacks in wet locations unless the jack is specifically designed for wet locations.

Never touch uninsulated telephone wires or terminals unless the telephone line has been disconnected at the network interface.

Use caution when installing or modifying telephone lines.

Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electrical shock from lightning.

Do not use the telephone to report a gas leak in the vicinity of the leak.

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## **Related Publications**

Refer to these publications for additional information:

- *BOF for LAN Technical Reference Adapter Interfaces*, SBOF-6221
- *LAN Technical Reference IEEE 802.2 and NETBIOS*, SC30-3587

**Note:** SBOF-6221 and SC30-3587 replace *Local Area Network Technical Reference*, SC30-3383

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## Chapter 1. Introduction

The Home and Away Credit Card Adapter (PC Card) supports the simultaneous operation of both Ethernet and data/fax modem functions. The PC Card is designed to operate in computers with PC card sockets that comply with the standards for Personal Computer Memory Card International Association (PCMCIA) Release 2.0 (or higher), Type II or III sockets.

Special features include:

- Ability to set up system at “Home” in your office or “Away” from your office. You can use the connector block for either setup. When you are Away, take the connector block with you. You can use the phone cable available wherever you want to set up. If you need an Ethernet cable for the Away setup, you can use the one included in this package. Another idea is to use the the Y-cable (ordered separately) for the Home setup. The advantage to this is that you can leave the Y-cable plugged into your wall outlets, disconnect the cable from the PC card, and be portable.
- Compliance with PCMCIA and the IEEE 802.3, 10BASE-T standards. This allows the PC Card to be used with a variety of application programs.
- Sleep Mode/Remote Wake-Up — a minimal-power-consumption state that is entered when the modem function is not in use. Furthermore, the PC Card supports the ability to wake up to full power when an incoming call is detected.
- QuickLink Mobile software—a communications software package that allows the use of all of the features of your fax modem. QuickLink Mobile controls the exchange of information between your fax modem and the remote modem, fax modem, or fax machine.
- Modem function—The Modem function of the PC Card can transfer data at speeds up to 14.4 Kbps using V.32bis mode. It also supports V.32, V.22bis, V.23, V.22, V.21, Bell 212A, and Bell 103. When used as a fax modem, it supports V.17, V.29, V.27ter, and group 3 send and receive rates up to 14.4 Kbps.



Both Class 1 and Class 2 AT fax commands are supported for facsimile communications. The modem also incorporates V.42bis and MNP5 data compression as well as V.42 LAPM and MNP 2-4 error control schemes.

- Cellular support—MNP10 EC and Celeratis TX-CEL support is used to compensate for noisy line conditions when using a cellular phone. See Appendix B, “Parts, BBS, and Cellular Information” on page 61 for information.
- Support for a variety of network operating systems and network applications.

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## Chapter 2. Installation

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### Order of Installation

To install this PC Card, complete the following steps, in order. You might want to mark this page for easy retrieval or make a copy to use as a reference.

- **1** Read the information in Chapter 1, "Introduction."  
**Note:** Be sure that you have your computer's manuals. They contain information about the sockets in your computer.
- **2** Check the shipping package contents list and tips beginning on page 4.
- **3** Install your fax modem software such as QuickLink, which is included in this package.  
**Note:** You need to remember your selection for the COM Port.
- **4** Check that you have the correct software levels. See page 6.
- **5** Follow the installation instructions for your environment. See page 9.
- **6** Insert the PC Card. For Home configuration, see page 51. For Away configuration, see page 40.
- **7** Installation is now complete. See Chapter 3, "Modem Operation" on page 43 for Modem Only and Modem+Ethernet operation information.

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## Kit Contents

In addition to this manual, your kit contains the following items:

- Home and Away Credit Card Adapter.
- Ethernet PC Card cable (RJ-45 to RJ-45).
- Phone cable (RJ-11 to RJ-11).
- A connector block.

**Note:** Standard, commercially available cables for both your modem and Ethernet LAN can be attached to the block. The block also contains a device to help you determine whether or not your telephone line can support the use of a modem. See Chapter 5, “Using the Modem Saver” on page 49 for more information.

- Home and Away Credit Card Adapter Installation Diskette (3-1/2 inch).
- Home and Away Credit Card Adapter Network Utility Diskette (3-1/2 inch).
- Home and Away Credit Card Adapter AT Commands manual.
- QuickLink Mobile fax/modem software.
- Product warranty and registration card. Keep the product warranty for your records.
- *Caution: Safety Information—Read This First* booklet.

Please see “BBS (Bulletin Board System)” on page 63 for information about obtaining an updated version of the installation program through the Bulletin Board Service of the IBM PC Company.

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## Installation Tips

This section provides references to other sections of this publication, phone numbers, and tips about the PC Card.

1. You might want to download the latest version of the PC Card installation software from the IBM PC Company Bulletin Board System (BBS). See page 63 for BBS phone numbers.
2. If you have problems with your computer or PC Card or need assistance, contact your IBM representative or call the IBM PC Company HelpCenter at 1-800-772-2227 (U.S.) or 1-800-465-7999 (Canada).
3. Make certain that the PCMCIA Release 2.0, Type II socket in your computer is enabled. Read your computer documentation for information about how to do this.
4. During installation, make sure that your choices for the COM port are consistent with your communications program and do not conflict with system-provided COM ports. Otherwise, your system will not work correctly.
5. Also during installation, use the modem saver to check your phone line to make sure it is safe to use. See Chapter 5, "Using the Modem Saver" on page 49.
6. See Appendix B, "Parts, BBS, and Cellular Information" on page 61 for information regarding cellular support.
7. If you are not using Card Services, determine which system resources, such as memory ranges, IRQs, and I/O ports, are available.
8. For more information regarding System Resources refer to Appendix D, "Overview of System Resources" on page 75.

**Note:** If you are using a Toshiba computer, do not use physical addresses C0000–C8000 for your memory area. Toshiba uses this area for its video cache.

Return to page 3 to continue. Step 2 of the Installation Checklist is now complete.

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## Check Software Levels

The DOS-compatible installation environments are described in this section. Use this section to make sure that you have the appropriate levels of software needed for this installation. You will install the software later.

### DANGER

**To avoid a shock hazard, do not connect or disconnect any cables or perform installation or maintenance of this product during an electrical storm.**

**1** Before you install the PC Card, you need the Home and Away Credit Card Adapter Installation Diskette and the following items:

- A computer with a PCMCIA Release 2.0 (or higher), Type II or III socket.  
Make certain that the PCMCIA socket is enabled by following the instructions in the documentation provided with your computer. Make a note of which socket (A,B,C,D or 1,2,3,4) you plan to use.
- IBM PC-DOS or Microsoft\*\* MS-DOS\*\* Version 5.0 (or higher), installed.
- If Microsoft Windows\*\* is installed, it must be Version 3.1 or higher.
- If you want to use the Card and Socket Services programming interfaces, you need PCMCIA Card Services Release 2.0 or higher and PCMCIA Socket Services Release 2.0 (installed). These are usually included with your computer, your computer's utility diskette, or your operating system. You must reboot your computer after installing these. See Appendix D, "Overview of System Resources" on page 75 for a discussion of these.

The release level of Card Services installed on your computer is shown during reboot, and the installation program detects its presence.

- **For Modem+Ethernet:** One of the following Ethernet network operating system software programs, which you will install later, according to “Order of Installation” on page 3.

**Note:** A network operating system is not needed if installing the modem only.

- IBM LAN Support Program, Version 1.33 (or higher) and an Ethernet network application program, such as one in the following list:
  - PC 3270 Emulation Program Version 3.0
  - DOS LAN Requester with LAN Server Version 3 or later
  - IBM PC LAN Program PCLP Version 1.34

**Note:** The IBM LAN Support Program for NDIS is included on the Home and Away Credit Card Adapter Installation Diskette.

- Artisoft\*\* LANtastic\*\* Version 5.0 (or higher)
- Banyan\*\* VINES\*\* Version 5.50
- Microsoft LANManager\*\* Version 2.2
- Microsoft Windows for Workgroups Version 3.11
- Novell\*\* NetWare\*\* Version 3.11 (or higher)

**Note:** The Novell Universal Client software is included on the Home and Away Credit Card Adapter diskettes.

- Novell Personal NetWare\*\* Version 1.0
- IBM TCP/IP Version 2.1.1

The READ.ME file on the Installation Diskette contains information to help you configure and customize the PC Card.

**Note:** Most users can use the default parameters that are provided by the PC Card installation program.

**2** Return to page 3 to continue. Step 4 of the Installation Checklist is now complete.

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## PC Card Installation Programs

You can install the PC Card on a computer that has one of the following network operating systems. The procedures in this section contain the recommended sequence of installation steps that you should follow when installing the various network operating systems in combination with DOS. You must run the PC Card installation program in a DOS full-screen session. With DOS installed, you can use the environments in this section.

### Where to Find the Installation Instructions for Your Environment

*Table 1. Installation Instructions*

Modem only	page 10
Novell NetWare (including Personal NetWare)	page 11
IBM LAN Support Program	page 19
Artisoft LANtastic	page 22
Banyan VINES	page 26
Microsoft LANManager	page 30
Microsoft Windows for Workgroups	page 34
IBM TCP/IP for DOS/Windows	page 37



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## Modem Only—Installation

To be able to use the modem without loading your network operating system, a modem enabler must be installed.

**1** Insert the Home and Away Credit Card Adapter Installation Diskette into the diskette drive.

**2** Type **a:install**. Select **Modem Installation Only** and follow the instructions on the panels as they appear.

**Note:** If you are not using Card Services and you have more than one PC Card socket in your computer, for the Card Socket parameter, note which card socket you are configuring.

**Note:** For the modem COM Port parameter, the installation program defaults to COM2. Whether you accept this value or change it, be sure that the value you select matches the value used when installing your modem software.

**3** Exit the installation program, remove the diskette, and reboot your computer.

**4** Return to page 3 to continue. Step 5 of the Installation Checklist is now complete.

## Novell NetWare—Installation

Use the following table to find the appropriate set of instructions.

If you do not already have Novell NetWare installed on your computer, use the instructions for Novell Universal Client.

*Table 2. Novell Installation Instructions*

Novell Universal Client	page 11
Novell NetWare < 4.0 and ≥ 3.11	page 12
Novell NetWare 4.0	page 13
Novell NetWare 4.0x	page 14
Novell NetWare 4.1	page 15
Personal NetWare	page 16

### Novell Universal Client:

Novell Universal Client software is included with the PC Card. This client software will connect to LANs with Novell NetWare versions 3.11 and higher.

- 1** Insert the Home and Away Credit Card Adapter Installation diskette in drive A, and type: **a:\install** (where **a:** is the drive letter for the drive that contains the Installation diskette).
- 2** Follow the instructions on the panels as they appear. Choose **Novell NetWare** as the network environment.
- 3** Choose **Universal Client** as the version (default).
- 4** The universal client installation prompts you to insert the Network Utility diskette. Insert it into the drive when requested.
- 5** Exit the installation program, remove the diskette, and reboot your computer.
- 6** Return to page 3 to continue. Step 5 of the Installation Checklist is now complete.

## Novell NetWare Versions lower than 4.0 and greater than or equal to 3.11:

**1** Create a directory that will hold the NetWare files. The expected directory name is NETWARE.

**2** In your AUTOEXEC.BAT:

- Add the directory to the PATH= command. For example, PATH=C:\;\C:\DOS;yourdirectory;
- Add the following commands to the end:

```
LSL
NESL
FME_NET
ROUTE
IPXODI
NETX
```

These represent:

NetWare Link Support Layer program  
IBM Ethernet driver  
Routing module, only if routing is required  
NetWare ODI Network driver  
NetWare workstation shell.

**3** Find the NetWare diskette containing the files specified in step 4 and insert it in the diskette drive.

**4** Copy LSL.COM, IPXODI.COM, ROUTE.COM (only if routing is required), and NETX.COM to your NetWare directory.

**Note:** Make a note of the directory name to which you have copied the NetWare files. You will need the directory name when you perform the installation procedures in the next step.

**5** Skip to “Install the PC Card Software” on page 17 *without* rebooting your computer.

## Novell NetWare Version 4.0:

- 1** Create a directory that will hold the NetWare files. The default directory name is NETWORK.
- 2** In your AUTOEXEC.BAT:
  - Add the directory to the PATH= command. For example,  
PATH=C:\;C:\DOS;yourdirectory;
  - Add the following commands to the end:  
LSL  
NESL  
FME\_NET  
ROUTE  
IPXODI  
VLM

These represent:

  - NetWare Link Support Layer program
  - IBM Ethernet driver
  - Routing module, only if routing is required
  - NetWare ODI Network driver
  - NetWare workstation shell for NetWare 4.0x.
- 3** Find the NetWare diskette containing the files specified in step 4 and insert it in the diskette drive.
- 4** Copy LSL.COM, IPXODI.COM, and ROUTE.COM (only if routing is required) to your NetWare directory.
- 5** Copy all files with a .VLM extension to your NetWare directory.
- 6** Copy VLM.EXE to your NetWare directory.
- 7** Add LASTDRIVE=Z to the end of your CONFIG.SYS.
- 8** Skip to “Install the PC Card Software” on page 17 *without rebooting* your computer.

## Novell NetWare Version 4.0x:

- 1** Insert the Novell 4.0x Diskette in drive A, and type **a:**, press **Enter** and then type **install**, and press **Enter**. Follow the steps on the panels as they appear.
- 2** At step 1 on the panel, record the client directory name in order to do a client installation. The default directory name is C:\NWCLIENT.
- 3** At step 4 on the panel, press **Enter** to install the driver.
- 4** At the Insert The Driver Disk window, insert Home and Away Credit Card Adapter Installation Diskette 1 and press **Enter**.
- 5** Choose **IBM Home and Away Credit Card Adapter**.
- 6** At the Settings for IBM Home and Away Credit Card Adapter window, press **Esc**.
- 7** At step 5, press **Enter** to finish installing NetWare.
- 8** Press **Enter** to exit the installation program.
- 9** Skip to "Install the PC Card Software" on page 17 *without rebooting* your computer.

## Novell NetWare Version 4.1:

- 1** Insert the first NetWare diskette in drive A.
- 2** Type **a:**.
- 3** Type **install**.
- 4** On the main menu, you need to confirm or change all six items, as described here:
  - 1** The default directory is NWCLIENT.
  - 2** The default is Yes.
  - 3** The default is No.
  - 4** The default is No.
  - 5** Press **Enter** to get the Network Board list. Page down to the bottom and select **OTHER DRIVERS**. When you get to the Insert the Driver Disk panel, insert the Home and Away Credit Card Adapter Installation Diskette and press **Enter**. At *Network Board* select **IBM Home and Away Credit Card Adapter**. Change the settings if you want. In most cases, you can use the defaults provided.  
  
Press **Enter** to continuing installing the NetWare files. Follow the instructions on the panels as they appear.
- 5** Skip to "Install the PC Card Software" on page 17 *without rebooting* your computer.

## Personal NetWare

- 1** Insert the Personal NetWare Diskette in drive A, and enter **a:install**. Follow the instructions on the panels as they appear.
- 2** When you reach the Primary Panel Interface Card window, choose **OEM Supplied Driver** from the pull-down menu.
- 3** When prompted for a diskette containing the driver files insert Home and Away Credit Card Adapter Installation Diskette 1 and press **Enter**.
- 4** Make sure that IBM Home and Away Credit Card Adapter appears as the Primary Network Interface card.
- 5** Choose **Accept above and continue**.
- 6** Make a note of the subdirectory name where you install the NetWare software. The default name is NWCLIENT.
- 7** When you see third party supplied driver file, insert Home and Away Credit Card Adapter Installation Diskette 1.
- 8** Enter **CNTL-C** to exit the Personal NetWare installation.
- 9** Continue with "Install the PC Card Software" on page 17 *without rebooting* your computer.

## Install the PC Card Software

Read the following notes, and then follow the steps listed after them to install the PC Card software.

### Memory Management Notes

- If you are using Card and Socket Services, the installation program will default to autoselect mode, which allows the LAN driver to negotiate with Card and Socket Services for whichever resources are available. If you are using Custom Install, the installation program will also allow you to select values for resources to be used by your PC Card such as Interrupt Level, IO Base (I/O), and Memory Base (SRAM).
- If you are not using Card and Socket Services in autoselect mode, you must ensure that the values that you select for Interrupt, I/O, and SRAM do not conflict with those values for other devices in your computer.
- If you are using a memory manager, you must exclude the memory ranges being used by your PC Card for SRAM (20-KB + 1 byte default size). If you are using EMM386, in most cases the memory exclusions will be automatically handled by the installation program.

**1** Make sure that the Installation Diskette is in the drive, and type **a:\install**. Follow the instructions on the panels as they appear. *Express Installation* enables you to install the drivers more quickly by using default parameters. In *Custom Installation*, you can change the parameters.

**2** You will need the following information as you go through the panels (in both Express and Custom Installation):

- For the network environment parameter, select **Novell NetWare**.
- If you are not using Card Services and you have more than one PC Card socket in your computer, for the Card Socket parameter, note which PC Card socket you are configuring.
- For the Modem COM Port parameter, the installation program will default to COM2. Whether you accept this



value or change it, be sure that the value you select matches the value you used when installing your modem software (such as QuickLink).

- 3** Exit the installation program, remove the diskette, and reboot your computer.
- 4** Return to page 3 to continue. Step 5 of the Installation Checklist is now complete.

## IBM LAN Support Program—Installation

Refer to your LAN Support Program (LSP) documentation for specific information regarding the LSP installation. See the README.LSP file on the Installation Diskette. There is an LSP book diskette on the IBM Personal Computer BBS. See “BBS (Bulletin Board System)” on page 63.

- 1** Insert the Home and Away Credit Card Adapter Installation Diskette in the diskette drive.
- 2** Install LSP:
  - a** Type `a:\lspndis\dxmaid`, press **Enter**, and follow the instructions on the panels to run the installation aid.
  - b** When you get to the Setup panel, indicate that you have driver diskettes.
  - c** Make a note of the name of your target directory. The default directory name is LSP. You will have to specify this name when the Home and Away installation program asks for the directory containing your PROTOCOL.INI file. This is done during step 3 on page 20.
  - d** While running DXMAID, when you are prompted for driver diskettes, press **Enter**, because the Installation Diskette is already in the drive.
  - e** When you get to the Primary Adapter panel, ADAPTER DRIVER section, select **Home and Away Credit Card Adapter**. No selection is necessary in the PROTOCOL DRIVERS section.
  - f** Press **F4** to finish the installation.

**Note:** When installation is complete, leave the diskette in the drive but *do not reboot* your computer. Continue with step 3 on page 20.

- 3** Read the following notes, and then follow the steps listed after them to install the PC Card software.

#### Memory Management Notes

- If you are using Card and Socket Services, the installation program will default to autoselect mode, which allows the LAN driver to negotiate with Card and Socket Services for whichever resources are available. If you are using Custom Install, the installation program will also allow you to select values for resources to be used by your PC Card such as Interrupt Level, IO Base (I/O), and Memory Base (SRAM).
- If you are not using Card and Socket Services in autoselect mode, you must ensure that the values that you select for Interrupt, I/O, and SRAM do not conflict with those values for other devices in your computer.
- If you are using a memory manager, you must exclude the memory ranges being used by your PC Card for SRAM (20-KB + 1 byte default size). If you are using EMM386, in most cases the memory exclusions will be automatically handled by the installation program.

**a** Make sure that the Installation Diskette is in the drive, and type **a:\install**. Follow the instructions on the panels as they appear. *Express Installation* enables you to install the drivers more quickly by using default parameters. In *Custom Installation*, you can change the parameters.

**b** You will need the following information as you go through the panels (in both Express and Custom Installation):

- For the network environment parameter, select **Other NDIS Environments**.
- If you are not using Card Services and you have more than one PC Card socket in your computer, for the Card Socket parameter, note which socket you are configuring.

- For the Modem COM Port parameter, the installation program will default to COM2. Whether you accept this value or change it, be sure that the value you select matches the value you used when installing your modem software (such as QuickLink).

- 4** Exit the installation program, remove the diskette, and reboot your computer.
- 5** Install your Ethernet network application program (for example, DOS LAN Requester or PC LAN Program) using the installation procedures that are supplied with the programs.
- 6** Return to page 3 to continue. Step 5 of the Installation Checklist is now complete.

## Artisoft LANtastic—Installation

**1** Install Artisoft LANtastic: **Version 5.0 instructions** (see page 23 for Version 6.0):

**a** Obtain the Artisoft NDIS Support for LANtastic diskette from Artisoft Inc.:

- Use a modem and telecommunications software to access the Artisoft bulletin board system (BBS). Call 602-884-8648 for a modem speed of up to 9600 bps, or 602-884-9675 for a modem speed of 14.4 Kbps. Use a modem protocol of 8 bits, no parity, and 1 stop bit (8,n,1).
- Download AINDIS.EXE from the Artisoft BBS.
- Copy AINDIS.EXE to a blank, formatted, high-density diskette.
- Run AINDIS to extract multiple files onto the diskette.

**b** Install the ARTISOFT LANtastic Version 5.0 software using the installation instructions provided with it (**a:install**). You will need the following information as you go through the panels.

- Make a note of the subdirectory name where you install the LANtastic software. The default name is LANTASTI.
- Make a note of the new STARTNET.BAT name if you change it. You will need this name in step 2 on page 24.
- Select **Network Adapter Installed**, and in the window select **Other Netbios Compatible Network Adapter**.
- Select **Adapter Drivers to Install**, and in the window select **Other Netbios Compatible Network Adapter**.
- Set up your printers and diskette drives according to the LANtastic installation instructions. Contact your network administrator if you need more information.

- Select **Perform Installation**. This may take a while.

**C** Copy all ARTISOFT NDIS files from your new diskette to your LANtastic subdirectory. This installs NDIS Support for LANtastic.

**d** In your AUTOEXEC.BAT:

- Add the directory that holds the LANtastic files (from step 1b) to the PATH= command. For example,  
PATH=C:\;C:\DOS;yourdirectory;
- Add the following command to the end:  
STARTNET

**e** Continue with step 2 on page 24.

**Version 6.0 instructions** (see page 22 for Version 5.0):

**a** Install the Artisoft LANtastic Version 6.0 software using the installation instructions provided with it (**a:install**). You will need the following information as you go through the panels.

- Make a note of the subdirectory name where you install the LANtastic software. The default name is LANTASTI.
- When prompted for an adapter, select **NDIS Support for Network Adapters**.
- When prompted to insert the manufacturer's driver diskette, insert the Home and Away Credit Card Adapter Installation Diskette.
- The program will then continue the installation. Follow the instructions on the panels as they appear.

**b** After the installation is complete, *do not reboot* your computer. Press **Esc** to exit to DOS.

**C** Continue with step 2 on page 24.

- 2** Read the following notes, and then follow the steps listed after them to install the PC Card software.

#### Memory Management Notes

- If you are using Card and Socket Services, the installation program will default to autoselect mode, which allows the LAN driver to negotiate with Card and Socket Services for whichever resources are available. If you are using Custom Install, the installation program will also allow you to select values for resources to be used by your PC Card such as Interrupt Level, IO Base (I/O), and Memory Base (SRAM).
- If you are not using Card and Socket Services in autoselect mode, you must ensure that the values that you select for Interrupt, I/O, and SRAM do not conflict with those values for other devices in your computer.
- If you are using a memory manager, you must exclude the memory ranges being used by your PC Card for SRAM (20-KB + 1 byte default size). If you are using EMM386, in most cases the memory exclusions will be automatically handled by the installation program.

**a** Make sure that the Installation Diskette is in the drive, and type **a:\install**. Follow the instructions on the panels as they appear. *Express Installation* enables you to install the drivers more quickly by using default parameters. In *Custom Installation*, you can change the parameters.

**b** You will need the following information as you go through the panels (in both Express and Custom Installation):

- For the network environment parameter, select **Artisoft LANtastic**.
- If you are not using Card Services and you have more than one PC Card socket in your computer, for the Card Socket parameter, note which PC Card socket you are configuring.

- For the Modem COM Port parameter, the installation program will default to COM2. Whether you accept this value or change it, be sure that the value you select matches the value you used when installing your modem software (such as QuickLink).

**3** Return to page 3 to continue. Step 5 of the Installation Checklist is now complete.



## Banyan VINES—Installation

- 1** If one computer is already attached to your Banyan server, follow the instructions here. Otherwise, skip to step 1a to install your PC Card.
  - Format a high-density diskette.
  - From the computer already logged in to the server, type **PCCOPY**.
  - On successive panels, select:
    - **Copy PC Configuration Software and/or LAN Driver**
    - **NDIS Ethernet and PCCONFIG (PC Configuration)** and press **F10** when done.
    - **REDIRALL.EXE** and press **F10** when done.
    - **A:**
  - Insert the formatted diskette in drive A and press **Enter**.
  - This will make one installation diskette with all the required Banyan files on it.
  - Back at your computer, make a \VINES subdirectory on your hard disk.
  - Copy the contents of the new diskette into your \VINES subdirectory.
  - Go to step 2 on page 27.
- a** Make a \VINES subdirectory on your hard disk.
- b** Copy the contents of the Banyan installation diskette to your \VINES subdirectory.
- c** If you used a directory name other than \VINES, make a note of it. You will need the directory name when you perform the installation procedures in step 2 on page 27.

- d** Locate the subdirectory \NDIS on one of the two Banyan VINES LAN software diskettes and copy the contents of this subdirectory to the subdirectory on your hard disk containing the other Banyan software.

**2** Read the following notes, and then follow the steps listed after them to install the PC Card software.

#### Memory Management Notes

- If you are using Card and Socket Services, the installation program will default to autoselect mode, which allows the LAN driver to negotiate with Card and Socket Services for whichever resources are available. If you are using Custom Install, the installation program will also allow you to select values for resources to be used by your PC Card such as Interrupt Level, IO Base (I/O), and Memory Base (SRAM).
- If you are not using Card and Socket Services in autoselect mode, you must ensure that the values that you select for Interrupt, I/O, and SRAM do not conflict with those values for other devices in your computer.
- If you are using a memory manager, you must exclude the memory ranges being used by your PC Card for SRAM (20-KB + 1 byte default size). If you are using EMM386, in most cases the memory exclusions will be automatically handled by the installation program.

**a** Make sure that the Installation Diskette is in the drive, and type **a:\install**. Follow the instructions on the panels as they appear. *Express Installation* enables you to install the drivers more quickly by using default parameters. In *Custom Installation*, you can change the parameters.

**b** You will need the following information as you go through the panels (in both Express and Custom Installation):

- For the network environment parameter, select **Banyan VINES**.

- If you are not using Card Services and you have more than one PC Card socket in your computer, for the Card Socket parameter, note which PC Card socket you are configuring.
- For the Modem COM Port parameter, the installation program will default to COM2. Whether you accept this value or change it, be sure that the value you select matches the value you used when installing your modem software (such as QuickLink).

**Note:** *Do not reboot* your computer at this time.

**3** Run the PCCONFIG program that was supplied with the Banyan Software.

**a** Type **CD VINES**.

**b** Type **PCCONFIG** to run the configuration program.

**c** Select **Login Environment Settings**.

**d** Select **Default Communications Driver**.

**e** Select **NDIS Ethernet**.

**f** Press **Enter**.

**g** Press **Esc** to get back to the main menu.

**h** Select **Network Card Settings**.

**i** Select **NDIS Ethernet**.

**j** Press **Enter**.

**k** Type **FME\_NDIS\_NIF** in the PROTOCOL.INI bindings blank.

**l** Make sure that the other settings are the same as those chosen when you ran the Credit Card Adapter Installation Program (those specified in your PROTOCOL.INI).

**m** Press **F10**, **Esc**, and **F10** to save your changes.

**4** Return to page 3 to continue. Step 5 of the Installation Checklist is now complete.

**Note:** After you install the PC Card and reboot your computer, type **CD VINES**, and then **BAN** to get to the Banyan login panel.

## Microsoft LANManager—Installation

- 1** If Microsoft LANManager is not already installed, refer to the *Microsoft LANManager Installation and Configuration Guide* along with these instructions to install the program. If the program is already installed, go to step 3 on page 31.
- 2** Make a note of the directory to which you are installing your LANManager software because you will be asked for it in step 4 on page 32. The default name is LANMAN.DOS.
  - a** Insert your SETUP diskette and type **a:setup**.
  - b** On the Network Adapter Drivers window, select the **Other Driver** option.
  - c** Insert the Home and Away Credit Card Adapter Installation Diskette when prompted.
  - d** Do *not* enter a path name on the prompt window.
  - e** Press **Enter** when FME\_NDIS.DOS is displayed.

A message will be displayed to indicate when the NDIS driver (FME\_NDIS.DOS) has been copied.
  - f** On the Network Protocols window, select the NetBeui driver.
  - g** Follow the instructions on the panels to complete the configuration. However, *do not reboot* your computer at this time. Throughout the rest of the installation, pressing **Enter** will advance the panels.

**Note:** You will get a note saying *Setup has detected extended memory in your system. Do you want setup to maximize application memory?* Answer no.
  - h** Go to step 4 on page 32.

### 3 If Microsoft LANManager is already installed:

**Note:** If your computer was set up as a Basic Workstation, LANManager will not allow you to add another PC Card. You must reinstall LANManager and set up your computer as an Extended Workstation.

- a** Make a note of the directory in which LANManager resides because you will be asked for it in step 4 on page 32.
- b** Start the Microsoft LANManager Setup program.
- c** From the menu bar, select **Configuration**, and then **Network Drivers**.
- d** The Workstation Configuration window will be displayed. Select the **Add New Config** option on that window.
- e** On the Network Adapter Drivers window, select the **Other Driver** option.
- f** Insert the Home and Away Credit Card Adapter Installation Diskette when prompted.
- g** Do *not* enter a path name on the prompt window.
- h** Press **Enter** when FME\_NDIS.DOS is displayed.  
A message will be displayed to indicate when the NDIS driver (FME\_NDIS.DOS) has been copied.
- i** On the Network Protocols window, select the NetBeui driver.
- j** Follow the instructions on the panels to complete the configuration. However, *do not reboot* your computer at this time. Throughout the rest of the installation, pressing **Enter** will advance the panels.

**k** After the configuration has been completed, return to step 3d if you need to configure LANManager for a second Home and Away Credit Card Adapter.

**4** Read the following notes, and then follow the steps listed after them to install the PC Card software.

#### Memory Management Notes

- If you are using Card and Socket Services, the installation program will default to autosect mode, which allows the LAN driver to negotiate with Card and Socket Services for whichever resources are available. If you are using Custom Install, the installation program will also allow you to select values for resources to be used by your PC Card such as Interrupt Level, IO Base (I/O), and Memory Base (SRAM).
- If you are not using Card and Socket Services in autosect mode, you must ensure that the values that you select for Interrupt, I/O, and SRAM do not conflict with those values for other devices in your computer.
- If you are using a memory manager, you must exclude the memory ranges being used by your PC Card for SRAM (20-KB + 1 byte default size). If you are using EMM386, in most cases the memory exclusions will be automatically handled by the installation program.

**a** Make sure that the Installation Diskette is in the drive, and type **a:\install**. Follow the instructions on the panels as they appear. *Express Installation* enables you to install the drivers more quickly by using default parameters. In *Custom Installation*, you can change the parameters.

**b** You will need the following information as you go through the panels (in both Express and Custom Installation):

- For the network environment parameter, select **MS LAN Manager**.

- If you are not using Card Services and you have more than one PC Card socket in your computer, for the Card Socket parameter, note which PC Card socket you are configuring.
- For the Modem COM Port parameter, the installation program will default to COM2. Whether you accept this value or change it, be sure that the value you select matches the value you used when installing your modem software (such as QuickLink).

**5** Return to page 3 to continue. Step 5 of the Installation Checklist is now complete.



## Microsoft Windows for Workgroups—Installation

**Note:** If Windows for Workgroups is already installed, refer to the *Microsoft Windows for Workgroups User's Guide* for instructions on how to install and configure a third-party device driver. Then, continue with step 2.

- 1** If Windows for Workgroups is not already installed, use the steps below to help while installing according to the Windows for Workgroups manual.
  - a** When you get to the Network Setup panel (Diskette 6), select **Networks**, and then select **Install Microsoft Windows Network**.
  - b** Change any other items for your environment, and select **OK** and **Continue**.
  - c** When prompted to add a network adapter, select **Unlisted or Updated Network Adapter** and select **OK**. You will be asked to insert a diskette that contains the network driver; that is when you should insert the Home and Away Credit Card Adapter Installation Diskette, and select **OK**.
  - d** When you get to the Install Driver panel, change the directory name to **A:\DOS**, and select **OK**.
  - e** When the program finds the correct drivers, select **OK**. Add any necessary protocols, and select **Close** and **OK**.
  - f** Exit the Windows for Workgroups setup. *Do not* reboot your computer at this time. Select **Continue** to get to the DOS prompt.
- 2** Read the following notes, and then follow the steps listed after them to install the PC Card software.

### Memory Management Notes

- If you are using Card and Socket Services, the installation program will default to autoset mode, which allows the LAN

driver to negotiate with Card and Socket Services for whichever resources are available. If you are using Custom Install, the installation program will also allow you to select values for resources to be used by your PC Card such as Interrupt Level, IO Base (I/O), and Memory Base (SRAM).

- If you are not using Card and Socket Services in autoselect mode, you must ensure that the values that you select for Interrupt, I/O, and SRAM do not conflict with those values for other devices in your computer.
  - If you are using a memory manager, you must exclude the memory ranges being used by your PC Card for SRAM (20-KB + 1 byte default size). If you are using EMM386, in most cases the memory exclusions will be automatically handled by the installation program.
- a** Make sure that the Installation Diskette is in the drive, and type **a:\install**. Follow the instructions on the panels as they appear. *Express Installation* enables you to install the drivers more quickly by using default parameters. In *Custom Installation*, you can change the parameters.
- b** You will need the following information as you go through the panels (in both Express and Custom Installation):
- For the network environment parameter, select **Windows for Workgroups**.
  - If you are not using Card Services and you have more than one PC Card socket in your computer, for the Card Socket parameter, note which PC Card socket you are configuring.
  - For the Modem COM Port parameter, the installation program will default to COM2. Whether you accept this value or change it, be sure that the value you select matches the value you used when installing your modem software (such as QuickLink).

- 3** Use the *Microsoft Windows for Workgroups User's Guide* to configure your network resources.
- 4** Return to page 3 to continue. Step 5 of the Installation Checklist is now complete.

## IBM TCP/IP for DOS/Windows

- 1** Insert the first of your set of TCP/IP diskettes in the diskette drive.
  - 2** Type **a:\install** and follow the instructions.
  - 3** Make a note of the directory where you install the software because you will be asked for it later. The default name is C:\TCPDOS.
  - 4** Using a text editor, append file FME\_NDIS.DDI from the Home and Away Credit Card Adapter Installation Diskette to the end of the file NDIS.DDI in the C:\yourdirectory\ETC directory. This will add the Home and Away Credit Card Adapter to the list of supported adapters in step 5.
  - 5** Run TCP/IP Custom to configure TCP/IP for DOS using the installation instructions provided with it. You will need the following information as you go through the panels.
    - When configuring the NDIS interface, select the Home and Away Credit Card Adapter as the PC Card to be bound. It should be at the end of the list.
    - When you are prompted to insert driver diskette D1 to install the driver, insert the Home and Away Credit Card Adapter Installation Diskette.
- Note:** You do not need to reboot before continuing with step 6.
- 6** Read the following notes, and then follow the steps listed after them to install the PC Card software.

### Memory Management Notes

- If you are using Card and Socket Services, the installation program will default to autoset mode, which allows the LAN driver to negotiate with Card and Socket Services for whichever resources are available. If you are using Custom Install, the installation program will also allow you to select values for resources to be used by your PC Card

such as Interrupt Level, IO Base (I/O), and Memory Base (SRAM).

- If you are not using Card and Socket Services in autoselect mode, you must ensure that the values that you select for Interrupt, I/O, and SRAM do not conflict with those values for other devices in your computer.
- If you are using a memory manager, you must exclude the memory ranges being used by your PC Card for SRAM (20-KB + 1 byte default size). If you are using EMM386, in most cases the memory exclusions will be automatically handled by the installation program.

**a** Make sure that the Home and Away Credit Card Adapter Installation Diskette is in the drive, and type **a:\install**. Follow the instructions on the panels as they appear. *Express Installation* enables you to install the drivers more quickly by using default parameters. In *Custom Installation*, you can change the parameters.

**b** You will need the following information as you go through the panels (in both Express and Custom Installation):

- For the network environment parameter, select **Other NDIS Environments**.
- If you are not using Card Services and you have more than one PC Card socket in your computer, for the Card Socket parameter, note which PC Card socket you are configuring.
- For the Modem COM Port parameter, the installation program will default to COM2. Whether you accept this value or change it, be sure that the value you select matches the value you used when installing your modem software (such as QuickLink).

**7** If you are installing TCP/IP under Windows, use the *Microsoft Windows for Workgroups User's Guide* to configure your network resources.

- 8** Reboot your computer and run TCPCHECK to verify the configuration.
- 9** Return to page 3 to continue. Step 5 of the Installation Checklist is now complete.

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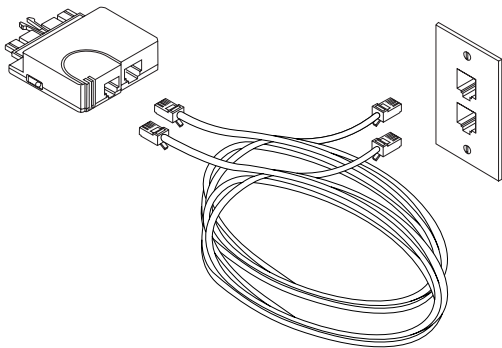
## Inserting the PC Card

**Note:** Before installing the Home and Away Credit Card Adapter, be sure to read “Electronic Emission Notices” on page 67.

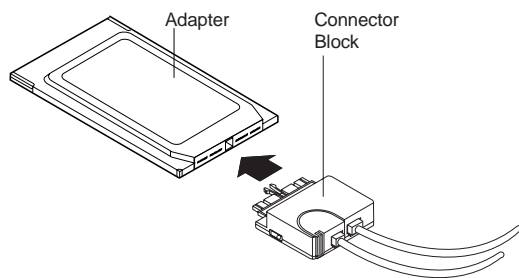
For an alternate hardware configuration, see Chapter 6, “Using the Y-cable” on page 51.

**Note:** If you are using Card and Socket Services, you might be able to use *hot pluggability* features with your PC Card. Refer to the READ.ME file on the Installation Diskette for the most current information regarding hot pluggability.

- 1 Switch OFF the power to the computer.
- 2 Connect the cables to the outlets and the connector block:
  - Attach the phone (smaller) and Ethernet (larger) cables to the appropriate telecommunications outlets.
  - Attach the phone and Ethernet cables to the connector block.

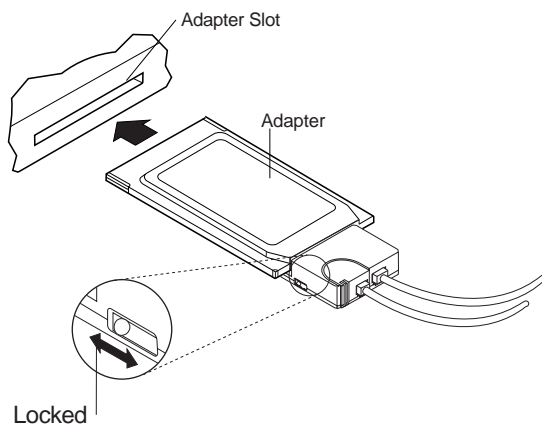


- 3 Attach the connector block to the PC Card. The block is keyed to go in only one way. If you feel resistance before it is fully inserted, turn it over and reinsert it. To lock the block in place, push the button locks on the connector block toward the PC Card. Push the buttons back toward the cables to unlock the connector block from the PC Card.



**4** Insert the PC Card in the socket.

The PC Card is keyed to go in only one way. If you feel resistance before it is fully inserted, turn it over and reinsert it.



**5** Switch ON the power to the computer.

**6** Return to page 3 to continue. Step 6 of the Installation Checklist is now complete.



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## Removing the PC Card

**Note:** If you are using Card and Socket Services, you might be able to use *hot pluggability* features with your PC Card. Refer to the READ.ME file for the most current information regarding hot pluggability.

Follow these steps to remove the PC Card:

- 1** Switch OFF the power to the computer.
- 2** With the cable still attached to the PC Card, remove the PC Card from the computer.
- 3** To detach the block from the PC Card, push the buttons back toward the cables to unlock the connector block from the PC Card. Then pull the block from the card.
- 4** Grasp the connector and unplug it from the PC Card. The cable is still connected to the network.
- 5** Store the PC Card in the adapter sleeve.

---

## Chapter 3. Modem Operation

The PC Card supports the following data modem modulation standards in originate and answer modes:

CCITT V.21	300 bps
Bell 103F	300 bps
CCITT V.22	1200 bps
Bell 212A	1200 bps
CCITT V.23	1200/75 bps
CCITT V.22bis	2400 bps
CCITT V.32	up to 9600 bps
CCITT V.32bis	up to 14400 bps

### Common COM Ports

The four COM ports, C1 through C4, and their associated base-address values and interrupt settings, are shown as follows:

COM1:	03f8h	IRQ4
COM2:	02f8h	IRQ3
COM3:	03e8h	IRQ4
COM4:	02e8h	IRQ3

The COM port chosen during the Home and Away Credit Card Adapter installation must match the COM port chosen for your modem software. This can usually be changed in the modem software. See the documentation that came with your modem application program.

---

### Ethernet and Modem Concurrent Use

If you have installed the modem and Ethernet functions and you plan on using the modem and Ethernet functions concurrently, the installation loads the NDIS or ODI driver, FME\_NDIS.DOS or FME\_NET.COM, respectively, to support both functions.

If you have a Novell NetWare environment with Card Services support, a Card Services-aware modem enabler, MODEMCS.SYS, was loaded and your CONFIG.SYS was modified by the installation program. You may use your modem with or without loading the

network. See Chapter 4, "Hot-Pluggability and Suspend/Resume Issues" on page 47 for additional information.

If you have a Novell NetWare environment without Card Services support, a modem enabler, POINTMOD.EXE was loaded for use when your network is **not** loaded. Your CONFIG.SYS file was not edited because the enabler can be executed from the DOS command line. To use the modem enabler you must **not** have your network drivers loaded. To unload the Novell NetWare drivers you must remove them in the reverse order that they were installed. This can be accomplished by typing the following at the DOS prompt:

```
VLM U (or NETX U)
IPXODI U
FME_NET U
NESL U
LSL U
```

You may now load the modem enabler by typing **POINTMOD** at the DOS command line. You can use your modem communications software to run your modem. If you would like to load your network after and have not rebooted, you may do this from the DOS command line by typing:

```
POINTFME
LSL
NESL
FME_NET
IPXODI
VLM (or NETX)
```

Your network and modem are now able to be used concurrently.

If you have installed an NDIS environment (such as Windows for Workgroups, Artisoft LANtastic, IBM LAN Support Program, or Banyan Vines), you need to be aware that you cannot have your network drivers loaded if you want to load a modem-only enabler, MODEMCS.SYS or POINTMOD.EXE. Your NDIS network drivers are usually loaded at CONFIG.SYS time. You may choose to have two CONFIG.SYS files that you can switch between, one for loading the Ethernet and modem and another for modem-only use. You may

also choose to set up a menu-driven CONFIG.SYS. See “Modem Only—Installation” on page 10 for additional information.

---

### **Modem Only Use**

If you have installed the modem only with Card Services support, the installation program loaded a Card Services-aware modem enabler, MODEMCS.SYS and modified your CONFIG.SYS. See Chapter 4, “Hot-Pluggability and Suspend/Resume Issues” on page 47 for additional information.

If you have installed the modem only without Card Services support, a modem enabler, POINTMOD.EXE, was loaded and your CONFIG.SYS was modified by the installation program.

If you choose not to have POINTMOD.EXE load at CONFIG.SYS time, you may load it at the DOS command line by typing **POINTMOD**.

**Note:** You should not have any network drivers loaded while using a modem-only enabler, MODEMCS.SYS or POINTMOD.EXE.

### **Miscellaneous Modem Information**

If you are asked to choose a modem type while installing your modem software, choose Boca Research, Zoom, or Hayes Compatible modem.

If you get a message when trying to start windows such as: “Cannot find a device file that may be needed to run Windows in 386 enhanced mode” and it mentions VFMED.386, you may have specified the wrong path for your Windows directory during the installation. Compare the path given in the PROTOCOL.INI or NET.CFG with the actual location of the VFMED.386 file.



---

## Chapter 4. Hot-Pluggability and Suspend/Resume Issues

The drivers support a level of hot-pluggability and Suspend/Resume. Hot-pluggability refers to the ability to remove and insert your PC Card at any time while the computer is running. If you follow these guidelines, no damage will occur to your PC Card, computer, or software. Hot-plugging has the advantage of allowing you to remove your PC Card when you are using battery power, thus reducing the drain on your battery. To use the hot-plugging features of this PC Card, you must:

- Use Card and Socket Services. If you are using a point enabler, **do not** attempt to unplug your PC Card while the computer is switched on. You may damage both your PC Card and the computer.
- Use the DOS ODI environment. At the present time, the DOS NDIS environments do not support hot-pluggability. Removing your PC Card while using any of these may result in a system hang or the inability to access your LAN applications.

To remove the PC Card or go into suspend mode, you must first unload all of the Novell NetWare drivers. This is done by typing **stopnet** at the DOS prompt or by removing the drivers in the reverse order that they were installed. This can be accomplished by typing the following at the DOS prompt:

```
VLM U (or NETX)
IPXODI U
FME_NET U
NESL U
LSL U
```

At this point, you may remove the PC Card from the computer. Once the PC Card is removed, you may enter and exit suspend mode as often as you would like before reinserting the PC Card. It is best to reinsert the adapter while the machine is not in suspend mode.

Also, a modem enabler, MODEMCS.SYS, will take control after you unload the Novell NetWare drivers. When you reload your network drivers, the modem enabler will pass control back to the DOS ODI driver, FME\_NET.COM. This will allow you to use your modem under a Card Services environment with or without your network drivers loaded.

---

## Chapter 5. Using the Modem Saver

The Home and Away Credit Card Adapter connector block has a modem saver circuit built into it. It prevents the modem from being connected to a phone system that could permanently damage the modem. Every time you start a call using your modem (for example, to use bulletin boards, Fax, or online services), the modem saver LEDs will indicate whether the phone line is safe to use. See Table 3. If the modem saver detects a potentially damaging phone line it will not allow the modem to take the phone line off-hook, thus preventing damage to the modem. If the modem saver indicates a potentially damaging line, contact your local communications system administrator to find a suitable connection to the local Public Switched Telephone Network (PSTN).

*Table 3. LED Conditions for the Home and Away Credit Card Adapter Connector Block*

LED	Description
Green	Good line—Continue with normal modem use.
Flashing Yellow	Potential modem damage—Disconnect RJ-11 cable from connector block and find another line to attach.
Neither LED lit	1) Dead phone line or 2) Phone system that does not use conventional wiring—DO NOT attempt to make a connection. Contact your local communications system administrator to find a suitable phone connection.





---

## Chapter 6. Using the Y-cable

The Y-cable has a 22-pin connector on one end, 3 meters of cable, and 2 connectors on the other end. The larger connector is RJ-45; the smaller is RJ-11.

See Appendix B, "Parts, BBS, and Cellular Information" on page 61 for ordering information.

---

### Inserting the PC Card

**Note:** Before installing the Home and Away Credit Card Adapter, be sure to read "Electronic Emission Notices" on page 67.

For an alternate hardware configuration, see "Inserting the PC Card" on page 40.

**Note:** If you are using Card and Socket Services, you might be able to use *hot pluggability* features with your PC Card. Refer to the READ.ME file on the Installation Diskette for the most current information regarding hot pluggability.

**1** Remove any diskettes from the diskette drives and switch OFF the power to the computer.

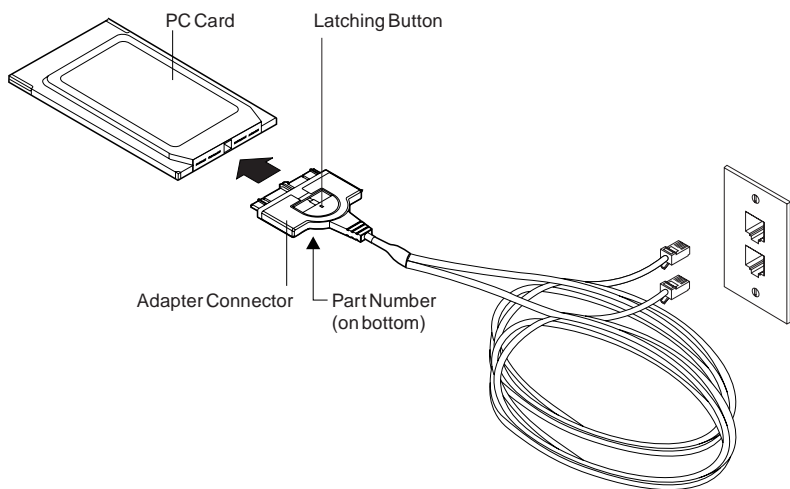
**2** Connect the Y-cable to the outlets and the PC Card:

- Attach the phone (smaller) and Ethernet (larger) connectors on the Y-cable to the appropriate telecommunications outlets.
- Attach the 22-pin connector on the Y-cable to the PC Card.

The Y-cable is keyed to attach one way. If you feel resistance before the cable is fully inserted, turn it over and reinsert it.

To lock the cable securely, move the latching button toward the PC Card. In some cases, you may want to leave the latch retracted. If the latch is left retracted and the cable is pulled, it will disconnect from the PC Card,

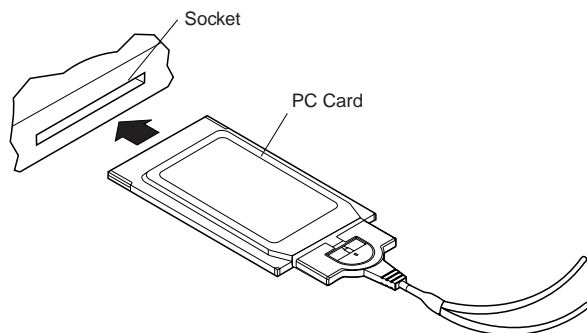
possibly saving your computer from being pulled off a table.



**3** Insert the PC Card in the socket.

The PC Card is keyed to go in only one way. If you feel resistance before it is fully inserted, turn it over and reinsert it.

If you are using Card and Socket Services, put the card in either socket. If you are not using Card and Socket Services, use the socket you specified during installation.



**4** Switch ON the power to the computer.

**5** Return to page 3 to continue. Step 6 of the Installation Checklist is now complete.

---

## Appendix A. Problem Determination

Check this list of possible error conditions if problems occur.

1. If you are using Card Services:

During reboot, you hear four alternating tones. This indicates that Card Services was unable to give you one or more resources that your program requested. Resources are I/O ports, interrupt level, and memory locations.

Make sure the PC Card is in the socket.

**Note:** The items in the following paragraphs are performed by the installation program.

- If you are using the NDIS driver (FME\_NDIS.DOS):

Edit the PROTOCOL.INI file and see whether you have specified a particular value for the interrupt level or memory locations. This would be indicated by the keywords INTERRUPT=X, COMPORT=X, IOBase=0XXX, or RAMADDRESS=0XXXXX.

If you find the parameters for INTERRUPT or IOBASE, comment them out by placing a semicolon in front of the keyword. If you have specified a value for RAMADDRESS, change the value to 0 so that the line looks like the following:

```
RAMADDRESS=0
```

Also, verify that the keyword PCMCIA is in the list of keywords.

If INTERRUPT or IOBASE are commented out or are not in PROTOCOL.INI, if RAMADDRESS is already set to 0, and if the keyword PCMCIA is in the list, the driver is in Autoselect mode and it allows Card Services to determine what values are used by the driver.

**Note:** A specified value for COMPORT **must** be in PROTOCOL.INI in order for the driver to work correctly.

- If you are using the ODI driver (FME\_NET.COM):

Edit the NET.CFG file and see whether you have specified a particular value for the interrupt level or memory locations. These would be indicated by the keywords MEM XXXXX, PORT XXX, INT X or COMPORT X.

If you find the parameters for PORT or INT, comment each out by placing a semicolon in front of the keyword. If you have specified a value for MEM, change the value to FFFFFFFF so that the line looks like the following:

```
MEM FFFFFFFF
```

Also, verify that the keyword PCMCIA is in the list of keywords.

If INT or PORT are commented out or are not in NET.CFG, if MEM is already set to FFFFFFFF, and if the PCMCIA keyword is there, the driver is in Autoset mode and allows Card Services to determine what values are used by the driver.

**Note:** A specified value for COMPORT **must** be in NET.CFG in order to use the modem and Ethernet concurrently.

If you reboot and still receive the alternating beep alarm, there is a problem with Card Services. Check your level of Card Services and ensure that it is the latest available.

2. If you suspect that you have a hardware problem with the PC Card, run the PC Card diagnostics. See "Running the Diagnostics Program" on page 57.
3. If your computer displays an error code, contact your IBM representative or call the IBM PC Company HelpCenter at 1-800-772-2227 (U.S.) or 1-800-465-7999 (Canada).
4. If you are using an enabler, make sure that the values on the enabler line in the CONFIG.SYS match the values in PROTOCOL.INI or NET.CFG. The values must be specified in PROTOCOL.INI or NET.CFG.

Enabler (CONFIG.SYS)	NDIS (PROTOCOL.INI)	ODI (NET.CFG)
IRQ=5	INTERRUPT=5	INT 5
SRAM=D400	RAMADDRESS=0xD4000	MEM D4000
IO=300	IOBASE=0x300	PORT 300
COM=2	COMPORT=2	COMPORT 2

---

## Modem Problem Determination

If you have a problem with your modem, check that:

The telephone has a dialtone.

The phone number is correct.

The dial string is correct.

The communication program instructions were followed correctly.

The COM port assigned to the PC Card was not previously assigned to another device.

The COM port values for the PC Card are the same as those chosen for data/fax application program.

The DAA (if required) and telephone connector are correct for the country where you are using the modem.

**Note:** If you are using the PC Card in the United States or Canada, you do not require an external DAA.

---

## Running the Diagnostics Program

Use the diagnostics program on the Installation Diskette to test the hardware components of the PC Card. This program is optional but can be used if the PC Card is not functioning as expected.

The diagnostics program performs a series of tests and displays the results of each one as *passed* or *failed*. It also displays the universally administered address.

If you get a *failed* message, contact your IBM representative or call the IBM PC Hotline at 1-800-772-2227 (U.S.) or 1-800-465-7999 (Canada).



**Note:** The testing process might run as long as 2 minutes and must be completed before you can resume working.

Verify that the network system software has been installed, and that the cable and network connections are secure. Complete the following steps to test the PC Card:

- 1** Make sure the PC Card is in the socket.
- 2** Insert the Home and Away Credit Card Adapter Installation Diskette.
- 3** Switch ON the power to the computer.
- 4** Follow the instructions as they appear.

When you have finished running the diagnostics, remove the diskette and reboot the computer.

If you have questions about any of the instructions, consult your system administrator.

When testing is complete, store the diskette in a safe place.

The following table shows tests, possible test results, and remedial action:

<b>Test</b>	<b>Result</b>	<b>Action</b>
Memory Test	Pass	Memory is functioning properly.
	Fail	Replace the PC Card
Modem Test	Pass	If the modem passes the modem test and problems persist, try another wall outlet.
	Fail	Modem controller cannot be contacted. Replace the PC Card.

<b>Test</b>	<b>Result</b>	<b>Action</b>
Loop Back Test	Pass	Network connection is good. If network problems persist, consult your network administrator. Most hubs and repeaters also have status LEDs that indicate whether they are receiving link pulses from the computer.
	Fail	Run the diagnostics again and be sure to connect and disconnect from the network when directed. Network traffic may also cause a false failure of the test.
STNIC Address Test	Pass	The Ethernet controller is functioning properly.
	Fail	The Ethernet controller could not be contacted. Replace the PC Card.



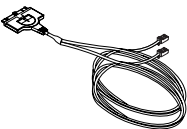
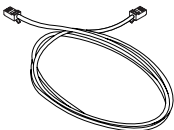


---

## **Appendix B. Parts, BBS, and Cellular Information**

To order parts, contact your IBM marketing representative or your place of purchase.

Refer to "Electronic Emission Notices" on page 67 for the cable and connector assemblies required for compliance to the FCC limits.

Table 4. Part Numbers

Part Number	Description	Diagram
25H4198	PC Card Y-cable	
13H9566	RJ-45-to-RJ-45 cable	
13H9565	RJ-11-to-RJ-11 cable	
13H7373	Connector block	
25H4192	Cellular upgrade kit (OKI 1145/1150 AT&T 3760)	
25H4195	Cellular upgrade kit (Mitsubishi 3500/4000 Diamondtel 20X/22X)	
25H4196	Cellular upgrade kit (Motorola 8 Pin Flip)	
25H4193	Cellular upgrade kit (NEC P110/120/180 AT&T 3610)	

## **BBS (Bulletin Board System)**

If your Home and Away Credit Card Adapter Installation Diskette is damaged, or you need to obtain an updated version of the installation program, in the United States and Canada you can call the IBM Personal Computer Company BBS using the following phone numbers:

<b>United States</b>	(919) 517-0001
<b>Vancouver</b>	(604) 664-6464
<b>Toronto</b>	(416) 946-4244
<b>Montreal</b>	(514) 938-3022
<b>Winnipeg</b>	(204) 934-2798

You can download a copy of the Installation Diskette from the BBS by using a modem. In the United States, search directory 32 for "Credit Card." In Canada, search directory 19 for "PCMCIA." If you are outside the United States or Canada, contact your IBM marketing representative. Download the latest file (FMENGxxx.ZIP). Use the PKUNZIP utility to unpack the files onto your hard disk. One of the files is a READ.ME. Read the READ.ME file for further instructions about how to make installation diskettes.

## Cellular Support - Software Installation

MNP10 EC and Celeratis TX-CEL support is used to compensate for noisy line conditions when using a cellular phone.

To use a cellular phone with the Home and Away Credit Card Adapter, a cellular phone driver must first be uploaded to the modem. Any communication package capable of uploading an ASCII file can be used to load the driver. The cellular phone driver file (<driver>.S37) should be copied to the directory of your communication package.

## Manual Installation

To upload the driver for your particular phone:

1. Start your communications package.
2. Set the baud rate to its highest value, the data bits to 8, and the priority to none.
3. Begin the driver upload by typing AT^C2 and pressing **Enter**. The modem will respond with *download initiated*.
4. Start the ASCII upload of the driver needed for your phone, <driver>.S37.
5. Once the uploading is initiated, a series of dots will scroll across the screen. After a successful upload, an OK message will be displayed.
6. Type AT^I to verify that the cellular driver has loaded.
7. Connect your cellular cable to the modem and the cellular phone. See "Cellular Support - Hardware Installation" on page 66.

Phones supported are:

NEC P110/120/180  
AT&T 3610  
OKI 1145/1150  
AT&T 3760  
MITSUBISHI 3500/4000  
Diamondtel 20X/22X  
Motorola 8 Pin Flip

## DOS Installation

1. Insert the cellular upgrade diskette into drive A.
2. At the C: prompt, type **A:SETUPDOS**.
3. Press **Enter** to advance through the panels.
4. At the first Cellular Phone Driver panel set the Port value for your modem setup by using the tab and arrow keys. Set the rate to 19200 bps. Select verify COMPort and IRQ to check your settings. If the modem is not found you can select T to search for the correct modem settings.
5. At the second Cellular Phone Driver panel use the tab and arrow keys to select the proper cellular phone driver and the destination path for the software.
6. At the third Cellular Phone Driver panel you can load the driver or make corrections.
7. To load your cellular phone driver from now on type **CELPHONE** at the DOS prompt.

## Windows Installation

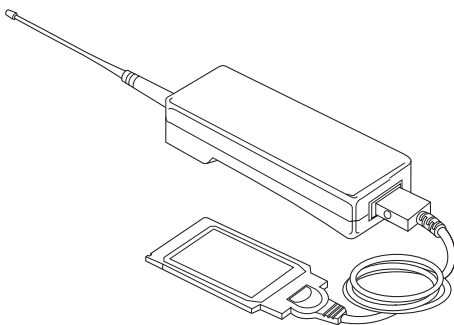
1. Insert the cellular upgrade diskette into drive A.
2. From the File option of the Program Manager menu select Run. Type **a:install** and press **Enter**.
3. From the Welcome panel with the mouse cursor select Complete or Custom and then select Continue.
4. At the Install panel type in the destination path for the software and select Continue.
5. At the Cellular Drivers panel select which cellular drivers you wish to use with your modem.
6. To load a cellular driver go to the Cellular program group and select CellLoad to load the default driver or CellApp to load a different driver.



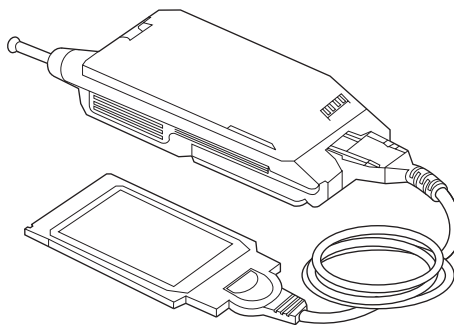
## Cellular Support - Hardware Installation

Attach your cellular cable to your phone and the Home and Away Credit Card Adapter according to one of the following drawings.

If your phone looks like the following drawing, turn on your phone **before** connecting the phone to the cable.



If your phone looks like the following drawing, turn on your phone **after** connecting the phone to the cable.



---

## Appendix C. Notices

References in this publication to IBM products, programs, or services do not imply that IBM intends to make these available in all countries in which IBM operates. Any reference to an IBM product, program, or service is not intended to state or imply that only IBM's product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any of IBM's intellectual property rights may be used instead of the IBM product, program, or service. Evaluation and verification of operation in conjunction with other products, except those expressly designated by IBM, are the user's responsibility.

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### Electronic Emission Notices

The following statement applies to this IBM product. The statement for other IBM products intended for use with this product will appear in their accompanying manuals.

### 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 (IBM part number 25H4198, 13H7373, 25H4192, 25H4195, 25H4196, 25H4193 or its equivalent) 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.

#### **FCC Part 68 Compliance Information:**

The IBM DAA, included in P/N 0934318, complies with Part 68 of the FCC rules. The label on the back cover of the PC Card contains, among other information, the FCC registration number and Ringer Equivalence Number (REN) for this equipment. If requested, provide this information to your telephone company.

An FCC compliant telephone cord and modular plug (RJ-11) is provided with this equipment. This equipment is designed to be connected to the telephone network or premises wiring using a compatible modular jack which is Part 68 compliant. See installation instructions for details.

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.

If the IBM DAA causes harm to the telephone network, the Telephone Company may discontinue your service temporarily. If possible, they will notify you in advance. But if advance notice isn't practical, you will be notified as soon as possible. You will be advised of your right to file a complaint with the FCC.

Your telephone company may make changes in its facilities, equipment, operations, or procedures that could affect the proper operation of your equipment. If they do, you will be given advance notice so as to give you an opportunity to maintain uninterrupted service.

If trouble is experienced with this equipment, for repair or warranty information, in the United States, call IBM at **1-800-426-7299**. In Canada, call IBM at **1-800-565-3344**.

No repairs can be performed by the customer.

## **Industry Canada Compliance Statement**

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus as set out in the interference-causing equipment standard entitled: *Digital Apparatus*, ICES-003 of Industry Canada.

## **Avis de conformité aux normes d'Industrie Canada**

Cet appareil numérique respecte les limites de bruits radioélectriques applicables aux appareils numériques de Classe A prescrites dans la norme sur le matériel brouiller: *Appareils numériques*, NMB-003 édictée par Industrie Canada.

## **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.

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

The load number assigned to each terminal device denotes the percentage of the total load to be connected to a telephone loop which is used by the device, to prevent overloading. The termination on a loop may consist of any combination of devices subject only to the requirement that the total of the load numbers of all the devices does not exceed 100. The load number of this unit is 05.

**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.

Le NUMÉRO DE CHARGE (LN) attribué à chaque dispositif du terminal sert à indiquer le pourcentage de la charge totale qui doit être connecté à une ligne d'abonné utilisée par ce dispositif, afin de prévenir toute surcharge. Par terminaison de ligne, on entend toute combinaison de dispositifs qui satisfait l'exigence selon laquelle le

total des NUMÉROS DE CHARGE de tous les dispositifs n'est pas supérieur à 100.

NUMÉRO DE CHARGE DE CETTE UNITÉ : 05

情報処理装置等電波障害自主規制協議会  
(VCCI)表示

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ThinkPad

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## Cellular Support



This product contains SPECTRUM CONNECTED cellular data communication technology which can be activated for data communication over a cellular telephone network when a license is obtained from SPECTRUM and the product is combined with an appropriate cellular telephone driver and corresponding cable compatible with popular brands of cellular telephones. No such license is provided with this product and activation without a use license is prohibited. To obtain a license and to determine the availability of an appropriate driver and cable for a cellular telephone, contact your place of purchase.





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## Appendix D. Overview of System Resources

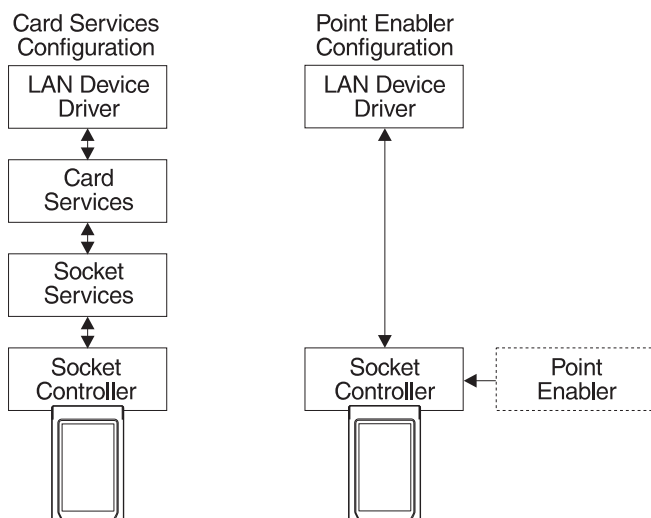
In order for communications programs to use a PC Card, interface software is needed. At present, several interfaces are available and each has its advantages and disadvantages. The two most important interfaces are those provided by Point Connectivity Enablers and Card Services; both are available under DOS.

Computers that support PCMCIA have one or more PC Card sockets, known as A, B, C... or 1, 2, 3.... The sockets are controlled by a PC Card Interface Controller (PCIC) in your computer. In many computers, this is an Intel 82365SL, but some use other types.

**Relationship between the Interfaces:** The following diagram shows how the interfaces relate to each other:

### Credit Card Software Configurations

---



### **Point Connectivity Enablers**

These are small programs that provide an interface directly to the PCIC; therefore, they must be written to support a particular type of controller. For the Home and Away Credit Card Adapter, there is a point enabler for the Intel 82365 chip and compatible chips.

One point enabler is supplied for the PC Card:

**POINTFME.EXE** For computers with Intel-compatible PCMCIA controllers—these include the IBM ThinkPad, Toshiba 4500 (and later), and many others.

In the DOS environment, you have the option of using the point connectivity enabler *instead* of Card and Socket Services. When using the point connectivity enabler, it is essential that you make certain that the resources used by the PC Card are different from and do not conflict with the system resources and any other PC Cards installed in your computer.

### ***Advantage***

- Enablers consume no memory — they remove themselves after configuring the PC Card.

### ***Disadvantages***

- You must specify the socket number; the point enabler will enable only that socket. Therefore, the PC Card must always be in a specific socket.
- Hot-plugging is not possible (see “Card Services” on page 77).
- In some computers, the socket might not be switched off when the computer is in suspend mode, so the PC Card will continue to consume power.
- When configuring two or more PC Cards, you must allocate all PC Card resources (I/O port, memory, and interrupt) manually.

### **Card Services**

Card Services requires Socket Services. Both interfaces will usually be provided with your computer or operating system, as is the case with IBM PC DOS 6.1 or higher.

Card Services is a software management interface that allows system resources (such as I/O ports, memory, and interrupt) to be allocated automatically when it has detected that a PC Card has been inserted.

Client drivers call Card Services to allocate and de-allocate system resources. When Socket Services detects the insertion or removal of a PC Card, it sends notification to Card Services. Card Services then notifies its registered client drivers, such as FME\_NDIS.DOS, that they should allocate or de-allocate resources.

### **Advantages**

- Allows insertion and removal of PC Cards without computer reconfiguration and without electrical damage.
- Automatically allocates system resources.

### **Disadvantage**

This is a stay-resident program that uses system memory. The amount varies according to the type of PCMCIA support and the drivers used.

### **Socket Services**

This is a BIOS-type interface that provides a way to gain access to the PCMCIA sockets of a computer. It identifies how many sockets your computer has and detects the insertion or removal of an PC Card while the computer is switched on. It has an interface to Card Services. Socket Services (Release 2.0 or higher) is part of the PCMCIA Specification.

This PC Card does not support a Socket-Services-only environment.

### **Super Client Drivers**

Many vendors are providing customers with super client drivers; these are drivers that will enable many different PC Cards. PC-DOS 6.1 includes one called PCMSCD.EXE, for example.

While the Home and Away Credit Card Adapter does not use or require Super Client drivers, it can coexist with them.

### **Card and Socket Services versus Point Enablers**

There is much debate about this subject. In principle, Card and Socket Services is the preferred method of connection because it allows you to insert or remove PC Cards from any socket at will, even while the computer is switched on; and it automatically allocates resources like memory, I/O ports, interrupt levels, and sockets.

Point enablers are popular because they remove themselves from memory after having been loaded—as opposed to the 30–40 KB of memory needed for Card and Socket Services.

For point enablers, you have to specify the socket in which a particular PC Card will be and you have to specify memory locations, interrupt levels, and other parameters. This is not difficult unless you use several PC Cards at different times. If that is the case you need to make certain that what you specify does not conflict with any other PC Cards installed in your computer.

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## Glossary of Terms and Abbreviations

This glossary defines terms and abbreviations used in this manual. If you do not find the term you are looking for, refer to the index or to the *IBM Dictionary of Computing*, SC20-1699.

- The symbol (A) identifies definitions from the *American National Standard Dictionary for Information Systems*, ANSI X3.172-1990, copyright 1990 by the American National Standards Institute (ANSI). Copies can be purchased from the American National Standards Institute, 1430 Broadway, New York, New York 10018.
- The symbol (I) identifies definitions from published parts of the *Information Technology Vocabulary*, developed by Subcommittee 1, Joint Technical Committee 1, of the International Organization for Standardization and the International Electrotechnical Commission (ISO/IEC JTC1/SC1).

### A

**adapter.** In a LAN, within a communicating device, a circuit card that, with its associated software and/or microcode, enables the device to communicate over the network.

**application program.** (1) A program written for or by a user that

applies to the user's work. Some application programs receive support and services from a special kind of application program called a network application program. (2) A program used to connect and communicate with stations in a network, enabling users to perform application-oriented activities.

**architecture.** The description of the logical structure, formats, protocols, and operational sequence for transmitting information through, and controlling the configuration and operation of, a network.

### B

**Basic Input/Output System (BIOS).** In IBM personal computers with PC I/O channel architecture, microcode that controls basic hardware operations such as interactions with diskette drives, fixed disk drives, and the keyboard.

**BBS.** Bulletin Board System.

**BIOS.** Basic input/output system.

### C

**Card Services.** Card Services is a software management interface that allows for the automatic allocation of system resources (such as memory and interrupts) once Socket Services detects that the Credit Card PC Card has been inserted. Card

Services releases these resources when the PC Card has been removed. Card Services also provides an interface to higher level software to load any needed drivers.

**COM.** Communication.

**command.** (1) A request for performance of an operation or execution of a program. (2) A character string from a source external to a system that represents a request for system action.

**computer architecture.** The organizational structure of a computer system, including hardware and software.(A)

**configuration.** (1) The arrangement of a computer system or network as defined by the nature, number, and chief characteristics of its functional units. More specifically, the term may refer to a hardware configuration or a software configuration.(I)(A) (2) The devices and programs that make up a system, subsystem, or network. (3) See also *system configuration*.

**connect.** In a LAN, to physically join a cable from a station to an access unit or network connection point.

**Connectivity Enabler.** The Connectivity Enabler (sometimes referred to as simply the *enabler*) is software used to configure the PCMCIA socket hardware and the PC Card. It is loaded as a driver in the CONFIG.SYS file after Card and

Socket Services, and before the LAN software is loaded. The Connectivity Enabler enables the PCMCIA socket and opens a *window* in system memory that can be allocated to the PC Card.

**connector.** A means of establishing electrical flow.

**Credit Card.** PC Card. They are approximately the size and shape of a credit card. They are full-function PC Cards for personal computers, like notebooks, tablets, and even some desktops, that have adapter sockets conforming to the PCMCIA 2.0 standards for Type II cards. Sometimes referred to as *Credit Card Adapters*.

**customize.** The process of defining and activating a configuration and changing system parameters to meet user requirements.

## D

**default.** Pertaining to an attribute, value, or option that is assumed when none is explicitly specified.

**device driver.** The code needed to attach and use a device on a computer or a network.

**diagnostics.** Modules or tests used by computer users and service personnel to diagnose hardware problems.

**directory.** A table of identifiers and references to the corresponding items of data.(I)(A)

**diskette.** A flexible magnetic disk enclosed in a protective container.

**diskette drive.** The mechanism used to seek, read, and write data on diskettes.

**Disk Operating System.** An operating system for computer systems that use disks and diskettes for auxiliary storage of programs and data.

**DOS.** Disk Operating System.

## E

**enabled.** (1) On a LAN, pertaining to an adapter or device that is active, operational, and able to receive frames from the network. (2) Pertaining to a state of a processing unit that allows the occurrence of certain types of interruptions. (3) Pertaining to the state in which a transmission control unit or an audio response unit can accept incoming calls on a line.

**Ethernet network.** A baseband LAN with a bus topology in which messages are broadcast on a coaxial cable using a carrier sense multiple access/collision detection (CSMA/CD) transmission method.

## H

**hardware.** Physical equipment as opposed to programs, procedures, rules, and associated documentation.(I)(A)

## I

**IBM Personal Computer Disk Operating System (DOS).** A disk operating system based on MS-DOS.

**IEEE.** Institute of Electrical and Electronics Engineers.

**Internet Protocol (IP).** (1) A protocol that routes data through a network or interconnected networks. IP acts as an interface between the higher logical layers and the physical network. This protocol, however, does not provide error recovery, flow control, or guarantee the reliability of the physical network. IP is a connectionless protocol. (2) A protocol used to route data from its source to its destination in an Internet environment.

**interrupt.** (1) A suspension of a process, such as execution of a computer program, caused by an external event and performed in such a way that the process can be resumed. (A) (2) To stop a process in such a way that it can be resumed. (3) In data communication, to take an action at a receiving station that causes the sending station to end a transmission. (4) A means of passing processing control from one software or microcode module or routine to another, or of requesting a particular software, microcode, or hardware function.

**I/O (input/output).** (1) Pertaining to a device whose parts can perform



an input process and an output process at the same time.

(2) Pertaining to a functional unit or channel involved in an input process, output process, or both, concurrently or not, and to the data involved in such a process.

**IP.** Internet Protocol.

**IRQ.** Interrupt Request.

## J

### **Japanese Electronics Industry Development Association**

**(JEIDA).** An organization of companies in the Asia-Pacific area developing the personal computer card standard. PC Cards are a key technology for adding memory, storage, and I/O capability to portable systems like notebooks and laptops. The standard describes the physical requirements, electrical specifications, and software architecture for PC cards. JEIDA works closely with PCMCIA to promote a worldwide standard.

**JEIDA.** Japanese Electronics Industry Development Association

## K

**kbps.** kilobits per second

**KB.** kilobytes

## L

**LAN.** Local area network.

**LAN adapter.** The circuit card within a communicating device (such as a personal computer) that, together with its associated software, enables the device to be attached to a LAN.

**LAPM.** Link Access Procedure for Modems.

**LED.** Light Emitting Diode.

**link.** (1) The logical connection between nodes including the end-to-end link control procedures. (2) The combination of physical media, protocols, and programming that connects devices on a network.

**Note:** A link connection is the physical medium of transmission; for example, a telephone wire or a microwave beam. A link includes the physical medium of transmission, the protocol, and associated communication devices and programming; it is both logical and physical.

### **local area network (LAN).**

(1) Physical network technology that transfers data at high speed over short distances. (2) A network in which a set of devices are connected to one another for communication and that can be connected to a larger network. See also *token ring* and *Ethernet*.

**LSP.** LAN Support Program.

## M

**memory.** Program-addressable storage from which instructions and other data can be loaded directly into registers for subsequent execution or processing.

**modem (modulator/demodulator).** A device that converts digital data from a computer to an analog signal that can be transmitted in a telecommunication line, and converts the analog signal received to data for the computer.

## N

**NDIS.** Network Driver Interface Specification. Sometimes pronounced "en'-dis".

**NetBIOS.** Network Basic Input/Output System. The standard interface to networks, IBM PCs, and compatible personal computers, used on LANs to provide message, print server, and file server functions. The IBM NetBIOS application program interface (API) provides a programming interface to the LAN so that an application program can have LAN communication without knowledge and responsibility of the data link control (DLC) interface.

**network.** A signal path connecting input/output devices to a system. A network may consist of multiple LAN segments connected together with bridging products.

**network administrator.** A person who manages the use and maintenance of a network.

**network application program.** A program used to connect and communicate with adapters on a network, enabling users to perform application-oriented activities and to run other application programs.

**Network Driver Interface Specification (NDIS).** Developed by Microsoft and 3Com as a LAN adapter driver architecture that lets a DOS system support one or more network adapters and protocol drivers. An NDIS driver is included on the diskette that is shipped with the Home and Away Credit Card Adapter.

## O

**ODI.** Open Data Link Interface

**open.** (1) To make an adapter ready for use. (2) A break in an electrical circuit. (3) To make a file ready for use.

**Open Data Link Interface.** The Open Data Link Interface (ODI) was developed by Novell as a LAN adapter driver architecture that lets a computer operating system support one or more network adapters and protocol drivers. An ODI driver is included on the diskette that is shipped with the Home and Away Credit Card Adapter.

**operating system.** Software that controls the execution of programs.

An operating system may provide services such as resource allocation, scheduling, input/output control, and data management.(A)

## P

**panel.** The complete set of formatted information that appears in a single display on a visual display unit.

**parameter.** (1) A variable that is given a constant value for a specified application and that may denote the application.(1)(A) (2) An item in a menu or for which the user specifies a value or for which the system provides a value when the menu is interpreted.

**patch cable.** A length of cable with data connectors at both ends that is normally used to interconnect two sections of building cable at a patch panel or to connect a product to the building cable.

**PCIC.** PC Card Interface Controller.

**PCLP.** PC LAN Program.

**PCMCIA.** Personal Computer Memory Card International Association

**Personal Computer Disk Operating System (PC DOS).** A program that controls the operation and execution of application programs one task at a time in IBM personal computers.

### **Personal Computer Memory Card International Association**

**(PCMCIA).** An organization of companies developing the personal computer card standard. PC Cards are a key technology for adding memory, storage, and I/O capability to portable systems like notebooks and laptops. The standard describes the physical requirements, electrical specifications, and software architecture for PC Cards. PCMCIA works closely with JEIDA to promote a worldwide standard.

### **Point Connectivity Enabler.**

Sometimes referred to as simply the *enabler*. Software used to configure the PCMCIA socket hardware and the PC Card. The Point Connectivity Enabler enables the PCMCIA socket and opens a *window* in system memory that can be allocated to the PC Card.

**protocol.** A specification for the format and relative timing of information exchanged between communicating parties.

**PSTN.** Public Switched Telephone Network.

## R

**random access memory (RAM).** A computer's or adapter's volatile storage area into which data may be entered and retrieved in a nonsequential manner.

## S

**select.** The process of choosing a single symbol or menu item by placing the cursor on it and clicking the mouse button.

**shared RAM (SRAM).** Random access memory (RAM) on an adapter that is shared by the computer in which the adapter is installed.

**socket.** (1) An abstraction used by Berkeley UNIX that allows an application to access TCP/IP protocol functions. (2) An IP address and port number pairing.

**Socket Services.** Socket Services is a BIOS-level software interface that provides a way to access the PCMCIA sockets of a computer that is independent of the PCMCIA hardware controller. It identifies all sockets and detects the insertion or removal of a PC Card while the system is powered on.

**SRAM (Shared RAM).** Random access memory (RAM) on an adapter that is shared by the computer in which the adapter is installed.

**system configuration.** A process that specifies the devices and

programs that form a particular data processing system.

## T

**TCP/IP.** Transmission Control Protocol/Internet Protocol.

**token ring.** A network with a ring topology that passes tokens from one attaching device (node) to another. A node that is ready to send can capture a token and insert data for transmission.

**Transmission Control Protocol (TCP).** (1) A communications protocol used in Internet and in any network that follows the U.S. Department of Defense standards for internetwork protocol. TCP provides a reliable host-to-host protocol between hosts in packet-switched communications networks and in interconnected systems of such networks. It assumes that the Internet Protocol is the underlying protocol. (2) A transport protocol in the Internet suite of protocols that provides reliable, connection-oriented, full-duplex data stream service.

**Transmission Control Protocol/Internet Protocol (TCP/IP).** A set of protocols that allow cooperating computers to share resources across a heterogeneous network.



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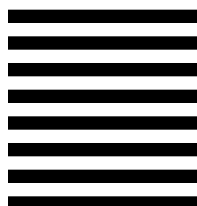
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