

**Note**

Before using this information and the product it supports, be sure to read the general information under "Notices" on page 25.

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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. This booklet describes safe procedures for cabling and plugging in electrical equipment.



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



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



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



**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. Cette brochure décrit les procédures pour câbler et connecter les appareils électriques en toute sécurité.



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



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



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



**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.



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



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



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



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



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



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。

---

## **Important Information for the USA**

### **Safety Information**

When using your telephone equipment, basic safety precautions should always be followed to reduce the risk of fire, electrical shock, and injury to persons, including the following:

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.

## **FCC Part 68 Compliance Information**

The IBM Data/Fax Modem P/N: 25H6420, complies with Part 68 of the FCC rules. The label on the Data/Fax Modem cover 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.

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 Data/Fax Modem 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.





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# Introduction to the PCMCIA 28.8/14.4 Data/Fax Modem

The IBM PCMCIA 28.8/14.4 Data/Fax Modem (Data/Fax Modem) is a PC Card modem that provides both data and fax transmission capability at rates of up to 28800 bps. It is designed for use with regular telephone lines on any Public Switched Telephone Network (PSTN).

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## Features of the Data/Fax Modem

The following list summarizes the features of the Data/Fax Modem:

Support for OS/2 2.1 operating system, OS/2 Warp 3.0, Microsoft\*\* Windows\*\* 3.1, Windows for Workgroups 3.11, and DOS 5.0 or higher

Hayes-AT compatible command set

### Data

- V.34 (28.8 Kbps)
- V.FC (28.8 Kbps)
- V.32bis (14.4 Kbps)
- V.32 (9.6 Kbps)
- V.22bis (2.4 Kbps)
- V.22 (1.2 Kbps)
- V.21 (0.3 Kbps)
- Bell 212A (1.2 Kbps)
- Bell 103J (0.3 Kbps)

### Data Error Correction

- V.42
- MNP 2-4

### Data Compression

- V.42bis
- MNP 5

### Group 3 Fax

- Class 2
- Class 1
- V.17 (14.4 Kbps)
- V.29 (9.6 Kbps)
- V.27ter (4.8 Kbps)

Cellular telephone compatibility through MNP 10 EC support

To connect your Data/Fax Modem to your cellular phone you will need to purchase a special interface package. Refer to the online README.TXT file for a list of cellular phones supported.



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## Contents of the Data/Fax Modem Kit

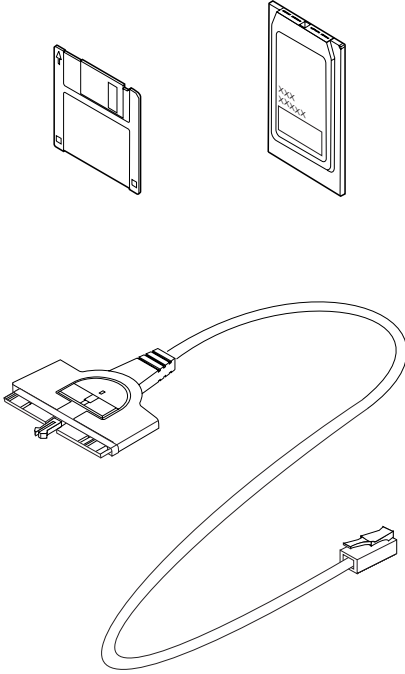


Figure 1. Contents of the Data/Fax Modem Kit

Along with this manual, the Data/Fax Modem kit consists of:

- The Data/Fax Modem diskette
- The Data/Fax Modem PC Card
- The Data/Fax Modem interface cable
- The *Safety Information* manual

Applications software for use with your Data/Fax Modem may be included in your kit.

If any item is missing or damaged, contact your place of purchase.

**Note:** You may want to save the Data/Fax Modem packing materials in case you ever need to ship the Data/Fax Modem.



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## What You Need

To install the Data/Fax Modem, you need:

The Data/Fax Modem PC Card

The Data/Fax Modem diskette

The Data/Fax Modem interface cable

A personal computer system with one available PCMCIA Type II PC Card socket

Communications software

Card and Socket Services Release 2.0 or higher

A 3.5-inch, 1.44-MB diskette drive

One of:

- PC-DOS Version 5.0 or higher
- MS-DOS\*\* Version 5.0 or higher
- Microsoft Windows Version 3.1
- Windows for Workgroups Version 3.11
- OS/2 Version 2.1
- OS/2 Warp Version 3.0

The following manuals:

- This manual
- The instruction manuals supplied with your computer
- The manuals supplied with your operating system
- The manuals supplied with your communications software

A blank, 3.5-inch, 2.0-MB capacity diskette to back up the Data/Fax Modem software

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## Installation

This section includes procedures that will allow you to connect and disconnect the Data/Fax Modem to, and from, your personal computer and a PSTN telephone line. Also included are instructions for installing the Data/Fax Modem software for users of both OS/2 and DOS operating systems and in the Windows environment.

During the software installation you will be offered the option of installing a device driver, the README file, the online documentation, and the diagnostics program. Depending on your computer, your applications software, and your computer skills it may not be necessary to install any or all of those files. If you want to conserve space on your computer's hard disk, you can choose not to install them or to install only some of them. The files will always be available to you for later installation from the Data/Fax Modem diskette.

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### Backing Up the Data/Fax Modem Diskette

It is a good idea to make a backup copy of the Data/Fax Modem diskette to use should something happen to the original. To make a backup copy, you will need a blank, 3.5-inch, 2.0-MB capacity diskette.

Follow your computer's operating system instructions for making a copy of the diskette. Place the original Data/Fax Modem diskette in a safe place, and use the backup copy for installation and testing.

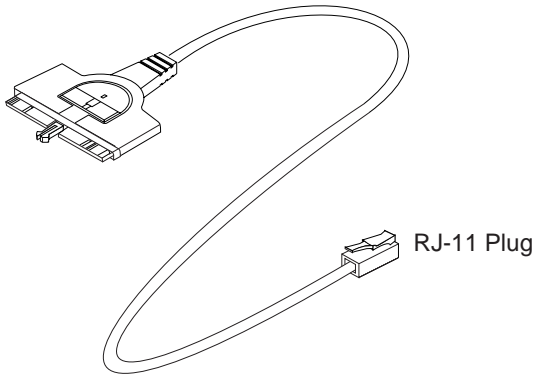


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## Connecting to the Telephone Network

The connection and installation procedures that follow are shown in one of many possible orders. The order in which the connections are made between your computer, the PC Card, the interface cable, and a telephone outlet is unimportant and will not affect the performance or reliability of your Data/Fax Modem. In addition, you may make these connections with your computer either on or off.

Use the cable illustrated in Figure 2 and connect the RJ-11 end of the cable to a PSTN outlet.

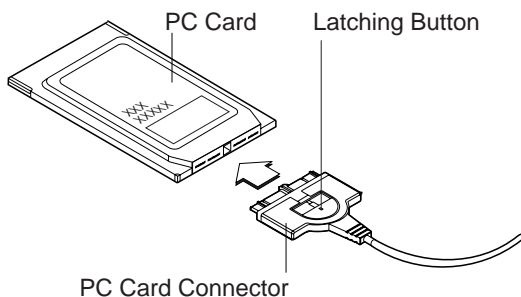


*Figure 2. Cable for Connecting to an Analog PSTN Line*



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## Installing and Removing the PC Card



**1** Move the latching button on the PC Card connector (the half-circle in the center of the adapter connector) toward the cable. The cable cannot be connected or disconnected unless the latch is retracted.

**2** Attach the connector to the PC Card.

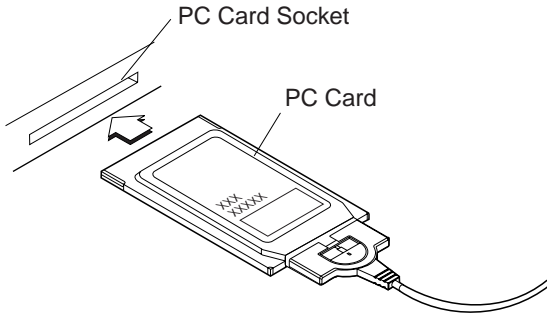
The PC Card connector is keyed to attach to the PC Card one way only. If you feel any resistance, remove the PC Card connector, turn it over, and reattach it.

**3** To lock the PC Card cable securely, move the latching button toward the PC Card.

**Hint:** In some cases, you may want to leave the PC Card cable latch retracted. If the PC Card cable is pulled, it will disconnect from the PC Card, possibly preventing your computer from being pulled off a table.



**4** Insert the PC Card into any PC Card socket.



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

**Note:** When removing your PC Card from your computer with the PC Card connector attached, press the computer's eject button and gently pull on the PC Card connector. Never pull the interface cable to remove the PC Card and connector.

**5** Continue with "Installing and Configuring the Software" on page 9.

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## Installing and Configuring the Software

**Warning:** Save and close any open applications at this time to avoid any risk of data loss.

The README file contains information about the software installation that may be helpful with your application. We recommend that you read this file before installing the software. For instructions on how to view the file, see "Accessing the README File" on page 12.

- 1** Insert the Data/Fax Modem diskette in your diskette drive.
- 2** Based on your operating system or environment, begin the software installation as follows:

### **OS/2 users**

- Open an OS/2 full screen.
- At the command prompt, type **a:instos2** and press **Enter**.

### **Windows users**

- Pull down **File** from the Program Manager Action Bar and select **Run**.
- In the dialog box, type **a:instwin** and press **Enter**.

### **DOS users**

- At the command prompt, type **a:instdos** and press **Enter**.

- 3** Follow the instructions of the setup program.

Although you can install the software without first inserting the Data/Fax Modem PC Card, we recommend that you insert it and any other PC Cards that you will be using with the Data/Fax Modem before you run the setup program.

The modem device driver requires that Card Services be installed on your computer. If you receive the message "Card Services is required," you must install Card Services before the software installation can continue. Refer to your computer and operating system manuals for instructions on how to do this.

The installation program will detect whether or not your computer is already equipped with a Card Services super enabler. If one is present, the setup program will detect this and you will not need to install the v34modem device driver that is included on the Data/Fax Modem diskette.

- 4** When prompted, choose whether or not you want to install the README file on your computer. If you choose not to install it, you can read it at any time on the Data/Fax Modem diskette.
- 5** When prompted, choose whether or not you want to install the online documentation on your computer. If you choose not to install it, the online documentation will still be available to you for later installation from the Data/Fax Modem diskette.
- 6** When prompted, choose whether or not you want to install the diagnostics program on your computer. This program performs testing and diagnostics on your Data/Fax Modem. If you choose not to install it, the program will still be available to you for later installation from the Data/Fax Modem diskette.
- 7** If you want to verify that you have installed the PC Card and software correctly and that the Data/Fax Modem is functioning correctly, continue with "Testing the Data/Fax Modem" on page 14. If not, you have finished the installation.

To get important information on using your Data/Fax Modem, read "Using and Testing the Data/Fax Modem" on page 11.

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## Using and Testing the Data/Fax Modem

**Note:** If your telephone service includes a call-waiting feature, it should be disabled before you use your Data/Fax Modem to avoid a communication interruption. Refer to the front pages of your telephone directory or contact your telephone company for instructions on how to disable call waiting.

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### Using the Data/Fax Modem

**1** Insert the PC Card in an available PC Card socket.

**2** Start your communications software.

**Notice to Windows users:** If the PC Card is inserted after Windows has been started, and your communications software does not function correctly, it may be necessary to exit and restart Windows with the PC Card inserted.

**3** You can now use your modem applications.

Read the instructions that came with your communications software, or any applications software that was packaged with the Data/Fax Modem, for information on their use.

**Note:** To try your modem you may want to connect to the IBM PC Company Bulletin Board Service (IBM PCC BBS). The service is a useful source of information including:

- Product upgrades
- New product announcements
- Answers to questions about your modem
- Answers to questions about other IBM products
- Free software

To connect to the IBM PCC BBS, use your modem applications software and dial 919-517-0001.

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## The README File

The README file (README.TXT) contains the most up-to-date information about the installation process and Data/Fax Modem applications.

During the installation process, you had the option of placing this file on the hard disk of your computer. If you did not select the install option, the file is still available for viewing at any time on the Data/Fax Modem diskette. If you want to place the file on your computer's hard disk at some later date, you need only copy the file (README.TXT) from the Data/Fax Modem diskette.

## Accessing the README File

Use any text editor to view the contents of the README file, either directly from the Data/Fax Modem diskette or from the directory in which you installed it on your computer's hard disk.

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## The Data/Fax Modem Online Documentation

The Data/Fax Modem online documentation includes information about modem and fax commands, error messages, and general topics.

During the installation process you had the option of placing this information on the hard disk of your computer. If you did not select the install option the information is still available for installation from the Data/Fax Modem diskette. If you want to place this information on your computer's hard disk at some later date, you need only install the software again as you did in "Installing and Configuring the Software" on page 9. When prompted, select the appropriate option.

## Accessing the Online Documentation for OS/2 Users

If you selected the install option for the online documentation during the software installation, double-click on the V34 PC Card Folder placed on your OS/2 desktop to see the online information.

## **Accessing the Online Documentation for Windows Users**

If you selected the install option for the online documentation during the software installation, double-click on the icon in the Data/Fax Modem Program Group to see the online information.

## **Accessing the Online Documentation for DOS Users**

If you selected the install option for the online documentation during the software installation, see the V34MODEM.TXT file in the directory where you installed the software for the documentation.

If you would like to test the Data/Fax Modem, see "Testing the Data/Fax Modem" on page 14.

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## Testing the Data/Fax Modem

Ensure that the PC Card and cables are connected correctly before you start the diagnostics program.

**Warning:** Save and close any open applications at this time to avoid any risk of data loss.

## Starting the Diagnostics Program for OS/2 Users

**1** If you selected the install option for the diagnostics program during the Data/Fax Modem software installation, then double-click on the V34TEST icon on the OS/2 desktop and go to step 6.

If you did not select the install option, then continue with step 2.

**2** Insert the Data/Fax Modem diskette in your computer's diskette drive.

**3** Open an OS/2 full screen.

**4** At the OS/2 prompt type **a:** (or the name of the diskette drive in which you have inserted the diskette) and press **Enter**.

**5** Type `\os2\v34test` and press **Enter**.

**6** Follow the instructions as indicated.

If the tests run without errors, the Data/Fax Modem is ready for use.

If an error occurs, see "Problems While Testing the Data/Fax Modem" on page 18.

## Starting the Diagnostics Program for Windows and DOS Users

**1** **Windows users** exit to a DOS prompt.

**DOS users** begin at the command prompt.

**2** If you selected the install option for the diagnostics program during the Data/Fax Modem software installation, type **cd\v34modem** and press **Enter**. Then, go to step 6.

**Note:** If you installed the modem software in a directory other than v34modem, then type the name of that directory in place of v34modem.

If you did not select the install option, continue with step 3.

**3** Insert the Data/Fax Modem diskette in your computer's diskette drive.

**4** Type **a:** (or the name of the diskette drive in which you have inserted the diskette) and press **Enter**.

**5** Type **cd\dos** and press **Enter**.

**6** Type **v34test** and press **Enter**.

**7** Follow the instructions as indicated.

If the tests run without errors, the Data/Fax Modem is ready for use.

If an error occurs, see "Problems While Testing the Data/Fax Modem" on page 18.





## Problem Solving

This section contains procedures that help you troubleshoot problems with the Data/Fax Modem.

In addition to the procedures in this chapter, there are specific error messages that you can receive during installation of the Data/Fax Modem software, when you are trying to start the application drivers, or when you are trying to make a call. Any of these messages that appear will also display instructions about how to correct the error. If you receive an error message, follow the instructions displayed. If the instructions displayed with an error message do not contain enough information for you to correct the error, use the online documentation option to find a more detailed description of the error.

If you still cannot correct the error, use Table 1 to locate the symptom that best describes the problem.

*Table 1. Problem Descriptions and Recommended Actions*

<b>Symptom</b>	<b>Recommended Action</b>
Problem with the modem's operation	See "Testing the Data/Fax Modem" on page 14.
Received errors while testing the modem	See "Problems While Testing the Data/Fax Modem" on page 18.
Other problems not described in this table	Refer to the online documentation appropriate to your environment.

**Note:** If you are still having problems after trying the suggested actions in Table 1, see Appendix A on page 19 for information on obtaining service for your adapter.

---

## Problems While Testing the Data/Fax Modem

If an error occurs during testing of the Data/Fax Modem, follow the instructions here.

- 1** If you receive an error message, try the action suggested in the diagnostics program and run the diagnostics again.

**Note:** You should also check the online information files appropriate to your operating system or environment as described in "The Data/Fax Modem Online Documentation" on page 12. Any new information or procedure that is discovered after this manual has been printed will be detailed there.

- 2** If the problem persists after you have tested the Data/Fax Modem again, verify that the following conditions have been met before obtaining service.

All cabling is securely connected.

The PC Card is securely seated in the socket.

There are no compatibility problems between the Data/Fax Modem and one or more other ports in your personal computer system.

To isolate a compatibility problem, first verify that you have not configured an internal serial port to the same address as the Data/Fax Modem. Then, remove the other PC Cards from your personal computer and run the diagnostics.

There are no problems with your personal computer.

- 3** If any of the conditions listed in step 2 have not been met, correct the problem and run the test again.

If the conditions listed in step 2 have been met, it may be necessary to have your computer and Data/Fax Modem serviced. See Appendix A on page 19 for information on obtaining help and service.

---

## Appendix A. Help and Service Information

During the warranty period, you can get toll-free technical support 24 hours a day, 7 days a week, to answer any questions about your new IBM option. If you need warranty service, return or exchange is available. In addition, if your IBM option is installed in an IBM computer, you might be entitled to service at your location. Your technical support representative can help you determine the best alternative.

Before calling, you may want to try using the IBM PCC BBS to get the latest information about product use and possible product upgrades. To use this service, see the Note in Step 3 on page 11. If you still require assistance, please prepare for your call by following these steps.

---

### Step 1: Troubleshooting

You might be able to solve the problem yourself. If you have not done so already, you may want to try the procedures in "Problem Solving" on page 17 before calling IBM. Additionally, here are some other things you might want to try:

1. Remove and reconnect the cable.
2. Remove and reseal the PC Card.
3. Place the PC Card in a different socket, if one is available.
4. Reread your applications software instructions; be sure that software settings are correct.
5. Inspect the PC Card for damage, such as bent pins.
6. Refer to your computer manuals for instructions about the installation of upgrades. Look for a section about system setup or system configuration. Follow all procedures.

---

## Step 2: Preparing for the Call

To assist the technical support representative, have available as much of the following information as possible:

1. Product name, description, and serial number (if any)
2. Proof of purchase
3. Computer manufacturer, model, serial number (if IBM), and manual
4. Exact wording of the error message (if any)
5. Description of the problem
6. Hardware and software configuration information for your system

If possible, have your computer and the Data/Fax Modem available. Your technical support representative might want to walk you through the problem during the call.

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## Step 3: Placing the Call to IBM

Use one of the following numbers:

Within the United States, call the Options by IBM HelpCenter at 1-800-426-7299.

Within Canada

- For support, call HelpPC at 1-800-565-3344.
- For more information or to place an order, call 1-800-465-7999.

Outside the United States and Canada, contact your IBM HelpWare number, your place of purchase, or your local IBM branch office.

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## Appendix B. Product Warranties and Notices

# IBM

*International Business Machines Corporation Armonk, NY 10504*

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### Statement of Limited Warranty

*The warranties provided by IBM in this Statement of Limited Warranty apply only to Machines you originally purchase for your use, and not for resale, from IBM or an IBM authorized reseller. The term "Machine" means an IBM machine, its features, conversions, upgrades, elements, or accessories, or any combination of them. Machines are subject to these terms only if purchased in the United States or Puerto Rico, or Canada, and located in the country of purchase. If you have any questions, contact IBM or your reseller.*

**Machine:** IBM PCMCIA 28.8/14.4 Data/Fax Modem

**Warranty Period\*:** Lifetime

*\*Elements and accessories are warranted for three months. Contact your place of purchase for warranty service information.*

### Production Status

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

## The IBM Warranty

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

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

For a feature, conversion, or upgrade, IBM or your reseller may require that the Machine on which it is installed be 1) the designated, serial-numbered Machine and 2) at an engineering-change level compatible with the feature, conversion, or upgrade. Some of these transactions (called "Net-Priced" transactions) may include additional parts and associated replacement parts that are provided on an exchange basis. All removed parts become the property of IBM and must be returned to IBM.

Replacement parts assume the remaining warranty of the parts they replace.

If a Machine does not function as warranted during the warranty period, IBM or your reseller will repair or replace it (with a Machine that is at least functionally equivalent) without charge. If IBM or your reseller is unable to do so, you may return it to your place of purchase and your money will be refunded.

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

## Warranty Service

To obtain warranty service for the Machine, you should contact your reseller or call IBM. In the United States, call IBM at **1-800-426-7299**. In Canada, call IBM at **1-800-565-3344**. You may be required to present proof of purchase.

Depending on the Machine, the service may be 1) a "Repair" service at your location (called "On-site") or at one of IBM's or a reseller's service locations (called "Carry-in") or 2) an "Exchange" service, either On-site or Carry-in.

When a type of service involves the exchange of a Machine or part, the item IBM or your reseller replaces becomes its property and the replacement becomes yours. The replacement may not be new, but will be in good working order and at least functionally equivalent to the item replaced.

It is your responsibility to:

1. obtain authorization from the owner (for example, your lessor) to have IBM or your reseller service a Machine that you do not own;
2. where applicable, before service is provided —
  - a. follow the problem determination, problem analysis, and service request procedures that IBM or your reseller provide,
  - b. secure all programs, data, and funds contained in a Machine,
  - c. inform IBM or your reseller of changes in a Machine's location, and
  - d. for a Machine with exchange service, remove all features, parts, options, alterations, and attachments not under warranty service. Also, the Machine must be free of any legal obligations or restrictions that prevent its exchange; and
3. be responsible for loss of, or damage to, a Machine in transit when you are responsible for the transportation charges.



## Extent of Warranty

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

Misuse, accident, modification, unsuitable physical or operating environment, improper maintenance by you, or failure caused by a product for which IBM is not responsible may void the warranties.

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In Canada, warranties include both warranties and conditions.

Some jurisdictions do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

## Limitation of Liability

Circumstances may arise where, because of a default on IBM's part (including fundamental breach) or other liability (including negligence and misrepresentation), you are entitled to recover damages from IBM. In each such instance, regardless of the basis on which you are entitled to claim damages, IBM is liable only for:

1. bodily injury (including death), and damage to real property and tangible personal property; and
2. the amount of any other actual loss or damage, up to the greater of \$100,000 or the charge for the Machine that is the subject of the claim.

Under no circumstances is IBM liable for any of the following:

1. third-party claims against you for losses or damages (other than those under the first item listed above);
2. loss of, or damage to, your records or data; or
3. economic consequential damages (including lost profits or savings) or incidental damages, even if IBM is informed of their possibility.

Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

This warranty gives you specific legal rights and you may also have other rights which vary from jurisdiction to jurisdiction.

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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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## Notice to Canadian Users

### Special Requirements for Canada

Certain requirements exist for data communication products manufactured for use in Canada. Principle among these requirements is the application of the ISC stamp as described below. However, certain data communication products do not require the ISC stamp nor adherence for ISC requirements. If this is the case the ISC stamp will not be affixed to the rear panel of standalone units nor packaged with units designed for insertion in user equipment.

### Industry and Science Canada (ISC) Requirements

ISC stamps are affixed to the rear of each standalone unit sold in Canada. Card units which are installed in the user's equipment are shipped with a stamp included. The user should place the stamp on the outside of his equipment as close as possible to the telephone line connector. This stamp has the certification number for that particular unit. The numbers are different for each model.

The Industry and Science Canada label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective, operational, and safety requirements. ISC 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. For their own protection users should ensure that the electrical ground connections for 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.

**IMPORTANT:** Users should not attempt to make installation connections themselves, but should contact the appropriate electric inspection authority or electrician.

#### **Load Number**

The Load Number (6.5) 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 the 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.

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## Electronic Emission Notices

The following statements apply 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 13H7530 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.



## Industry Canada Compliance Statement

This digital apparatus does not exceed the Class B 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 B prescrites dans la norme sur le matériel brouiller: *Appareils numériques*, NMB-003 édictée par Industrie Canada.

## Japanese Voluntary Control Council for Interference (VCCI) Statement

This equipment is Class 2 Equipment (information equipment to be used in commercial and industrial districts) which is in conformance with the standard set by Voluntary Control for Interference by Data Processing Equipment and Electronic Office Machines (VCCI) with an aim to prevent radio interference in residential districts.

This equipment could cause interference to reception when used in proximity to radio and television receivers.

Please handle the equipment properly according to the instruction manual.

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## Spectrum Technology License

This product contains inactivated SPECTRUM CONNECTED \*\* cellular data communication technology which requires a use license from Spectrum Information Technologies, Inc. No such license is provided with this product and activation without a use license is prohibited. The SPECTRUM CONNECTED cellular data communication technology contained in this product can be activated for data communication over a cellular 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. To obtain a license and to determine the availability of an appropriate driver and cable for a cellular telephone, contact IBM Networking Direct at 1-800-IBM-CALL (1-800-426-2255).



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## Glossary

This Glossary defines terms and abbreviations as applicable to the Data/Fax Modem. It includes terms and definitions from the *IBM Dictionary of Computing* (New York; McGraw-Hill, Inc., 1994).

**bit rate.** The number of bits transmitted per second (bps). For a modem communicating over the telephone channel, standard bit rates are 300, 1200, 2400, 4800, 9600, 14400, and 28800 bps.

**Card Services.** Software that coordinates access to PC Cards, sockets, and system resources. If you use more than one PC Card, or if you are inserting and removing PC Cards from your computer, Card Services monitors and updates the socket and resource status.

**device driver.** Software written to enable functions on and allow applications to access a hardware device.

**Group 3 Fax (G3 Fax).** A protocol for the transmission of facsimile through the analog telephone network.

**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.

**MNP.** Microcom Networking Protocol.

**MNP 2,3,4.** Protocols for error correction.

**MNP 5.** Protocol for 2:1 data compression.

**MNP 10 EC.** Protocol for error correction, optimized for harsh line conditions such as cellular.

**PC Card.** A product conforming to the PCMCIA Standard, Version 2.1, published by the Personal Computer Memory Card International Association (PCMCIA).

**RJ-11 plug.** A four-pin, modular connector used to physically connect a piece of communications equipment to a PSTN telephone line.

**Socket Services.** Software that controls the configuration of your socket. This software should come with your computer if your computer has a PC Card socket, or with your PC Card socket adapter if you have a PC Card socket adapter in your computer.

**socket.** Computer connector that accepts a PC Card.

**super enabler.** Often packaged with Card Services, super enablers recognize a wide range of PC Card products such as modems.





# Tell Us What You Think!

**PCMCIA 28.8/14.4 Data/Fax Modem  
Installation and Testing Instructions  
Part Number 38H5080**

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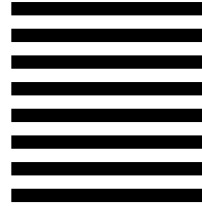


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