IBM®

PCMCIA 33.6 Data/FAX/Voice Modem with XJACK connector

Installation Guide

OPTIONS
by IBM

Note *Before using this information and the product it supports, be sure to read the general information in Product Warranty and Notices.*

First Edition (January 1997)

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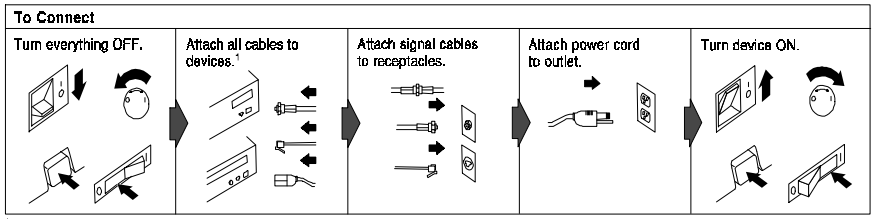
Part 1 : Safety

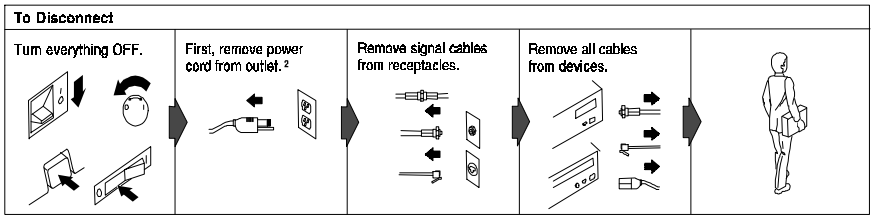
This modem card is for use only in Listed Personal Computers that have installation instructions detailing user installation of card cage accessories.

DANGER:

Electrical current from power, telephone, and communication cables is hazardous. To avoid shock hazard, connect and disconnect cables as shown below when installing, moving or opening the covers of this product or attached devices. The power cord must be used with a properly grounded outlet.



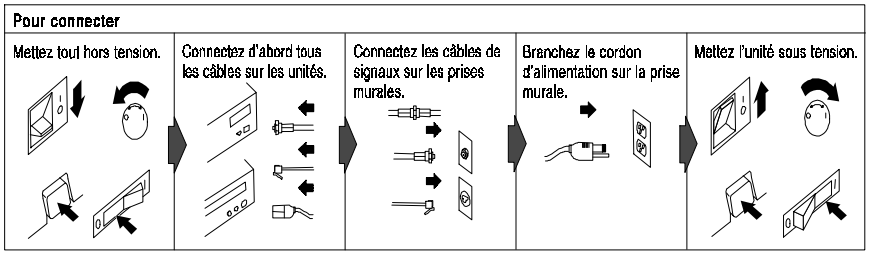
[1] In the U.K., by law, the telephone cable must be connected after the power cord.

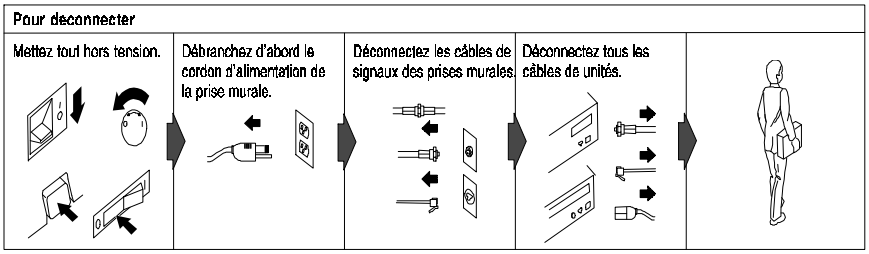


[2] In the U.K., by law, the power cord must be disconnected after the telephone line cable.

DANGER:

Le courant électrique provenant des câbles d'alimentation, téléphoniques et de transmission peut présenter un danger. Pour éviter tout risque de choc électrique, connectez et déconnectez ces câbles comme indiqué ci- dessous lorsque vous installez ou déplacez ce matériel ou les unités connectées, ou que vous soulevez un carter.*

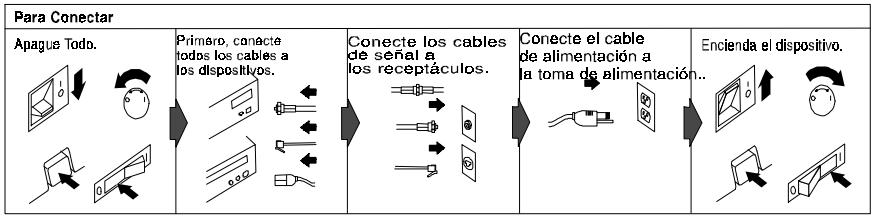


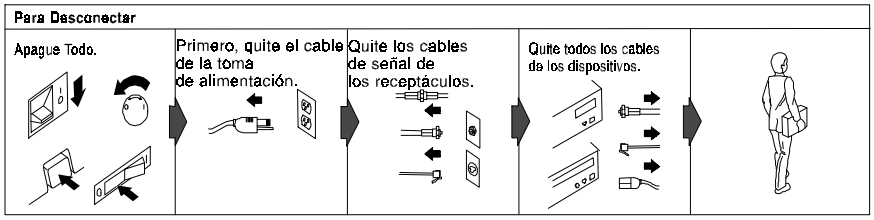


*Le cordon d'alimentation doit être branché sur un socle de prise de courant correctement mis à la terre.

PELIGRO:

La corriente eléctrica de la alimentación, teléfono y cables de comunicación es peligrosa. Para evitar peligro de descargas cuando instale, mueva o abra las cubiertas de este producto o de un disp. conectado, conecte y desconecte los cables tal como se muestra a continuachión.





DANGER:

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

To avoid shock hazard:

- The power cord must be connected to a properly wired and earthed receptacle.
- Any equipment to which this product will be attached must also be connected to properly wired receptacles.

DANGER:

Pour éviter tout risque de choc électrique, ne manipulez aucun câble et n'effectuez aucune opération d'installation, d'entretien ou de reconfiguration de ce produit au cours d'un orage.

Pour éviter tout risque de choc électrique :

- Le cordon d'alimentation doit être branché sur une prise d'alimentation correctement câblée et mise à la terre.
- D'autre part, tout le matériel connecté à ce produit doit également être branché sur des prises d'alimentation correctement câblées et mises à la terre.

PELIGRO

Para evitar peligo de descargas, no contecte o desconecte ningún cable, ni realice ninguna instalación, mantenimiento o reconfiguración de este producto durante una tormenta eléctrica.

Para evitar peligro de descargas:

- El cale de alimentación debe estar conectado a una toma de alimentación adecuadamente cableada y con toma de tierra.
- Cualquier equipo al cual se conecte este producto debe estar tamblén conectado a tomas de alimentación adecuadamente cableadas.

Cuando sea posible, utilice una mano para conectar o desconectar los cables de señal para impedir que se produzcan posible descargas eléctricas al tocar dos superficies con potencial eléctrico distinto.

DANGER

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.

Part 2 : Quick Installation

Thank you for purchasing an IBM PCMCIA 33.6 Kbps Data/FAX/Voice modem with XJACK** Connector. This card is fully PCMCIA** 2.1 compatible and ready to plug into your computer slot.

Note:

Do NOT connect your modem to a digital PBX (switchboard) system, because you may damage the modem. Modems are designed to function with analog telephone lines, such as most residential lines. When in a hotel or office building, please request an analog or fax line from the concierge or facilities personnel.
Do NOT connect your modem to an ISDN line. In some countries, ISDN (digital) lines are being provided for residences and businesses. These lines may damage the modem.

Please note that this modem is fully compatible with analog telephone lines that are connected to a Digital Exchange. The Digital Exchange supplies analog lines to homes and businesses.

Important: Be sure to retain your proof of purchase because it might be required to receive warranty service. You can find information on how to get help, technical support, and warranty service in *Help and Service Information.*

Installing Modem in Windows 3.x and NT 4.0

1. For NT , Check the Devices applet in the Control Panel to make sure PCMCIA support is enabled. The startup type should be “boot” and the status should say “started”.
2. Power off your computer.
3. Insert the modem card into a PCMCIA card slot on your computer. Make sure that the card is completely inserted and mated securely to the computer.
4. Connect one end of the RJ11 phone cable to the XJACK® connector on the modem.
5. Connect the other end of the modem cable to an analog telephone line
6. Power on your computer, start Windows
   The modem is now ready for use.

Installing Modem in Windows95

1. Power on your computer, start Windows95.
2. Insert the modem card into a PCMCIA card slot of your computer. Make sure that the card is completely inserted and mated securely to the computer.
3. **New Hardware Found** will be on the screen.
4. Select option **Driver from disk provided by hardware manufacturer**
5. Click on **OK**.
6. Insert the Windows95 Installation diskette into diskette drive **A:**
7. Click on **OK**.
8. Follow the Windows95 prompts to complete installation.
9. Connect one end of the RJ11 phone cable to the XJACK® connector on the modem.
10. Connect the other end of the modem cable to an analog telephone line

The modem is now ready for use.

Installing Modem in OS/2 Warp

1. Power on your computer, start OS/2.
2. Insert the modem card into a PCMCIA card slot of your computer. Make sure that the card is completely inserted and mated securely to the computer.
3. Open the “OS/2 system folder”.
4. Open “System Setup”.
5. Run the “Selective Install”.
6. Click on the option (icon) for PCMCIA support.
7. Select your laptop from the list.
8. Check “PCMCIA Modem/FAX” box.
9. Select “OK” to install OS/2 Warp’s built-in PCMCIA card and socket services.
10. Follow the OS/2 instructions to complete the install.
11. After the installation has completed, reboot the computer.
12. Connect one end of the RJ11 phone cable to the XJACK® connector on the modem.
13. Connect the other end of the modem cable to an analog telephone line

The modem is now ready for use.

REPLACE WITH TRANSLATED VERSION

Quick Install (Canadian French)

Thank you for purchasing an IBM PCMCIA 33.6 Kbps Data/FAX/Voice modem with XJACK** Connector. This card is fully PCMCIA** 2.1 compatible and ready to plug into your computer slot.

Note:

Do NOT connect your modem to a digital PBX (switchboard) system, because you may damage the modem. Modems are designed to function with analog telephone lines, such as most residential lines. When in a hotel or office building, please request an analog or fax line from the concierge or facilities personnel.

Do NOT connect your modem to an ISDN line. In some countries, ISDN (digital) lines are being provided for residences and businesses. These lines may damage the modem.

Please note that this modem is fully compatible with analog telephone lines that are connected to a Digital Exchange. The Digital Exchange supplies analog lines to homes and businesses.

Product Service and Warranty Information

For technical support, support hours, and warranty terms and conditions, see the enclosed inserts, or contact your IBM reseller or IBM marketing representative.

REPLACE WITH TRANSLATED VERSION

Installing Modem in Windows 3.x and NT 4.0

1. For NT , Check the Devices applet in the Control Panel to make sure PCMCIA support is enabled. The startup type should be “boot” and the status should say “started”.
2. Power off your computer.
3. Insert the modem card into a PCMCIA card slot on your computer. Make sure that the card is completely inserted and mated securely to the computer.
4. Connect one end of the RJ11 phone cable to the XJACK® connector on the modem.
5. Connect the other end of the modem cable to an analog telephone line
6. Power on your computer, start Windows
   The modem is now ready for use.

REPLACE WITH TRANSLATED VERSION

Installing Modem in Windows95

1. Power on your computer, start Windows 95.
2. Insert the modem card into a PCMCIA card slot of your computer. Make sure that the card is completely inserted and mated securely to the computer.
3. **New Hardware Found** will be on the screen.
4. Select option **Driver from disk provided by hardware manufacturer**
5. Click on **OK**.
6. Insert the Windows95 Installation diskette into diskette drive **A:**
7. Click on **OK**.
8. Follow the Windows95 prompts to complete installation.
9. Connect one end of the RJ11 phone cable to the XJACK® connector on the modem.
10. Connect the other end of the modem cable to an analog telephone line

The modem is now ready for use.

REPLACE WITH TRANSLATED VERSION

Installing the Modem in OS/2 Warp

1. Power on your computer, start OS/2.
2. Insert the modem card into a PCMCIA card slot of your computer. Make sure that the card is completely inserted and mated securely to the computer.
3. Open the “OS/2 system folder”.
4. Open “System Setup”.
5. Run the “Selective Install”.
6. Click on the option (icon) for PCMCIA support.
7. Select your laptop from the list.
8. Check “PCMCIA Modem/FAX” box.
9. Select “OK” to install OS/2 Warp’s built-in PCMCIA card and socket services.
10. Follow the OS/2 instructions to complete the install.
11. After the installation has completed, reboot the computer.
12. Connect one end of the RJ11 phone cable to the XJACK® connector on the modem.
13. Connect the other end of the modem cable to an analog telephone line

The modem is now ready for use.

REPLACE WITH TRANSLATED VERSION

Quick Install (Spanish)

Thank you for purchasing an IBM PCMCIA 33.6 Kbps Data/FAX/Voice modem with XJACK** Connector. This card is fully PCMCIA** 2.1 compatible and ready to plug into your computer slot.

Note:

Do NOT connect your modem to a digital PBX (switchboard) system, because you may damage the modem. Modems are designed to function with analog telephone lines, such as most residential lines. When in a hotel or office building, please request an analog or fax line from the concierge or facilities personnel.

Do NOT connect your modem to an ISDN line. In some countries, ISDN (digital) lines are being provided for residences and businesses. These lines may damage the modem.

Please note that this modem is fully compatible with analog telephone lines that are connected to a Digital Exchange. The Digital Exchange supplies analog lines to homes and businesses.

Product Service and Warranty Information

For technical support, support hours, and warranty terms and conditions, see the enclosed inserts, or contact your IBM reseller or IBM marketing representative.

REPLACE WITH TRANSLATED VERSION

Installing Modem in Windows 3.x and NT 4.0

1. For NT , Check the Devices applet in the Control Panel to make sure PCMCIA support is enabled. The startup type should be “boot” and the status should say “started”.
2. Power off your computer.
3. Insert the modem card into a PCMCIA card slot on your computer. Make sure that the card is completely inserted and mated securely to the computer.
4. Connect one end of the RJ11 phone cable to the XJACK® connector on the modem.
5. Connect the other end of the modem cable to an analog telephone line
6. Power on your computer, start Windows
   The modem is now ready for use.

REPLACE WITH TRANSLATED VERSION

Installing Modem in Windows95

1. Power on your computer, start Windows 95.
2. Insert the modem card into a PCMCIA card slot of your computer. Make sure that the card is completely inserted and mated securely to the computer.
3. **New Hardware Found** will be on the screen.
4. Select option **Driver from disk provided by hardware manufacturer**
5. Click on **OK**.
6. Insert the Windows95 Installation diskette into diskette drive **A:**
7. Click on **OK**.
8. Follow the Windows95 prompts to complete installation.
9. Connect one end of the RJ11 phone cable to the XJACK® connector on the modem.
10. Connect the other end of the modem cable to an analog telephone line

The modem is now ready for use.

REPLACE WITH TRANSLATED VERSION

Installing the Modem in OS/2 Warp

1. Power on your computer, start OS/2.
2. Insert the modem card into a PCMCIA card slot of your computer. Make sure that the card is completely inserted and mated securely to the computer.
3. Open the “OS/2 system folder”.
4. Open “System Setup”.
5. Run the “Selective Install”.
6. Click on the option (icon) for PCMCIA support.
7. Select your laptop from the list.
8. Check “PCMCIA Modem/FAX” box.
9. Select “OK” to install OS/2 Warp’s built-in PCMCIA card and socket services.
10. Follow the OS/2 instructions to complete the install.
11. After the installation has completed, reboot the computer.
12. Connect one end of the RJ11 phone cable to the XJACK® connector on the modem.
13. Connect the other end of the modem cable to an analog telephone line

The modem is now ready for use.

Part 3 : Introduction

Package Contents

Along with this Installation Guide, the following items are included in this package:

- IBM PCMCIA 33.6 Kbps Data/FAX/Voice modem with XJACK** Connector (FRU part number 12J2785).
- RJ-11 to RJ-11 Cable with cable coupler
- Software Program License (in last section of this manual)
- Diskette for Windows95 operating system. (Also includes README and AT Command files)
- Communication software

As you examine these items, look for any physical damage.
Retain the shipping container in the event that you need to ship your IBM PCMCIA 33.6 Kbps Data/FAX/Voice modem with XJACK Connector.

Important: Be sure to retain your proof of purchase because it might be required to receive warranty service. You can find information on how to get help, technical support, and warranty service in *Help and Service Information.*

Additional features

The IBM PCMCIA 33.6 Data/FAX/Voice modem, when used with communications software programs which support these features, can be used to do the following:

- Invoke AutoSync**.
- Automatically dial calling card numbers
- Voice messaging

The modem automatically adjusts from asynchronous to synchronous data transmission, called AutoSync.

With AutoSync turned on, the modem automatically converts to synchronous communication when it is connected to a synchronous modem. This eliminates the need for an asynchronous-to-synchronous conversion device when connecting to a mainframe or other system requiring synchronous communications.

Your communications software must support AutoSync in order for you to use it. Your software will affect how the modem functions with AutoSync.

To activate AutoSync, do the following:

- Set S-Registers S19, S20, and S25 to the values you want to use
- Issue **AT&Q4S95=0**

After the **CONNECT** message appears, the modem waits a period of time determined by S25 before examining the condition of the DTR signal: if DTR is on, the modem begins synchronous operation; if DTR is off, the modem hangs up and returns to asynchronous operation.

AutoSync will stop under the following conditions:

- Any **AT&D*n*** command
- Loss of carrier
- Ejecting the modem
- Cable disconnection

Caller ID

Your modem, when used with communications software that supports this feature, allows you to keep track of callers' names and telephone numbers. You must subscribe to Caller ID from your phone company.

Automatic Credit Card Dialing

Whenever you make a credit card call, your modem will detect the “bong” that sounds prior to entering your credit card number. When it detects this sound, the modem automatically enters your credit card number, placing the call. This is called “smart dialing”.

To use the smart dial feature, enter a string similar to this:

ATDT <phone#>&<credit card#>

Voice Messaging

Your modem, when used with communications software that supports this feature, allows you to send and receive personal voice mail. If you have a multimedia computer, you can send greetings and record voice messages as you would with a standard answering machine, with several voice mailboxes on one system. You can even access your voice messages remotely.

Additional Information for Installing with Windows NT 4.0

- After power on, open **Control Panel**
- Double click **Modems** icon
- **Install New Modem** panel should appear on your screen
- Check **don't detect modem**
- Click **NEXT**
- Insert supplied Windows95 Installation diskette in diskette drive
- Click on OK
- Under Models, you should see **IBM 33.6 Data-Fax-Voice Modem**
- Remove diskette, click on **NEXT**
- Windows NT 4.0 will request you select a com port, select any one then click on **NEXT**.
- If NT says it is unable to add modem to com port, click **OK** and re-run modems from control panel but do NOT select **don't detect modem**. Windows NT 4.0 will then correctly assign the modem to a com port.

Vertifying OS/2 COM port setting

- Open **System Setup** in **System** folder.
- Double click on the **Plug-and-play** icon.
- You should see **modem configured in** the slot number the modem is in.
- To find out which COM port the modem is assigned to, select the slot and double click on it.
- This will display the COM port and IRQ (interrupt) that is assigned to the modem.

Part 4 : Cellular Communications

Introduction

Connecting your modem to a cellular telephone gives you freedom from land lines, enabling you to send data and faxes without being tied to a physical phone line. You can move from one network or cell to another and still use your phone.

Before you can use a cellular phone with your modem, you must obtain the correct Cellular cable. Cellular cables are provided for IBM by USRobotics** parts service center.

To order or obtain information for Cellular cables

in U.S.A. call 1-800-846-2233

in Canada call 1-800-891-6342 .

The modem can support up to two cellular drivers, which support certain models of Motorola**, Nokia**, AT&T**, Radio Shack**, and other leading cellular phones. Simply plug in the cellular cable, and the modem will recognize the type of phone you plan to use.

What to Expect from Cellular Data Transmissions

Cellular mobility creates some conditions of which you should be aware:

- Cellular phones use radio frequencies for transmission, and are subject to the same signal impairments as are other radio devices. Your modem is designed to overcome this.
- Because cellular telephones use radio frequencies, they do not do any of the following:
    - Generate dial tones or busy signals
    - Send ring voltage back to the modem
    - Decode touch tone or pulse dial signals

Your modem is configured to overcome this.

- A large portion of the cellular voice channel is reserved for out-of-band signalling, reducing the bandwidth on the cellular network. This can result in distortion or signal loss. You cannot control this.
- Voice compression techniques on some cellular networks can cause loss of bandwidth, resulting in slower data transmission. You cannot control this.
- The mobile telephone exchange may send a signal over the control channel commanding the telephone to reduce its transmission power, possibly resulting in dropped data lines. You cannot control this.
- The mobile telephone exchange may send messages to, or request information from, the telephone on the voice channel while the data link is established. This can temporarily disrupt data communications or cause the line to be dropped. You cannot control this.

To ensure that your transmission quality is as high as possible, do the following:

- Use cellular protocols whenever possible. These will be set up automatically on the modem when you plug in the Megahertz cellular direct connect cable. Always use error correction and data compression to receive and send the highest quality transmissions.
- Use cellular modem pools if available. Contact your cellular carrier or service provider to see if cellular modem pools are available in your area. This service is accessed by dialing the previs *DATA (*3282) before the number you are dialing.
- Be sure the signal is as strong as it can be. Refer to your cellular phone's manual for a description of signal strength, and an explanation of how to read the signal strength bars. If the signal is not strong enough to support a voice call, it will not handle data transmission.
    - Pull the antenna out to its full length and point it in several different directions until you find the strongest signal. Try putting the phone in a vertical position and moving it closer to a window. Never lay the phone on a metal surface during transmissions.
    - Keep in mind that large objects like mountains or even a car hood can cause the signal to be reflected back to you or block the signal from reaching the phone.
- Be sure the cellular phone's battery is fully charged while you are sending or receiving faxes or data.
    - If the low battery message blinks during transmission (signaling it is running out of power), disconnect the transmission, attach a fully charged battery, and redial.

Automatic Cable Sensor

When no cellular cable is inserted, the modem is in landline mode. When a cellular cable is inserted, a three-tone ascending beep will sound, the message **Motorola Cable Attached** or **Nokia Cable Attached** will appear (if you are in terminal mode), and the modem will automatically go into cellular mode.

If a cable is attached that the modem does not recognize, the message **Unrecognized Cable Attached** will appear if you are in terminal mode.

No AT command string is needed to put the modem into cellular mode. The initialization string is automatically sent when the cable is attached.

When the cellular cable is removed, the message **Cable has been Removed** will appear if you are in terminal mode and the modem will automatically return to land line mode.

Connecting the Modem to a Cellular Phone

If the cellular cable kit requires it, flash your modem to enable cellular functions.

Always connect the cables in the following order:

1. Insert the modem into the computer.

2. Be sure your computer is powered up.

3. Initialize the modem in the computer.

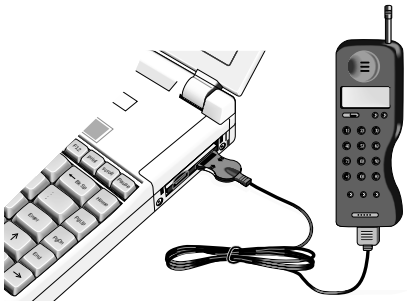
4. Enter your communications software package.

5. Connect the cellular phone cable to the phone. The phone's power should be off.

6. Connect the other end of the cellular cable to the modem. You will hear three ascending tones in rapid succession, indicating that the Cable Sensor recognizes the cable and the modem is configured for the phone. If your software is in terminal mode, the message **<Phone> Cable Attached** will appear.

7. Turn the cellular phone on, if modem has not already turned it on. If you have a digital cellular phone, switch it to analog mode (refer to your phone's user manual for instructions on how to do this).
The phone is now ready to use.

The cellular phone connection looks like this:



Using Cellular Protocols

The modem is equipped with both ETC** and MNP** 10-EC cellular enhancements. If you are not sure what cellular protocols the modem with which you are connecting supports, set **S79=1** to set the startup rate at 4800bps. The transmission speed between the modems will adjust during the call to the fastest speed that produces the most stable transmission.

MNP 10-EC and ETC

The purpose of MNP 10-EC and ETC cellular protocols is to combat particularly harsh line conditions that can arise during cellular and rural transmissions to produce optimum cellular performance.

MNP 10-EC is the default cellular protocol for your modem. MNP 10-EC supports LAP-M and MNP error correction protocols. When the modem connects with LAP-M error correction and has MNP 10-EC enabled, the protocol reported is LAP-M-EC (if the protocol result code reporting option is enabled). When the modem connects with MNP error correction and has MNP 10-EC enabled, the protocol reported is ALT-EC.

Both MNP 10-EC and ETC offer the following additional features:

- Improves the initial connection success rate.
- Automatically calculates optimal transmission speeds to compensate for cellular telephone signal distortion. This is done in the following categories:
    - The modem connection begins at the optimal speed that will ensure a strong connection, then moves to the highest possible speed during transmission.
    - A reliable link is established during noisy call setups.
    - Transmission speeds are adjusted continuously throughout the connection, supplying the highest possible speed with the greatest reliability that the line can support at any time.
    - Link and transmission performance under adverse conditions are greatly improved. Errors during transmission are detected and the packets resent.
    - Signal line conditioning

Connecting to the Internet Over Cellular

It is highly recommended that you connect to your Internet provider using a landline connection. Most Internet providers are not set up to support and maintain a cellular connection.

If you need to connect to an Internet provider with a cellular phone system, contact your local carrier to see if they provide a cellular modem pool (usually by dialing *DATA (*3282) before the number you are dialing).

If so, follow your carrier's instructions for connecting with the modem pool. Contact your Internet provider through the modem pool.

If not, carefully follow the recommended procedures to connect your cellular phone to the modem.

Dialing

Cellular dialing functions work the same as landline functions

If you are dialing manually and you do not require a Personal ID Number (PIN) and your phone number is 555-5555, enter

```
ATDT 5555555
```

If you are dialing manually and your cellular phone requires that you enter a PIN and your PIN number 1234, enter the phone number, five commas (you may need fewer or more commas, depending on your system. Each comma represents a two-second delay), an exclamation point, then the PIN number. For example, if your PIN number is 1234, enter

```
ATDT 5555555,,,,,!1234
```

Enter these numbers into a dialing directory the same way as they are shown above.

When the modem connection has been established using the default protocols, the protocol message will be **LAP-M-EC**, indicating the modem is using LAP-M error correction and MNP10-EC cellular enhancements.

Part 5 : Testing Your Modem

Refer to the Application Software's Installation Manual to load the communications software you will be using.

1. Turn on your computer.
2. Start your communication software and be sure it is in the command mode. This is also known as terminal mode.
3. Setup your communication software to 19200 and the communication port your modem is using.
4. If the port opened properly, go to the next step. Otherwise, check if you have any other communication software trying to use the same port. If so, close that software. If not, switch to a different COM port.
5. Type **AT&F** and press **enter**, you should see an **OK** response. If nothing happened at this point, this indicates that the modem is not getting the proper IRQ.
6. Type **AT\N1** and press **enter**
7. Type **ATE1** and press **enter**
8. Type **ATS18=n** and press **enter**

   NOTE: n is the number of seconds (30-255) you want the test to last.
9. Type **AT&T1** press **enter**. You should see **CONNECT nnnnn** (n is the connect speed you selected) displayed on your screen. After the CONNECT message, the modem is in the data mode. You can type any character on your keyboard and see them displayed on your screen.
10. When the time you specified in register S18 expires, you see **OK** displayed on your screen.
11. Type **AT&F** and press **enter**, you should see an **OK** response on your screen.

Dial Tone Test

1. Turn on your computer.
2. Start your communication software and be sure it is in the command mode. This is also known as terminal mode.
3. Setup your communication software to the communication port your modem is using.
4. Type **ATZ** and press **Enter**.

   Typing this command sets the modem to the default values. Your modem responds by displaying **OK** on your screen.
5. Type **ATL3** and press **Enter**.

   Typing this command increases the volume level at the modem speaker. Your modem responds by displaying **OK** on your screen.
6. Type **ATD** and press **Enter**.

   You should hear a dial tone from the modem speaker.
7. Press **Enter**.

   You should no longer hear the dial tone. Your modem responds by displaying **NO Carrier** on your screen.

This completes the Dial Tone Test

Part 6 : Help and Service Information

Before calling, please prepare for your call by following these steps.

Step 1: Troubleshooting

The modem was completely tested for proper operation at the factory before packaging for shipment. If the modem does not respond to the **AT** commands described in *Testing your modem*, please try the following:

- Ensure that the modem is properly seated in your computer by removing and re-inserting the modem.
- Verify that the COM port specified in your communications software is the same as the COM port to which your modem is set..
- Ensure that the communications software is installed properly. Follow the installation instructions in the communications application manual carefully, and check the documentation for any additional information pertaining to your system.

Step 2: Preparing for the Call

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

- Option name, description and serial number (if any)
- Order and or Field Replaceable Unit (FRU) part numbers
- Proof of purchase
- Computer manufacturer, model, serial number (if IBM) and manual
- Exact wording of the error message (if any)
- Description of the problem
- Hardware and software configuration information for your system
- If possible, be at your computer. Your technical support representative might want to walk you through the problem during the call.

Step 3: Placing the Call to IBM

Technical support is available during the warranty period to answer any questions about your new IBM option. Support response time will vary depending on the number and nature of calls received.

For the support telephone and support hours by country, refer to the following table or to an optional enclosed technical support insert. If the number is not provided in the table or insert, contact your IBM reseller or IBM marketing representative.

Support 24 hours a day, 7 days a week	
Canada	1-800-565-3344
Puerto Rico	1-800-772-2227
United States	1-800-772-2227

Part 7 : Product Warranty

The following warranty information applies to products purchased in the United States, Canada, and Puerto Rico. For warranty terms and conditions for products purchased in other countries, see the enclosed Warranty insert, or contact your IBM reseller or IBM marketing representative.

International Business Machines Corporation Armonk, New York, 10504

Statement of Limited Warranty

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

Machine: IBM PCMCIA 33.6 Data/FAX/Voice Modem

Warranty Period*: Five (5) years
**Contact your place of purchase for warranty service information..*

Production Status

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

The IBM Warranty for Machines

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

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

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

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

If you transfer a Machine to another user, warranty service is available to that user for the remainder of the warranty period. You should give your proof of purchase and this Statement to that user. However, for Machines which have a life-time warranty, this warranty is not transferable.

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.

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

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

You agree to:

1. obtain authorization from the owner to have IBM or your reseller service a Machine that you do not own; and

2. where applicable, before service is provided --

   a) follow the problem determination, problem analysis, and service request procedures that IBM or your reseller provide,

   b) secure all programs, data, and funds contained in a Machine, and

   c) inform IBM or your reseller of changes in a Machine's location.

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

Extent of Warranty

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

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

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2. the amount of any other actual direct damages or loss, up to the greater of U.S. $100,000 or the charges (if recurring, 12 months' charges apply) for the Machine that is the subject of the claim.

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Part 8 : Notices

Electronic Emission Notices

Federal Communications Commission (FCC) Statement

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult an IBM authorized dealer or service representative for help.

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 Class B Emission Compliance Statement

This Class B digital apparatus meets the requirement of the Canadian Interference-Causing Equipment Regulations.

Avis de conformité à la réglementation d'Industrie Canada

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouiller du Canada.

Federal Communications Commission (FCC) and Telephone Company Requirements

1. This adapter complies with Part 68 of the FCC rules. A label is affixed to the adapter that contains, among other things, the FCC registration number, USOC, and Ringer Equivalency Number (REN) for this equipment. If these numbers are requested, provide this information to your telephone company.

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

3. If the adapter causes harm to the telephone network, the telephone company may discontinue your service temporarily. If possible, they will notify you in advance; if advance notice is not practical, you will be notified as soon as possible. You will be advised of your right to file a complaint with the FCC.

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

5. If you experience trouble with this product, contact your Authorized Reseller, or call IBM. In the United States, call IBM at **1-800-772-2227**. In Canada, call IBM at **1-800-565-3344**. You may be required to present proof of purchase.
   The telephone company may ask you to disconnect the adapter from the network until the problem has been corrected, or until you are sure the adapter is not malfunctioning.

6. No customer repairs are possible to the adapter. If you experience trouble with the adapter, contact your Authorized Reseller or see Help and Service section of this manual for information.

7. This adapter may not be used on coin service provided by the telephone company. Connection to party lines is subject to state tariffs. Contact your state public utility commission or corporation commission for information.

8. When ordering network interface (NI) service from the local Exchange Carrier, specify service arrangement USOC RJ11C.

Canadian Department of Communications Certification Label

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

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. 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 electric inspection authority, or electrician, as appropriate.

NOTICE: The LOAD NUMBER (LN) 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 sum of the LOAD NUMBERS of all the devices does not exceed 100.

Étiquette d'homologation du ministère des Communications du Canada

AVIS : L'étiquette du ministère des Communications du Canada identifie le matériel homologué. Cette étiquette certifie que le matériel est conforme à certaines normes de protection, d'exploitation et de sécurité des réseaux de télécommunications. Le ministère n'assure toutefois pas que le matériel fonctionnera à la satisfaction de l'utilisateur.

Avant d'installer ce matériel, l'utilisateur doit s'assurer qu'il est permis de le raccorder aux installations de l'entreprise locale de télécommunications. Le matériel doit également être installé en suivant une méthode acceptée de raccordement. L'abonné ne doit pas oublier qu'il est possible que la conformité aux conditions énoncées ci-dessus n'empêchent pas la dégradation du service dans certaines situations.

Les réparations de matériel homologué doivent être effectuées par un centre d'entretien canadien autorisé désigné par le fournisseur. La compagnie de télécommunications peut demander à l'utilisateur de débrancher un appareil à la suite de réparations ou de modifications effectuées par l'utilisateur ou à cause d'un mauvais fonctionnement.

Pour sa propre protection, l'utilisateur doit s'assurer que tous les fils de mise à la terre de la source d'énergie électrique, des lignes téléphoniques et des canalisations d'eau métalliques, s'il y en a, sont raccordés ensemble. Cette précaution est particulièrement importante dans les régions rurales.

Avertissement: l'utilisateur ne doit pas tenter de faire ces raccordements lui-même, il doit avoir recours à un service d'inspection des installations électriques ou à un électricien, selon le cas.

AVIS: L'INDICE DE CHARGE (IC) assigné à chaque dispositif terminal indique, pour éviter toute surcharge, le pourcentage de la charge totale qui peut être raccordé à un circuit téléphonique bouclé utilisé par ce dispositif. L'extrémité du circuit bouclé peut consister en n'importe quelle combinaison de dispositifs pourvu que la somme des INDICES DE CHARGE de l'ensemble des dispositifs ne dépasse pas 100.

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4) make copies of the Programs and distribute them to a rightful possessor of a System and to install the Programs for a rightful possessor (but only to the extent necessary to restore or maintain the System), provided that you supply such party a copy of this Agreement; and

5) transfer possession of these Programs and diskette(s) to another party in conjunction with the transfer of a System, provided that you supply a copy of this Agreement and all Program and System documentation to such party. When you do so, your license is terminated and you must destroy all your remaining copies of the Program.

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3) sublicense, rent, lease, or assign the Programs.

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IBM warrants the Programs solely in accordance with the Statement of Limited Warranty for Machines that accompanied your System, which is hereby incorporated by reference.

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