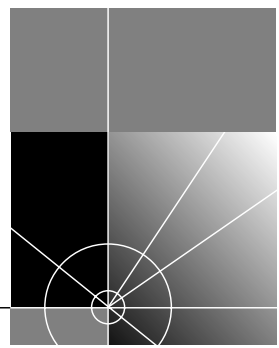
3Com OfficeConnect 56K Business Modem Getting Started Guide



http://www.3com.com/

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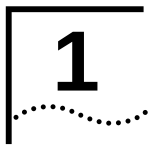


INTRODUCTION

This chapter includes

- Using this Guide
- Related Documentation
- Conventions
- Contacting 3Com

If the information in the release notes shipped with your product differs from the information in this guide, follow the instructions in the release notes.

Using this Guide

Use this *Getting Started Guide* to obtain the information you need to get your 3Com OfficeConnect 56K Business Modem installed, configured, and running correctly.

In order to	Go to chapter
Install the Business Modem	Chapter 2
Troubleshoot the Business Modem	Chapter 3
Make a connection to your Internet Service Provider (ISP)	See the *3Com OfficeConnect 56K Business Modem Command Reference* found on the CD-ROM.

Related Documentation

The *Com OfficeConnect 56K Business Modem Command Reference* found on the CD-ROM has detailed information about configuring your Business Modem.

Conventions

The table below lists the conventions used within this manual.

Icon	Notice Type	Description
	Information note	Important features or instructions
	Caution	Information to alert you to potential damage to a program, system, or device
	Warning	Information to alert you to potential personal injury

Contacting 3Com

Please contact 3Com if you have any questions.

To do this	Contact
Contact Technical Support	888.326.6099 24 hours a day, 7 days a week
Contact Canadian Technical Support	800-532-7273 24 hours a day, 7 days a week
Send a Fax to Fax Support	847-262-4329
Send a Fax to Canadian Fax Support	905-479-0232
Dial into the 3Com Bulletin Board System	847.262.6000
Visit the 3Com U.S. Robotics support Web site.	http://support.3com.com
Visit the 3Com Web site	http://www.3com.com

2 INSTALLING THE BUSINESS MODEM

Use this chapter to install the Business Modem.

- What You Need
  - Package Contents
- Installing Your Business Modem
  - Desktop Installation
  - OfficeConnect Stacking Installation
  - Hardware Installation
  - Modem Driver Installation
  - Testing the Installation
- For More Information

What You Need

You need the following items (not included) in addition to the contents of your box to install the Business Modem:

- Computer or terminal with a serial port (16650 UART recommended)
- One of the following operating systems: Windows 95, Windows 98, Windows NT 4.0 or later, or Macintosh OS 8.
- An analog telephone line
- RS-232 serial cable

WARNING: *The Business Modem requires a standard, analog telephone line. Do not connect your Business Modem to a digital telephone line. Digital lines are commonly used in office buildings and hotels. If you are unsure whether your line is analog or digital, ask your network administrator or your local telephone company.*

Package Contents

Your Business Modem package contains the following items:

- The 3Com OfficeConnect 56K Business Modem
- Power adapter
- Telephone cable
- Universal Serial Bus (USB) cable
- Rubber feet and stacking clips kit
- The *Connections* CD-ROM, which contains:
  - Lots of free software
  - The 3Com OfficeConnect 56K Business Modem Command Reference Guide
  - Special offers
  - Updated Business Modem INF file

IYou will need a serial cable to connect your modem to your computer. Because there are a variety of connector types that different computers require, a serial cable is not provided with your modem. Many users may already have an existing modem and serial cable.

Installing Your Business Modem

There are two ways to install your Business Modem; as a free-standing desktop modem or as part of a stack with other OfficeConnect products.

Desktop Installation

If you plan to place your modem on a flat surface, you can use the four self-adhesive rubber feet included in your modem's package to prevent your modem from sliding around. Stick the feet to the marked areas at each corner of the underside of your modem. Turn to "Connecting Your Business Modem to Your Computer".

OfficeConnect Stacking Installation

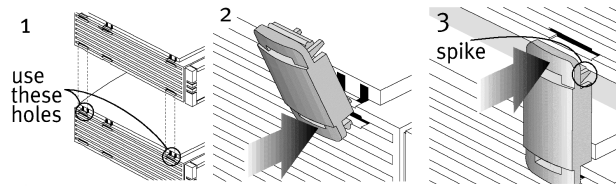
If you own other 3Com OfficeConnect products, you can use the four stacking clips included in your Business Modem's package to neatly and securely stack your modem on top of the OfficeConnect unit(s). Follow these instructions to stack your modem on top of an OfficeConnect unit.

1. Place the OfficeConnect device you want to stack below your modem on a flat surface. The supplied blue clips fit in the positions on the side of the unit as shown in step 1 of the illustration on the next page.
2. Position a clip over one of these holes and push it in until it clicks into place, as shown in step 2 of the following illustration. Repeat this for the other clip position on the same side.

3 Keeping the front of the units aligned, position the modem on top of the OfficeConnect device and rest the bottom of the modem on the clips' spikes, as shown in step 3 of the following illustration. Push the clips firmly into the modem until they click into place.

NOTE: To remove a clip, hold the units firmly with one hand and hook the first finger of your other hand around the back of the clip. Be careful not to pull so hard that you break the clip.

4 Repeat these steps to secure the other side.



Hardware Installation Look at the back of your computer for a port

If you have	Ports may be labeled this way:
An IBM compatible PC	COM, RS-232 or with symbols such as: **IOIOI** ⎍⎍⎍
A Macintosh	Modem port Printer port

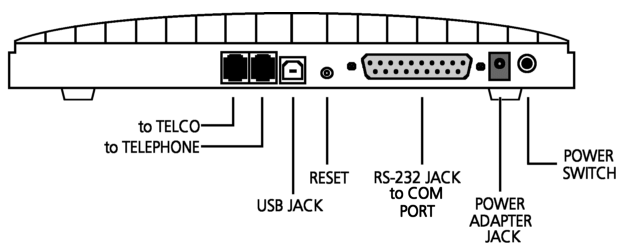
Refer to your computer's documentation to locate the serial port.After you have selected the correct cable, connect the male DB-25 end of your

serial cable to your Business Modem and the other end to a serial port on your computer.

If you have	Connect the male DB-25 to your modem and the other end to
An IBM-compatible PC	COM, RS-232 or with symbols such as: **IOIOI** ⎍⎍⎍
A Macintosh	the Modem port or the Printer port

Write down the number of the serial port to which you connect your Business Modem. If your serial ports are lettered instead of numbered, A is COM1 and B is COM2. If you cannot find a serial port, consult the documentation that came with your computer.

5 Connect one end of the phone cable to the wall jack and the other end to your Business Modem port labeled TELCO.



6 If you have a telephone that you'd like to connect to your modem, plug the phone cable into the your modem port labeled PHONE.

7 Plug one end of the power adapter to your Business Modem and the other end to a standard AC power outlet.

8 Turn on your computer.

Modem Driver Installation

Once your Business Modem is attached to your computer, you will need to install it's drivers. The process will vary depending on your operating system.

Macintosh users: *You will not need to install drivers to use your Business Modem.*

WINDOWS 950 AND 950a

1. When Windows detects the modem, click **Driver from disk provided by hardware manufacturer**. Then click **OK**.
2. When you see the "Install From Disk" dialog box, hold down the SHIFT key while inserting the *Connections* CD into your CD-ROM drive. Release the SHIFT key when the light on your CD-ROM drive stops blinking. Then type **D:** (where "D" is the letter name of your CD-ROM drive), and click **OK**.
3. Follow the on-screen instrcutions to complete installation of the drivers.

WINDOWS 950b

1. When Windows detects the modem, hold down the SHIFT key while inserting the *Connections* CD into your CD-ROM drive. Release the SHIFT key when the light on your CD-ROM drive stops blinking. Then click **Next**.
2. Click **Finish**.
3. If you are prompted for the installation disk, type the location of the CD (typically D:\, where "D" is the letter name of your CD-ROM drive).

WINDOWS NT 4.0

NOTE: If you have installed the Windows NT Plug and Play utility (Service Pack 3), you should follow the instructions under "WINDOWS 950 AND 950a" above. Otherwise, continue below.

1. Double-click the **My Computer** on your desktop.
2. Double-click **Control Panel**.
3. Double-click the **Ports** icon.
4. Click **Add**.

5. Fill in the COM port # and IRQ fields with the COM port and IRQ you wish to use with your new modem. The "Base I/O Port Address" field will be filled in with the correct default value. Click **OK**.
6. The "Ports" screen will appear showing the COM port you just added. Click **OK**.
7. Return to the Control Panel and double-click the **Modems** icon.
8. Click **Add**.
9. Click **Next**. Your computer will look for the modem.
10. Once your computer finds the modem, you will see a screen showing that it has detected a "Standard Modem". Click **Change**.
11. Click **Have Disk**.
12. When you see the "Install From Disk" screen, hold down the SHIFT key while inserting the *Connections* CD into your CD-ROM drive. Release the SHIFT key when the light on your CD-ROM drive stops blinking. Then type **D:** in the text box, and click **OK**. (If your CD-ROM drive uses a letter other than **D**, use that letter instead.)
13. When you see the "Install New Modem" screen, click the manufacturer of your modem in the first column and then click type of modem you have in the second column. Then click **OK**.
14. Write the COM port setting here: ____. Click **Next**.
15. Click **Finish**.

WINDOWS 98 AND WINDOWS NT 5.0

1. When Windows detects the modem, hold down the SHIFT key while inserting the *Connections* CD into your CD-ROM drive. Release the SHIFT key when the light on your CD-ROM drive stops blinking. Then click **Next**.
2. Make sure the "Search for the best driver for your device" option is checked. Then click **Next**.
3. Make sure "CD-ROM drive" is checked and click **Next**.
4. Windows will alert you that it has found the driver for your modem. Click **Next**.
5. If you are prompted for the installation disk, type the location of the CD (typically D:\, where "D" is the letter name of your CD-ROM drive).
6. Click **Finish**.
7. If you are asked whether you wish to restart Windows, click **Yes**.

Testing the Installation

To test the installation of your modem, use any communications software package, such as Windows Terminal, HyperTerminal, Procomm Plus, or RapidComm. HyperTerminal is used in this documentation as an example. Every communications program is different; consult the documentation that came with your communications program for more information.

1. Run HyperTerminal.
2. When the first window appears, enter the name of your connection in the **Name** field and click **OK**.
3. Enter the phone number you want to dial and click **OK**. If you only want to test your modem, you may enter any number.
4. See the table below.

In order to	Click this button
Dial a number	Dial
Test without dialing a number	Cancel

When the HyperTerminal terminal window appears, type **AT** and hit **<ENTER>**. If your modem is connected properly, "OK" will appear on the terminal screen.

For More Information

The *3Com OfficeConnect 56K Business Modem Command Reference*

Be sure to investigate the *Command Reference* for this product (located on the *Connections* CD-ROM) if you are looking for additional technical information about your modem (including s-registers, AT commands, and specifications), step by step configuration instructions, or detailed troubleshooting information

To view the *Command Reference*, install the *Connections* CD-ROM using the instructions in the CD's liner notes as a guide. Once *Connections* is installed, launch the software (click Start/Programs/3Com U.S.Robotics/*Connections*). From the main *Connections* interface, click *User Guides* and then select the guide for your modem.

3 TROUBLESHOOTING

This chapter explains how to troubleshoot the Business Modem. This chapter is divided into these sections:

- Problems that occur before connecting.
- Problems that occur after connecting.
- What to do if you still have problems.

Problems That Occur Before Connecting

No response to AT

For Windows users, make sure that you set the correct COM port and IRQ in your communications software and, if applicable, in Windows' Control Panel - Ports.

For Macintosh users, make sure that you set the correct serial port (modem port or printer port) and that AppleTalk is disabled.

- Make sure that your communications software is in Terminal mode.
- Be sure that your communications software is set to the correct bit rate and word length (7 bits with or without a parity bit, or 8 bits and no parity).

Word Length	Parity (1 Bit)	Stop Bits
7	Even, Odd Mark, Space	1
7	None	2
8	None	1

- Make sure that verbal result codes (status messages) are enabled. Send these commands to the Business Modem:

For your modem to	Command
enable message display	**ATQ0**
Display verbal messages	**ATV1**

- Review your communications software manual to see what Carrier Detect (CD) operations your software requires. Then see the chapter about Controlling EIA-232 Signaling.
- Although it is a rare condition, check whether your computer is reversing the send/receive functions at the EIA-232 interface. Refer to your computer's documentation.
- Check your RS 232 cable to make sure it is not a NULL modem cable.

The Business Modem won't dial

- You may need to change the DTR setting at the Business Modem. If so, see the chapter about Controlling EIA-232 Signaling.
- Make sure that the phone line from your wall jack connects to JACK port of the Business Modem.
- Make sure the Business Modem is connected to a standard analog phone line and not to a digital system (typically found in offices and hotels).
- If the Business Modem responds NO DIAL TONE when you attempt to dial, first make sure that the phone line is connected to the JACK port on the back of the Business Modem.

  If you hear dial tone when the Business Modem tries to dial but, it quickly returns off hook and reports NO DIAL TONE, try adding X3 to the dial string, for example sending ATDTX3 5551212. The Business Modem will ignore dial tone detection.

Double characters are appearing on your monitor

This is a signal that both the Business Modem's local echo and your software's local echo are on.

Type the command to turn off your online echo (ATF1) or turn your communications software's local echo off (refer to your software's documentation).

After you dial, the Business Modem reports NO CARRIER and then hangs up

- Try increasing S7 and decreasing S9 to allow more time for the connection.
- Try calling a different device. If you are trying to connect to an older modem at 2400 bps or less, it may not support error control. Try sending AT&M0, and then try the call again. Reset the Business Modem (send ATZ) after you finish the call.

Hear ringing but the Business Modem won't answer

- Look at the TR LED to make sure that your terminal or computer is sending a DTR signal via the EIA-232 interface.
- Send ATI4 to the Business Modem and check that S0 is set to a value higher than 0.
- Set &F1 and S0=1, then try again.

The Business Modem acts as though a data link has been established, but no call was received,

Carrier Detect (CD) may be overridden (with &C0), but your system may require that the override be turned OFF (with &C1). Review your communications software manual to see what CD operations are required.

The Business Modem behaves as if <Enter> were pressed when you don't press any keys

Your software may be misreading signals from the Business Modem when the Business Modem sends a Carriage Return and a Line Feed before and after the RING and CONNECT messages. Sending the Quiet mode command, ATQ1, should solve the problem.

Problems that Occur After Connecting

Your screen displays random or "garbage" characters

Make sure that the Business Modem is set to the same bit rate, word length, parity, and number of Stop bits as the device to which you are connecting.

If the settings are correct, the problem may be with the phone line. Try the following measures:

- Place the call again. The phone company routes even local calls differently each time you call.
- Call a different device to see if the problem persists. The problem may be with the device you first tried to call.

If the modem is set to a fixed serial port rate (&B1) and your software is fixed at 19.2K, 38.4K, 57.6K, or 115.2K bps, the reason may be one of the following:

- Your computer may not support the higher serial port rate. If this is the case, fix your software rate at 9600 bps.
- If you use memory-resident programs (TSRs-Terminate and Stay Resident programs) or disk-caching programs, they may be interfering. Try disabling them before you run your communications software.
- Check that your software and the Business Modem are set for the same kind of flow control, either hardware or software. Some communications programs also require that you disable the type you are not using.

Many CRC errors

- Send AT&F1 to enable hardware flow control and other optimized settings.
- Try a different file transfer protocol (use ZMODEM if it's available to you)
- If you use memory-resident programs (TSRs-Terminate and Stay Resident programs) or disk-caching programs, they may be interfering. Try disabling them before you run your communications software.

Mainframe computer keeps dropping your connection

You must turn off the Business Modem's result codes and character echo (ATQ1E0). The modem at the mainframe also needs to be set to ATQ1E0.

Bad faxes or can't fax

- Make sure the fax software is set to use Class 1 fax. Refer to your fax software's manual.
- If you use memory-resident programs (TSRs-Terminate and Stay Resident programs) or disk-caching programs, they may be interfering. Try disabling them before you run your communications software.

Both devices exchange carrier signals, but fail to establish a communications link

- Make sure the Business Modem is in the correct mode, fax or data, depending on whether the connection is to be made with a facsimile device or a data device.

  See Chapter 2, Modes of Operation, in the electronic *3Com OfficeConnect 56K Business Modem Command Reference* on the *Connections* CD for information on switching between Fax and Data modes.
- Make sure the proper bit rate, word length, parity and number of Stop bits have been selected.
- Send ATI4 and check to see that your modem is at the correct Bn setting to connect with either an HST modem (B1 setting) or "V." modem (B0 setting).
- Make sure that your Business Modem's connection rate setting, &Nn, is correct for the call. If the connection rate is locked at a speed (&N1-&N14) different from the calling modem's, the Business Modem hangs up. The default setting of &N0, variable link operations, allows the two modems to negotiate the highest possible connection rate.
- If your modem is attempting to answer a V.32 call, you may need to lengthen the extra V.32 answer tones. See under S28 in Appendix B (Alphabetic Command Summary) in the electronic *3Com OfficeConnect 56K Business Modem Command Reference* on the *Connections* CD.

- If you are attempting to make a connection using HST modulation, make sure that the modem at the other end of the line is HST compatible, V.32 terbo compatible at 14.4 Kbps, V.32 compatible at 9600 bps, V.22 bis-compatible at 2400 bps, Bell 212A-compatible at 1200 bps, or Bell 103-compatible at 300 bps.
- If none of the above corrects the problem, it's likely that the quality of the phone connection is poor. The variable quality of phone line connections may be due to any number of conditions in the phone service's equipment or the current environment. Try several calls, and if you still can't get through, try calling another device. If the second device accepts your call, the problem may lie with the device you first tried to call.

If You Still Have Problems

The problems described above are by far the most common ones that users encounter. If the suggestions we've given don't clear up your difficulties, try the following:

1. Review the manual carefully to see if you've missed something.
2. Call or visit your dealer. Chances are that your dealer will be able to give you the assistance you need. This is much more efficient (and time-saving) than returning the product to 3Com Corporation.
3. If your dealer can't help you, refer to the Customer Service Access Card provided in this package. This card lists several important 3Com numbers.
4. If you must return your Business Modem to us, the Service Representative you talk with will give you a Service Repair Order (SRO) number. Products without an SRO number will not be accepted.
5. If you do return the Business Modem to us, please follow these procedures:
   a. Ship the unit, postage pre-paid, in its original container. If the original container is not available, pack the unit carefully in a strong box of corrugated cardboard with plenty of packing material.
   b. Be sure to include your SRO number inside the package, along with your name and address. Put your return address and your SRO number on the shipping label as well.
   c. Ship the package to the following address:

3Com Corporation
SRO# _____
Attn: Dock 15 PCD
1800 West Central
Mount Prospect, IL 60056

3Com will not accept packages sent COD, so be sure to send the modem postage paid.

3Com will repair your Business Modem and return it to you via United Parcel Service.

4 WARRANTY

3COM CORPORATION LIMITED WARRANTY

3Com OfficeConnect 56K Business Modem

3Com warrants this hardware product to be free from defects in workmanship and materials, under normal use and service, for the lifetime of the product from the date of purchase from 3Com or its authorized reseller. 3Com's sole obligation under this express warranty shall be, at 3Com's option and expense, to repair the defective product or part, deliver to Customer an equivalent product or part to replace the defective item, or if neither of the two foregoing options is reasonably available, 3Com may, in its sole discretion, refund to Customer the purchase price paid for the defective product. All products that are replaced will become the property of 3Com. Replacement products may be new or reconditioned. 3Com warrants any replaced or repaired product or part for ninety (90) days from shipment, or the remainder of the initial warranty period, whichever is longer.

YEAR 2000 WARRANTY: In addition to the Hardware Warranty stated above, 3Com warrants that each product sold or licensed to Customer on and after January 1, 1998 that is date sensitive will continue performing properly with regard to such date data on and after January 1, 2000, provided that all other products used by Customer in connection or combination with the 3Com product, including hardware, software, and firmware, accurately exchange date data with the 3Com product, with the exception of those products identified at 3Com's Web site,

http://www.3com.com/products/yr2000.html

as not meeting this standard. If it appears that any product that is stated to meet this standard does not perform properly with regard to such date data on and after January 1, 2000, and Customer notifies 3Com before the later of April 1, 2000, or ninety (90) days after purchase of the product from 3Com or its authorized reseller, 3Com shall, at its option and expense, provide a software update which would effect the proper performance of such product, repair such product, deliver to Customer an equivalent product to replace such product, or if none of the foregoing is feasible, refund to Customer the purchase price paid for such product.

Any software update or replaced or repaired product will carry a Year 2000 Warranty for ninety (90) days after purchase or until April 1, 2000, whichever is later.

OBTAINING WARRANTY SERVICE: Customer must contact a 3Com Corporate Service Center or an Authorized 3Com Service Center within the applicable warranty period to obtain warranty service authorization. Dated proof of purchase from 3Com or its authorized reseller may be required. Products returned to 3Com's Corporate Service Center must be pre-authorized by 3Com with a Service Repair Order (SRO) number marked on the outside of the package, and sent prepaid and packaged appropriately for safe shipment, and it is recommended that they be insured or sent by a method that provides for tracking of the package. The repaired or replaced item will be shipped to Customer, at 3Com's expense, not later than thirty (30) days after 3Com receives the defective product. Return the product to:

3Com
SRO#_____
attn: Dock 15 PCD
1800 W. Central Ave.
Mt. Prospect, IL 60056

3Com shall not be responsible for any software, firmware, information, or memory data of Customer contained in, stored on, or integrated with any products returned to 3Com for repair, whether under warranty or not.

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limited to the duration of the applicable written warranty. This warranty gives you specific legal rights which may vary depending on local law.

GOVERNING LAW: This Limited Warranty shall be governed by the laws of the State of California, U.S.A. excluding its conflicts of laws principles and excluding the United Nations Convention on Contracts for the International Sale of Goods.

Important: *If you send your unit, pack it securely and be sure your SRO number is visible on the outside of the package.*

Notices

FCC Certification Statement

3Com
3800 Golf Rd.
Rolling Meadows, IL 60008

FCC Registration

FCC15	CJE-0263	CJE-0396
FCC68	CJEUSA-73130-FA-E CJEUSA-24161-M5-E	CJEUSA-30043-MM-E
Ringer Equivalence	0.4B	0.4B

FCC Notice

The user may find the following information prepared by the Federal Communications Commission helpful:

The CIB Interference Handbook and The CIB Telephone Interference Bulletin.

These documents are available on the Internet through the FCC Compliance and Interference Bureau Home Page at http://www.fcc.gov/cib listed under documents. Select CIB Interference Handbook or CIB Telephone Interference Bulletin.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

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

FCC Notice: Radio and Television Interference

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 the dealer or an experienced radio/TV technician for help.

The user may find the following information prepared by the Federal Communications Commission helpful:

The CIB Interference Handbook and The CIB Telephone Interference Bulletin.

These documents are available on the Internet through the FCC Compliance and Interference Bureau Home Page at http://www.fcc.gov/cib listed under documents. Select CIB Interference Handbook or CIB Telephone Interference Bulletin.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

Industry Canada (IC)

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

Cet appareil numérique respecte les limites de bruits radio-électriques applicables aux appareils numériques de la Classe B préscrites dans la norme sur le matériel brouilleur: Appareils Numériques, NMB-003 édictée par l'Industrie Canada

The Industry Canada 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 a 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 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 a 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 electrical ground connections by themselves, but should contact the appropriate inspection authority or electrician, as appropriate.*

UL Listed Accessory

Your modem is a UL listed accessory. It must be used with a UL listed computer.