V.92 USB MODEM

USER GUIDE
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Before You Begin

Before you install your V.92 modem, make sure that you have received the following items:

- USB modem with built-in USB cable
- Phone cord
- CD containing installation software, documentation, and Customer Support information.

You will also need:

- A PC running Windows® Vista, XP, 2000, Me, or 98SE or
  A Macintosh running OS X 10.x.x or 9.x or
  A Linux-based computer
- An available USB port on your computer
- A DVD or CD drive
- A telephone jack to plug the modem into, so the modem can dial out and receive calls.

Important Safety Measures

- To reduce the risk of fire, use the supplied phone cord or an AWG 26 or larger UL-listed or CSA-certified phone cord.
- Do not use this product near water — for example, in a wet basement or next to a swimming pool.
- Avoid using a telephone (other than a cordless phone) during an electrical storm.
- Do not use the telephone to report a gas leak while you are in the vicinity of the leak.

Getting Started

- Windows Me and 98 users: Please go to Installing the Modem on Windows Me and 98SE on page 11.
Macintosh users: Please go to Installing the Modem on Mac OS X 10.5 on page 15 or Installing the Modem on Mac OS X 10.0.x - 10.4.x on page 17 or Installing the Modem on Mac OS 9.x on page 21.

Linux users: Please go to Installing the Modem on a Linux PC on page 24.

Installing the Modem on Windows Vista, XP, 2000

**Note:** If you have a PC and are replacing an existing internal modem, turn to page 42 for instructions.

**Install the Software**

1. Your computer should be turned on. Close any applications you have running.

2. Insert the CD that came with your modem into your CD or DVD drive.

   **Windows Vista:**
   - If the AutoPlay dialog box appears, click Run Setup.exe.
   - If the User Account Control dialog box appears, select Allow.
   
   The CD should start automatically after a few seconds and display an installation screen. If the CD does not start automatically, on your desktop select Computer or My Computer and double-click your CD or DVD drive icon.

3. When the introductory window opens, select your language.

4. On the Modem Installation menu, click Install Modem Drivers, then USB Drivers.

5. The installation program begins.

   **Windows Vista:** If a message appears saying that Windows can't verify the publisher of this driver software, click Install this driver software anyway.
Windows XP: If you message appears saying that the software has not passed the Windows logo test, click Continue Anyway.

Windows 2000: You may see a dialog box stating that the Digital Signature was not found. You can safely ignore this message and click Yes.

6 When the USB Modem Driver Installation... window appears, click OK to install the NetWaiting Modem on Hold application, which will let you take a phone call while you are online. See page 10 for more information.

7 On the Netwaiting Setup window, click Next and follow the prompts.

8 On the NetWaiting Setup InstallShield ... window, leave the two check boxes unselected and click Finish.

9 On the Modem Installation window, click Main Menu, then Exit.

10 Remove the installation CD and shut down your computer.

Connect the Modem and Confirm the Installation

1 Your computer should be shut down.

2 Make a note of the modem's serial number, which is located on the bottom of the modem case, just under the barcode.
3 Connect the cable end of the modem to any USB port on your computer.

4 Turn on your computer.

5 A popup notification message states that the new hardware installed successfully.

   *Windows Vista*: If a Windows driver installation message appears, select *Locate and install*. If the User Account Control message appears, click *Continue*.

   *Windows XP*: If the *Found New Hardware*... window opens, select *Install the software automatically*, click *Next*, and follow the prompts. If a Windows logo test failure message appears, click *Continue Anyway*. If the *Completing the Found New Hardware Wizard* dialog appears, click *Finish*.

   *Windows 2000*: If a Digital Signature message appears, you can safely ignore it and click *Yes*.

6 Connect the supplied phone cord to the phone jack on the modem. Plug the other end of the cord into the wall jack just as you would a telephone.

7 *Windows Vista*: Select *Start > Control Panel > Printers and Other Hardware > Phone and Modem Options*. 

8
Windows XP and 2000: Select Start > Settings > Control Panel > Phone and Modem Options.

8 Enter your Location information and then click the Modems tab.

9 On the Modems page, select the installed USB modem, then click the Properties button.

10 On the USB Modem Properties page, verify that the Maximum Port Speed is set to 115,200.

11 Click the Diagnostics tab. On the Diagnostics page, click Query Modem. You will see a list of AT commands and responses, indicating that your modem is properly connected.

12 Click OK to close the Diagnostics page.

13 On the Phone and Modem Options dialog, click OK to exit.

That's it! Your modem installation is complete.

Note: The DATA light comes on when the modem is plugged into the USB port of a powered-on computer and has been successfully initialized by a properly-installed driver. It indicates that the modem is ready to communicate data.
Important—If Your PC Already Had a Modem
You must redirect your application software so that it recognizes your new modem.

- America Online 9.0 users: On the AOL Sign on screen, click the Connect Options button. On the Connect Options dialog, select Advanced Settings. On the Advanced Settings dialog, click the Modems tab, select the new USB modem from the list, then click Close to exit.
- Windows Vista users: Select Start > Control Panel > Network and Sharing Center > Manage Network Connections > Dial-up Connection. Select the connection, then right-click Properties. In the Connect using box make sure that your new USB modem is selected.
- Windows XP and 2000 users: Select Start > Settings > Control Panel > Network Connections > Dial-up Connection (Windows 2000: Dial-up Connection). Select the connection, then right-click Properties. In the Connect using box make sure that your new USB modem is selected.

Taking a phone call while you're online
Windows Vista, XP and 2000 users: Your modem includes the NetWaiting™ Modem-on-Hold™ program, which notifies you when you have an incoming telephone call and lets you put your Internet connection on hold while you take the call. Netwaiting is installed automatically as part of your modem software installation.

Note: If you want to use Modem-on-Hold, your Internet Service Provider (ISP) must support the V.92 dial-up modem standard. You can contact your ISP if you are unsure about this support. Also, you must have Call Waiting/Caller ID service from your telephone company to use the modem’s Call Waiting/Caller ID feature.
If someone calls while you are online, the NetWaiting dialog opens, offering three choices:

- To place your Internet connection on hold and accept the call, click the green OK icon.
- To disconnect from the Internet and accept the call, click the yellow Disconnect icon.
- To reject the call and remain connected to the Internet, click the red X icon.

For more details about NetWaiting, please refer to the program's help.

**Installing the Modem on Windows Me and 98SE**

**Note:** If you have a PC and are replacing an existing internal modem, turn to Appendix A on page 42 for instructions on removing the old modem.

**Install the Software**

1. Your computer should be turned on. Close any applications you have running.
2 Insert the CD that came with your modem into your CD drive.
   The CD should start automatically after a few seconds and display an installation screen. If the CD does not start automatically, on your desktop select **My Computer** and double-click your CD drive icon.

3 When the introductory window opens, select your language.

4 On the **Modem Installation** menu, click **Install Modem Drivers**, then **USB Drivers**.

5 The installation program begins. Click **Next** and follow the on-screen instructions.
   
   *Windows Me:* You may see a dialog box stating that the Digital Signature was not found. You can safely ignore this message and click **Yes**.

6 When the installation is complete, follow these steps:
   - Click **Finish**.
   - On the **Modem Installation** menu, click **Main Menu**, and then **Exit**. (If the menu is minimized, click the USB modem button on the taskbar to display the menu.)
   - Remove the installation CD and shut down your computer.
Connect the Modem and Confirm the Installation

1. Make sure that your computer is powered off.

2. Connect the cable end of the modem to any USB port on your computer.

3. Power on your computer.

4. Popup notification messages tell you that Windows is installing the USB modem hardware and associated software on your system.

5. Connect the supplied phone cord to the phone jack on the modem. Plug the other end of the cord into the wall jack just as you would a telephone.

6. Click Start > Settings > Control Panel > Modems.

7. When prompted, enter your Location information and click Close.

8. On the Modems Properties page, select the new USB modem, click Properties to verify that the Maximum Port Speed is set to 115,200, then click OK.

9. On the Modems Properties page, click the Diagnostics tab, select the new USB modem, then click More info. You will see a list of AT commands and responses, indicating that your modem is properly connected.

10. Click OK, then Close to exit.

**Note:** The DATA light comes on when the modem is plugged into the USB port of a powered-on computer and has been successfully initialized by a properly-installed driver. It indicates that the modem is ready to communicate data.
Important—If Your PC Already Had a Modem

You must redirect your application software so that it recognizes your new modem.

- **America Online 9.0 users**: On the AOL Sign on screen, click the Connect Options button. On the Connect Options dialog box, select Advanced Settings. On the Advanced Settings dialog box, click the Modems tab, and then, in the list of modems, select your new USB Modem. Click Close to exit.

- **Dial-up Networking users**: From your computer’s desktop, double-click My Computer and then Dial-up Networking. Double-click the Make New Connection icon, select your new modem from the drop-down list, and follow the prompts.
Installing the Modem on Mac OS X 10.5

Connect the Modem to Your Computer

1 Connect the cable end of the modem to an available USB port on your computer. Do not connect the modem to a USB port on a keyboard.

2 Connect the supplied phone cord to the phone jack on the modem. Plug the other end of the cord into the wall jack as you would for a telephone connection.

Configure the Modem

1 On the Dock, select System Preferences > Network to open the Network pane.

2 In the Network Connections Services list, select USB Modem. If the USB Modem does not appear in the list:
   a Click the + button on the lower left of the Network pane.
   b Select USB Modem from the Interface pull-down menu.
   c Enter a name in the Service Name field.
   d Click Create.

The newly created modem appears in the Network pane’s list.
3 On the **Network** pane, click the **Advanced** button.

4 On the **USB Modem** pane, click the **Modem** tab and select the new modem in the **Vendor** field and **Universal (115k)** in the **Model** field.

5 If your ISP has given you **DNS** or **Proxies** information, open those tabs and enter the information.

6 Click **OK** to return to the **Network** pane.

7 On the **Network** pane, enter the telephone number and account information that your ISP gave you, then click **Apply**.

8 Click **Connect** to open the Internet connection.

9 Click **Disconnect** when you finish the Internet session.
Note: The DATA light comes on when the modem is plugged into the USB port of a powered-on computer and has been successfully initialized by a properly-installed driver. It indicates that the modem is ready to communicate data.

Installing the Modem on Mac OS X 10.0.x - 10.4.x

Install the Modem Script File
1  Make sure that your computer is powered on. Close any applications that are running.
2  Double-click your hard drive icon, then open the System > Library > Modem Scripts folders.
3  Insert the modem CD into your CD-ROM drive and open it by double-clicking its icon.
4  Open the Mac folder and drag the Universal (115k) file into the Modem Scripts folder on your hard drive.
5  Close all open windows.

Connect the Modem to Your Computer
1  Connect the cable end of the modem to any USB port on your computer.
2  Connect the phone jack on the modem to the supplied phone cord, and plug the other end of the cord into the wall telephone jack.

Configure the Modem
1  On the Dock, select System Preferences > Network to open the Network pane.
2  In the New Port Detected message box, click OK.
3  On the Network pane, open the Show list and select USB Modem.
4 On the PPP tab, enter the information that your Internet Service Provider (ISP) has given to you.

5 If your ISP gave you TCP/IP or Proxies information, open those tabs and enter the information.

6 Click the Modem tab, then select the Universal (115k) entry from the Modem pull-down menu.

7 Accept the defaults for the additional options, then click Apply Now.
8 On the PPP tab, click **Dial Now** to launch the Internet Connect application.

9 On the USB Modem dialog, click **Connect**: 
10 When you finish your Internet session, click the Disconnect button.

That's it! Your installation and setup are complete.

**Note:** The **DATA** light comes on when the modem is plugged into the USB port of a powered-on computer and has been successfully initialized by a properly-installed driver. It indicates that the modem is ready to communicate data.

**Important**—If you use America Online for OS X, you must redirect your application software so that it recognizes your new modem. On the AOL Welcome screen, click the Setup button. On the America Online Setup dialog, select **Add or change a modem or other connection**. On the New Modem Results dialog, select **Universal (115K)** as the **Modem option**, and **USB Modem** as the **Port option**.
Installing the Modem on Mac OS 9.x

Install the Modem Script File

1 Make sure that your computer is powered on. Close any applications that are running.

2 Insert the CD that came with your modem into your CD-ROM drive and open it by double-clicking its icon.

3 Open your hard drive; then open the System > Library > Modem Scripts folders.

4 On your CD, open the Mac folder and drag the Universal (115k) file into the Modem Scripts folder.

5 Close all open windows.

Connect the Modem to Your Computer

1 Connect the modem to an available USB port.

2 Connect the supplied phone cord to the phone jack on the modem. Plug the other end of the cord into the wall jack just as you would a telephone.

Configure the Modem

1 From the Apple menu, select Control Panels > Modem.

2 On the Modem dialog, select USB Modem from the Connect via menu.
3 In the Setup area, select Universal (115K) from the Modem menu.

4 Close the Modem dialog.

5 When the Save changes to the current configuration? message appears, click Save.

**Configure TCP/IP**

1 From the Apple menu select Control Panels > TCP/IP.

2 On the TCP/IP dialog, select PPP from the Connect via menu.

3 In the Setup area, verify that Using PPP Server (the default setting) appears in the Configure: field.

4 Close the TCP/IP dialog.

5 When the Save changes to current configuration? message appears, click Save.
Configure Remote Access

1. From the Apple menu select Control Panels > Remote Access.

2. On the Remote Access dialog, enter your user Name, Password, and dial-up access Number, and click Connect.

Note: The DATA light comes on when the modem is plugged into the USB port of a powered-on computer and has been successfully initialized by a properly-installed driver. It indicates that the modem is ready to communicate data.

Important—if you are an America Online 5.0 user, you must redirect your application software so that it recognizes your new modem. On the AOL Welcome screen, click the Setup button. In the America Online Setup dialog, select Configure a new modem. On the New Modem Results dialog, accept Unknown - Error Correcting as the default Modem option, and select USB Modem as the Port option.
Installing the Modem on a Linux PC

1. Plug the modem into any USB port on your computer.

2. Connect one end of the supplied telephone cable to the phone jack on the modem, and the other end of the cable to a wall telephone jack.

3. Insert the modem CD into your CD-ROM drive, double-click the CD icon, and open the Linux folder.
   
   You will see four folders containing Linux drivers: rpm, debian, tar, and Distribution-specific binary packages (easiest to install).

4. Select the appropriate folder for your version of Linux, and copy the folder to your computer.

5. From the command prompt, access the folder containing the driver.

   - **To install the driver in .rpm or .deb format:**
     
     a. Type `su` (for .rpm) or `sudo` (for debian) and press Enter.
     
     b. At the prompt, enter your superuser password.
     
     c. Next, for .rpm, enter:
        
        ```
        rpm -i dgcmodem.i386.rpm
        ```
        For .deb,
        
        ```
        dpkg -i dgcmodem_i386.deb
        ```
     
     d. At the prompt, enter the Linux source build directory that matches your running kernel.
     
     e. If necessary, run `dgcconfig` to complete the installation.

   - **To install the driver in .tar format:**
     
     a. Extract the driver with:
        
        ```
        tar -xzf dgcmodem-1.01.tar.gz
        ```
     
     b. Change to the driver directory with:
        
        ```
        cd dgcmodem-1.01
        ```
c Enter

    su make install

    or

    sudo make install

d At the prompt, enter your superuser password.
e Next, enter
dgccconfig

f At the prompt, enter the Linux source build directory that matches your running kernel, and wait while the driver is installed.

6 Configure your PPP client program to use the USB modem.

<table>
<thead>
<tr>
<th>Note: The DATA light comes on when the modem is plugged into the USB port of a powered-on computer and has been successfully initialized by a properly-installed driver. It indicates that the modem is ready to communicate data.</th>
</tr>
</thead>
</table>

**Sample Installation and Setup on Ubuntu Linux**

This example describes modem installation and setup on Ubuntu Linux, which uses the **debian** format driver.

**To install the driver:**

1 Plug the modem into any USB port on your computer.

2 Connect one end of the supplied telephone cable to the phone jack on the modem, and the other end of the cable to a wall telephone jack.

3 Stop all running programs on your computer.

4 Insert the modem CD into your CD-ROM drive, double-click the CD icon, and open the Linux folder.
5. Select and open the debian folder, then double-click dgcmodem_1386.deb (the package installer).

6. In the Installer window, click install Package.
7 When the installation begins, click Terminal to view the installation as it progresses.

The software opens a shell and describes the install.

8 In the lower right corner of the screen, click the vertical box, then press the Enter key to continue.

9 When the Installation finished message confirms that the debian package was installed, click Close.
To set up the modem connection:

1. From the desktop tool bar, select System > Administration > Network to open the Network Settings window.

2. On the Connections tab, double-click Modem connection.

3. On the Settings for interface ppp0 window, click the Modem tab, then select the Modem settings that apply to your configuration. (/dev/modem is the default value; otherwise, try /dev/ttyS0, /dev/ttyS1, /dev/ttyS2, or /dev/ttyS3. Port availability determines which port you can use.)

4. On the Settings for interface ppp0 window, click the General tab, then enter the information that your ISP provided (your Username, password, and the Provider's Phone number to use for Internet access). Make sure that the Enable this connection checkbox is selected.

5. On the Settings for interface ppp0 window, click the Options tab, and make sure that the Set modem ... and Retry ... checkboxes are selected.

6. Click OK.
The software updates the interface configuration based on your settings.

When the update is complete, exit and reboot your system. Thereafter, when you select the modem, the connection should dial automatically.

### About Your Modem

#### Communication Setup Options

If you run into configuration difficulties with your communication software, it may be helpful to read the following section.

In setting up some older software programs, you may be asked to enter certain information. Most programs have default settings that are correct for use with this modem, and there is no need to change them. However, you should be aware of the following items:

- If you are asked to select the "modem type" from a menu, and you don’t see this modem listed by name, select the most descriptive name such as **V.92 modem**, **56K modem**, or generic **Class 1 Modem**.
• In the dialing directory, set all entries to the highest possible baud rate, if your software and serial port support these speeds (do not go over 115,200 bps). All communications between the computer and the faxmodem take place at this higher speed, independent of the modem-to-modem speed.
• If your fax software gives you the option of selecting Class 1 or Class 2 fax drivers, select Class 1.

Initialization Strings and AT Commands
An initialization string is a group of AT command settings that is sent to the modem as soon as you start up the software. The software determines which commands should be included in the initialization string, based on the device you select during installation. The commands remain in effect throughout the communications session, unless the software sends other commands to override them.

The software uses other AT command strings for all commands sent to the modem. This is transparent to you—the software does this in the background without you being aware of it.


If your software suggests an initialization string for this modem, you should use it. If your software does not list this modem and no initialization string is suggested, use the following: AT &F.

Your telephone service may include Call Waiting that you can temporarily suspend by using your phone to dial a special code. (For example, in the U.S., you can disable call waiting by adding *70 to your dialing prefix; please check with your local phone company for the correct code for your area.) You can include that code, followed by a comma, in the dial string or dial prefix in your software.
If your software does not handle AT commands automatically, it should provide a place to enter AT commands in its setup menus. However, in some cases you may need to enter AT commands directly to the modem. You must do so from a data program’s terminal mode.

**Using Terminal Mode to Enter AT Commands**

1. Start your data communications program.
2. Change to terminal mode (also called command, local, direct, or dumb mode). Check your software documentation for additional instructions.
3. Type AT plus the command you need and press Enter. You will see an OK response.
4. When you finish, you can return to the data communications program’s standard user interface. See the software program’s documentation if you need help.

To return to the factory default settings for the modem, in terminal mode, type AT &F and press Enter. Refer to the Troubleshooting section on page 32 for more tips about AT commands.

**Using Video**

Your faxmodem supports video applications through the V.80 standard protocol so that it can be used for high-quality modem-to-modem videoconferencing. The modem is compatible with H.324 point-to-point and H.323 Internet video conferencing standards. To send videos, you need a camera and video software.
Troubleshooting

If your modem stops working, please read this section carefully before calling Customer Support. In addition, your modem CD includes a list of Frequently Asked Questions (FAQs).

Go to http://www.zoom.com/techsupport/dial_up/3095F.shtml for V.92 USB modem update and support file information.

Plug and Play Setup Problems with Windows

Under some circumstances, the Plug and Play setup under Windows may not resolve all installation problems. The Windows Help system has an excellent tool for thoroughly diagnosing and solving many problems.

1 On your desktop, double-click the Computer or My Computer icon.

2 Choose the Help Topics command in the Help menu. Windows displays the Windows Help dialog box.

3 Select the Contents tab.

   Note: Windows Vista, XP, 2000 and Me include a Help Search option, which you can use instead. Search for “hardware conflict” or “USB,” for example.

4 Click Troubleshooters (for Windows 98, you will also have to click Windows 98 Troubleshooters), then click the hardware conflict help entry.

5 Follow the instructions for determining and resolving a hardware conflict.

This should solve your problem. Remember to write down your COM port setting.
Other Troubleshooting Tips

Problem: Your modem seems to install under Windows, but Windows cannot find it later.

Solution: If your computer has a built-in modem on the motherboard, Windows may reinstall it the next time you start up. Consult your computer’s documentation or call your computer’s manufacturer to get instructions on how to disable the built-in modem.

Problem: The software cannot find the modem and the modem does not respond to AT commands. (The following comment applies to many other problems as well.)

Solution: The most common problem with modems is that the communications software is not configured for the same COM port as the modem.

Check which COM port the modem is using. Make sure that the software’s COM port setting matches the modem’s COM port setting. From the Windows Toolbar, go to Start > Settings > Control Panel > Modems > Diagnostics. Click the COM port for your modem, then click More info. If Windows displays the modem’s ATI responses, the modem is working.

Another problem is that COM port resources may be in use by another device. Make sure that the COM port resources used by the modem are not being used by any other device, such as a soundcard.
You type an AT command line in a terminal application and press Enter, but your modem fails to execute the command line. Or there was no response after executing a command.

Solution: Be sure you type AT at the beginning of the command line.

Make sure the communications software is configured for the same COM port as your modem.

Be sure your modem is not in data mode when you type the command. Use the escape character sequence to switch to terminal mode (The default escape sequence is to wait at least one second, type ++++, and wait another second or more.)

If you typed a command but did not receive an OK response from your modem, the E0 and Q1 commands may be in effect, disabling echo and responses. Verify this with the &V command. To enable echo and responses, type ATE1Q0 and press Enter.
Problem: The modem speaker volume is too low or too high.

Solution: Your modem has a small speaker on board that provides audible feedback of dial tones and remote connection signals ("handshaking"). This is not the same as the speaker that you may have connected to your sound card.

If the software allows you to control the volume, make sure the speaker is enabled and set to a comfortable volume.

If the software does not have speaker settings, add one of the AT commands listed below to the initialization string:

- L1 for low volume
- L2 for medium volume
- L3 for highest volume
- M0 to turn the speaker off entirely

For example, if you want the volume low and the software uses the initialization string AT &F, change it to AT &F L1.
Problem: The modem does not automatically dial a call when you send a Dial command.

Solution: Make sure the modem speaker is turned on in your software so that you can hear dialing sounds. Also, make sure that the phone line is plugged in. Make sure that you are dialing a valid phone number, including any required dial prefixes. If you are using tone dialing on a line that requires pulse dialing, the line may not be able to accept tone-dialed calls. Select Pulse dialing in your software, or make sure the software dialing prefix is ATDP (for pulse dialing). Make your communications software and modem are configured for the same COM port. Make sure your modem has hung up from the previous call. Select Hang Up in your software; or type ATH in terminal mode.

Problem: The modem can connect to some modems, but not to others.

Solution: A remote modem does not respond because of the extended negotiation process by which modems determine the best common connection between them. If this is the case, you may have to disable part or all of the negotiation process. In the following table, “protocol” means error correction and data compression.
AT commands to force communication speeds

<table>
<thead>
<tr>
<th>To force different communication speeds</th>
<th>Type these AT commands and press Enter</th>
</tr>
</thead>
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<td>Negotiate speed and protocol (default setting)</td>
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<td>V92 only (disable V.90)—56000 bps</td>
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<td>V.90 only (disable V.92)—56000 bps</td>
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<td>Disable both 56K and autorate on V.34—33600 bps</td>
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<td>V.34—33600 bps</td>
<td>AT+MS=V34,0</td>
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<tr>
<td>V.32bis—14400 bps</td>
<td>AT+MS=V32B,0</td>
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<td>V.32—9600 bps</td>
<td>AT+MS=V32,0</td>
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<tr>
<td>2400 bps</td>
<td>AT+MS=V22B,0</td>
</tr>
<tr>
<td>1200 bps</td>
<td>AT+MS=V22,0</td>
</tr>
</tbody>
</table>

**Notes:** Some software allows these commands to be added to the list of dial prefixes or the initialization string.

When the protocol is forced, the modem will not attempt to connect at other protocols if it cannot connect at the forced protocol. It will try to connect at the fastest speed available within the forced protocol.

There are other configurations that can be forced as well. If you need to select a particular configuration, use the AT command strings shown below. You can always return to the modem's default configuration by typing AT &F and pressing the Enter key.

Remember that if you do this, the modem will not have received the commands in your software's initialization string as it normally would. Using the ATZ command overcomes this problem if you have saved all of your setup parameters in nonvolatile memory. (To save setup parameters in nonvolatile memory in AT terminal mode: Type AT, followed by the parameter settings you desire, followed by &W, and
press Enter. For example, if you type AT \&C1 \&D2 \&W and press Enter, the \&C1 and \&D2 parameter settings are stored.)

**AT commands to force specific operations**

<table>
<thead>
<tr>
<th>To force</th>
<th>Type command &amp; press Enter</th>
</tr>
</thead>
<tbody>
<tr>
<td>MNP 5/MNP 4 operation</td>
<td>AT IN5</td>
</tr>
<tr>
<td>LAPM only (V.42)</td>
<td>AT IN4</td>
</tr>
<tr>
<td>MNP 4 only</td>
<td>AT IN5%C0</td>
</tr>
<tr>
<td>V.42bis data compression</td>
<td>AT+DS=3</td>
</tr>
<tr>
<td>V.44 data compression only</td>
<td>AT+DS44=3</td>
</tr>
<tr>
<td>Auto-answer</td>
<td>ATS0=1</td>
</tr>
</tbody>
</table>

**Problem:** Your V.92 modem does not connect reliably at V.92.

**Solution:** First be sure that you have the latest modem firmware downloaded from our Web site. Also make sure that your ISP offers V.92 at the number you are calling.

If you still have a V.92 problem, you may want to modify your Internet Connection string in Windows: On your desktop, double-click the My Computer icon, and then double-click Dial-up Networking. Right-click the existing Internet Connection that you wish to modify and select Properties. Select General > Configure > Connection > Advanced.

You can add initialization (init) strings on the line labeled Extra Settings. Enter one of the init strings listed in the following table. Try these commands one at a time until you find the one that gives you the highest possible connection rate for your telephone line conditions.
Adding initialization strings

<table>
<thead>
<tr>
<th>Init String</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATW2S7=150+MS=V90 OR AT&amp;F+MS=V92</td>
<td>S7  Sets wait time for remote carrier, wait time can be 1-255 seconds</td>
</tr>
<tr>
<td>AT&amp;FS7=150</td>
<td>&amp;F  Sets factory defaults</td>
</tr>
<tr>
<td>AT&amp;F&amp;C1&amp;D2\N5=1S7=100</td>
<td>&amp;C1 DCD (Data Carrier Detect) follows the remote carrier signal</td>
</tr>
<tr>
<td></td>
<td>&amp;D2 DTR (Data Terminal Ready) reacts with a disconnect, sends “OK” response and disables auto-answer while DTR signal is OFF</td>
</tr>
<tr>
<td>\N5</td>
<td>MNP Error Correction Only</td>
</tr>
<tr>
<td>\A2</td>
<td>Maximum block size: 192 characters</td>
</tr>
</tbody>
</table>

Problem: Modem-on-Hold is not working.

Solution:
You may have disabled Call Waiting in your dial up networking settings. For example, in the US, if you included *70, in your phone number to dial, you have disabled Call Waiting.

Your ISP may not support V.92. Check with them.

Confirm that you have established a V.92 connection. Modem-on-Hold will not work with a V.90 connection.

Your phone line may not have Call Waiting enabled. In order to use Modem-on-Hold, your phone must support Call Waiting. Please check with your local telephone company.

Your firmware might be out of date. Please visit our Web site to upgrade your modem’s firmware.
<table>
<thead>
<tr>
<th>Problem</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>You are using V.92 Modem-on-Hold but it disconnects you as soon as you are notified of an incoming call.</td>
<td>Your ISP may have set your modem “on hold” time to zero. This means that you are disconnected immediately after accepting an incoming call. Your Modem-on-Hold software might be set to automatically disconnect. Please consult the online help included with your Modem-on-Hold software.</td>
</tr>
<tr>
<td>Your modem disconnects while communicating with a remote system.</td>
<td>The remote system has hung up, and you need to reconnect. The other most common sources of interruptions are Call Waiting or someone picking up an extension phone. If you have Call Waiting, you can usually temporarily disable it by including a prefix such as *70, (including the comma) in the U.S., or by selecting it as a prefix in the software’s dialing directory. Depending on your service, you may not be able to disable Call Waiting for incoming calls. If your incoming data calls are frequently disrupted by Call Waiting, you should consider dropping the service or installing a separate phone line without Call Waiting. <strong>Note:</strong> Disabling Call Waiting prevents your V.92 Modem-on-Hold feature from working.</td>
</tr>
<tr>
<td>Your modem does not make a connection.</td>
<td>If your modem places calls but never connects, make sure you are dialing the right number and that the remote modem is turned on.</td>
</tr>
</tbody>
</table>
Problem: Modem performance seems sluggish.
Solution: If you are connected to the Internet, there may be a lot of traffic at the Web sites you are visiting. Other possible causes are lack of sufficient memory in your computer (insufficient RAM) or a slow processor (you need a Pentium® 266 or faster, or equivalent, when using Windows 98SE, Me, or 2000).

Problem: Data appears garbled on the screen.
Solution: Your communications software character set-up (start bit, data bits, stop bits, and parity bit) does not match that of the remote system. Check your settings against those used by the remote system and make sure they match. Pay particular attention to the parity setting, as this is the most common difference among systems. You should normally use 8 data bits, NO parity, and 1 stop bit (8, NONE, 1 or 8N1). Another common setting is 7 data bits, EVEN parity, and 1 stop bit (7, EVEN, 1 or 7E1).

Problem: You encounter communications problems with your modem.
Solution: Check that your communications software has been set up properly. Recheck the initialization string and dial string specified in your software manual.

Memory-resident programs can cause a variety of problems. Try starting up your computer without them. Programs that can cause problems include antivirus programs and screen savers.
Appendix A: Removing an Internal Modem

If you are replacing an external modem or if your computer does not have an internal modem installed, you do not need to follow the instructions in this section.

1 Before you take out the modem, you must inform Windows that you are going to remove it. Follow these steps:
   
   *Windows Vista, XP and 2000: Select Control Panel > Phone and Modem Options. If prompted, enter your Location information. Then click the Modems tab, select your old modem, and click Remove.
   
   *Windows Me and 98: Click Start > Settings > Control Panel > Modems. If prompted, enter your Location information. In the Modems Properties dialog, select your old modem, and click Remove.

2 Physically remove the old modem as follows:
   
   a Shut down and turn off the computer.
   b Remove any cables connected to the modem.
   c Open the case of the computer.
   d If applicable, remove the screw that attaches the modem bracket to the computer.
   e Pull the modem out of its slot.
   f Replace the computer’s case.

3 Return to the installation instructions.
Appendix B: Regulatory Information

**U.S. FCC Part 68 Statement**

This equipment complies with Part 68 of the FCC rules and the requirements adopted by the ACTA. The unit bears a label on the back which contains among other information a product identifier in the format US:AAAEQ##TXXXX. If requested, this number must be provided to the telephone company.

This equipment uses the following standard jack types for network connection: RJ11C.

This equipment contains an FCC compliant modular jack. It is designed to be connected to the telephone network or premises wiring using compatible modular plugs and cabling which comply with the requirements of FCC Part 68 rules.

The Ringer Equivalence Number, or REN, is used to determine the number of devices which may be connected to the telephone line. An excessive REN may cause the equipment to not ring in response to an incoming call. In most areas, the sum of the RENs of all equipment on a line should not exceed five (5.0).

In the unlikely event that this equipment causes harm to the telephone network, the telephone company can temporarily disconnect your service. The telephone company will try to warn you in advance of any such disconnection, but if advance notice isn’t practical, it may disconnect the service first and notify you as soon as possible afterwards. In the event such a disconnection is deemed necessary, you will be advised of your right to file a complaint with the FCC.

From time to time, the telephone company may make changes in its facilities, equipment, or operations which could affect the operation of this equipment. If this occurs, the telephone company is required to provide you with advance notice so you can make the modifications necessary to obtain uninterrupted service.

There are no user serviceable components within this equipment. See Warranty flyer for repair or warrantee information.

It shall be unlawful for any person within the United States to use a computer or other electronic device to send any message via a telephone facsimile unless such message clearly contains, in a margin at the top or bottom of each transmitted page or on the first page of the transmission, the date and time it is sent and an identification of the business, other entity, or individual sending the message and the telephone number of the sending machine or
of such business, other entity, or individual. The telephone number provided may not be a 900 number or any other number for which charges exceed local or long distance transmission charges. Telephone facsimile machines manufactured on and after December 20, 1992, must clearly mark such identifying information on each transmitted message. Facsimile modem boards manufactured on and after December 13, 1995, must comply with the requirements of this section.

This equipment cannot be used on public coin phone service provided by the telephone company. Connection to Party Line Service is subject to state tariffs. Contact your state public utility commission, public service commission, or corporation commission for more information.

**Industry Canada CS03 Statement**

NOTICE: This equipment meets the applicable Industry Canada Terminal Equipment Technical Specifications. This is confirmed by the registration number. The abbreviation, IC, before the registration number signifies that registration was performed based on a Declaration of Conformity indicating that Industry Canada technical specifications were met. It does not imply that Industry Canada approved the equipment.

The Ringer Equivalence Number (REN) for this terminal equipment is identified on the bottom label of the equipment. The REN assigned to each terminal equipment provides an indication of the maximum number of terminals allowed to be connected to a telephone interface. The termination on an interface may consist of any combination of devices subject only to the requirement that the sum of the Ringer Equivalence Numbers of all the devices does not exceed five.

AVIS : Le présent matériel est conforme aux spécifications techniques d’Industrie Canada applicables au matériel terminal. Cette conformité est confirmée par le numéro d’enregistrement. Le sigle IC, placé devant le numéro d’enregistrement, signifie que l’enregistrement s’est effectué conformément à une déclaration de conformité et indique que les spécifications techniques d’Industrie Canada ont été respectées. Il n’implique pas qu’Industrie Canada a approuvé le matériel.

L’indice d’équivalence de la sonnerie (IES) du présent matériel est montré sur l’étiquette inférieure du produit. L’IES assigné à chaque dispositif terminal indique le nombre maximal de terminaux qui peuvent être raccordés à une interface téléphonique. La terminaison d’une interface peut consister en une combinaison quelconque de dispositifs, à la seule condition que la somme d’indices d’équivalence de la sonnerie de tous les dispositifs n’excède pas 5.

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.
US FCC Part 15 Emissions Statement
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 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.

Industry Canada Emissions Statement
This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.
Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

Electrostatic Discharge Statement
The unit may require resetting after a severe electrostatic discharge event.

Safety Notices
CAUTION: To reduce the risk of fire, use the supplied phone cord or an AWG 26 or larger UL listed or CSA certified telecommunication line cord.
Do not use this product near water – for example, in a wet basement or near a swimming pool.
Avoid using this product during an electrical storm. There may be a remote risk of electric shock from lightning.
Declaration of Conformity

Manufacturer/Producent/Fabrikant/Constructor/
Hersteller/Konstrukteur/Fabbricante/
Fabricante/Tillverkare/Üretici/Nhà sản xuất

Zoom Technologies, Inc.
207 South Street
Boston, MA 02111 USA
617-423-1072
www.zoom.com

Brand/Varemærke/Merk/Mark/Marque/Marke/
Marchio/Marka/Marca/Märke/Thương hiệu

Zoom/Hayes V.92/V.90 USB Modem
Series 1063, Model 3095,
08-15356

56K USB Modem
Series 1068, Hayes Model
15360, 1171

Conexant USB Modem
Model RD02-D400

The manufacturer declares under sole responsibility that this equipment is compliant to Directive 1999/5/EC via the following. This product is CE marked.

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Appendix C: Reference Information

We recommend that you take a few moments to fill in the following information for your future reference. In the event you need to call Technical Support or Customer Service, you will need the information below.

<table>
<thead>
<tr>
<th>Modem Model</th>
<th>___________________________</th>
</tr>
</thead>
<tbody>
<tr>
<td>(located on the box)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Serial Number</th>
<th>___________________________</th>
</tr>
</thead>
<tbody>
<tr>
<td>(located on the bottom of the modem under the bar code)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>COM Port</th>
<th>___________________________</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Date of Purchase</th>
<th>___________________________</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Store or Dealer</th>
<th>___________________________</th>
</tr>
</thead>
</table>