

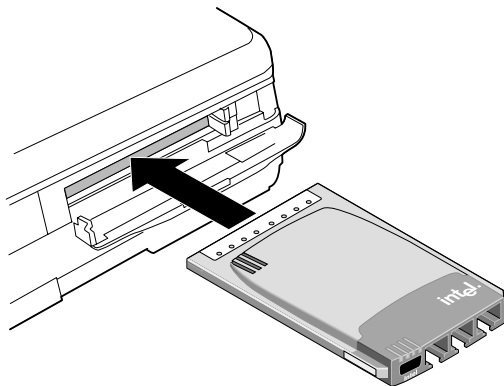
# Intel® PRO/100 Mobile CardBus Adapters

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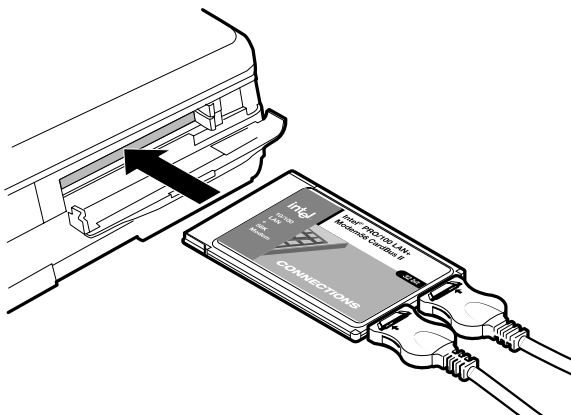
您可在 Intel 光碟片中 Manuals 資料夾  
內找到本文件的中文版本

## Quick Installation Guide and Modem Information Guide

### For Type III Models without Cables



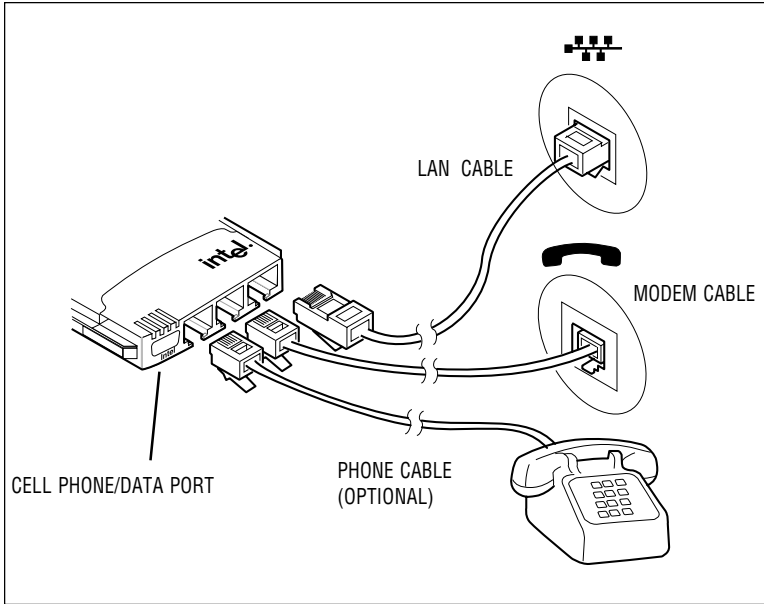
### For Type II Models with Cables



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## Hardware Installation — Type III Combo

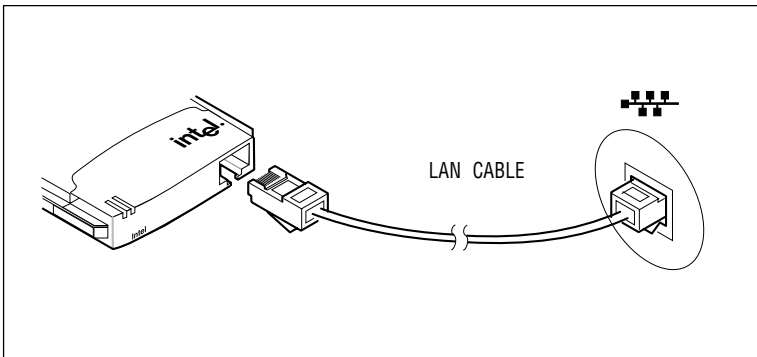
Attach your phone line and LAN cable to the adapter as shown below. Use the icons on the bottom of the adapter to correctly identify each jack. Take care not to attach the phone line to the LAN connector. Fully insert the adapter into a Type III slot or the bottom slot in a pair of Type II CardBus slots.\* See User's Guide for cell phone information.



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## Hardware Installation — Type III LAN Only

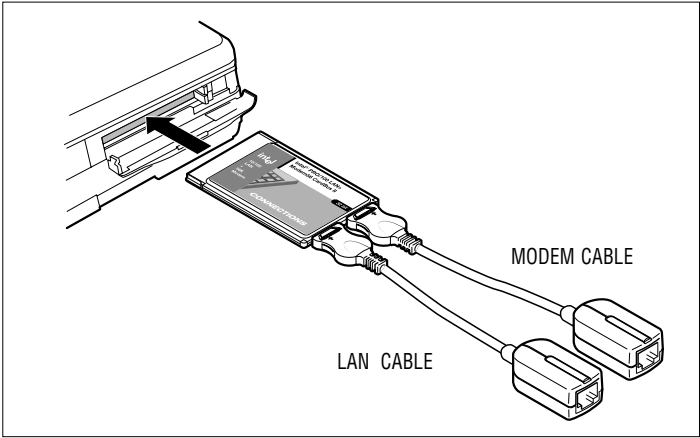
Attach your LAN cable to the adapter as shown in the diagram below. Fully insert the adapter into a Type III slot or the bottom slot in a pair of Type II CardBus slots.\*



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## Hardware Installation — Type II Combo

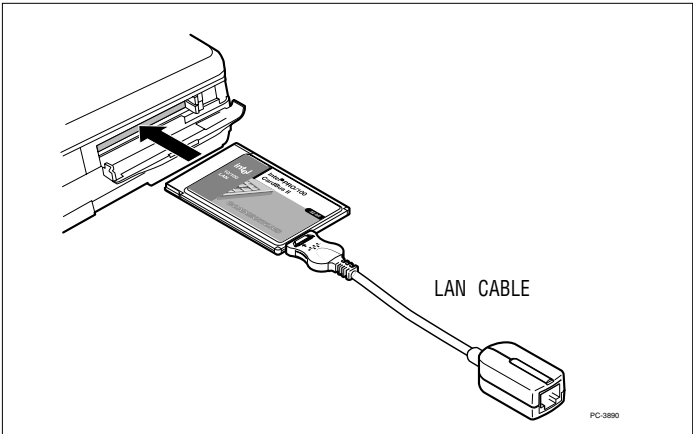
Attach the LAN and modem cables to the adapter as shown in the diagram. Use the icons on the cables to correctly identify each cable. Fully insert the adapter into a CardBus slot.\* Attach network and modem lines to the appropriate cables. Take care not to attach the phone line to the LAN cable.



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## Hardware Installation — Type II LAN Only

Attach the LAN cable to the adapter as shown in the diagram below. Fully insert the adapter into a CardBus slot.\* Attach your network twisted pair Ethernet RJ-45 cable to the PRO/100 cable.



\* Note: if the adapter won't fully insert, the slot may not be CardBus compatible. Try a different slot or check your owner's manual.

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# Software Installation for Windows<sup>†</sup> 98

Note: if your laptop computer does not have a CD-ROM drive, see Making a Floppy Disk.

## Type II Adapters Only

- 1 With Windows running, insert the PRO/100 Mobile adapter into the CardBus slot and connect cables as shown in Hardware Installation.
- 2 Windows detects the adapter and displays the Add New Hardware wizard. Click Next to continue. In this procedure, the LAN driver will be installed first and then the modem driver (if you have the PRO/100 Combo adapter). If the New Hardware Found window does NOT appear, you may need to enable CardBus support in your mobile computer's BIOS. See your computer owner's manual for information.
- 3 On the next screen, Windows prompts for a driver search. Choose "Search for the best driver (Recommended)" and click Next.
- 4 Insert the Intel CD or floppy disk and select the corresponding check box. Click Next to continue. If necessary, specify the path to your CD-ROM or floppy drive.

Note: When you insert the Intel CD to install drivers, an autorun file displays an introductory screen with several buttons. This is not part of the installation process, and you may close it or leave it open for later reading.

- 5 The new dialog box displays the name of the adapter, depending on the product you are installing. Choose "The updated driver (Recommended)." Click Next.
- 6 Windows confirms the device name and location of the LAN driver (NET8257.INF). Click Next to continue. Windows may prompt you for the location of Windows networking files. Usually these are located in c:\windows\options\cabs or on your Windows 98 installation CD.
- 7 A message confirming successful LAN driver installation appears. Click Finish.
- 8 For most networks, you will need to configure properties for your protocols, computer identification, and preferred servers. Contact your network administrator for details if you need assistance.
- 9 If you have the LAN only adapter, restart your computer when prompted and proceed to step 11.

If you have the Combo adapter, do not restart your computer yet. When prompted to do so, click No and proceed to step 10.

- 10 Windows detects the modem portion of the adapter (PCI Serial Controller) and repeats the wizard process above for the modem (driver name is MDME100B.INF). At the end of this process, a small dialog box appears stating "Your card has been successfully configured." Click OK to close this dialog box.
- 11 If the New Hardware Found wizard is present, click Finish.
- 12 Restart the computer to complete installation.

If you are not in the U.S. or Canada, run the Country Identifier utility to specify your location. The utility is located in the Intel Mobile program group.

## Type III Adapters Only

- 1 With computer power on, insert your new adapter as described in Chapter 1.
- 2 Connect the network cable and modem cable if it is a combo card.
- 3 Windows detects the adapter. The Add New Hardware Wizard starts. Follow the prompts in the wizard to install the drivers from the Intel CD.
- 4 Restart your computer when prompted
- 5 If you are not in the U.S. or Canada, run the Country Identifier utility to specify your location. The utility is located in the Intel Mobile program group.

Run the Intel Setup program on the Intel CD to install the Intel PROSet utility.

For most networks, you will need to configure properties for your protocols, computer identification, and preferred servers. Contact your network administrator for details if you need assistance.

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## Software Installation for Windows Me

Note: if your laptop computer does not have a CD-ROM drive, see "Making a Floppy Disk."

This Windows version was not fully released at the time the Intel CD was finalized. The drivers on this CD have been tested with "Release Candidate" versions of Windows Me.

## Type II Adapters Only

- 1 With computer power on, insert your new adapter as described in Chapter 1.
- 2 Connect the network cable and modem cable if it is a combo card.
- 3 Windows Me starts and detects the adapter. A default Windows LAN driver installs first and then the default modem driver. Although these drivers provide basic functionality, you'll need to update them with the drivers on the Intel CD. To update the drivers, continue this procedure.
- 4 Right-click the My Computer Icon on the desktop and click Properties. Click the Device Manager Tab. This displays a list of devices.
- 5 Find the Network adapters icon and expand if necessary. Select the Intel PRO/100 adapter and click Properties. Click the Driver Tab. The driver date of 10/23/99 is shown. Click Update Driver.
- 6 Insert your Intel CD into your drive and wait a few moments for it to spin up. The "Update Device Driver Wizard" starts. Select Automatic Search and click Next to continue.
- 7 After a few moments, the wizard displays the LAN driver on the Intel CD and automatically installs it. Click Finish.
- 8 Restart your computer when prompted.
- 9 Repeat steps 4 - 7 for the Modem. In the Device Manager, expand the Modem listing and choose the Intel PRO/100 Mobile Combo adapter.
- 10 Restart your computer when prompted.
- 11 If you are not in the U.S. or Canada, run the Country Identifier utility to specify your location. The utility is located in the Intel Mobile program group.

Run the Intel Setup program on the Intel CD to install the Intel PROSet utility.

For most networks, you will need to configure properties for your protocols, computer identification, and preferred servers. Contact your network administrator for details if you need assistance.

## Type III Adapters Only

- 1 With computer power on, insert your new adapter as described in Chapter 1.

- 2 Connect the network cable and modem cable if it is a combo card.
- 3 Windows Me detects the adapter. The Add New Hardware Wizard starts. Follow the prompts in the wizard to install the drivers from the Intel CD.
- 4 Restart your computer when prompted
- 5 If you are not in the U.S. or Canada, run the Country Identifier utility to specify your location. The utility is located in the Intel Mobile program group.

Run the Intel Setup program on the Intel CD to install the Intel PROSet utility.

For most networks, you will need to configure properties for your protocols, computer identification, and preferred servers. Contact your network administrator for details if you need assistance.

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## Software Installation for Windows NT† 4.0

If you are also installing NT 4.0 at this time, you'll need to create a floppy disk with drivers. See "Making a Floppy Disk" later in this document.

- 1 Before powering up your mobile computer, insert the PRO/100 Mobile adapter into the CardBus slot, as shown in the Hardware Installation section.
- 2 With the adapter in the CardBus slot, power-up the computer, click Start, click Settings, and select Control Panel. Control Panel opens.
- 3 Double-click the Network icon. The Network Settings window opens.
- 4 Click the Adapters tab. The Network Adapters window opens.
- 5 Click Add. The Select Network Adapter window opens.
- 6 Click Have Disk, insert the Intel CD and wait for the CD to fully spin up. (The autorun screen may appear. Close the autorun.) Specify the correct path for the CD. Click OK to continue.
- 7 The CardBus Resources window opens, displaying settings for memory and interrupt values (the default interrupt is 10). If you are installing the Combo adapter, a Modem tab also appears. Select values for each setting. A single interrupt is shared for the LAN and modem functions. (If your computer has card and socket services installed the CardBus resources window does not appear; proceed to step 9.)

Note: In most circumstances, the default settings will properly operate the adapter. However, some computers may require changes to the defaults. Usually, only the IRQ setting needs adjustment. See step 11 to verify settings.

- 8 Click OK. The Network Settings window redisplay.
- 9 Click Close. Complete any relevant dialog boxes that appear such as TCP/IP settings. Contact your Network Administrator for help if necessary.
- 10 When the Network Settings Change window opens, click Yes to restart the computer.
- 11 To check the resources chosen in step 7, start PROSet by double-clicking the Intel PROSet icon in Control Panel. If there are no conflicts with the LAN settings, you'll see the General tab with adapter status information. If there is a resource conflict with another device, PROSet displays a Troubleshooting tab with instructions. Follow these instructions to choose different resources. Resources can be changed by clicking the Advanced tab, CardBus Resources button and choosing an interrupt and/or memory value. Close the PROSet utility and restart when prompted.

### **Modem Setup (Combo Adapters Only)**

- 1 After the computer has restarted, check the NT Event Log for any possible Modem resource issues from step 7 above. You may need to change resources if the log indicates a Modem problem. See step 11 above for changing resources. If no problems are noted, select Modems from Control Panel.
- 2 At the Install New Modem screen make sure that the *Don't detect my modem; I will select it from a list* check box is NOT checked. Click Next. NT will query the COM ports looking for the Intel modem. Once the Intel modem is found, click Next. If a *Standard Modem* is found, click Change. On the next screen, click Have disk. Type the path to your CD-ROM drive and click OK.
- 3 At the Install New Modem screen, click OK. After confirming that Intel PRO/100 Mobile Adapter appears in the dialog box, click Next. Then, click Finish to complete the installation.
- 4 At the Modems Properties screen click Dialing Properties to set up dialing properties (not necessary if a modem had been previously installed). If necessary, change the maximum speed to 115,200. Click Close when done.

If you are not in the U.S. or Canada, run the Country Identifier utility to specify your location. The utility is located in the Intel Mobile program group.



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## Windows 2000 Installation

Note: when you insert the Type II adapter, Windows 2000 detects the controllers on the adapter and automatically installs drivers. Although these drivers provide basic LAN and modem functionality, you should update the drivers as described below. For Type III adapters, see the Type III procedure that follows the Type II one below.

### Type II Adapters Only

If you have the LAN-only Mobile adapter, follow steps 1 through 13. If installing the Combo Mobile adapter, follow all steps below.

- 1 On the Windows desktop, right click My Computer.
- 2 Click the Hardware tab.
- 3 Click the Device Manager button.
- 4 Double-click the Network Adapters device. You'll see the Intel adapter listed.
- 5 Right click the Intel adapter and click Properties. On the dialog that appears, click the Driver tab.
- 6 Click the Update driver button. This starts the Upgrade Device Driver Wizard. Click Next to start.
- 7 On the next screen select "Search for a suitable driver ...." Click Next.
- 8 On the next screen, uncheck all boxes except the CD-ROM drives one. Insert the Intel CD and wait until the Autorun screen appears. Close the Autorun screen by clicking the X in the upper right hand corner. Click Next in the wizard.
- 9 The next screen indicates a driver was found. **Be sure to check the box at the bottom of the screen, called Install one of the other drivers.** Click Next to continue.
- 10 The next screen displays a list of drivers. Carefully examine the list. Look in the "Provider" column and select the first driver with Intel as the provider. The location column should indicate this driver is on your CD-ROM drive. Click Next.
- 11 The drivers are copied to your computer. When the wizard reappears, click Finish.
- 12 Close the Intel adapter Properties dialog by clicking Close.
- 13 If your adapter is a LAN only product you are done. If your adapter is a combo product, proceed to step 14.

- 14 To update the modem driver, double-click the Modems device in the Device Manager.
- 15 Right click the Intel modem and click Properties. On the dialog that appears, click the Driver tab.
- 16 Repeat steps 6 through 12 above.
- 17 Close the Device Manager, and click OK on the System Properties window to close it.
- 18 Modem users only, Go to Start, Programs, Intel PRO/100 Mobile adapter.
- 19 Click Intel Country Identifier. The utility scans for modems. After a few moments the country dialog appears.
- 20 Select your country from the pull-down list and click Save and then Exit.

Run the Intel Setup program on the Intel CD to install the Intel PROSet utility.

## Type III Adapters Only

- 1 With computer power on, insert your new adapter as described in Chapter 1.
- 2 Connect the network cable and modem cable if it is a combo card.
- 3 Windows detects the adapter. The Add New Hardware Wizard starts. Follow the prompts in the wizard to install the drivers from the Intel CD.
- 4 Restart your computer when prompted
- 5 If you are not in the U.S. or Canada, run the Country Identifier utility to specify your location. The utility is located in the Intel Mobile program group.

Run the Intel Setup program on the Intel CD to install the Intel PROSet utility.

For most networks, you will need to configure properties for your protocols, computer identification, and preferred servers. Contact your network administrator for details if you need assistance.

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## Modem AT Commands

For a complete list and description of modem commands, view the CB2HELP.HLP file on the Intel CD. This is a standard Windows help file. To view it, double-click the file in Explorer or File Manager.

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## Making a Floppy Disk

If you need to use a floppy disk for installing drivers, instead of the CD-ROM drive, use the MAKEDISK utility on the Intel CD. This utility is located in the \MAKEDISK directory on the Intel CD. Place a blank floppy in your A: drive. The format for the command is:

```
D:\MAKEDISK\MAKEDISK [OS] [A:]
```

In the example above, D: is your CD-ROM drive, OS is your operating system and A: is your floppy drive. To see a list of valid operating system codes, just type MAKEDISK and press Enter. A screen with instructions will appear.

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## LAN Diagnostics

If you have trouble installing or setting up the LAN portion of the PRO/100 adapter, try running the LAN diagnostics . To run diagnostics from Windows, start Intel PROSet by double-clicking the PROSet icon in the tray or in Control Panel. In PROSet, click the Diagnostics tab and run the displayed tests. (If PROSet is not installed, see the online User's Guide).

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## Troubleshooting

- Review the MOBILE.TXT and CB2HELP.HLP files on the Intel CD.
- Make sure you have the current drivers for your adapter. Check the Intel support Web site at <http://support.intel.com>.
- When loading drivers or running the test utility, keep the LAN adapter cable attached to the CardBus adapter.
- Plug in to a known working network connection.
- Try using the adapter on a different computer.
- Try another adapter if available.
- If your computer has multiple CardBus sockets, move the adapter to another socket.

- In Windows NT 4.0, try a different IRQ value. Use PROSet to change. Go to the Advanced tab and click the CardBus Resources button
- If you have more than one PC Card device in your computer, remove the non-Intel PC Card devices.
- Make sure that the interrupt, memory address, and I/O address for the Intel device do not conflict with other installed hardware (such as sound cards, CD-ROM drives and PEN devices). However, conflicts with the CardBus controllers and/or IRQ handler for PCI steering are normal and do not impact operation of the adapter.

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## User's Guide

For more details on installation and testing procedures see the User's Guide. This guide is located on the Intel CD in the Manuals folder. File name is: mobile\_full.pdf. You'll need to have the Adobe Acrobat\* reader installed to view it.

# 56K Modem Information

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## How does 56K modem technology work?

This modem uses 56K modem technology to reach speeds up to 56 Kbps.\* 56K modem technology enables users to access information and email on corporate networks, the Internet and other online services at speeds up to 56 Kbps over standard phone lines.

The 56 Kbps modem technology utilizes the fact that today's telephone network infrastructure is primarily digital. With this new technology, speeds up to 56 Kbps can be achieved downstream (when downloading data from the "Host" modem) when all of the following conditions are met:

- 1 The line must be digitally terminated at the host side.
- 2 The connection can only go through a single digital to analog conversion (which means that satellite transmission and communications through digital PBXs will not operate at 56Kbps).
- 3 There must be two compatible modems: one at the Host and one on the computer. For your Intel modem, this means that the Host modem must support the V.90 standard or K56flex† technology.

## Different types of 56K and the V.90 Standard

There are different types of 56K technologies available today. Your Intel modem is V.90 *and* K56flex compatible. This means that your Intel modem can connect at speeds up to 56K with any brand of V.90 modem or if the modem is not V.90 compatible, it must be K56flex compatible to reach 56K speeds. When connecting with non-56K speed modems, your Intel modem connects at speeds to 33.6 Kbps.

\* 56 Kbps refers to server download speed only, and requires V.90 compatible modems at both the user and server sites. Download speeds of 56K are currently unavailable in the U.S. Other country-specific regulations may impose similar limits. For additional technical information on K56flex, go to [www.intel.com/network/mobile](http://www.intel.com/network/mobile).

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## How can I improve my 56K connections?

First, check the Intel Web site for modem firmware updates (see Hint below). Second, check with your service provider to verify that they are using the latest V.90 technology compatible with the Intel modem.

In addition, there are two different modem settings you can change to improve your V.90 connections. These commands can be added to an application's initialization string or sent directly to the modem by using any communications or terminal application. When sending the commands by themselves, start the command with AT (example: AT+MS=V34), and press the Enter key. When adding the command to an application's initialization string, the "AT" should already be present.

### **Changing Top Speed (+MS Modulation Selection) Command**

You can set the top speed at which your modem attempts to negotiate. The default is V.90 (32000 to 56000 bps).

Tip: if you routinely try to connect to non-56K modems or are having trouble establishing connections, then try to lower the "top speed" by changing the +MS setting to +MS=V34 or lower.

+MS=V90	V.90 (32000 to 56000 bps) default
+MS=K56	K56flex (32000 to 56000 bps)
+MS=V34	V.34 (2400 - 33600 bps)
+MS=V32B	V.32bis (4800 - 19200 bps)
+MS=V32	V.32 (4800 or 9600 bps)
+MS=V23C	V.23 with constant carrier (1200/75 or 75/1200 bps)
+MS=V22B	V.22bis (2400 bps)
+MS=V22	V.22 (1200 bps)
+MS=V21	V.21 (300 bps)
+MS=B212	Bell 212A (1200 bps)
+MS=B103	Bell 103 (300 bps)

### **Change Setting For Particular Type of Location (S108 - Digital Loss Selection) Command**

The S108 setting can be changed to improve the likelihood of obtaining a V.90 connection, depending on your type of location. S108 changes how digital loss is to be used during a V.90 connection.

Tip: If you are connecting at speeds greater than 33.6Kbps, but want to get closer to a top speed of 56Kbps, try changing your S108 setting. Different settings may improve your connection speed, depending on your type of location.

S108=0	0 dB digital loss (with no robbed bit signalling)
S108=1	3 dB digital loss (recommended for use with PBX systems)
S108=2	2 dB digital loss
S108=3	3 dB digital loss (normal)
S108=6	6 dB digital loss (recommended for long distance, default setting)
S108=7	0 dB digital loss

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## In which countries can my Intel modem achieve 56K speed?

Currently, the 56K modem reaches maximum download speeds in most countries in Europe, the Pacific Rim, and the Americas. Intel is working with many other countries to certify 56K modem operation. Because these efforts are ongoing, the list of currently certified countries is posted on our support Web site.

- Check the latest Intel Mobile product news at:  
[http://www.intel.com/network/products/mobile\\_adapters.htm](http://www.intel.com/network/products/mobile_adapters.htm)
- Download software, firmware, and country-specific upgrades from:  
<http://support.intel.com/network>

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## Parts and Accessories

For the most recent list of PRO/100 Combo adapter cables and accessories, visit:

<http://support.intel.com/support/network/adapter/24188.htm>

# Web and Internet Support Sites

Support: <http://support.intel.com>  
Network Products: <http://www.intel.com/network>  
Corporate: <http://www.intel.com>  
FTP Host: <download.intel.com>  
FTP Directory: </support/network/adapter/>

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