Chapter 6

Expanding your Notebook

This chapter gives short descriptions of how to add devices to your computer using the ports and connectors of the notebook

Upgrading and Options

Your notebook is designed to provide the best technology currently available, but recognizing that computer hardware and software change quickly, your notebook can easily be upgraded and expanded to meet your changing computing needs.

Nowadays, many devices support Plug and Play technology. This means that Windows can automatically detect the device when it is connected to your system. If the device requires a driver, Windows will load it automatically. If Windows does not have the device driver stored on your notebook, it will ask you to supply either the original Windows disc or diskettes, or a disc or diskettes from the device manufacturer so that the device driver can be installed.

Troubleshooting Devices

If you have problems getting a device to operate, it may be because the device requires resources that are already being used by another device, for example an IRQ (interrupt request) or an address space.

1. You can identify this kind of problem by running Windows *Device Manager*.

2. Click on the *Start* button. Point to *Settings* and click on *Control Panel*.

3. Double-click the *System* icon and then select the *Device Manager* tab in the *System Properties* window.

4. Click on the device that you are interested in, and then click on the *Properties* button.

5. For many items, the *Properties* window will have tabs for *Drivers* and *Resources*. You can use these windows to identify if the device is conflicting with resources used by other devices, and perhaps resolve the problem.

6. You may be able to resolve some conflicts my making changes to the port configurations by using the System Configuration Utility (see Chapter 3).

   NOTE: If you want to install a new device into system but the system resource(for example : IRQ) is not enough, you should stop or release the installed device.

I/O Ports

The rear and left side of your notebook have a full range of I/O ports that allow you to connect a variety of peripheral devices to your system. We will discuss here the ports that are not already covered in a previous part of the manual.

Printer

Whether you purchase a portable computer or a desktop model, you will probably connect the printer to the computer via the parallel cable. You might also connect to a printer via a USB connection, a network connection, a serial connection, or via the IR (infrared) port. See Chapter 5 for more information on using the infrared port option. Whatever the nature of the connection, you will need to set up the necessary drivers for the printer. You can vary the port connection, or network setup, at the step it is required.

Installing Your Printer
When you first boot your notebook, you will be offered the opportunity to set up your printer. If you did not set up your printer at that time, or if you have added a printer to your system, you can follow the steps below to prepare your printer for use in Windows.

Select **Start/Settings/Printers** and then **Add Printer**. In the "Add Printer Wizard" click on **Next**. Scroll through the list of manufacturers and printers to find yours. If your model is not listed here, check your printer documentation for a compatible printer to use as a source of the printer driver. The program will then ask you to identify the connection for that printer, usually LPT 1.

You will then be prompted for a name for this printer. You can accept the default, but you can choose any name you want. If you are going to work in an environment where there might be more than one printer of the same model, the names become an important way of distinguishing your printers from each other. On the same screen you are also asked whether this will be your default printer.

You will then be asked if you want to print a test page. This would be a good idea if this is a new printer, or the first printer that you have set up for your notebook.

When Windows has finished loading your printer drivers, you will be returned to the **Printers** window. You should now see your printer listed there. You may also see some other drivers, e.g. for fax software.

You may have noticed that there is a fax driver in your printer choices. You can select the fax program as a printer device for any Windows-based document that you are running in Windows. The document will be sent to the fax program just as it would be sent to the printer.

Other Parallel Devices

Your parallel port can also be used with other parallel devices, e.g.. Your parallel port is capable of supporting enhanced EPP and ECP transfer modes. EPP transfer mode provides significant performances increases for transfer to 1-way parallel devices, such as printers. ECP transfer mode provides increased performance for 2-way transfers such as those used to link another computer to your notebook system for file transfer. You might need to check the documentation of your device to determine the modes supported. If you need to change the transfer mode of your printer, you can do so in the System Configuration Utility. See Chapter 3 for information on the System Configuration Utility.
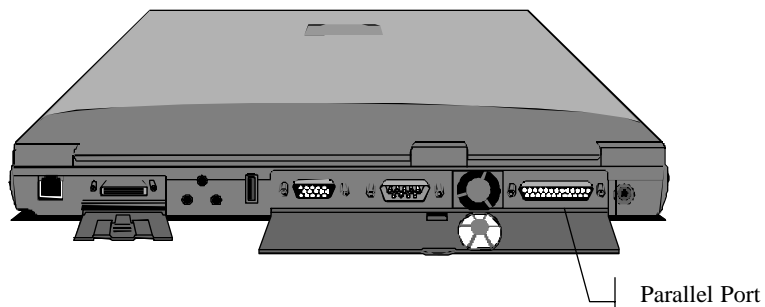

Parallel Port

Figure 6-1: Parallel Port

Be sure to shut down your system before connecting the device to your notebook to prevent damage to your system and the parallel device.

External Pointing Device

You can connect a serial mouse to your notebook. If you use a serial mouse, connect the mouse to the serial port located on the backside of your notebook.
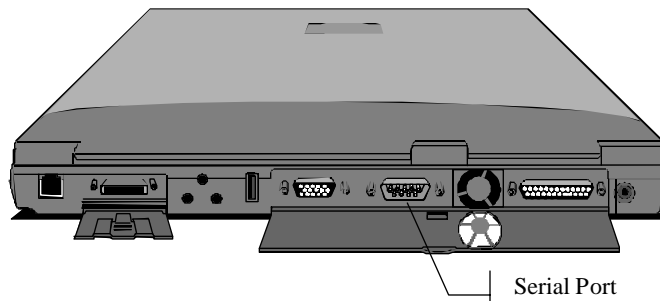
Serial Port

Figure 6-2: Serial Port

If your serial mouse is Windows compliant, the notebook should detect new hardware and take you through the process of installing the hardware. If Windows does not recognize your serial mouse, you will need to use Windows to Add New Hardware (**Start/Settings/Control Panel/Add New Hardware**). You can have Windows search for the mouse, or if you know the correct settings, you can set up the mouse manually. If Windows does not have drivers for your mouse, you can use a standard driver, or use a disk provided by the mouse manufacturer.

Serial Devices

The Communications Ports on your notebook allow you to connect external devices such as a mouse, a modem, a printer, a scanner, or another computer to the notebook.

Devices connected after the notebook is powered up may not work reliable. Connect devices to the serial port while the system is turned off. This not only helps to protect your notebook from damage, but turning on the notebook after connecting an external device to the port allows the computer to prepare itself and the device to operate together.

USB Ports

The notebook is equipped with one USB port, which allows you to take advantage of a high-speed connection to newer devices. A USB port allows you to connect up to 127 devices through a single port, at very high transfer rates of up to 12 Mbps. Devices can be connected through a USB hub, an external device that provides power and connection for other USB devices, or connected one to the other in a chain. Your notebook will automatically check the USB port to determine what devices are attached. If they are new to your system, the Plug-and-Play interface will detect the new equipment. The

constant communication between the USB port and your devices allows you to connect and disconnect devices without shutting down first.
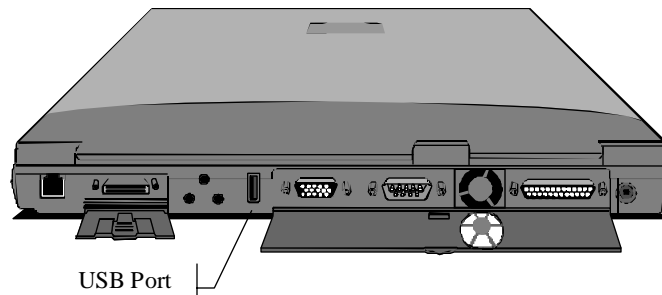
USB Port

Figure 6-3: USB Port

You can connect a USB device by plugging the USB cable into the USB port on the left side of the notebook.

The system should automatically detect the new device and make it available for you. If the device is not immediately recognized, check the documentation for the device.

The USB port not only provides a connection between your notebook and the external devices, but they are also capable of providing electrical current to run those devices. If you make considerable use of your notebook under battery power, you should consider how USB devices might drain your battery or slow battery charging. If you have a USB device that has its own electrical power source, you should consider using this device as a hub for your other devices. These devices can then draw power through the hub device, leaving your notebook free to conserve or recharge battery power.

Using the PS/2 Port

The PS/2 port on the left side of the notebook lets you connect an external keyboard to your system, such as a full size AT-enhanced keyboard, or an external pointing device to your system, such as a mouse or a trackball. The PS/2 device must have a mini-DIN PS/2 connector. If your device uses a larger AT DIN connector or a 9-pin serial connector, you can easily get an adapter to change it to a mini-DIN PS/2 connector.
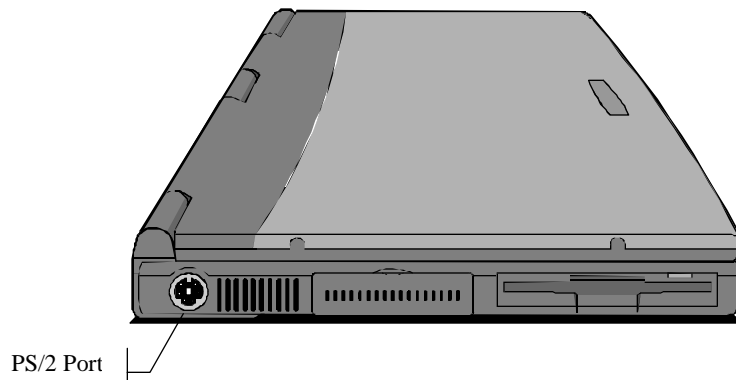
PS/2 Port

You can plug in, and unplug an external keyboard even when your system is turned on. When you connect the external keyboard to your system, the built-in keyboard remains active and you can enter data through either keyboard.

When you use this port for connecting an external PS/2 pointing device to your system, such as a mouse or a trackball, you can plug in, and unplug, the external pointing device even when your system is turned on. When you connect the device to your system, the built-in touchpad remains active and you can control the screen pointer with either the touchpad or the external pointing device.

Using the other Ports

The use of the infrared port is explained in Chapter 4.

The use of the AC adapter is explained in Chapter 4.

The use of the telephone jack is explained in Chapter 4.

The use of the audio jacks is explained in Chapter 5.

The use of the external monitor port and the TV-out port is explained in Chapter 5.

Using the Optional Port Replicator

The optional port replicator duplicates most of the ports of your notebook. If you usually connect your notebook to a number of peripheral devices, such as a printer, a monitor, a mouse, a scanner, and so on, you can permanently connect the devices to the port replicator. When you dock your notebook into the port replicator, you will have immediate access to the devices connected to the replicator.

> **NOTE**: The ports on the back of the notebook are no longer accessible when you connect the port replicator to the notebook. These ports are all duplicated on the replicator, including one extra Game, one S-video, and two PS/2 ports.

Port Replicator Components

Ports duplicated on the port replicator:

- Serial Port, explained earlier in this chapter.

- Parallel Port, explained earlier in this chapter.

- External Monitor Port, explained in Chapter 5.

- Line out/Line in/Microphone in - audio jacks, explained in Chapter 5.

- PS/2 Ports (Two), for simultaneous connection of a keyboard and a mouse. Usage is explained earlier in this chapter.

- USB Ports (Two), explained earlier in this chapter.

- TV-out Port, explained in Chapter 5.

The use of these ports is explained elsewhere in this manual, as indicated.

New ports included on the replicator:

Game
The 15-pin Game port can be used to connect your computer to an IBM-compatible joystick or similar device. The notebook will automatically detect if you are connecting a joystick device.

S-video
The S-video jack can be used to output video to devices that use S-video plugs such as camcorders.

Installing Memory

This notebook has a memory compartment, which contains two sockets for industry standard SODIMMS (small outline dual in-line memory modules). These modules are readily available from numerous third-party manufacturers.

The memory compartment is located in the base of the notebook. Install extra memory as follows:

1. Before you begin, turn off your computer, disconnect the AC adapter, and remove the internal battery.

2. Take precautions to prevent static electricity causing damage to your memory card as follows:

   • If you can, wear a grounding wrist strap that's connected to a safely grounded connection during the installation.

   • Discharge any accumulated static electricity by touching the metal case of a safely grounded device before beginning the installation.

   • Leave all electronic components inside their static-proof packaging until they are required for the installation.

   • Handle all circuit boards and electronic components carefully. Hold boards by the edges only. Do not flex or stress circuit boards.

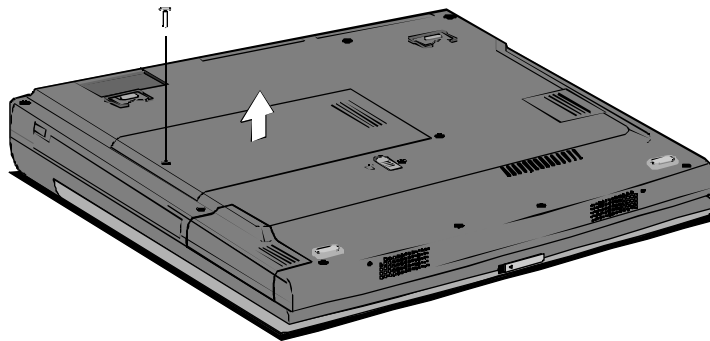3. Locate the memory compartment cover and remove the locking screw.

Figure 6-5: Removing the Memory Compartment Cover

4. Inside the memory compartment, you will see two sockets for the SODIMMs. In some configurations of this notebook, a 32 or 64 MB module will occupy one of the sockets. You can install the second socket with another SODIMM. You can install any size of SODIMM from 8 MB up to 128 MB in any of the free sockets.

5. If both sockets are occupied by SODIMMs, and you want to change one or both of the SODIMMs for a higher capacity module, locate the locking latches at each side of the socket. Pull these locking latches outwards. This will allow the socket and module to pop up to an angle of about 20 degrees. You can then slide the module out of the SODIMM socket.
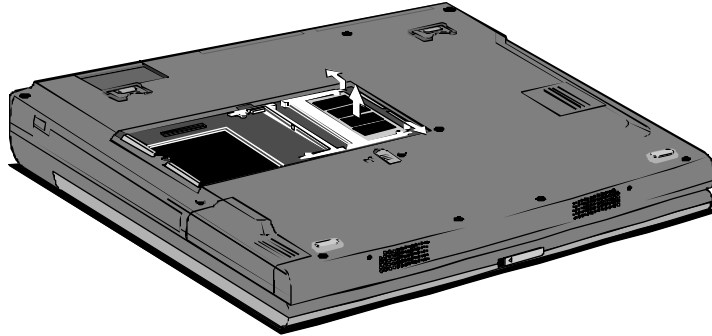

Figure 6-6: Removing a Memory Module

6. Hold the new module at the same angle as the socket and slide the edge connector side of the module into the socket. The edge connector has a cutout and the socket has a notch so that it can only be installed in the correct way. Press the module into the socket until you can no longer see the gold-teeth of the edge connector.
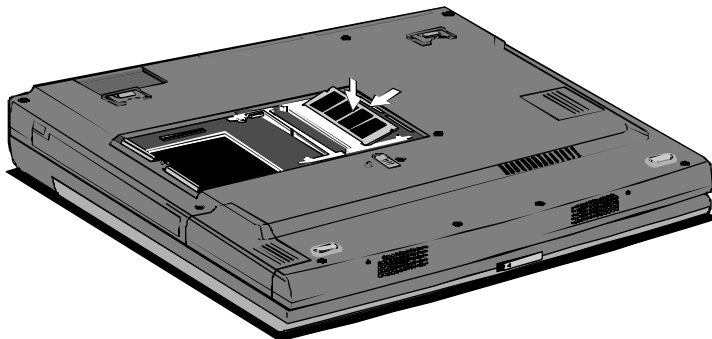

Figure 6-7: Inserting a Memory Module

7. Press the module down into the memory compartment so that the locking latches on either side of the socket engage, and hold the card down flat inside the compartment.

8. Replace the memory compartment cover and secure it with the locking screw.

9. Reconnect the AC adapter and/or replace the internal battery. Restart your notebook. When the system POST (power on self test) appears, you can verify that the system has automatically recognized the new memory configuration.

> **NOTE**: Please note that your notebook has a preinstalled suspend-to-disk partition to support the amount of memory that was factory installed in your notebook. If you expand the memory beyond the capacity of the original suspend-to-disk partition, you will need to create a larger partition on your hard disk drive. This may involve reorganizing your complete hard disk drive. Please refer to a certified technician familiar with this notebook if you are not familiar with this procedure.

Modem

Inside the memory compartment there is also space for the optional internal fax/modem device. The fax/modem is a factory-installed option. If your notebook did not originally come with this option, and you want to expand your notebook with a modem, contact your vendor for more information.
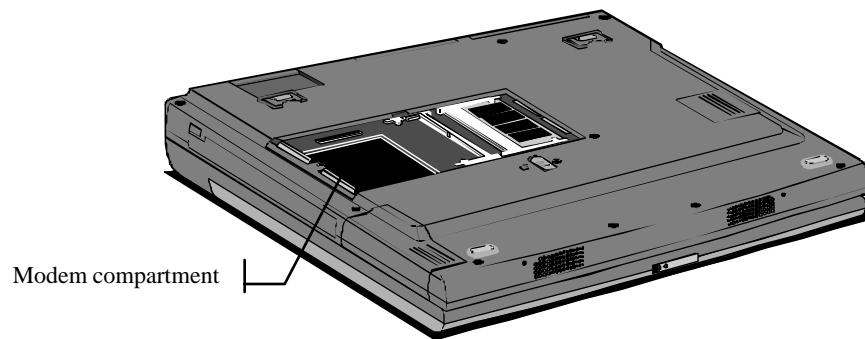
Modem compartment

Figure 6-8: Modem Compartment