

Hardware Options

This chapter tells how to install hardware options such as additional memory, an external keyboard or keypad, VGA monitor, mouse and printer. For operating instructions, read the manual included with the accessories.



Always turn off the notebook before you install additional devices. Also, if devices such as a printer or a monitor use a separate power source, turn on the devices first before you turn on the notebook.

3.1 Additional Memory

The system has optional onboard memory and two memory slots that let you install up to 40 MB of memory using 4/8/16MB industry-standard DIMMs (dual inline memory modules).

Memory Configurations

Table 3-1 lists the possible memory configurations.

Table 3-1 *Memory Configurations*

Onboard	Slot I	Slot II	Total Memory
0 MB	4 MB	4 MB	8 MB
0 MB	8 MB	8 MB	16 MB
0 MB	16 MB	16 MB	32 MB
8 MB	0 MB	0 MB	8 MB
8 MB	4 MB	4 MB	16 MB
8 MB	8 MB	8 MB	24 MB
8 MB	16 MB	16 MB	40 MB



The DIMM used for slots 1 and 2 should be the same type.

Installing Memory



Should you decide to add memory, we recommend that you seek the help of a qualified service technician. Improper installation may damage the notebook or cause a malfunction. Consult your authorized dealer for assistance.

The memory slots are accessible directly under the keyboard. Simply unlatch and lift the keyboard to expose the memory slots. Then (1) insert the DIMM into the slot and (2) press down to secure the DIMM. Do the same for the second slot. Refer to Figure 3-1.

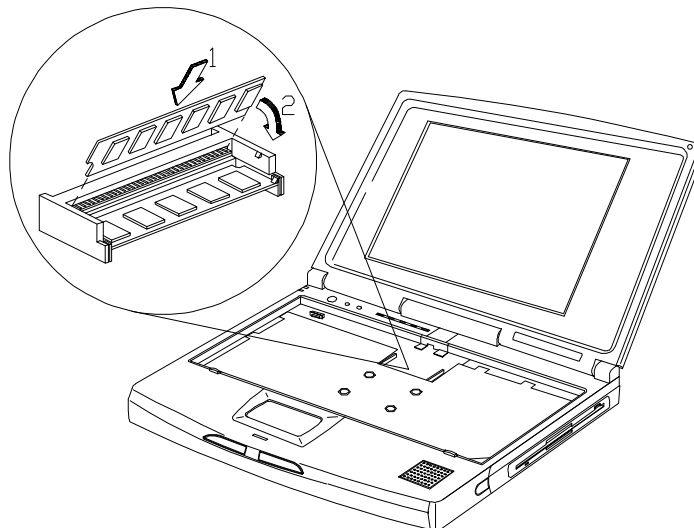


Figure 3-1 Installing Memory

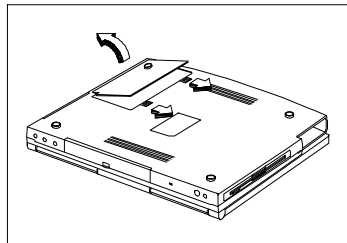
After installing the memory modules, the system automatically detects and reconfigures the total memory size during the POST routines.

3.2 Hard Disk Drive Upgrade

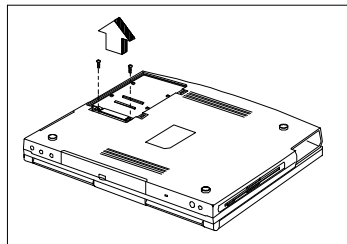
This notebook has a modular design that enables easy hard disk drive upgrades. The storage compartment accepts a high-capacity, 2.5-inch hard disk drive. See Appendix B for a list of the hard disk drives available.

We recommend that you seek the help of a qualified service technician if you decide to perform an upgrade. Improper installation may cause a malfunction or serious damage. Contact your dealer for more information.

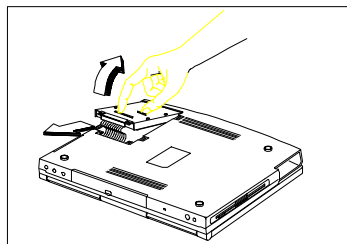
Follow these steps to remove the hard disk drive:



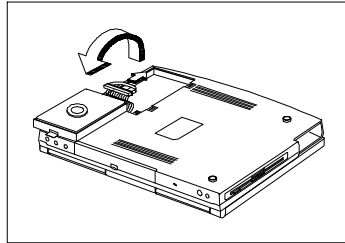
1. Power off the notebook. Unlock the hard disk drive compartment locks and remove the cover.



2. Remove the two screws that secure the hard disk drive unit to the housing.



3. Lift up the hard disk drive and pull it out.



4. Flip the hard disk drive unit and very carefully disconnect the hard drive cable. The metal housing and the hard drive can be separated in order to install a new hard drive.



Reverse the process to install a hard disk drive. The notebook automatically detects the hard disk drive type during power-on self test.



If the hard disk drive capacity is greater than 528MB, enter Setup and enable the Large Disk Capacity parameter. See section 4.3.4.

3.3 External Keyboard or Keypad

This notebook has a keyboard with full-sized keys and an embedded keypad. If you do a lot of numeric data entry, you may want to use a 17-key numeric keypad for greater convenience. Also, if you feel more comfortable using a desktop keyboard, you can install a 101-/102-key, PS/2-type external keyboard.

Connect an external keyboard or keypad into the keyboard/keypad/mouse connector ( ) on the rear panel. See Figure 3-2.

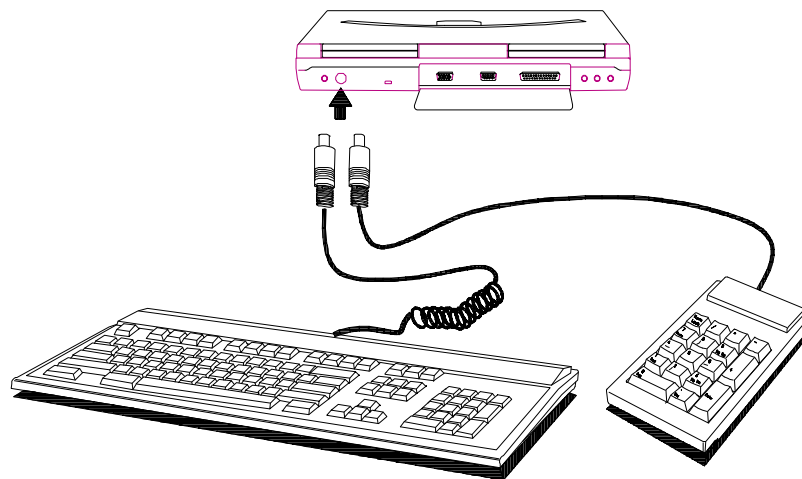



Figure 3-2 Connecting an External Keyboard or Keypad



The notebook also supports the IBM Y-bridge type keyboard/mouse connector for simultaneous keyboard and mouse connection to the PS/2 port.

3.4 External Monitor



To show graphical effects on a larger display, you can connect an external VGA monitor to the CRT port () on the rear panel. Read the monitor manual for additional instructions. See Figure 3-3.



Before you install a monitor, turn off the notebook. Always turn on the external monitor first before you turn on the notebook.

An external VGA monitor connected to the notebook automatically displays at 640 x 480 resolution. To display high-resolution VGA, see Appendix D for details.

3.5 Printer

This notebook supports both serial and parallel printers. For a serial printer, plug the printer cable into a serial port (). For a parallel printer, plug the printer cable into the parallel port (). See Figure 3-3.





Turn on the printer first before you turn on the notebook. See your printer manual for operating instructions.

If the printer does not function, enter Setup and see to it that the parallel or serial port is enabled. See section 4.5 for assistance.

3.6 External Mouse

This notebook accepts either a serial mouse or PS/2-compatible mouse or similar pointing device.

If you use a serial mouse, plug it into the serial port () on the rear panel. See Figure 3-3. If you use a PS/2-compatible mouse, plug it into the keyboard/ keypad/mouse connector () on the rear panel.



The built-in touchpad works simultaneously with an external PS/2-compatible mouse if one is connected.

After installing the mouse, turn on the system. For DOS and Windows 3.x environments, run a mouse driver to activate the mouse. Read the mouse manual for more information. Under Windows 95, run the Add New Hardware Wizard in the Control Panel folder to search for the serial mouse and load the necessary driver.

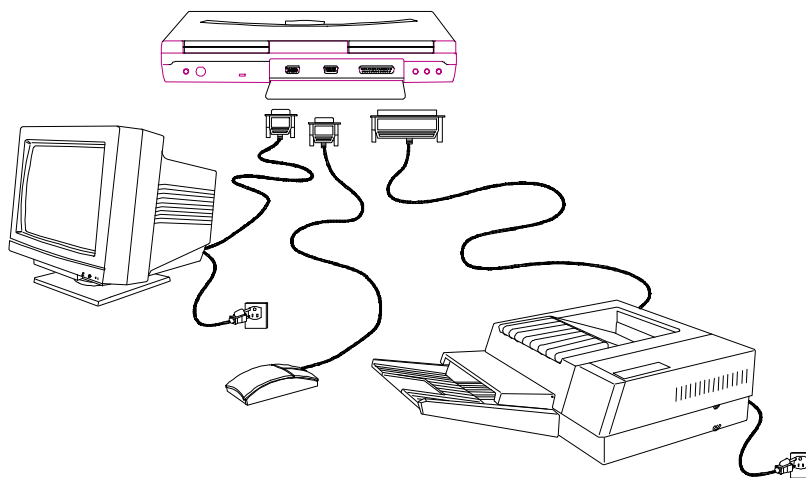


Figure 3-3 Connecting a Monitor, a Serial Mouse and a Parallel Printer

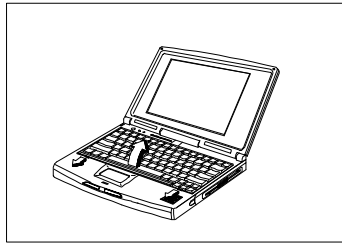
3.7 CPU Upgrade

The notebook features a unique ZIF (zero insertion force) socket that allows you to easily upgrade your CPU.

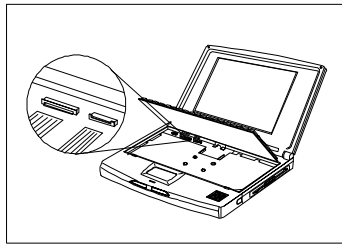


We recommend you have the CPU upgrade performed by a qualified service technician to prevent possible damage, because the CPU is sensitive to static electricity. Improper installation may cause a malfunction. Consult your dealer if you have any questions.

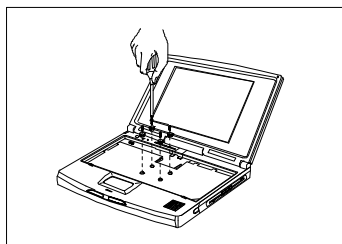
Follow these steps to upgrade your CPU:



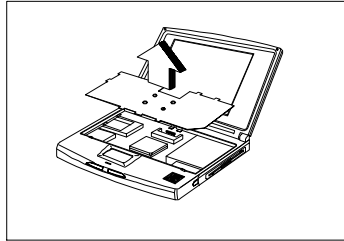
1. Unlock the keyboard latches and lift up the keyboard.



2. At this point, you may choose to remove the keyboard by releasing the two keyboard cables.



3. Remove the four screws that secure the heat sink to the mainboard.



4. Remove the heat sink to expose the CPU.

5. After removing the heat sink, follow these steps to remove the CPU and install a replacement CPU. Refer to Figure 3-4.

- ❶ Insert a flat-blade screwdriver into the opening at the right end of the socket and push towards the other end of the socket until the words OPEN and UNLOCKED show on both ends of the socket.
- ❷ Pull out the CPU. Then insert the replacement CPU.
- ❸ Insert a flat-blade screwdriver into the opening at the left end of the CPU socket and push towards the other end of the socket until the words UNOPENED and LOCK show on both ends of the socket.

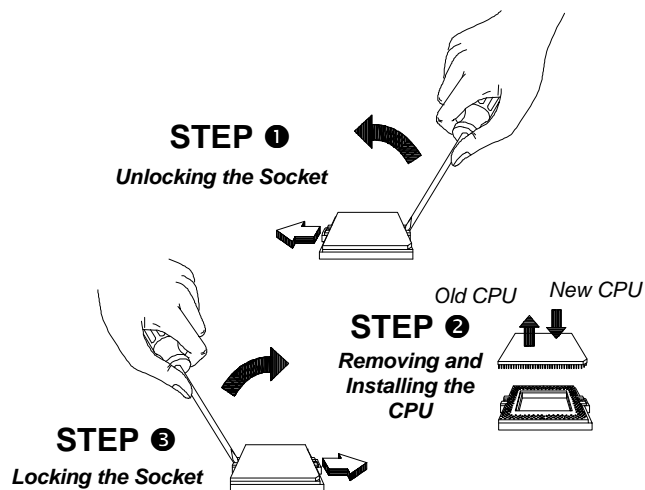


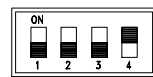
Figure 3-4 Removing and Installing the CPU

6. After installing the new CPU, set the following switches:
 - CPU speed switch SW2 (found to the left of the CPU socket)
 - CPU voltage switch SWY1 (found to the lower right of the CPU socket)

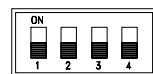


A J4 jumper may appear in place of SWY1. You need to short this jumper when installing a Pentium 120MHz CPU.

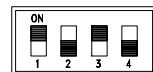
Refer to Figure 3-5 and Figure 3-6.



Intel Pentium 75MHz



Intel Pentium 100MHz



Intel Pentium 120MHz

Figure 3-5 CPU Speed Settings



2.9 volts



3.1 volts



3.3 volts

Figure 3-6 CPU Voltage Settings

7. Replace and screw back the heat sink.
8. Replace the keyboard, if necessary.

3.8 Audio Devices (Optional)

To complement the 16-bit stereo audio option, there are microphone-in, line-in and line-out audio ports, besides the built-in speaker.

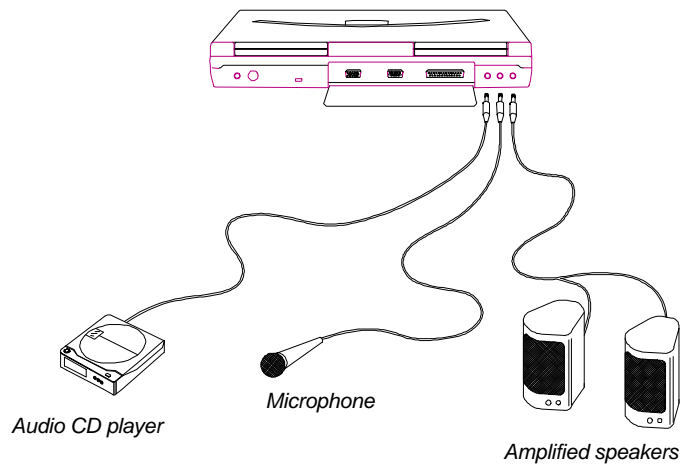


Figure 3-7 Connecting Audio Devices