

# Maintaining and Troubleshooting Your E-5200 System





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# System Access

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# Static Electricity Precautions

Static electricity can permanently damage electronic components in your computer. When opening your computer case, always perform the following procedure:

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**Caution!**

Prevent electrostatic damage to your system by following static electricity precautions every time you open your computer case.

---

1. Wear a grounding wrist strap (available at most electronics stores).
2. Turn off the system power.
3. Touch the back of the power supply case to discharge any static electricity.
4. Unplug all power cords from AC outlets.
5. Remove the computer cover.

Follow these precautions to avoid electrostatic damage to your system components:

- Avoid static-causing surfaces such as plastic and styrofoam in your work area.
- Remove the parts from their antistatic bags only when you are ready to use them. Do not lay parts on the outside of antistatic bags since only the inside of the bag provides antistatic protection.
- Always hold cards by their edges and their metal mounting bracket. Avoid touching components on the cards and the edge connectors that connect to expansion slots.
- Never slide cards or other parts over any surface.

# Removing the Cover

Before you can work inside your computer, you must remove parts of the cover:

- To install expansion cards and other internal components, remove one side panel (the right panel, as seen from the back of the system).
- To install drives you access from outside the computer, remove both side panels.
- To install hard drives, remove the side panels and the front bezel.

You do not need to remove the top of the cover to install or remove components from the computer.

Because the components inside your computer are extremely sensitive to static electricity, be sure to follow the precautions for avoiding static electricity damage at the beginning of this chapter.

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 **Note:**

Only qualified personnel should open the system for maintenance. You need a grounding wrist strap and a Phillips screwdriver to remove the computer's cover.

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 **Warning!**

To avoid exposure to dangerous electrical voltages and moving parts, turn off your computer and unplug the power cord before removing the system cover.

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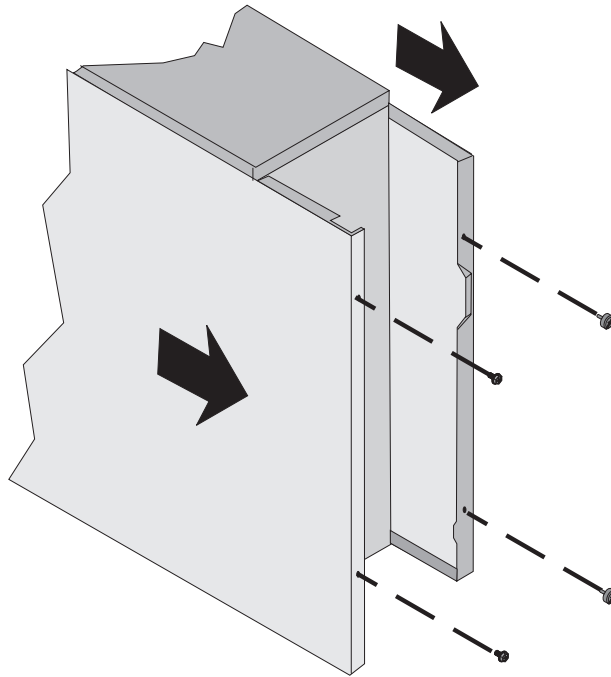
The directions that follow tell you how to remove and side panels of the cover and the front bezel.

**Note:**

Your computer includes an anti-intrusion switch on the cover. If you attempt to remove the cover without turning off the computer, your computer will automatically turn off.

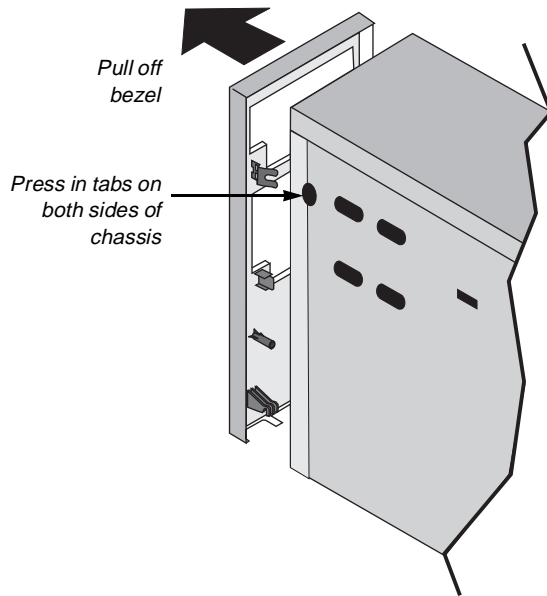
## To remove the cover

1. Turn off the computer and disconnect all power cords.
2. Turn the computer so that the back of the computer faces you. Remove the two thumbscrews that attach the right side panel to the back of the computer and the two Phillips screws that attach the left panel.



3. Grasp the right panel by the handhold in the panel and slide the panel towards you until the panel clears the chassis. You may need to pull the panel to disengage the tabs at the front of the panel from the chassis.
4. Slide the left panel towards you until the panel clears the chassis.

5. Push in the tabs on each side of the front bezel and pull the bezel off the chassis.

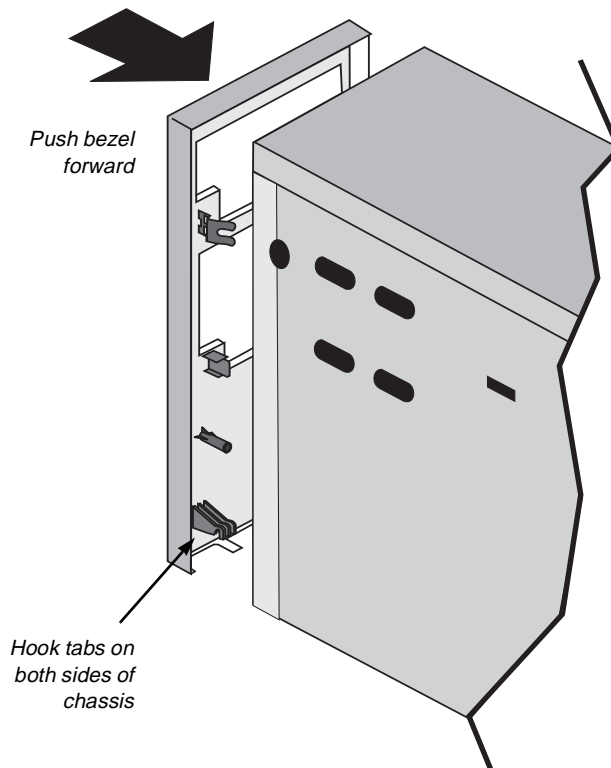


# Replacing the Cover

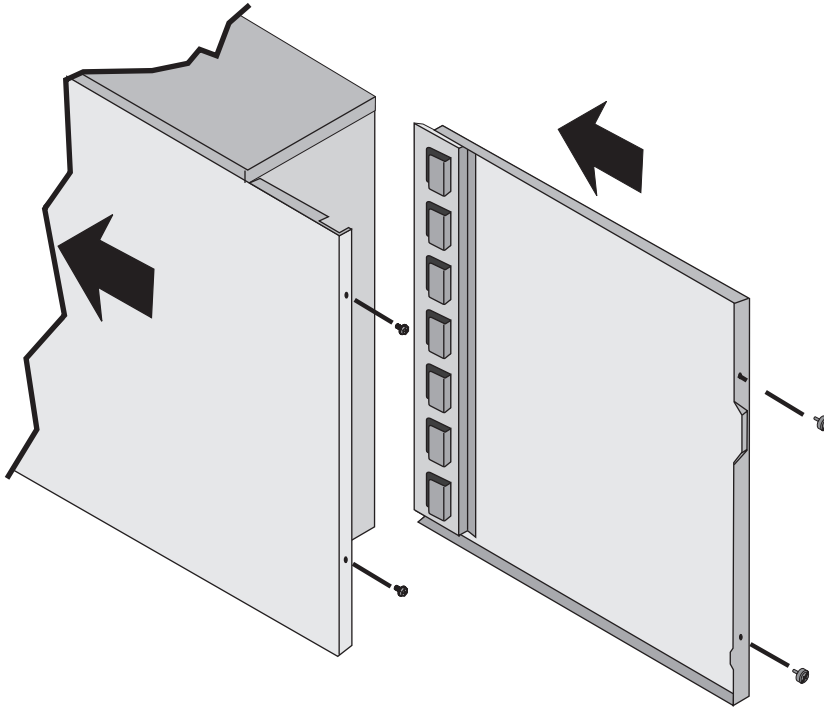
Replace the cover as soon as you finish installing or removing components so that dust and dirt (which could damage the computer) do not collect inside the computer.

## To replace the cover

1. Hook the tabs at the bottom of the front bezel into the slots in the chassis. Then push the bezel into the chassis until the bezel snaps in place.



2. Place the left side panel onto the chassis and slide the panel toward the front of the chassis. Replace the two screws that attach the panel to the chassis.



3. Place the right side panel onto the chassis, making sure the panel fits into the rails on the chassis. Slide the panel toward the front of the chassis until the tabs on the panel fit under the rim of the chassis. You may need to tap the back of the panel to fit the tabs in place. Replace the two thumbscrews that attach the panel to the chassis.





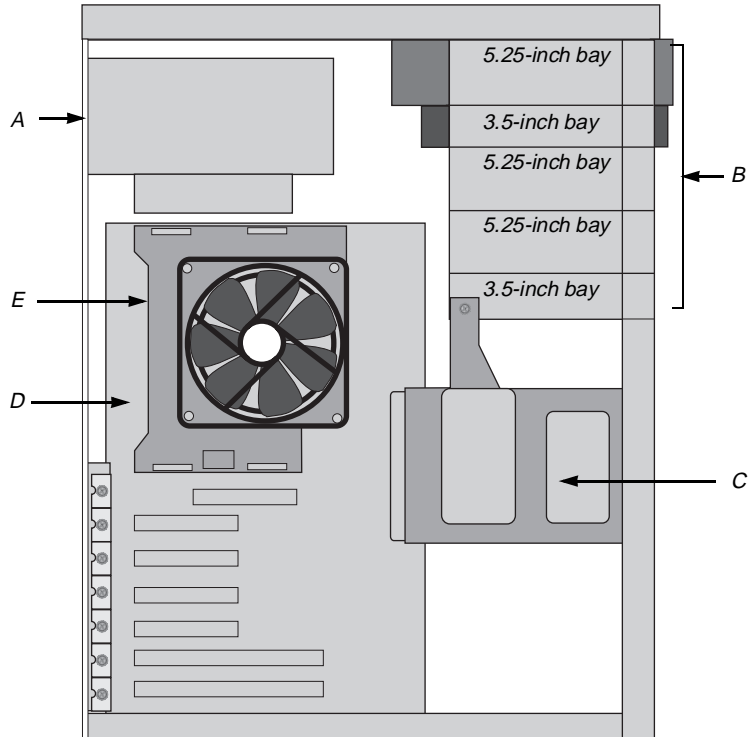
# System Components

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# System Components

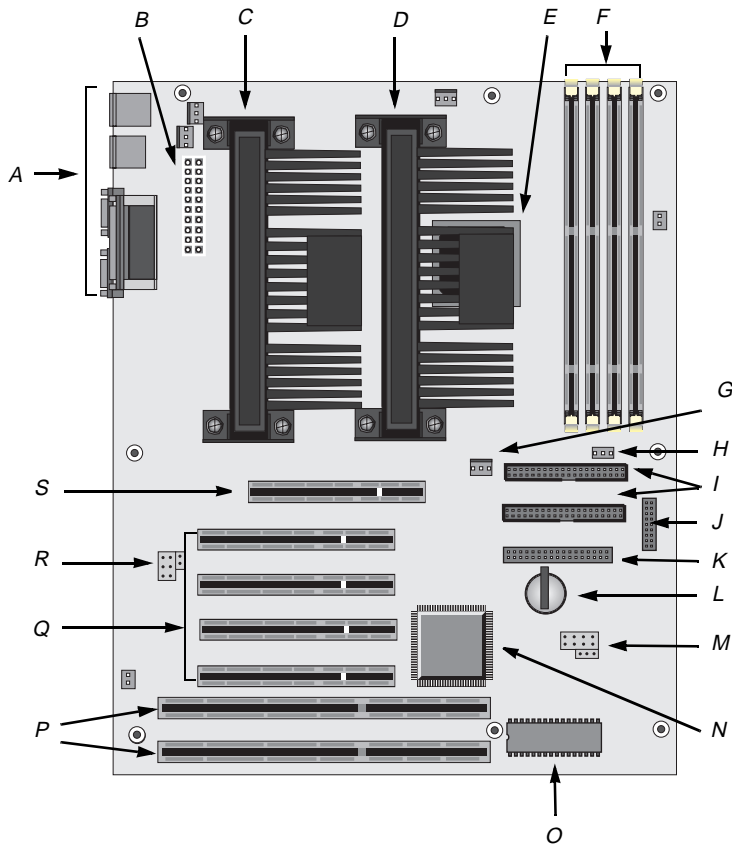
The following figure and list identify components inside the computer.



- A** Power supply
- B** Externally accessible drive bays
- C** Internal 3.5-inch drive bays
- D** System board
- E** Fan and fan housing

# System Board

System board components are identified in the following figure and list.



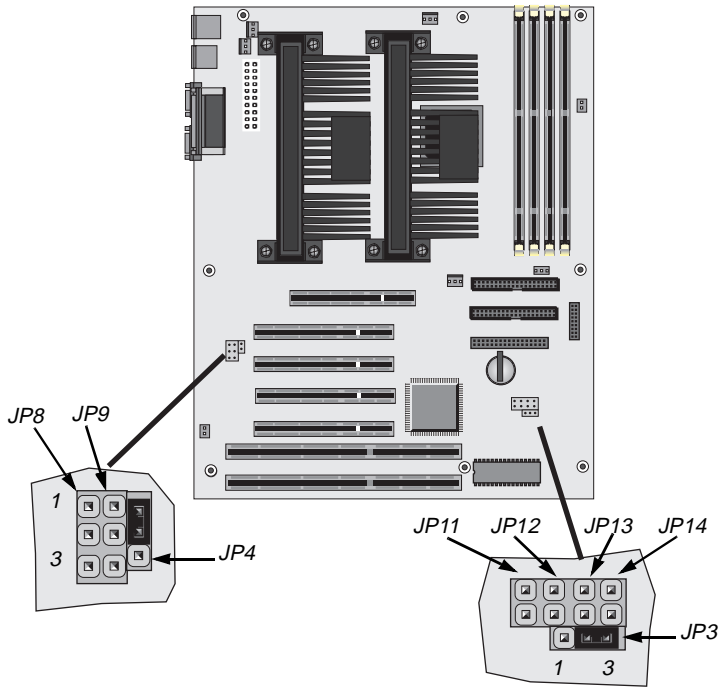
- A** Back panel I/O connectors
- B** Power connector
- C** Primary Pentium II processor slot
- D** Secondary Pentium II processor slot
- E** 82371EB chip
- F** DIMM slots



- G** Wake on LAN connector (JP19)
- H** Wake on modem ring connector (JP15)
- I** IDE connectors
- J** Front panel I/O connector (C28)
- K** Diskette drive connector
- L** Battery
- M** Jumpers (JP3, JP11, JP12, JP13, JP14)
- N** Intel 440 BX chip set
- O** BIOS chip
- P** ISA expansion slots (two)
- Q** PCI expansion slots (four)
- R** Jumpers (JP8, JP9, JP4)
- S** AGP expansion slot

# Jumpers

The following figure shows the location of the jumpers on the system board.



Jumpers JP11, JP12, JP13, and JP14 set the processor speed.

Speed for 66 Mhz Processor	JP11	JP12	JP13	JP14
233 Mhz	On	Off	Off	On
266 Mhz	Off	On	On	On
300 Mhz	Off	On	Off	On
350 Mhz	Off	Off	On	On

<b>Speed for 100 Mhz Processor</b>	<b>JP11</b>	<b>JP12</b>	<b>JP13</b>	<b>JP14</b>
300 Mhz	On	Off	On	On
350 Mhz	On	Off	Off	On
400 Mhz	Off	On	On	On
450 Mhz	Off	On	Off	On

Jumper JP3 resets the Setup (BIOS) values to their default settings.

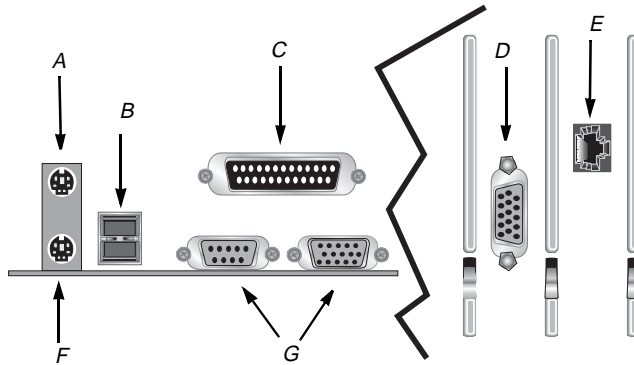
	<b>JP3</b>
Default	Pins 1-2
Reset values	Pins 2-3

Jumpers JP4, JP8, and JP9 set the diskette and infrared connectors.

	<b>JP4</b>	<b>JP8</b>	<b>JP9</b>
Two diskette drives (default)	Off	Pins 2-3	Pins 1-2
One diskette drive and one infrared	Off	Pins 1-2	Pins 2-3

# I/O Connectors

The following I/O connectors are included with the standard system.



- A** Mouse port
- B** USB ports (two)
- C** Parallel (printer) port
- D** AGP video connector
- E** RJ-45 network connector
- F** Keyboard port
- G** Serial ports (two)





# Installing Components

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# Installing Memory

The SDRAM DIMMS supported by your system board conform to the following standards:

- 3.3 V.
- Intel 4-clock.
- 100 MHz.
- Unbuffered.
- Unregistered for 64 and 128 MB. Registered for 256 MB.
- ECC.

Four DIMM sockets are available on the system board: bank 0, bank 1, bank 2, and bank 3. You can fill one or more of the banks with 64, 128, or 256 MB DIMMS. The maximum system memory is 1 GB.

When you are installing DIMMS, keep the following in mind:

- Do not install buffered and unbuffered DIMMs together.
- Do not install registered and unregistered DIMMs together.
- Do not install 66 MHz and 100 MHz DIMMs together.
- A processor with a bus speed of 66 MHz can be paired with 66 or 100 MHz SDRAM, but a processor with a bus speed of 100 MHz should be paired only with 100 MHz SDRAM.

See the figure on page 11 for the location of the DIMM sockets.

## To install a DIMM

1. Turn off the system and unplug the power cord.
2. Remove the cover side panel (see page 3 for instructions), observing the static electricity precautions on page 2.

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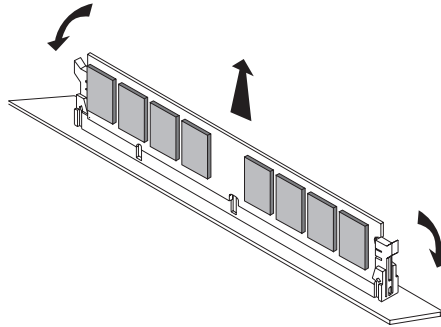
### Note:

To remove or install a DIMM, you need a grounding wrist strap. If you remove a DIMM make sure to place it in an antistatic bag.

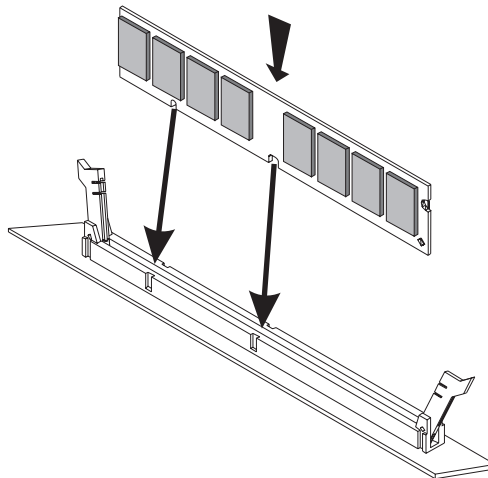
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3. Do one of the following:

- If there is a DIMM in the socket you want to use, pull open the socket clamps on each side of the DIMM socket and carefully pull the DIMM out of the socket.



- If you want to install a DIMM in an empty socket, pull open the clamps on each side of the socket.
4. Insert the new DIMM perpendicular to the socket and align the two notches in the DIMM with the two notches in the DIMM socket.



---

▼ **Caution!**

Never try to remove a DIMM without opening the socket clamps. You may break the socket or damage the DIMM.

---



5. Gently press the DIMM into the socket until it does not move any farther. (Inserting the DIMM correctly automatically closes and locks the socket clamps on the slot.)
6. Replace the system cover (see page 6 for instructions). Plug in the power cord and turn on the computer.

If your computer does not start up correctly, see “Memory Problems” on page 60 or the section in the “Troubleshooting” chapter that corresponds to the problem you are having, such as no video on start up.

# Installing Expansion Cards

The system board has seven expansion slots:

- One AGP expansion slot for a graphics card
- Two ISA-bus 8/16-bit expansion slots
- Four 32-bit PCI local bus interface expansion slots

The ISA slot and PCI slot next to each other share a slot location. You can use one or the other slot, but not both. The maximum number of slots that can be filled is six.

Some ISA expansion cards have jumpers or switches that set interrupts and I/O addresses. To set the jumpers and switches, follow the instructions that come with the cards.

See the figure on page 11 for the location of the expansion slots.

## To install an expansion card

1. Turn off the system and unplug the power cord.
2. Remove the cover side panel (see page 3 for instructions), observing the static electricity precautions on page 2.
3. If there is an expansion card installed in the slot you want to use, remove it:
  - Unplug the cables connecting the card to other devices.
  - Remove the screw that attaches the card to the chassis.
  - Grasp the upper corners of the card, and pull the card out of the slot. If the card is difficult to remove, rock the card back and forth slightly as you pull the card out of the slot. Do not bend the card or you may damage it.
4. If a port cover is installed in the panel next to the slot you want to use, remove the screw that attaches the port cover to the rear panel and pull the cover out of the chassis. Save the port cover for reinstallation in case you ever remove the card.

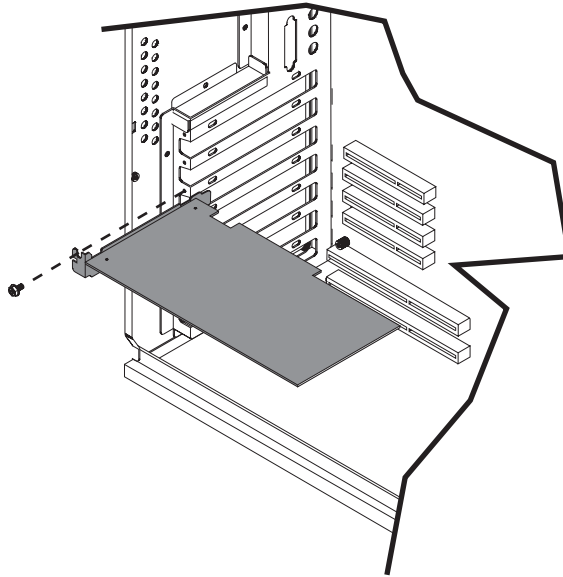
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### Note:

To remove or install an expansion card, you need a grounding wrist strap and a Phillips screwdriver. If you remove an expansion card, make sure to place it in an antistatic bag.

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5. Insert the edge of the new expansion card into the expansion slot. Push the card into the slot until the card is fully seated in the slot.



6. Install the screw that holds the card in place.
7. If you are installing a sound card, see “To install a sound card” on page 22. If you are installing a video card, see “To install a video card” on page 23. If you are installing a modem, see “To install a modem” on page 24.

### To install a sound card

1. See the sound card’s documentation for the location of the card’s connectors.
2. If you have a CD-ROM drive in your computer, connect the CD audio cable to the card’s CD audio input jack. Make sure the cable is connected to the CD audio output connector on the back of the CD-ROM drive.

3. Replace the system cover (see page 6 for instructions). Plug in the power cord and turn on the computer.
4. If you have speakers, connect the speakers to the audio-out connector on the back of the sound card.
5. If you have a modem with answering machine functionality, connect the modem input cable to the sound card's telephone answering device (TAD) input connector.
6. If you have a joystick, connect it to the joystick/MIDI port on the back of the sound card.
7. If you have added the sound card as an option or upgraded your sound card, you must install the driver for it. See the sound card documentation for the installation instructions.
8. Try playing an audio CD to test the sound card's functions. If the sound card does not function correctly, see "Expansion Card Problems" on page 55 and "CD-ROM Problems" on page 55.

### To install a video card

1. See the video card's documentation for the location of the card's connectors.
2. Replace the system cover (see page 6 for instructions).
3. Connect the monitor to the video connector on the back of the video card.
4. Plug in the computer's power cord and the monitor's power cord. Turn on the monitor and then the computer.
5. Install the video card drivers. Consult the card's documentation for driver installation instructions.
6. If the monitor does not display the video correctly, see "Expansion Card Problems" on page 55 and "Video Problems" on page 63.

## To install a modem

1. Replace the system cover (see page 6 for instructions) Plug in the power cord and turn on the computer.
2. Use the modem documentation to connect the telephone cables to the jacks in the back of the modem.
3. Set up the modem through your computer's operating system. See your modem documentation for instructions.
4. Try connecting to your Internet service provider or a bulletin board service.
5. If the modem does not connect, see "Expansion Card Problems" on page 55 and "Modem Problems" on page 60 for troubleshooting information.

# Installing Drives

Your computer has the following drive bays:

- Two 3.5-inch drive bays that can be accessed from outside the computer.
- Three 5.25-inch drive bays that can be accessed from outside the computer.
- Three 3.5-inch drive bays that are not accessible from outside the computer.

The standard configuration for your computer includes a 5.25-inch IDE CD-ROM drive, a 3.5-inch IDE hard drive, and a 3.5-inch diskette drive.

As you prepare to install drives, keep the following in mind:

- Before you install a drive, see the drive's documentation for information on configuring the drive, setting any jumpers on the drive, and attaching cables to the drive.
- If you are installing a drive that uses an expansion card controller, install the expansion card before you install the drive.
- The computer's integrated IDE connectors can support four IDE drives. The computer's integrated diskette connector can support a diskette drive.
- IDE hard drives can be configured as single, master, or slave. IDE CD-ROM drives can be configured as master or slave. Use the drive-select jumpers on the drives to configure IDE drives as follows: If only one drive is attached to the controller cable, configure the drive as single if it is a hard drive or master if it is a CD-ROM drive. If two drives of any type are attached to the cable, configure one as master and one as slave.
- If you want to install SCSI drives, you need to install a SCSI controller card to operate the drives and may need to install software drivers.
- You may need to configure the drives you install through the system's Setup program. Press F1 at start up to access the Setup program.

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 **Note:**

To remove and install drives, you need a grounding wrist strap and a Phillips screwdriver. If you remove a drive, make sure to place it in an antistatic bag.

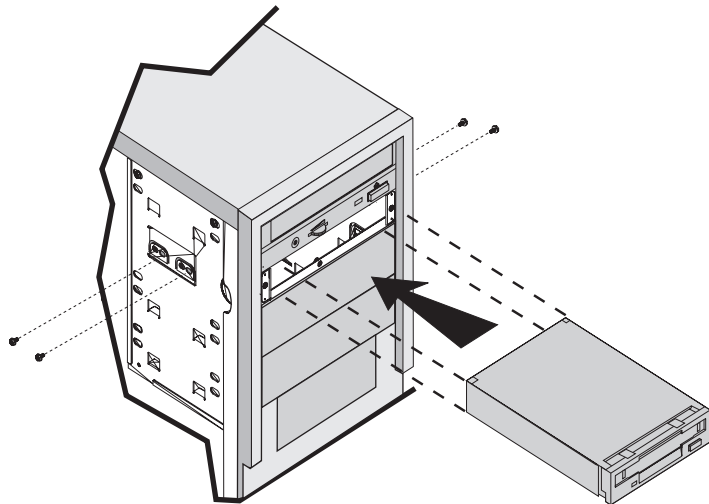
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## *Installing a 3.5-Inch Diskette Drive*

In your computer, a 3.5-inch diskette drive attaches to a metal mounting bracket. For the location of the 3.5-inch diskette drive brackets, see the figure on page 10.

### To install a 3.5-inch diskette drive

1. Turn off the system and unplug the power cord.
2. Remove the cover side panels (see page 3 for instructions), observing the static electricity precautions on page 2.
3. If a drive is installed in the bracket you want to use, remove the drive:
  - Disconnect the power and data cables from the back of the drive.
  - Remove the four screws that attach the drive to the drive bracket.
  - Push the drive out of the chassis through the bezel.
4. If no drive is in the bracket, push out the EMI shield in the bracket and remove the plastic drive bay cover on the front bezel.
5. Place the new drive into the drive bracket through the front bezel.



6. Install the four screws that attach the drive to the drive bracket.
7. Connect the power and data cables to the drive.
8. Replace the system cover (see page 6 for instructions) Plug in the power cord and turn on the computer.

If the system does not recognize the new drive, see “Diskette Drive Problems” on page 57 for troubleshooting information.

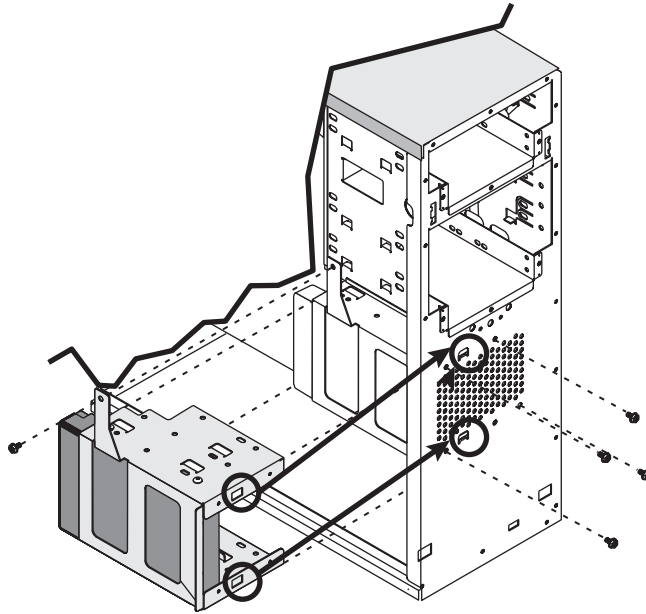
## *Installing a 3.5-Inch Hard Drive*

In your computer, a 3.5-inch hard drive attaches to a metal mounting bracket. You can easily remove the bracket and install a new drive. For the location of the 3.5-inch hard drive bracket, see the figure on page 10.

### To install a 3.5-inch hard drive

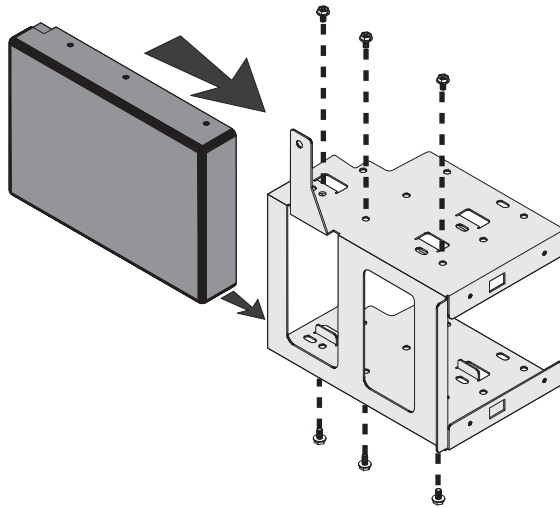
1. Turn off the system and unplug the power cord.
2. Remove the cover side panels and bezel (see page 3 for instructions), observing the static electricity precautions on page 2.
3. If any drives are installed in the hard drive bracket, disconnect the cables from the back of the drives.
4. Remove the four screws on the front of the chassis that attach the hard drive bracket. Then remove the screw inside the chassis that attaches the bracket. Support the bracket with your hand as you remove the screw inside the chassis.





5. Slide the bracket up to unhook the tabs on the bracket from the slots in the chassis. Lift the bracket out of the chassis.
6. If a drive is in the bay of the bracket that you want to use, remove the six screws that attach the drive to the bracket and remove the drive.

7. Slide the new hard drive into the bracket and attach the drive to the chassis with six screws.



8. Replace the hard drive bracket in the chassis, sliding it down until the tabs on the bracket hook into the slots on the chassis. Attach the bracket to the chassis with the five screws you removed in step 4.
9. Connect the power and controller cables to the drives in the bracket.
10. Replace the system cover (see page 6 for instructions). Plug in the power cord and turn on the computer.
11. Configure the drive as needed in Setup.

If the system does not recognize the new drive, see “Hard Drive Problems” on page 58 for troubleshooting information.

## Installing a 5.25-Inch Drive

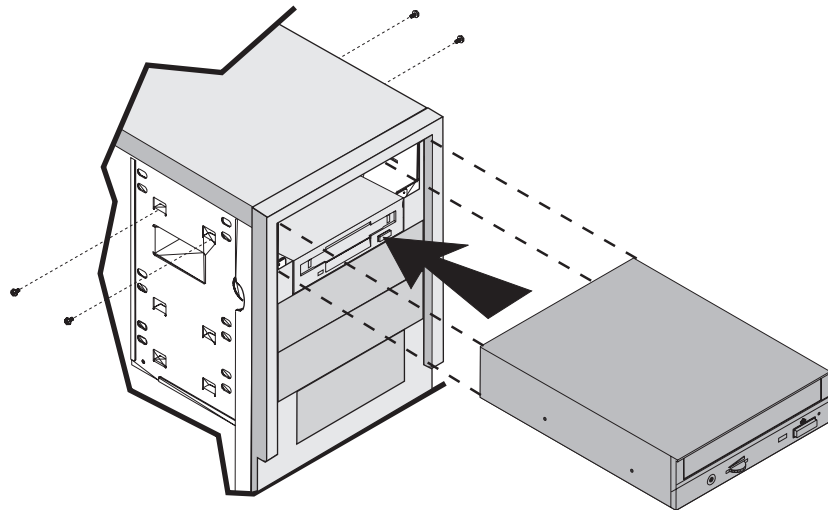
You can install 5.25-inch drives in your computer's 5.25-inch drive bays. For the location of the bays, see the figure on page 10.

**Note:**

The bottom 5.25-inch bay can hold only a 3.5-inch drive installed with a special bracket. A longer drive interferes with the system board.

### To install a 5.25-inch drive

1. Turn off the system and unplug the power cord.
2. Remove the cover side panels (see page 3 for instructions), observing the static electricity precautions on page 2.
3. If a drive is installed in the bay you want to use, remove it:
  - Disconnect the cables from the back of the drive.
  - Remove the four screws that attach the drive to the chassis.
  - Slide the drive out of the chassis through the front bezel.
4. If no drive is in the bay, push out the EMI shield in the bay and remove the plastic drive bay cover on the front bezel.
5. Slide the new 5.25-inch drive into the bay through the front bezel.



6. Attach the drive to the chassis with four screws.
7. Connect the cables to the drive.
8. Replace the system cover (see page 6 for instructions). Plug in the power cord and turn on the computer.
9. Configure the drive in Setup.

If the system does not recognize the new drive, see “CD-ROM Problems” on page 55 or “Diskette Drive Problems” on page 57 of this guide for troubleshooting information.

**Note:**

To remove and install the CMOS battery, you need a grounding wrist strap and a small flat-blade screwdriver. Be sure to follow state and local regulations when disposing of the old battery.

**Warning!**

There is a danger of explosion if the CMOS battery is replaced incorrectly. Replace the battery with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

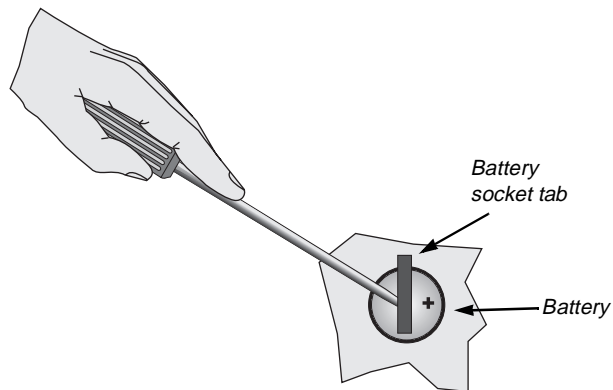
# Replacing the CMOS Battery

Your system board uses a 3-V coin-type lithium battery. If the settings you enter in the Setup utility are not saved when you turn off the computer, replace the battery.

Replacing the system board battery resets the Setup utility to its default values. See the figure on page 11 for the location of the battery.

## To install the battery

1. Turn off the system and unplug the power cord.
2. Remove the cover side panel (see page 3 for instructions), observing the static electricity precautions on page 2.
3. With a small screwdriver, lift up the battery socket tab.



4. Lift the battery out of the socket.

5. Put the new battery into the socket. Make sure the positive (+) side of the battery faces up.
6. Replace the system cover (see page 6 for instructions). Plug in the power cord and turn on the computer.
7. Open the Setup utility by pressing F1 at start up. Check the settings and restore any settings for your system. Save your changes, exit the Setup utility, and let the computer continue the startup process.

If your Setup changes are not saved correctly, make sure you have installed the battery correctly, with the positive side up.

**Note:**

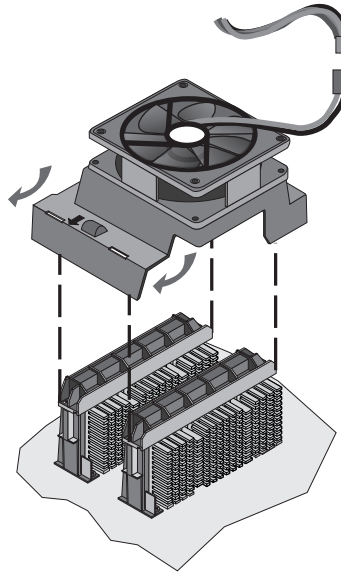
To remove and install the fan, you need a grounding wrist strap.

# Replacing the Fan

See the figure on page 10 for the location of the fan and fan housing.

## To install the fan

1. Turn off the system and unplug the power cord.
2. Remove the cover side panel (see page 3 for instructions), observing the static electricity precautions on page 2.
3. Disconnect the fan power cable from the power supply.
4. Place your thumbs underneath the edge of the fan housing near the expansion slots and press forward and up on the edge until the housing edge disengages from the processor bracket.



5. Disengage the other side of the housing from the processor bracket and lift the fan and housing out of the system.

6. Place the new fan and housing over the processor brackets. The side of the housing with the arrow on it goes next to the expansion slots.
7. Push down the side of the housing near the power supply until the housing edge snaps over the processor bracket.
8. Push down the side of the housing near the expansion brackets until the housing edge snaps into place.
9. Connect the fan power cable to the power supply cable.
10. Replace the system cover (see page 6 for instructions). Plug in the power cord and turn on the computer.

If the fan does not work correctly, make sure you installed the fan correctly and check the connection of the fan cable to the power supply cable.



**Note:**

To remove and install the power supply, you need a grounding wrist strap and a Phillips screwdriver.

**Note:**

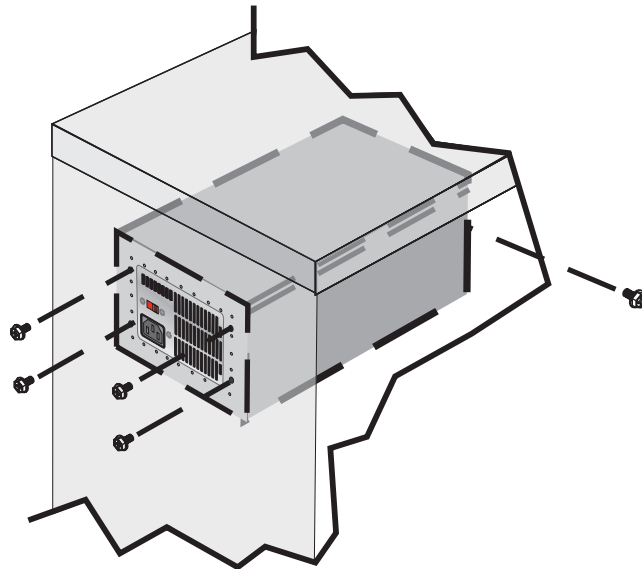
If a larger power supply is available, the installation procedures may differ.

# Replacing the Power Supply

Please observe the following instructions for removing the power supply and installing a new one.

## To install the power supply

1. Turn off the system and unplug the power cord.
2. Remove the cover side panel (see page 3 for instructions), observing the static electricity precautions on page 2.
3. Disconnect all power supply cables from internal devices, including the main power supply connection to the system board.
4. Remove the four screws on the back of the chassis that attach the power supply to the chassis.



5. Support the power supply with your hand and remove the screw inside the chassis that attaches the power supply.

6. Lift the power supply out of the chassis.
7. Check the red voltage switch on the back of the new power supply. Be sure it is set to the correct voltage for your area.
8. Line up the holes in the new power supply with the screw holes in the back of the chassis.
9. Replace the four screws on the back of the chassis and the one screw inside the chassis that attach the power supply to the chassis.
10. Reconnect the power supply cables.
11. Replace the system cover (see page 6 for instructions). Plug in the power cord and turn on the computer.

If the system does not work correctly, make sure that you installed the power supply correctly and connected the power supply cable to the power connector on the system board. Check that the voltage connector on the back of the power supply is set correctly.

---

**Note:**

To remove and install a processor, you need a grounding wrist strap and a Phillips screwdriver. If you remove a processor, make sure to place it in an antistatic bag.

---

## Installing a Processor

Install only Pentium II processors. Other processors may not function correctly.

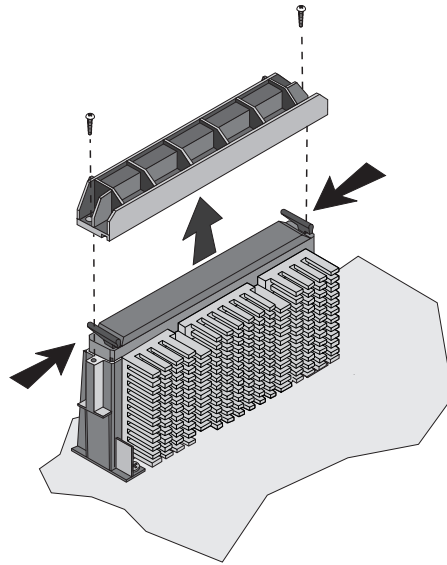
If you are installing a second processor, make sure both processors are of the same speed.

For the location of the processor slots, see the figure on page 11.

### To install a processor

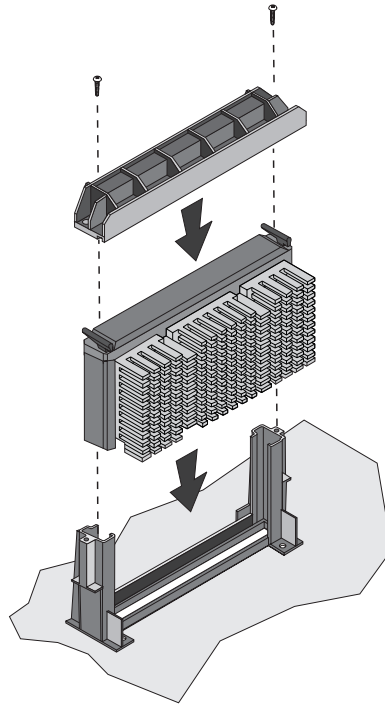
1. Turn off the system and unplug the power cord.
2. Remove the cover side panel (see page 3 for instructions), observing the static electricity precautions on page 2.
3. Remove the fan and fan housing. See “Replacing the Fan” on page 34 for instructions.

4. Remove the two screws that attach the top bracket to the processor slot you want to use.

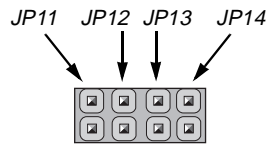
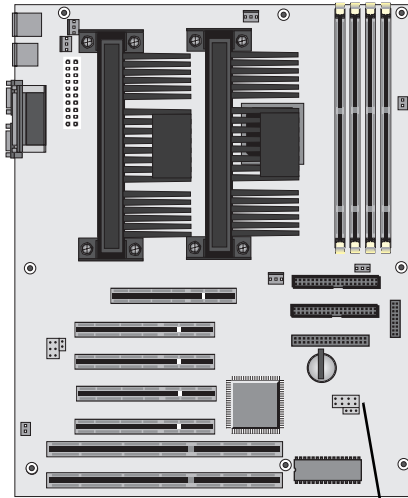


5. Press in the two latches at the top of the processor (or terminator card) and pull the processor (or terminator card) up and out of the processor slot.

6. Push the new processor into the slot until it snaps into place.



7. Replace the top bracket and the two screws that hold the bracket in place.
8. Set the jumpers on the system board to match your processor speed. Use the following illustration and tables to set the jumpers. In the tables, *On* means place the jumper on the two jumper pins, and *Off* means remove the jumper from the two jumper pins.



<b>Speed for 66 MHz Processor</b>	<b>JP11</b>	<b>JP12</b>	<b>JP13</b>	<b>JP14</b>
233 MHz	On	Off	Off	On
266 MHz	Off	On	On	On
300 MHz	Off	On	Off	On
350 MHz	Off	Off	On	On

<b>Speed for 100 MHz Processor</b>	<b>JP11</b>	<b>JP12</b>	<b>JP13</b>	<b>JP14</b>
300 MHz	On	Off	On	On
350 MHz	On	Off	Off	On
400 MHz	Off	On	On	On
450 MHz	Off	On	Off	On

9. Replace the system cover (see page 6 for instructions). Plug in the power cord and turn on the computer.
10. If you installed a second processor in your system, run the Uni-Multi Processor Upgrade Utility provided with your processor.

If the system does not work correctly, see “Processor Problems” on page 62 for troubleshooting information.

# Replacing the System Board

See the figures on page 10 and page 11 for the location of the system board and the location of connectors on the board.

Use the following steps to install a new system board.

## To install the system board

1. Turn off the system and unplug the power cord.
2. Remove the cover side panel (see page 3 for instructions), observing the static electricity precautions on page 2.
3. Remove the following devices:
  - Expansion cards: see “Installing Expansion Cards” on page 21 for instructions.
  - Fan and fan housing: see “Replacing the Fan” on page 34 for instructions.
  - Processor: see “Installing a Processor” on page 38 for instructions.
  - Peripheral devices attached to the rear-panel I/O connectors.
  - Devices from the old system board, including cables, that are not included with the new board. See the figure on page 11 for the location of the cable connectors.

---

### Note:

To remove and install the system board, you need a grounding wrist strap, a Phillips screwdriver, and a flat-blade screwdriver. Make sure to place all static-sensitive devices in antistatic bags.

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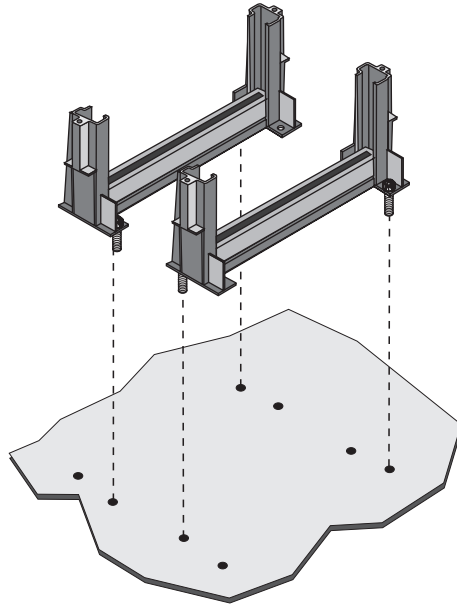
### Note:

Under no circumstances return any component without obtaining a Return Material Authorization (RMA) number.

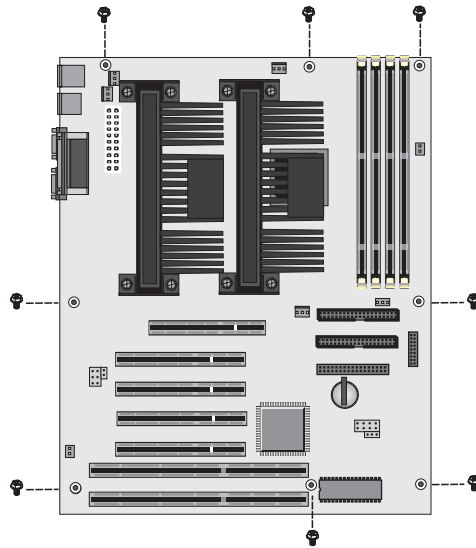
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4. Remove the four screws that attach the bottom processor brackets to the system board and lift the brackets out of the chassis.



5. Remove the eight screws that attach the system board to the chassis. Carefully lift the system board out of the chassis and set it aside.



6. Remove the new system board from its packing material. Place the new system board into the chassis, lining it up with the chassis screw holes. Install the eight screws that attach the system board to the chassis.
7. Replace the bottom processor brackets and install the four screws that attach them to the system board.
8. Replace the following devices:
  - Expansion cards: see “Installing Expansion Cards” on page 21 for instructions.
  - Fan and fan housing: see “Replacing the Fan” on page 34 for instructions.
  - Processor: see “Installing a Processor” on page 38 for instructions.
  - Peripheral devices attached to the rear-panel I/O connectors.

- Devices from the old system board, including cables, that are not included with the new board. See the figure on page 11 for the location of the cable connectors.
9. Make sure the jumper settings on the system board are correct for your processor. See “Installing a Processor” on page 38 for information on setting the jumpers.
  10. Replace the system cover (see page 6 for instructions). Plug in the power cord and turn on the computer.

If the system does not work correctly, see “Troubleshooting Tips” on page 54 for troubleshooting information.



# BIOS Setup

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# Using the BIOS Setup Utility

The computer's BIOS has a built-in program that lets you set many basic system characteristics. These settings are stored in battery-backed RAM (CMOS memory) and saved even when the power is off. This chapter contains information about this Setup utility and is intended to serve as a guide so that you can make changes to your system's BIOS when necessary.

To enter the Setup utility, restart the system and then press F1 when prompted during the startup process. When Setup opens, the Main Setup screen appears.

Main	Advanced	Security	Exit
System Date	Thur May 6, 1999		F1 Help
System Time	17:31:03		ESC Back
			Enter Select
Floppy Options	Press Enter		↑ Previous Item
Primary IDE Master	Press Enter		↓ Next Item
Primary IDE Slave	Press Enter		←→ Select Menu
Secondary IDE Master	Press Enter		
Secondary IDE Slave	Press Enter		F5 Setup Defaults
Language	English		F6 Previous Values
Boot Options	Press Enter		F10 Save & Exit
Video Mode	EGA / VGA		
Mouse	Installed		
Total Memory	128KB		
BIOS Version			

As you select items on the main menu and in submenus, you see information related to the current selection in the Item Specific Help box.

The command bar shows the keystrokes necessary to access help, navigate through the menus, and perform other functions.

- **F1** opens the Help screen, providing general help for using the Setup utility.
- The up arrow and down arrow keys select items in the menu.
- The left arrow and right arrow keys move you between the menus.
- **ENTER** either moves you to a submenu screen or selects an item.

- **Esc** closes the screen you are in and returns you to the previous screen.
- **F5** opens a screen that lets you return all values to their default settings.
- **F6** opens a screen that lets you discard all changes you have made.
- **F10** opens a screen that lets you save all settings and then exit the Setup utility.

The main screen has the following menu selections at the top of the screen:

- **Main** gives you access to basic information and settings related to your system hardware and configuration.
- **Advanced** gives you access to information and settings for system resources, hardware, and system configuration.
- **Security** gives you access to settings related to system access passwords.
- **Exit** gives you access to options for exiting the Setup utility.

# Updating the BIOS

If you need a new version of BIOS, you can download the BIOS update from the Gateway technical support web site and install the new version from a diskette.

## To update the BIOS

1. Turn on your computer and press F1 during start up to enter Setup.
2. Write down the settings for each selection. (At the end of the BIOS update process, you will reset the BIOS back to the default values.)
3. Exit the Setup program.
4. Download the correct BIOS file from the web site.
5. Uncompress the contents of the BIOS file you downloaded, and copy the contents onto a bootable diskette.
6. Place the bootable diskette into drive A and restart the system with the diskette in the drive.

The AMIFLASH utility opens and the BIOS is updated. When the update is completed, the following message appears:

**Flash ROM Programming Successful.**

**Press any key to reboot.**

7. Press a key and remove the diskette from the diskette drive. As your system restarts, you may see the following message:

**CMOS Settings Wrong**

8. Press ESC to enter Setup.
9. Press F5 to reset the BIOS values to their default settings. If you do not set the BIOS values back to defaults using the F5 key, the system may function erratically.
10. Reenter and save the BIOS values you wrote down at the beginning of this process.



# Troubleshooting

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# Using LANDesk Client Manager

The status of your system's hardware is monitored through the hardware management ASIC on the system board. Monitored information includes voltage and chassis intrusion.

The features of the hardware management system can be accessed through Intel® LANDesk® Client Manager, which provides a health indicator for your system.

LANDesk Client Manager, a desktop management interface (DMI), is already loaded on your Windows NT system. LANDesk Client Manager lets you monitor your system for critical situations that may need your attention. It also lets a system administrator remotely manage systems as inventory, including cataloging their contents.

LANDesk Client Manager lets you:

- Review inventoried hardware and software.
- View component information.
- Back up and restore system configuration files. Whenever you plan to change the system configuration, you can make a backup set. If the system no longer works correctly after changing the configuration, you can restore the configuration using the backup set.
- Troubleshoot. Because LANDesk Client Manager lets you view the system inventory, you can easily troubleshoot system problems.
- Receive notification of system events. For example, if the system is running low on virtual memory, LANDesk Client Manager notifies you of the potential problem.
- Transfer files to and from client workstations. This is helpful, for example, when updating client workstation drivers.

# Viewing System Resources

You can view system resources through the Windows NT Diagnostics screen. Check what system resources are already used before adding peripherals to avoid resource usage conflicts.

## To view system resources

1. Click **Start**, select **Programs**, select **Administrative Tools (Common)**, and click **Windows NT Diagnostics**. The Windows NT Diagnostics window opens.
2. Click a tab to see the information that you want:
  - **IRQ:** shows the interrupt request lines assigned to devices in the system. The IRQ is a hardware line that a device can use to send signals to the processor when the device needs the processor's services.
  - **I/O ports:** shows the input/output ports used by devices such as printers.
  - **DMA:** shows the direct memory access channels used by devices in the system. DMA channels enable devices to access memory directly, instead of going through the processor to access memory.
  - **Memory addresses:** shows how the memory in the system is allocated.
  - **Installed devices:** shows the devices installed in your system.

# Troubleshooting Tips

This section presents solutions to some potential problems. If the suggestions in this section are not helpful, check the technical support area of the Gateway web site (<http://www.gateway.com>) for more information.

Only qualified personnel should open the system for maintenance.

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## *Warning!*

When you turn the computer off by pressing the power button, some electric current still flows through the system. Before removing the system cover or connecting or removing any peripherals, turn off the system and then unplug the power cord from the electrical outlet.

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## *Safety Guidelines*

While troubleshooting your computer, follow these safety guidelines:

- Never remove the system's cover while the system is turned on.
- Do not attempt to open the monitor; it is extremely dangerous. Even if the monitor's power is disconnected, energy stored in the monitor's components can be dangerous.
- Make certain you are properly grounded before opening the system chassis. See the static electricity precautions on page 2 for more information on preventing electrostatic damage to the system.


## *Basic Troubleshooting*

These basic tips can help you as you troubleshoot your system:

- Make sure the power cord is connected to the computer and an AC outlet.
- Make sure the AC outlet is supplying power.
- If you use a power strip, make sure it is switched on and the circuit breaker is set.
- Make sure the voltage selection switch on the back of the system is set to the proper voltage.
- If a peripheral, such as the keyboard, mouse, hard drive, or printer does not appear to work, ensure that all connections are secure.
- If an error message is displayed on the screen, write it down, word for word. You may be asked about it when calling Technical Support.

- Enter the Setup program and check your configuration settings. If your system is not operating correctly, the Setup may contain an invalid configuration setting.
- If you added or removed system components, reread the instructions for the procedures you performed to see if you made a mistake.
- If an error occurs within an application, consult the documentation supplied with the software.

## *Expansion Card Problems*

 An expansion card is not recognized by the system

<b>Probable Cause</b>	<b>Solution</b>
The card was not installed correctly.	Reseat the card and make certain that its jumpers are configured appropriately. See the card's documentation for instructions on setting jumpers.
The IRQ or I/O address is set incorrectly.	Check the IRQ and address configuration of the card and ensure that there is not a conflict with another card in the system.

## *CD-ROM Problems*

 An audio CD produces no sound

<b>Probable Cause</b>	<b>Solution</b>
The CD is loaded incorrectly.	Make certain the CD label is facing upward, and then try again.
The speakers are not connected.	Check the speaker cables. Make certain they are connected properly and securely.
The speaker volume is turned down.	Check the volume control on the speaker and on the CD-ROM.

<b>Probable Cause</b>	<b>Solution</b>
The sound card may not be installed correctly.	Open the system and then reseat the sound card. Make certain the cables are connected properly.
The speakers may be faulty.	Connect a set of headphones to the audio-out jack to test the output. If they work, replace the speakers.

 **The system does not recognize the CD-ROM drive**

<b>Probable Cause</b>	<b>Solution</b>
The CD is loaded incorrectly.	Make certain the CD label is facing upward, and then try again.
The CD is dirty.	Clean the CD with a lint-free cloth.
The secondary IDE controller may be disabled.	Restart your computer, and then press F1 to enter the Setup program. Make sure that the secondary IDE controller is enabled in the program.
The drive may not be configured properly.	Consult the drive's documentation for instructions on how to configure the drive.
The CD-ROM cables are not installed correctly.	Open the system and check that the cables are connected correctly to the CD-ROM drive.
The IDE cable is not installed correctly.	Open the system and check that the IDE cable is connected to the system board IDE connector.

## Diskette Drive Problems

❓ The diskette drive is not recognized by the system

Probable Cause	Solution
The diskette controller may be disabled.	Restart your computer and then press F1 to enter the Setup program. Make sure that the diskette controller is enabled in Setup.
The diskette drive may be configured incorrectly.	Restart your computer and then press F1 to enter the Setup program. Make sure that the diskette drive settings are set correctly in Setup.
The diskette drive cables are not installed correctly.	Open the system and check that the cables are connected correctly to the diskette drive.
The controller cable is not installed correctly.	Open the system and check that the diskette cable is connected to the system board diskette connector.

❓ The diskette drive will not read, write, or format

Probable Cause	Solution
The diskette is not IBM formatted.	Make certain the diskette you are trying to format is IBM-compatible. If it is, try reformatting it. If the diskette is not IBM-compatible, use a different diskette.
The diskette is corrupted.	Run Check Disk on the diskette. If errors are detected and corrected, try accessing the diskette again.
The diskette is write protected.	Make certain the write-protection window on the upper-right corner of the diskette is closed (unprotected).


 The diskette drive LED is lit continuously

Probable Cause	Solution
The diskette is corrupted.	Remove the diskette from the drive. If the light remains on, try restarting the system.
The cable to the drive is not connected properly.	Open the system and check the cable between the diskette drive and its controller. Make certain the pins are not bent or misaligned.

## *Hard Drive Problems*

 An IDE drive is not recognized by the system

Probable Cause	Solution
The primary IDE device may be configured incorrectly.	Restart your computer and then press F1 to enter the Setup program. Make sure the primary IDE connector is enabled in Setup.
The drive may not be configured properly.	Consult the hard drive's documentation for instructions on how to configure the drive.
The IDE cable is not installed correctly.	Open the system and check that the IDE cable is connected to the system board IDE connector.

 A SCSI drive is not recognized by the system

<b>Probable Cause</b>	<b>Solution</b>
The expansion controller card is not seated properly.	Open the system and reseat the drive controller.
The cables are not connected correctly.	Open the system and check that the controller and power cables are connected correctly to the drive.
The SCSI bus is not properly terminated.	Make certain the last device on the SCSI chain is properly terminated.
The drive is configured with a conflicting SCSI address.	Change the drive's SCSI address to one that is not currently being used by the system.

## *Keyboard Problems*

 The keyboard does not work

<b>Probable Cause</b>	<b>Solution</b>
A key was depressed while the system was starting up.	Clear the sticking key and then turn off the system, wait for a few seconds, and turn the system back on.
The keyboard is not plugged in or connected properly.	Check the keyboard cable. Make certain it is plugged in correctly.
Something spilled into the keyboard.	Turn off the system. Turn the keyboard upside down to let it dry before turning the system back on.
The keyboard is defective.	Try a keyboard you know is working.



## Memory Problems

❓ Memory errors were detected during system start up

Probable Cause	Solution
Memory was added or removed and the new configuration was not saved in Setup.	Enter Setup and save the new memory configuration.
The memory module was installed incorrectly.	Check the memory module for proper seating and orientation.
A memory chip on a module is faulty.	Replace the module on which the faulty chip resides. Third-party diagnostic programs can help determine which chip or memory segment is failing.

## Modem Problems

❓ The modem is not recognized by the system

Probable Cause	Solution
The modem is not connected to a live phone jack.	Make certain the line connected to the modem is live and plugged into the appropriate port on the modem (line port).
The modem is not configured with a valid interrupt or address.	Check the system settings for possible conflicts. If one exists, correct the problem by selecting an available interrupt and address.
The phone jack is shared by another modem or telephone.	If the modem shares the jack with another device, make certain the other device does not have the port open (for instance, someone is on the phone, or another modem is in use).
The modem is not seated properly in the expansion slot.	Open the system and reseat the modem.

## Mouse Problems

❖ The mouse does not work

Probable Cause	Solution
The mouse is not plugged in or connected properly.	Check the mouse cable. Make certain it is plugged in correctly.
The mouse driver did not load when the system started.	Load the driver manually or contact Technical Support.
The mouse is defective.	Try a mouse you know is working.

❖ The mouse pointer moves erratically on the screen

Probable Cause	Solution
There is dirt inside the mouse.	Remove the mouse roller ball and clean the ball and the inside of the mouse-ball socket.

## Printer Problems

❖ The printer will not turn on

Probable Cause	Solution
The printer is not plugged in.	Check the power cable. Make certain it is plugged into a live power source.
The printer is not turned on.	Make certain the printer is turned on. If the printer has power, the power LED should be on.
The printer is defective.	Try another printer, if one is available.


 The printer is turned on but will not print

Probable Cause	Solution
The printer is not connected to the system.	Check the data cable between the printer and the system. Make certain it is connected to the proper port. Check the connector and cable for bent or broken pins.
The printer is not designated as the default printer.	If the printer to which you are trying to print is not the default printer, make certain you have selected it through the application's printer setup function.
The printer has not been added to the system.	From the Printers window ( <b>Start   Settings   Printers</b> ), double-click <b>Add Printer</b> . Follow the directions for adding the new printer.

 The printer prints garbled text


Probable Cause	Solution
The wrong driver is being used for the selected printer.	From the Printers window ( <b>Start   Settings   Printers</b> ), select the printer. From the <b>File</b> menu, click <b>Properties</b> . Make certain the printer is using the right printer driver. If not, install the correct one.

## *Processor Problems*

 A new processor is not recognized by the system

Probable Cause	Solution
The processor was installed incorrectly.	Check the installation. The processor should be recognized automatically if it was installed correctly.
The processor speed was not selected on the system board.	Set the system board jumpers to select the proper processor speed.

## System Problems

 The system will not start up

Probable Cause	Solution
The system is not connected to an AC outlet.	Check the power cable and make certain it is connected to an AC power source.
Voltage selection switch not set correctly.	Make certain the voltage selection switch reflects the correct power source for your area.
The power supply is not connected to the system board.	Check the cable connecting the power supply to the system board.

 The settings in the Setup program are not retained

Probable Cause	Solution
The CMOS battery has failed.	Replace the CMOS battery.
The CMOS battery was installed incorrectly.	Make certain the battery is installed with the positive (+) side up.

## Video Problems


 The system is running but there is no display

Probable Cause	Solution
The monitor is not turned on.	Make certain the monitor is plugged in and turned on. If the monitor is turned on, the power LED should be lit.
The monitor's cable is not connected.	Make certain the monitor's cable is connected to the video port on the back of the system.
The connector or cable is damaged.	Check the connector and cable for bent or damaged pins.

Probable Cause	Solution
The monitor's brightness and contrast controls are turned down.	Adjust the brightness and contrast controls to the center position.
The video card is not seated correctly.	Open the system and reseal the video card.
The video card is not compatible with the system.	PCI video cards must be compatible with the system.
The monitor is defective.	Connect a working monitor to the computer.

 The text on the display is dim or difficult to read

Probable Cause	Solution
The monitor's brightness and contrast controls are turned down.	Adjust the brightness and contrast controls until the text becomes clear.
Sunlight is glaring off the display.	Position the monitor away from the sun or window.

 The color monitor displays everything in black and white

Probable Cause	Solution
The system was turned on before the monitor.	Make certain the monitor is turned on and then restart the system.
The display type is set incorrectly.	From the Control Panel window ( <b>Start   Settings   Control Panel</b> ), double-click <b>Display</b> , click the <b>Settings</b> tab, and click <b>Display Type</b> . Set the display to the appropriate monitor type and then restart the system.

 The displayed characters are garbled

Probable Cause	Solution
The video cable is damaged.	Check the cable and connectors for bent pins or broken wires.
The video card has failed.	Try another video card.
The display setup is incorrect.	From the Control Panel window ( <b>Start   Settings   Control Panel</b> ), double-click <b>Display</b> , click the <b>Settings</b> tab, and check the settings. The correct display type should be selected, along with a supported resolution. Check your monitor and video card documentation for details.

 The video is distorted

Probable Cause	Solution
The monitor's controls are not properly adjusted.	Adjust the monitor controls until the text becomes clear. (See your monitor documentation for more information.)
The connector or cable is damaged.	Check the connector and cable for bent or damaged pins.
The power strip is damaged.	Disconnect the monitor power cable and connect it directly to the power source.
The monitor is too close to a source of electrical interference.	Move the monitor away from sources of electrical interference, such as televisions, unshielded speakers, microwaves, fluorescent lights, and metal beams or shelves.
The monitor needs to be degaussed.	Turn off the computer and monitor and leave them off for at least a half hour and then restart the system.

# Error Messages

This section lists common error messages that may be displayed on your monitor.

Error Message	Solutions
Access denied.	Try saving to a new file or diskette. Move the write-protection tab over the hole on the back of the diskette.
Bad command or file name.	Make certain you entered the right command. Verify the specified drive and try it again.
Base memory [xxx] expansion.	This is an informational message only. No action is required.
Checking RAM on disk controller.	Your Setup configuration is incorrect. Enter Setup and verify the setting values.
CD-ROM is not recognized.	See "The system does not recognize the CD-ROM drive" on page 56.
Data error.	Run Check Disk on the reported disk.
Decreasing available memory.	Your Setup configuration is incorrect. Enter Setup and verify the setting values.
Diskette drive is not recognized.	See "The diskette drive is not recognized by the system" on page 57.
Diskette drive 0 seek to track 0 failed.	Enter Setup and verify the diskette drive settings. Check the diskette drive cables. Make certain Pin 1 on the cable aligns with Pin 1 on the connector.
Diskette drive reset failed.	Enter Setup and verify the diskette drive settings. Check the diskette drive cables. Make certain Pin 1 on the cable aligns with Pin 1 on the connector.
Diskette read failed - strike F1 to retry boot.	Make certain the boot disk contains the command.com file. Use the configuration utility (if applicable) to verify your drive or controller configuration. Press F1 to try the startup again.

Error Message	Solutions
Gate A20 failure.	You may have an XT keyboard connected to an AT system or vice versa. Make certain the keyboard is configured to work with the appropriate system. Some keyboards have a switch to select either AT or XT.
Hard disk controller failure.	Make certain the hard disk cable is properly connected. Open the Setup program and verify that the correct drive type is selected.
Hard disk controller failure - press F1 to try reboot.	The drive controller may be defective. Press F1 to retry the boot.
Insert bootable media device.	See "An IDE drive is not recognized by the system" on page 58. See "A SCSI drive is not recognized by the system" on page 59. Backup your files as soon as possible.
Insufficient disk space.	Check the free space on the disk volume. If the volume is full or almost full, remove unnecessary files.
Invalid configuration information...	Enter Setup and verify the setting values.
Invalid password.	Enter your password again, making certain to enter it correctly. If you do not know the password, you may need to reinstall the software you are trying to access.
Keyboard clock line failure.	Try a working keyboard. Make certain the keyboard is compatible with the system. You may have to change the switch setting to AT.
Keyboard controller failure.	Try a working keyboard. Make certain the keyboard is compatible with the system. You may have to change the switch setting to AT.
Keyboard not detected.	See "The keyboard does not work" on page 59. Turn off the system and check the keyboard cable.



<b>Error Message</b>	<b>Solutions</b>
Keyboard stuck key failure.	Remove any objects that may be resting on the keyboard and then restart the system. Check for sticky keys. Clean the keyboard if necessary.
Memory errors were detected while the system powered up.	See "Memory errors were detected during system start up" on page 60.
Memory size error.	Enter Setup and save the memory configuration.
Non-system disk or disk error.	Eject the diskette and press ENTER. If the diskette is bootable, check it for errors.
Not enough memory.	Close all programs that are not currently in use.
Print queue is full.	Wait until the current print job has been completed before sending another print job. If you receive this error often, you need to add memory to the printer.
Printer is out of paper.	Add paper to the printer. Make certain the printer is online.
Required parameter missing.	Make certain you entered the right command.
Syntax error.	Make certain you entered the right command.
Time and date not set.	Enter Setup to set the system's date and time.
Write protect error.	Move the write-protection tab over the hole on the back of the diskette.

# BIOS Beep Codes

If POST detects errors, the computer emits a series of beeps to indicate the problem. The following table lists these beep codes.

Beeps	Description
1	Insert diskette in diskette drive A.
2	<b>Gw2kboot.rom</b> file not found in root directory of the diskette in diskette drive A.
3	Base memory error.
4	Flash programming successful.
5	Diskette read error.
6	Keyboard controller BAT command failed.
7	No flash EPROM detected.
8	Diskette controller failure.
9	Boot block BIOS checksum error.
10	Flash erase error.
11	Flash program error.
12	<b>Gw2kboot.rom</b> file size error.
Continuous	Flash programming successful. Turn off system and turn on again.

# System Specifications

The following table lists the specifications for your system.

Case size	Width: 7.32 in. Depth: 17.29 in. Height: 18.74 in.
Processor	Dual processor slots on the system board. Slots support Intel® Pentium® II processors with speeds of 300, 333, 350, or 400 Mhz.
Cache	Level 2, 512 K pipelined burst cache on system board.
RAM	Four sockets on the system board support SDRAM ECC 4-clock DIMMs. Maximum memory is 1 GB. System supports 64 and 128 MB unregistered DIMMs and 256 registered DIMMs.
BIOS	AMI BIOS. Flash BIOS for easy updates from diskette.
IDE interfaces	Supports up to four ATAPI/IDE devices (hard drives or CD-ROMs) using two onboard PCI IDE controllers.
Diskette drive interface	A diskette drive controller is integrated on the system board.
I/O ports	One parallel port, two serial ports, two USB ports, one PS/2 keyboard port, and one PS/2 mouse port on the system board. LPT and COM are configurable from the Setup program.
Expansion slots	One AGP, two ISA, and four PCI slots. One ISA and one PCI slot are shared.
Temperature, operating	10° to 40° Celsius
Temperature, nonoperating	-40° to 71° Celsius
Humidity, operating	10 to 80 percent
Humidity, nonoperating	5 to 95 percent
Shock (40 G, half-sine)	11 ms
Vibration	2 to 300 Hz, 0.25 G (sinusoidal)

Voltage, AC input	90 to 130 VAC, 180 to 265 VAC
Voltage, DC input	±10 percent of all DC outputs from power supply
Frequency	47 to 53 at 115 VAC, 57 to 63 at 230 VAC
Certification	FCC Class B, UL, CUL, EN 55022, EN50082-1, EN60950, VCCI Class B



# Computer Virus Notice

## *What is a virus?*

A virus is a program written with malicious intent for the sole purpose of creating havoc in a computer system. It attaches itself to executable files or boot sectors, so it can replicate and spread. Some viruses may only cause your system to beep or display messages or images on the screen. Other viruses are highly destructive and corrupt or erase the contents of your files or diskettes. To be safe, never assume any virus is harmless.

## *What types of viruses are known?*

Viruses are identified by how they infect computer systems.

- *Program viruses* infect executable program files such as .com, .exe, .ovl, .drv, .sys, and .bin.
- *Boot viruses* attach themselves to a boot record, master boot, FAT, or partition table.
- *Multipartite viruses* are both program and boot infectors.

## *How does a virus spread and contaminate?*

There are many ways a virus can spread and infect your system. However, a virus is inactive until the infected program is executed, or a boot record is read. Thereafter, the virus loads itself into system memory and begins to copy and spread itself.

Diskettes used in a contaminated system can get infected and, in turn, transfer the virus when used in another system. A virus can also spread via programs downloaded from bulletin boards or the Internet. Remember that viruses cannot appear all by themselves. They have to be written, then spread through direct contact with executable programs or boot sectors.

## *What can you do to protect your system?*

Awareness is the key. You need to learn about the existence of viruses, how they spread, and what to do to protect your system by reducing the likelihood of virus contamination. The following may help:

- Obtain an anti-virus program and make it a habit to scan the system regularly. These programs may be purchased from a local software store or obtained via shareware on the Internet or online service providers such as CompuServe, Prodigy, AOL, or DeltaNet.
- Make backup copies of all files and write-protect the diskettes.
- Obtain all software from reputable sources and always scan new software for any viruses before installing files.

If you suspect your system has been infected, you must find and remove the viruses immediately using an anti-virus program. Next, reboot your system as follows: shut the system down, then turn it off for at least 15 seconds before turning it back on. This is the only way to ensure the virus does not remain in your system RAM.

## *What do we do to prevent virus contamination?*

We stand by the integrity of our products. Our staff takes every precaution to ensure our files are free from viruses. These precautions include the following:

- We use McAfee VirusScan, a leading anti-virus software that detects and removes over 95% of known viruses and provides comprehensive protection including local and network drives, CD-ROMs, floppies, boot sectors, and partition tables. VirusScan also provides advanced protection against unknown viruses. We continuously update and use the most current version of McAfee VirusScan on all of our products.
- All master diskettes are write-protected and scanned at least twice before release.
- Sample production diskettes are periodically scanned as an additional quality check.

- All incoming products such as systems to repair, vendor diskettes, hard drives, and trade-show units are scanned for viruses.
- All systems are given a final test before shipping.

Unfortunately, today's technology makes the creation of newer viruses possible, some of which can elude even the best scanners available. Hence, there is no absolute guarantee of virus immunity on any product. If you think you have received an infected product from us, please contact Technical Support. Our staff will assist you in correcting the problem.



# Regulatory Compliance Statements

## American Users



### Caution!

The Federal Communications Commission warns users that changes or modifications to the unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio or television reception. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio and 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.
- Use shielded I/O cables when operating this equipment.

Accessories: This equipment has been tested and found to comply with the limits of a Class B digital device. The accessories associated with this equipment are as follows:

- Shielded video cable
- Shielded power cord

These accessories are required to be used in order to ensure compliance with FCC rules.

## Canadian Users:



This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the radio interference regulations of Industry Canada.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de Classe B prescrites dans le règlement sur le brouillage radioélectrique édicté par Industrie Canada.

**Attention!**

Couper le courant avant l'entretien.

This Information Technology Equipment has been tested and found to comply with the following European directives:

[i]EMC Directive 89/336/EEC amending Directives 92/31/EEC & 93/68/EEC as per:

- EN 50081-1:1992 according to  
EN 55022:1995 Class B  
EN 61000-3-2:1995 or EN 60555-2:1986  
EN 61000-3-3: 1995
- EN50082-1:1992 according to  
EN 61000-4-2:1995 or IEC 801-2:1984  
ENV 50140:1994 or IEC 801-3:1984  
EN 61000-4-4:1988 or IEC 801-4:1998

[ii]Low Voltage Directive (Safety) 73/23/EEC as per EN 60950:1992, A1, A2, and A3

This is a Class B product based on the standard of the Voluntary Control Council for Interference by Information Technology Equipment (VCCI). If this is used near a radio or television receiver in a domestic environment, it may cause radio interference. Install and use the equipment according to the instruction manual.

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準に基づくクラスB情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。

取扱説明書に従って正しい取り扱いをして下さい。

This device has been tested and found to comply with the limits for a Class B digital device, pursuant to the Australian/New Zealand standard AS/NZS 3548 set out by the Spectrum Management Agency.

**Caution!**

Disconnect power before servicing.

European Users:



Japanese Users:



Australian and New Zealand Users:





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