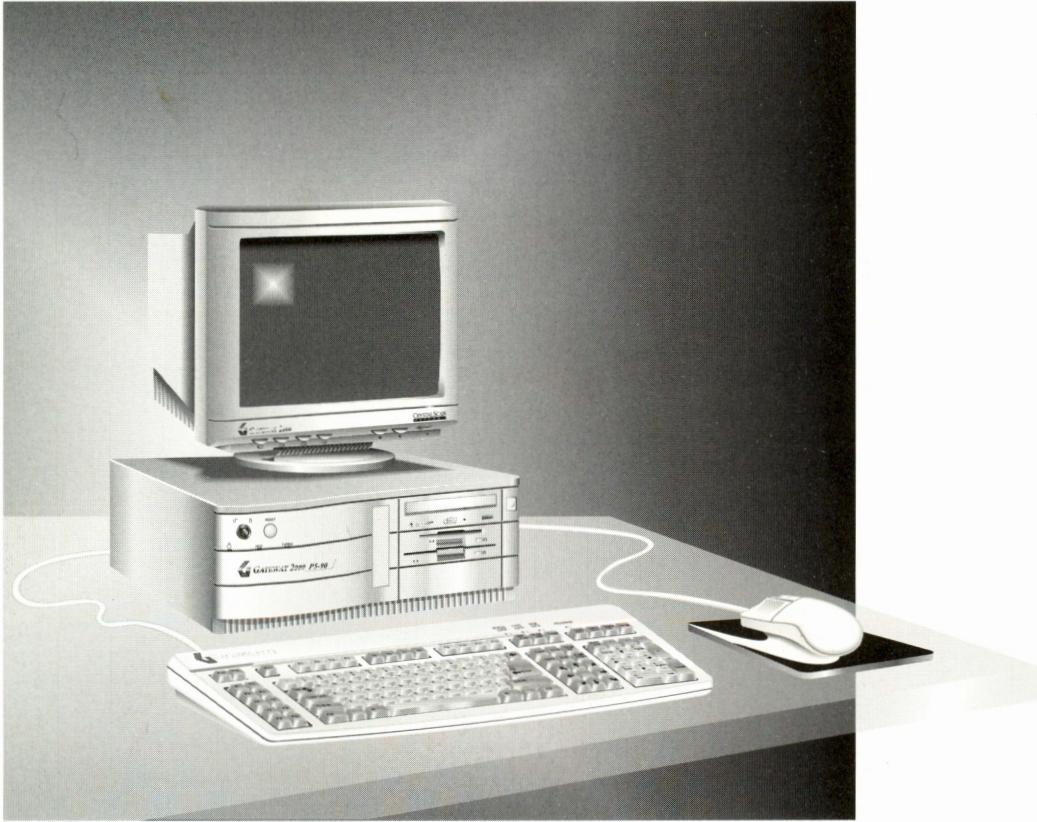


GATEWAY 2000®
COMPUTER SYSTEM

P5-75/90/100/120



TECHNICAL REFERENCE

Part # MBCMAN013ADUS

Notices

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610 Gateway Drive
N. Sioux City, SD 57049 USA

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To obtain information on known processor (CPU) errata, contact Intel at 1-800-548-4725.



FCC statement

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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

- Shielded video cable
- Shielded power cord.

These accessories are required to be used in order to ensure compliance with FCC rules. It is the responsibility of the user to provide and use these accessories.

Class B Digital Device. This equipment has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of 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 an experienced radio/TV technician for help.

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

To comply with the limits for a FCC Class B computing device, always use the shielded power cord supplied with this unit.

CAUTION: DISCONNECT POWER BEFORE SERVICING.
ATTENTION: COUPER LE COURANT AVANT L'ENTRETIEN.

WARNING: There is danger of explosion if the battery is incorrectly replaced.

Replace the battery with an Intel-recommended battery (contact Gateway 2000). Using a different battery, recharging, or disassembling the battery may present a danger due to fire or explosion.

Dispose of used batteries promptly according the the manufacturer's instructions. Keep all batteries away from children.

Specifications

The following specifications are for the standard configuration; your system may contain optional equipment. All specifications are subject to change without notice or obligation.

Desktop case dimensions	(WxDxH) 17 x 16.25 x 6.5
Tower case dimensions	(WxDxH) 9.87 x 18.64 x 22.8, including base
CPU	Intel P54C Pentium operating at 3.3 volts VCC
CPU speed	75, 90, 100, or 120MHz
Processor upgrade	Accepts Intel Level 5 OverDrive upgrade
Cache subsystem	Primary 16K write back cache; 8K code/8K data (all processors) Secondary asynchronous 256K write back cache, direct mapped (certain system board configurations only)
RAM capacity	8MB or 16MB standard. Expandable to 128 MB on system board
BIOS	AMI BIOS: Flash BIOS for easy updates from floppy disk
Graphics adapter	PCI local bus graphics accelerator card; 2 MB of VRAM standard
Disk interfaces	Supports up to four IDE hard disk drives using two on-board PCI IDE adapters; automatic drive type selection for easy setup. A floppy controller is integrated on the system board
Hard disk drive	Western Digital IDE hard drive with read-look-ahead cache buffer, and large block disk access, either 730MB or 1GB.
Floppy drive	1.44MB-3.5 inch floppy drive; support for second floppy drive
CD-ROM drive	Quad-speed CD-ROM drive included
I/O ports	One parallel and two serial ports on system board; LPT and COM configurable from system setup program; no jumper settings required
Mouse	Microsoft PS/2 ergonomic mouse and Gateway 2000 mouse pad
Keyboard	PS/2 keyboard
ISA expansion slots	Two or three (one slot is shared with PCI)
PCI bus expansion slots	Three or four (one slot is shared with ISA)
Power supply	145 watts; switchable 120VAC and 240VAC operation; standard IEC power connector for easy power cable changeover
Software	MS-DOS, Windows, and optional software are loaded onto the hard disk at our factory; master diskettes, CD, and manuals provided
System environment	Internal temperature: 10°C to 35°C Humidity: 20% to 80% Altitude: -200 ft to 10,000 ft Shock, vibration: 12g, 11ms half-sine; 2 to 200Hz, 0.25g sinusoidal CPU clearance: >0.4 inch after installation, top and sides
Certification	FCC Class B, UL, CSA

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The Setup Utility



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If your Setup utility looks different . . .

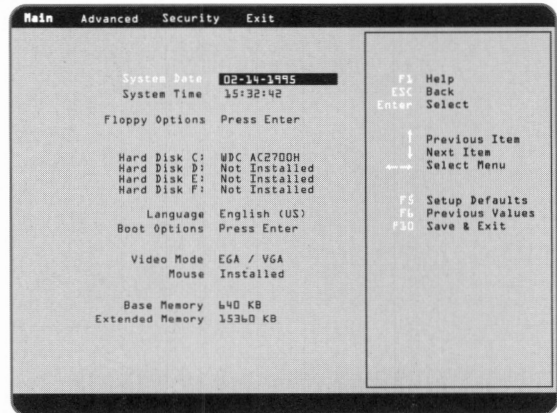
This chapter contains information about your system's CMOS Setup utility. It is intended to serve as a guide so you can make changes to your system's BIOS. Many of the screens you see on the next few pages match your system's BIOS. However, since Gateway 2000 is always working to bring you the best and latest in computer technology, you may have received a system with a newer BIOS version. In this case some of the screen illustrations shown in this chapter may differ slightly from what you see on your screen. Do not be concerned, since the chapter still provides information on how to move through the Setup utility, how to view submenus, and how to make and save changes. Also, most BIOS upgrades do not involve dramatic changes, so most of the screens shown in this chapter closely resemble what you see in your system's BIOS.

The CMOS Setup Utility

Note: The parameters shown in the screens on the following pages may or may not match your system, depending on your system's configuration. The screens are meant to serve as examples only; they do not necessarily indicate how you should configure your system's Setup.

The computer's BIOS has a built-in Setup utility that allows you to set several basic system characteristics. The settings are stored in battery-backed RAM that retains information about your system when the power is off.

To enter the Setup, Press F1 when the prompt to do so appears on the screen shortly after your computer is turned on (during what is called the *boot process*). After a moment the Main Setup screen appears:



Main Setup menu screen.

Notice that there is a separate box on the right hand side of the screen. This is the Command Screen, and it is displayed as part of every window in the Setup utility. It contains several commands that help you move through the Setup functions. A detailed illustration of this command screen appears on the next page.

Setup command screen

Help command:

Press F1 to get information about the highlighted item; only usable in a submenu.

Back up command:

Press Esc to back out of any field.

Select command:

Press Enter to select submenus and options.

Setup Defaults command:

Press F5 to set the Setup parameters to their factory default values. A submenu appears asking you to press either Enter (to load the defaults) or Escape to skip.

Previous Item command:

Press the Up Arrow to move to the previous menu item.

Previous Values command:

Press F6 to set all Setup parameters to the values that were set when you entered Setup. A submenu appears asking you to press either Enter (to discard the changes) or Escape to skip.

Next Item command:

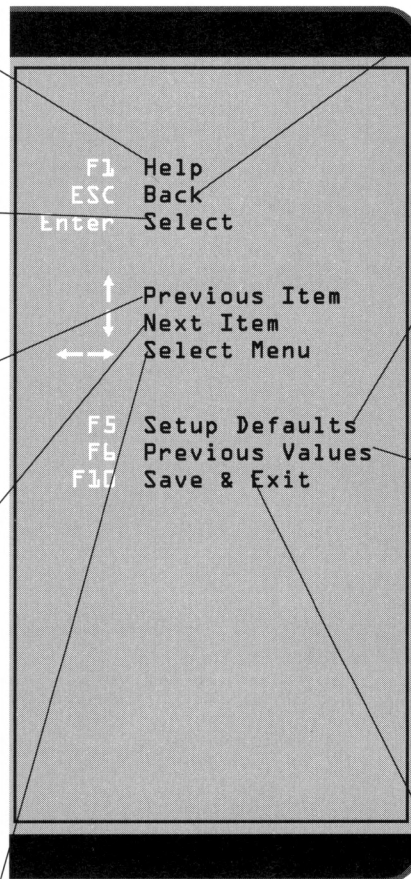
Press the Down Arrow to move to the next menu item.

Select Menu command:

Use the left and right arrows to move between the 4 major menus.

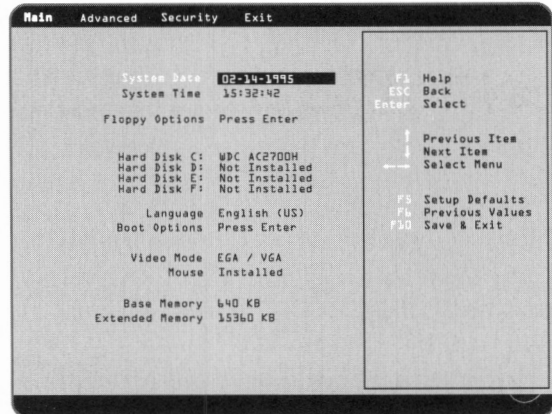
Save & Exit command:

Press F10 to exit Setup and either save or ignore all changes. A submenu appears asking you to press Enter (to save the changes) or Escape (to ignore the changes and exit).



Using the Main CMOS Setup menu

Now that you can move around the Setup screens, let's return to the Main Setup menu and look at the options.



Main Setup menu screen.

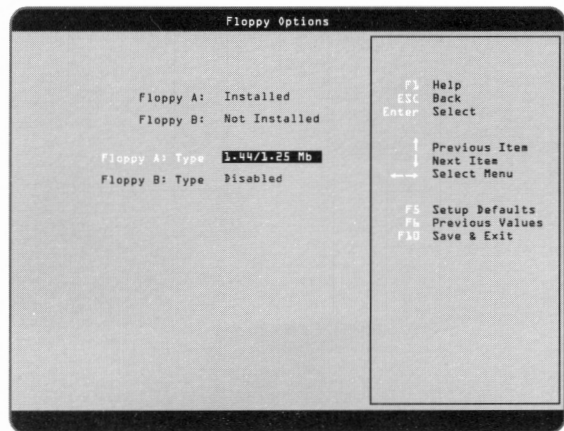
Several items of information in this menu tell you about your system. You can change some of the items; others are unchangeable and are provided solely for your information.

System time and date

These fields provide you with the current date and time. Note that the hour is displayed as a 24-hour clock. For example, 1:00 PM is 13:00:00.

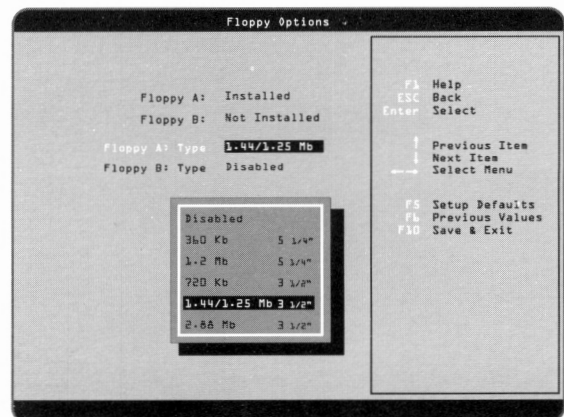
Floppy drive options

Highlight this item and press Enter to view the floppy drive options submenu screen. This screen provides you with information about the floppy disk drives that are installed on your system. See the next page for an illustration of this screen.



Floppy drive options information screen.

Press Enter on the highlighted floppy drive type to see the options menu for floppy drive type. You should only change the floppy drive type if you have installed one of the other, non-standard floppy drives on the list.

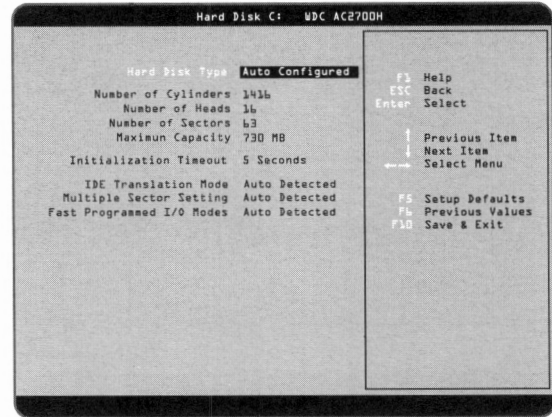


Floppy drive type options menu.

Hard disk setup

Your system can support two IDE hard drives on the on-board primary IDE connector, and two more on the on-board secondary IDE connector.

Highlight the first available drive type item and press Enter until the hard disk information submenu appears, as shown below. The system default is set to **Auto Configured**, which allows the system to directly detect and set up the drive type every time the system boots. (With this setting you can swap drives while the system is off and the system detects the new drive configuration when you power up.)



Hard disk submenu screen.

You can change the drive configuration to **User Definable** by pressing Enter on the highlighted bar to view additional options. You may need to choose the **User Definable**, mode if you are running Novell and have a 540MB or larger size drive. Highlight **User Definable** and press Enter. Now you can fill in the fields with your specific information. For example, set the drive to 1048 cylinders, 16 heads, and 63 sectors. The size shows 516MB.

Note: If your system has two or more IDE hard drives, set the Initialization Timeout for each one after C (drives D, E, etc.) to 5 seconds or the system will only acknowledge the C drive.

The **Initialization Timeout** determines how long the system waits to determine if an IDE drive is present. To save time when booting, set the initialization timeout on drives that are not installed to **Disabled**.

The **IDE Translation Mode** controls the way your system interacts with the hard drive in terms of the drive size, capabilities, and the operating system that it uses. The default setting is **Auto-Detected**.

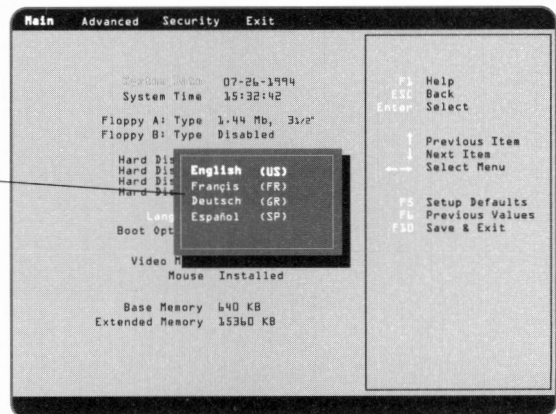
The **Multiple Sector Setting** controls the number of sectors transferred by an IDE drive per interrupt generated. The default setting is **Auto-Detected**.

Fast Programmed I/O Modes control the speed at which programmed I/O transfers occur on the PCI-IDE interface. The default setting is **Auto-Detected**.

Language

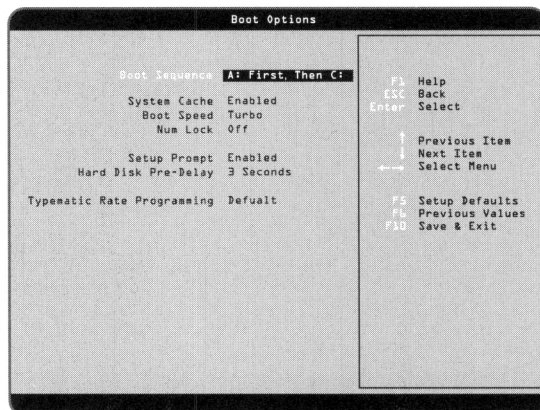
This field controls the language of the text strings used in both Setup and in your system. Any available language will appear as an option in its own language. See the screen illustration below:

Language options screen:
highlight and press Enter
to select any one.



Boot Options

Highlight this item and press Enter to see the submenu shown below, in which you can select several parameters that affect the system's boot up configuration.



Boot options submenu screen.

The **Boot Sequence** field controls the order in which the hard and floppy drives are booted. We recommend the Setup default shown above.

The **System Cache** field controls the CPU's cache (as well as the secondary cache installed on some systems). We recommend leaving it set to **Enabled**, since setting it to **Disabled** degrades system performance.

The **Boot Speed** field controls the system speed. We recommend leaving this setting to **Turbo**, since selecting **Deturbo** decreases system performance.

The **Num Lock** field controls whether the keyboard Num Lock function is turned on or off when the system boots up. Since the AnyKey keyboard has separate numeric and cursor keys, we recommend you set this to **On**. However, the factory default setting is **Off**.

The **Setup Prompt** field controls whether or not the *Press <F1> Key to Enter Setup* message is displayed during the Power On Self Test (POST).

The **Hard Disk Pre-Delay** field delays the system's attempt to initialize the first IDE drive in the system. This is necessary because some drives may hang if they are accessed too soon following power up or reset. This delay only affects the first drive to be accessed and works in conjunction with the **Initialization Timeout** option found in the **Main Setup/Hard Disk** submenu.

The **Typematic Rate Programming** field controls whether or not your system uses default or user configurable values for two sub-items: **Typematic Rate Delay** and **Typematic Rate**. Since the AnyKey keyboard has typematic functions built in, you can set this to **Default**. See the AnyKey Help in the Gateway 2000 group in Windows for information about programming the AnyKey keyboard. If you choose **Override**, the following two sub items appear:

- Typematic Rate Delay.** This item sets how long a key must be held down before it begins to repeat. It is functional only if Typematic Rate Programming is set to **Override**.
- Typematic Rate.** This item sets how fast a key repeats. It is functional only if Typematic Rate Programming is set to **Override**.

Video Mode

This field is for information only.

Mouse

This field is for information only.

Base Memory

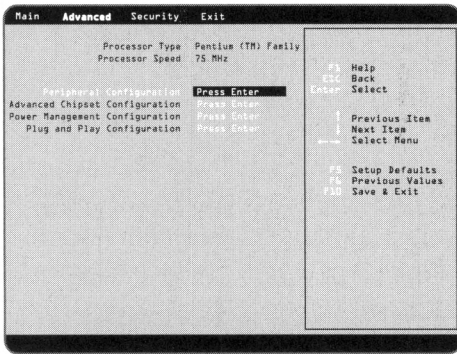
This field is for information only.

Extended Memory

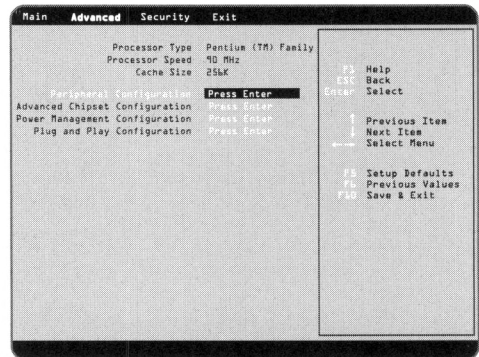
This is an information field, which you cannot change, except by adding or removing memory. It should reflect your total RAM above the first 1MB.

Using the Advanced CMOS Setup menu

Use the Right Arrow to toggle over to the next main menu screen, the Advanced CMOS Setup menu, as shown below:



Advanced Setup menu screen for systems with no secondary cache.



Advanced Setup menu screen for systems with secondary cache.

Like the Main menu, the Advanced menu also contains several items of information that tell you about your system. You have the option to change some of the items; others are unchangeable and are provided solely for your information.

Processor Type

This field is for information only.

Processor Speed

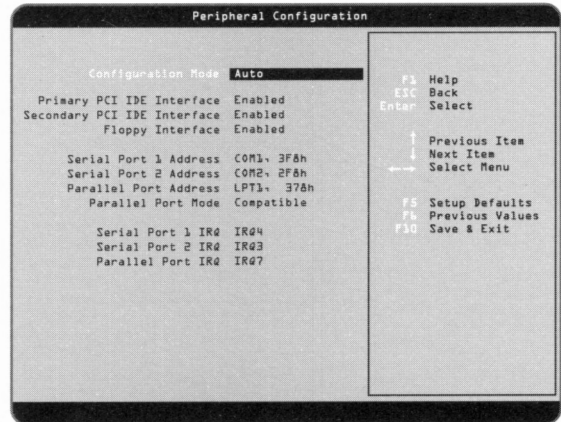
This field is for information only.

Cache size

This field, which appears only in systems with cache, gives the cache size and is for information only.

Peripheral Configuration

By pressing Enter on this highlighted option, you can select the Peripheral Configuration submenu, as shown below:



Peripheral configuration submenu screen.

This submenu gives you the choice of having the system set the on-board system resources automatically or allowing you to set them manually. If you choose the Auto Configuration mode, you are only able to alter the Parallel Port Mode (choose either **Compatible**, **Bi-Directional**, **ECP**, or **EPP**).

Note: If the **Primary PCI IDE Interface** is set to **Disabled** (and the **Secondary PCI IDE Interface** is still **Enabled**), IRQ 14 becomes available under the Plug and Play options submenu.

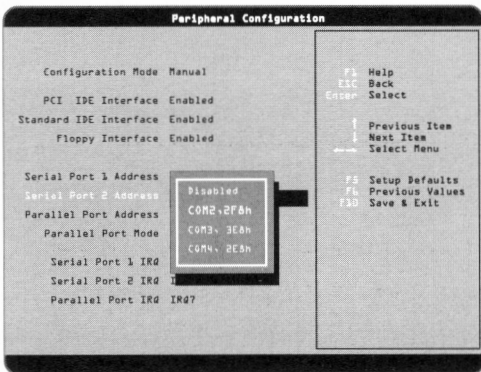
If the **Secondary PCI IDE Interface** is set to **Disabled** (and the **Primary PCI IDE Interface** is still **Enabled**), IRQ 15 becomes available under the Plug and Play options submenu.

If you choose manual setup, several changes appear on the screen:

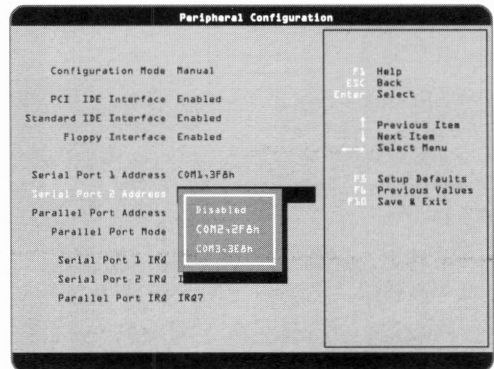
- ❑ The **Primary PCI IDE Interface**, **Secondary PCI IDE Interface**, and **Floppy Interface** fields all become user alterable. These fields allow you to enable or disable the drive interfaces (**Enabled** is the default).
- ❑ The **Serial Port 1 Address** and **Serial Port 2 Address** fields are alterable now and you can manually select the I/O ports used by these interfaces. However, if a COM port is chosen for one of the Serial Port Addresses, it does not appear in the option list for the other Serial Port Address. For

Note: There are two sets of Serial Port Address 1 and 2 options depending on whether you purchased a system with an ATI GX PCI Video Card or not. Look at the figures below to see which screen applies to your system.

example, if you choose COM1, 3F8h (the default setting) for the Serial 1 Port Address, it does not appear in the Serial Port 2 Address choice menu.

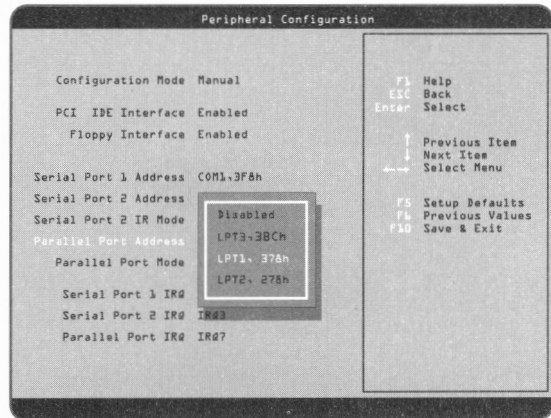


Serial Port Address options for systems without the ATI GX Video Card.



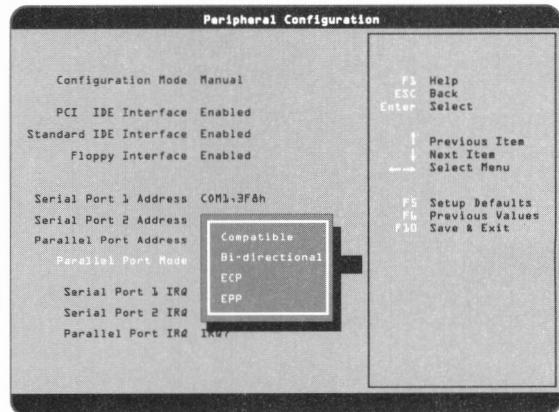
Serial Port Address options for systems with the ATI GX Video Card.

- ❑ The **Parallel Port Address** field is also alterable now. You can select the I/O port used by this interface. However, both the Serial Port 1 and 2 Addresses and the Parallel Port Address are already set to allow your system to function properly. You may never need to adjust these settings. The Parallel Port Address options are shown on the next page.



Parallel Port Address options screen.

- The **Parallel Port Mode** functions the same whether the Configuration Mode is set to manual or automatic.



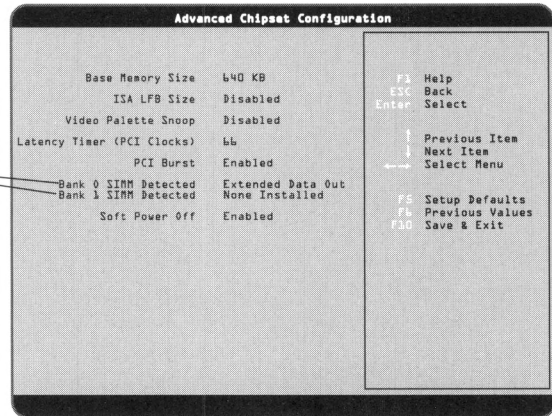
Parallel Port Mode options screen.

- The **Serial Port 1 IRQ**, **Serial Port 2 IRQ**, and **Parallel Port IRQ** fields display the interrupts used by the serial and parallel ports. The assigned IRQ is dependent upon the I/O address configured for a particular I/O port. Once an I/O address is selected, you cannot change these settings.

Advanced Chipset Configuration

By pressing Enter on this highlighted option, you can select the Advanced Chipset Configuration submenu, as shown below:

The Bank 0 and Bank 1 SIMMs fields may look different depending on the type of memory installed in your system and whether there are SIMMs in both banks or just one bank.



Advanced Chipset Configuration submenu screen.

This submenu allows you to change the characteristics of your system's base memory size and ISA LFB size, among others.

The **Base Memory Size** controls the mapping of addresses between 512KB and 640KB. Unless you are using an ISA card that requires access to the address range of 80000h-9FFFFh, we recommend leaving this option set to the default **640KB**.

The **ISA LFB Size** allows you to create a hole in the system memory map. Accesses made to addresses within this hole are directed to the ISA bus instead of to main memory. You should set this field to **Disabled** unless you are using an ISA card with 64K or greater of memory that needs to be accessed by the system, and you are not using Plug and Play run-time utilities (CM and ICU).

The **Video Palette Snoop**, when set to **Enabled**, allows an ISA video card to share a common palette with a PCI graphics card. If your system is configured with only a PCI graphics card, you should leave this item set to its default setting of **Disabled**.

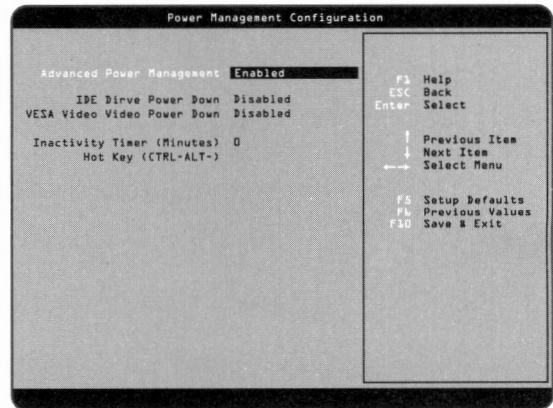
The **Latency Timer (PCI Clocks)** field controls the length of time an agent on the PCI bus can hold the bus after another agent has requested the bus. The default is **66** and should not be changed.

The **PCI Burst** field controls the transfer method for data on the PCI bus, either single or a burst of four data words. We recommend leaving this item set to **Enabled**.

The **Bank 0 SIMM Detected** and **Bank 1 SIMM Detected** fields automatically detect and display installed memory SIMM types, either Extended Data Out (EDO) or Fast Page Mode (FPM).

Power Management Configuration

By pressing Enter on this highlighted option, you can select the Power Management Configuration submenu, as shown below:



Power management configuration submenu screen.

Note: In order for APM to work properly, POWER.EXE must be loaded onto your system. Your system should already have the POWER.EXE program installed on it. You can check to see if the POWER.EXE file is in the CONFIG.SYS on your system by looking for a line in the CONFIG.SYS that contains the words, "device=POWER.EXE ADV: MAX," or something similar.

This submenu allows you to enable or disable several power saving features, including several settings for video.

The **Advanced Power Management (APM)** field allows you to enable or disable advanced power management support in your system. If you choose **En-**

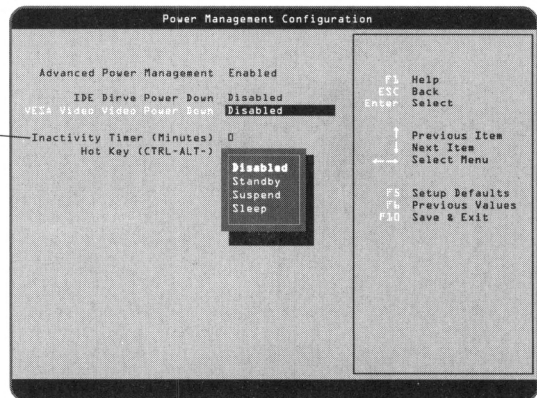
abled, the system works with APM-aware operating systems and software to manage the power consumed by the CPU, IDE drives, and graphics cards.

If you choose **Disabled**, then none of the other fields in the Power Management Configuration submenu are displayed.

The **IDE Drive Power Down** field controls whether or not a spin down command is issued to the IDE drives when the system goes into low power mode. Choose **Enabled** or **Disabled**.

The **Vesa Video Power Down** field controls the VESA power management command issued to the graphics card when the system goes into low power mode. Several settings are provided, as shown below. The proper setting is dependent upon the VESA mode(s) supported by your graphics card.

This screen shows the inactivity timer as set to 0. You can leave it set to 0, or select any number of minutes between 2 and 255.



VESA Video Power Down settings options screen.

The **Inactivity Timer** field controls the number of minutes that the system detects no user activity before switching to low power mode. You can set this timer anywhere from 2 to 255 minutes.

The **Hot Key** field is used to define a key sequence that, when entered, causes the APM BIOS to ask and APM-aware operating system to go into immediate

power managed mode. This key sequence is CTRL-ALT and whatever key you choose to complete the sequence. After selecting a key, you must press Enter to activate the Hot Key.

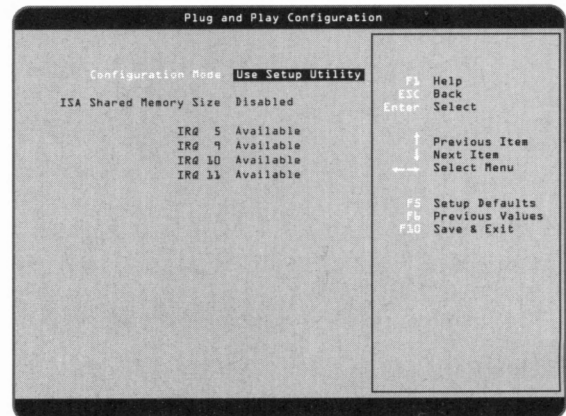
Note: It takes the system approximately one minute to go into power managed mode after you have pressed the Hot Key combination.

When the system goes into the power down mode, it emits two descending tones to let you know that power management mode is imminent. If you have set a User Password, however, you must enter that password before you can use the Hot Key. Instructions for setting a User Password are in the next section, “Using the Security CMOS Setup Menu.”

Plug and Play Configuration

Press Enter on this highlighted option to select the Plug and Play Configuration submenu, as shown below:

Note: The Plug and Play Configuration screen is a dynamic screen—the available IRQs change according to the peripherals you have installed and the IRQs they use.



Plug and Play Configuration submenu screen.

This submenu allows you to alter such items as the Plug and Play configuration manager’s source of information, the ISA shared memory size, and several IRQs, which can be made directly available to, or used by, an ISA card.

The **Configuration Mode** field allows you to choose the method in which information about legacy ISA cards (ISA cards that do not have Plug and Play capabilities) is conveyed to the BIOS, allowing the BIOS to set up PCI and ISA Plug and Play cards without conflicting with the legacy ISA cards.

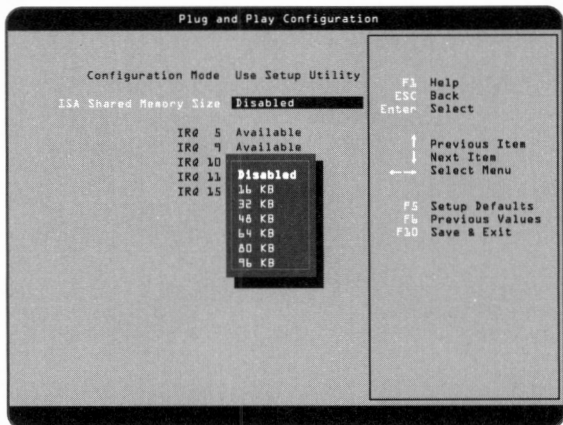
If you choose **Use Setup Utility**, the BIOS depends upon information provided by you in the fields (shown on the screen illustration on page 16) to prevent conflicts between Plug and Play cards and legacy ISA cards. If this option is chosen, you should not install and use run-time Plug and Play software (Configuration Manager and ICU).

If you choose **Use ICU**, then the BIOS uses the information provided by the run-time Plug and Play software (Configuration Manager and ICU) to ensure that there are no conflicts with legacy ISA cards. You should only choose this mode if your system is configured with these utilities and they are used. When you choose **Use ICU**, no other fields are displayed in this submenu.

The **ISA Shared Memory Size** field is used to specify a range of memory addresses that are directed to the ISA bus rather than on-board memory. This field should be set to a memory size (16KB, 32KB, etc.) only when a non-Plug and Play ISA card (legacy card) is used which has its own non-ROM memory space. Local Area Network (LAN) cards that have on-board memory buffers are one example of this, video capture cards that have video buffer memory are another.

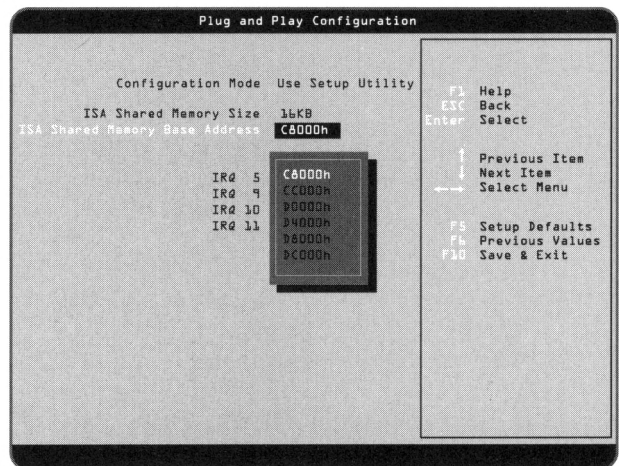
Note: Shadowing is a technique that copies a block of memory from an add-in card's ROM to a corresponding address in system memory to allow faster access to the code and achieve higher performance.

The default is for all upper memory to be available for memory shadowing unless a block is unshadowed by selecting one of the other memory options shown below:



Memory options to set aside as un-shadowed.

Note that if you choose an option other than **Disabled**, a second field appears called the **ISA Shared Memory Base Address** field. This field displays a corresponding address for the unshadowed memory size you selected. You have the option to change the base address for all unshadowed memory options except 96KB, because this option takes up the entire memory block.



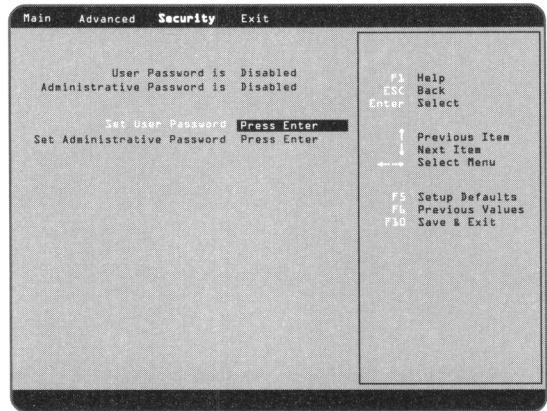
Note: IRQ 3, IRQ 4, IRQ 7, IRQ 14, and IRQ 15 are not visible if they are consumed by on-board resources:

IRQ 4 – Serial Port 1,
 IRQ 3 – Serial Port 2,
 IRQ 7 – Parallel Port,
 IRQ 14, 15—Both IDE
 interfaces
 used

The **IRQ 3—IRQ 15** fields are used to indicate whether individual interrupts are used by ISA legacy cards. If not used, then they should be set to **Available**. If they are used, they should be set to **Used by ISA Card**. *It is important to remember that all but one can be set to Used by ISA Card. At least one IRQ must remain available for PCI cards that use interrupts to function.*

Using the Security CMOS Setup menu

Use the right arrow to toggle over to the next main menu screen, the Security CMOS Setup menu.



Security Setup menu screen.

In this menu, you can set two types of passwords for your CMOS Setup program. The two types of passwords are User Passwords and Administrative Passwords.

The **Set User Password** allows you to set a password to control access to the Setup Utility, the keyboard initial boot, and the keyboard when used along with the **Security Hot Key**.

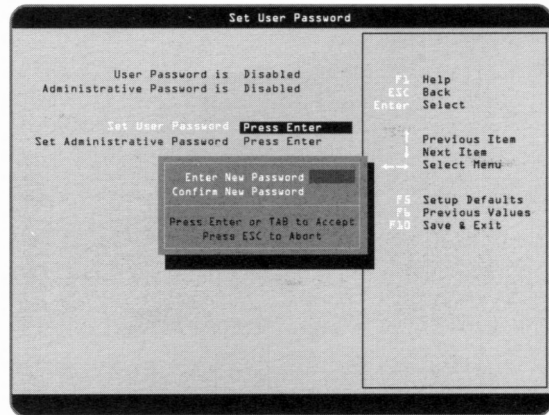
The **Administrative Password** allows you to set a password to control access to the Setup Utility only.

The following table describes the interaction between these passwords:

Password in Effect	Enter Setup with User Password	Enter Setup with Admin Password	Boot
User PSWD only	Change all fields	N/A	User password required
Admin PSWD only	N/A	Can change all fields	No password required
Both	Can change limited number of fields*	Can change all fields	User or Admin password required

*If the Administrative Password is in effect and you enter Setup with the User Password, you can only change the System Date, System Time, User Password, and Security Hot Key fields.

When you press Enter on the highlighted Set User Password field, the following window appears:



Set User Password screen showing the Enter Password window.

Enter your password in the *Enter New Password* block. Then, retype it in the *Confirm New Password* block. Your password is now set. The window above is shown for **Set User Password**, but it appears the same for **Set Administrative Password**.

You can tell if a password has been set in either of the two fields by looking at the top of the Security menu screen. If either the **User Password is** or **Administrative Password is** fields say *Enabled*, then a password is in place for that field.

If you are entering a new password in either field to replace an older one, the pop-up window will look about the same, except the words *Enter Current Password* appear at the top.

If you have set a password in either of the two password fields, a third field, **Unattended Start**, appears. This field controls the point at which you must enter your password.

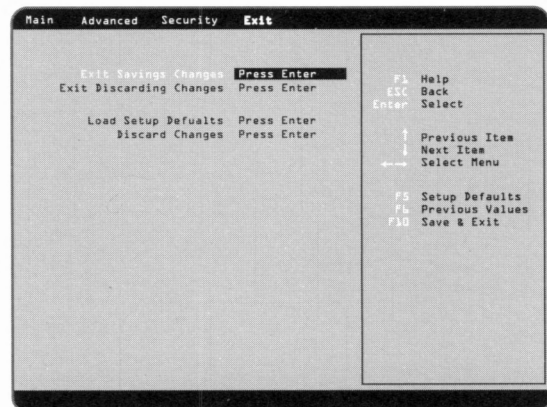
If you choose **Enable**, you must give the password after the system has completed automatic boot activity and before you can use the keyboard (the keyboard is locked).

If you choose **Disable**, you must give the password before the system starts automatic bootup.

Another field you see if you have entered a User or Administrative password is the **Security Hot Key (CTRL-ALT-)** field. Use this field to define a key that, typed in sequence with CTRL-ALT, places the system into secure mode by locking out the keyboard. When you type in the Security Hot Key, the Num Lock, Caps Lock, and Scroll Lock lights on your keyboard flash on and off in sequence, indicating that your system is now secure.

Using the Exit CMOS Setup menu

Use the right arrow to toggle over to the next main menu screen, the Exit CMOS Setup menu, as shown below:

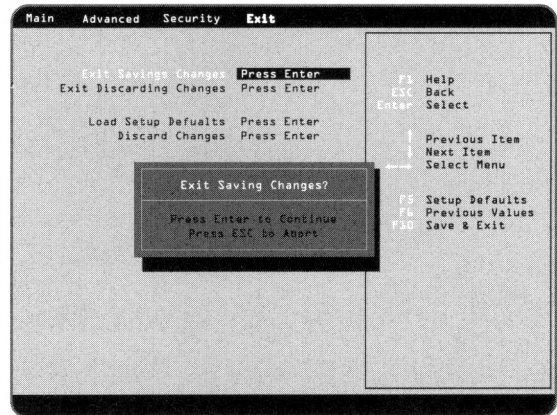


Exit Setup menu Screen.

This menu allows you to choose whether or not to keep any changes in the CMOS Setup that you may

have made before exiting CMOS. You can also choose to load any Setup defaults you may want.

If you press Enter on the **Exit Saving Changes** field, the following screen appears:



Exit Setup menu screen showing the Saving Changes options window.

The **Exit Saving Changes** field allows you to exit the Setup Utility and save the current entries for all parameters.

If you press **Enter**, the system exits Setup with all parameters set to their current values.

If you press **Escape**, you return to the Exit menu without saving any changes.

The **Exit Discarding Changes** field allows you to exit the Setup Utility and discard any changes you may have made to the Setup parameters.

If you press **Enter**, the system exits Setup and throws out any changes you made to the parameters.

If you press **Escape**, you return to the Exit menu with no change.

The **Load Setup Defaults** field allows you to load default values into all Setup parameters, except for passwords.

If you choose **Enter**, the defaults are loaded into all Setup parameters, except for passwords.

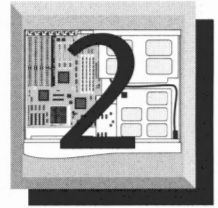
If you choose **Escape**, you return to the Exit menu with no change.

The **Discard Changes** field allows you to undo any changes you made to the Setup parameters during this Setup session.

If you choose **Enter**, any changes you made to the Setup parameters are discarded.

If you choose **Escape**, you return to the Exit menu with no changes.

Inside the Computer System



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Important static electricity precautions

Many of the computer system's components are extremely sensitive to static electricity. The following procedures reduce the possibility of damaging components:

1. Before handling any components or touching anything inside the system unit, discharge your body's static electric charge by touching a grounded surface. Wear a grounding wrist strap if one is available.
2. Do not remove parts from their antistatic containers or bags until you are ready to install them. When removing cards or chips from a system, immediately place them in an antistatic bag.
3. When handling cards, hold them by their edges, and avoid touching the circuitry.
4. Do not slide cards or ICs over any surface.
5. Avoid having plastic, vinyl, and foam in your work area.
6. Limiting your movements during installation reduces static electricity.

Removing the cover

Computers emit radio frequency energy that can interfere with television and radio reception if not contained. Do not operate the computer with the cover removed.



1. Take precautions against static discharge. Work in a static-free area and use a grounding strap whenever you handle electronic components.
2. Power down the computer and disconnect the power cord and all other cables from the back of the unit.
3. Remove the screws that hold the cover in place. Refer to Chapter 4 of the *System Guide* that shipped with your system for instructions. Do not remove any other screws.
4. Carefully remove the cover.

When you replace the cover, be careful not to remove or damage any brass tabs that may be around the edge of the unit, and do not catch the cover on any cables inside the unit.

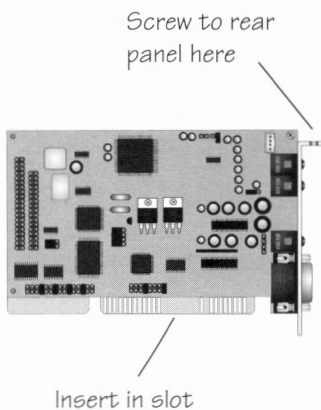
Expansion slots and cards

The system board has seven expansion slot connectors. Four slots are ISA-bus 8/16-bit slots. Three slots accept expansion cards with a 32-bit PCI local bus interface. The ISA slot and PCI slot next to each other share a slot location, so you can use one or the other but not both.

Installing expansion cards

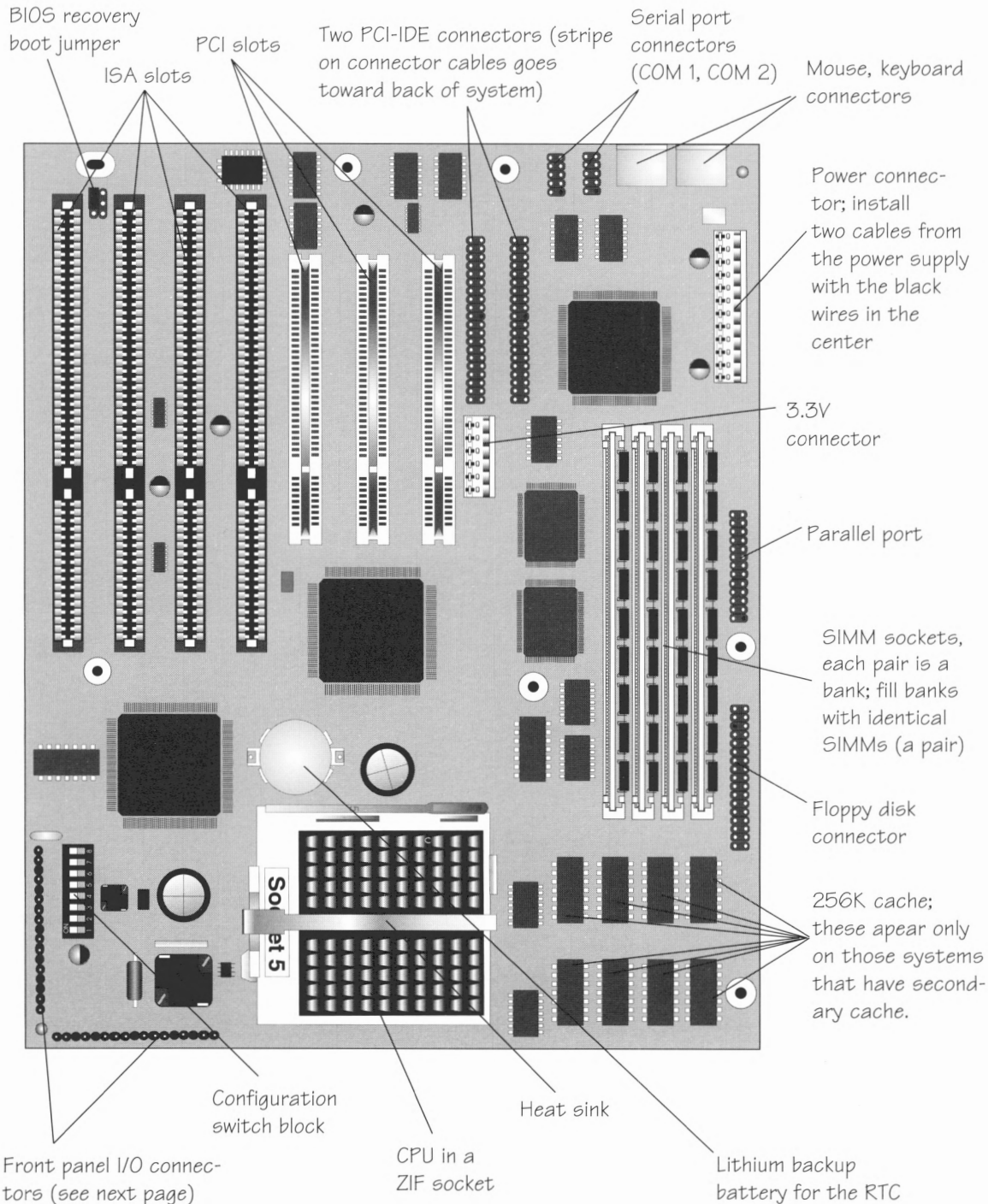
There are two types of expansion cards: ISA cards and PCI cards. Many ISA expansion cards have jumpers or switches which set interrupts and I/O addresses, and they have instructions that explain how to set them to avoid conflicts; follow the instructions carefully!

If you install a PCI card, simply plug it in. Refer to the system board illustration on the next page for the proper installation location. The system configures the card for you.

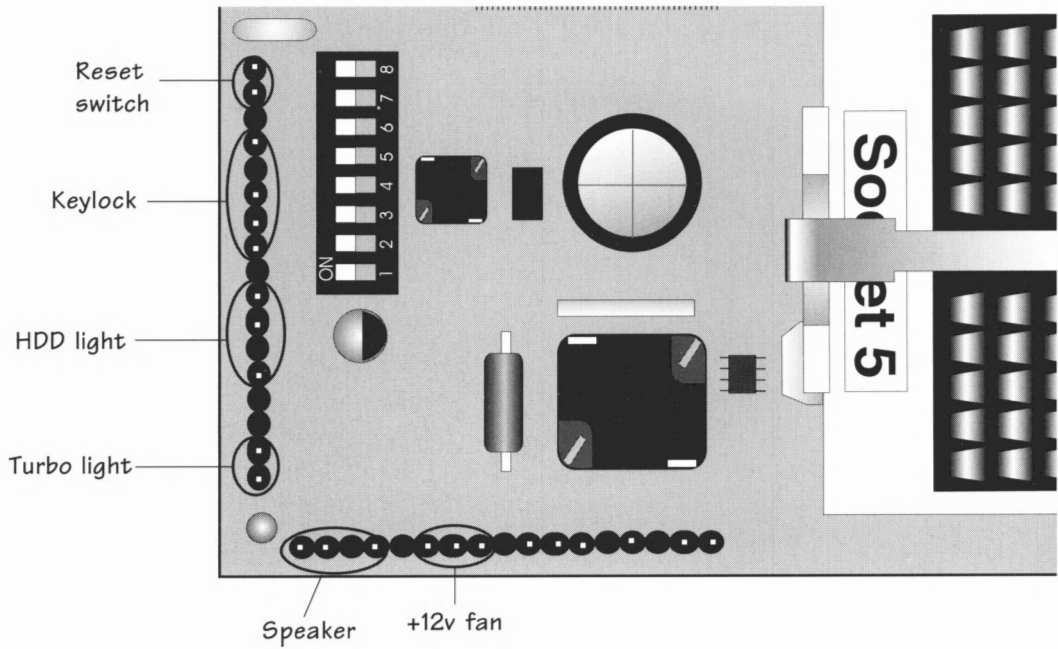


1. Set any jumpers and switches on the card as described in the card's instructions.
2. Power down the system and remove the cover.
3. If you have a tower case, lay the unit on its side to make access to the interior easier.
4. Locate a free expansion slot.
5. Remove the screw securing the expansion port cover to the rear panel. Keep the port cover to re-install if you ever remove the card.
6. Seat the expansion card firmly in the slot.
7. Secure the card to the rear panel with the screw from step 5.
8. Attach any cables according to the card's instructions.
9. Replace the system unit cover.
10. Install any software the card may require.

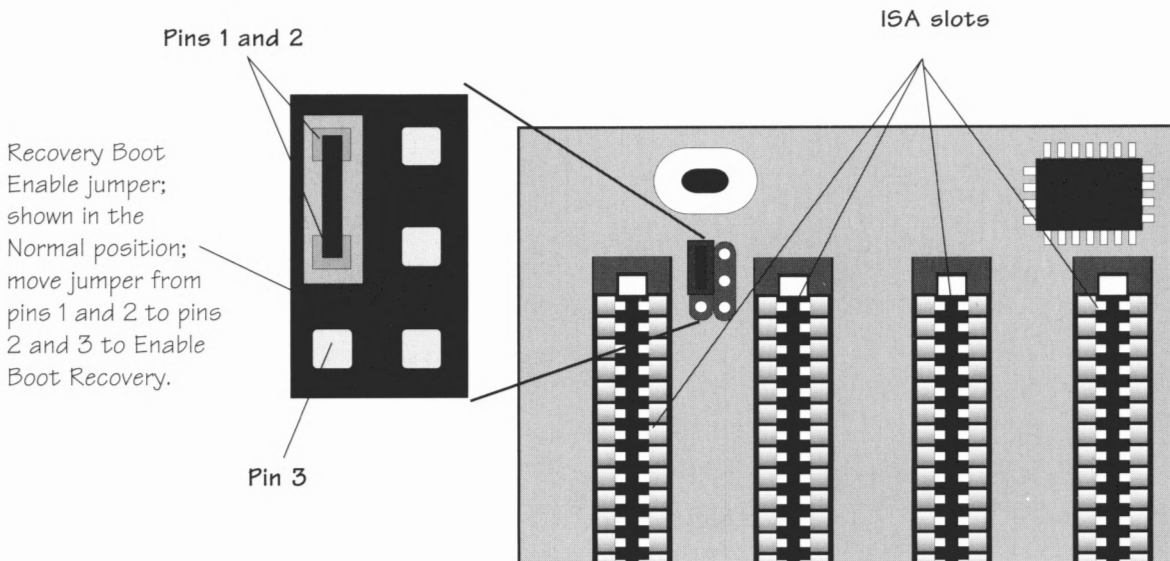
System board connectors



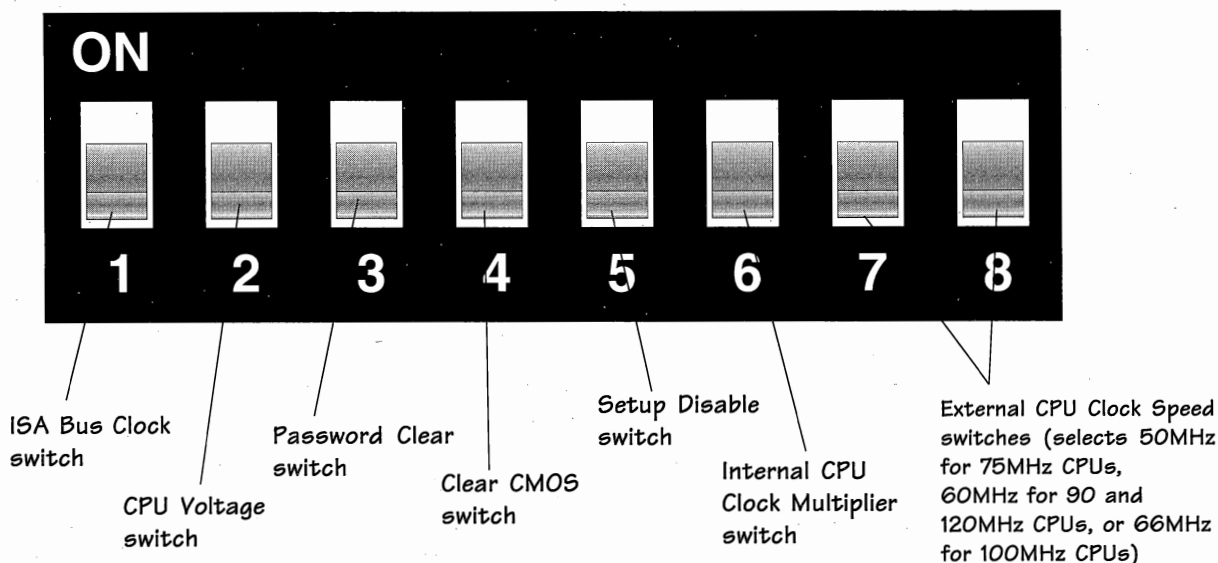
System board pin locations



Recovery Boot Enable jumper location and function



System board switch locations and functions



Note: These switches operate the same as the light switches on the walls of the rooms in your house. However, you may need to use a pen cap or the tip of a small screw driver to flip these switches; they are very small and you probably won't be able to adjust them with your fingers.

ISA Bus Clock switches (switch 1)

These switches change the clock frequency of the ISA bus. The effect of these switches on the ISA clock depends on the setting of the CPU clock speed switches (switches 7 and 8). The specific setting for this switch is shown in the chart.

CPU Frequency	Switch 1	ISA Bus Speed
75 MHz	ON	8.33MHz
	OFF	6.25MHz
90/120 MHz	ON	10MHz
	OFF	7.5MHz
100MHz	ON	11.1MHz
	OFF	8.33MHz

CPU Voltage switch (switch 2)

This switch establishes the CPU voltage set point. The voltage point is set at the factory for your particular CPU and should not be changed.

Password Clear switch (switch 3)

You can clear the system password by powering down your system, setting this switch to ON, and then pow

ering up the system again. You should only use this switch if you have forgotten your password and need to clear it. After clearing the password, power down your system and reset the switch to the OFF position, then power up your system to re-establish normal function.

Clear CMOS switch (switch 4)

You can reset the CMOS settings to their default values by first powering down your system, then setting this switch to the ON position. When you power up the system again, the CMOS is cleared. To restore normal operation, power down the system, reset the switch to the OFF position, and then power up the system.

Setup Disable switch (switch 5)

This switch disables access to the CMOS Setup Utility if set to the ON position. The default setting is the OFF position (allows access to the Setup Utility).

Internal CPU Clock Multiplier switch (switch 6)

This switch sets the internal CPU clock multiplier to either 3/2x (switch set to OFF) or 2x (switch set to ON) the CPU's external clock speed. The default setting depends on the speed of your system's processor. See the chart below for the specific settings.

External CPU Clock Speed (switches 7 and 8)

These switches in conjunction with switch 6, set the CPU's internal operating frequency at either 75, 90, 100, or 120MHz. The default setting depends on the speed of your system's processor. See the chart below for the specific settings.

Frequency	Switch 6	Switch 7	Switch 8
75MHz	OFF	OFF	OFF
90MHz	OFF	ON	OFF
100MHz	ON	OFF	OFF
120MHz	OFF	ON	ON

Installing memory

Warning! Make certain that the system unit is unplugged from the AC power before you open the case.

Note: If you are upgrading to EDO SIMMs from FPM SIMMs and your system has a 100MHz processor, you need to be sure that your EDO SIMMs operate at 60 nanoseconds.

Note: Even though you can use parity SIMMs, you should be aware that the parity feature is not supported by the system board. In other words, parity SIMMs become virtual non-parity SIMMs.

Your computer's system board supports up to 128MB of RAM, using two or four 4MB, 8MB, 16MB, or 32MB SIMMs, as available. There are two types of SIMMs that your system board supports. These are Extended Data Out (EDO) and Fast Page Mode (FPM) SIMMs. Your system comes standard with FPM SIMMs, but also supports EDO SIMMs.

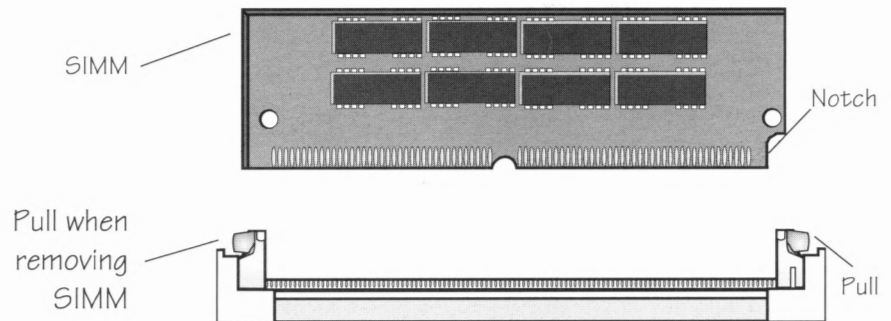
Extended Data Out (EDO) SIMMs are a new type of memory available for computer systems. EDO SIMMs allow for more efficient data transfer across the system board, resulting in faster performance than with the FPM SIMMs.

You can use either parity-checking or non-parity checking SIMMs, although parity generation and checking are not supported by the system board (i.e., both types operate as non-parity SIMMs). You can install any combination of SIMMs as long as you install identical pairs.

For example, you can install two 16MB EDO SIMMs and two 8MB FPM SIMMs, but you cannot install one 4MB FPM SIMM, one 8MB FPM SIMM, and two 8MB EDO SIMMs. This is because the two FPM SIMMs do not match (they are not the same size).

If you use two SIMMs, put them side by side in either the first two or last two sockets.

1. Insert the SIMM into the socket as shown below. Start the module at about a 45° angle.
2. Gently press the SIMM toward the back of the socket until it snaps underneath the metal clamps.




Installing and removing memory modules.

1. Gently pull out on the metal socket clamps to release the SIMM from the socket.
2. Tilt the module toward the front of the socket and lift it out gently. *Never force the SIMM out of the socket without releasing the clamps.* Failure to release the clamps may break the socket, causing damage which is not covered by the warranty.

Upgrading the processor

Warning: To avoid irreparable damage to the system board and/or the upgrade processor, *raise the handle of the ZIF socket before removing or inserting a chip.*

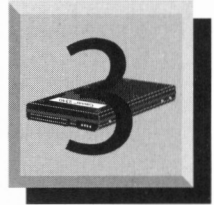
The system board CPU socket is designed to accommodate an Intel OverDrive processor upgrade, however, if an expansion card extends over the socket, you must remove it.



1. Carefully remove the heat sink clamp from the top of the processor.
2. Locate the ZIF socket on the system board. **UNLATCH AND RAISE THE HANDLE.**
3. Remove the chip/processor by lifting it straight up.
4. Unpack the OverDrive chip/processor and align it over the socket, making sure to match the notched corner or dot on the processor with the corner on the socket whose pin holes are different from the holes in the other corners. It is the corner at the base of the handle.
5. Push the processor fully into place, making sure not to bend any pins underneath the processor; then lower and lock the handle.
6. Set the switches described in the illustration on page 2-6 to match the CPU speed and voltage of the OverDrive chip/processor.
7. Note the environmental considerations shown on the specifications page. Take care not to exceed them.

After the chip is in place, you must have clearance of at least 0.2 inch above and around the chip. This allows room for cooling. In no case should the internal temperature of the system exceed 35° C.

The Hard Drive



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Introduction


The purpose of this chapter is to provide you with a general overview of the hard drive(s) in your system, how they are connected, and how they function. You probably won't need to use this information right away because your system was shipped with a hard drive (or drives) already installed, configured, and ready to go.

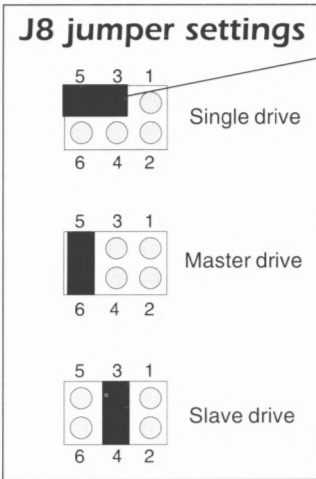
If you ever choose to add another hard drive, or replace your existing one with a faster or larger drive, you will find detailed instructions on how to install the drive(s) in the *Installation Instructions* included with every hard drive ordered from the Gateway 2000 Component Add-On Sales Department. These instructions include information on the following:

- master and slave drives
- power connections
- hard drive cable connections.

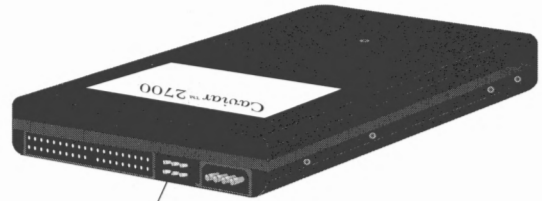
Configuring Western Digital IDE drives

To configure a drive for either a single drive installation or as the master drive (drive C:) of a two-drive system, make sure that a jumper is installed on the correct pins as shown on the next page.

- 
1. If you install two IDE drives, you must designate one as the *master* (C:) drive, and the other as the *slave* (D:) drive.
 2. To configure one drive as a master, install a jumper on pins 5 and 6 of J8.
 3. To configure the other drive as a slave, install a jumper on pins 3 and 4 of J8. The slave drive starts spin-up about four seconds after the master drive.



This jumper may or may not be on your IDE drive. If it is, it is initially located in this position.



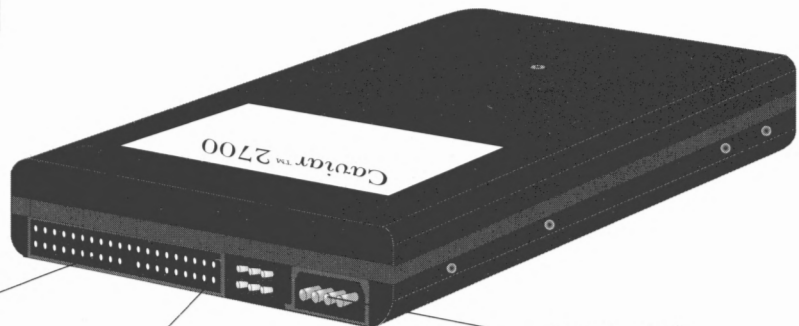
J8 location
(the six pins located next to the power connector)

Two separate cables connect to each hard disk: the *ribbon or data cable*, which connects the hard disk to the system board, and the *power supply cable*.



1. The edge of the ribbon cable with the stripe orients to Pin 1 of the connector on the drive, which is at the end near the power supply connector.
2. Connect the other end of the ribbon cable to the system board (or to the host adaptor). Align the stripe on the cable with Pin 1 on the IDE interface connector. This is the end closest to the back of the system.
3. Connect the power cable. It is keyed so it can only be inserted the correct way.

Note: The first two drives installed in the system should be connected to the system board connector, labeled as "primary." Any other drives after that should be connected to the secondary IDE connector.



Ribbon cable connects here

Pin 1

Power supply connector

Setting up an IDE drive

Note: If the system doesn't recognize an IDE drive, consider the possibility that you connected one end of the ribbon cable incorrectly.

To set up the hard drive, power up the computer and enter into the Setup program by pressing F1 when the prompt to do so appears on the screen. Make sure all installed drives are listed on the Main Setup screen. Highlight and press Enter for each of the installed drives, and choose AUTO CONFIGURE to specify the drive type for each of the hard drives in your system. The system BIOS automatically determines the correct drive parameters for you.

For your information, the IDE hard disk drive parameters for both hard drive types that come standard with most systems are shown below:

Western Digital 730MB IDE hard disk drive parameters.

Drive	Cyl.	Heads	Sectors	LZ	Write Precomp
730MB	1416	16	63	0	None

Western Digital 1GB IDE hard disk drive parameters.

Drive	Cyl.	Heads	Sectors	LZ	Write Precomp
1GB	2100	16	63	0	None

If the AUTO CONFIGURE command does not work, there is probably a hardware problem, such as a misconnected cable or a defective drive. Check to see if the cables are connected properly and reconnect them if they are not. If AUTO CONFIGURE still does not work, try entering the parameters manually. Use values from the appropriate table shown above, depending on your hard drive type. If the drive still does not function at this point, contact Gateway 2000 Technical Support for help.



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