LASER

Motherboard = UniC Lite 486

486CV Series

PERSONAL COMPUTER

VTECH

User's Manual

Printed on Recycled Paper
Printed in China 91-2254-04

Important Safety Instructions

Please read the following instructions before proceeding with the installation of this equipment.

1. Follow all warnings and instructions marked on this product.
2. Unplug this product from the wall outlet before cleaning. Only use a damp cloth to clean the product.
3. Do not use this product near water.
4. Do not place this product on an unstable cart, stand, or table. The product may fall, causing serious damage to the product.
5. Slots and openings on the cabinet front and back are provided for ventilation. To ensure reliable operation of the product and to protect it from overheating, these openings must not be blocked or covered. This product should never be placed near or over a radiator or heat register. This product should not be placed in a built-in installation unless proper ventilation is provided.
6. This product should be operated from the type of power source indicated on the marking label. If you are not sure of the type of power available, consult your dealer or local power company.
7. This product is equipped with a 3-wire grounding type plug having a third (grounding) pin. This plug will only fit into a grounding-type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the purpose of the grounding-type plug.
8. Do not allow anything to rest on the power cord. Do not locate this product where persons will walk on the cord.
9. If an extension cord is used with this product. Make sure that the total of the ampere ratings on the products plugged into the extension cord do not exceed the extension cord ampere rating. Also, ensure that the total of all products plugged into the wall outlet does not exceed 15 amperes.
10. Never push objects of any kind into the ventilation holes as they may touch dangerous voltage points or short out parts that could result in a risk of fire or electric shock. Never spill liquid of any kind on the product.
11. Except as explained in this manual, do not attempt to service this product yourself. Opening or removing those covers marked, "Do Not Remove" may expose you to dangerous voltage points or other risks. Refer all servicing in those compartments to servicing personnel.

12. Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:
    A) When the power cord plug is damaged or frayed.
    B) If liquid has been spilled into the product.
    C) If the product has been exposed to rain or water.
    D) If the product has been dropped or the cabinet has been damaged.
    E) If the product exhibits a distinct change in performance, indicating a need for service.

Operating Range

Your computer is guaranteed to operate reliably under the following conditions.

Condition	Operating Range	Non-Operating/ Storage Range
Temperature	5°C to 35°C	-35°C to 65°C
Humidity	50% to 70% R.H.	at 65°C, 90% R.H. (no-condensation)

Environmental Considerations

When deciding where to place your computer, be sure to consider space, temperature and lighting as specified in the safety instructions.

Choosing a good location for your system

Choose a place with an isolated electric circuit (without any large appliances) and enough electrical outlets to meet the requirements for your entire computer system. A power-strip may be helpful. A surge-protector (a device that prevents damage due to power fluctuations) is recommended.

The area in which the computer is placed should be large enough to allow for ample working space and sufficient air flow around the equipment. Be careful to position the system so that it is not likely to be moved or jarred inadvertently.

Put the computer in the same kind of safe place where you would put a television or stereo. Be sure to:

- Use a flat, level surface.
- Don't use a carpet or bed, where the unit might get too hot.
- Always spread the plastic support legs, and make sure it is standing firmly.

Temperature

Maintain the room temperature in a median range of 50 to 95 degrees Fahrenheit (10 to 35 degrees Celsius). Generally, temperatures that are comfortable for the user are safe for computer operation.

Lighting

Lighting should be sufficient to prevent eye strain and should be oriented to prevent glare on the monitor's screen. When positioning and adjusting the available light sources in your work area, you might consider the following suggestions:

Natural light

- If your work area has windows use blinds, shades or drapes to control the amount of daylight in the room.
- Try positioning the video monitor so that its side faces the window. This will help reduce any glare on the video screen.

Overhead light

- Position the video monitor between rows of overhead lights to avoid glare on the video screen.
- Install a dimmer switch if possible to dim the overhead lights.
- If the overhead lights have multiple light bulbs, remove some of them to lower the light intensity.
- If installing new lights, use indirect lighting.

Individual lighting

- Position individual lights to shine on the keyboard or work area, but not on the video screen.
- Use the individual lights as needed to provide intense light on an area instead of bright overhead lights.

Table of Contents

Chapter 1
Setup your Computer System

This chapter describes how to assemble the components of your system and make it operational.

- **Unpacking your System**
- **Familiarize yourself with the Computer**
- **Attaching the Keyboard**
- **Attaching the Monitor**
- **Attaching the Mouse**
- **Plugging in the Computer**
- **Turning on the System**
- **Software for your Computer**
- **Using the Keyboard**

Unpacking your System

Be sure that you have the following items:

- Computer System Main Unit
- Keyboard
- Power Cord
- User's Manual
- Operating Environment User's Guide and Floppy Disk (If supplied with your system)
- MS-DOS® User's Guide & Floppy Disk (If supplied with your system)
- Peripheral Cables (If supplied with your system)
- Mouse (If supplied with your system)
- Warranty Card (This may not be applicable in some countries, please check with your dealer.)

You will also need a monitor (one may be included as part of a Factory-built Computer Package). The computer can work without a monitor, but you will not be able to see what it is doing.

You may receive additional items. However, if you don't receive the essential items listed above, contact the store where you bought the computer.

Store the box and packing material in a safe, dry place, in case you ever need to ship the computer.

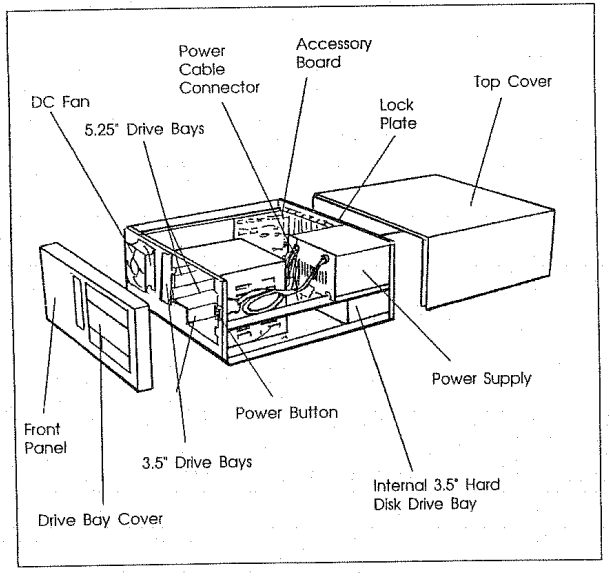
Familiarizing yourself with the Computer

Take a moment to familiarize yourself with the main features of the system unit. Do not worry about learning each feature in detail before setting up the computer.

Since your computer can be equipped with various options, there may be minor variations from the descriptions in this book.

Some selected models may have a slightly different front panel. The figures included here only show a typical case, and may not be exactly the same as the one on your unit.

Locations of floppy drives and peripheral connectors may vary between models.



Ports and Switches

Port connectors are where you plug in the cable connectors for other pieces of equipment, such as a monitor, printer, mouse or modem. Since your computer can be equipped with custom features, you may see other ports and switches on the back of the computer. (Refer to the appropriate User's Guides for those accessories.)

- **Power Switch** - This switch turns on the computer. "0" is off, "1" is on.
- **AC Power Port** - This is where the power cord plugs in. One end of the power cord fits into this port, and the other end inserts into a three-prong, grounded electrical outlet.
- **Expansion Slots** - This is where you can connect peripheral devices to accessory boards installed in the expansion slots.
- **Cooling Fan Vents** - The fan inside the System Unit circulates air through the computer, and helps prevent overheating. The air needs to flow freely, so do not block the vents.
- **Video Port** - This is where the monitor is connected to the video accessory board.
- **Serial Port** - This is where you can connect 9- pin/25-pin serial devices such as an - external modem or mouse. Serial ports are generally assigned the label "COM", followed by a number. This is a 9-pin/25-pin male port.
- **Parallel Printer Port** - This is where you can connect a "parallel" printer. Parallel ports are generally assigned the label "LPT", followed by a number. This 25-pin female port is LPT1.
- **Keyboard Port** - This is where you connect the keyboard.

For CSA User's:

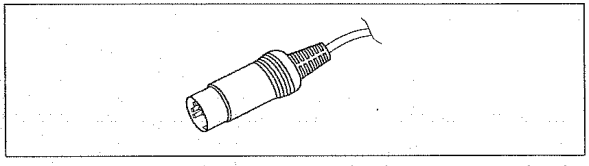
Pour ouvrir l'appareil

1. *Mettre hours tension l'unité centrale.*
2. *Mettre hors tension tous les périphériques externes (imprimante, écran, etc.)*
3. *Débrancher de la prise de courant le cordon d'alimentation de l'unité centrale.*
4. *Débrancher tous les câbles à l'arrière de l'unité centrale après avoir noté leur emplacement*
5. *Glisser le capot vers l'arrière après avoir desserré les onze vis à l'arrière.*
6. *Une fois le capot séparé du bord avant, le soulever et l'enlever.*

Pour refermer l'appareil

1. *Glisser le capot en place. Fixer le capot au moyen de onze vis à l'arrière.*
2. *Brancher tous les câbles de périphériques à l'arrière de l'unité centrale.*
3. *Brancher le cordon d'alimentation à la prise de courant. Remettre l'ordinateur sous tension.*

Attaching the Keyboard



Look at the end of the keyboard cord. Notice that the pins are arranged so that the cable can be plugged in only one way.

Locate the keyboard port on the rear of the System Unit.

Align the keyboard cord connector with the port, and plug the connector into the port.

Plug the keyboard connector into the round rear socket. The connector has an alignment key. Turn the connector slowly until it fits in the socket and push gently.

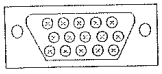
Attaching the Monitor

If a monitor is included as part of a Factory-built Computer Package, follow the connection instructions below. A video accessory board is installed in the computer and the system is ready to use.

If you purchased a monitor and/or a video adapter board as a separate item from your computer, be sure to read the *Video Board Requirement* information on the next page. You need to ensure that the computer, video board and monitor are compatible and correctly configured.

Look at the end of the cable attached to your monitor. Notice that it is shaped like the letter "D." This ensures that it gets connected correctly. The connector has room for 15 pins.

On the rear of the System Unit, locate the 15-hole Video Port that matches the connector on the monitor cable.



15-pin Port

Insert the monitor connector into the matching port, making sure the connector and port are properly aligned. On the connector, find the two screws or small knobs. Gently tighten them to secure the connector.

Plug the monitor power cord into a three-prong, grounded outlet. Alternatively, on selected models it may be neccessory to plug the female socket of the monitor power card into the AC Power Port, which is located on the rear of the System Unit.

Video Board Requirement

For a monitor to work with a computer, the computer must have a video board. Your computer and software create electronic signals to display information, and the video board inside the computer translates those signals, sending them to the monitor through a cable. The monitor uses the translated signals to create the display image on the screen.

If you purchased a monitor and/or a video board separately from the computer, you need to check that the video board and the monitor are compatible (meaning they will work together). In some cases this will require setting switches or jumpers on the video board. Users with high-resolution Super VGA systems will want to use utility programs called "video drivers" to enhance the display image of certain application software. Read the documentation that accompanied the monitor and video board for details on compatibility, configuration and display image enhancement.

CAUTION!

An incorrect setting can cause damage to the video board and/or the monitor.

NOTE

If a monitor is included as part of a Factory-built Computer Package, then a video board is installed in your computer. Once you connect the monitor, the system is ready to use.

Attaching the Mouse

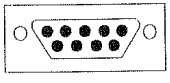
NOTE

If a mouse is included with your computer as part of a Factory-built Computer Package, follow the connection instructions below.

If you purchased a mouse as a separate item from your computer, read the documentation that accompanied the mouse for installation instructions.

Look at the connector on the end of the cable. It will resemble a) or b). Notice that the pins are arranged so that the cable can be plugged in only one way.

a) Serial Mouse Port



9-pin port

b) PS/2 Mouse

Locate the Mouse Port on the rear of the System Unit.

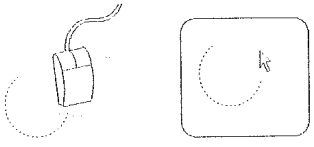
Insert the mouse cord connector into the appropriate port, making sure the connector and port are properly aligned.

Mouse Overview

A mouse is a small device, about the size of your palm. On the bottom is a ball that rolls when you move the mouse across a flat surface. The movement of the ball sends signals to the computer (using a program called a mouse driver) to control the movement of the corresponding pointer on the screen.

You also send instructions to the computer by *clicking* the mouse buttons. The button functions vary, depending on the program you are using.

For some programs, using a mouse can be faster and easier than using a keyboard.



Mouse Movement

Corresponding Pointer Movement

Plugging in the Computer

- Make certain that the power switch is turned off. The switch should be in the "OFF" position.

This computer is designed to be connected to a grounded AC outlet. The three pronged plug is an important safety feature which enables the grounding of the equipment. To avoid the risk of injury due to electrical shock or equipment damage, DO NOT disable this feature in any way.

- Locate the AC power port on the rear of the system unit.
- Connect the power cords to your computer and any peripherals to standard power outlets.

Power Surge Protection

Your computer will operate if plugged in directly to a wall outlet. However, there is a risk of damage to the system should there be a power fluctuation.

Power fluctuations include brownouts (periods when not enough electric power is available) and blackouts (when no power is available). Both generally involve your electric company's transmission lines.

In your home, you may notice the lights dim when an appliance, such as a microwave oven or air conditioner is turned on. When the appliance turns off, the lights get brighter. The lights brighten because there is a surge of electricity. There is also a surge when power is restored after a brownout or blackout. These surges can damage your computer and void your warranty.

To help prevent damage from brownouts, blackouts and surges, many computer users buy surge protectors (also called surge suppressors). Surge protectors have an electrical cord that plugs into a wall outlet instead of plugging the computer directly into the wall outlet. The surge protector's circuitry handles any power fluctuations by absorbing surges and cutting off power during a brownout or blackout. Most surge protectors are equipped with reset switches, and include several outlets so you can plug in your computer, monitor, printer, and other peripheral devices (such as printers, modems, CD-ROM drives, Tape drives, etc.)

Always turn on the computer first, before turning on external peripheral devices. When turning off the system, turn off the peripherals, then turn off the computer.

Turning on the System

- Turn on the monitor. The Power Switch may be a button that you push on the front, lower right corner, or it may be a switch on the right side of the monitor. (When a switch is in the down, or "0" position, the monitor is off; and when in the up, or "1" position, the monitor is on.)

  The power indicator (on the front of the monitor) lights when the monitor is on. The monitor stays blank until the computer is turned on.

- Turn on the computer (Push the power switch once or switch the power switch from "0" to "1"). The following things will happen:

  - You hear the cooling fan motor begin to spin, and the lights on the function panel illuminate.
  - The computer identifies the BIOS type and checks the memory.
  - The disk drive in-use lights illuminate.

What you see on the monitor screen depends on the following:

If a hard disk drive is included as part of a Factory-built Computer Package, an **operating environment** may automatically start when you turn on the computer. (The operating environment aids you in giving instructions to the computer.)

If an operating environment is not included with your computer, you may see a **command prompt** (Requiring you to input instructions) or a message.

If your computer does not respond as described above, refer to the Troubleshooting section in this manual.

Booting the Computer

There may be times when the computer will "hang" (an error in a software program will stall the computer to a point where it stops operating). When this happens, do not turn off the computer. Try the following:

- Press the <ESC> key
- Hold down the <CTRL> key and press the <BREAK> key simultaneously

If the system is still stalled, you need to restart the computer, which is also referred to as rebooting.

Be careful! **Rebooting will erase all data in the computer's memory (not stored on disks). To minimize data loss, save your work onto disks frequently and reboot your computer only when absolutely necessary.**

You can reboot the computer in one of the following ways:

- Hold down the <CTRL> and <ALT> keys and press the <DEL> key simultaneously. (This is known as a *warm boot* because the computer is not completely restarted.)
- Press the *Reset* button on the front of the System Unit or turn the computer off and on. (This is known as a *cold boot* because the computer is completely restarted.)

Software for your Computer

You use software to give instructions to the computer. Software includes the operating system, the operating environment, applications and programs, which all work together so you can use your computer to perform tasks.

This chapter will familiarize you with the following software topics:

The **operating system**, MS-DOS®, is the foundation of all of your other software. It coordinates instructions among the various parts of your computer.

The **operating environment** software makes it easier for you to work with the operating system and provides useful features.

The selection of software applications and programs you can use is nearly limitless.

Functions and use of Software

Software programs tell the computer how to do certain tasks. Which programs you use depends on what kind of task you want to complete.

The Operating System

At the base of all software programs and applications is the *operating system.* The operating system is what gives the computer its basic operating instructions. It manages the flow of information to and from the various components of the computer. Your computer uses the Microsoft® Disk-Operating-System (MS-DOS®).

The Operating Environment

The operating environment software included with your system makes it easier to give instructions to the computer. Instead of having to learn all the complexities of MS-DOS®, you just point and click with a mouse, or press a keyboard key to tell the computer what to do.

The software includes a tutorial, a beginner's guide to the computer and software. Accessories include letter writer, address book, calculator and calendar applications to help you stay organized.

Device Driver Software

Optional peripheral devices, such as a mouse, high resolution video card or printer, get operating instructions from programs called drivers. Drivers work with the operating system to coordinate commands given to the computer. Peripheral devices can not work without drivers.

Optional Software

The selection of software programs you can use on your computer is nearly limitless. Most programs fit into one of the application categories listed below:

Word Processors can create written documents such as memos, letters, and reports.

Spreadsheet software is used for bookkeeping and accounting projects.

Database software lets you design, build and manage lists of information.

Graphics programs are used to create drawings and illustrations.

Desktop Publishing software combines the features of Word Processors and Graphics software to make publication design easier.

MS®-Windows™ is a complex operating environment (also called a *graphical user interface).* Many powerful applications are designed to take advantage of the Windows interface. Windows lets you use several of these applications at once, and generally allows you to share data among the different programs.

Compatibility

When buying software, make sure it is compatible with your computer system. Software packages usually list the minimum hardware requirements. Compare these requirements with your system specifications (check the label on the box your computer came in). Make sure you have the right type of microprocessor, enough memory (or RAM), and the correct video resolution capability.

You may also want to consider compatibility between programs. If you want to take a drawing you created in a graphics program and add it to a report written with a word processor, the programs have to be compatible.

Software Storage - Disks

Software is stored on disks (or diskettes). Disk drives use magnetic impulses to transfer data between the disk and the computer. If you think of a disk as similar to an audio or video tape, then the disk drive is the recorder that lets you record (write) and play (read) the software on the disk.

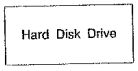
If your system includes a hard disk drive, you will generally use it for your working copies of software programs. You will use floppy disks to install new software on the hard disk drive, and save backup copies of the hard disk drive data.

3.5" Floppy Disk

A High-Density 3.5" disk can store up to 1.44MB of data. The metal shutter protects the memory media (the smooth, shiny material inside), so leave the shutter closed.

5.25" Floppy Disk

A High-Density 5.25" disk can store up to 1.2MB of data. Handle 5.25" disks by the corners only, since touching the memory media in the center or oval openings can destroy data.



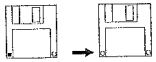
Hard Disk Drive

Depending on the model, a hard disk drive can store from a few mega bytes to a couple of giga bytes of data. The drive can be an internal device, inside the System Unit, or a peripheral device housed outside the chassis.

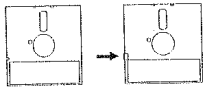
Write-Protecting Disks

When you want to prevent changes to data on a particular disk, you can *write-protect* it. This allows your computer to read and copy the data from the disk, but prevents adding or changing any data.

- To write-protect 3.5" disks, slide open the window in the corner of the disk, as shown in the right-hand diagram.



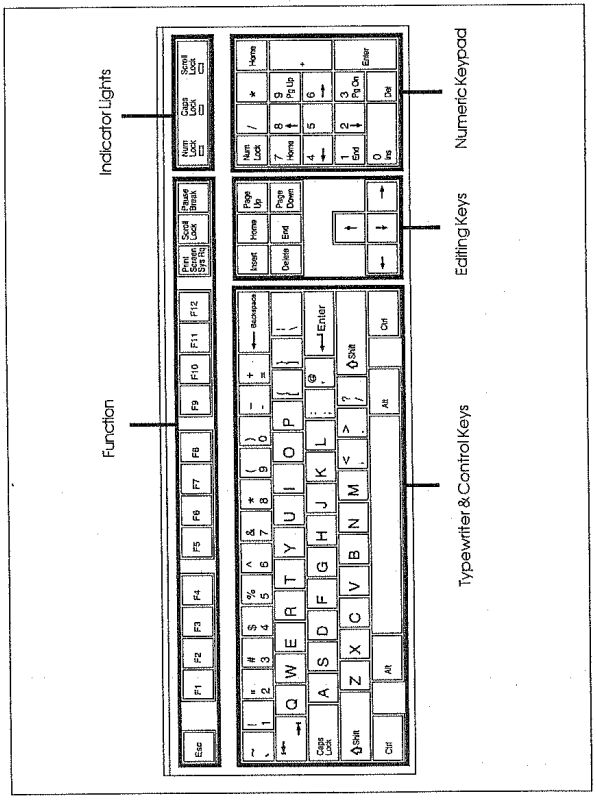
- To write-protect 5.25" disks, cover the notch on the side of the disk, as shown in the right-hand diagram.



Using the Keyboard

Keyboard Layout

The keyboard that comes with your computer is divided into four major sections based on the functions of the keys.



The location of the keys varies between keyboards, but the functions will remain as explained.

Typewriter and Control Keys

Pressing the typewriter keys enters letters, numbers, and symbols. The typewriter keys have *typematic* action; when you hold down a key, it repeats until you release it. Other keys in this section of the keyboard are:

For switching between upper-case letters, lower-case letters, punctuation or symbols press and hold SHIFT.

For typing upper-case (capital) letters without using SHIFT. To turn upper-case *off*, press the key again. The CAPS LOCK light on the keyboard indicates when the feature is on.

Sometimes referred to as the RETURN key, the ENTER key function varies from program to program. In general, it either moves the cursor to the next line, or confirms a command that you enter into the computer.

Erases any character to the immediate left of the cursor.

Pressed alone, CTRL ("Control") has no effect. Pressed with another key (CTRL + S for example), performs an operation, which varies from program to program.

ALT ("Alternate") works like CTRL but performs other functions.

Moves the cursor around the screen. In most word processing programs, TAB works as it does on a typewriter. In the operating environment, it moves the cursor from field to field and button to button.

Editing Keys (Also known as *cursor control* keys.)

When *on*, inserts characters starting at the cursor, pushing other characters one space to the right. When *off*, you can type over the text.

Varies from program to program. In general, HOME moves the cursor to the upper left-hand corner of the screen.

Deletes the character at the cursor position. All characters move left one position, filling the space originally occupied by the deleted character.

Varies from program to program. In general, END moves the cursor to the lower right-hand corner of the screen.

In text or graphics programs, these keys move the cursor from one page to the next. PAGE UP moves the cursor to the previous page. PAGE DOWN moves the cursor to the next page.

These keys move the cursor on the screen in the direction indicated.

Numeric Keypad

The Numeric Keypad features numbers (0 through 9) and mathematical signs for addition (+), subtraction (-), multiplication (*), and division (/). The keypad can be used in two modes: calculator keys or cursor keys (the arrows). You switch between modes by turning the NUM LOCK feature on or off. It is recommended that you leave the NUM LOCK feature On. Then you can use the Editing Keypad arrow keys to move the cursor, and the Numeric Keypad for entering numbers.

Functions the same as the ENTER key in the Typewriter and Control Key section.

The numeric keypad arrows can be used for cursor control (like the Editing arrow keys) when the Num Lock feature is turned *off*.

Pressing the NUM LOCK key switch the Num Lock feature on and off. The NUM LOCK light on the keyboard indicates when the feature is on. When *on*, you can enter numbers with the Numeric Keypad. When *off*, the keypad acts as a cursor control.

Function Keys

Function keys are specialized keys whose functions vary from program to program.

ESC — Varies from program to program. Refer to software documentation for details about ESC.

F1 through F12 — Pressing the numbered function keys generally speeds up common tasks. For example, a program may assign the F3 key with the "Save File" function, so that, instead of selecting "Save File" from a software application's menu, you could simply press the F3 key. (Refer to software documentation for details on function key options.)

PRINT SCREEN — Sends the image on the screen to the printer. Your printer must be ready to print before you press PRINT SCREEN.

SYS RQ — Activated by pressing CTRL + PRINT SCREEN, SYS RQ is used for starting and terminating tasks and supplying input to tasks from the keyboard in some multi-tasking programs. Use SYS RQ only as instructed in software documentation.

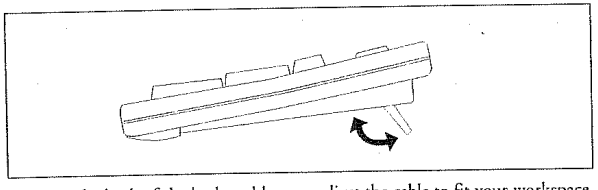
SCROLL LOCK — Pauses the scrolling feature in some programs. Pressing the key again resumes scrolling. The SCROLL LOCK light on the keyboard indicates when the feature is on.

PAUSE — Interrupts the computer's routine and pauses. Pressing the key again resumes the program.

BREAK — Activated by pressing CTRL + PAUSE, BREAK exits some programs. Only use it as a last resort; you may lose data.

Adjusting the keyboard height

You can adjust the keyboard height for typing comfort.



Clips on the back of the keyboard let you adjust the cable to fit your workspace.

Chapter 2
Installing Options

To keep pace with you, your computer will need to be changed periodically. Adding options such as additional memory or accessory boards can dramatically improve the performance of your computer.

This chapter explains a number of installing options you may want to consider.

- Installing an Accessory Boards
- Installing a 3.5" and 5.25" Device
- Installing a 3.5" Hard Disk Drive in the Internal 3.5" Drive Bay
- Installing the Lock Plate

Just as with other electronic devices, do not attempt to install options or make repairs unless you are very familiar with the operation and design of computers. If you are unsure how to install an option, it is best to take your computer to an Authorized Service Center and have a trained technician do the work for you.

CAUTION! **As with any electric device, disconnect the power before servicing the unit.**

CAUTION! **If you install an option yourself and do it incorrectly, you may seriously damage the computer and void your warranty.**

Opening the Computer

Before opening the computer, make certain to:

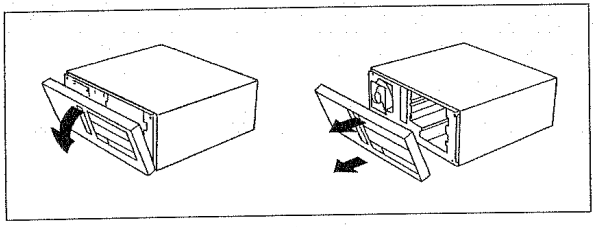
- Turn off any peripheral devices and the computer.
- Unplug the computer from the outlet.
- Disconnect the power cord from the computer.
- Disconnect all cables and connectors.

If you are upgrading a floppy disk drive or hard disk drive, you also need to remove the front panel.

Remove the Front Panel

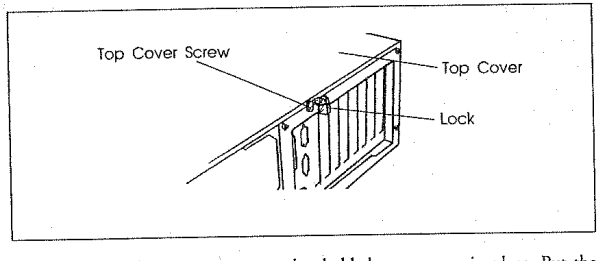
To remove the front panel, grasp the front panel and pull it forward to release the retaining clips.

To replace the front panel, hold it horizontally. Align the clips on the inside of the panel's top edge with the openings on the System Unit. Carefully swing the front panel closed until the clips on the bottom edge snap into place.



Remove the Computer Cover

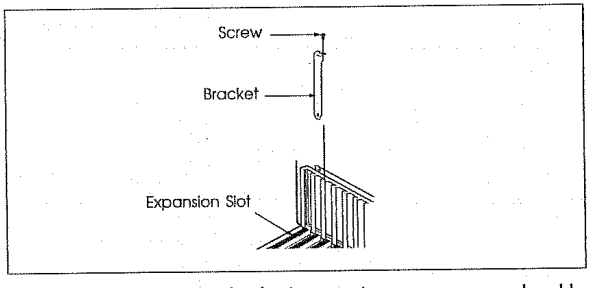
Disconnect all cables from the back of the computer, and place it on a clean, even surface with ample work space.



- Remove the top cover screw that hold the top cover in place. Put the top cover screw safely aside for securing the top cover later.
- With the rear panel facing you, grasp the sides of the top cover and pull it toward you. (It may help to pull the sides of the cover outward, away from the unit, while pulling.)
- Lift the top cover off the computer case. Put it in a safe place where it will not be damaged.

Installing an Accessory Board

- Turn off any peripherals and the computer.
- Unplug the computer from the outlet.
- Disconnect the power cord from the computer.
- Disconnect any peripheral device cables.
- Open the computer cover.
- Remove a screw and bracket to vacate an expansion slot.

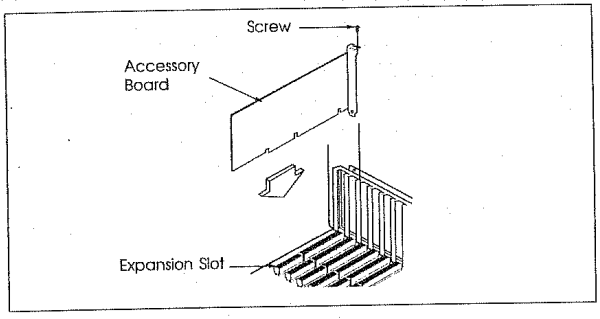


- Choose an expansion slot that is appropriate to your accessory board by matching the expansion slot socket with the accessory board's connector.

  Depending on your system, you may have up to 3 different types of socket for adding accessory boards - **ISA Bus (8 Bit or 16 Bit), VEAS Local Bus, PCI Local Bus.**

- Remove the screw that holds the corresponding bracket for the expansion slot you will be using. Save the screw to secure the board in place later. The expansion slots facing the power supply are equipped with small anchor brackets to hold the board.
- Remove the accessory board from its anti-static wrapping. Handle the board by its edges and avoid touching any of the electronic components and connectors, except as instructed by documentation to set jumper and switch settings.
- Make the necessary jumper and switch settings as instructed in the accessory board documentation.

- Insert the board into the expansion slot, using the bracket on the board as a guide. Push gently on the outer edge and corners of the board to help seat it correctly into the slot.



- Replace the bracket screw (and anchor bracket, if needed) to secure the accessory board in place.
- Reinstall the computer cover. Reconnect any peripheral cables. Connect the power cord. Turn on the computer and run the SETUP program.

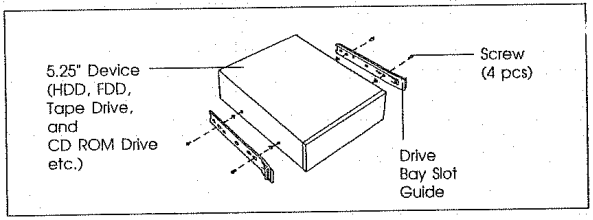
Installing a 3.5" and 5.25" Devices

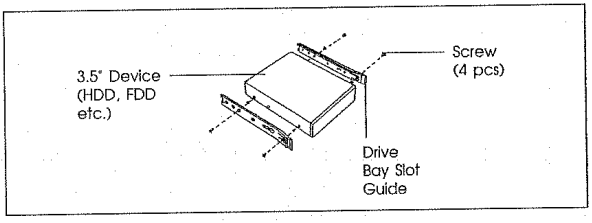
Standard equipment on most systems includes one 3.5" floppy disk drive or one 5.25" floppy disk drive. The computer chassis includes additional bays for each size devices, with access provided by removable faceplates on the computer case.

To Install a 3.5" or 5.25" Device in the Drive Bay

- Unpack the device and read the instructions that accompany the drive.
- Turn the computer off, unplug the power cord and disconnect all external peripheral devices.
- Remove the computer cover by removing the retaining screw and lifting the cover off the chassis.
- Remove the computer cover front panel.
- Remove the drive bay cover from the front panel you intend to use.

- Configure the drive according to the manufacturer's instructions.
- Attach the drive bay slot guides to the drive with screws.





- Insert the drive into the drive bay and push it in until it is completely inside the bay and the guides snap into the locked position.
- Plug the interface cable connector into the drive's connector located on the rear of the drive, until it is firmly seated.

The colored strip on one side of the cable should be on the same side as the pin 1 of the connector.

Be sure to check the cable orientation in order to match the colored strip to the pin 1 end of the connector.

- Plug the power cable connector into the power input connector located on the back of the drive.
- Install the front panel and replace the top cover.
- Reconnect the computer and peripherals to their power sources and then turn the power on.

Hard Disk Drive

With today's software and your growing needs, you may decide to increase the computer's data storage capacity by adding (or upgrading) a hard disk drive. A hard disk drive can be installed in the drive bay or in the internal drive bays.

CAUTION!

Do not attempt to install a hard disk drive unless you are very familiar with the operation and design of computers. If you are unsure how to install an option, it is best to take your computer to an Authorized Service Center and have a trained technician do the workfor you.

Formatting a Hard Disk Drive

Before a hard disk can be used, it must be prepared to accept data. This is called "formatting" and is a complex process. Your DOS manual explains how to format a hard disk drive.

NOTE

In most cases a hard disk drive is pre-formatted for your convenience. If you are not sure if a hard disk drive has been formatted, contact the place where you bought the drive. If you re-format a hard disk drive you may delete critical data.

Do not attempt to format a hard disk drive unless you are very experienced and know exactly what you are doing! Incorrectly formatting a hard drive can ruin the drive and void your warranty! If a hard disk drive was included with your computer, it is already formatted. Do not format it. Doing so will delete data stored on the drive.

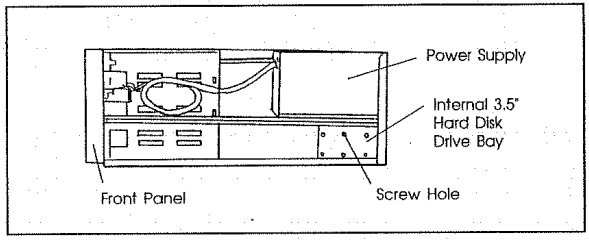
To Install a 3.5" Hard Disk Drive in the Internal 3.5" Hard Disk Drive Bay

- Unpack the drive and read the instructions that accompany the drive.

CAUTION!

Static electricity can harm delicate components inside the computer. To prevent damage caused by static electricity, discharge the static electricity from your body before you touch any of the computer's electronic components. This can be accomplished by touching an unpainted metal surface on the computer chassis. The use of a grounding wrist strap is also recommended.

- Turn the computer off, unplug the power cord and disconnect all external peripheral devices.
- Remove the computer cover by removing the retaining screw and lifting the cover off the chassis.
- Configure the drive according to the manufacturer's instructions.
- Attach the 3.5" hard disk drive into the drive bay with screws.



- Plug the interface cable connector into the drive's connector located on the rear of the drive, until it is firmly seated.

CAUTION!

The colored strip on one side of the cable should be on the same side as the pin 1 of the connector.

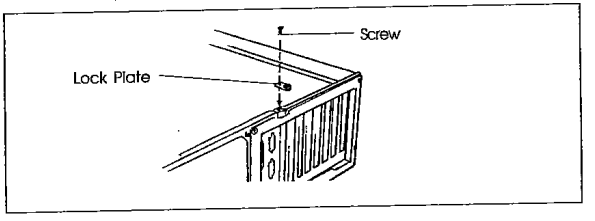
Be sure to check the cable orientation in order to match the colored strip to the pin 1 end of the connector.

- Plug the power cable connector into the power input connector located on the back of the drive.
- Install the front panel and replace the system cover.
- Reconnect the computer and peripherals to their power sources and then turn the power on.

Installing the Lock Plate

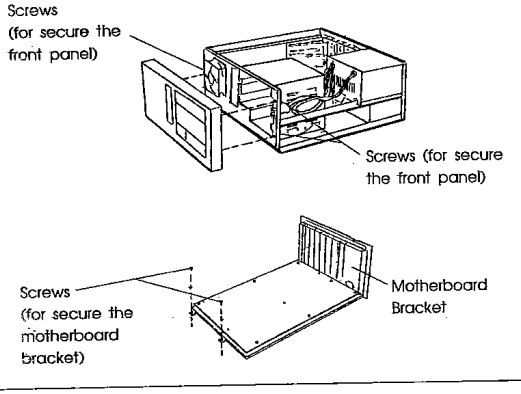
The lock plate prevents unauthorized access to the internal components of the computer. To install the lock plate, complete the following steps:

- Remove the top cover screw from the rear of the computer.
- Slide the top cover towards the back and lift it aside.
- Position the lock plate under the screw hole and replace the screw.



- Reinstall the top cover.
- Install a lock to secure the top cover.

Make sure you secure the front panel and motherboard bracket with the screws before reinstalling the top cover.



Chapter 3
Upgrade the System Board

Users may want to upgrade the memory or make similar adjustments to enhance the performance of the Computer System. This chapter outlines some common options.

- Upgrading Memory
- Installing SIMMs
- Removing SIMMs
- Installing a New Processor

Adding memory to your computer requires skill, the right kind of memory components and some careful preparation.

Upgrading your computer memory involves the following steps:

- Select the amount of memory desired
- Install the memory modules

Just as with other electronic devices, do not attempt to install options or make repairs unless you are very familiar with the operation and design of computers. If you are unsure how to install an option, it is best to take your computer to an Authorized Service Center and have a trained technician do the work for you.

CAUTION! **As with any electric device, disconnect the power before servicing the unit.**

CAUTION! **If you install an option yourself and do it incorrectly, you may seriously damage the computer and void your warranty.**

Upgrading Memory

Adding more memory can help your computer process more data and, in some cases, do it faster. Before adding more memory, however, it is important to understand a bit about how computer memory works.

Memory Assignments

Your computer's memory (also called Random Access Memory, or RAM,) can be assigned into three categories:

- **Conventional**
  Referred to as main memory or lower memory, Conventional Memory is the first 640 kilobytes (K or KB) accessed. Software programs require this memory to store their program files.

- **Extended Memory**
  RAM above 1 Megabyte (MB) can be assigned as extended memory. Operating systems other than DOS, as well as some software programs, can take advantage of extended memory.

- **Expanded Memory**
  RAM above 1 MB (on selected models only) can be assigned as Expanded Memory, which is driven by software, not hardware.

DOS, as it was originally written, cannot access more than 640K of memory, thereby limiting the size of the programs it can run. As the need for more powerful software and larger files grew, Lotus®, Intel®, and Microsoft® developed a way for IBM® compatible computers to access memory above 640K, while still respecting the limitations of the DOS operating system.

The result of these efforts was the Expanded Memory Specification, or "EMS" as it is commonly called. Software, such as Lotus 1,2,3®, or MS®-Windows™, can incorporate the rules and requirements of EMS so that it takes advantage of expanded memory and creates larger and more powerful files.

Installing SIMMs

When installing a Single in Line Memory Module (SIMM), use the following guidelines:

- Determine the desired amount of memory, and get the necessary SIMM (Single in Line Memory Module) modules.

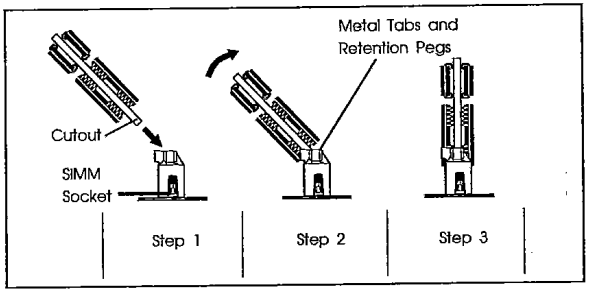
- Turn off any peripherals and the computer. Unplug the computer from the outlet. Disconnect the power cord from the computer. Disconnect any peripheral device cables. Open the computer as described at this manual.

- Discharge any static electricity you may have by touching an unpainted surface on the chassis of the computer.

- Remove any accessory boards installed in the expansion slots. Put the boards in a safe place.

- Notice that a SIMM module has a notch on one end so that it fits into a socket only one way. Handle the module by the edges, and do not touch the shiny contacts.

- Locate the cutout area on one corner of the SIMM.



- Hold the SIMM so that the cutout is facing towards the back of the chassis and the SIMMs edge connector is aligned with the slot in the center of the SIMM socket (Step 1).

- Position the SIMM at a 45 degree angle to the left of the socket and press the SIMMs edge connector firmly into the SIMMs socket (Step 2).

- Move the top of the SIMM to the right until it clicks into place (Step 3).

You should hear a click as the metal tabs on each end of the socket snap into place and the small retention pegs snap into the holes at each end of the SIMM.

If you have misaligned or only partially seated the SIMM, you will not hear a sharp click and the retention pegs will not snap into holes. You must then remove the SIMM and re-install it.

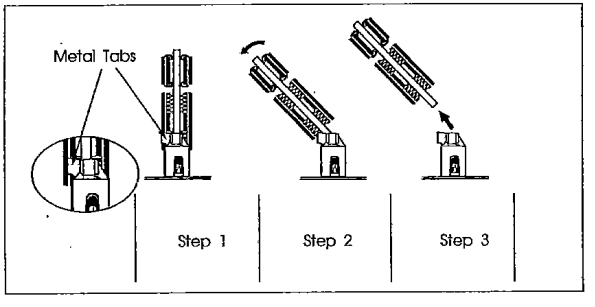
- Reinstall the plastic post and the accessory boards you removed. Re-install the computer cover. Reconnect any peripheral cables. Connect the power cord.

- Turn the computer on and resume operation.

Removing SIMMs

To remove SIMMs, complete the following steps:

- Turn the computer off, unplug the power cord and disconnect all external peripheral devices. Remove the computer cover.
- Locate the four SIMM sockets on the system board.
- Carefully spread the metal tabs of the SIMM socket just far enough apart to allow the SIMM to disengage from the socket. The SIMM will pop up slightly (Step 1).



CAUTION!

Static electricity can harm delicate components inside the computer. To prevent damage caused by static electricity, discharge the static electricity from your body before you touch any of the computers electronic components. This can be accomplished by touching an unpainted metal surface on the computer chassis. The use of a grounding wrist strap is also recommended.

- Carefully remove the SIMM from the socket following Step 2 and Step 3.

Installing a New Processor

A math co-processor chip is dedicated to performing "floating point" mathematical calculations, and can dramatically increase the performance of some software programs. An upgrade processor can dramatically increase general system speed and performance.

Most microprocessor upgrade kits include the following items:

- Microprocessor chip
- Installation instructions and technical data

Your system may have these features built in, or support them as upgrades.

CAUTION!

As with any electric device, disconnect the power before servicing the unit.

NOTE

Some microprocessors may have a heat sink which is a metal plate with cooling ribs or pegs that helps dissipate heat and is attached to the top of the microprocessor chip.

To install a New Processor

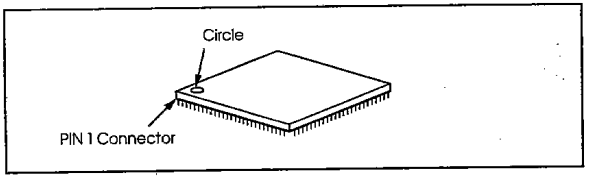
- Turn off any peripherals and the computer. Unplug the computer from the outlet. Disconnect the power cord from the computer. Disconnect any peripheral device cables. Open the computer.
- Discharge any static electricity you may have by touching an unpainted metal surface on the chassis of the computer.
- If the system microprocessor is already on the motherboard socket, you need to remove it from the motherboard socket. The socket is a Zero Insertion Force (ZIF) socket which has a metal arm at one side. Carefully grasp this arm, move it horizontally away from the socket and lift it up. Eventually you will be able to lift the chip straight up out of the socket. Be careful not to bend any pins.

NOTE

If there is no microprocessor on the motherboard socket, you can skip Step 3.

Be careful not to bend any of the pins when removing the microprocessor chip from its socket. The microprocessor chip can be permanently damage.

- Unpack the new microprocessor chip and identify the pin 1 corner of the chip.



CAUTION! **Identifying the pin 1 corner is critical for positioning the chip correctly.**

A small circle marked on the top of the chip designates the pin 1 corner. If a heat sink is attached and covers the top of the chip, identify the pin 1 corner by turning the chip over. Locate the small gold finger that extends from one corner of the large central square portion of the chip. The gold finger points towards pin 1, which is also uniquely identified by a square pad.

- Match pin 1 of the upgrade microprocessor chip with pin 1 of the ZIF socket. The pin 1 corner of the ZIF socket is designated by a small triangle printed on the system board.

CAUTION! **Positioning the microprocessor chip incorrectly in the socket can permanently damage the chip and the computer when you turn on the system.**

- Carefully align the processor with the socket on the motherboard.
- Carefully insert the processor into the socket, and move the metal arm downward to replace it in its original position. Change any jumper settings as detailed in the Hardware Configuration.
- Re-install the computer cover. Reconnect any peripheral cables. Connect the power cord. Turn on the computer and run the SETUP program.

Chapter 4
Motherboard Configuration

This part of the manual is specifically written to help the user configure the Motherboard hardware. The user may optimize the system performance by changing the default configuration preset by the factory.

Features :-

- Supports Intel™ 486SX/DX/DX2, 486SLE, Pentium™ OverDrive™ Processor, Intel DX4™, P24D (Dark Green support)
- Supports Cyrix™ 486SX/SX2, 486DX/DX2, 486DX2V, M9(M1sc)
- Supports AMD™ 486DX/DX2/DX4, Enhanced DX2/DX4 series
- Supports UMC™ 486 U5S-Super
- Supports SGS-Thomson 486DX2
- Supports CPU speed running at 25/33/40/50/63/66/75/80/83/100/120Mhz
- Supports 1MB, 2MB, 4MB, 8MB, 16MB, 32MB, and 64MB 72 PIN DRAM SIMMs
- Supports 128/256KB and 512KB write-through / write-back secondary Cache.
- Supports System Memory Management (SMM) and full SMI Interface support for Intel SL-Enhanced CPU (S-series)
- Four 16-bit ISA BUS expansion slots (one ISA shares with a PCI slot)
- Three 32-bit PCI BUS expansion slots (one PCI shares with a ISA slot)
- Peripheralson-board
  1. Dual channel PCI IDE. Supports PIO Mode 3 and 4.
  2. Optional UMC Super I/O provides 2 COM ports, 1 Parallel Port, and 1 Game Port.
- AWARD™system BIOS, System and Video BIOS Shadowing, Video BIOS Cacheable. Support Plug and Play on PCI and ISA cards.

Memory Expansion

There are a total of 4 SIMM slots on the Motherboard , they are labelled as SIMM1 , SIMM2 , SIMM3, and SIMM4. Each slot can accommodate one 1MB, 2MB, 4MB, 8MB, 16MB, 32MB, or 64MB 72 PIN SIMM module.

Configuration Rules

The motherboard supports many combinations of DRAM SIMM modules for its main memory, however, the following rules must be observed:

1. Slot SIMM1 must be occupied before SIMM2 can be used. Slot SIMM3 must be occupied before SIMM4 can be used.
2. Slots SIMM1 and SIMM2 must be greater than that of SIMM3 and SIMM4.
3. The total size of the DRAM in SIMM1 and SIMM2 must be greater than that of SIMM3 and SIMM4.
4. SIMMs must be 80ns, or faster, page mode DRAM of 1MB, 2MB, 4MB, 8MB, 16MB, 32MB, and 64MB size.
5. The size of the main memory must be between 2MB and 256MB.

The table below offer an example of some of the possible DRAM configurations:

DRAM Configuration Table

SIMM1	SIMM2	SIMM3	SIMM4	Total
1MB	1MB	X	X	2MB
1MB	1MB	1MB	1MB	4MB
4MB	X	X	X	4MB
4MB	X	1MB	1MB	6MB
4MB	4MB	X	X	8MB
8MB	X	X	X	8MB
4MB	4MB	1MB	1MB	10MB
8MB	X	1MB	1MB	10MB
4MB	4MB	4MB	X	12MB
8MB	X	4MB	X	12MB
4MB	4MB	4MB	4MB	16MB
8MB	X	4M	4MB	16MB
8MB	8MB	X	X	16MB
16MB	X	X	X	16MB
8MB	8MB	1MB	1MB	18MB
16MB	X	1MB	1MB	18MB
8MB	8MB	4MB	X	20MB
16MB	X	4MB	X	20MB
8MB	8MB	4MB	4MB	24MB
8MB	8MB	8MB	X	24MB
16MB	X	4MB	4MB	24MB
16MB	X	8MB	X	24MB
8MB	8MB	8MB	8MB	32MB
16MB	X	8MB	8MB	32MB
16MB	16MB	X	X	32MB
32MB	X	X	X	32MB
16MB	16MB	1MB	1MB	34MB
32MB	X	1MB	1MB	34MB
16MB	16MB	4MB	X	36MB
32MB	X	4MB	X	36MB
16MB	16MB	4MB	4MB	40MB
16MB	16MB	8MB	X	40MB
32MB	X	4M	4M	40MB
32MB	X	8MB	X	40MB
16MB	16MB	8MB	8MB	48MB

16MB	16MB	16MB	X	48MB
32MB	X	8MB	8MB	48MB
32MB	X	16MB	X	48MB
16MB	16MB	16MB	16MB	64MB
32MB	X	16MB	16MB	64MB
32MB	32MB	X	X	64MB
64MB	X	X	X	64MB
32MB	32MB	1MB	1MB	66MB
64MB	X	1MB	1MB	66MB
32MB	32MB	4MB	X	68MB
64MB	X	4MB	X	68MB
32MB	32MB	4MB	4MB	72MB
32MB	32MB	8MB	X	72MB
64MB	X	8MB	X	72MB
32MB	32MB	8MB	8MB	80MB
32MB	32MB	16MB	X	80MB
64MB	X	8MB	8MB	80MB
64MB	X	16MB	X	80MB
32MB	32MB	16MB	16MB	96MB
32MB	32MB	32MB	X	96MB
64MB	X	16MB	16MB	96MB
64MB	X	32MB	X	96MB
32MB	32MB	32MB	32MB	128MB
64MB	X	32MB	32MB	128MB
64MB	64MB	X	X	128MB
64MB	64MB	1MB	1MB	130MB
64MB	64MB	4MB	X	132MB
64MB	64MB	4MB	4MB	136MB
64MB	64MB	8MB	X	136MB
64MB	64MB	8MB	8MB	144MB
64MB	64MB	16MB	X	144MB
64MB	64MB	16MB	16MB	160MB
64MB	64MB	32MB	X	160MB
64MB	64MB	32MB	32MB	192MB
64MB	64MB	64MB	X	192MB
64MB	64MB	64MB	64MB	256MB

Remark: X - Not installed

Motherboard Configuration

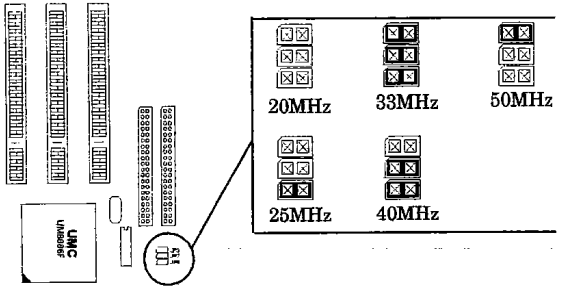
Under some circumstances you may wish to change the default configuration of the Motherboard. These changes are made through adapting jumper settings on the Motherboard. The following text will describe the function of every jumper and connector, and their corresponding location on the Motherboard can be found at the end of this chapter.

Legend

Jumper Nor Installed

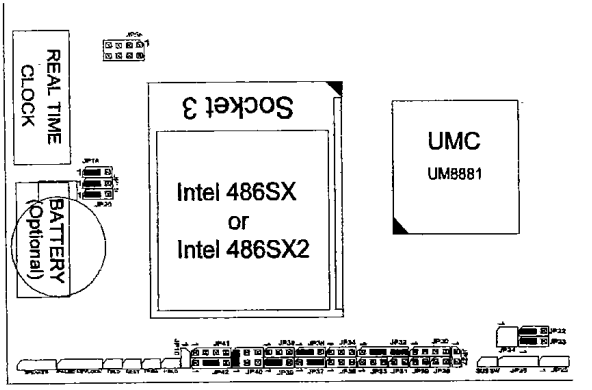
Jumper Installed

System Clock Speed Selection

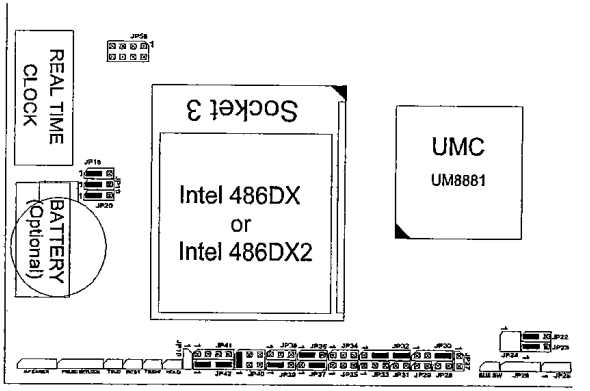


CPU Selection Jumpers

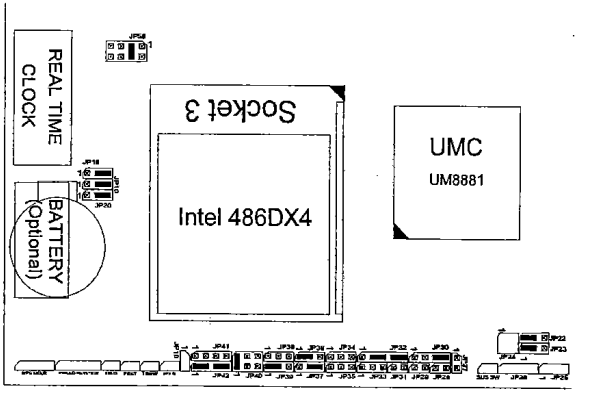
Intel™ 486SX and 486SX2



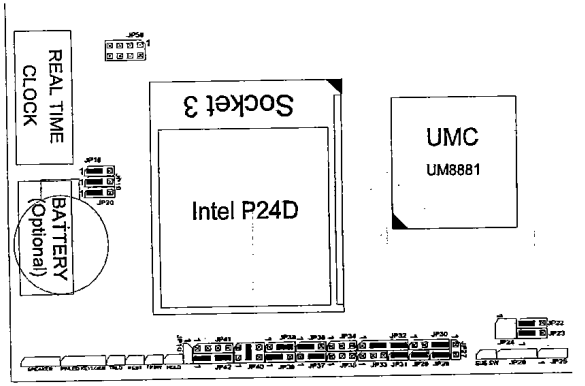
Intel™ 486DX and 486DX2



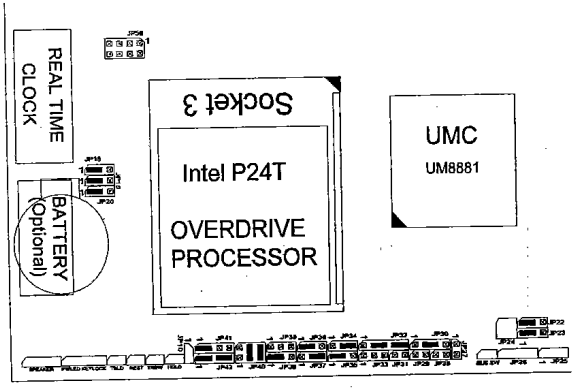
Intel™ 486DX4



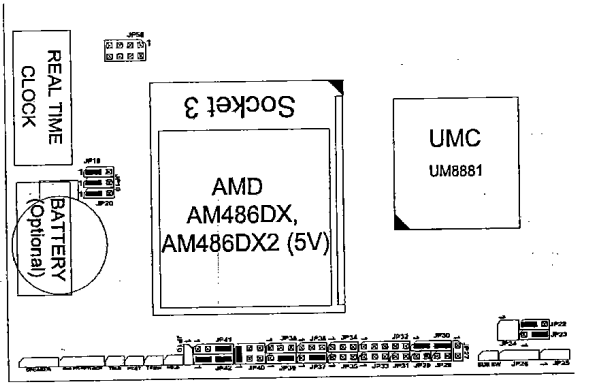
Intel™ P24D



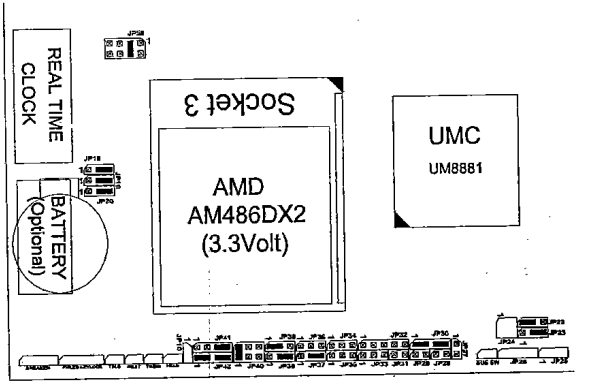
Intel™ 486P24T PENTIUM™ OVERDRIVE™



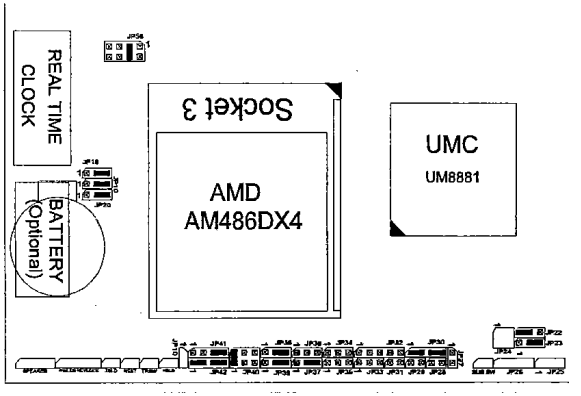
AMD™ Am486DX, DX2 (5 volt)



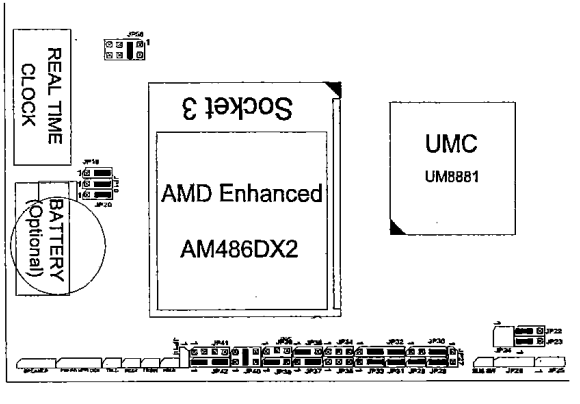
AMD™ Am486DX2 (3 volt)



AMD™ Am486DX4

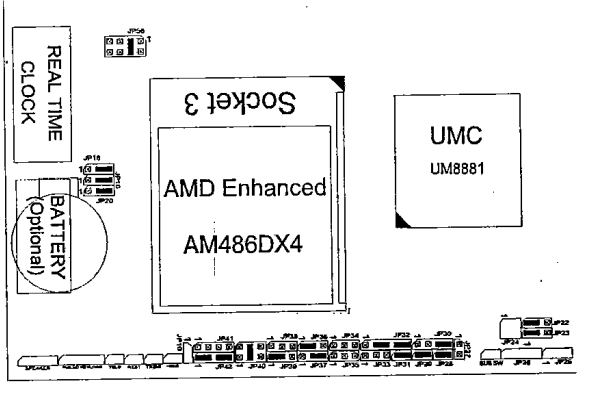


AMD™ Enhanced Am486-DX2

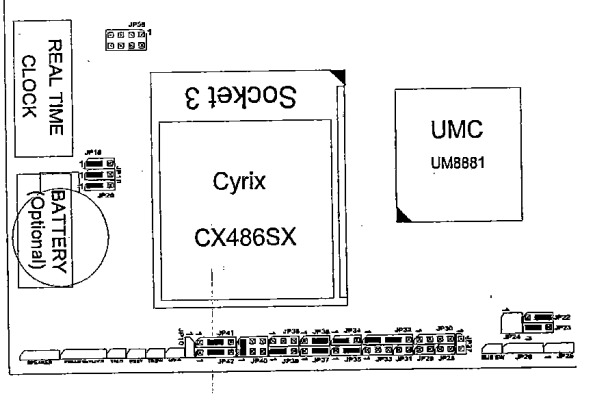


AMD™ Enhanced Am486-DX4

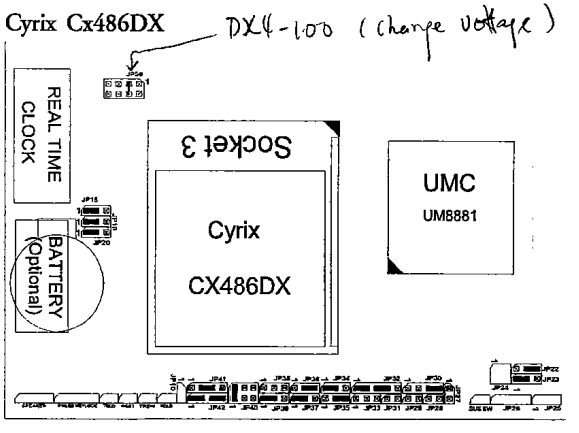
AMD 5x86 133



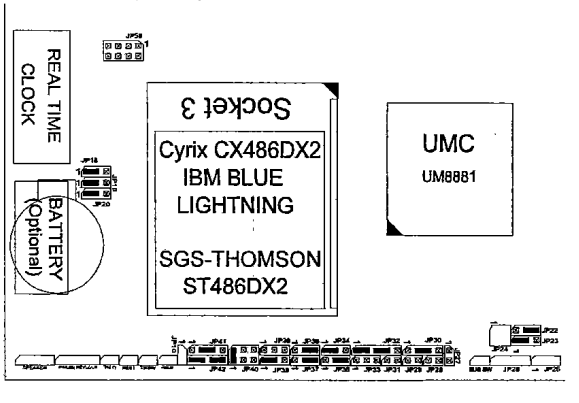
Cyrix Cx486SX



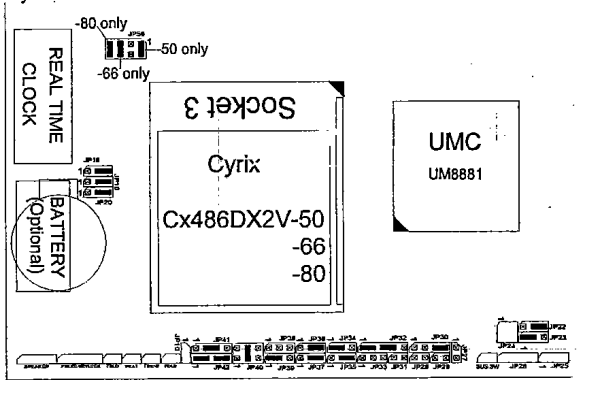
Cyrix Cx486DX



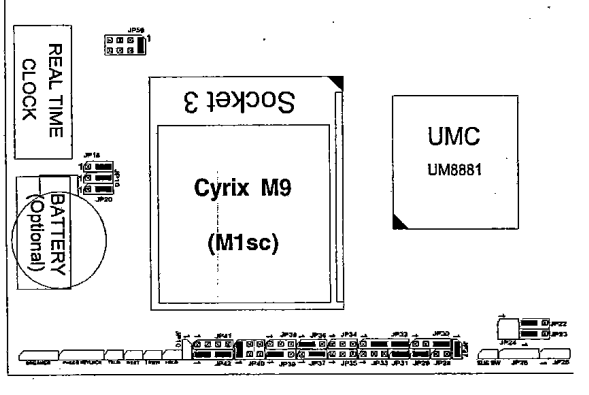
Cyrix Cx486DX2
IBM Blue Lightning and SGS-Thomson ST486DX2



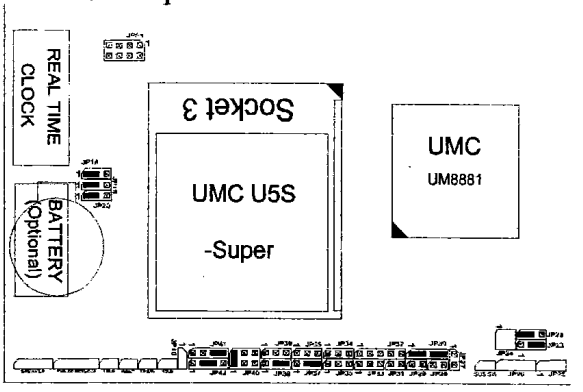
Cyrix Cx486DX2V-50
Cyrix Cx486DX2V-66
Cyrix Cx486DX2V-80



Cyrix M9 (M1sc) 5x86

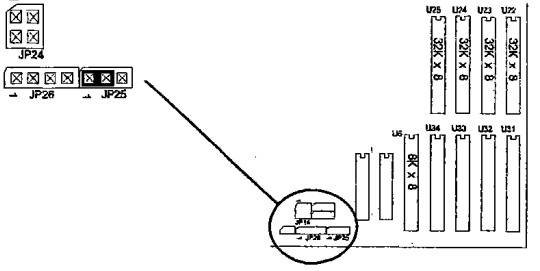


UMC U5S - Super

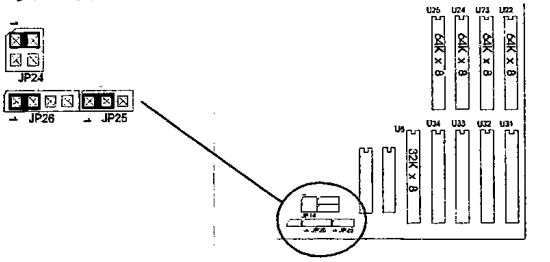


External Cache Selection Jumpers

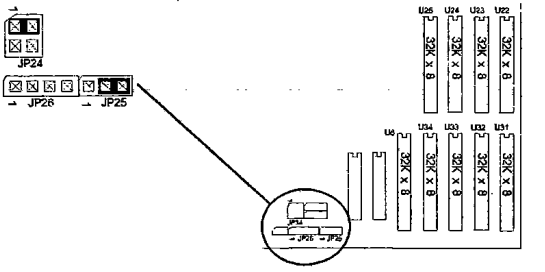
128K Cache



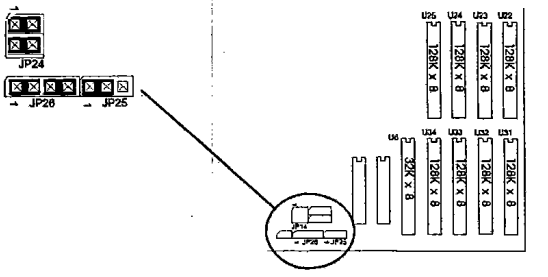
256K Cache



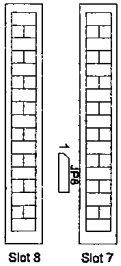
256K Cache



512K Cache



CMOS Data Discharge Jumper - JP6



Normal Operation

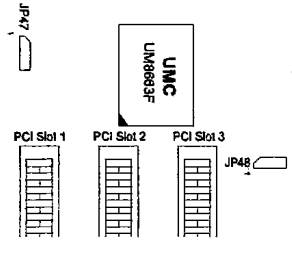
Clear Motorola Real Time Clock

Clear Dallas / Benchmarq Real Time Clock

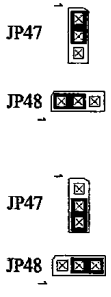
The "Clear" option is a temporary setting and must be returned to the "Normal Operation" mode for the computer to function.

ECP Mode Parallel Port DMA Channel Selection

(Only available with Multi I/O Option.)



ECP DMA Channel



Factory Adjusted Jumper Functions

The following jumpers located on the motherboard are set at the factory level and are not available to users. These jumpers are as follows:

Chipset Selection

IDSEL Group	JP57	JP58	JP59
UM8881F	1-2	1-2	1-2
UM8881F/E	2-3	2-3	2-3

Onboard EPROM Programming Selection

Programming	JP3
12 Volt	1-2
5 Volt	2-3
No programming	open

Real Time Clock Selection

RTC Type	JP11	JP60
Dallas/Benchmarq	1-2	1-2
Motorola	2-3	2-3

RTC Type	JP53
DS12885, BQ3285	2-3
Others	1-2

Connectors

JP1 - Keyboard Lock

1. +5V
2. N.C.
3. Ground
4. Keyboard Lock
5. Ground

REST - Reset Switch

1. Reset Signal
2. Ground

SPEAKER - Speaker Connector

1. Speaker Data
2. N.C.
3. Ground
4. +5V

TBSW - Turbo Switch

1. Turbo Signal
2. Ground

TBLD - Turbo LED

1. Turbo Data
2. Ground

SUS SW - Suspend Switch

1. +5V
2. Suspend Signal

CN11 - Hard Drive LED

1. +5V
2. HDD Signal

JP1 - Keyboard Connector

1. Keyboard Clock
2. Keyboard Data
3. N.C.
4. Ground
5. +5V

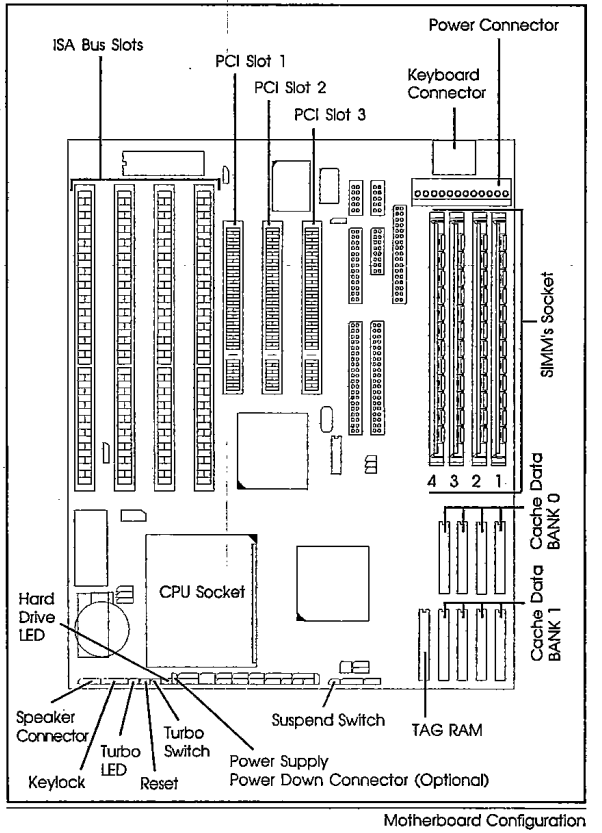
JP2 - Power Connector

1. Power Good
2. +5V
3. +12V
4. -12V
5. Ground
6. Ground
7. Ground
8. Ground
9. -5V
10. +5V
11. +5V
12. +5V

Motherboard Layout

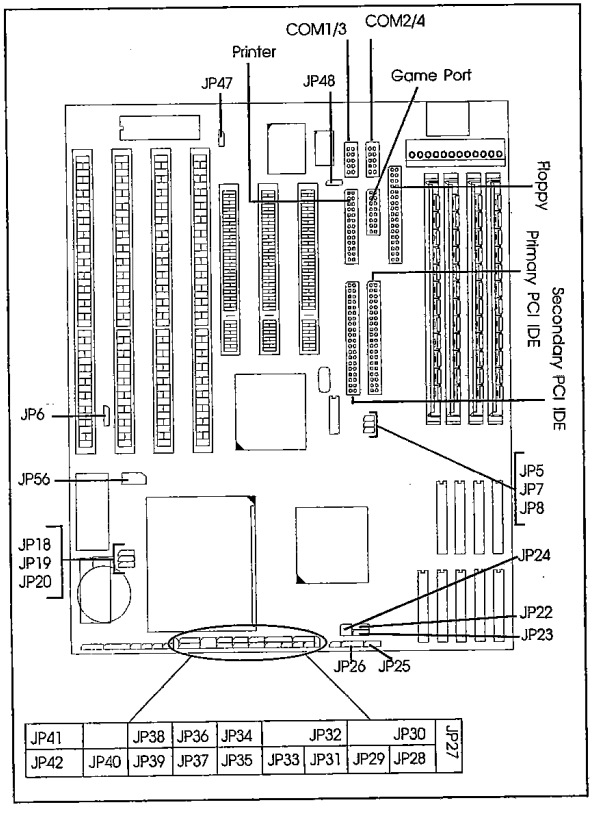
The following diagrams show the relative positions of the jumpers, connectors, major components and memory banks on the Motherboard with optional Multi-I/O.

Major Component Locations



Motherboard Configuration

Jumper Locations and I/O Headers



Chapter 5
BIOS Setup

After you have configured the Motherboard, and have assembled the components, you can turn on the completed system. At this point, run the software setup to ensure that the system information is correct.

The software setup of the Motherboard is achieved through Basic Input-Output System (BIOS) programming. You use the BIOS setup program to tell the operating system what type of devices (such as disk drives) are connected to your Motherboard.

The system setup is also called CMOS setup. Normally, you will only need to run the system setup again if you have changed the hardware configuration (for example, a processor upgrade).

The BIOS installed on this Motherboard is written by Award Software International Inc. Depending on the version of the BIOS, your BIOS setup screens may differ to those illustrated in this section.

Entering Setup

Power on the computer and press <Del> immediately will allow you to enter Setup. The other way to enter Setup is to power on the computer, when the below message appears briefly at the bottom of the screen during the POST (Power On Self Test), press <Del> key or simultaneously press <Ctrl>, <Alt>, and <Esc> keys.

TO ENTER SETUP BEFORE BOOT PRESS CTRL-ALT-ESC OR DEL KEY

If the message disappears before you respond and you still wish to enter Setup, restart the system to try again by turning it OFF then ON or pressing the "RESET" button on the system case. You may also restart by simultaneously pressing <Ctrl>, <Alt>, and <Delete> keys. If you do not press the keys at the correct time and the system does not boot, an error message will be displayed and you will again be asked to,

PRESS F1 TO CONTINUE, CTRL-ALT-ESC OR DEL TO ENTER SETUP

Control Keys

Up arrow	Move to previous item
Down arrow	Move to next item
Left arrow	Move to the item in the left hand
Right arrow	Move to the item in the right hand

Esc key	Main Menu ---Quit and not save changes into CMOS Status Page Setup Menu and Option Page Setup Menu —Exit current page and return to Main Menu
PgUp key	Increase the numeric value or make changes
PgDn key	Decrease the numeric value or make changes
+ key	Increase the numeric value or make changes
- key	Decrease the numberic value or make changes
F1 key	General help, available in all areas except for the
Standard	CMOS Setup Menu
(Shift)F2 key	Change color from total 16 colors. F2 to select color forward, (Shift) F2 to select color backward
F5 key	Restore the previous CMOS value from CMOS,
available	in all areas except for the
Standard	
CMOS Setup Menu	
F6 key	Load the default CMOS value from BIOS default
table,	available in all areas except for the Standard
CMOS Setup	Menu
F7 key	Load setup defaults
F10 key	Save all the CMOS changes, only for Main Menu

Getting Help

Main Menu

The on-line description of the highlighted setup function is displayed at the bottom of the screen.

Standard CMOS Setup / BIOS Features Setup / Chipset Features Setup / Power Management Setup / PCI Configuration Setup.

Press F1 to pop up a small help window that describes the appropriate keys to use and the possible selections for the highlighted item. To exit the Help Window press <Esc>.

The Main Menu

Once you enter Award BIOS CMOS Setup Utility, the Main Menu will appear on the screen. The Main Menu allows you to select from ten setup functions and two exit choices. Use arrow keys to select among the items and press <Enter> to accept or enter the sub-menu.

ROM PCI/ISA BIOS (XXXXXXXX)
CMOS Setup Utility
Award Software, Inc

STANDARD CMOS SETUP	PASSWORD SETTING
BIOS FEATURES SETUP	IDE HDD AUTO DETECTION
CHIPSET FEATURES SETUP	SAVE & EXIT SETUP
POWER MANAGEMENT SETUP	EXIT WITHOUT SAVE
PCI/GREEN FUNCTION SETUP	
LOAD BIOS DEFAULTS	
LOAD SETUP DEFAULTS	

Esc : Quit ↓↑→← : Select Item

F10 : Save & Exit Setup (Shift)F2 : Change Color

Time, Date, Hard Disk Type...

Standard CMOS Setup Menu

The items in the Standard CMOS Setup Menu are divided into 8 categories. Each category includes one or more setup items. Use the arrow keys to highlight the item and then use the <PgUp> or <PgDn> keys to select the value you want in each item.

ROM PCI/ISA BIOS (XXXXXXXX)
STANDARD CMOS Setup
Award Software, Inc

Date (mm:dd:yy) : Mon, Jan 01 1995
Time (hh:mm:ss) : 00:00:00

HARD DISKS	TYPE	SIZE	CYLS.	HEADS	PRECOMP	LANDZ	SECTORS	Mode
Primary Master	: None	0	0	0	0	0	0	—
Primary Slave	: None	0	0	0	0	0	0	—
Secondary Master	: None	0	0	0	0	0	0	—
Secondary Slave	: None	0	0	0	0	0	0	—

Drive A : 1.2M, 5.25"
Drive B : None

Video : EGA/VGA
Halt on : No Errors

Base Memory	:	640K
Extended Memory	:	XXXXK
Other Memory	:	384K
Total Memory	:	XXXXK

Esc : Quit ↓↑→← : Select Item PU/PD/+/- : Modify

F1 : Help (Shift)F2 : Change Color

Date

The date format is <day>, <month> <date> <year>.

- day - The day, from Sun to Sat, determined by the BIOS and is dirpmax-only
- date - The date, from 1 to 31 (or the maximum allowed in the month)
- month - The month, Jan through Dec
- year - The year, from 1994 through 2099

Time

The time format is <hour> <minute> <second>. The time is calculated based on the 24-hour military-time clock. For example, 1 p.m. is 13:00:00.

Hard Disk type

This category identifies the types of hard disk drive "C" or drive "D" that has been installed in the computer. There are 46 predefined types and a user definable type. Type 1 to Type 46 are predefined. Type "User" is user-definable.

Press PgUp or PgDn to select a numbered hard disk type or type the number and press <Enter>. Note that the specifications of your drive must match with the drive table. The hard disk will not work properly if you enter improper information in this category. If your hard disk drive type is not matched or listed, you can use Type "User" to define your own drive type manually.

If you select Type "User", related information is asked to be entered to the following items. Enter the information directly from the keyboard and press <Enter>. This information should be provided in the documentation from your hard disk vendor or the system manufacturer.

CYLS	- number of cylinders
HEADS	- number of heads
PRECOMP	- write precom
LANDZONE	- landing zone
SECTORS	- number of sectors
MODE	- IDE transfer mode

If a hard disk has not been installed select NONE and press <Enter>.

Drive A type/Drive B type

This category identifies the types of floppy disk drive "A" or drive "B" that has been installed in the computer.

None	- No floppy drive installed
360K, 5.25 in	- 5-1/4 inch PC-type standard drive; 360 kilobyte capacity
1.2M, 5.25 in	- 5-1/4 inch AT-type high-density drive; 1.2 megabyte capacity
1.2M, 5.25 in	- 5-1/4 inch AT-type high-density drive; 1.2 megabyte capacity
720K, 3.5 in	- 3-1/2 inch double-sided drive; 720 kilobyte capacity
1.44M, 3.5 in	- 3-1/2 inch double-sided drive; 1.44 mega byte capacity
2.88M, 3.5 in	- 3-1/2 inch double-sided drive; 2.88 mega byte capacity

Video

This category selects the type of adapter used for the primary system monitor. The setting must match your video display card and monitor. Although secondary

monitors are supported, you do not have to select the type in Setup.

EGA/VGA	- Enhanced Graphics Adapter/Video Graphics Array. For EGA, VGA, SVGA, or PGA monitor adapters.
CGA 40	- Color Graphics Adapter, power up in 40 column mode
CGA 80	- Color Graphics Adapter, power up in 80 column mode
MONO	- Monochrome adapter, includes high resolution monochrome adapters

Halt on

This category determines whether the computer will stop if an error is detected during power up.

No errors	- Whenever the BIOS detects a non-fatal error the system will be stopped and you will be prompted.
All errors	- The system boot will not be stopped for any error that may be detected.
All, But Keyboard	- The system boot will not stop for a keyboard error; it will stop for all other errors.
All, But Diskette	- The system boot will not stop for a disk error; it will stop for all other errors.
All, But Disk/Key	- The system boot will not stop for a keyboard or disk error; it will stop for all other errors.

Memory

This category is display-only and is determined by the POST (Power On Self Test) of the BIOS.

Expanded Memory

Expanded Memory is memory defined by the Lotus™/Intel™/Microsoft™(LIM) standard as EMS. Many standard DOS™applications can not utilize memory above 640K, the Expanded Memory Specification (EMS) swaps memory which is not utilized by DOS with a section, or frame, so these applications can access all of the system memory. Memory can be swapped by EMS is usually 64K within 1MB or memory above 1MB, depending on the chipset design.

Expanded memory device driver is required to use memory as Expanded Memory.

Base Memory

The POST of the BIOS will determine the amount of base (or conventional) memory installed in the system. The value of the base memory is typically 512K for systems with 512K memory installed on the Motherboard, or 640K for systems with 640K or more memory installed on the Motherboard.

Extended Memory

The BIOS determines how much extended memory is present during the POST. This is the amount of memory located above 1MB in the CPU's memory address map.

Other Memory

This refers to the memory located in the 640K to 1024K address space. This is memory that can be used for different applications. DOS uses this area to load device drivers to keep as much base memory free for application programs. Most use for this area is Shadow RAM.

BIOS Features Setup Menu

ROM PCI/ISA BIOS (XXXXXXXX)
BIOS Features Setup
Award Software, Inc

Virus Warning	: Disabled	Video BIOS Shadow	: Enabled
CPU Internal Cache	: Enabled	C8000-CBFFF Shadow	: Disabled
External Cache	: Enabled	CC000-CBFFF Shadow	: Disabled
Quick Power On Self Test	: Disabled	D0000-D3FFF Shadow	: Disabled
Boot Sequence	: A,C	D4000-D7FFF Shadow	: Disabled
Swap Floppy Drive	: Disabled	D8000-DBFFF Shadow	: Disabled
Boot Up Floppy Seek	: Enabled	DC000-DFFFF Shadow	: Disabled
Boot Up Numlock Status	: On		
Boot Up System Speed	: High		
IDE HDD Block Mode	: Disabled		
Gate A20 Option	: Fast		
Memory Parity Check	: Enabled		
Typematic Rate Setting	: Disabled		
Typematic Rate (Chars/Sec)	: 6		
Typematic Delay(Msec)	: 250		
Security Option	: Setup	ESC : Quit ↓ ↑ → ←	: Select Item
IDE Second Channel Control	: Enabled	F1 : Help PU/PD/+/-	: Modify
		F5 : Old Values (Shift)F2	: Color
		F6 : Load BIOS Defaults	
		F7 : Load Setup Defaults	

Virus Warning

This category flashes on the screen. During and after the system boots up, any attempt to write to the boot sector or partition table of the hard disk drive will halt the system and the following error message will appear, in the mean time, you can run an antivirus program to locate the problem.

> ! WARNING !
> Disk boot sector is to be modified
> Type "Y" to accept write or "N" to abort write
> Award Software, Inc.

Enabled - Activates automatically when the system boots up causing a warning message to appear when anything attempts to access the boot sector or hard disk partition table.

Disabled - No warning message to appear when anything attempts to access the boot sector or hard disk partition table.

CPU Internal Cache

This feature allows a user to disable the high speed internal cache of the processor. The default value is enable.

Enabled - Enable cache
Disabled - Disable cache

External Cache

This category speeds up memory access. However, it depends on CPU/chipset design. The default value is disable.

Enabled - Enable cache
Disabled - Disable cache

Quick Power On Self Test

This category speeds up Power On Self Test (POST) after you power on the computer. If it is set to Enable, BIOS will shorten or skip some check items during POST.

Enabled - Enable quick POST
Disabled - Normal POST

Boot Sequence

This category determines which drive computer searches first for the disk operating system (i.e., DOS). Default value is A, C.

C, A - System will first search for hard disk drive then floppy disk drive.

A, C - System will first search for floppy disk drive then hard disk drive.

Swap Floppy Disk

This feature allows the user to swap the drive designation of the "A" and "B" floppy disk drives.

Disabled - Default Setting
Enabled - Swap "A" and "B" Drives

Boot Up Floppy Seek

During POST, BIOS will determine if the floppy disk drive installed is 40 or 80 tracks. 360K type is 40 tracks while 760K, 1.2M and 1.44M are all 80 tracks.

Enabled - BIOS searches for floppy disk drive to determine if it is 40 or 80 tracks. Note that BIOS can not tell from 720K, 1.2M or 1.44M drive type as they are all 80 tracks.

Disabled - BIOS will not search for the type of floppy disk drive by

track number. Note that there will not be any warning message if the drive installed is 360K.

Boot Up NumLock Status

The default value is On.

On - Keypad is number keys
Off - Keypad is arrow keys

Boot Up System Speed

It selects the default system speed - the speed that the system will run at immediately after power up.

High - Set the speed to high
Low - Set the speed to low

IDE HDD Block Mode

This feature allows the system to use hard drives of capacities greater than 526MB.

Enabled - Enable IDE HDD Block Mode
Disabled - Disable IDE HDD Block Mode

Gate A20 Option

Normal - Keyboard
Fast - Chipset

Typematic Rate Setting

This determines the typematic rate.

Enabled - Enable typematic rate
Disabled - Disable typematic rate

Typematic Rate (Chars/Sec)

6 - 6 characters per second
8 - 8 characters per second
10 - 10 characters per second
12 - 12 characters per second
15 - 15 characters per second
20 - 20 characters per second
24 - 24 characters per second
30 - 30 characters per second

Typematic Delay (Msec)

When holding down a key, the time between the first and second character displayed.

250 - 250 msec
500 - 500 msec
750 - 750 msec
1000 - 1000 msec

Security Option

This category allows you to limit access to the system and Setup, or just to Setup.

System - The system will not boot and access to Setup will be denied if the correct password is not entered at the prompt.
Setup - The system will boot, but access to Setup will be denied if the correct password is not entered at the prompt.

Note: To disable security, select PASSWORD SETTING at Main Menu and then you will be asked to enter password. Do not type anything and just press <Enter>, it will disable security. Once the security is disabled, the system will boot and you can enter Setup freely.

Video BIOS Shadow

It determines whether video BIOS will be copied to RAM, however, it is optional from chipset design. Video Shadow will increase the video speed.

Enabled - Video shadow is enabled
Disabled - Video shadow is disabled

C8000 - CFFFF Shadow/DC000 - DFFFF Shadow

These categories determine whether optional ROM will be copied to RAM by 16K byte.

Enabled - Optional shadow is enabled
Disabled - Optional shadow is disabled

Chipset Features Setup Menu

This screen controls the settings for the board's chip set. The controls for this screen are the same as for the previous screen.

ROM PCI/ISA BIOS (XXXXXXXX)
Chipset Features Setup
Award Software, Inc

Auto Configuration	: Enabled	PCI Posted Memory Write	: Disabled
		Burst Copy-Back Option	: Disabled
DRAM Read Wait States	: 3 WS	Host Clock / PCI Clock	: 1 : 1
DRAM Write Wait States	: 0 WS	Preempt PCI Master Option	: Disabled
EDO DRAM Read Wait States	: 1 WS	IBC DEVSEL# Decoding	: Slow
L1 Cache Update Scheme	: Wr-Through	ALT Bit in Tag SRAM	: 7+1 Bits
L2 Cache Update Scheme	: Wr-Through	IDSELRemaping Option	: Enabled
L2 Cache Wait States	: 2-2-2-2		
System BIOS Cacheable	: Disabled	Onboard FDD Controller	: Enabled
Video BIOS Cacheable	: Disabled	Onboard Parallel Mode	: ECP Mode
Keyboard Controller Clock	: PCICLK1/4	Onboard Parallel Port	: 378H
ISA Bus Clock Option	: PCICLK1/4	Onboard Serial Port 1	: COM1
Keyboard Emulation	: Disabled	Onboard Serial Port 2	: COM2
Memory Hole Below 16MB	: 64K	Onboard Game Port	: Disabled
Slow Refresh (1/4 Freq)	: Disabled		
I/O Recovery Time	: 2 BCLK	ESC : Quit ↓ ↑ → ←: Select Item	
Host-to-PCI Post Write	: 1 WS	F1 : Help PU/PD/+/- : Modify	
Host-to-PCI Burst Write	: Disabled	F5 : Old Values (Shift)F2 : Color	
PCI Bus Park Option	: Disabled	F6 : Load BIOS Defaults	
		F7 : Load Setup Defaults	

Onboard FDC Controller (Optional)

Enabled : The onboard Floppy Disk Controller is enabled.
Disabled : The onboard Floppy Disk Controller can be disabled if you prefer to use a Floppy Disk controller on a peripheral card.

Onboard Parallel Port Mode (Optional)

Normal : Standard and Bidirectional Modes
EPP : Enhanced Parallel Port Mode 1.9 and Standard Mode
ECP : Extended Capabilities Port Mode
ECP/EPP : ECP and EPP modes

If you have a parallel interface peripheral device that uses one of the parallel port enhancements listed, set this line for the enhanced mode your peripheral supports.

Onboard Parallel Port (Optional)

378H : Onboard Parallel Port set to LPT1
278H : Onboard Parallel Port set to LPT2
3BCH : Onboard Parallel Port set to LPT3
Disabled : Onboard Parallel Port disabled

Onboard Serial Port 1 (Optional)

COM1 : The Primary Serial port is configured for COM1 and IRQ4
COM2 : The Primary Serial port is configured for COM2 and IRQ3
COM3 : The Primary Serial port is configured for COM3 and IRQ4
COM4 : The Primary Serial port is configured for COM4 and IRQ3
Disabled : The Primary Serial port is disabled

Onboard Serial Port 2 (Optional)

COM1 : The Secondary Serial port is configured for COM1 and IRQ4
COM2 : The Secondary Serial port is configured for COM2 and IRQ3
COM3 : The Secondary Serial port is configured for COM3 and IRQ4
COM4 : The Secondary Serial port is configured for COM4 and IRQ3
Disabled : The Secondary Serial port is disabled

Onboard Game Port (Optional)

Enabled : The onboard Game port is enabled.
Disabled : The Secondary Serial port is disabled

Power Management Setup

This category determines how much power consumption for system after selecting below items. Default value is Enabled.

ROM PCI/ISA BIOS (XXXXXXXX)
Power Management Setup
Award Software, Inc

Power Management	:	Max Saving	* Monitor Event In Full On Mode	
PM Control by APM	:	Enabled	PCI Master3 Check	: Enabled
Video Off Method	:	Blank Screen	PCI Master2 Check	: Enabled
HDD Standby Timer	:	1 min	PCI Master1 Check	: Enabled
Doze Timer Select	:	0.5 min	VESA Slave Access Check	: Enabled
Standby Timer Select	:	2 min	LPT Access Check	: Enabled
Suspend Timer Select	:	2 min	COM Access Check	: Enabled
			ISA Master & DMA Check	: Enabled
Mode Control : CPU Speed		Display	IDE Access Check	: Enabled
Doze Mode : 1/2 HCLK		Turn On	Floppy Access Check	: Enabled
Standby Mode : 1/2 HCLK		Turn Off	VGA Access Check	: Enabled
Inactive Mode : STOP CLK				
			ESC : QUIT	: Select Item
			F1 : Help PU/PD/+/-	: Modify
			F5 : Old Values (Shift)F2	: Color
			F6 : Load BIOS Defaults	
			F7 : Load Setup Defaults	

Power Management

User Defined - All the power down time-out values are selected by user.
Max power Saving - Auto setting power down time-out value to maximum power consumption.
Min Power Saving - Auto setting power down time-out value to save minimum.
Disable - Disable whole system power management function.

HDD Standby Timer

Select time-out value 1-15 minutes for IDE with disk auto standby. This function depends on disk drive, some older mode disk drives don't support auto standby function. System BIOS set this function before booting if HDD supported.

Video Off Method

Select the style of power management used for the monitor. System BIOS will disable Hsync & Vsyn output to VGA monitor.

PCI/Green Function Setup

This screen configures the PCI Bus slots.

ROM PCI/ISA BIOS (XXXXXXXX)
PCI/Green Function Setup
Award Software, Inc

PnP BIOS Auto-Config	:	Disabled	* Wakeup Event In Inactive Mode :	
			Monitor IRQ 3 Wakeup	: Disabled
Slot 1 Using INT#	:	Auto	Monitor IRQ 4 Wakeup	: Disabled
Slot 2 Using INT#	:	Auto	Monitor IRQ 5 Wakeup	: Disabled
Slot 3 Using INT#	:	Auto	Monitor IRQ 6 Wakeup	: Disabled
1st Available IRQ	:	11	Monitor IRQ 7 Wakeup	: Disabled
2nd Available IRQ	:	12	Monitor IRQ 9 Wakeup	: Disabled
3rd Available IRQ	:	10	Monitor IRQ 10 Wakeup	: Disabled
4th Available IRQ	:	9	Monitor IRQ 11 Wakeup	: Disabled
PCI IRQ Actived By	:	Edge	Monitor IRQ 12 Wakeup	: Disabled
PCI IDE Controller	:	Enabled	Monitor IRQ 14 Wakeup	: Disabled
PCI IDE IRQ Map To	:	ISA	Monitor IRQ 15 Wakeup	: Disabled
			ESC : Quit	: Select Item
			F1 : Help PU/PD/+/-	: Modify
			F5 : Old Values (Shift)F2	: Color
			F6 : Load BIOS Defaults	
			F7 : Load Setup Defaults	

The "IRQ" field assigns a system IRQ to a PCI slot.
The Default IRQ settings are :

Slot 1	:	11
Slot 2	:	12
Slot 3	:	10
Slot 4	:	9

You can change the default to another setting. If you do, make sure that you do not choose an IRQ already in use.

The 'PCI IRQ Actived By' item, selects between Level trigger, and Edge trigger. You only need to change this if you have a card that uses the Edge trigger method of generating an interrupt request. Most PCI cards use the Level method. Many IDE controller cards use Edge triggering.

When you're finished making settings for this screen, press the <ESC> key to go back to the main screen.

Load BIOS Defaults

This option allows the user to load all the BIOS defaults except for the Standard CMOS Setup.

Load Setup Defaults

This selection allows the user to load SETUP Defaults except for the Standard CMOS Setup.

Password Setting

When you select this function, the following message will appear at the centre of the screen to assist you in creating a password.

ENTER PASSWORD:

Type the password, up to eight characters, and press <Enter>. The password typed now will clear any previously entered password from CMOS memory. You will be asked to confirm the password. Type the password again and press <Enter>. You may also press <Esc> to abort the selection and not enter a password.

To disable password, just press <Enter> when you are prompted to enter password. A message will confirm the password being disabled. Once the password is disabled, the system will boot and you can enter Setup freely.

PASSWORD DISABLED.

If you select System at Security Option of BIOS Features Setup Menu, you will be prompted for the password every time the system is rebooted or any time you try to enter Setup. If you select Setup at Security Option of BIOS Features Setup Menu, you will be prompted only when you try to enter Setup.

IDE HDD Auto Detection

Selecting this option tells the computer to search for any detectable IDE hard disk drives which are attached to the system. If it detects a drive it will prompt the user to determine if the drive that it found was correctly located. Type "Y" <Enter> if the drive has been detected correctly, type "N" <Enter> if it has not.
Press "ESC" to skip any detection sequence. Once all drives are selected, press "ESC" to exit.

Power-On Boot

After you have made all the changes to CMOS values and the system cannot boot with the CMOS values selected in Setup, restart the system by turning it OFF then ON or Pressing the "RESET" button on the system case. You may also restart by simultaneously press <Ctrl>, <Alt>, and <Delete> keys. Upon restart the system, immediately press <Insert> to load BIOS default CMOS value for boot up.

Base Memory	:	640K
Extended Memory	:	XXXXK
Other Memory	:	384K
Total Memory	:	XXXXK