Overview

Introduction to the Safari Plus Databook

The **Safari Plus Databook** system is an innovative new booksize Pentium® processor-based PC that combines integrated networking, communications and multimedia features to provide you with a personal computer that is fast and powerful without taking up valued desk space. The high-performance CPU and 256KB Pipeline Burst Level II cache, and up to 128MB of Fast Page Mode or EDO memory provide the extra processing power you need for today's demanding business and multimedia applications.

With the 10BaseT LAN controller and optional Fax/Modem with embedded voice mode capabilities, the **Safari Plus Databook** System can be customized to perform a vast array of data transfer and networking tasks.

The Full Duplex audio card allows you to take advantage of the fascinating new world of multimedia education and home entertainment. Choose from hundreds of interactive CD-titles or cruise the Internet with 3D sound and watch as a vivid and colorful world opens up before your eyes. With the sound card you can enjoy high quality audio with all your games, applications, and digital recordings. And connection to a wide variety of game and audio hardware is easy with one Game port, an audio Line-In port, a Line-Out port and an external Microphone port conveniently tucked away on the rear panel.

For full I/O connectivity, the **Safari Plus Databook** System also comes with an RJ45 jack to connect to a LAN network, PS/2 keyboard and mouse ports, two serial ports, one ECP/EPP capable parallel port, one IrDA interface (optional) for easy infrared data transfer, one VGA connector, and two USB connectors for easy plug and play connectivity to a variety of upcoming USB capable peripherals. One 32-bit PCI slot and a shared ISA/PCI slot provide room for additional expansion.

The **Safari Plus Databook** not only employs the latest breakthroughs in personal computing technology but also complies with accepted international safety, regulatory and ergonomic standards for maximum compatibility.

Unpacking The Safari Plus Databook

Upon unpacking the system, check to see that the following standard items are contained in the shipping cartons and are in good order and condition:

System unit tower case with appropriate cables and power cords

Standard in packing:

1. This User's Manual

2. LAN Controller Utility diskettes

3. S3 Trio64/ViRGE VGA Controller Utility diskettes

Optional:

1. CD-ROM Drive:
    a. Mitsumi SR201S 20X CD-ROM Drive
    b. Matsushita UJDA110 20X CD-ROM Drive
    c. Toshiba XM-1702B 24X CD-ROM Drive
    d. Matsushita UJDA150L 24X CD-ROM Drive

2. Sound Card: Crystal 4237B

Before making any connections, inspect each item carefully for any damage that may have occurred while in transit. Report any damage found to your dealer or the carrier who delivered the computer.

Retain the shipping cartons and other packing materials for future use.

Setting Up the Safari Plus Databook

Place the computer system in a site that is clean, well-ventilated and near a grounded (three-pronged) outlet. If the computer does not have enough ventilation, internal components overheat and become damaged. If you are using a Fax/Modem make sure the workspace is near a telephone jack.

Note: *If the line voltage in your area is unreliable, you may want to use a voltage regulator to protect the system from possible harmful effects caused by sudden electrical surges.*

Although the computer system is designed and built to work and last for a long time, you may do well to heed the following precautions to get the most out of the system:

■ Avoid placing the system on an unstable stand or surface subject to bumps and violent shaking.

■ Avoid food, smoke, or traffic areas that may expose the system to liquid and food spills, cigarette ashes and dust.

■ Do not subject the system to extreme temperatures and humidity.

■ Occasionally clean the computer with a soft cloth moistened with water. Do not use soap or liquid cleaners on the display.

Note: *Unless you are a qualified technician, you must never tinker with any of the components inside the system unit, display monitor and keyboard. Irresponsible use of the system will invalidate the warranties and may cause you unnecessary harm.*

A Look at the Front of the Computer

Below is a view of the front panel of the system unit.
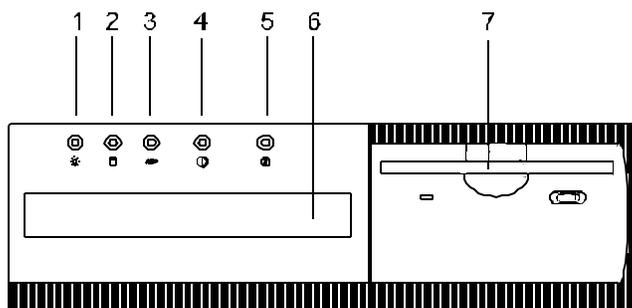
1. Power-On Indicator
It glows when the computer's power is turned on.

2. Hard Disk Activity Indicator
When a hard disk or CD-ROM drive is being accessed, the LED indicator correspondingly lights up.

3. Suspend Mode or LAN Activity Indicator
It glows when the system is in suspend mode.

4. Reset Button
Press it to restart or reboot the system without turning the system power off then on again.

5. Suspend Button
Press it to allow system to enter suspend mode. If the system is already in suspend mode, pressing it will restore the system power back to full-on mode.

6. CD-ROM Drive Bay
This space allows you to install a CD-ROM drive.

7. 3.5" FDD Bay
The primary disk storage of the system for 3.5" diskettes.

A Look at the Rear of the Computer

The rear of the computer is where you connect power, peripheral devices such as a Fax/Modem or printer, input devices such as a keyboard, and output devices such as a display monitor or speakers. Please refer to the pictures below for the location of the rear components of the Safari Plus Databook.
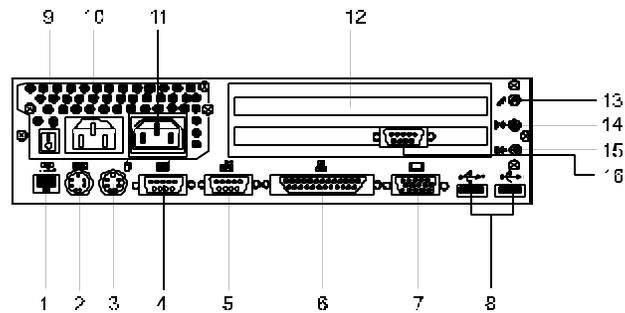
1. RJ-45 LAN Cable Socket
The LAN cable is plugged into this socket.

2. PS/2 Keyboard Connector
The keyboard cable is plugged into this connector.

3. PS/2 Mouse Connector
The PS/2 mouse cable is plugged into this connector.

4. COM1 Port
The serial port is for connecting to a serial mouse.

5. COM2 Port
An additional serial port besides item 4 is for connecting to another serial device.

6. Parallel Port
The parallel port is for connecting to a printer.

7. VGA Connector
The monitor cable is plugged into this connector.

8. USB Jacks
Two USB (Universal Serial Bus) jacks for connecting to some USB devices.

9. Power On/Off Switch
The switch is for turning the power on and starting the system running. When the system is in power-on status, press it to turn the computer power off.

10. AC In Socket
The power cord is plugged into this socket.

11. AC Out Socket
The display monitor's power cord is plugged into this socket.

12. Adapter Panel
Behind it is the expansion slot where an adapter or add-on card is installed.

13. Microphone-In Jack
The microphone cable is plugged into this jack.

14. Line-In Jack
The cable of an external audio device to the sound card is plugged into this jack.

15. Line-Out Jack
The cable of an audio output from the sound card is plugged into this jack.

16. IR Port (optional)
The infrared port is for connecting to an IrDA, MIR, and FIR device.

Display

The system comes with a factory option of an S3 Trio64V2/DX or S3 ViRGE DX/GX graphics card. The system provides an S3 media channel for hardware MPEG.

If your system features S3 Trio64V2/DX –

This VGA controller combines high-performance graphics and high-quality video acceleration features with the capability to directly interface to live video and MPEG-1 peripherals. It incorporates an enhanced version of the 64-bit graphics accelerator core and high performance 170MHz true-color RAMDAC.

If your system features S3 ViRGE DX/GX –

This enhanced VGA controller provides improved 2D acceleration for excellent Windows applications performance and a full-featured high-performance 3D rendering engine for realistic user experience in games and other interactive 3D applications. Another advanced feature is the compressed texture formats for improved performance and reduced memory requirements.

VGA drivers and utilities have been provided with the installation diskettes to enable you to take full advantage of the display capabilities of the display monitor while using different application programs. Please refer to the README file in the utility diskettes or ask your dealer for more information or documentation on these utilities and drivers.

The table on the next page lists the VGA resolutions supported by the system.

Supported VGA Resolution Table

Resolutions Supported	Trio64V2/ DX 1MB RAM	Trio64V2/ DX 2MB RAM	Refresh Rate (Hz)	ViRGE DX/GX 2MB RAM	Refresh Rate (Hz)
640x480x4	🗐	🗐	60	🗐	60
640x480x8	🗐	🗐	60, 72, 75, 85	🗐	60, 72, 75, 85
640x480x15	🗐	🗐	60, 72, 75		60, 72, 75
640x480x16	🗐	🗐	60, 72, 75	🗐	60, 72, 75
640x480x24				🗐 *	60, 72, 75
640x480x32		🗐	60, 72, 75	🗐	60, 72, 75
800x600x4				🗐	
800x600x8	🗐	🗐	56, 60, 72, 75, 85	🗐	56, 60, 72, 75, 85
800x600x15	🗐	🗐	60, 72, 75		60, 72, 75
800x600x16	🗐	🗐	60, 72, 75	🗐	60, 72, 75
800x600x24				🗐 *	60, 72, 75
800x600x32		🗐	60, 72, 75	🗐	60, 72, 75
1024x768x4				🗐	
1024x768x8	🗐	🗐	43(IL), 60, 70, 75, 85	🗐	43(IL), 60, 70, 75, 85
1024x768x15		🗐	43(IL), 60, 70, 75		43(IL), 60, 70, 75
1024x768x16		🗐	43(IL), 60, 70, 75	🗐	43(IL), 60, 70, 75
1152x864x8	🗐	🗐	60		60
1280x1024x4				🗐	
1280x1024x8		🗐	45(IL), 60, 75	🗐	45(IL), 60, 75

1600x1200x 4				▤	
1600x1200x 8		▤	48.5(IL)	▤	48.5(IL)

Color bits: 4=16 colors; 8=256 colors; 16=64K colors; 32=16.7 million colors,
IL=InterLaced;
* =Non-accelerated mode

Getting Ready to Go

Introduction

This chapter provides you with the necessary information and instructions you need to set up the new Safari Plus Databook. This chapter also guides you through starting up the computer for the first time and doing basic operations. Setting up the computer involves the following steps:

- Connecting a display monitor to the computer

- Connecting a keyboard to the computer

- Connecting a PS/2 mouse to the computer

- Connecting any other peripherals that you may have including a printer, a serial mouse, audio equipment or a USB peripheral

- Plugging in and turning on the computer

System Connections

The Safari Plus Databook system should look like the figure below after all the initial connections are in place. Note that each major connection is numbered for easy reference in later descriptions and instructions given in this chapter. The Safari Plus Databook comes with two different types of rear panel – please refer to the correct diagram for your system.

Your computer system should look like the figure below after all the initial connections are in place.
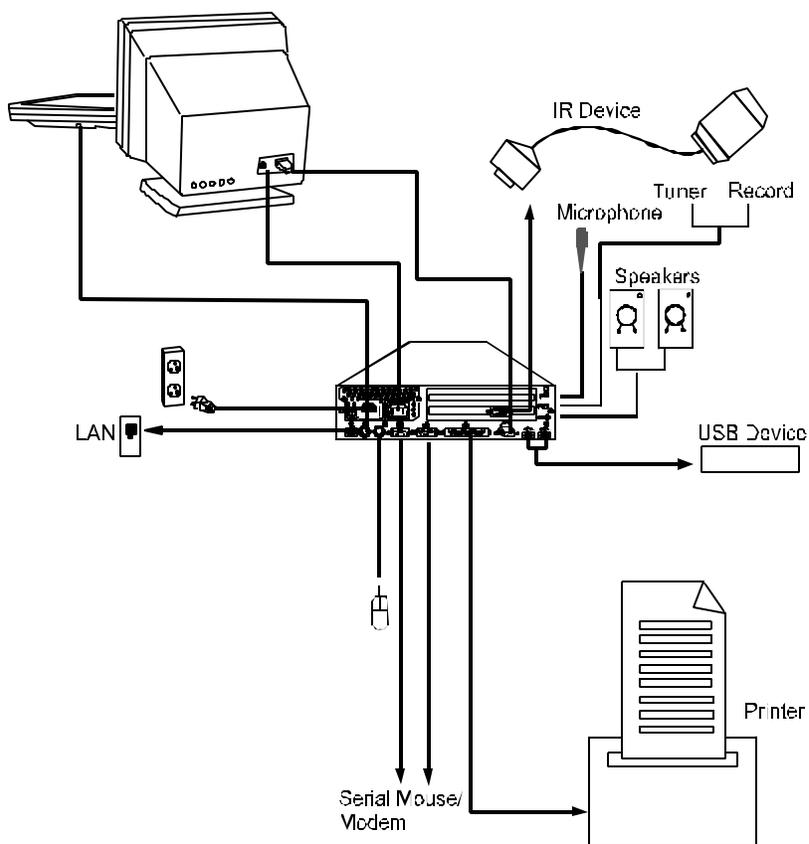
Operating System

A computer starts up only when there is an **operating system** (O/S) existing on its hard disk or when a system diskette is in its primary drive, normally designated as drive A.

Most computers are sold with an operating system pre-installed. If this is true of your computer, you can **be sure that the hard disk is pre-formatted and contains the files necessary for booting**.

If the hard disk is not yet formatted and the O/S not yet installed into it, read carefully the related manuals for instructions in the proper hard disk formatting and running of the Setup program of MS-DOS.

The computer automatically loads the O/S after you turn it on. This process is called **booting**.

If you are booting from a system diskette, see the section on Diskette Operations to know how to insert diskettes into the drive.

If you are booting from the hard disk, proceed with the following instructions.

Diskless LAN Station Setup

After completing the system connections described in the Section **System Connections** on page 9. You can link with the local area network by simply following the steps listed in **Appendix C**.

Power-On Operations

1. Turn on the computer by pressing the power button.

    Each time the system power is turned on, the system runs a series of tests, commonly referred to as POST (Power-On-Self-Test) which checks the status of major computer devices that include the system board, memory, video, keyboard, and disk drive. Some status messages of POST appears on the screen.

    POST compares the current hardware setup status with the default configuration information pre-entered into the system BIOS SETUP. (See Chapter 4 for details on the BIOS SETUP settings.)

2. When POST detects a mismatch between the actual hardware configuration and the BIOS SETUP default settings, error messages indicating invalid configuration appears on the screen. Normally, the message specifies the cause of the problem, thereby giving you a hint on how to fix the problem.

    When you see such an error message, refer to Chapter 5 on Troubleshooting Tips in this manual to know how to solve the problem. If the error message persists or if the problem is not discussed in the Troubleshooting Tips chapter, consult your dealer or a qualified service technician for assistance.

3.   When no mismatch is found and POST successfully completes its check, the computer first tries to boot from drive A. If there is no diskette in drive A, the computer boots from the hard disk, usually designated as drive C.

When the computer boots from the hard disk that has an operating system properly installed on it, the system prompt, usually the **C:>** prompt appears.

The appearance of the **C:>** prompt signifies successful booting or start-up of the system. You could now start installing or using the application programs like MS-Windows.

Diskette Operations

Inserting/Removing Diskettes

When you are starting up the system for the very first time, the disk drives probably will have the cardboard head protector inserted into the drive.

1.   Remove the cardboard head protector from the disk drive. Press the eject button to pull out the cardboard. Keep the cardboard for future use in case you may have to move the system.

2.   If the system does not have a hard disk and an operating system, insert a system diskette (that comes with the operating system diskettes and contains the COMMAND.COM file).

When you insert a diskette in the FDD, insert the diskette with the label side up and the metal plate first into the drive until the diskette locks in place.

3.   To remove a diskette from the FDD, press the diskette eject button to make the diskette come out partway out of the drive and gently pull out the diskette by hand.

Note: *When the system is accessing the drive (indicated by the lit in-use indicator), be careful not to remove a diskette or accidentally press the power button. Doing so may destroy the data on the diskette and may damage the drive mechanism.*

Diskette Types

The type of diskette that you can use in a disk drive depends on the drive size. See the following table to know the drive/diskette compatibility features:

DRIVE CAPACITY	DISKETTE DENSITY	READ/WRITE
High Capacity	High Density	Yes/Yes
1.44MB 3.5 inch		Yes/Yes*
Standard Capacity	High Density	No/No
720KB 3.5 inch	Standard Density	Yes/Yes

Note

* To format a standard-density diskette in a high-capacity drive, you must include certain parameters in the formatting command. Refer to the operating system documentation for details.
Note that the capacity of a standard-density diskette will not change when it is formatted in a high-capacity drive.
A standard-capacity disk drive might not be able to read a standard-capacity diskette that was written or formatted in a high-density drive.

Backing Up Master Diskettes

Master diskettes are the original diskettes of the operating system or software programs. As a safeguard against unexpected damage or alterations, make back up copies of the master diskettes and use the backup diskettes for everyday operation. Store the master diskettes in a safe place. Consult the MS-DOS or MS-Windows documentation to know how to properly back up diskettes.

The hard disk has a much larger capacity and faster access speed than the floppy disk drive. For your convenience, you are advised to copy frequently-used program files from your MS-DOS or utility diskettes or other application programs into your hard disk so you can run the programs from there.

Resetting the Computer

You may re-start the system (that is, go through booting and POST operations again) without turning the computer power off and on again. There are two ways to do this:

1. Press the Reset button on the front panel of the system.

2. Press <**Ctrl>** + **<Alt>** + **<Del>** keys simultaneously.

Power-Off Operations

1. If you are using a program, save the data and exit to the system prompt.

2. Remove the diskette, if any, from the disk drive.

3. Turn off the computer by pressing the Power Button.

4. Turn off the power of any connected external devices.

If you have to turn the computer on again immediately after turning it off, wait for at least five seconds. Turning the computer off and on rapidly can damage it.

Doing System Upgrades

We recommend that you contact your Safari Plus Databook reseller for carrying out any system upgrades. The following upgrades to the system are best if attempted only by a qualified technician.

Before starting make sure you have a stable and clean working environment. Dust and dirt can get into computer components and cause malfunction. Use containers to keep small components separated. Many of the screws on the computer are of different sizes; if you put them together you may spend a lot of time trying to track down the correct screw when you put the computer back together. Also, putting all small components in a safe container keeps them from getting lost. Having adequate lighting and using proper tools can prevent you from accidentally damaging the internal components. Most of the procedures that follow require only a few simple tools, including the following:

- A Philips Screwdriver

- A flat tipped screwdriver

- A set of jeweler's screwdrivers

- A multimeter (not always required)

- A grounding strap

Please see Appendix B for the location of jumpers and connectors.

Removing the Top Cover

Static electricity can damage electronic devices. Before handling any hardware outside of its anti-static packaging, first discharge any static build-up from your body by touching any propective grounded device such as an unpainted metal surface.

1. Turn the power of the system unit off and all connected peripherals.

2. Disconnect all power cords and cables from the system unit.

3. Remove the lock the white arrow pointed. Loosen the three screws securing the top cover with a Philips screwdriver.
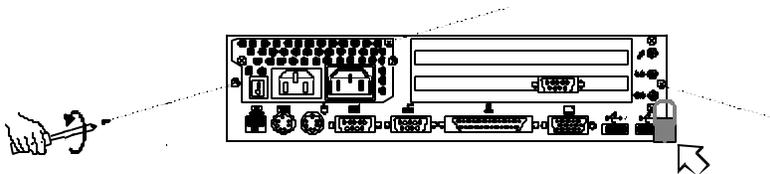
1. Grasp the cover with both hands. Pull the cover backward until it slides off the chassis.
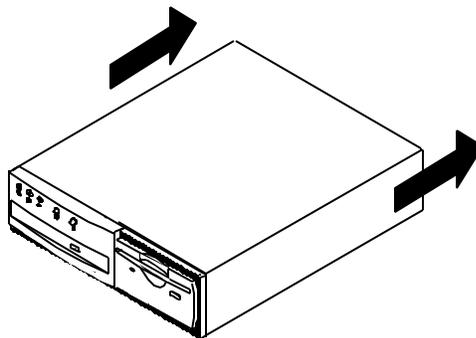
Recommended System Configuration

Please refer to the recommended system configuration below before purchasing any new component.

1. Floppy disk drive: Mitsumi 353T6/358T6

2. CD-ROM drive: Mitsumi SR201S 20X or
                     Matsushita UJDA110 20X
                     Toshiba XM 1702B 24X
                     Matsushita UJDA150L 24X

Following are the allowed dimensions of add-on cards:
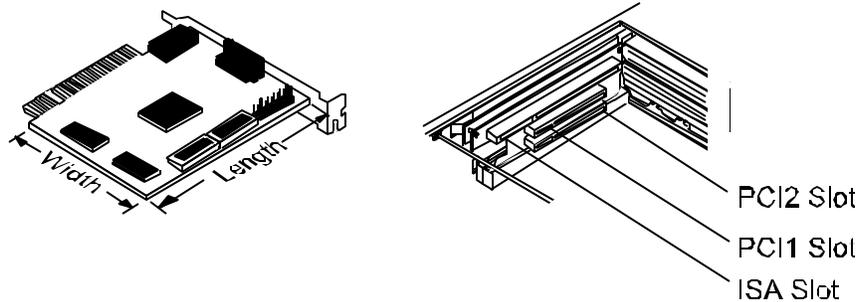
ISA Slot – Width = 90mm maximum; Length = 190mm maximum

PCI1 Slot – Width = 90mm maximum; Length = 240mm maximum

PCI2 Slot – Width = 90mm maximum; Length = 135mm maximum

DRAM Modules:

TYPE	VENDOR	MODEL	SIZE
Fast Page	Hyundai	Hy514400A	4MB, 8MB
		Hy5117400JC-70	16MB
	Hitachi	HM514400CLS7	4MB, 8MB
	Mitsubishi	M5M418160BJ-7	4MB
		M5M4100BJ-7	4MB
		FC1121 Rev1.0	8MB
		M5M417400AJ-7	16MB
		M5M417400BJ-7	16MB
	Micron	MT-12D136G-7	4MB
	NEC	4217400-60	4MB
		4216100-60 *	64MB
	TI	TMS418160-70DZ	4MB
		TMS417400DJ-6 *	32MB
	Toshiba	TC514400ASJL-7	4MB
		TC5117400BSJ-60 *	32MB
EDO	SEC	KM416C1204AJ	8MB
		KM44C4104AK	16MB
	Hyundai	Hy5118164B-60	16MB
	Micron	MT4C4007JDJ-60	4MB
	Toshiba	M5117405A-60	16MB
	Siemens	HYB8118165BSJ-60	4MB
	Mitsumi	M5M418165BJ	8MB, 16MB
	TI	TMS418169DZ-60	8MB
	OKI	M5118165A-60J	8MB
		M5117405A-60A	16MB

* ECC function also supported

Dimensional Restriction of SIMMs
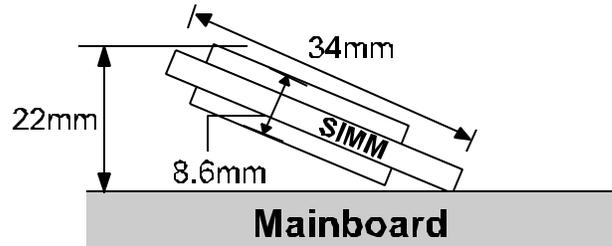
The SIMM installed cannot go beyond the dimensional requirements as shown in the above figure.

Removing the Front Panel Chassis

1. Loosen the two screws on each side of the front panel chassis as shown in the figure below.
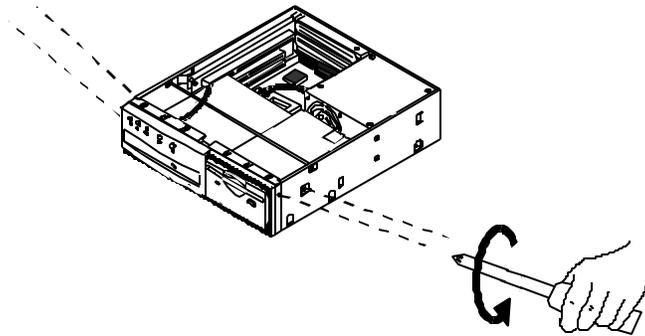
2. Pull the front chassis away from the main body about 10cm. Disconnect the ribbon cables and power wires of the FDD and CD-ROM drive.
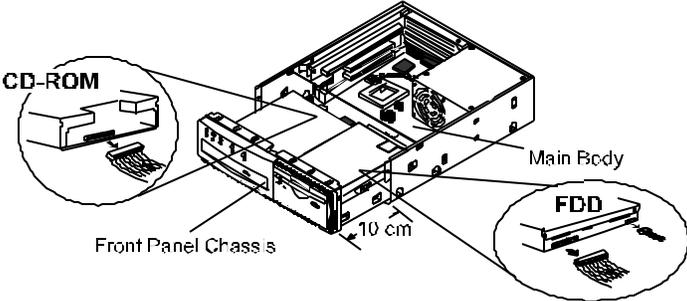
3. Pull the front panel away from the main body. Pull out the LED wires plugged to the J1 connector. Take note of the colors of the wires to be able to restore them properly.
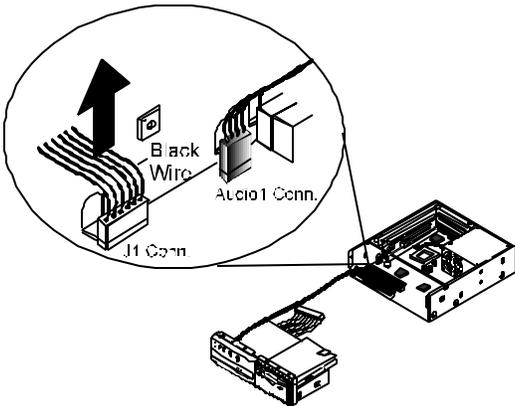
Installing the Hard Disk Drive (HDD)

Place the HDD onto the chassis and secure the four screws for affixing the HDD.
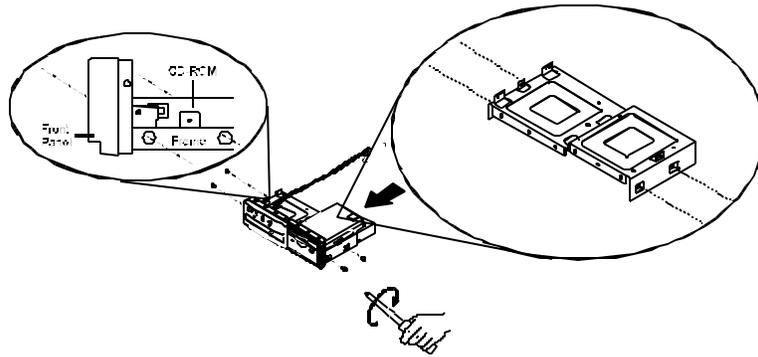
Upgrading the CD-ROM Drive

The CD-ROM drive is optional with your system. To upgrade the existing CD-ROM drive you must first remove it from the chassis.

1.   Loosen the three screws that fastens the CD-ROM drive on to the chassis and remove the CD-ROM drive.
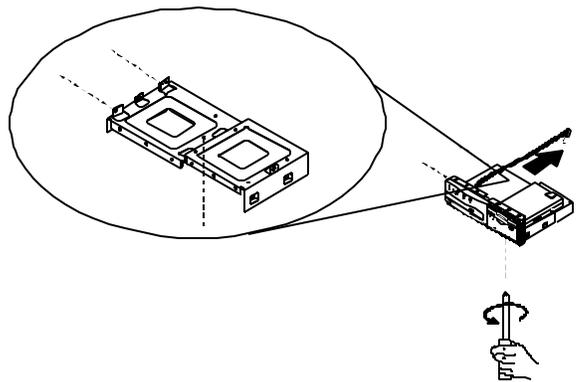
2.   Remove the bracket on the side of the CD-ROM drive by loosening the two screws that affix it.
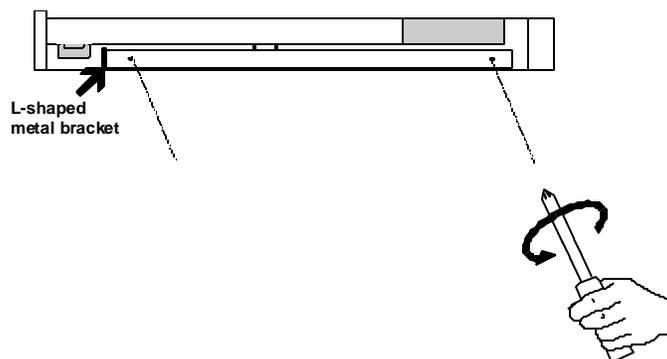
Installing the CD-ROM Drive

1. Attach the CD-ROM drive adaptor to the CD-ROM drive adaptor connector located at the back of the slim CD-ROM drive, by securing the two screws to it with a mini-screwdriver.
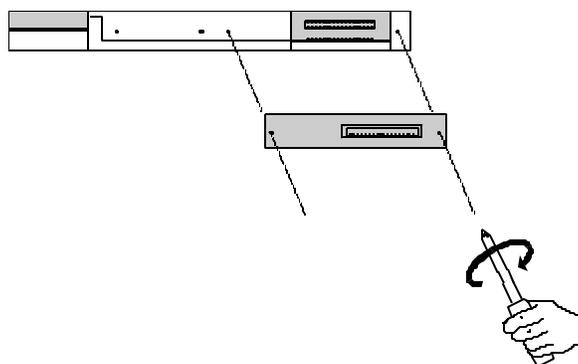
2. Attach the L-shaped metal bracket by matching the two screwholes of the metal bracket to the first and last screwholes of the group of four screwhole on the right underside portion of the slim CD-ROM drive and securing the two screws to it (see the following figure).

L-shaped metal bracket

first and last screwhole on the right underside portion of the slim CD-ROM drive
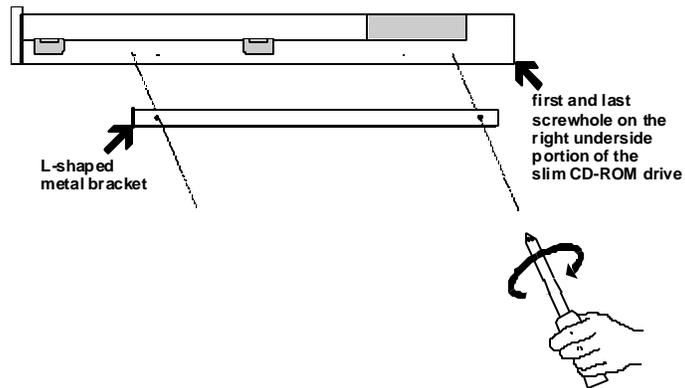
3. In case this is the first time that a CD-ROM drive is to be installed into the system, remove the front panel plastic cover of the CD-ROM drive bay by pushing outwards from the inside with your fingers.

   Remove the 11 x 28mm metal sheet located at the front right lower edge of the CD-ROM drive bay metal bracket by gripping it using pliers and rocking it back and forth until it breaks free as shown in the following figure.
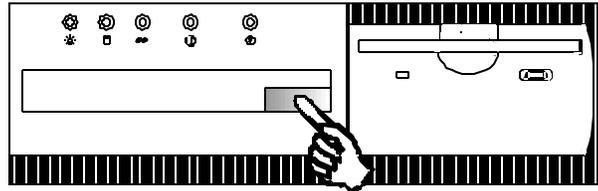
4. Place the new CD-ROM drive onto the chassis and secure the three screws that affix the CD-ROM drive as shown in the following figure.
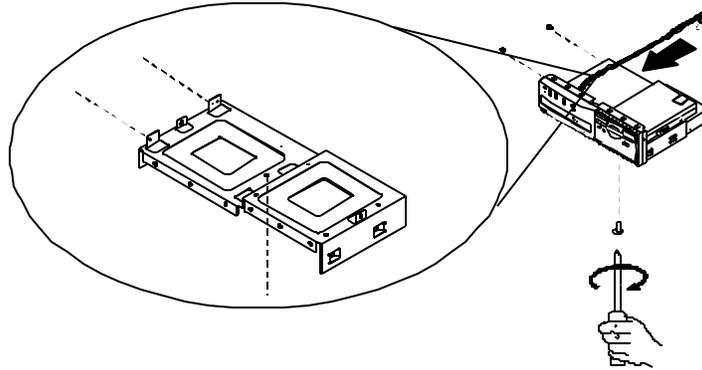
5. Connect the 40-pin connector end of the CD-ROM drive connector cable to the adaptor connector located at the back of the CD-ROM drive and the other end to the SECONDARY connector located on the mainboard, taking care to align the 50-pin connector of the CD-ROM drive connector cable to pins 55 and 56 of the SECONDARY connector, leaving pins 1-6 unconnected. Pin 26 of the SECONDARY connector has been removed to prevent inserting the connector cable in the wrong orientation (refer to the following figure).
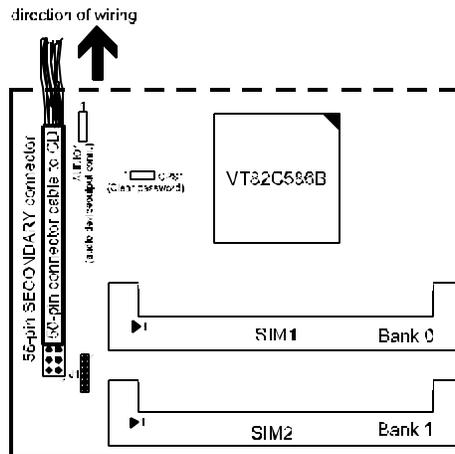
Upgrading and Installing the Floppy Disk Drive

The floppy disk drive (FDD) comes standard with the system. When upgrading the FDD, *remove the HDD first* then loosen the four screws that hold the FDD and remove the FDD as shown below.
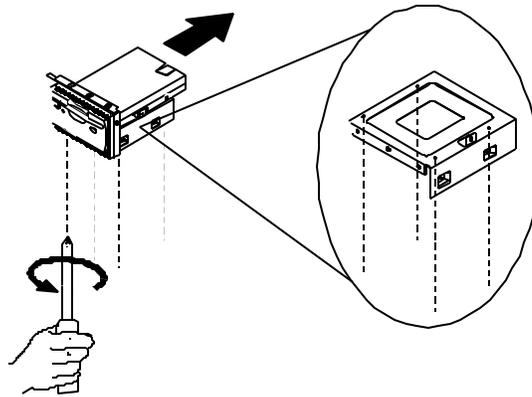
Installing Add-On Cards

1. Remove the metal plate that affixes the brackets by loosening the screw on it.
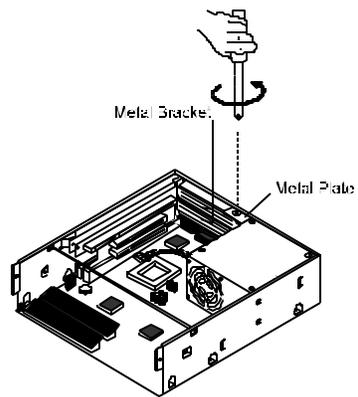
2. Firmly insert the add-on card on an available slot, in this example, the PCI slot.
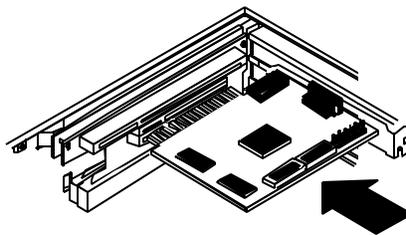
3.   Insert the metal plate to affix the add-on card, and secure the screw on it.
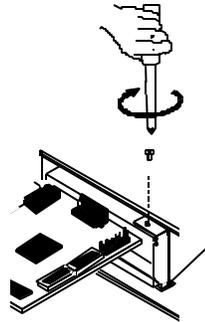
Connecting Wires and Cables

1.   Insert the LED wires plugged on to the J1 connector. Notice the colors of the wires.

2.   Place the front panel chassis on to the main body but leave about 10cm space in between for connecting the cables and wires easily.

Installing the CPU and CPU Cooler

1.   Remove the sticker on the bottom of the cooler.

2.   Place the CPU on the ZIF socket taking care not to bend the pins underneath. Notice that Pin 1 of the CPU is beneath the white dot and the hole on the ZIF socket is around the triangular blank area.

3.   Using a mini-screwdriver insert the tip into the plastic hole marked ⬥ **LOCK** ⬥ (the one nearest the EISA slots) on the ZIF socket and push the handle towards the arrow indicated (away from the EISA slots) to lock the CPU in place as shown in the following figure.
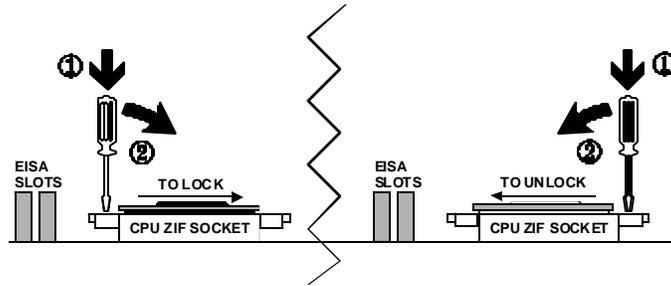
4. Place the cooler on the CPU and affix it by its clip.

5. Connect the cable wire to the FAN1 (3-pin male) connector on the mainboard.
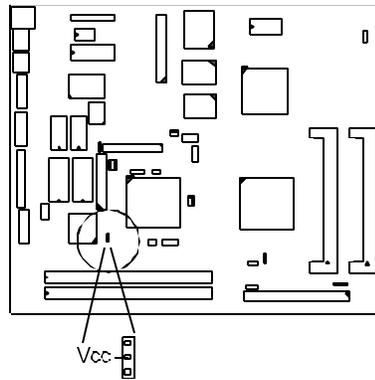
Installing the DRAM Modules

The computer's mainboard allows up to 128MB DRAM using SIMMs (Single-In-Line Memory Modules). The table below shows the various DRAM configurations allowed.

(Unit : Mega bytes)

TOTAL MEMORY	SIMM1 (72-pin)	SIMM2 (72-pin)
8MB	4MB	4MB
16MB	8MB	8MB
32MB	16MB	16MB

64MB	32MB	32MB
128MB	64MB	64MB
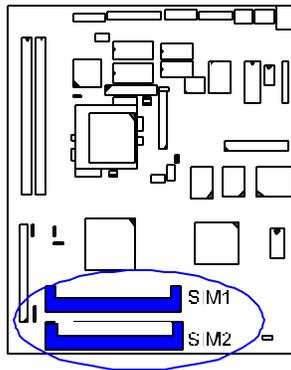
1. Locate the SIMM sockets on the mainboard.
2. Insert the SIMM's edge connector into the socket.
3. Push down the SIMM carefully until it clicks into position.

Note!
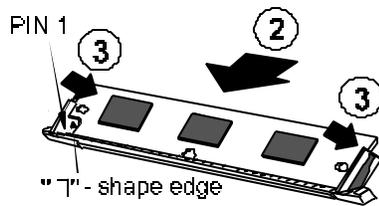
BIOS Setup automatically detects changes in the system memory. You need not run the Setup program to modify the extended memory settings.

Removing the DRAM Modules

To remove the SIMMs, simply pull the retaining latch on both ends of the socket and take out the SIMM modules.

BIOS Setup

The system comes with the Award BIOS chip that contains the ROM Setup information of the system. This chip serves as an interface between the processor and the rest of the system's components. This chapter explains the information contained in the Setup program and tells you how to modify the settings according to the system configuration.

The BIOS ROM of the system stores the Setup utility. When you turn on the computer, the system provides you with the opportunity to run this program. This appears during the Power-On-Self-Test (POST). Press the <**Delete**> key to call up the Setup utility. If you are a little bit late pressing the mentioned key(s), POST will continue with its test routines, thus preventing you from calling up Setup. If you still need to call Setup, reset the system by simultaneously pressing the <**Ctrl**>, <**Alt**> and <**Delete**> keys, or by pushing the Reset button on the system case.

Main CMOS Setup

When you run Setup, the CMOS SETUP UTILITY main program screen will appear with the following options:

```
                    ROM PCI/ISA BIOS (2A5LC008)
                        CMOS SETUP UTILITY
                       AWARD SOFTWARE, INC.

   STANDARD CMOS SETUP            INTEGRATED PERIPHERALS

   BIOS FEATURES SETUP            SUPERVISOR PASSWORD

   CHIPSET FEATURES SETUP         USER PASSWORD

   POWER MANAGEMENT SETUP         IDE HDD AUTO DETECTION

   PNP/PCI CONFIGURATION          SAVE & EXIT SETUP

   LOAD BIOS DEFAULTS             EXIT WITHOUT SAVING

   LOAD SETUP DEFAULTS

   Esc : Quit                     ↑ ↓ → ←  : Select Item
   F10 : Save & Exit Setup        (Shift)F2 : Change Color
```

A section at the bottom of the above screen displays the control keys for this screen. Take note of these keys and their respective uses. Another section just below the control keys section displays information on the currently highlighted item in the list.

Load Defaults

The "Load BIOS Defaults" option loads the minimized settings for troubleshooting. "Load Setup Defaults" on the other hand, is for loading optimized defaults for regular use. Choosing defaults at this level will modify all applicable settings.

Standard CMOS Setup

The "Standard CMOS Setup" option allows you to record some basic system hardware configuration and set the system clock and error handling. If the mainboard is already installed in a working system, you will not need to select this option anymore. However, if the configuration stored in the CMOS memory on the mainboard gets lost or damaged, or if you change the system hardware configuration, you will need to re-specify the configuration values. The configuration values usually get lost or corrupted when the power of the onboard CMOS battery weakens.

The above screen provides you with a list of options. At the bottom are the control keys for this screen. Take note of these keys and their respective uses.

User-configurable fields appear in a different color. If you need information on the selected field, press the <**F1**> key. The help menu will then appear to provide you with the information you need. The memory display at the lower right-hand side of the screen is read-only and automatically adjusts accordingly.

Date

To set the date, highlight the "Date" field and then press the page up/page down or +/– keys to set the current date. Follow the month, day and year format. Valid values for month, day and year are: Month: (1 to 12), Day: (1 to 31), Year: (up to 2099).

Time

To set the time, highlight the "Time" field and then press the page up/page down or +/– keys to set the current time. Follow the hour, minute and second format. Valid values for hour, minute and second are: Hour: (00 to 23), Minute: (00 to 59), Second: (00 to 59) time, just press the <**Enter**> key twice if you do not want to modify the current time.

Note.

To bypass the date and time prompts, create an AUTOEXEC.BAT file. For information on how to create this file, refer to the MS-DOS manual.

Hard Disk Drives

This field records the specifications for all non-SCSI hard drives installed in the system. The onboard PCI IDE connectors provide Primary and Secondary channels for connecting up to four IDE hard disks or other IDE devices. Each channel can support up to two hard disks; the first of which is the "master" and the second is the "slave".

Specifications for SCSI hard drives need not be entered here since they operate using device drivers not supported by any BIOS. If you install a SCSI controller card, refer to their respective documentations on how to install the required SCSI drivers.

For IDE hard disk drive setup, you can:

■   Use the Auto setting for detection during bootup.

■   Use the IDE HDD AUTO DETECTION in the main menu to automatically enter the drive specifications.

■   Enter the specifications yourself manually by using the "User" option.

The entries for specifying the hard disk type include CYLS (number of cylinders), HEAD (number of read/write heads), PRECOMP (write precompensation), LANDZ (landing zone), SECTOR (number of sectors) and MODE. The SIZE field automatically adjusts according to the configuration you specify. The documentation

that comes with the hard disk should provide you with the information regarding the drive specififcations.

The MODE entry is for IDE hard disks only, and can be ignored for MFM and ESDI drives. This entry provides three options: *Normal*, *Large*, *LBA*, or *Auto*. Set MODE to *Normal* for IDE hard disk drives smaller than 528MB; set it to *LBA* for drives over 528MB that support Logical Block Addressing (LBA) to allow larger IDE hard disks; set it to *Large* for drives over 528MB that do not support LBA. *Large* type of drive can only be used with MS-DOS and is very uncommon. Most IDE drives over 528MB support the *LBA* mode.

Auto Detection of Hard Disks on Bootup

For each field: Primary Master, Primary Slave, Secondary Master, and Secondary Slave, you can select *Auto* under the TYPE and MODE fields. This will enable auto detection of your IDE drives during Bootup. This will allow you to change the hard drives (with the power off) and then power on without having to reconfigure the hard drive type. If you use older hard drives which do not support this feature, then you must configure the hard drive in the standard method as described above by the "User" option.

After the IDE hard disk information has been entered into BIOS, new IDE hard disks must be partitioned (such as with FDISK) and then formatted before data can be read from and written on. Primary IDE hard drives must have its partition set to active (also possible with FDISK).

Drive A

This field records the type of floppy drive installed in the system. The available options for drive A are: *None* (default); *360KB, 5.25 in.*; *1.2MB, 5.25 in.*; *720KB, 3.5 in.*; *1.44MB, 3.5 in.*; *2.88MB, 3.5 in.* To enter the configuration value for a particular drive, highlight its corresponding field and then select the drive type using the left- or right-arrow key.

Floppy 3 Mode Support

This is the Japanese standard floppy drive. The standard stores 1.2MB in a 3.5inch diskette. This is normally disabled but you may choose from either: *Disabled* (default); *Drive A*; *Drive B*; and *Both*.

Video

Set this field to the type of video display card installed in the system. The options are: *EGA/VGA* (default); *Mono* (for Hercules or MDA); *CGA 40*; and *CGA 80*. If you are using a VGA or any higher resolution card, choose the "EGA/VGA" option.

Halt On

This field determines which types of errors will cause the system to halt. Choose from *All Errors* (default); *No Errors*; *All, But Keyboard*; *All, But Diskette*; and *All, But Disk/Key*.

BIOS Features Setup

The "BIOS Features Setup" option consists of configuration entries that allow you to improve the system performance, or lets you set up some system features according to your preference. Some entries here are required by the mainboard's design to remian in their default settings.

```
ROM PCI/ISA BIOS (2A5LC008)
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-CFFFF Shadow  : Disabled
Quick Power On Self Test : Enabled    D0000-D3FFF Shadow  : Disabled
Boot Sequence(LS120/ZIP100): A,C,SCSI D4000-D7FFF Shadow  : Disabled
Boot Up Floppy Seek     : Enabled     D8000-DBFFF Shadow  : Disabled
Boot Up NumLock Status  : On          DC000-DFFFF Shadow  : Disabled
Gate A20 Option         : Fast
Typematic Rate Setting  : Disabled
Typematic Rate (Chars/Sec) : 6
Typematic Delay (Msec)  : 250
Security Option         : Setup

OS Select For DRAM > 64MB : Non-OS2
ReMote Boot From NE2000  : Disabled
                                      ESC : Quit         ↑↓←→ : Select Item
                                      F1  : Help         PU/PD/+/- : Modify
                                      F5  : Old Values   (Shift)F2 : Color
                                      F6  : Load BIOS  Defaults
                                      F7  : Load Setup Defaults
```

A section at the lower right of the screen displays the control keys you can use. Take note of these keys and their respective uses. If you need information on a particular entry, highlight it and press the <**F1**> key. A pop-up help menu will appear to provide you with the information you need. <**F5**> loads the last set values, <**F6**> and <**F7**> loads the BIOS default values and Setup default values, respectively.

Virus Warning
This field protects the boot sector and partition table of the hard disk against accidental modifications. Any attempt to write to them will cause the system to halt and display a warning message. If this occurs, you can either allow the operation to continue or use a bootable virus-free floppy disk to reboot and investigate the system. This setting is recommended because of conflicts with new operating systems. Installation of new operating systems require that you disable this to prevent write errors. The options are: *Disabled* (default); *Enabled*.

CPU Internal Cache

When enabled, improves system performance. Disable this item when testing or troubleshooting. The options are: *Enabled* (default); *Disabled*.

External Cache

When enabled, supports an optional cache SRAM. The options are: *Enabled* (default); *Disabled*.

Quick Power On Self Test

When enabled, allows the BIOS to bypass the extensive memory test. The options are: *Enabled* (default); *Disabled*.

Boot Sequence (LS120/ZIP100)

Allows the system BIOS to first try to boot the operating system from the selected disk drive. The options are: *A, C, SCSI* (default); *C, A, SCSI*; *C, CDROM, A; CDROM, C, A; D, A, SCSI; E, A, SCSI; F, A, SCSI; SCSI, A, C; SCSI, C, A; C only; LS/ZIP, C*.

Boot Up Floppy Seek

When enabled, assigns the BIOS to perform floppy diskette drive tests by issuing the time-consuming seek commands. The options are: *Enabled* (default); *Disabled*.

Boot Up Numlock Status

When set to On, allows the BIOS to automatically enable the NumLock Function when the system boots up. The options are: *On* (default); *Off*.

Gate A20 Option

When set at *Fast* will allow a faster access response under Protected Mode. The options are: *Fast* (default); *Normal*.

Typematic Rate Setting

The term **typematic** means that when a keyboard key is held down, the character is repeatedly entered until the key is released. When this item is *Enabled*, you may change the typematic repeat rate. The options are: *Disabled* (default); *Enabled*.

Typematic Rate (Chars/Sec)

Sets the rate of a character repeat when the key is held down. The options are: *6* (default); *8*; *10*; *12*; *15*; *20*; *24*; *30*.

Typematic Delay (Msec)

Sets the delay time before a character is repeated. The options are: *250* (default); *500*; *750*; *1000* millisecond.

Security Option

Allows you to set the security level of the system. The options are: *Setup* (default); *System*.

OS Select For DRAM > 64MB

If the operating system (OS) you are using is OS2, select the option *OS2*; otherwise, stay with the default setting of *Non-OS2*. The options are: *Non-OS2* (default); *OS2*.

ReMote Boot From NE2000

When *Enabled*, it allows the system to boot up via a remote server after the procedures as listed in Appendix C are completed. The options are: *Disabled* (default); *Enabled*.

Video BIOS Shadow

When *Enabled*, it allows the BIOS to copy the video ROM code of the add-on video card to the system memory for faster access. The options are: *Enabled* (default), *Disabled*.

C8000-CBFFF to DC000-DFFFF Shadow

When *Enabled*, it allows the BIOS to copy the BIOS ROM code of the add-on card to system memory for faster access. It may improve the performance of the add-on card. Some add-on cards will not function properly if its BIOS ROM code is shadowed. To use these options correctly, you need to know the memory address range used by the BIOS ROM of each add-on card. The options are: *Disabled* (default); *Enabled*.

Chipset Features Setup

The "Chipset Features Setup" option controls the configuration of the system's chipset. Control keys for this screen are the same as for the previous screen.

```
                    ROM PCI/ISA BIOS (2A5LC008)
                        CMOS SETUP UTILITY
                       CHIPSET FEATURES SETUP

 Video BIOS  Cacheable    : Enabled    CPU to PCI Write Buffer  : Enabled
 System BIOS Cacheable    : Disabled   PCI Dynamic Bursting     : Enabled
 Memory Hole At 15Mb Addr.: Disabled   PCI Burst                : Enabled
 Sustained 3T Write       : Enabled    PCI Master 0 WS Write    : Enabled
 CPU Pipeline             : Enabled    Quick Frame Generation   : Enabled
 Memory ECC Check         : Disable    PCI Peer Concurrency     : Enabled
 Linear Burst             : Disabled
 DRAM Auto Configuration  : Disabled
 DRAM Timing Control      : Fast
 SDRAM  Single/Burst Wrte : Burst
 SDRAM  Cycle Length      : 3
 SDRAM  Bank Interleave   : Disabled

                                       ESC : Quit        ↑↓←→ : Select Item
                                       F1  : Help        PU/PD/+/- : Modify
                                       F5  : Old Values  (Shift)F2 : Color
                                       F6  : Load BIOS  Defaults
                                       F7  : Load Setup Defaults
```

Video BIOS Cacheable

When *Enabled*, it allows the system to use the video BIOS codes from SRAMs instead of the slower DRAMs or ROMs. The options are: *Enabled* (default); *Disabled*.

System BIOS Cacheable

When *Enabled*, it allows the ROM area F000H-FFFFH to be cacheable when the cache controller is activated. The recommended setting is *Disabled* especially for high speed CPUs (200 MHz and above). The options are *Disabled* (default); *Enabled*.

Memory Hole At 15MB Addr.

When *Enabled*, the memory hole at the 15MB address will be relocated to the 15~16MB address range of the ISA cycle when the processor accesses the 15~16MB address area. When *Disabled*, the memory hole at the 15MB address will be treated as a DRAM cycle when the processor accesses the 15~16MB address. The options are: *Disabled* (default), *15M-16M*; *14M-16M*.

Sustained 3T Write

When *Enabled*, it allows the CPU to complete the memory writes in 3 clocks. The options are: *Enabled* (Default); *Disabled*.

CPU Pipeline

When *Enabled*, it allows the CPU to execute the pipeline function. The options are: *Enabled* (default), *Disabled*.

Memory ECC Check

When *Enabled*, it allows you to correct 1 bit memory errors that may occur in the memory. The options are *Disabled* (default); *Enabled*.

Linear Burst

When *Enabled*, it allows you to configure the CPU to SRAM data read/write mode. If you use an Intel CPU (running the Intel Burst mode), stay with the default setting of *Disabled*. Refer to page 62, jumper *J3*. The options are: *Disabled* (default); *Enabled*.

DRAM Auto Configuration

Allows you to set the type of DRAM used. This is to be set by a technician only. The options are: *Disabled* (default); *60ns*; *70ns*.

DRAM Timing Control

Allows you to speed up the data access of the VIA VT82C586B chip. If the aboved option DRAM Auto Configuration is set at *60ns* or *70ns*, then this option DRAM Timing Control is fixed at *Turbo*. The options are: *Fast* (default); *Normal*; *Turbo*.

SDRAM Single/Burst Write

This item allows you to set the speed of SDRAM data write whether to a single address or continuously. The options are *Burst* (default); *Single*.

SDRAM Cycle Length

If the CAS latency of the SDRAM DIMM is 2, set it at *2* to enhance the system's performance. If the CAS latency of the SDRAM DIMM is 3, stay with the default setting of *3*. The options are: *3* (default); *2*.

SDRAM Bank Interleave

When the Bank interleave function of the SDRAM is set at *2 Bank* or *4 Bank*, data transaction performance is better. The options are: *Disabled* (default); *2 Bank*; *4 Bank*.

CPU to PCI Write Buffer

The default setting of *Enabled* allows data and address access to internal buffer of the VIA VT82C586B chip so that the processor can be released from the wait state. The options are: *Enabled* (default); *Disabled*.

PCI Dynamic Bursting

When *Enabled*, the PCI controller allows bursting PCI transfer if the consecutive PCI cycles come with the address falling in the same 1KB space. This improves the PCI Bus throughput. The options are: *Enabled* (default); *Disabled*.

PCI Burst

When *Enabled*, it allows data transfer on PCI Buses to improve. Disable this item when troubleshooting. The options are: *Enabled* (default); *Disabled*.

PCI Master 0 WS Write

When *Enabled*, it allows a zero-wait-state-cycle delay when the PCI master drive writes data to DRAM. The options are: *Enabled* (default); *Disabled*.

Quick Frame Generation

When *Enabled*, it allows the system to start the PCI Bus (by asserting frame) as soon as possible when the Bus cycle is going forward to the PCI Bus. The options are: *Enabled* (default); *Disabled*.

PCI Peer Concurrency

Enable this item to allow the CPU to continue its operation even when another PCI Bus is active. The options are: *Enabled* (default); *Disabled*.

Power Management Setup

The "Power Management Setup" option allows you to reduce the power consumption of the system. This feature turns off the video display and shuts down the hard drive after a period of inactivity.

```
                        ROM PCI/ISA BIOS (2A5LC00B)
                          POWER MANAGEMENT SETUP
                          AWARD SOFTWARE, INC.

Power Management    : Disabled
PM Control by APM   : Yes           IRQ3  (COM 2)      : Primary
Video Off Option    : Suspend -> Off IRQ4  (COM 1)      : Primary
Video Off Method    : DPMS Support   IRQ5  (LPT 2)      : Primary
MODEM Use IRQ       : NA             IRQ7  (LPT 1)      : Primary
                                     IRQ8  (RTC Alarm)  : Disabled
                                     IRQ9  (IRQ2 Redir) : Disabled
HDD Power Down      : Disable        IRQ10 (Reserved)   : Disabled
Doze Mode           : Disable        IRQ11 (Reserved)   : Disabled
Suspend Mode        : Disable        IRQ12 (PS/2 Mouse) : Primary
                                     IRQ14 (Hard Disk)  : Primary
                                     IRQ15 (Reserved)   : Disabled
VGA I/O & MEMORY    : OFF
LPT & COM I/O       : LPT/COM
HDD & FDD I/O       : ON
                                     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

This field acts as the master control for the power management modes. *Max Saving* puts the system into power saving mode after a brief period of system inactivity; *Min Saving* is almost the same as *Max Saving* except that this time the system inactivity period is longer; *Disabled* disables the power saving features; *User Defined* allows you to set power saving options according to your preference. The options are*: Disabled* (default*); User Defined*; *Min Saving*; *Max Saving*.

PM Control by APM

The option *No* allows the BIOS to ignore the APM (Advanced Power Management) specification. Selecting *Yes* will allow the BIOS to wait for APM's prompt before it enters Doze mode, Standby mode, or Suspend mode. If the APM is installed, it will prompt the BIOS to set the system into the power saving mode after all tasks are done. The options are: *Yes* (default); *No*.

Video Off Option

This feature provides for the selection of the video display power saving mode. The option *Suspend –> Off* allows the video display to go blank if the system enters Suspend mode. The option *All Modes –> Off* allows the video display to go blank if the system enters Doze mode or Suspend mode. The option *Always On* allows the

video display to stay in Standby mode even when the system enters Doze or Suspend mode. The options are: *Suspend –> Off* (default); *Always On*; *All Modes –> Off*.

Video Off Method

The option *V/H SYNC+Blank* allows the BIOS to blank off screen display by turning off the V-Sync and H-Sync signals sent from the add-on VGA card. *DPMS Support* allows the BIOS to blank off screen display via the add-on VGA card which supports DPMS (Display Power Management Signaling function). *Blank Screen* allows the BIOS to blank screen display by turning off the red-green-blue signals. The options are: *DPMS Support* (default); *Blank Screen*, *V/H SYNC+Blank*.

MODEM Use IRQ

This feature allows you to select the IRQ# to meet the modem's IRQ#. The options are: *NA* (default); *3*; *4*; *5*; *7*; *9*; *10*; *11*.

HDD Power Down

This option shuts down any IDE hard drives in the system after a period of inactivity. The time period is user-configurable from 1 to 15 minutes. This feature does not affect SCSI hard drives. The options are: *Disabled* (default); *1 Min*; . . . *15 Min*.

Doze Mode/Suspend Mode

Sets the period of time after which Doze/Suspend Mode activates. At *Max Saving*, Doze/Suspend Mode will activate after 10 seconds. At *Min Saving*, Doze/Suspend Mode will activate after 1 hour. If Power Management option is set at User Defined, user has the option to set it at *10 Sec*; *20 Sec*; *30 Sec*; *40 Sec*; *1 Min*; *2 Min*; *4 Min*; *6 Min*; *8 Min*; *10 Min*; *20 Min*; *30 Min*; *40 Min*; or *1 Hour*. The default value is *Disabled* (default).

VGA I/O & Memory

Selecting *ON* will enable the power management timers when a *no activity* event is detected in the VGA. Select *OFF* to disable the PM timer even if a *no activity* event is detected. The options are: *OFF* (default); *ON*.

LPT & COM I/O

Selecting *LPT & COM* will enable the power management timer when a *no activity* event is detected in the LPT and COM ports. Selecting *LPT* or *COM* will enable the power management timers when a *no activity* event is detected in the LPT or COM ports. Select *NONE* to disable the power management timer even if a *no activity* event is detected. The options are: *LPT & COM* (default); *NONE*; *LPT*; *COM*.

HDD & FDD I/O

Selecting *ON* will enable the power management timers when a *no activity* event is detected in the hard disk drive and floppy disk drive. Select *OFF* to disable the power

management timer even if a *no activity* event is detected. The options are: *ON* (default), *OFF*.

IRQ3 (COM2), . . . , IRQ15 (Reserved)

After the time period which you have set in the Suspend Mode feature expires, the system advances from Doze Mode to Suspend Mode in which the CPU clock stops and the screen display is turned off. At this moment, when the IRQ activity which is defined as *Primary* occurs, the system goes back to Full-on Mode directly.

When the IRQ activity which is defined as *Secondary* takes place, the system enters another low power state, Dream Mode, in which the system will act as if on Full-on Mode except that the screen display remains off until the corresponding IRQ handler finishes, afterwhich it reverts back to Suspend Mode. For instance, if the system is connected to a LAN and receives an interruption from its file server, the system will enter Dream Mode to execute the corresponding calling routine.

The options are: *Disabled*; *Primary*; *Secondary*. The default values of IRQ3, 4, 5, 7, 12, 14 are: *Primary*. The default value of IRQ8, 9, 10, 11, 15 is: *Disabled*.

> **Note**
>
> *Under certain operating systems such as Windows NT 4.0 (Build 1381), the CD auto-insertion feature might have some effect on power management. It is recommended that the CD-ROM drive use the secondary channel, and set to the following in the feature Power Management Setup – HDD & FDD I/O: Off; IRQ15 (Reserved): Secondary.*

PNP/PCI Configuration Setup

The "PNP and PCI Setup" option configures the PCI Bus slots. All PCI Bus slots on the system use INTA#, thus all installed PCI cards must be set to this value.

```
                    ROM PCI/ISA BIOS (2ASLC000)
                      PNP/PCI CONFIGURATION
                       AWARD SOFTWARE, INC.

PNP OS Installed         : No       PCI IRQ Activated By : Level
Resources Controlled By  : Auto     Assign IRQ For VGA   : Disabled
Reset Configuration Data : Disabled
IRQ Sequence:9,10,11,5,7,4,3,12,15,14


                                    ESC : Quit         ↑↓→← : Select Item
                                    F1  : Help         PU/PD/+/- : Modify
                                    F5  : Old Values   (Shift)F2 : Color
                                    F6  : Load BIOS  Defaults
                                    F7  : Load Setup Defaults
```
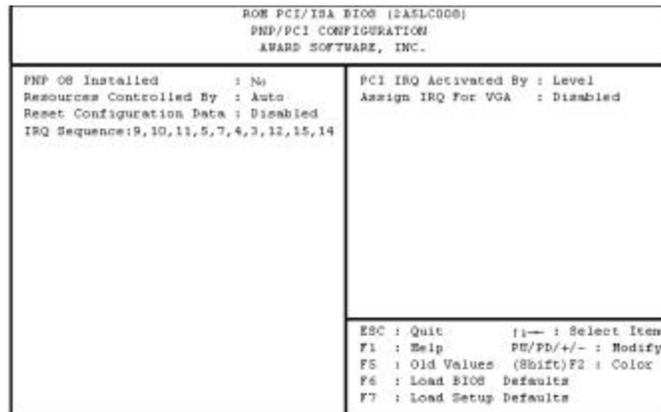
PNP OS Installed

When Plug and Play operating systems (OS) are installed, interrupts may be reassigned by the OS when *Yes* is selected. When a non-Plug and Play OS is installed or to prevent reassigning of interrupt settings, select *No* here. The options: are *No* (default); *Yes*.

Resources Controlled By

If set at *Auto*, BIOS automatically arranges all system resources for you. If there are conflicts or you are not satisfied with the configuration settings, simply set all the resources by selecting *Manual*. The options are: *Auto* (default); *Manual*.

Reset Configuration Data

When *Enabled*, this feature allows the system to clear the last BIOS configuration data and reset them with the default BIOS configuration data. The options are: *Disabled* (default); *Enabled*.

IRQ Sequence

Allows you to set the sequence of the IRQ#. The options are: *9, 10, 11, 5, 7, 4, 3, 12, 15, 14* (default); *15, 11, 10, 9, 12, 14, 5, 7, 3, 4*.

IRQ-3; -4; -5; -7; -9; -10; -11; -12; -14; -15; DMA-0; -1; -3; -5; -6; -7 Assigned to

These options, which allows you to set whether a particular IRQ# or DMA# is used by a PCI/ISA PNP or Legacy ISA card will only appear on screen if the above item Resources Controlled By is set at *Manual*. The options are: *PCI/ISA PNP* (default except for IRQ-3 and IRQ-4); *Legacy ISA*.

PCI IRQ Activated By

If the IDE card is triggered by edge, set it at *Edge*. The options are: *Level* (default); *Edge*.

Assign IRQ For VGA

If the PCI VGA card you are using does not need an IRQ, select *Disabled*, thereby releasing an IRQ for system use. The options are: *Disabled* (default), *Enabled*.

Used MEM Base Addr

This field, which allows you to set the base address and block size of a Legacy ISA card that uses any memory segment within the *C800*, *CC00*, *D000*, *D400*, *D800*, and *DC00* address range will only appear on screen if the above item Resources Controlled By is set at *Manual*. If you have such a card, and you are not using an ICU to specify its address range, select a base address from the six available options and

the next field will then appear for selecting the block size. The options are: *N/A* (default); *C800*; *CC00*; *D000*; *D400*; *D800*; *DC00*.

Used MEM Length

If you have more than one Legacy ISA card in the system that requires to use the aboved address range, you can increase the block size to either *8K*, *16K*, *32K*, or *64K*. If you are using an ICU to accomplish this task, leave the aboved option Used MEM Base Addr at *N/A*. This item will only appear if the above item Used MEM Base Addr is not set at *N/A*. The options are: *8K* (default); *16K*; *32K*; *64K*.

Load BIOS Defaults

The "Load BIOS Defaults" option allows you to load the troubleshooting default values permanently stored in the BIOS ROM. These default settings are non-optimal and disables all high performance features. To load these default settings, highlight "Load BIOS Defaults" on the main screen and then press the <**Enter**> key. The system displays a confirmation message on the screen. Press the <**Y**> key and then the <**Enter**> key to confirm. Press the <**N**> key and then the <**Enter**> key to abort. This feature does not affect the fields on the Standard CMOS Setup screen.
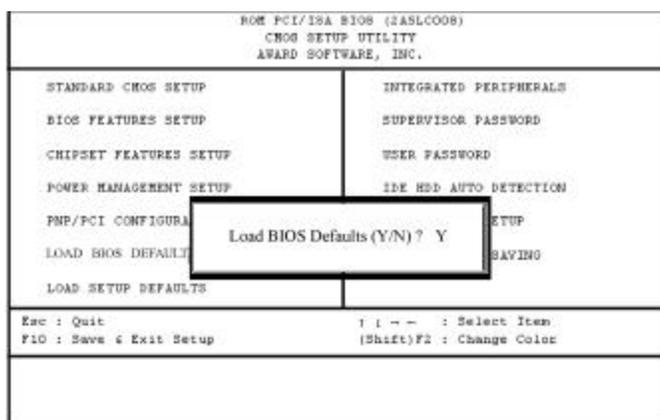
Load Setup Defaults

The "Load Setup Defaults" option allows you to load the default values to the system configuration fields. These default values are the optimized configuration settings for the system. To load these default values, highlight "Load Setup Defaults" on the main screen and then press the <**Enter**> key. The system displays a confirmation message on the screen. Press the <**Y**> key and then the <**Enter**> key to

confirm. Press the <**N**> key and then the <**Enter**> key to abort. This feature does not affect the fields on the Standard CMOS Setup Screen.
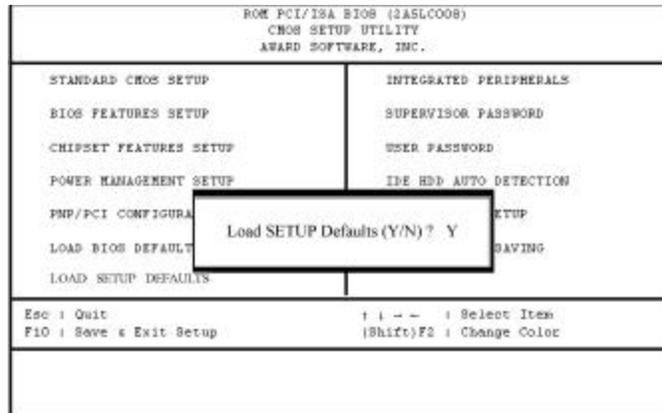
Integrated Peripherals
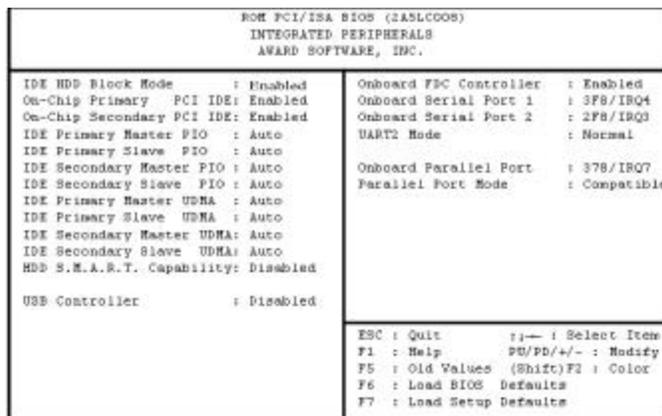
IDE HDD Block Mode

When *Enabled*, the system executes read/write requests to the hard drive in Block Mode. The options are *Enabled* (default); *Disabled*.

On-Chip Primary PCI IDE

When *Enabled*, it allows you to use the onboard primary PCI IDE. The options are: *Enabled* (default); *Disabled*.

On-Chip Secondary PCI IDE

When *Enabled*, it allows you to use the onboard secondary PCI IDE. The options are: *Enabled* (default), *Disabled*.

IDE Primary Master PIO

Allows an automatic or a manual configuration of the PCI primary IDE hard drive (master) mode if the above item On-Chip Primary PCI IDE is *Enabled*. The options are: *Auto* (default); *Mode 1*; *Mode 2*; *Mode 3*; *Mode 4*.

IDE Primary Slave PIO

Allows an automatic or a manual configuration of the PCI primary IDE hard drive (slave) mode if the above item On-Chip Primary PCI IDE is *Enabled*. The options are: *Auto* (default); *Mode 1*; *Mode 2*; *Mode 3*; *Mode 4*.

IDE Secondary Master PIO

Allows an automatic or a manual configuration of the PCI secondary IDE hard drive (master) mode if the above item On-Chip Secondary PCI IDE is *Enabled*. The options are: *Auto* (default); *Mode 1*; *Mode 2*; *Mode 3*; *Mode 4*.

IDE Secondary Slave PIO

Allows an automatic or a manual configuration of the PCI secondary IDE hard drive (slave) mode if the above item On-Chip Secondary PCI IDE is *Enabled*. The options are: *Auto* (default); *Mode 1*; *Mode 2*; *Mode 3*; *Mode 4*.

IDE Primary Master UDMA

Allows an automatic configuration of the PCI primary IDE hard drive (master) mode if Ultra DMA is supported on the system and if the above item On-Chip Primary PCI IDE is *Enabled*. The options are: *Auto* (default); *Disabled*.

IDE Primary Slave UDMA

Allows an automatic configuration of the PCI primary IDE hard drive (slave) mode if Ultra DMA is supported on the system and if the above item On-Chip Primary PCI IDE is *Enabled*. The options are: *Auto* (default); *Disabled*.

IDE Secondary Master UDMA

Allows an automatic configuration of the PCI secondary IDE hard drive (master) mode if Ultra DMA is supported on the system and if the above item On-Chip Secondary PCI IDE is *Enabled*. The options are: *Auto* (default); *Disabled*.

IDE Secondary Slave UDMA

Allows an automatic configuration of the PCI secondary IDE hard drive (slave) mode if Ultra DMA is supported on the system and if the above item On-Chip Secondary PCI IDE is *Enabled*. The options are: *Auto* (default); *Disabled*.

HDD S.M.A.R.T. Capability

Enable this option if the hard disk drive you are currently using supports the S.M.A.R.T. function. The options are *Disabled* (default), *Enabled*.

USB Controller

Disable this option if you are not using the onboard USB feature. The options are: *Enabled* (default); *Disabled*.

BIOS Support USB Keyboard (available only when USB Controller is enabled)

When the USB devices cannot be detected automatically by the system BIOS or some driver diskettes came with the USB devices, set it at *DOS* to allow for the installation of the drivers. The options are: *Setup* (default); *DOS*.

Onboard FDC Controller

When *Enabled*, the floppy disk drive (FDD) controller is activated. The options are: *Enabled* (default); *Disabled*.

Onboard Serial Port 1

If serial port 1 uses the onboard I/O controller, you can modify the serial port parameters. If an I/O card needs to be installed, COM3 and COM4 maybe needed. The options are: *3F8/IRQ4* (default); *Disabled*; *3E8/IRQ4*; *2F8/IRQ3*; *2E8/IRQ3*.

Onboard Serial Port 2

If serial port 2 uses the onboard I/O controller, you can modify the serial port parameters. If an I/O card needs to be installed, COM3 and COM4 may be needed. The options are: *2F8/IRQ3* (default); *Disabled*; *3E8/IRQ4*; *2E8/IRQ3*; *3F8/IRQ4*.

UART2 Mode

Allows you to select the IR modes if the serial port 2 is used as an IR port and the above option Onboard Serial Port 2 is not set at *Disabled*. Set it at *Normal* when you use COM2 as a serial port instead of an IR port. The options are: *Normal* (default); *IrDA SIR*; *IrDA FIR*.

IR Use DMA

This selection is only available if you select *IrDA FIR* in the UART2 Mode. The options are: *Disabled* (default); *0*; *1*; *3*.

Onboard Parallel Port

Allows you to select from a given set of parameters if the parallel port uses the onboard I/O controller. The options are: *378/IRQ7* (default); *Disabled*; *278/IRQ5*; *3BC/IRQ7*.

Parallel Port Mode

Allows you to connect with an advanced printer if the above option Onboard Parallel Port is not set at *Disabled*. The options are: *Compatible* (default); *Extended*; *EPP*; *ECP*.

ECP Mode Use DMA

This selection is only available if you select *ECP* in the Parallel Port Mode. The options are: *0* (default); *1*; *3*.

EPP Version

This selection is only available if you select *EPP* in the Parallel Port Mode. The options are: *1.9* (default); *1.7*.

Supervisor Password and User Password

These two options set the system passwords. "Supervisor Password" sets a password that will be used to protect the system and the Setup utility; "User password" sets a password that will be used exclusively on the system. By default, the system comes without any passwords. To specify a password, highlight the type you want and then press the <**Enter**> key. A password prompt appears on the screen. Taking note that the password is case sensitive, and can be up to 8 alphanumeric characters long, type in your password and then press the <**Enter**> key. The system confirms your password by asking you to type it again. After setting a password, the screen automatically reverts to the main screen.

To implement the password protection, specify in the "Security Option" field of the BIOS Features Setup screen when the system will prompt for the password. If you want to disable either password, press the <**Enter**> key instead of entering a new password when the "Enter Password" prompt appears. A message confirms the password has been disabled.

IDE HDD Auto Detection

The "IDE HDD Auto Detection" option detects the parameters of an IDE hard drive and automatically enters them into the Standard CMOS Setup screen. Up to four IDE drives can be detected, with parameters for each listed inside the box. To accept the optimal entries, press the <**Y**> key or else select from the numbers displayed under the OPTIONS field; to skip to the next drive, press the <**N**> key. If you accept the values, the parameters will appear listed beside the drive letter on the screen. The process then proceeds to the next drive letter. Pressing the <**N**> key to skip rather

than to accept a set of parameters causes the program to enter zeros after that drive letter.

Remember that if you are using another IDE controller that does not feature Enhanced IDE support for four devices, you can install two IDE hard drives. The IDE controller must support the Enhanced IDE features in order to use Drive E and Drive F.

When auto-detection is completed, the program automatically enters all entries you accepted on the field for that drive in the Standard CMOS Setup screen. Skipped entries are ignored and are not entered in the screen.

If you are auto-detecting a hard drive that supports the LBA mode, three lines will appear in the parameter box. Choose the line that lists LBA for an LBA drive. Do not select large or Normal.

The auto-detection feature can only detect one set of parameters for a particular IDE hard drive. Some IDE drives can use more than one set. This is not a problem if the drive is new and there is nothing on it.

If the hard drive was already formatted on an older previous system, incorrect parameters may be detected. You will need to enter the correct parameters manually or use low-level format if you do not need the data stored on the hard drive.

If the parameters listed differ from the ones used when the drive was formatted, the drive will not be readable. If the auto-detected parameters do not match the ones that should be used for your drive, do not accept them. Press the <**N**> key to reject the presented settings and enter the correct ones manually from the Standard CMOS Setup screen.

Save and Exit Setup

Select this option to save into the CMOS memory all modifications you specified during the current session. To save the configuration changes, highlight the "Save & Exit Setup" option on the main screen and then press the <**Enter**> key.

Exit Without Saving

Select this option to exit the Setup utility without saving the modifications you specified during the current session. To exit without saving, highlight the "Exit Without Saving" option on the main screen and then press the <**Enter**> key.

Default values of the various Setup items on this chapter may not be the same ones shown on the monitor screen.

Troubleshooting

The system is built to last long and perform its multi-functions with utmost efficiency. It is also user-friendly, both in its normal operations and when it encounters a system problem. It alerts you to possible problems by way of screen messages that also give you the correct instructions to solve the problem.

This chapter offers some possible solutions to potential problems that you might have with the computer.

Determining Problem Causes

To facilitate troubleshooting when you encounter problems when operating the computer, it is important to find out if the cause is software-related or hardware-related. It is suggested that you record the observations of events immediately prior to and during the time you encountered the problem.

If the problem is software-related, consult the software manual of the application you are using. If the problem is hardware-related, it may be due to improper installation and/or incorrect configuration. If it is due to improper installation, then any or a combination of the following corrective procedures should solve the problem:

■ Check the installation or connection to see if it is correctly done or firmly in place.

■ Check if the installation calls for a change in jumper settings or DIP switch settings.

■ Read the document accompanying the hardware option you installed for any special instructions or troubleshooting actions.

BIOS-Related Errors

When BIOS detects an error during system startup or during POST (Power-On-Self-Test), the display monitor normally shows the message that tells the cause

of the problem and also suggests on how to solve it. These kinds of error messages will ask you to run SETUP and correct the settings in that program according to actual configuration. (Please read Chapter 4 on BIOS SETUP.)

The following information lists some of the common configuration-related errors and gives the corresponding procedures to solve them.

Error Message: CMOS BATTERY HAS FAILED

Cause: The CMOS battery is no longer functional.

Action: Replace it.

Error Message: CMOS CHECKSUM ERROR

Cause: BIOS checksum of CMOS is incorrect. This may be caused by a weak battery.

Action: Check the battery and replace it, if necessary.

Error Message: DISK BOOT FAILURE, INSERT SYSTEM DISK AND PRESS ENTER

Cause: No boot device was found.

Action: Insert a system disk into Drive A and press **Enter** key. If you boot from the hard disk, make sure that the controller is installed properly and all cables are correctly attached.

Error Message: DISK DRIVES OR TYPES MISMATCH ERROR – RUN SETUP

Cause: The type of disk drive installed in the system is different from that defined in CMOS.

Action: Run SETUP to reconfigure disk drive type.

Error Message: DISPLAY SWITCH IS SET INCORRECTLY

Cause: Display switch on the mainboard is set at color. This message indicates a different switch setting than indicated in SETUP.

Action: First, determine the correct setting; then either change the jumper setting, or run SETUP to re-select a proper video option.

Error Message: DISPLAY TYPE HAS CHANGED SINCE LAST BOOT

Cause: Since the last power-on of the system, the display adapter has changed.

Action: Run SETUP to re-select a proper video option.

Error Message: ERROR ENCOUNTERED INITILIZING HARD DRIVE
/ ERROR INITILIZING HARD DISK CONTROLLER

Cause: Hard disk cannot be initialized.

Action: Ensure that the hard disk controller is installed properly and all cables are properly connected. Ensure the correct hard disk type is set in the BIOS SETUP. Check that if any jumper related to the hard disk needs to be reconfigured.

Error Message: FLOPPY DISK CNTRLR ERROR
/ NO CNTRLR ERROR / NO CNTRLR PRESENT

Cause: Cannot find or initialize the floppy disk drive (FDD) controller.

Action: Ensure that the FDD controller is installed properly. If no floppy disk drive installed, run SETUP and set the Diskette Drive at NONE.

Error Message: KEYBOARD ERROR / NO KEYBOARD PRESENT

Cause: Cannot initialize the keyboard.

Action: Make sure the keyboard is attached properly and that no keys are being pressed during boot.

Error Message: MEMORY SIZE HAS CHANGED SINCE LAST BOOT

Cause: Memory has been added or removed since last bootup but system has not recognized it.

Action: Run SETUP and enter the new memory size in the memory fields.

Error Message: MEMORY VERIFY AT...

Cause: Indicates an error verifying a value already written to memory.

Action: Use the specified location along with the system's memory map to locate the bad chip.

Error Message: OFFENDING ADDRESS NOT FOUND/OFFENDING SEGMENT

Cause: This message is used in conjunction with the I/O CHANNEL CHECK message when the segment that has caused the problem has been isolated.

Error Message: PRESS A KEY TO REBOOT

Cause: This message is displayed when an error occurs that requires you to reboot.

Action: Press any key so that the system will reboot.

Error Message: PRESS F1 TO DISABLE NMI, F2 TO REBOOT

Cause: BIOS detects a Non-Maskable Interrupt condition.

Action: Press **F1** to disable NMI or **F2** to reboot the system without disabling NMI.

Error Message: RAM – CHECKING FOR SEGMENT...

Cause: Indicates an error in the RAM module.

Action: Change the malfunctioning RAM module.

Error Message: SYSTEM HALTED, (CTRL–ALT–DEL) TO REBOOT

Cause: Indicates the present boot attempt has been aborted and the system must be rebooted.

Action: Press **CTRL, ALT, DEL** keys simultaneously.