CE31-A

MAINBOARD
MANUAL

DOC No.: 098B09
Rev.   : A0
Date   : 4, 1999
Part No. : 25-10936-20

Handling Precautions

Warning:
1. Static electricity may cause damage to the integrated circuits on the motherboard. Before handling any motherboard outside of its protective packaging, ensure that there is no static electric charge in your body.
2. There is a danger of explosion if the battery is incorrectly replaced. Replace only with the same or an equivalent type recommended by the manufacturer.
3. Discard used batteries according to the manufacturer's instructions.

Observe the following basic precautions when handling the motherboard or other computer components:

■ Wear a static wrist strap which fits around your wrist and is connected to a natural earth ground.

■ Touch a grounded or anti-static surface or a metal fixture such as a water pipe.

■ Avoid contacting the components on add-on cards, motherboards, and modules with the *golden fingers* connectors plugged into the expansion slot. It is best to handle system components by their monting brackets.

The above methods prevent static build-up and cause it to be discharged properly.

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Handling Precautions
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Chapter 1   Overview

Chapter 2   Installation Procedures

Chapter 3   BIOS Setup

Chapter 4   FAQs

Overview

The CE31-A is a MicroATX sized Socket 370 motherboard with onboard Video and Audio, and support for Ultra DMA/66. The CE31-A supports the Intel® Celeron PPGA 300-500 MHz processor at 66MHz Front side bus, and is ready to support 100MHz Front Side Bus in the event of any future CPU upgrades. Based around the SIS Eagle chipset, the CE31-A is a feature rich mainboard offering the very latest in quality onboard integrated functions.

Quality stereo sound is provided by the ESS Solo-1 onboard audio chip, which is equipped with Headphone AMP, while graphics capabilities are provided by the SIS 6326 2D/3D, which is embedded in the North Bridge. *The option of DVD playback software and a TV-out connection, allows DVD playback on a TV, instead of just a monitor. This special feature is enabled by FIC's unique licensing agreement with CSS.*

With support for Ultra DMA/66 and its high-speed interface, hard drive performance and data transfer speeds are significantly increased. The CE31-A has 2 DIMM, providing up to 1 GB of SDRAM, and has 3 PCI and 1 ISA expansion slot. UMA mode can be selected through the BIOS at either 4MB or 8MB, *while non UMA mode is offered as a manufacturing option*. The CE31-A is ACPI ready, ensuring improved power management, and is PC98 and Y2K compliant. Other key features of the CE31-A are Keyboard/Mouse Power On and CD Pro with enhanced drivers. A hardware monitoring facility provides effective system control and protection.

The CE31-A offers a complete set of standard I/O features, such as 2 serial ports, 1 parallel port, 1 PS/2 mouse and keyboard connector and 2 USB connectors. There are also connectors for 1 VGA, 1 media, mono-in for modem, CD-in, Wake-on-LAN and Wake-on-Ring.

Package Checklist

If you discover any item below was damaged or lost, please contact your vendor.

- Ö The mainboard
- Ö This user manual
- Ö One floppy disk drive cable
- Ö One printer and COM1 cable
- Ö One HDD cable
- Ö One COM2 cable
- Ö One USB cable (optional)
- Ö Software utilities

The CE31-A Mainboard

ISA Slot   3 PCI Slots   Integrated I/O Connectors

SiS Core Chipset   Floppy Drive Connector   Secondary/ Primary Connector   CPU Socket 370   2 DIMM Sockets
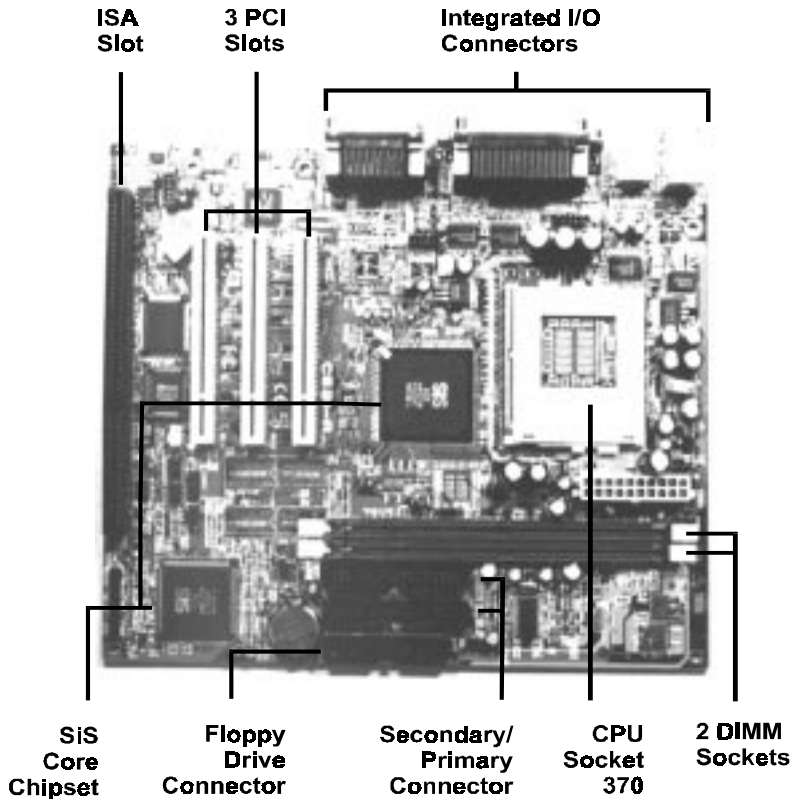
Main Features

■ Easy Installation

BIOS with support for Plug and Play, auto detection of IDE hard drives, LS-120 drives, IDE ZIP drives, Windows 95, Windows 98, Windows NT, and OS/2.

■ Leading Edge Chipset

SiS Eagle chipset includes a CPU interface controller, integrated memory controller, integrated power management unit, concurrent PCI (PCI v.2.0, 2.1, 2.2), 3D video, IDE and ISA bus controller.

■ Flexible Processor Support

Onboard Socket 370 supports leading-edge processors: Celeron™ PPGA processors 300A/333/366/400/433/466/500 MHz and up.

■ Various External Bus and CPU/Bus Frequency Ratio Support

The board supports the Bus frequency of 66 / 75 / 83 / 90 / 95 / 100 / 112 / 124 / 133MHz and the CPU/Bus frequency ratio of 2x / 2.5x / 3x / 3.5x / 4x / 4.5x / 5x / 5.5x / 6x / 6.5x / 7x / 7.5x / 8x by a switching voltage regulator which accepts 1.8V to 2.8V. (Please read **Install the CPU** in Chapter 2 for more information).

■ Versatile Main Memory Support

Accepts up to 1GB RAM using two DIMMs of 8, 16, 32, 64, 128, 256, 512MB with support for lightning-fast SDRAM (66/100MHz).

■ ISA and PCI Expansion Slots

One 16-bit ISA Bus and three 32-bit PCI Bus expansion slots provide the room to install a full range of add-on cards.

■ Onboard IrDA Connector

An IrDA connector for wireless infrared connections is available.

■ Enhanced PCI Bus Master IDE Controller with Ultra DMA/33 and Ultra DMA/66 Support

Integrated Enhanced PCI Bus Master IDE controller features two dual-channel connectors that accept up to four Enhanced IDE devices, including CD-ROM and Tape Backup Drives, as well as Hard Disk Drives supporting the new Ultra DMA/66 protocol. Standard PIO Mode 3, PIO Mode 4, DMA Mode 2, DMA Mode 4 devices are also supported.

■ USB Support

A fly cable comes with the board for allowing convenient, high-speed Plug and Play connections (up to four USB ports) to the growing number of USB compliant external peripheral devices on the market.

■ Remote Wake-Up Support

One LAN wake-up connector, WOL, supports LAN cards equipped for remote wake-up functionality; also, an additional Wake-On-Ring connector awakes the system while the ring signal via modem.

■ Super Multi Input/Output (I/O) Support

Integrated Plug and Play multi-I/O chipset features two high-speed UART 16550 compatible serial ports, one IR connector, one EPP/ECP capable parallel port, and one FDD connector.

■ SB-LINKô for the Audio Card with PCI Bus

The 2x3 pin SB-LINKô header accepts the Creative CT4600 series PCI audio cards with PCI solution to connect the Legacy Sound Blasterõ compatible audio to the PCI bus.

■ Compact ESS Solo-1 Audio Subsystem for Sound and Game

The onboard audio provides DirectMusic accelerator. It also provides OPL3, Sound Blaster Pro, MPU401 UART mode and Joystick function for various PC games on real DOS mode that without software drivers. The board came with three audio jacks: MIC_IN, L_IN, L_OUT; and one connector for joystick with MIDI interface.

Intelligent Properties

This mainboard comes equipped with the most advanced new features that not only optimize the performance of the latest processors but also enhance the manageablity, power management capabilities, and user-friendliness of your system. This section provides detailed information on these features, and how they are implemented on the mainboard.

■ Optimized Celeronô PPGA Processor Performance

The mainboard utilizes the advanced features of the SiS Eagle chipset to optimize the unrivaled performance of the Celeronô PPGA processor with MMXô technology, allowing you to enjoy a richer video, audio, digital imaging and communications experience from the latest generation of multimedia software.

■ Capability of Conference via Modem

The board equipped a MONO connector to allow users to talk with other people at remote end via a modem.

■ Connection with a Television (Optional)

The manufacturing optional connector, TV1, makes use of a television as a monitor for software games and other tasks by a cable from the board to the TV.

ACPI Ready

This mainboard fully implements the new ACPI (Advanced Configuration and Power Interface) 1.0 Hardware and BIOS requirement. If you install ACPI aware operating system, such as Windows 98, you fully utilized the power saving under ACPI.

It is compatible with all other none ACPI operating systems. If you want to setup ACPI feature under Windows 98, please follow the description below: Run Windows 98 setup by using **setup/p j** on the command line for installing Windows 98 with the ACPI control feature.
If you type **setup** without the parameter **/p j**, Windows 98 will be installed as APM, PnP mode, no ACPI will be used.

For more detail information, please visit the web site of Microsoft. Its address is: www.microsoft.com/hwtest/.

The major features of ACPI were listed as follows:

■ Soft-Off Support

   The mainboard's Soft-Off feature allows you to turn off your computer using the operating system. This feature requires a power supply witha soft-off power controller.

■ Remote Ring-On

   The Remote Ring-On function allows your computer to be turned on remotely via a modem while it is in sleep mode. This feature is particularly usefully when you are expecting a fax late night and leave only your modem on to minimize power consumption. As soon as possible the phone rings, the modem automatically turn on the system, which answers the phone and downloads the fax. Then the computer shuts off again, thereby minimizing its consumption of power. The Remote Ring-On function requires a power supply with a soft-off power controller.

■ RTC Alarm

   The RTC alarm feature allows you to preset the computer to wake-up at a certain time allowing you to implement a number of useful functions, such as automatically sending out a fax late at night.

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Installation Procedures

The mainboard has several user-adjustable jumpers on the board that allow you to configure your system to suit your requirements. This chapter contains information on the various jumper settings on your mainboard.

To set up your computer, you must complete the following steps:

■ Step 1 - **Set system jumpers**

■ Step 2 - **Install system RAM modules**

■ Step 3 - **Install the Central Processing Unit (CPU)**

■ Step 4 - **Install expansion cards**

■ Step 5 - **Connect ribbon cables, cabinet wires, and power supply**

■ Step 6 - **Set up BIOS software** (see Chapter Three)

■ Step 7 - **Set up supporting software tools**

WARNING: Excessive torque may damage the mainboard. When using an electric screwdriver on the mainboard, make sure that the torque is set to the allowable range of 5.0 ~ 8.0kg/cm.

Mainboard components contain very delicate Integrated Circuit (IC) chips. To prevent static electricity from harming any of the mainboard's sensitive components, you should follow some precautions whenever working on the computer:

1. Unplug the computer when working on the inside.
2. Hold components by the edges and try not to touch the IC chips, leads, or circuitry.
3. Wear an anti-static wrist strap which fits around the wrist.
4. Place components on a grounded anti-static pad or on the bag that came with the component whenever the components are separated from the system.

1). Set System Jumpers

Jumpers are used to select the operation modes for your system. Some jumpers on the board have three metal pins with each pin representing a different function. A "1" is written besides pin 1 on jumpers with three pins. To **set** a jumper, a black cap containing metal contacts is placed over the jumper pin/s according to the required configuration. A jumper is said to be **shorted** when the black cap has been placed on one or two of its pins. The types of jumpers used in this manual are shown below:

Jumper Cap   **3-pin Jumper**   **2-pin Jumper**   **Jumper Block**

Jumper are shown like above

"□" stands for pin 1

Jumper cap like above

Jumpers in a Block

NOTE: Users are not encouraged to change the jumper settings not listed in this manual. Changing the jumper settings improperly may adversely affect system performance.

CE31-A

▌▌▌▌▶ **QUICK REFERENCE**

This Chapter is intended to aid quick and easy installation.
In the event that more detailed information is required, please
consult the Installation Procedures Chapter.

4 ● **Optional CONN1 USB Disable**

2 ● **CPU Fan Installation**

MIC_IN
(Microphone
input jack)

LINE_IN
(Audio
input
jack)

LINE_OUT
(Audio
output
jack)

GAME (Game port)

VGA
(Monitor conn.)

COM1
(Serial port 1)

USB
(Universal
serial
bus)

KB/MS

LPT (Parallel port)

MS: PS/2
mouse (Top)
KB: PS/2
keyboard (Bottom)

MODEM
(Internal modem
/home audio
conn.)

Audio Chip

SB_LINK (SB_LINK conn.)

RL (Infrared conn.)

(ISA bus slot)

(PCI bus slot)

(PCI bus slot)

(PCI bus slot)

TV1
(Manufacturing
optional TV
output conn.)

CD1
(CD audio
in conn. 1)

CD2
(CD audio
in conn. 1)

CLR_PWD
(Clear password)

FAN1
(CPU fan
conn.)

COM2
(Serial port 2)

WOR
(Wake
on
Ring
conn.)

I/O Controller

ISA1

PCI3

PCI2

PCI1

North Bridge

1

Socket 370

BIOS ROM (PLCC)

WOL (Wake On LAN conn.)

POWER

(ATX power supply conn.)

SDRAM

SDRAM

CDNN1
(Manufacturing
optional USB
front connector)

J3
(CONN1
disable)

SDRAM

SDRAM

DIMM1

(DIMM socket)

DIMM2

(DIMM socket)

FAN2
(System fan
conn.)

SPEAKER

HDD_LED

PWL LED

RS_SW

MSG_LED

F_PNL

SLP_SW

(front panel conn.)

South Bridge

(Clear
CMOS)

Lithium Cell 3V

SECONDARY

(Secondary IDE conn.)

PRIMARY

(Primary IDE conn.)

FLOPPY

(Floppy disk conn.)

3 ● 1 ●

Clear CMOS, Clear Password

3 ● **Front Panel Block Cable Connection**

1). Clear CMOS, Clear Password

J4 (Clear CMOS)

1

Enable (Clear CMOS)

1

Disable (Default)

CLR_PWD (Clear Password)

1

Enable (Clear Password)

1

Disable (Default)
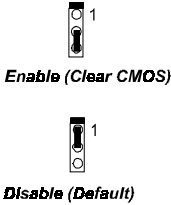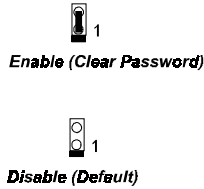
2). CPU Fan Installation

This connector is linked to the CPU fan. When the system is in suspend mode, the CPU fan will turn off; when it reverts back to full on mode, the fan will turn back on. Without sufficient air circulation, the CPU may overheat and cause damage to both the CPU and the mainboard.

Damage may occur to the mainboard and/or the CPU fan if these pins are incorrectly used. These are not jumpers, do not place jumper caps over these pins.

3). Front Panel Block Cable Connection

1

2   7
3   6
4   5

1. HDD LED
2. Speaker
3. Reset Switch
4. Suspend Switch
5. Message LED
6. Remote Power
   Switch
7. Power LED
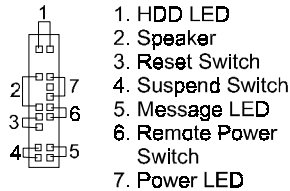
4). Other Enabled/Disabled Jumpers

J3 (USB Feature)

Disable

1 4
2 5
3 6

Enable

1 4
2 5
3 6
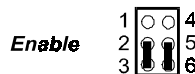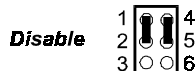
5). Load BIOS Setup Default

Load BIOS Defaults

BIOS defaults contain the most appropriate values of the system parameters that allow minimum system performance. The OEM manufacturer may change the defaults through MODBIN before the binary image burns into the ROM.

Load Setup Defaults

Selecting this field loads the factory defaults for BIOS and Chipset Features which the system automatically detects.

6). How to Upgrade BIOS

1. Format a bootable system floppy diskette by typing the command **format a:/s** in command mode.
2. Visit the the web site of the vendor and visit the BIOS Update page in the related Technical Support section.
3. Select the BIOS file you need and download it to your bootable floppy diskette.
4. Insert the bootable diskette containing the BIOS file into the floppy diskette drive.
5. Assuming that the floppy diskette drive is A, reboot the system by using the A: drive. At the A: > prompt, run the BIOS upgraded file by executing the Flash BIOS utility and the BIOS file with its appropriate extension.

Do not turn off or reset the computer during the flash process or if there is a problem.

Mainboard Layout

MIC_IN (Microphone input jack)

LINE_IN (Audio input jack)

LINE_OUT (Audio output jack)

VGA (Monitor conn.)

COM1 (Serial port 1)

USB (Universal serial bus)

KB/MS

GAME (Game port)

LPT (Parallel port)

MS: PS/2 mouse (Top) KB: PS/2 keyboard (Bottom)

MODND (Internal modem mono audio conn.)

Audio Chip

CD1 (CD audio in conn. 1)

COM2 (Serial port 2)

SPL_LINK (SPL_LINK conn.)

IR (Infrared conn.)

TV1 (Manufacturing optional TV output conn.)

CD3 (CD audio in conn. 1)

FAN1 (CPU fan conn.)

WOR (Wake on Ring conn.)

CLR_PWD (Clear password)

I/O Controller

1

PCI3

PCI2

PCI1

North Bridge

Socket 370

ISA1

BIOS ROM (PLCC)

POWER

(ATX power supply conn.)

WOL (Wake On LAN conn.)

SDRAM   SDRAM

CONN1 (Manufacturing optional USB front connector)

J3 (CONN1 disable)

SDRAM   SDRAM

(DIMM socket)   DIMM1

FAN2 (System fan conn.)

(DIMM socket)   DIMM2

HDD_LED

J4 (Clear CMOS)

SECONDARY   (Secondary IDE conn.)

SPEAKER

PW_LED MSG_LED F_PNL (Front panel conn.)

South Bridge

PRIMARY   (Primary IDE conn.)

RST_SW SP_SW

Lithium Cell 3V

FLOPPY   (Floppy drive conn.)

Clear Password: CLR_PWD

This switch allows you to enable or to disable both the keyboard and system password settings. You may need to adjust it if you forget your password. To clear the password setting: (1). Turn off your computer, (2). Enable this feature by setting the it at Enable, (3). Turn on your computer to boot screen, (4). Turn off your computer, (5). Disable the Clear Password feature by setting it at Disable, (6). Turn on your computer.

Enable (Clear Password)

Disable (Default)

CLR_PWD
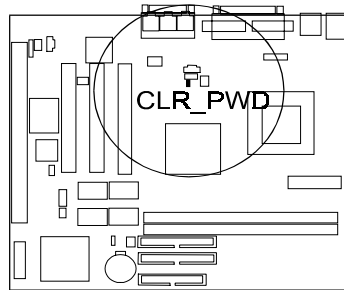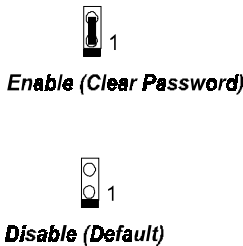
CMOS Clear: J4

The CMOS RAM is powered by the onboard button cell battery. To clear the RTC data: (1) Turn off your computer, (2) Move this jumper to "Enable," (3) Move the jumper back to "Disable," (4) Turn on your computer, (5) Hold down the <**Delete**> key during bootup and enter BIOS Setup to re-enter user preferences.

Enable (Clear CMOS)

Disable (Default)

J4
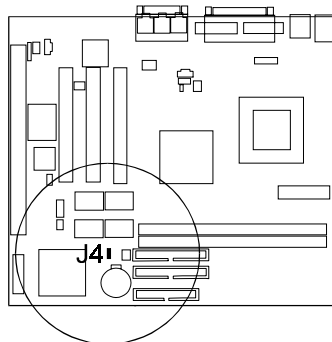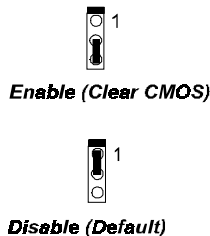
Internal USB Port Enable: J3

This jumper allows you to enable or to enable the internal USB connector, CONN1, while it is needed. If the CONN1 is used, the USB1 will be disabled automatically. If the CONN1 not being used, please keep J3 at disabling status.
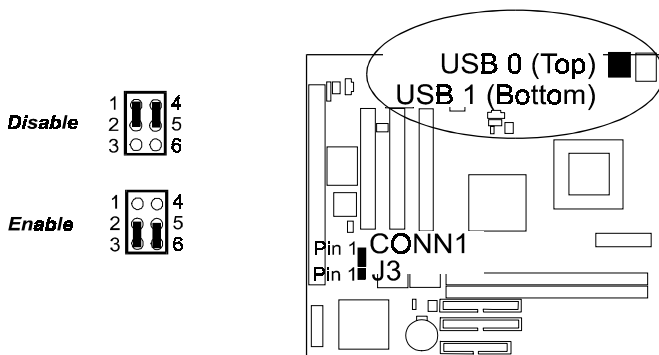
2). Install RAM Modules
SDRAM

The working space of the computer is the Random Access Memory (RAM). The system cannot act upon data unless it is loaded into RAM. When more memory is added, the working memory of the computer is larger, thereby increasing total performance. The mainboard RAM is comprised of two 168–pin Dual In-line Memory Modules (DIMMs). Each DIMM socket is able to support up to 512MB lightning-fast SDRAM.

SDRAM features an onchip burst counter that can be utilized to increment column addresses for very fast burst access, which means that SDRAM allows new memory access to be initiated before the preceding access has been finished.

Before making DRAM upgrades you should verify the type and speed of the RAM currently installed from your dealer. Installing mixtures of RAM types other than those described in this manual will have unpredictable results.

RAM Module Configuration

The mainboard provides two onboard DIMM sockets allowing 3.3V (unbuffered) SDRAM DIMM modules. Either 8, 16, 32, 64, 128, 256, or 512MB DIMM can be installed on these two sockets. The maximum total memory supported is up to 1GB.

Socket	Acceptable Memory Module		Total
1	8, 16, 32, 64, 128, 256, 512MB 168-pin 3.3V SDRAM	x1	
2	8, 16, 32, 64, 128, 256, 512MB 168-pin 3.3V SDRAM	x1	
	Total system memory allowed up to 1GB	=	

NOTE: This mainboard supports DIMMs with access speeds of 12ns, 10ns, or faster.

Install and Remove DIMMs

SDRAM DIMM modules have different pin contact on each side and therefore have a higher pin density. Complete the following procedures when installing DIMMs:

NOTE: Do not use memory modules with more than 18 chips per module. Modules with more than 18 chips exceed the design specifications of the memory subsystem and will be unstable. The notch on the DIMM module will shift between left, center, or right to identify the type and also to prevent the wrong type from being inserted into the DIMM slot on the mainboard. Ask your retailer for the specifications before purchasing.

1. Locate the DIMM slots on the mainboard.

2. Install the DIMM straight down into the DIMM slot with both hands.

3. The clip on both ends of the DIMM slot will close up to hold the DIMM in place when the DIMM touches the slot's bottom.

20 Pins   60 Pins   88 Pins
DRAM Key   Voltage Key

DIMM

20 Pins

Lock   Lock   Lock   Unbuffered Keying   3.3V Voltage Keying   Lock

Top View of DIMM Socket
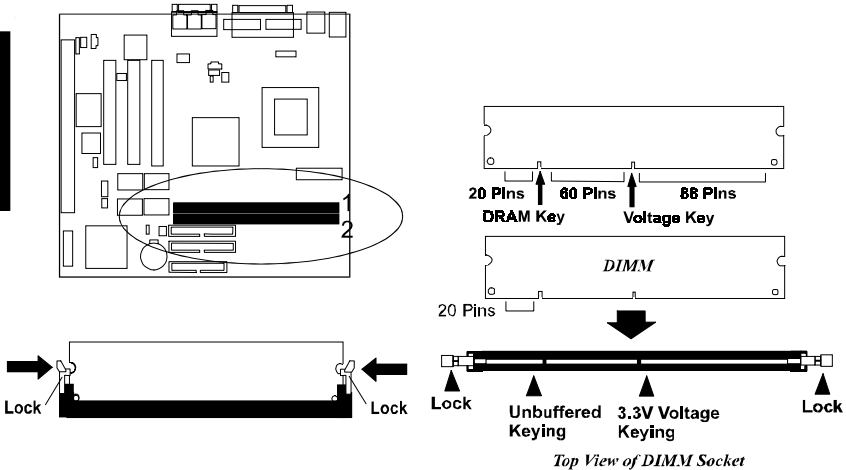
Press the clips with both hands to remove the DIMM.

3). Install the CPU

The CPU module resides in the ZIF PGA370 socket on the motherboard.

Pin 1
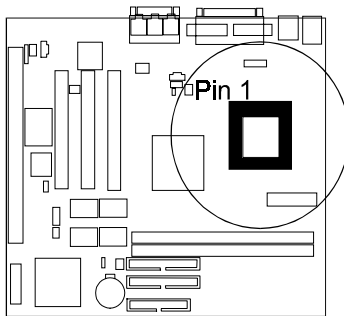
> **CAUTION:**
> 1. Always turn the system power off before installing or removing any device.
> 2. Always observe static electricity precautions. See "Handling Precautions" at the start of this manual.
> 3. Inserting the chip incorrectly may damage the chip.

To install the CPU, do the following:

1. Lift the lever on the side of the CPU socket.

2. Handle the chip by its edges and try not to touch any of the pins.

3. Place the CPU in the socket. The chip has a notch to correctly locate the chip. Align the notch with pin one of the socket. Pin one is located in the blank triangular area. Do not force the chip. The CPU should slide easily into the socket.

4. Swing the lever to the down position to lock the CPU in place.

5. See the following sections for information on the CPU jumpers settings.

4). Install Expansion Cards

This section describes how to connect an expansion card to one of your system's expansion slots. Expansion cards are printed circuit boards that, when connected to the mainboard, increase the capabilities of your system. For example, expansion cards can provide video and sound capabilities. The mainboard features one 16-bit ISA bus and three 32-bit PCI bus expansion slots.

**Chapter 2
Installation
Procedures**
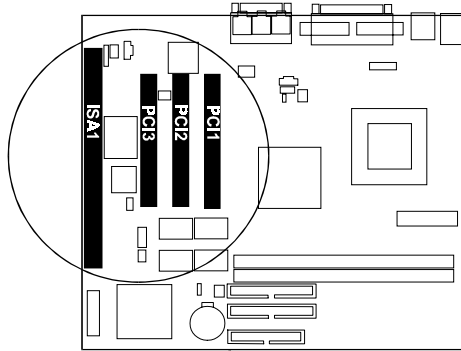
CAUTION: Make sure to unplug the power supply when adding or removing expansion cards or other system components. Failure to do so may cause severe damage to both the mainboard and expansioncards.
Always observe static electricity precautions.
Please read "Handling Precautions" at the start of this manual.

To install an expansion card, follow the steps below:

1. Remove the computer chassis cover and select an empty expansion slot.

2. Remove the corresponding slot cover from the computer chassis. Unscrew the mounting screw that secures the slot cover and pull the slot cover out from the computer chassis. Keep the slot cover mounting screw nearby.

3. Holding the edge of the peripheral card, carefully align the edge connector with the expansion slot.

4. Push the card firmly into the slot. Push down on one end of the expansion card, then the other. Use this "rocking" motion until the add–on card is firmly seated inside the expansion slot.

5. Secure the board with the mounting screw removed in Step 2. Make sure that the card has been placed evenly and completely into the expansion slot.

6. Replace the computer system's cover.

7. Setup the BIOS if necessary.

8. Install the necessary software drivers for the expansion card.

5). Connect Devices

Floppy Diskette Drive Connector: FLOPPY

This connector provides the connection with your floppy disk drive.
The red stripe of the ribbon cable must be the same side with the Pin 1.

IDE HDD Device Connectors: PRIMARY, SECONDARY

These two connectors are used for your IDE hard disk drives, CD drives, LS-120 drives, or IDE ZIP drives. The red stripe of the ribbon cable must be the same side with the Pin 1.

ATX Power Connector: POWER

This 20-pin male block connector is connected to the ATX power supply. The plug from the power supply will only insert in one orientation because of the different hole sizes. Find the proper orientation and push down firmly making sure that the pins are aligned.

CPU Fan Connector: FAN1

This connector is linked to the CPU fan. When the system is in suspend mode, the CPU fan will turn off; when it reverts back to full–on mode, the fan will turn back on. Please refer to the CPU fan installation manual for more information.
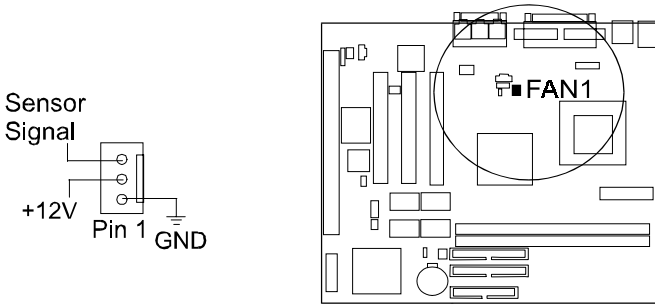
Wake-On-LAN Connector: WOL

This 3-pin connector allows the remote LAN server to wake up the system with a LAN card installed. Please also refer to the LAN card installation guide for related information.
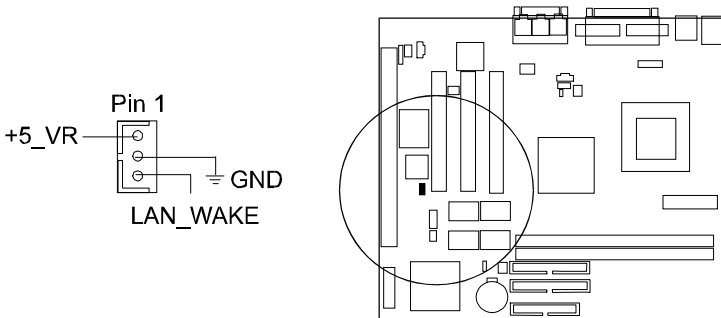
Front Panel Block Connector

This block connector concludes the connectors for linking with IDE LED, power LED, remote power button, message LED, suspend button, reset button and speaker on the front panel of the system case. Please identify polarities of plug wires for the case speaker and LEDs. Please ask vendor about this information when you buy them and install the system by yourself. The plug wires' polarities of this buttons will not affect the function.
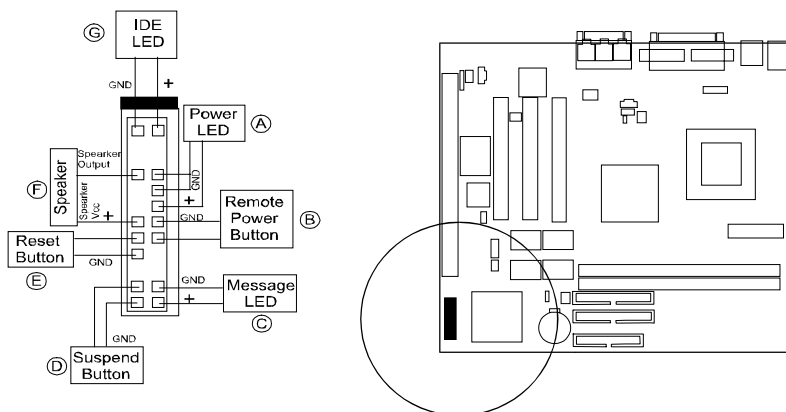
Power LED (A) is connected with the system power indicator to indicate whether the system is on/off. When the system enter the suspend mode, it blinks.

Remote Power Button (B) is connected with remote power (soft power) switch. Push this switch will turn off and on the system instead of turning the power switch on the power supply.

Message LED (C) is connected with the message LED. When the system is running normally, the indicator is off. It is controlled by the operating system or application software.

Suspend Button (D) is connected with suspend mode switch.

Reset Button (E) is connected to the reset switch. Push this switch to reboot the system instead of turning power switch off and on.

Speaker (F) is connected with the case speaker.

IDE LED (G) is connected IDE device indicator. This LED will blink when the hard disk drives are activated.

PCI Audio Card Connector: SB_LINK

This 6-pin male connector allows you to connect to your Creativeð 's sound card or compatible.
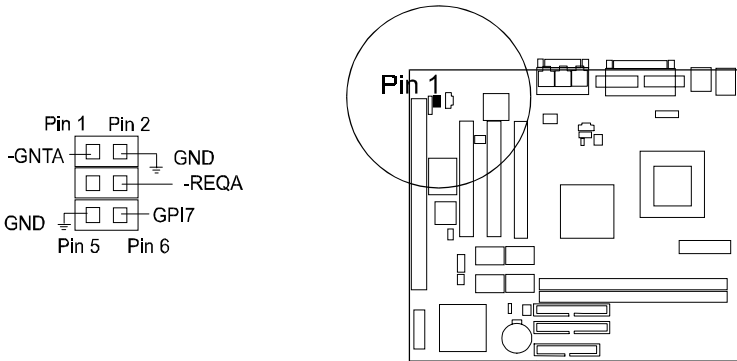
Infrared Connector: IR

This 5-pin connector is used to link with your IR device to allow transmission of data to another system that also supports the IR feature. This module mounts to a small opening on system cases that supports this feature.
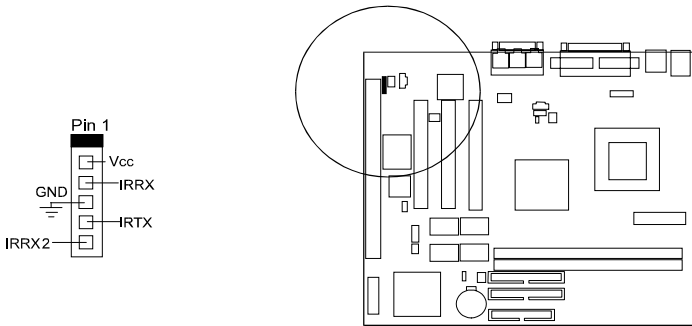
PS/2 Keyboard and Mouse Connector: KB, MS

These two 6-pin female connectors are used for your PS/2 keyboard and PS/2 mouse.
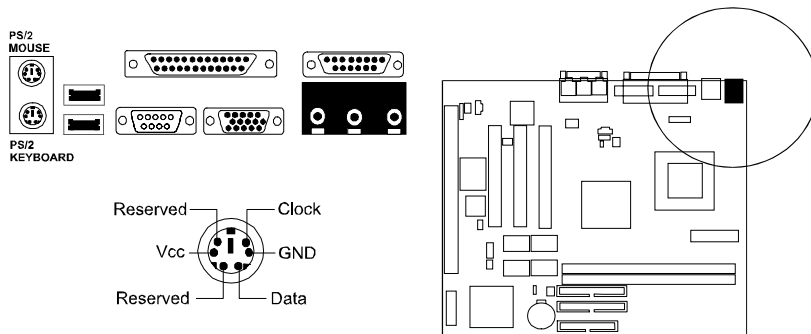
Universal Serial Bus Connectors: USB0, USB1, CONN1

These two connectors that integrated on the edge of the board are used for linking with USB peripheral devices. Also, this board provides a pinhead, CONN1, for linking with the USB socket on the front panel of some system cases. If the CONN1 connector is used (the jumper J3 must be set at Enabled), either USB0 or USB1 connector will be disabled. Your operating system must support USB features, such as MS Windows 98, MS Windows 95 OSR2.5 with USB Supplement.
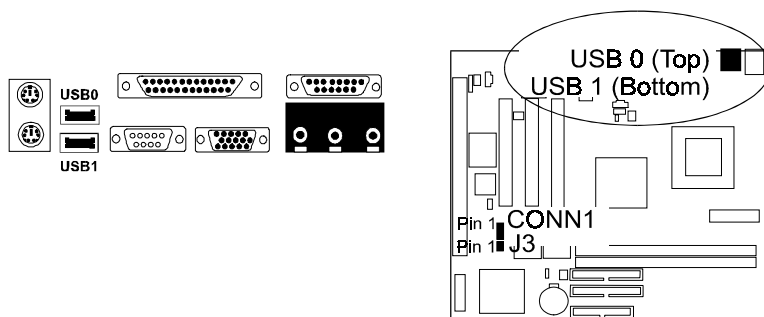
Printer Connector: LPT

This 25-pin D-Sub female connector is attached to your printer.
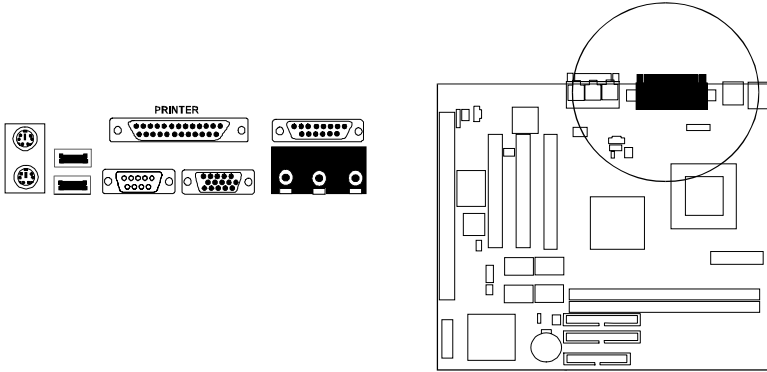
Serial Port Connectors: COM1, COM2

COM1 (9-pin D-sub male connector) and COM2 (9-pin male connector) allow you to connect with your devices that use serial ports, such as a serial mouse or a modem.
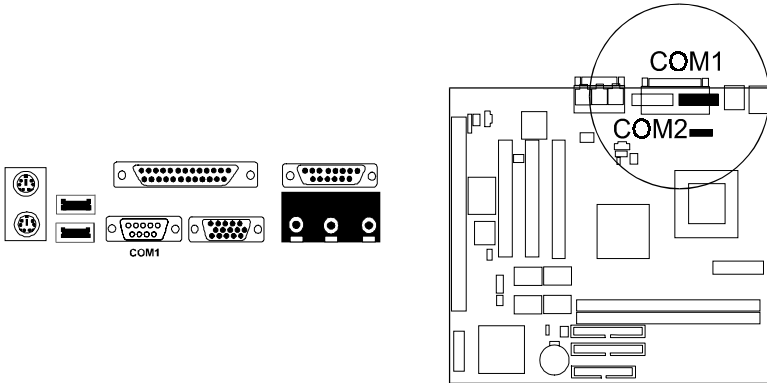
Joystick/MIDI Connector: GAME

This 15-pin female connector allows you to connect game joysticks or game pads for playing games. Connect MIDI devices for playing or editing audio.
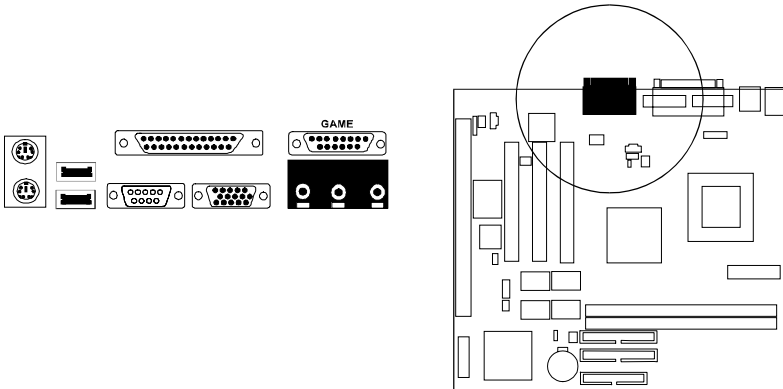
Audio I/O Jacks: L_OUT, L_IN, MIC_IN

L_OUT can be connected to headphones or preferably powered speakers. L_IN allows tape players or other audio sources to be recorded by your computer or played through the L_OUT. MIC_IN allows microphones to be connected for input voice.
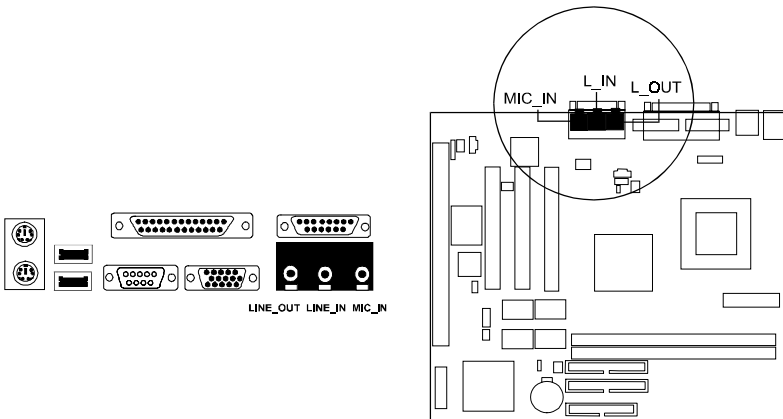
Video Graphics Accelerator Connector: VGA

This 15-pin female D-sub connector is connected to your display monitor.

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**Chapter 2
Installation
Procedures**
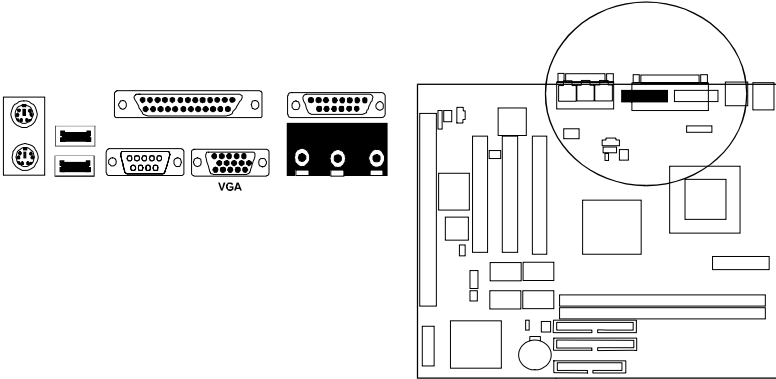
BIOS Setup

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

CMOS Setup Utility

```
┌─────────────────────────────────────────────────────────────────┐
│                ROM PCI/ISA BIOS (2A6INF09)                       │
│                   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      F5 : Menu in BIOS    ↑ ↓ → ← :  Select Item   │
│  F10 :  Save & Exit Setup             (Shift)F2 :  Change Color  │
│                                                                 │
└─────────────────────────────────────────────────────────────────┘
```

A Setup program, built into the system BIOS, is stored in the CMOS RAM. This Setup utility program allows changes to the mainboard configuration settings. It is executed when the user changes system configuration; user changes system backup battery; or the system detects a configuration error and asks the user to run the Setup program. Use the arrow keys to select and press Enter to run the selected program.

Standard CMOS Setup

```
              ROM PCI/ISA BIOS (2A6INF09)
                 STANDARD CMOS SETUP
                 AWARD SOFTWARE, INC.

 Date (mm:dd:yy) : Mon, Mar 29 1999
 Time (hh:mm:ss) : 15 : 37 : 55
 HARD DISKS        TYPE   SIZE   CYLS   HEAD   PRECOMP   LANDZ   SECTOR   MODE
 Primary Master   :  Auto    0      0      0        0       0        0    Auto
 Primary Slave    :  Auto    0      0      0        0       0        0    Auto
 Secondary Master :  Auto    0      0      0        0       0        0    Auto
 Secondary Slave  :  Auto    0      0      0        0       0        0    Auto
 Drive A  :  1.44MB
 Drive B  :  None                         Base Memroy:     640K
 Floppy 3 Mode Support : Disabled     Extended Meory: 31744K
                                          Other Memory:    384K
  Video   :  EGA/VGA
  Halt On :  All Errors                   Total Memory: 32768K
 Esc :  Quit             ↑↓→←    :  Select Item      PU/PD/+/-  :   Modify
 F1  :  Help            (Shift)F2  :  Change Color
```

The Standard CMOS Setup screen is displayed above. Each item may have one or more option settings. The system BIOS automatically detects memory size, thus no changes are necessary. 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.

Hard Disk Configurations

TYPE: Select User to fill the remaining fields. Select Auto to detect the HDD type automatically (recommended).

SIZE: The hard disk size. The unit is Mega Bytes.

CYLS: The cylinder number of the hard disk.

HEAD: The read/write head number of hard disk.

PRECOMP: The cylinder number at which the disk drive changes the write current.

LANDZ: The cylinder number that the disk drive heads (read/write) are seated when the disk drive is parked.

SECTOR: The sector number of each track defined on the hard disk.

MODE: Select Auto to detect the mode type automatically. If your hard disk supports the LBA mode, select LBA or Large. However, if your hard disk cylinder is more than 1024 and does not support the LBA function, set at Large. Select Normal if your hard disk supporting cylinders is below 1024.

Software Turbo Speed

The BIOS supports Software Turbo Speed feature. Instead of pressing the Turbo Speed Button on the front panel, simply press the **Alt, Ctrl, and** + keys at the same time to enable the Turbo Speed feature; and press the **Alt, Ctrl, and -** keys at the same time to disable the feature.

BIOS Features Setup

```
              ROM PCI/ISA BIOS (2A6INF09)
                  BIOS FEATURES SETUP
                  AWARD SOFTWARE,  INC.

Anti-Virus Protection        : Enabled    Video BIOS Shadow      : Enabled
CPU Internal Cache           : Enabled
External Cache               : Enabled
CPU L2 Cache ECC Checking    : Enabled
Quick Power On Self Test     : Enabled
Boot From LAN First          : Enabled
Boot Sequence                : A, C, SCSI
Swap Floppy Drive            : Disabled
Boot Up Floppy Seek          : Enabled
Boot Up NumLock Status       : On
Memory Parity Check          : Disabled
Typematic Rate Setting       : Disabled
Typematic Rate (Chars/Sec)   : 6
Typematic Delay (Msec)       : 250
Security Option              : Setup      Esc: Quit          ↑↓→← : Select Item
PCI/VGA Palette Snoop        : Disabled   F1  : Help         PU/PD/+/- : Modify
Assign IRQ For VGA           : Enabled    F5  : Old Values   (Shift)F2  : Color
OS Select For  DRAM > 64MB   : Non-OS2    F6  : Load BIOS Defaults
HDD S.M.A.R.T. Capability    : Disabled   F7  : Load Setup Defaults
Report No FDD For WIN 95     : Yes
```

Anti-Virus Protection

This feature starts the virus scan tool to detect if boot virus in boot sector of the first hard disk drive when booting up.
The options are: Enabled (Default), Disabled.

CPU Internal Cache

When enabled, improves the system performance. Disable this item when testing or trouble-shooting. The options are: Enabled (Default), Disabled.

External Cache

When enabled, supports an optional cache SRAM. This feature allows you to disable the cache function when the system performance is unstable to run some software. The options are: Enabled (Default), Disabled.

CPU L2 Cache ECC Checking

This feature allows users to activate the CPU's Level 2 cache's error check and correction function. 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 From LAN First

This feature makes the system bootable by the remote server via LAN. The options are: Enabled (Default), Disabled.

Boot Sequence

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.

Swap Floppy Drive

Allows you to switch the order in which the operating system accesses the floppy drives during boot up. The options are: Enabled, Disabled (Default).

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 Num Lock Function when the system boots up. The options are: On (Default), Off.

Memory Parity Check

This feature enables BIOS to perform automatic memory checking upon detection of ECC or parity DRAM. The options are: Enabled, Disabled (Default).

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.
The options are: Disabled (Default), Enabled.

Typematic Rate (Chars/Sec)

This feature is available only if the above item, Typematic Rate Setting, is set at Enabled. 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)

This feature is available only if the item, Typematic Rate Setting, is set at Enabled. 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.

PCI/VGA Palette Snoop

Set this feature to be enabled if any ISA adapter card installed in the system requires the VGA palette snoop function.
The options are: Disabled (Default), Enabled.

Assign IRQ For VGA

If your PCI VGA addon card does not need an IRQ, select at Disabled to release an IRQ for system use.
The options are: Enabled (Default), Disabled.

OS Select For DRAM > 64MB

If your operating system (OS) is OS/2, select the option OS2. Otherwise, stay with the default setting Non-OS2.
The options are: Non-OS2 (Default), OS2.

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

S.M.A.R.T. stands for Self-Monitoring and Analysis Reporting Technology which allows your hard disk drive to report any read/write errors and issues a warning with LDCM installed.
The options are: Disabled (Default); Enabled.

Chapter 3
BIOS Setup

Report No FDD For WIN 95

When the field under the Standard CMOS Setup Menu for Drive A and/or Drive B is set at None, users must set this field is set at Yes for it to function properly. Otherwise, set at No, even if field for Drive A and/or Drive B is set at None, system will still detect and recognize of a floppy drive(s).
The options are: Yes (Default), No.

Video BIOS Shadow

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.

Chipset Features Setup

```
                    ROM PCI/ISA BIOS (2A6INF09)
                        CHIPSET FEATURES SETUP
                        AWARD SOFTWARE,  INC.

 SDRAM CAS Latency          : 3T        Current CPU Temperature :
 System BIOS Cacheable      : Enabled   Current CPUFAN1 Speed  :
 Video RAM Cacheable        : Enabled   Cur. Chassis FAN Spd    :
 Memory Hole at 15M-16M     : Disabled
 AGP Aperature Size         : 64MB      +12V (V) :         +5V (V) :
 PCI Delay Transaction      : Disabled  +3.3V (V) :        Vcore (V) :
 SDRAM Synchronous Mode     : Enabled


 Auto Detect DIMM/PCI Clk   : Enabled
 Spread Spectrum            : Enabled
 CPU Host/SDRAM Clock       : Default
 CPU Clock Ratio Setting    : Default
                                        Esc : Quit       ↑↓→← : Select Item
                                        F1  : Help       PU/PD/+/- : Modify
                                        F5  : Old Values  (Shift)F2  : Color
                                        F6  : Load BIOS Defaults
                                        F7  : Load Setup Defaults
```

SDRAM CAS Latency

If the CAS latency of your installed SDRAM DIMM is 2, set it at 2 to enhance system performance. If the CAS latency is 3, stay with the default setting of 3T. The options are: 3T (Default), 2T.

System BIOS Cacheable

When enabled, allows the ROM area F000H-FFFFH to be cacheable when cache controller is activated. The options are: Enabled (Default), Disabled.

Video BIOS Cacheable

When enabled, allows the system to use the video BIOS codes from SRAMs, instead of the slower DRAMs or ROMs.

The options are: Enabled (Default), Disabled.

Memory Hole at 15M-16M

When set at Enabled, the memory hole at the 15MB address will be relocated to the 15-16MB address range of the ISA cycle when the CPU access the 15-16MB address area. When set at Disabled, the memory hole at the 15MB address will be treated as a DRAM cycle when the CPU acesses the 15-16MB address area. The options are: Enabled, Disabled (Default).

AGP Aperture Size

It allows you to select the main memory frame size for AGP use.
The options are 4, 8, 16, 32, 64 (Default), 128MB.

PCI Delay Transaction

Enable this feature to abort the current PCI master cycle and to accept the new PCI master request, it reaccepts the original PCI master and returns the PCI data phase to the original PCI master. It will enhance the system performance. The options are: Enabled, Disabled (Default).

SDRAM Synchronous Mode

Enabling this feature will cause CPU and memory to use the same clock frequency; for example, 66/66MHz, 100/100MHz. Diabling it will cause CPU and memory to have different clock frequency; for example, 66/100, 100/66MHz. The options are: Enabled (Default), Disabled.

SDRAM Clock Frequency

The feature allows you to select the SDRAM clock frequency. The selected option must be the same with the **CPU Host/SDRAM Clock**. This item appears if **SDRAM Synchronous Mode** is set at Disabled.
The options are: 100MHz (Default), 83, 66, 75.

CPU Clk High Than SDRAM

When CPU clock is higher than SDRAM clock, please set at this item to be Yes; for example, 100/66MHz. Set it to be No will cause CPU clock is lower than SDRAM clock; for instance, 66/100MHz. The selected option must be the same with the **CPU Host/SDRAM Clock**. This item appears if **SDRAM Synchronous Mode** is set at Disabled.
The options are: Yes (Default), No.

Auto Detect DIMM/PCI Clk

Set this field at Enabled to allow auto detection of DIMM clock speed. The options are: Enabled (Default), Disabled.

Spread Spectrum

This feature is used to set the spread Spectrum to be center spread type or down spread type. The options are: Enabled (Default), Disabled.

CPU Host/SDRAM Clock

Select Default or select a timing combination for the CPU and the PCI bus. When set to Default, BIOS uses the actual CPU and PCI bus clock values. The options are: Default (Default); 90/90MHz; 83/55MHz; 95/63MHz; 66/100MHz; 105/105MHz; 112/74MHz; 124/82MHz; 133/88MHz; 66/66MHz; 75/75MHz; 83/83MHz; 95/95MHz; 100/100MHz; 112/112MHz; 124/124MHz; 133/133MHz.

CPU Clock Ratio Setting

When set at Manual, it allows users to select the ratios of internal CPU frequency to the bus frequency manually in the feature appears below. The options are: Default (Default), Manual.

Processor Core Frequency

This feature lists all the options of the ratio.

The options are: x 1.5, x 2.0, x 3.0, x 4.0, x 5.0, x 2.5, x 3.5, x 4.5, x 5.5 (Default), x 6.0, x 7.0, x 6.5, x 7.5, x 8.0.

Current CPU Temperature

This feature will report the CPU internal temperature.

Current CPUFAN1 Speed

These fields display the current speed of the CPU fan, if your computer contains a monitoring system.

Cur. Chassis FAN Spd

These fields display the current speed of he chassis fan, if your computer contains a monitoring system.

+12V, +5V, +3.3V, Vcore

These fields display the power supply voltages.

Power Management Setup

```
                    ROM PCI/ISA BIOS (2A6INF09)
                    POWER MANAGEMENT SETUP
                      AWARD SOFTWARE, INC.

 Power Management      : User Define    IRQ [3-7, 9-15], NMI   : Enabled
 Video Off Option      : Suspend -> Off  IRQ 8 Break Suspend    : Disabled
 Video Off Method      : DPMS Supported  Power Button Over Ride : Delay 4 Sec.
 Doze Speed (div by)   : 2/8             Wake On Ring           : Enabled
 Stdby Speed (div by)  : 1/8             Wake On Lan            : Enabled
 MODEM Use IRQ         : 3               Wake On PCI PME        : Disabled
                                         Power Up by Alarm      : Disabled
        ** PM Timers **
 HDD Off After        : Disable
 Doze Mode            : Disable
 Standby Mode         : Disable
 Suspend Mode         : Disable
        ** PM Events **
 HDD Ports Activity   : Enabled
 COM Ports Activity   : Enabled          Esc : Quit        ↑↓→← : Select Item
 LPT Ports Activity   : Enabled          F1  : Help        PU/PD/+/- : Modify
 VGA Activity         : Enabled          F5  : Old Values  (Shift)F2  : Color
                                         F6  : Load BIOS Defaults
                                         F7  : Load Setup Defaults
```

Power Management

This item allows you to adjust the power management features. Select *Disable* for disabling global power management features. Select *User Define* for configuring your own power management features. *Min Saving* initiates all predefined timers in their minimum values. *Min Saving*, on the other hand, initiates maximum values.

The options are: User Define (Default), Min Saving, Max Saving, Disable.

Video Off Option

It provides the selections 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 *Susp, Stdby->Off* allows the video display to go blank if the system enters Standby and 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), Susp, Stdby -> Off, All Modes -> Off, Always On.

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 add-on VGA card. *DPMS Supported* allows the BIOS to blank off screen display by your add-on VGA card which supports DPMS (Display Power Management Signaling function). *Blank Screen* allows the BIOS to blank off screen display by turning off the red-green-blue signals.

The options are: V/H SYNC+Blank, DPMS Supported (Default), Blank Screen.

Doze Speed (div by)

When in Doze mode, this feature sets the CPU speed to be 2/8 of full speed. The options are: 1/8, 2/8 (Default), 3/8, 4/8, 5/8, 6/8, 7/8, 8/8.

Stdby Speed (div by)

When in Standby mode, this feature sets the CPU speed to be 1/8 of full speed. The options are: 1/8 (Default), 2/8, 3/8, 4/8, 5/8, 6/8, 7/8, 8/8.

MODEM Use IRQ

The feature allows users to select the IRQ# of the system that is the same IRQ# as the modem use.

The settings are: Auto, 3 (Default), 4, 5, 7, 9, 10, 11.

HDD Off After

The option lets the BIOS turn the HDD motor off when system is in Suspend mode. Selecting 1 Min..15 Min allows you define the HDD idle time before the HDD enters the Power Saving Mode.

The options 1 Min..15 Min will not work concurrently. When HDD is in the Power Saving Mode, any access to the HDD will wake the HDD up.

The options are: Disable (Default), 1 Min..15 Min.

Doze Mode

When disabled, the system will not enter Doze mode. The specified time option defines the idle time the system takes before it enters Doze mode. The options are: Disable (Default), 10 Sec, 1, 10, 30 Min, 1, 2, 4 Hour.

Standby Mode

When disabled, the system will not enter the Standby mode. The specified time option defines the idle time before enters Standby mode. The options are: Disable (Default), 10 Sec, 1, 10, 30 Min, 1, 2, 4 Hour.

Suspend Mode

When disabled, the system will not enter Suspend mode. The specified time option defines the idle time the system takes before it enters Suspend mode. The options are: Disable (Default), 10 Sec, 1, 10, 30 Min, 1, 2, 4 Hour.

HDD Ports Activity

When the HDD access occurs, it will make the system resume from the low power mode if set at Enabled.
The options are: Enabled (Default), Disabled.

COM Ports Activity

When the COM port access occurs, it will make the system resume from the low power mode if set at Enabled.
The options are: Enabled (Default), Disabled.

LPT Ports Activity

When the LPT port access occurs, it will make the system resume from the low power mode if set at Enabled.
The options are: Enabled (Default), Disabled.

VGA Activity

When the VGA access occurs, it will make the system resume from the low power mode if set at Enabled.
The options are: Enabled, Disabled (Default).

IRQ[3-7,9-15], NMI

Enable this feature will keep the system not in the Suspend mode when IRQ3, 4, 5, 6, 7, 9, 10, 11, 12, 13, 14, 15, NMI.
The options are: Disabled (Default) or Enabled.

IRQ 8 Break Suspend

Enable this feature will make IRQ8 to resume the system from Suspend mode. The settings are: Disabled (Default) or Enabled.

Power Button Over Ride

The selection Delay 4 Sec. will allow the system shut down after 4 seconds after the power button is pressed. The selection Instant-Off will allow the system shut down immediately once the power button is pressed.
The settings are Delay 4 Sec. (Default) or Instant-Off.

Chapter 3 BIOS Setup

Wake On Ring

An input signal on the serial Ring Indicator (RI) line (in other words, an incoming call on the modem) awakens the system from a soft off state. The settings are: Enabled (Default), Disabled.

Wake On Lan

When set at Enabled, an input signal comes from the other client/server on the LAN awakes the system from a soft off state if connected over LAN. The settings are: Enabled (Default), Disabled.

Wake On PCI PME

When set at Enabled, a Power Management Event (PME) come from PCI device will make the system from soft-off state. The settings are: Disabled (Default), Enabled.

Power Up by Alarm

Enabling it will make the system power on when real time clock (RTC) alarm happen power on. The settings are: Disabled (Default), Enabled.

Month Alarm, Day of Month Alarm, Week Alarm (SUN, ..., SAT), Time (hh:mm:ss)

These features allow you to set the time of the alarm starts when Power Up by Alarm is set to be Enabled.

PNP/PCI Configuration

```
          ROM PCI/ISA BIOS (2A6INF09)
             PNP/PCI CONFIGURATION
            AWARD SOFTWARE,  INC.

Resources Controlled By   : Auto        Slot 1 Use IRQ No.    : Auto
Reset Configuration Data  : Disabled    Slot 2 Use IRQ No.    : Auto
                                        Slot 3 Use IRQ No.    : Auto




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

Slot 1/2/3 Use IRQ No.

Some PCI devices would need to use an IRQ on the PCI bus. Selecting Auto allows the PCI controller to automatically allocate an IRQ. The options are: Auto (default); 3 to 5; 7; 9 to 12; 14; 15.

Resources Controlled By
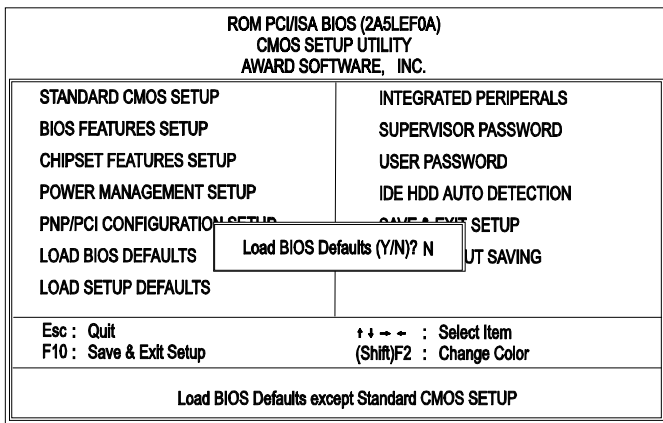
If set at Auto, the BIOS arranges all system resources. If there exists conflict, select Manual. The options are: Auto (Default), Manual. The manual options of IRQ- / DMA- assigned to are: Legacy ISA, PCI/ISA PnP.
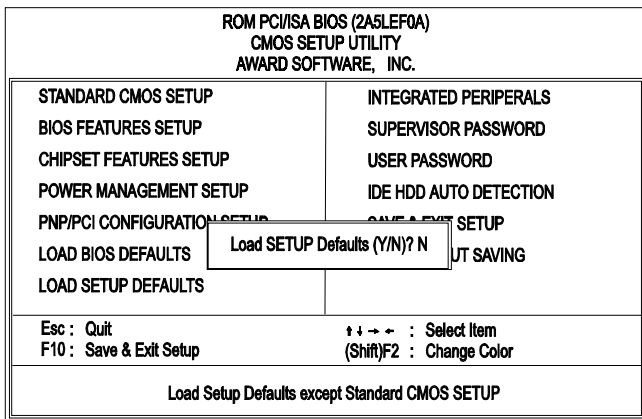
Reset Configuration Data

When enabled, allows the system to clear the last BIOS configuration data and reset with the default data. The options are: Enabled, Disabled (Default).

Load BIOS Defaults

```
                    ROM PCI/ISA BIOS (2A5LEF0A)
                         CMOS SETUP UTILITY
                       AWARD SOFTWARE,   INC.

   STANDARD CMOS SETUP                INTEGRATED PERIPERALS

   BIOS FEATURES SETUP                SUPERVISOR PASSWORD

   CHIPSET FEATURES SETUP             USER PASSWORD

   POWER MANAGEMENT SETUP             IDE HDD AUTO DETECTION

   PNP/PCI CONFIGURATION SETUP        SAVE & EXIT SETUP

   LOAD BIOS DEFAULTS    Load BIOS Defaults (Y/N)? N    UT SAVING

   LOAD SETUP DEFAULTS

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

           Load BIOS Defaults except Standard CMOS SETUP
```

BIOS defaults contain the most appropriate values of the system parameters that allow minimum system performance. The OEM manufacturer may change the defaults through MODBIN before the binary image burns into the ROM.

Load Setup Defaults

```
                    ROM PCI/ISA BIOS (2A5LEF0A)
                         CMOS SETUP UTILITY
                       AWARD SOFTWARE,   INC.

   STANDARD CMOS SETUP                INTEGRATED PERIPERALS

   BIOS FEATURES SETUP                SUPERVISOR PASSWORD

   CHIPSET FEATURES SETUP             USER PASSWORD

   POWER MANAGEMENT SETUP             IDE HDD AUTO DETECTION

   PNP/PCI CONFIGURATION SETUP        SAVE & EXIT SETUP

   LOAD BIOS DEFAULTS    Load SETUP Defaults (Y/N)? N    UT SAVING

   LOAD SETUP DEFAULTS

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

           Load Setup Defaults except Standard CMOS SETUP
```

Selecting *this* field loads the factory defaults for BIOS and Chipset Features which the system automatically detects.

Chapter 3
BIOS Setup

Integrated Peripherals

```
                    ROM PCI/ISA BIOS (2A6INF09)
                       INTEGRATED PERIPHERALS
                       AWARD SOFTWARE,  INC.

 Internal PCI/IDE            : Both       PS/2 mouse function     : Enabled
 IDE Primary Master PIO      : Auto       USB Controller          : Enabled
 IDE Primary Slave PIO       : Auto       USB Keyboard Support    : Disabled
 IDE Secondary Master PIO    : Auto       Init Display First      : PCI
 IDE Secondary Slave PIO     : Auto       VGA Shared Memory Size  : 4 MB
 Primary Master UltraDMA     : Auto       Onboard Audio           : Enabled
 Primary Slave UltraDMA      : Auto
 Secondary Master UltraDMA   : Auto
 Secondary Slave UltraDMA    : Auto
 POWER ON Function           : Button-Only
 KB Power ON Password        : Enter
 Hot Key Power ON            : Ctrl-F1
 KBC input clock             : 8 MHz
 Onboard FDC Controller      : Enabled
 Onboard Serial Port 1       : 3F8/IRQ4
 Onboard Serial Port 2       : 2F8/IRQ3   Esc : Quit        ↑↓→← : Select Item
 UR2 Mode                    : Standard   F1  : Help        PU/PD/+/- : Modify
 Onboard Parallel Port       : 378/IRQ7   F5  : Old Values  (Shift)F2 : Color
 Parallel Port Mode          : SPP        F6  : Load BIOS Defaults
                                          F7  : Load Setup Defaults
```

Internal PCI/IDE
This feature allows you to enable or disable onchip IDE channels.
The options are: Both (Default), Primary, Secondary, Disabled.

IDE Primary Master PIO
Allows an automatic or a manual configuration of the PCI primary IDE hard disk (master) mode. The options are: Auto (Default), Mode 0, 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 disk (slave) mode. The options are: Auto (Default), Mode 0, 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 disk (master) mode. The options are: Auto (Default), Mode 0, 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 disk (slave) mode. The options are: Auto (Default), Mode 0, Mode 1, Mode 2, Mode 3, Mode 4.

Primary Master UltraDMA

Allows you to select the first PCI IDE channel of the first master hard disk mode or to detect it by the BIOS if the hard disk supports UDMA (Ultra DMA, faster than DMA). The options are: Auto (Default), Disabled.

Primary Slave UltraDMA

Allows you to select the first PCI IDE channel of the first slave hard disk mode or to detect it by the BIOS if the hard disk supports UDMA (Ultra DMA, faster than DMA). The options are: Auto (Default), Disabled.

Secondary Master UltraDMA

Allows you to select the second PCI IDE channel of the secondary master hard disk mode or to detect it by the BIOS if the hard disk supports UDMA (Ultra DMA, faster than DMA). The options are: Auto (Default), Disabled.

Secondary Slave UltraDMA

Allows you to select the second PCI IDE channel of the secondary slave hard disk mode or to detect it by the BIOS if the hard disk supports UDMA (Ultra DMA, faster than DMA). The options are: Auto (Default), Disabled.

POWER ON Function

Allows you to set the method for powering-on the system. The default option of *BUTTON-ONLY* allows system power-on using the standard system case mounted ON/OFF switch. The option *Password* allows you to set up to 5 alphanumeric characters to power-on the system. The option *Hot KEY* allows you to set which of the 12 keyboard function keys (<**F1**> to <**F12**>) in combination with the <**Ctrl**> key to power-on the system. The option *Keyboard 98* allows you to power on the system with the Power ON key. The option *Mouse Left/Right* allows you to use the PS/2 mouse to power-on the system by double-clicking on the mouse button. The options are: BUTTON ONLY (Default); Password; Hot KEY, Keyboard 98, Mouse Left, Mouse Right.

KB Power ON Password

Allows you to set up to 5 alphanumeric characters use in powering-on the system. To set password, set the above item POWER ON Function to *Password*, then using the keyboard's down arrow key move cursor to this item KB Power ON Password and press the <**Enter**> key. A box will appear asking you to input the password desired to power-on the system.

Hot Key Power ON

When set POWER ON Function at Hot Key, this feature will appears on the monitor. It allows you to select a hot key to power on your computer. The options are: Ctrl-F1 (Default), Ctrl-F2, Ctrl-F3, Ctrl-F4, Ctrl-F5, Ctrl-F6, Ctrl-F7, Ctrl-F8, Ctrl-F9, Ctrl-F10, Ctrl-F2, Ctrl-F11, Ctrl-F12.

KBC input clock

This feature allows you to select different KBC input clocks which your keyboard actually supported. Please read your keyboard manual also for more information. The options are: 8 (Default), 12, 16 MHz.

Onboard FDC Controller

When enabled, the floppy diskette drive (FDD) controller is activated. The options are: Enabled (Default), Disabled.

Onboard Serial Port 1

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

Onboard Serial Port 2

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

UR2 Mode

This feature allows you to select IR modes if the serial port 2 is used as an IR port. Stay with the default setting, Standard, if you use COM2 as the seial port, instead of as an IR port.
The options are: Sharp IR, IrDA SIR, Standard (Default).

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BIOS Setup**

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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), 278/IRQ5, 3BC/IRQ7, Disabled.

Parallel Port Mode

Allows you connect with an advanced printer.

The options are: SPP (Default), ECP, ECP+EPP, EPP1.7, EPP1.9.

ECP Mode Use DMA

This feature allows you to select Direct Memory Access (DMA) channel if the ECP mode selected. The options are: 3 (Default), 1.

PS/2 mouse function

This feature allows you to release IRQ12 for using the PS/2 mouse.

The options are: Enabled (Default), Disabled.

USB Controller

Disable this option if you are not using the onboard USB feature.

The options are: Disabled, Enabled (Default).

USB Keyboard Support

Disable this option if you are not using the onboard USB feature.

The options are: Disabled (Default), Enabled.

Init Display First

When you install an AGP VGA card and/or a PCI VGA card on the board, this feature allows you to select the first initiation of the monitor display from which card. The options are: PCI Slot (Default), AGP.

VGA Shared Memory Size

This feature is used to decide the size of the onchip VGA shared memory from the system memory.

The options are: 2 MB, 4 MB (Default), 8 MB.

Onboard Audio

When you install an audio addon card, please set at Disabled. The options are: Enabled (Default), Disabled.

Supervisor/User Password

To enable the Supervisor/User passwords, select the item from the Standard CMOS Setup. You will be prompted to create your own password. Type your password up to eight characters and press Enter. You will be asked to confirm the password. Type the password again and press Enter. To disable password, press Enter twice when you are prompted to enter a password. A message appears, confirming the password is disabled.

Under the BIOS Feature Setup, if *Setup* is selected under the Security Option field and the Supervisor/User Password is enabled, you will be prompted password every time you try to enter the CMOS Setup Utility. If *System* is selected and the Supervisor/User Password is enabled, you will be requested to enter the Password every time when you reboot the system or enter the CMOS Setup utility.

IDE HDD Auto Detection

The IDE Hard Disk Drive Auto Detection feature automatically configures your new hard disk. Use it for a quick configuration of new hard drives. This feature allows you to set the parameters of up to four IDE HDDs. The option with **(Y)** are recommended by the system BIOS. You may also keys in your own parameters instead of setting by the system BIOS. After all settings, press Esc key to return the main menu. For confirmation, enter the Standard CMOS Setup feature.

Save and Exit Setup

After you have made changes under Setup, press Esc to return to the main menu. Move cursor to Save and Exit Setup or press F10 and then press Y to change the CMOS Setup. If you did not change anything, press Esc again or move cursor to Exit Without Saving and press Y to retain the Setup settings. The following message will appear at the center of the screen to allow you to save data to CMOS and exit the setup utility:

SAVE to CMOS and EXIT (Y/N)?

Exit without Saving

If you select this feature, the following message will appear at the center of the screen to allow you to exit the setup utility without saving CMOS modifications:

Quit Without Saving (Y/N)?

FAQs

General FAQs

How do I know my BIOS version?

Spot it on the boot screen, click [Pause/Break] button to write it down.

How to install a PS/2 mouse?

Enable PS/2 in Advanced Setup (AMI BIOS).There is a label on the board which points to pin number one when connecting the PS/2 mouse adapter on the board. The Pin number two is not connected because the female connector (on PS/2 Mouse adapter) doesn't have wire on number two slot. The PS/2 mouse port is a 5 pins pin header which is located beside keyboard socket.

How do I know which PCB Revision my motherboard is?

Some motherboards have more than one PCB Revision. This is written in the top left corner of the motherboard, next to the ISA slots. In some cases different PCB revisions may not all support the same processors, or may require different BIOSes. This is indicated where applicable.

Can I use ECC memory?

Yes, provided your chipset supports it. Check your manual (Overview section) or consult the chipset manufacturer's Web site (Intel or VIA).

My FIC Pentium-based motherboard PCI 2.1-compliant?

Yes. All FIC Pentium-based motherboards are PCI 2.1-compliant.

How do I know which FLASH chip I have?

Partially remove the sticker from the chip and see the name of the manufacturer. Usually the jumper setting is set correctly in the factory.

What is the purpose of KB_LOCK pins located on the front panel connector?

To lock the keyboard access to the system (if short). This feature works in conjunction with keylock found on some computer cases - when it is locked, it shots the two KB_LOCK pins and prevents keyboard access to the system.

What the DMI utility is used for?

DMI Configuration Utility can be used to maintain the Management information Format database (MIFD). DMI is also able to auto-detect and record information pertinent to a computers system such as the CPU type, CPU speed and internal/external frequencies and memory size. The onboard BIOS detects as much system information as possible and stores it in a 4KB Block in the motherboards Flash EPROM and allows the DMI to retrieve data from this database. The DMI utility also allows the system integrator or end user to add additional information into the MIFD such as serial numbers, housing configuration and vendor information. Those information cannot be detected by the motherboards BIOS and has to manually entered through the DMI Configuration utility and updated into the MIFD.

Is my FIC Pentium-based motherboard PCI 2.1-compliant?

Yes. All FIC Pentium-based motherboards are PCI 2.1-compliant.

**Chapter 4
FAQs**

Where can I get the drivers for PCI set motherboards?

FIC motherboards are based on Intel® and VIA® chipsets, who also make the drivers. To download drivers you need, visit Drivers and Utilities Page. There you will see links to FAQs and other Web sites that explain in detail how to install the drivers.

How can I get the USB drivers?

Download Microsoft USB Supplement and a set of generic USB Drivers from Drivers and Utilities Page. You must have Windows 950B (Service Release II, "Windows97") to install these.These drivers resolve the yellow exclamation mark problem (Unknown Devices, USB) in Device Manager.

How do I use DMI Utility?

Very carefully, because otherwise your system can become totally unusable after altering and saving some configuration on DMI. DMI Utility should not be run from Windows or DOS version higher than v6.22.

If you accidentally alter some settings using DMI Utility under Windows95 (or MS-DOS that comes with it), flash the system BIOS immediately, do not reboot. In some cases, using Win95 as operating system (for applying DMI Utility) shows insufficient error message while trying to load the Flash utility, that's why we recommend to use DOS 6.22. In that case, the other option is to use the Boot Block feature on the BIOS. Use an ISA VGA card for the system to allow them to boot at least on drive "A" (using DOS 6.22 of course) so you will be able to flash the BIOS at least. If you use DMI from Windows95 DOS prompt or Restart in MS-DOS mode, you will not be able to restart the PC.

**Chapter 4
FAQs**

Why not update BIOS?

In 90% of cases, a BIOS update is released to address a problem with a particular piece of hardware or software.Therefore, the new BIOS gives the system some new (different) parameters to work with. Newer BIOS'es contain all fixes from previous versions. If the fix list of a new BIOS does NOT address any of problems that you may have, it is unreasonable to update BIOS only for sake of it, because you may be using a combination of hardware/software that is incompatible and yet-untested with the BIOS version you're upgrading to.

It is recommended to refrain from updating BIOS without a good reason. If you don't see your problem listed in the fix list, do not update BIOS - better go to a shareware Web site (winfiles.com, shareware.com, tucows.com) and update your software or do something les dangerous.

And finally, some 10% of BIOS updates contain new CPU ID strings and code enhancements (ACPI, etc.). For those an update is recommended only when it is necessary (i.e. the processor ID does not display properly, the system must have ACPI, etc.).

A typical situation occurs when a user wants to update BIOS because the new version supports a CPU he/she "plans" to buy sometime in the future. With some bad luck, the user ends up with a wrong BIOS (wrong PCB, or chipset, or I/O or all of them) and a fried BIOS.

**Chapter 4
FAQs**

BIOS FAQs

How do I flash a new BIOS?

The mainboard package provides BIOS flash software tool in the software utility CD-ROM. This software feature is provided for upgrading BIOS use. Play the CD-ROM, click on *Browse CD*, select *Flash*, then choose the BIOS vendor that provided the BIOS this board came with. Please print the relating README file and read it first. For more information about, please visit FIC Online at www.fic.com.tw.

Downloading BIOS File

Format a bootable system diskette, visit the FIC website at **www.fic.com.tw**. Click *BIOS/Drivers Update* item under **BIOS** group, then select the BIOS file you need. Download it to your bootable diskette.

Upgrading BIOS File

Place the bootable diskette containing the BIOS file in the diskette drive (Assume the diskette drive is A.), and reboot the system by A drive. At the A: > prompt, execute the BIOS upgrading procedure by entering the Flash BIOS utility and the BIOS file with its extension.

Command: {flash tool file}{space}{downloaded BIOS file} <Enter>
The other parameters are listed in the relating README file, please read it if need.

After press *Enter* key, type Y to the message **Press "Y" to Continue, "N" to Reboot**. Press *Enter* key. When the message **Press Any Key to Reboot**, the procedure is completed. Press any key to reboot.

What is "Hardware-based intelligent virus protection"?

This is a new BIOS feature based on anti-virus (AV) softwere that protects the system from boot-time viruses. It is intellgent in the sense that it uses rules modeled after virii's behavior. For example, it can tell the difference between normal writing to HDD boot sector and virus-attempted writing. It unloads after boot-up so it does not provide total protection and is not intended to serve as replacement for regular anti-virus software.

This utility includes only Scan funcition and not Virus Delete function. It is not necessary to "update" virus definition files because there are none.

When I try to flash BIOS I get an error message saying about a wrong part number. Why?

Flash EPROM ("BIOS") chips used on FIC motherboards vary (Intel, AMD, Fujitsu, etc.). As far as this problem is concerned, there are two possible reasons:

a) you may have used a wrong BIOS or flash utility. Verify that both the BIOS file and the flash utility are the right versions.

b) the flash utility you used did not recognize the type of flash EPROM installed on your motherboard. Verify that you have the right files and if you're sure in that, ignore the warning.

I updated my BIOS and am not very much pleased with the result (slower performance, new bugs, etc.). What now?

Restore the old BIOS or wait until a newer BIOS is available. You should use the flash utility supplied with the old BIOS and NOT the flash utility you got with the new BIOS. If you do not know what flash utility it was, consult the Web support pages or contact technical support.

Windows 98 FAQs

What's the proper install prcedure for VIA-based motherboards?

There are four steps:

1) Go to BIOS Setup and enable USB

2) Install Win98 on your system

3) Download and install the VIA IrQ routing miniport driver from our Drivers and Utilities page

4) Download and install the VIA AGP driver from the same page (for MVP3 & VP3 chipsets only).

Windows98 comes with PCI Bridge patch included so you don't need to install it. In case you have more PCI devices always put the first PCI device on PCI Slot 2 and remember to enable USB in BIOS.

Why does my VIA chipset-based motherboard crash under Windows98?

This problem is caused by incorrect assignment of IRQ by Microsoft(r) Windows98. MiniPort driver released by VIA reassigns these IRQs. The driver has not been relased by FIC yet but it can be found on the FIC FTP server. Drivers approved by FIC can be downloaded from Drivers and Utilities page.

I need Windows98 drivers for my (VIA chipset-based) FIC motherboard!

Windows98 contains all drivers necessary. Therefore you need not use any of the drivers supplied on the CD-PRO/floppy.

For VIA chipset based motherboards, there is a problem with the way Windows98 assigns IRQs to devices - some may remain "invisible". This is the IRQ rooting problem desribed above (download the driver).

Another driver you might wish to update (not recommended unless you are experiencing problems) is VIA Bus Master IDE driver. It is shipped with MS Windows98 but newer versions are available for download.

Another thing you might wish to update is your VxD driver, also available on Drivers and Utilities page.

**Chapter 4
FAQs**

I flashed BIOS and now Windows won't boot.. I get a VxD error message.

This happens sometimes and is a software problem. You will have to reinstall Windows based on new BIOS. Windows must have found new settings (registers) different from the old BIOS, so Vxd error message will pop up if these are not found.

My Sound Blaster Live does not work under DOS. Why?

Creative Labs specifies that it does not work under DOS but it does work in DOS mode under Windows

Windows 95 FAQs

What is the proper install order of graphics-related VIA drivers?

1)Install Windows, 2) If your motherboard has an AGP port, load Vxd driver v. 2.9. 4) Load display card driver.

Why does my VIA chipset-based system crash when the system attempts to access UDMA HDD?

This problem appears under Windows 95 OSR2 and OSR 2.1. Microsoft made two updated versions of drivers that cause the problem. Please download them at

http://support.microsoft.com/support/kb/articles/q171/3/53.asp

How can I know if a software (example: WindowsNT) is compatible with FIC motherboards?

Each FIC motherboard is tested with a variety of operating systems and applications. Compatibility reports are published every time new model or updated model of a motherboard is released.Compatibility reports can be downloaded from individual motherboard support pages or from the FIC FTP Server (opens in a new window).

Windows95 shows an exclamation mark next to USB device on my
motherboard. Is there any driver that canhelp me?

The only reason why you can see that Exclamation mark on USB serial Bus
& PCI Bridge is that Windows95 didn't support it. You will need to install
its drivers to fix it.

Intel CPU FAQs

What's the difference between Celeron(tm) CPU packages SEPP and
PPGA?

Celeron SEPP is a Slot-1 version of the processor. Celeron PPGA is the
type that fits on Socket 370. For more information, visit http://www.intel.com.

How do I know what Intel CPU I've got?

CPU ID is a string by which a CPU identifies itself to BIOS. Since processor
marking can be changed andsome processors can run even at higher fre-
quencies than they're manufactured for, remarked processors can be found
on the market. Since they usually do run at the remarked frequency, in that
case it is hard to find out what CPU you actually have. To learn what Intel
CPU you really have, download Intel's utility CPUID.EXE and run it in real
mode (boot from a floppy and run it under DOS).

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