CP31-AG

MAINBOARD MANUAL

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 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, boards and modules with the "old finger" connectors plugged into the expansion slot. It is best to handle system components by their mounting bracket.

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

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Chapter 1   Overview

Chapter 2   Installation Procedures

Chapter 3   BIOS Setup

Chapter 4   FAQs

Overview

The CP31-AG is a MicroATX sized Socket 370 mainboard with Video and Audio on board. The CP31-AG supports the Intel Celeron PPGA 366-433 MHz processor, with 66/75/83/100/112/133 MHz Front Side Bus support. Based around the VIA Apollo Pro Plus chipset, the CP31-AG is a feature rich mainboard.

Superb stereo sound is provided by the Yamaha 740C onboard audio chip, and high quality graphics capablities come with onboard video, which is provided by the ATI Rage Pro Turbo, (the ATI Rage XL AGP with 8MB of SDRAM is offered as a manufacturing option).

The CP31-AG has 2 DIMMs, providing up to 512 MB of SDRAM, and 3 PCI and 1 ISA expansion slot. The CP31-AG is ACPI ready, ensuring improved power management, and is PC98 and Y2K compliant. Other features of the CP31-AG (manufacturing option) and CD Pro with enhanced drivers. A hardware monitoring facility offers the latest in system control and protection.

The CP31-AG offers CD-in, IrDA, Wake-on-LAN and AMC connections, as well as 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 is also 1 Line-out, Line-in, and Mic-in. Furthermore, the CP31-AG offers 1 digital flat panel pin header and 1 optional front USB pin header.

Package Checklist

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

- √   The CP31-AG mainboard
- √   This user manual
- √   One IDE ribbon cableThis user manual
- √   One floppy disk drive ribbon cable
- √   Software utilities

The CP31-AG Mainboard

ISA Slot   3 PCI Slots   Yamaha Audio Chip   ATI AGP Controller   Integrated I/O Connectors   Socket 370

SECONDARY/ Primary IDE Connector   Floppy Drive Connector   VIA Apollo Pro Plus Chipset
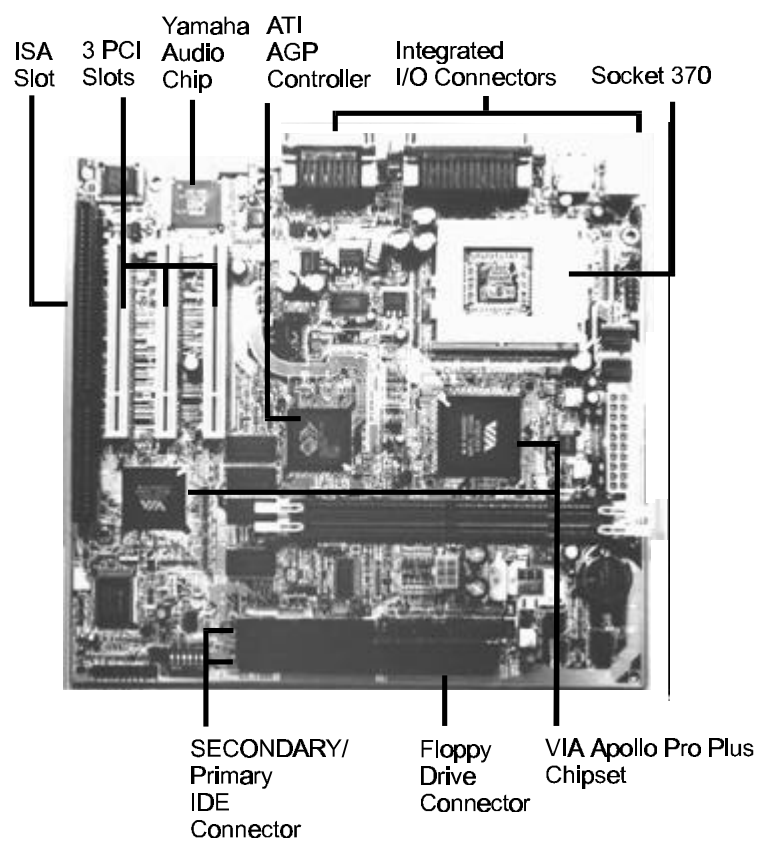
Main Features

The CP31-AG mainboard comes with the following high-performance features:

■ Easy Installation
   BIOS with support for Plug and Play, auto detection of IDE hard drives, LS-120 drives, MS Windows™ 95, Windows™ 98, Windows™ NT, and OS2™.

■ Flexible Processor Support
   Onboard Socket 370 supports leading-edge processors:
   Celeron™ PPGA processors 366/400/433 MHz.

■ Leading Edge Chipset
   VIA Apollo Pro Plus chipset includes a CPU interface controller, integrated SDRAM controller, synchronous ISA bus controller, integrated power management unit, concurrent PCI (PCI v.2.0 and 2.1), and USB.

■ Versatile Main Memory Support
   Accepts up to 512MB DRAM in two banks using DIMMs of 8, 16, 32, 64, 128, 256MB with support for SDRAM memory.

■ ISA and PCI Expansion Slots
   One 16-bit ISA and three 32-bit PCI expansion slots provide all the room you need to install a full range of add-on cards.

■ USB Support
   Two USB ports integrated in the rear I/O panel allow convenient, high-speed Plug and Play connections to the growing number of USB compliant external peripheral devices on the market.

■ Keyboard/Mouse Power-On and Power Failure Support
   The BIOS provides the features that allow users to configure the way to power-on the system by keyboard or mouse; also the feature of deciding the system status after back from power failure.

■ Enhanced PCI Bus Master IDE Controller 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.

■ 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.

■ Remote Wake-Up Support
One LAN wake-up connector supports LAN cards equipped for remote wake-up functionality.

■ Intel LANDesk® Client Manager (LDCM) Software Support
LDCM is a Desktop Management Interface (DMI)-compliant application for local and network management of desktop client systems. The application reduces the number of help desk calls by supplying the user with self diagnostics such as a PC health meter and local alert for potential problems.

■ Compact Yamaha Audio Subsystem for Sound and Game
The onboard Yamaha audio controller for the PCI Bus. It provides 64-voice XG wavetable synthesizer and supports DirectSound hardware accelerator, Downloadable Sound (DLS), and 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, LINE_IN, LINE_OUT; and one connector for joystick with MIDI interface.

Advanced Features

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 Celeron™ PPGA Processor Performance
The mainboard utilizes the advanced features of the VIA Apollo Pro Plus Chipset to optimize the unrivaled performance of the Celeron™ PPGA processor with MMX™ technology, allowing you to enjoy a richer video, audio, digital imaging and communications experience from the latest generation of multimedia software.

■ Integrated Accelerated Graphics Port (AGP) Controller
The integrated ATI AGP controller provides a dedicated 66MHz/133MHz path to the system memory offering a much greater bandwidth than the 32-bit PCI bus does which currently operates at a speed of 33MHz. AGP enabled 3D graphics cards can directly access main memory across this fast path instead of using local memory. This is especially important for memory-intensive 3D graphics applications so as to produce a more detailed 3D texture, greater clarity and higher levels of resolution without compromising system performance. This mainboard is fully compliant with the AGP 1.0 specification. To make use of the improved AGP performance, the mainboard should be installed with SDRAM type memory should also be fully AGP compliant. Using Microsoft   Microsoft Windows™ 98 and forthcoming versions of Windows™ 2000 which implement DirectDraw™ will allow the system to take full use of AGP benefits without the need to install additional drivers.

Intel LANDeskÒ Client Manager (optional)

The mainboard comes with optional Intel LANDesk® Client Manager, a Desktop Management Interface (DMI) compliant application that simplifies local and network management of desktop client systems by monitoring PC health, and by alerting local and designated remote users of potential problems. For example, the application will indicate when memory usage is high or hardware components are likely to fail. This capability provides new levels of manageability to deliver a lower cost of PC ownership by maximizing system uptime, increasing user productivity and reducing the number of help desk calls. Because it is industry-standard DMI compliant, Intel LANDesk® Client Manager can be used with other DMI-based network management tools.

LDCM Key Features

- Health Monitoring
- Real-Time Alerting
- Remote Accessibility
- Extensive Instrumentation

The LANDesk® Client Manager, including the client interface and the administrator   console used by the network administrator or manager, has a graphical user interface for ease-of-use and understanding and can be used for monitoring PC health, configuring key system files and viewing inventory.

Installation Procedures

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

To set up your computer, you should follow these installation steps:

■ Step 1 - Set system jumpers/switches

■ Step 2 - Install memory modules

■ Step 3 - Install the CPU

■ Step 4 - Install expansion cards

■ Step 5 - Connect devices

■ Step 6 - Set up BIOS feature

■ Step 7 - Set up software utilities

> **!** **CAUTION:** If you use an electric drill to install this Mainboard on your chassis, please wear a static wrist strap. The recommended electric drill torque is from 5.0 to 8.0 kg/cm to avoid damaging the chips' pins.

Quick Reference

Intel Celeron

66/75/83/100/112/133 MHz Front Side Bus Support

VIA Apollo Pro Plus

SDRAM DIMM (66/100 MHz)

Onboard ATI Pro Turbo AGP Support (Rage XL Optional)

Yamaha 740C

PCI/ISA Slot

ACPI Ready Support

Micro ATX Form Factor

1. CPU Frequency Select, Clear CMOS, Clear Password

CPU Speed		SW1-1	SW1-2	SW1-3	SW1-4
100MHz	66MHz				
350MHz	233MHz	ON	ON	OFF	OFF
400MHz	266MHz	ON	OFF	ON	ON
450MHz	300MHz	ON	OFF	ON	OFF
500MHz	333MHz	ON	OFF	OFF	ON
550MHz	366MHz	ON	OFF	OFF	OFF
600MHz	400MHz	OFF	ON	ON	ON

Enable (Clear CMOS)
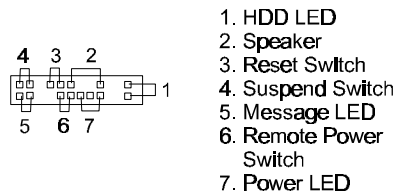
Enable (Clear Password)

Disable (Default)

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 Pentium II CPU cartridge may overheat and cause damage to both the CPU cartridge and the mainboard.
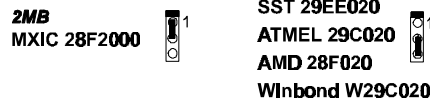
Damage may occur to the mainboard and/or the CPU fan if these pins are incorrectly used. These are not jumpers, do not place jumper caps over these pins.

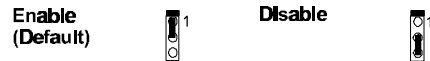**3. Front Panel Block Cable Connection**

1. HDD LED
2. Speaker
3. Reset Switch
4. Suspend Switch
5. Message LED
6. Remote Power
   Switch
7. Power LED

4. Other Enable/Disabled Jumpers/Switches

4.1 EP (Flash ROM Type Select)

2MB
MXIC 28F2000

SST 29EE020
ATMEL 29C020
AMD 28F020
Winbond W29C020

4.2 AUD_DIS (Onboard Audio Feature)

Enable
(Default)

Disable

4.3 KEY_WAKE (Keyboard Wake-Up)

Enable

Disable
(Default)

4.4 VGA_DIS (Onboard VGA Disable)

Enable
(Default)

Disable

9

4.2   **2**   **4.3**

4.1

BIOS
Flash
ROM
(PLCC)

CD_IN 2(Audio
Input conn. 2)

CD_IN 1(Audio
Input conn. 1)

VGA
(Monitor conn.)

COM1
(Serial port 1)

USB

KB
/MS

YAMAHA
Audio
Chip

LPT (Parallel port)

(Universal
serial
bus)

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

KEY_WAKE
(Keyboard
power on
enable)

AUD_DIS
(Onboard
audio feature
disable)

LINE_OUT
(Audio output jack)

IR
(Infrared
connector)

LINE_IN (Audio
Input jack)

MIC_IN (Microphone
Input jack)

GAME
(Game port)

COM2
(Serial port 2)

DFP
(Digital flat panel
monitor connector;
optional)

Socket 370

PCI bus slot3

PCI bus slot2

PCI bus slot1

Flash ROM top slot21

ISA1

PCI3

PCI2

PCI1

ISA bus slot

CPU_FAN
(CPU fan
connector)

Video
Chip

VGA_DIS
(Onboard VGA
disable)

North
Bridge

POWER
(ATX power
supply connector)

SDRAM

CHS_FAN1
(Chassis fan
connector 1)

SDRAM

South
Bridge

SDRAM

DIMM1   (DIMM socket)

DIMM2   (DIMM socket)

1. HDD_LED
(hard drive LED)
2. PW_LED (power LED)
3. RPW_SW
(remote power switch)

4. MSG_LED (message LED)
5. SP_SW (suspend switch)
6. RST_SW
(reset switch)

SDRAM

PWR_FAN

Lithium
Cell
3V

7. SPEAKER
(speaker)

(Power supply
cooling fan
connector)

I/O
Controller

USB2
(External USB connector; optional)

CHASSIS
(Chassis intrusion
alarm connector)

WOL (Wake
on LAN conn.)

SECONDARY (Secondary IDE conn.)

AMC (ATI multimedia channel conn.)

5   6   7

PRIMARY (Primary IDE conn.)

FLOPPY (Floppy drive connector)

CHS_FAN2
(Chassis fan
connector 2)

4   3   2

SW1
(System DIP switches)

3   **1**   **4.4**

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:
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. 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.

# 1). Set System Jumpers/Switches

Clear CMOS: SW1-5

The CMOS RAM is powered by the onboard button cell battery. To clear the RTC data: (1) Turn off your computer, (2) Move the CMOS Clear switch SW1-5 to   n" (Enabled), (3) Turn on your computer, (4) Hold down the <**Delete**> key during bootup and enter BIOS Setup to re-enter user preferences, (5) Turn off your computer, (6) Move the CMOS Clear switch SW1-5 to   ff" (Disabled), (7) Turn on your computer.
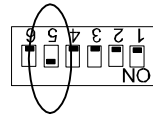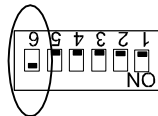
Enable
(Clear CMOS)
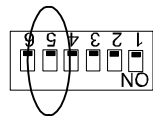
Disable (Default)
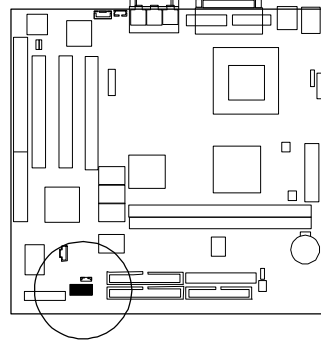
Clear Password: SW1-6

This switch allows you to enable or disable the password configuration. You may need to enable this switch by moving it to the   n" (Enabled) position if you forget your password. To clear the password setting: (1) Turn off your computer, (2) Move the Clear Password switch SW1-6 to   n" (Enabled), (3) Turn on your computer, (4) Hold down the <**Delete**> key during bootup and enter BIOS Setup to re-enter user preferences, (5) Turn off your computer, (6) Move the Clear Password switch SW1-6 to   ff" (Disabled), (7) Turn on your computer for the new settings to take effect.

Enable
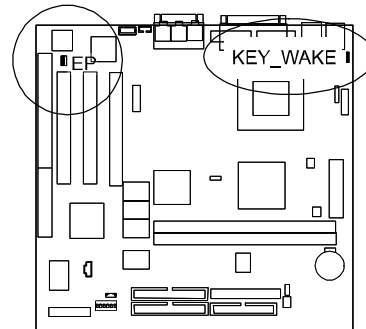(Clear Password)
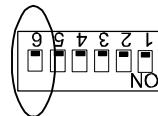
Disable (Default)

Flash ROM Type Selection: EP

The jumper allows you to configure the type of flash ROM chip. This jumper setting is correct by manufactory default. If you want to know the flash ROM type installed on this board, remove the sticker from the chip to see its type.

2MB
MXIC 28F2000   1

SST 29EE020
ATMEL 29C020   1
AMD 28F020

EP   KEY_WAKE

Keyboard Wake-up Selection: KEY_WAKE

The 3-pin jumper allows you to use your keyboard to power-on or wake-up your system.

NOTE: For the mainboard to use the Keyboard Wake-up + Wake-on-LAN function, the ATX power supply used should have a current of 1AMP at 5V Stand-By. To use the Keyboard Wake-up function only without using the Wake-on-LAN function, the ATX power supply used should have a current of 400milliAmpere at 5V Stand-By.
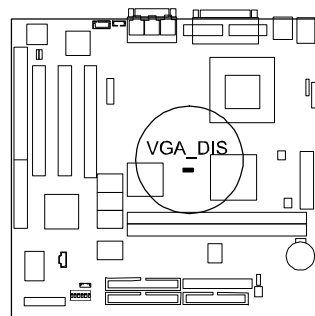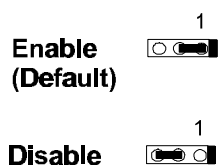
Enable   **Disable**
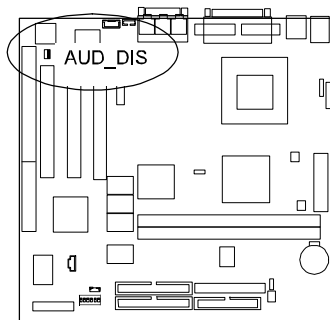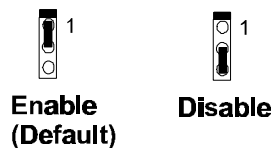   **(Default)**

Onboard VGA Feature Selection: VGA_DIS

This 3-pin jumper allows you use another add-on PCI VGA card instead of the onboard AGP VGA feature.

Onboard Audio Feature Selection: AUD_DIS

This 3-pin jumper allows you to use another add-on PCI sound card instead of the onboard audio feature.

2). Install RAM Modules

SDRAM Memory

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. Occasionally the system must break apart data files because the entire file does not fit into the RAM area. Consequently, when the system needs data that is not in RAM, it must access the disk where the balance of the data is stored.

Compared to the lightning speed access of the system has to RAM, accessing a mechanical disk drive is a slow process. The board RAM is comprised of three industry standard 168-pin Dual In-line Memory Modules (DIMMs). Each DIMM socket is able to support up to 256MB 3.3V (unbuffered) with data access time of 12ns, 10ns, 8ns or less EDO DRAM or lightning-fast SDRAM. ECC memory and parity check are also supported. If the DIMM runs at the speed of 100MHz, it must meet the PC100 specifications. Use the same memory size of DIMM on each socket for better performance. The maximum total memory supported is up to 512MB (a RAM module of this size was not available for testing).

PC100 DIMMs may have a serial EEPROM containing a number of critical timing parameters and data regarding the chip and DIMM vendor. This guarantees that the onboard core chipset will properly recognize the DIMM by reading all of the important timing parameters specified in the EEPROM on the serial presence detect interface. The DIMM supplier must understand these differences in detail and provide the correct information so that the core chipset will be programmed properly to control memory. Before making SDRAM 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.

| Socket	Acceptable Memory Module		Total Memory
1	8/16/32/64/128/256MB 168-pin 3.3V SDRAM	x1	
2	8/16/32/64/128/256MB 168-pin 3.3V SDRAM	x1	

Total System Memory allowed up to 512MB   =

Install and Remove DIMMs

This mainboard supports 100MHz SDRAM DIMMs; when the system frequency set to 100MHz, PC100-compliant SDRAM should be used.
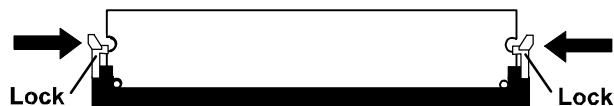
Complete the following procedures to install DIMMs:
1. Locate the DIMM slots on the mainboard.

Top View of DIMM Socket
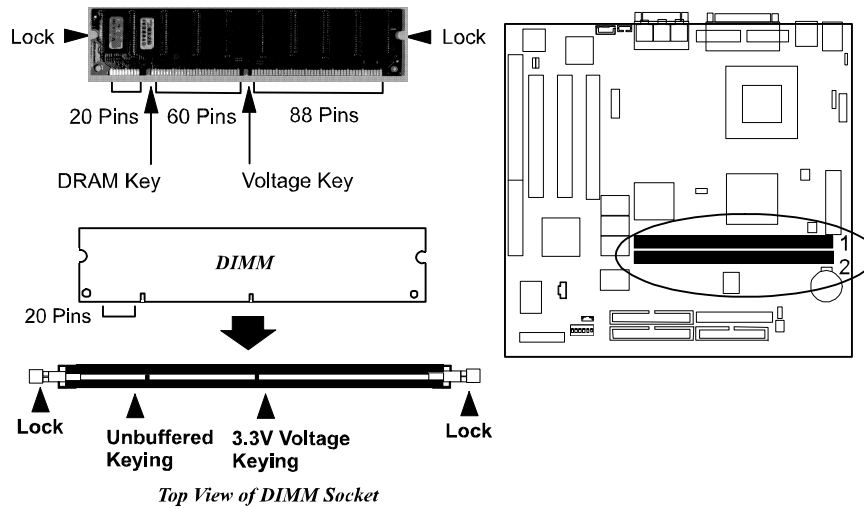
2. Install the DIMM straight down into the DIMM slot with both hands.
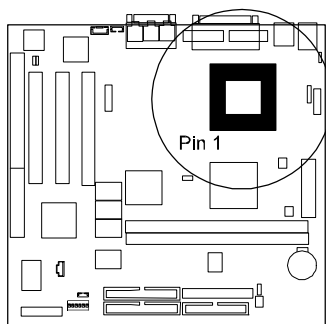
3. The clips of the slot will close up to hold the DIMM in place when the DIMM touches the slot   bottom.

Lock   Lock

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   andling 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.

CPU Internal Frequency Selection: SW1-1/ -2/-3/-4

These four switches are used to decide the internal frequency of the CPU.
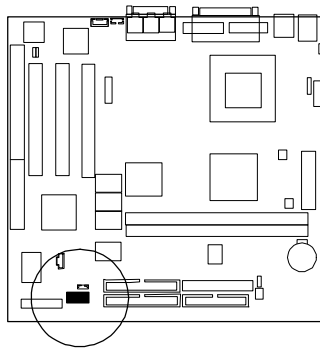
Ratio	CPU Speed		SW1-1	SW1-2	SW1-3	SW1-4
	100MHz	*66MHz*				
3.5 x	350MHz	233MHz	ON	ON	OFF	OFF
4.0 x	400MHz	266MHz	ON	OFF	ON	ON
4.5 x	450MHz	300MHz	ON	OFF	ON	OFF
5.0 x	500MHz	333MHz	ON	OFF	OFF	ON
5.5 x	550MHz	366MHz	ON	OFF	OFF	OFF
6.0 x	600MHz	400MHz	OFF	ON	ON	ON
6.5 x	650MHz	433MHz	OFF	ON	ON	OFF
7.0 x	700MHz	466MHz	OFF	OFF	ON	ON
7.5 x	750MHz	500MHz	OFF	OFF	ON	OFF

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. This mainboard features one 16-bit ISA bus, and three 32-bit PCI bus expansion slots. (PCI3 is shared with ISA1.)
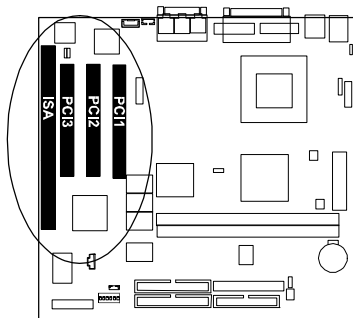
!

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

To install an expansion card, do the following:

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 n 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 cover.

7. Setup the BIOS if necessary.

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

# 5). Connect Cables and Power Supply

PS/2 Keyboard and Mouse Connector: KB and MS

These two 6-pin female connectors are used for your PS/2 keyboard and PS/2 mouse.
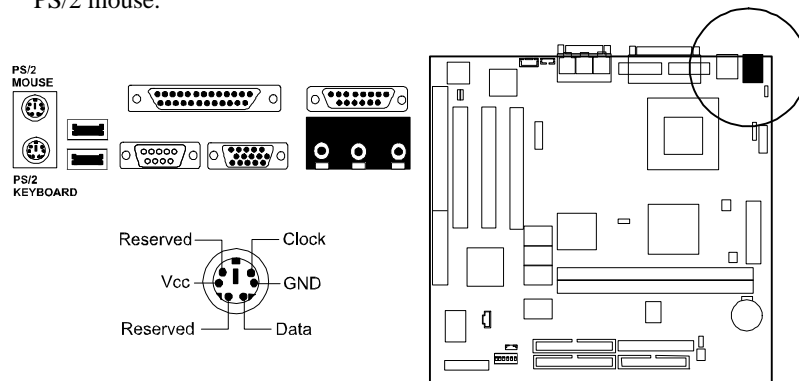
## *Universal Serial Bus Connectors: USB0, USB1, USB2*

These two connectors that integrated on the edge of the board are used for linking with USB peripheral devices. Also, this board provides an manufacturing optional connector USB2 for linking with the USB socket on the front panel of some system cases. If this connector is onboard and is used, the USB0 connector is disabled. Your operating system must support USB features, such as MS Windows 98, MS Windows 95 OSR2.5 with USB Supplement.
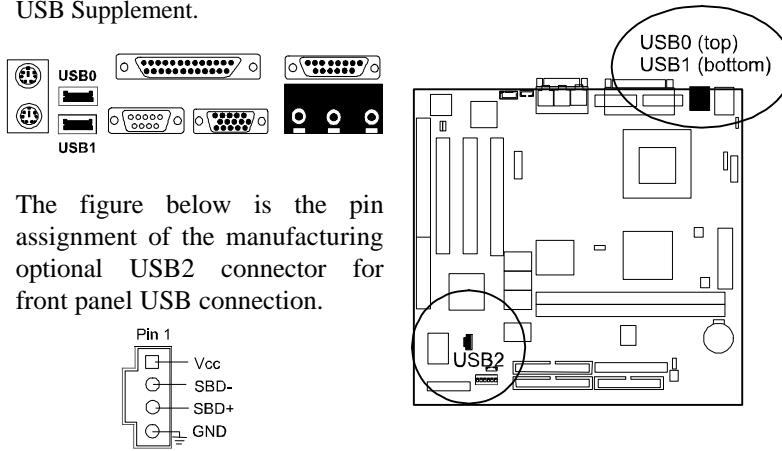
The figure below is the pin assignment of the manufacturing optional USB2 connector for front panel USB connection.
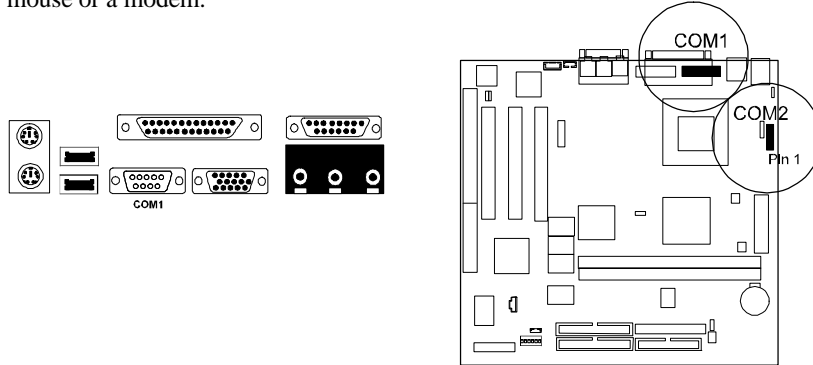

Printer Connector: LPT

This 25-pin D-Sub female connector is attached to your printer.

23
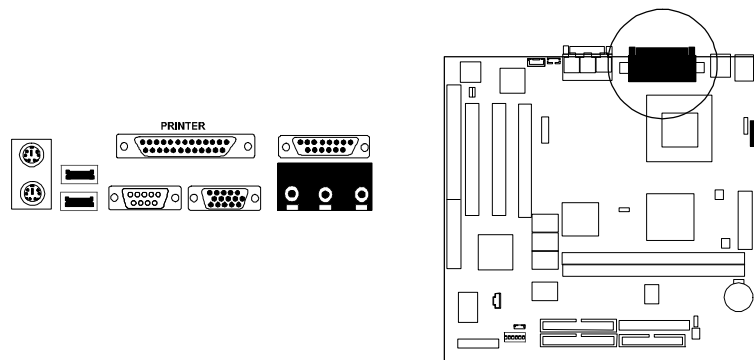
Serial Port Connectors: COM1, COM2
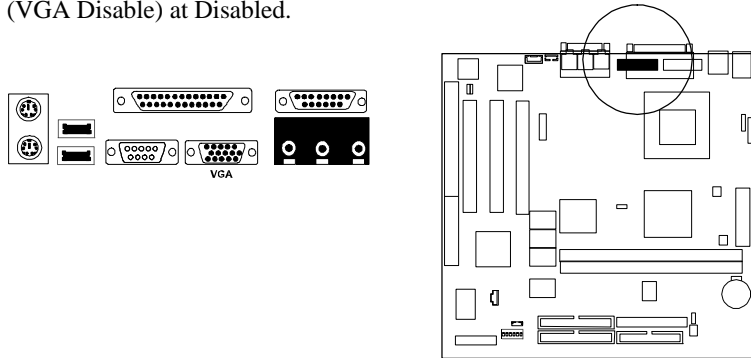
COM1 (9-pin D-sub male connector) and COM2 (9-pin male connector) allow you to connect with your devices that use serial ports, such as a serial mouse or a modem.

Video Graphics Accelerator Connector: VGA

This 15-pin female D-sub connector is connected to your display monitor. If you are not using the onboard VGA feature, set the jumper VGA_DIS (VGA Disable) at Disabled.

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.
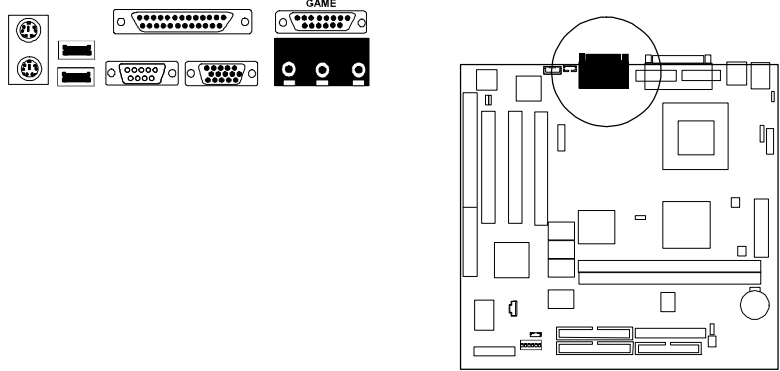
Audio I/O Jacks: L_IN, L_OUT, MIC_IN

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.
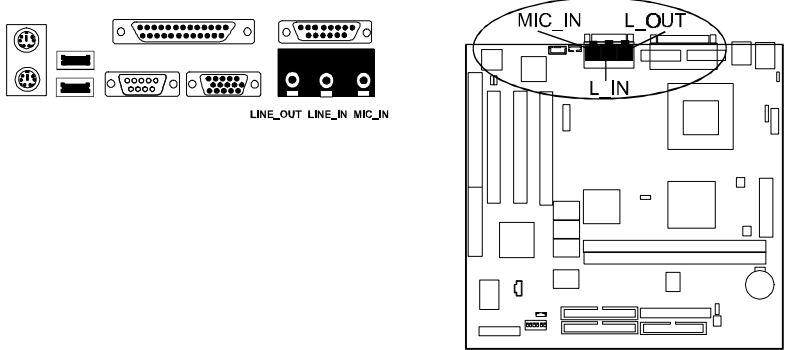
CPU Fan Connector: CPU_FAN

This connector is linked to the CPU fan for cooling the processor temperature. When the system enters the suspend mode, the CPU fan will shut off.

> **!** **CAUTION:** Without sufficient air circulation, the CPU cartridge may overheat and cause damage to both the CPU cartridge 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.

System Case Fan Connectors: CHS_FAN1, CHS_FAN2

These two 3-pin connector links to your cooling fan on the system case to lower the system temperature. Depending on the fan manufacturer, the wiring and plug may be different. Connect the fan plug to the mainboard taking into consideration the polarity of the connector.
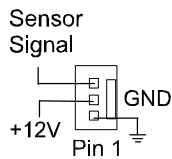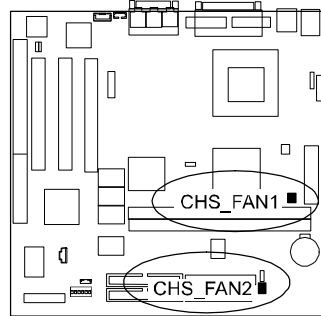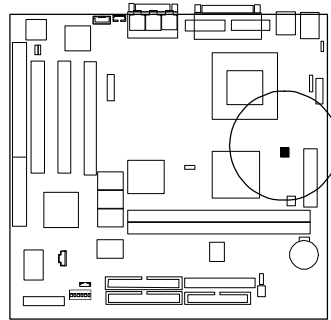
Power Fan Connector: PWR_FAN

This connector is connected with your power supply that supported a 6-wire plug to lower the power supply temperature. The signal which comes from the hardware monitor chip lowers the temperature of the power supply.

4	1	SENSE
5	2	+12V
6	3	Vcc3

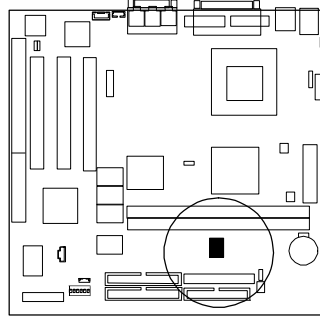## *Wake-On-LAN Connector: WOL*

This 3-pin connector allows remote LAN servers to manage the system that installed this board via a network adapter which also supports WOL. When you install a adapter with WOL connector, please read the network adapter card installation guide for details.
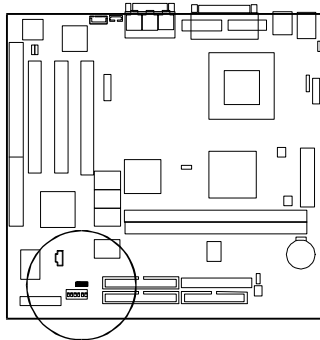
System Chassis Intrusion Alarm Connector: CHASSIS

The 3-pin male connector allows you to enable (or disable) system alarm activation if and when the system outer casing is being removed. A high level signal to the connector will indicate to the system that the chassis has been opened.

Pin 1

GND

Chassis

+5_VR

Pin 1
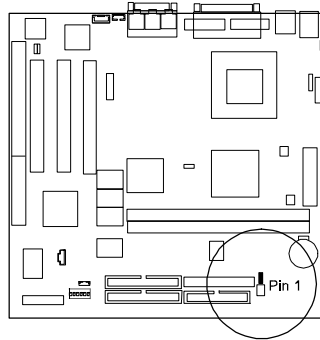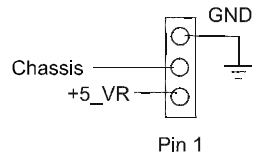
ATX Power Connector: POWER

This connector is connected to the ATX power supply.

+3.3V	11	1	+3.3V
-12V	12	2	+3.3V
GND	13	3	GND
-PWR_ON	14	4	+5V
GND	15	5	GND
GND	16	6	+5V
GND	17	7	GND
-5V	18	8	PWR_GOOD
+5V	19	9	5V_VR
+5V	20	10	+12V
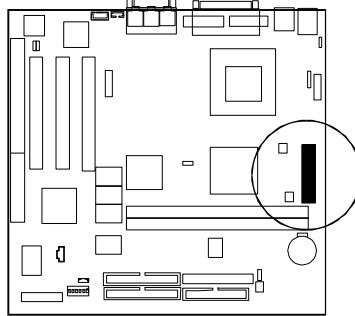
Floppy Diskette Drive Connector: FLOPPY

This 34   in block connector connects to your floppy disk drive using the cable that is provided with this mainboard. After connecting the single end to the mainboard, connect the two plugs on the other end to the floppy drives.
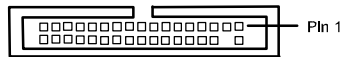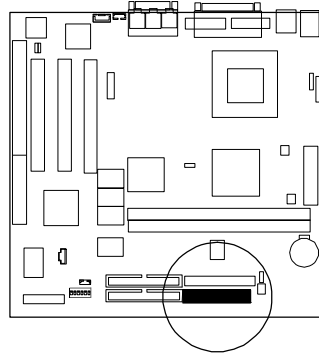
Pin 1

NOTE: Ribbon cables should always be connected with the red stripe on the Pin 1 side of the connector. The four corners of the connectors are labeled on the mainboard. Pin 1 is the side closest to the power connector on hard drives and floppy drives. IDE ribbon cable must be less than 18in. (46cm), with the second drive connector no more than 6in. (15cm) from the first connector.

CD-ROM Drive Audio-out Connector: CD_IN1, CD_IN2

These two 4-pin block connector are used for different specifications about the AUDIO_OUT port of your CD-ROM drive by a cable which comes with it.
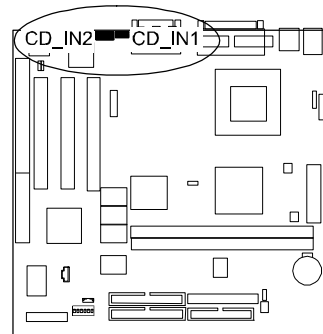
IDE HDD Device Connectors: PRIMARY, SECONDARY

These two connectors, which supports the provided IDE hard disk ribbon cable, are used for your IDE hard disk drives, CD drives, LS-120 drives, or IDE ZIP drives. After connecting the single end to the mainboard, connect the two plugs at the other end to your hard disk(s). If you install two hard disks, you must configure the second drive to Slave mode by setting its jumper accordingly. Refer to the documentation of your hard disk for the jumper settings. BIOS now supports SCSI device or IDE CD-ROM bootup.
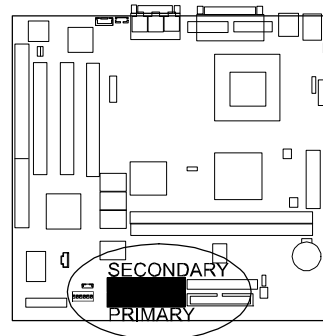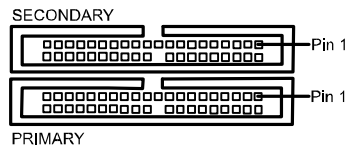
ATI Multimedia Channel Connector: AMC

This bi-directional video port allows direct connection to popular video upgrades such as video capture/conferencing, hardware DVD or MPEG-2 decorder, or TV tuner with intercast support. It includes an I²C interface for controlling AMC peripherals. If an ATI add-on card allowing an AMC interface such as ImpacTV2 is installed, this connector provides user with the linkage between the mainboard and the card. Refer to the card manual for more details.
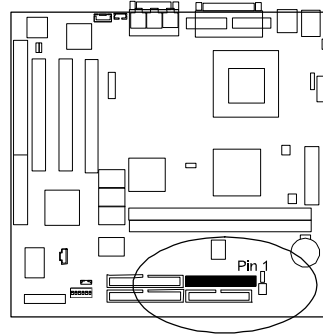
Front Panel Block Connector

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.
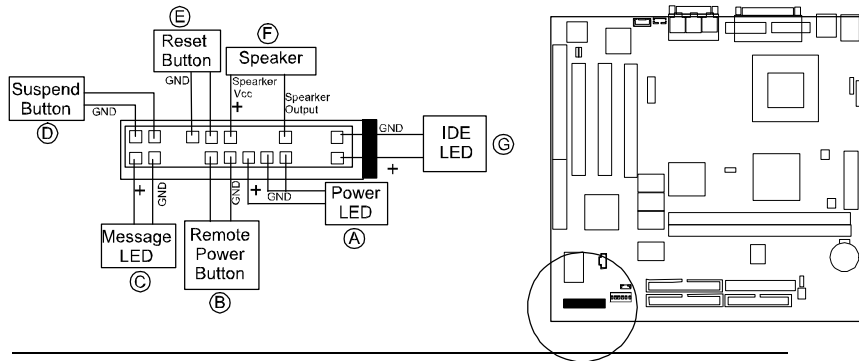
Power LED (A) is connected with the system power indicator to indicate whether the system is on/off. When the system enter the suspend mode, it blinks.

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.

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.
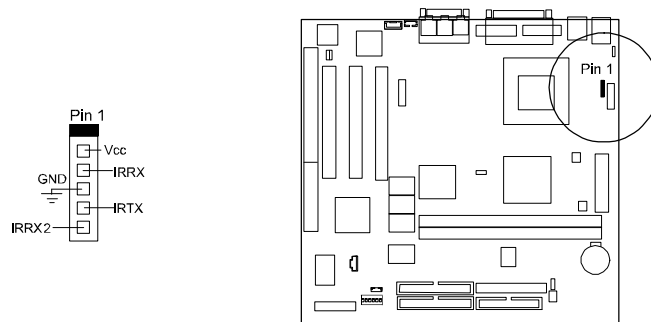
Digital Front Panel Connector: DFP (optional)

This optional connector linked with the digital flat panel display device.
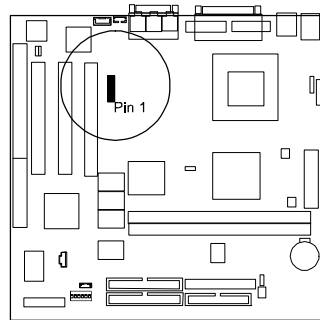
BIOS Setup

The mainboard comes with an AMI 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   components. This chapter explains the information contained in the Setup program and tells you how to modify the settings according to your system configuration.

Main Setup
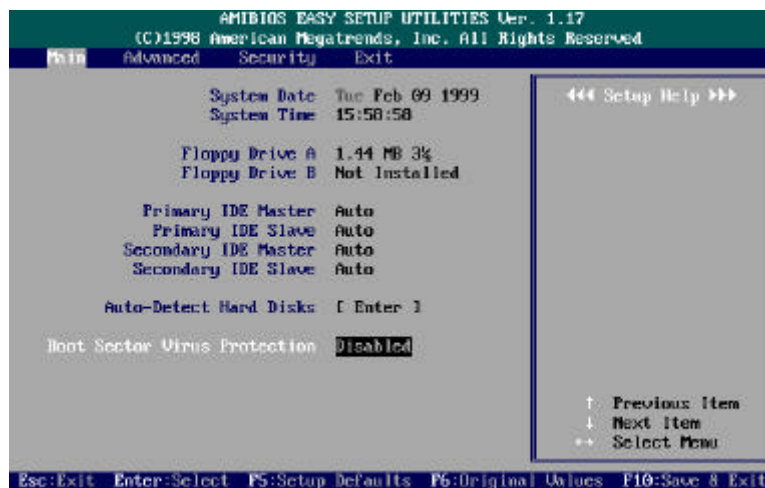
The Main Setup screen is displayed above. Each item may have one or more option settings. It allows you to change the system Date and Time, IDE hard disk, floppy disk drive types for drive A: and B:.

Auto-Detect Hard Disks
   Allows the system BIOS to detect all hard disk parameters automatically.

Boot Sector Virus Protection

When Enabled, a warning will be giver when any program or virus sends a Disk Format command or tries to write to the boot sector of a hard disk drive.

Advanced Setup

Advanced Setup options are displayed by choosing item from the AMI BIOS Setup main menu. All Advanced Setup options are described in their corresponding operating menus by brief Setup Helps.

Security Setup
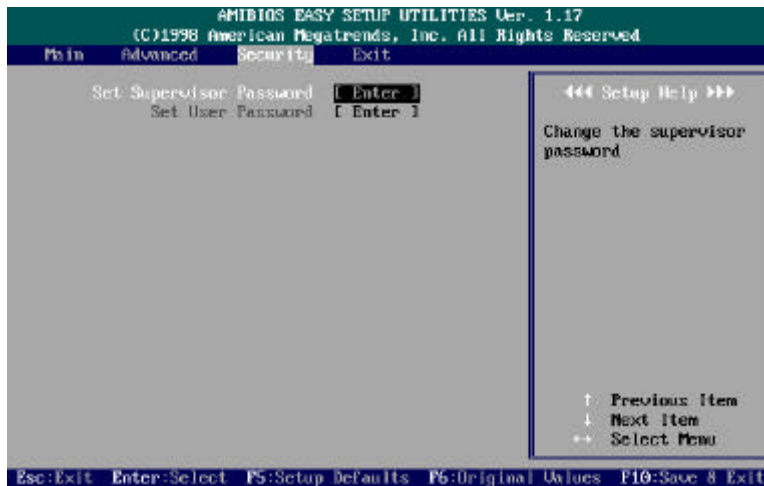
Set Supervisor and User Passwords: You can set either a Supervisor password or a User password. If you do not use a password, Just press **Enter** when the password prompt appears. The password check option is enabled in Advanced Setup by choosing either Always (the password prompt appears every time the system is powered on) or Setup (the password prompt appears only when AMI BIOS is run). You can enter a password by typing the password on the keyboard. When you select Supervisor or User, AMI BIOS prompts for a password. You must set the Supervisor password before you can set the User password. Enter a 1 to 6 character password. The password does not appear when typed.

Changing a Password: Enter the password and press **Enter**. After the new password is entered, retype the new password as prompted and press **Enter**. If the password confirmation is incorrect, an error message appears. If the new password is entered without error, press to return to the AMI BIOS Main Menu.

Exit Setup

Exit Saving Changes allows you to write the current settings to CMOS and exit.

Exit Discarding Changes allows you to exit without writing the current settings to CMOS.

Load Optimal Settings is selected for settings which provide the best system performance.

Load Fail Safe Settings is for settings that provide a more efficient computer. If the computer will not boot, select this option and try to diagnose the problem after the computer boots. These settings do not give optimal performance.

Load Original Values recalls your last set of previous settings. This option is convenient if you change settings and decide you wish to return to the previous settings.

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.

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.

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.

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   ” to Continue,   ” 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 funiction 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.

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 frequencies 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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