

CL31-A



MAINBOARD MANUAL

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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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PN-6210 Motherboard Manual

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Overview

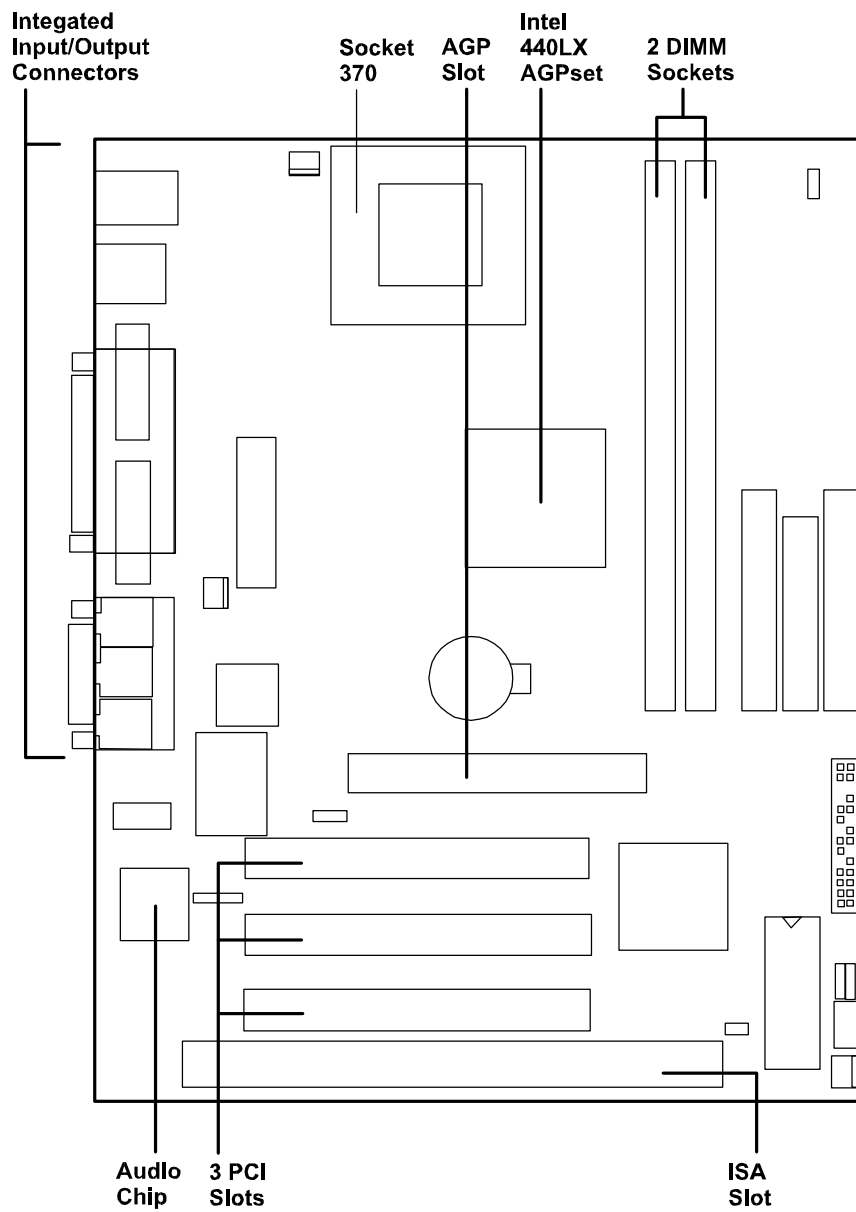
Based on the advanced [Intel 440LX AGPset](#), the CL31-A combines blistering [Celeron™ PPGA](#) processor performance with support for the new [Accelerated Graphics Port \(AGP\)](#) interface which provides a dedicated path for memory-intensive graphics applications – delivering faster system performance and arcade-quality 3D graphics. Also, it runs a range of [Celeron™ PPGA processors](#). Compliant with the [Microsoft PC97](#) standard at both the hardware and BIOS levels, the CL31-A comes with support for [ISMP™](#) which continuously checks the voltage status of your system and adjusts, when necessary, and reports any discrepancies to the network administrator. The CL31-A reduces the total cost of ownership with support optional [Intel LANDesk® Client Manager \(LDCM\)](#) software which allows for optimized system manageability across a network.

Package Checklist

Please check that your package contains all the items listed below. If you discover any item is damaged or missing, please contact your vendor.

- The CL31-A mainboard
- This user manual
- One IDE ribbon cable
- One floppy disk drive ribbon cable
- Software utilities

The CL31-A Mainboard



Main Features

The CL31-A 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**
Intel 82443LX AGPset 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 256MB DRAM in two banks using DIMMs of 8, 16, 32, 64, 128, 256MB with support for SDRAM or EDO memory.
- **Onboard Accelerated Graphics Port (AGP)**
One 32-bit AGP slot supports 1x/2x AGP VGA cards for superior 3D video and graphics performance with transfer speeds up to 264MB/second under 1x AGP transfer mode and up to 528MB/second under 2x AGP transfer mode.
- **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.
- **IrDA Connector**
An onboard IR connector for wireless infrared connection is available.
- **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.

■ **SB-LINK® for the Audio Card with PCI Bus**

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

■ **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 manageability, 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 Intel 440LX AGPset 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.

■ Onboard Accelerated Graphics Port (AGP)

The 32-bit AGP bus provides a dedicated 66MHz/133MHz path from the graphics card 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 and the VGA card and drivers should also be fully AGP compliant. Using Microsoft

Microsoft Windows™ 98 and forthcoming versions of Windows™ NT v.5.0 which implement DirectDraw™ will allow the system to take full use of AGP benefits without the need to install additional drivers.

Intel LANDesk® 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. Read Chapter 4 of this manual for more information.

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:

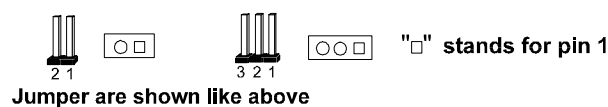
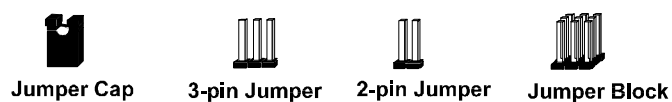
- [Step 1 -](#)
Set system jumpers
- [Step 2 -](#)
Install system RAM modules
- [Step 3 -](#)
Install the Central Processing Unit (CPU)
- [Step 4 -](#)
Install expansion cards
- [Step 5 -](#)
Connect ribbon cables, cabinet wires, and power supply
- [Step 6 -](#)
Set up BIOS software (see Chapter Three)
- [Step 7 -](#)
Set up supporting software tools (see Chapter Four)

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 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:



Jumpers are shown like above



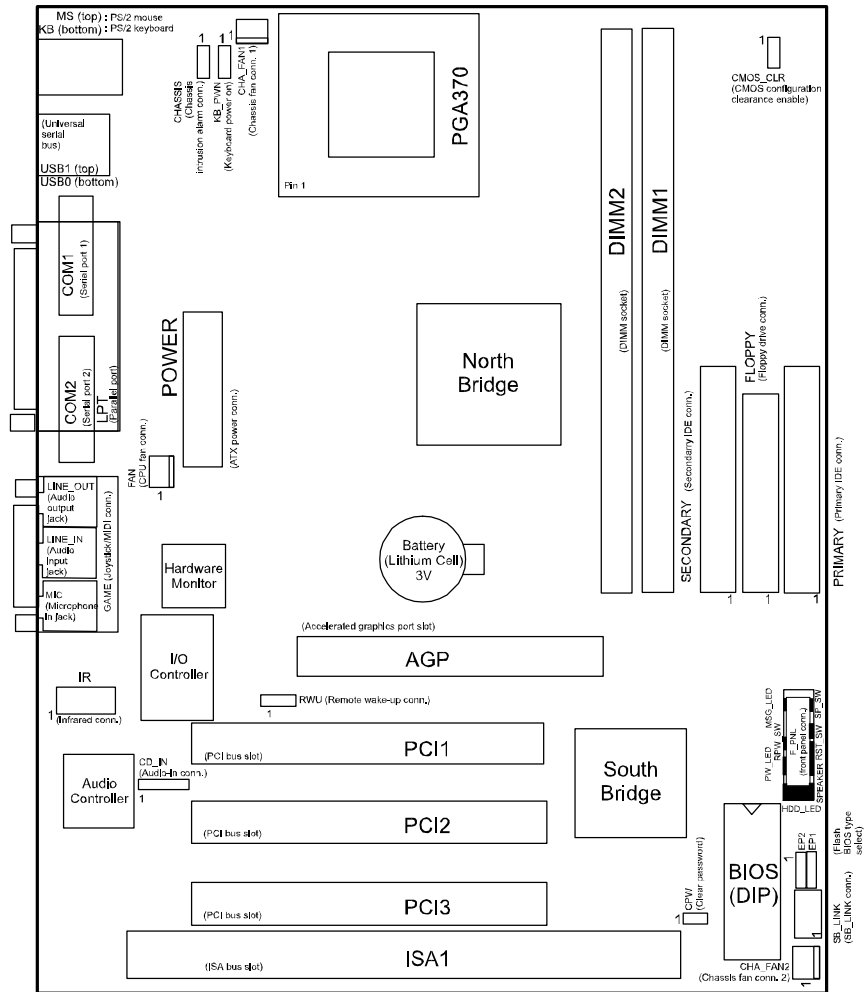
Jumpers cap like above



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.

Mainboard Layout

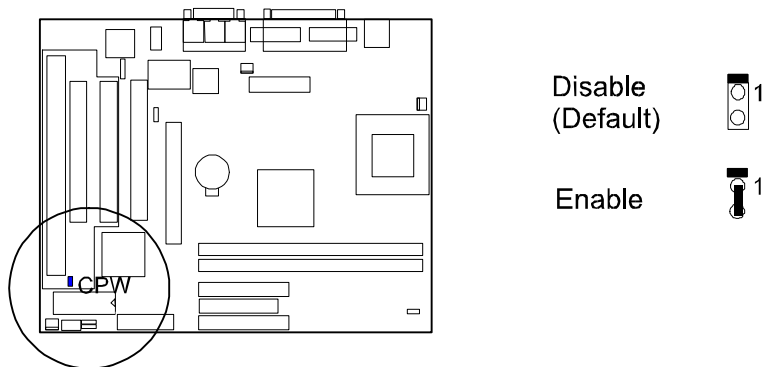


ONBOARD MARK	MEANING	PAGE
<i>Jumpers</i>		
CMOS_CLR	Clear CMOS Data	11
CPW	Clear Password	11
EP1, EP2	Flash ROM Type Select	12
KB_PWN	Keyboard Power-on Select	12
<i>Slots</i>		
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AGP	Accelerated Graphic Port Slot	16
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<i>Connectors</i>		
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RWU	Remote Wake-Up Connector	25
CD_IN	CD-ROM Drive Audio-out Connector	25
F_PNL *	Connectors for LEDs and Switches on Front Panel	26

* : Please read Page 26 for more information.

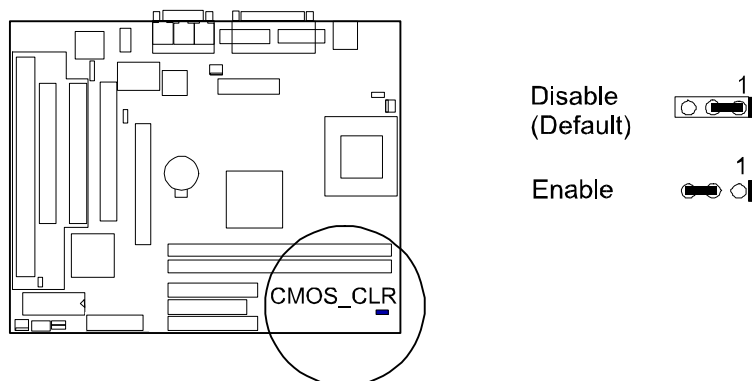
Clear Password: CPW

This jumper allows you to enable or to disable the password configuration. You may need to enable this jumper by shorting it with a jumper cap if you forget your password. To clear the password setting: (1) Turn off your computer, (2) Short this jumper by placing a jumper cap on it, (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) Remove the jumper cap, (7) Turn on your computer for the new settings to take effect.



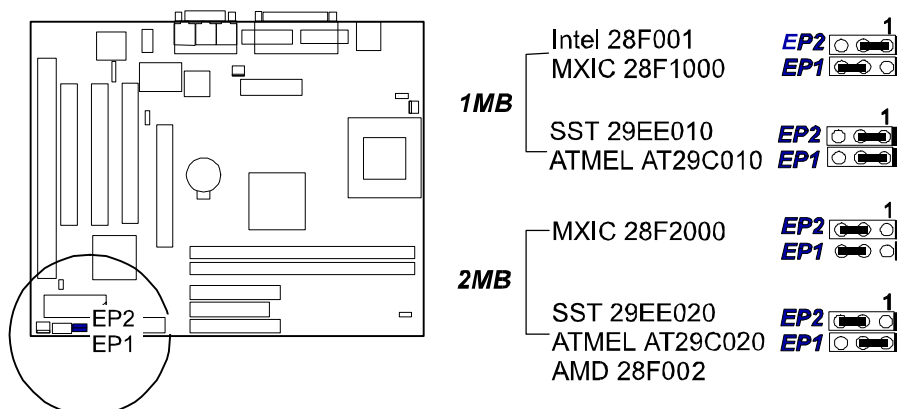
CMOS Clear: CMOS_CLR

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 "Disable," (3) Move the jumper back to "Enable," (4) Turn on your computer, (5) Hold down the <Delete> key during bootup and enter BIOS Setup to re-enter user preferences.



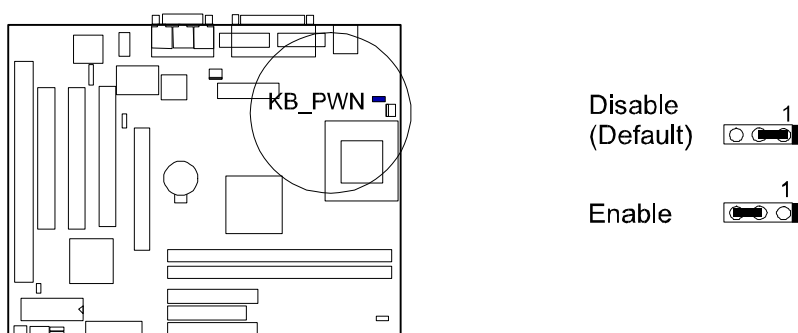
Flash ROM Type Select: EP1, EP2

These two jumpers allow you to configure the flash ROM chip. This jumper setting was installed with the manufacturer default. If you want to know the flash ROM type installed on this mainboard, partially remove the sticker on top of the chip.



Keyboard Power-On Select: KB_PWN

This jumper allows you to use the item "POWER ON Function" under Integrated Peripherals of the BIOS Setup. To use this feature, set it at "enabled" and correspondingly set this feature at the BIOS Setup.



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 128MB lightning-fast SDRAM.

SDRAM features an on-chip 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, or 256MB DIMM can be installed on these two sockets. The maximum total memory supported is up to 256MB.

Memory Socket	Memory Module		Total Memory
DIMM Sockets 1&2 (DIMM1 & DIMM2)	8MB, 16MB, 32MB, 64MB, 128MB 168-pin 3.3V EDO/SDRAM DIMM	x2	
	Total System Memory (Max 256MB)	=	

Or one 256MB DIMM on either DIMM1 or DIMM2.

Memory Socket	Memory Module		Total Memory
DIMM Sockets 1/2 (DIMM1 or DIMM2)	256MB 168-pin 3.3V EDO/SDRAM DIMM	x1	256MB
	Total System Memory (Max 256MB)	=	256MB

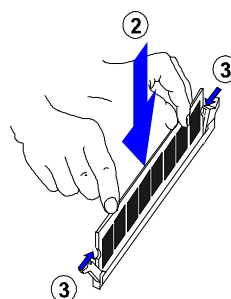
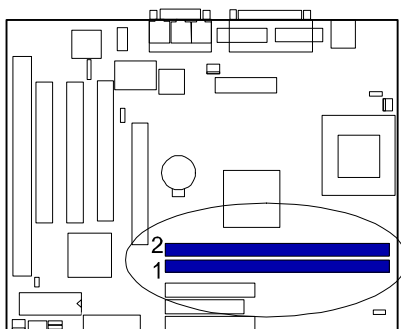
NOTE : This mainboard supports DIMMs with access speeds of 12ns, 10ns, or faster. ECC memory and parity check is also supported.

Install 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 24 chips per module. Modules with more than 24 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. (See the following figure.)



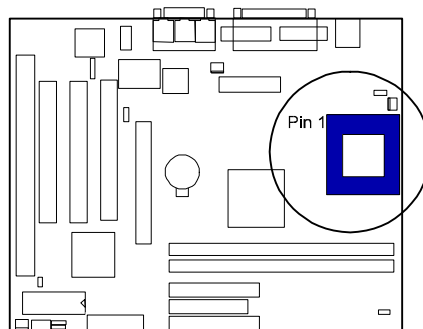
2. Install the DIMM straight down into the DIMM slot with both hands.
3. The clip on both ends of the DIMM slot will close up to hold the DIMM in place when the DIMM touches the slot bottom.

Remove DIMMs

Press the clips with both hands to remove the DIMM.

3). Install the Central Processing Unit (CPU)

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



CAUTION:

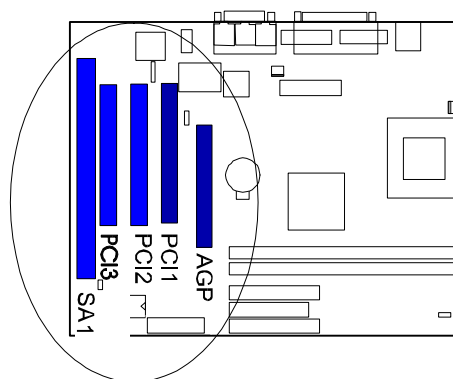
1. Always turn the system power off before installing or removing any device.
2. Always observe static electricity precautions. See "Handling Precautions" at the start of this manual.
3. Inserting the chip incorrectly may damage the chip.

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 32-bit AGP bus, one 16-bit ISA bus, and three 32-bit PCI bus** expansion slots.



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 expansion cards.

Always observe static electricity precautions. See "Handling Precautions" at the start of this manual.

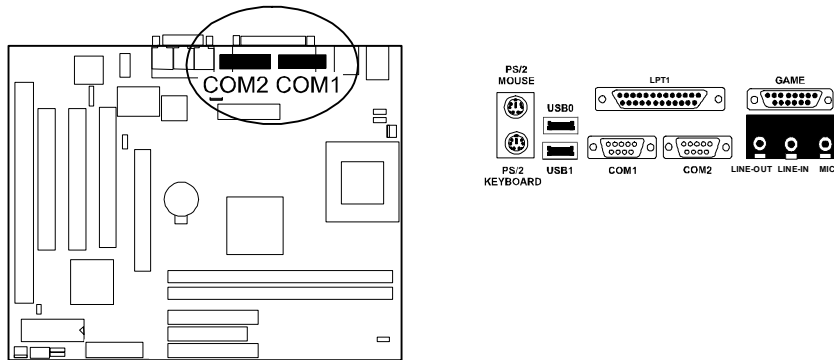
To install an expansion card, follow the steps below:

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 "locking" 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 cover.
7. Setup the BIOS if necessary.
8. Install the necessary software drivers for the expansion card.

5). Connect Cables and Power Supply

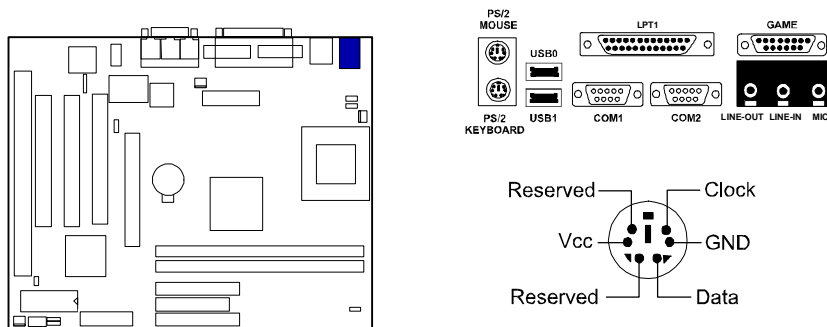
Serial Port Connectors: COM1, COM2

These two 9-pin D-sub male connectors allow you to connect with your devices that use serial ports, such as a serial mouse or a modem. Usually, it is recommended to connect the serial mouse to COM1 and the fax/modem to COM2.



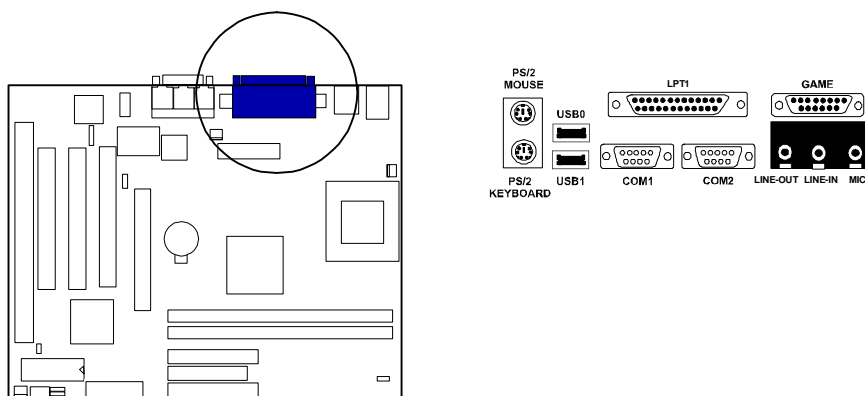
PS/2 Keyboard and Mouse Connector: KB and MS

These two 6-pin female connectors are used for your PS/2 keyboard and PS/2 mouse. The PS/2 keyboard connector is for a standard keyboard using a PS/2 plug (mini DIN). This connector will not allow standard AT size (large DIN) keyboard plugs. You may use a DIN to mini DIN adapter on standard AT keyboards. The system will direct IRQ12 to the PS/2 mouse if one is detected. If not detected, expansion cards may be using IRQ12.



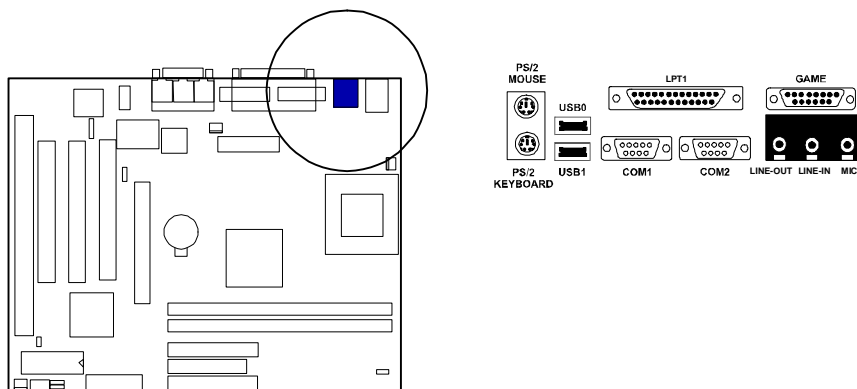
Printer Connector: LPT1

This 25-pin D-sub female connector is attached to your printer. Parallel printers must be connected to the parallel port (LPT1).



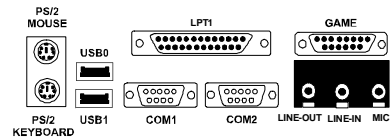
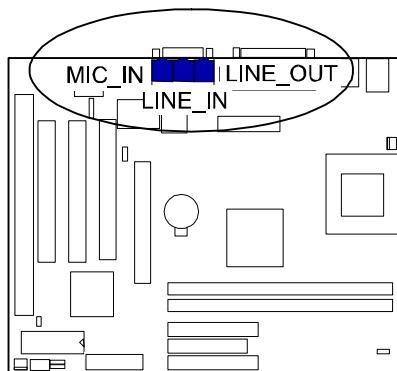
Universal Serial Bus Connectors: USB

These two connectors are used for linking with USB peripheral devices. Make sure to set the item USB Controller at *Enabled* under Integrated Peripherals of the BIOS Setup. Also, the version of the operating system you are using must be Windows 98 or above Windows 95 OSR2.1. Otherwise, USB supplement must be installed if you are using an older version.



Audio Port Connectors: *LINE-OUT, LINE-IN, MIC*

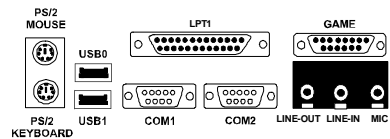
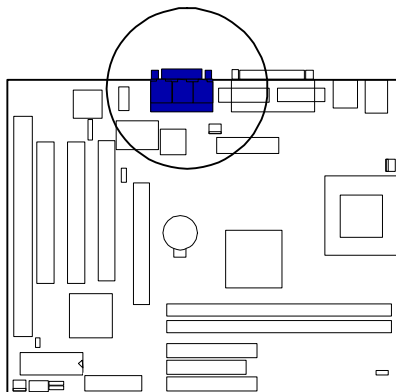
LINE-OUT can be connected to headphones or preferably powered speakers. LINE-IN allows tape players or other audio sources to be recorded by your computer or played through the LINE-OUT. MIC allows microphones to be connected for inputting voice.



NOTE: An external amplifier is necessary as the LINE-OUT connector does not support the pre-AMP function.

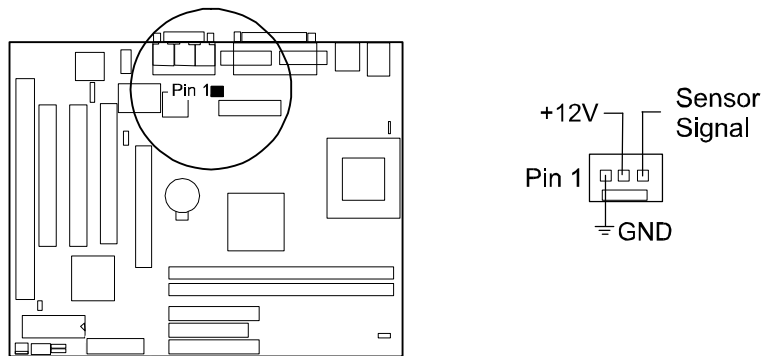
Joystick/MIDI Connector: *GAME*

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.



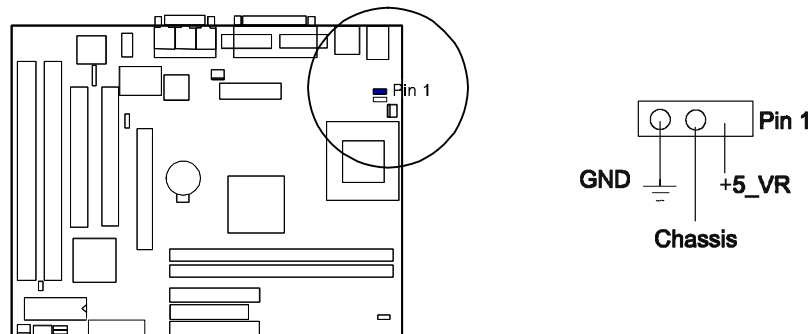
CPU Fan Connector: FAN

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. Refer to the CPU fan installation manual for more information.



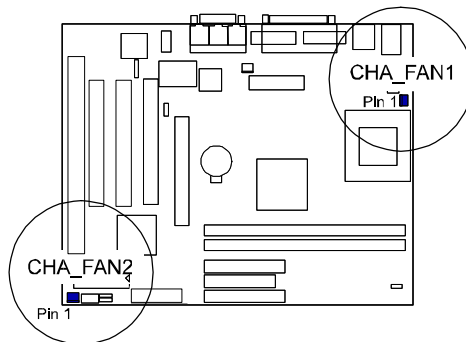
Chassis Intrusion Alarm Connector: CHASSIS

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.

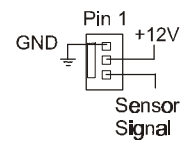


System Case Fan Connector: CHA_FAN1, CHA_FAN2

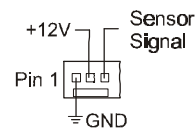
The mainboard features two 3 pin connector links to your cooling fan on the system case to lower the system temperature. Choose either one depending on the design of the system case. Depending on the fan manufacturer, the wiring and plug may be different. Connect the fan plug to the mainboard taking into consideration the polarity of the connector.



CHA_FAN1:



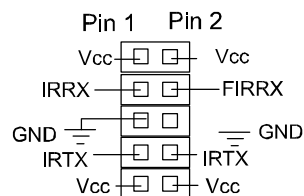
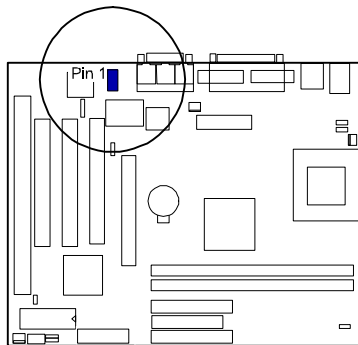
CHA_FAN2:



WARNING: 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.

Infrared Connector: IR

The 2x5 pin header is used for connecting to the infrared (SIR) port and allows transmission of data to another system which also supports the IR feature. This module mounts to a small opening on system cases that supports this feature.

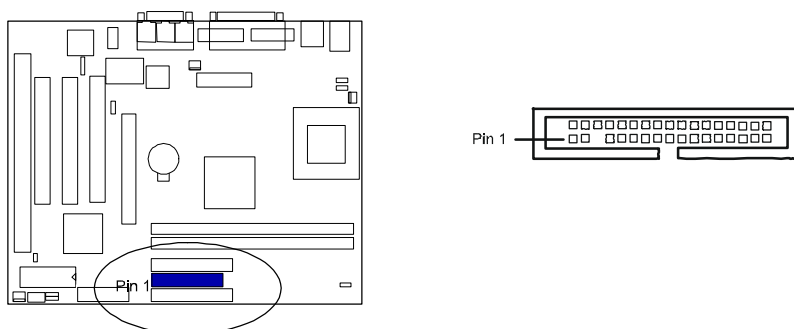


Floppy Diskette Drive Connector:

FDD

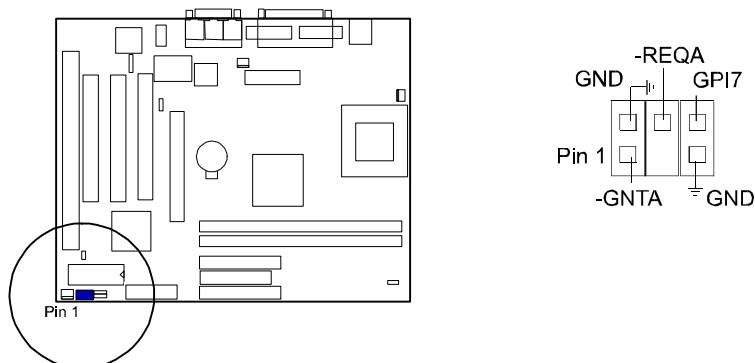
This 34 pin block connector connects to your floppy disk drive using the cable that is provided with this mainboard. After connecting the single end to the mainboard, connect the two plugs on the other end to the floppy drives. (Pin 4 is removed to prevent inserting in the wrong orientation when using ribbon cables with pin 4 plugged.)

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.



PCI Add-on Audio Card Connector: SB_LINK

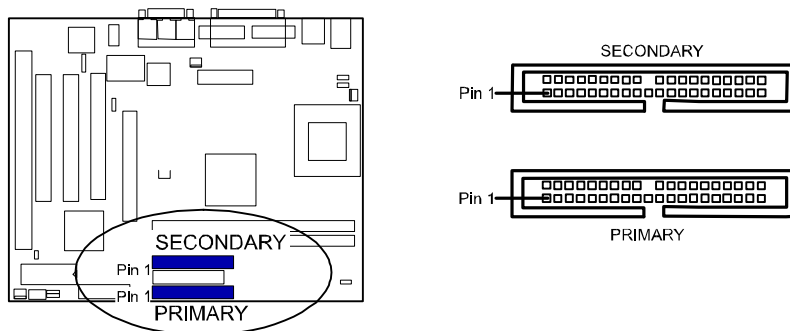
This connector allows you to connect to your Creative PCI add-on audio card connector cable when not using the onboard sound chip.



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. Pin 20 is removed to prevent inserting in the wrong orientation when using ribbon cables with pin 20 plugged.

TIP : You may configure two hard disks to be both Masters using one ribbon cable on the primary IDE connector and another ribbon cable on the secondary IDE connector. You may install one operating system on an IDE drive and another on a SCSI drive and select the boot disk through BIOS Setup.



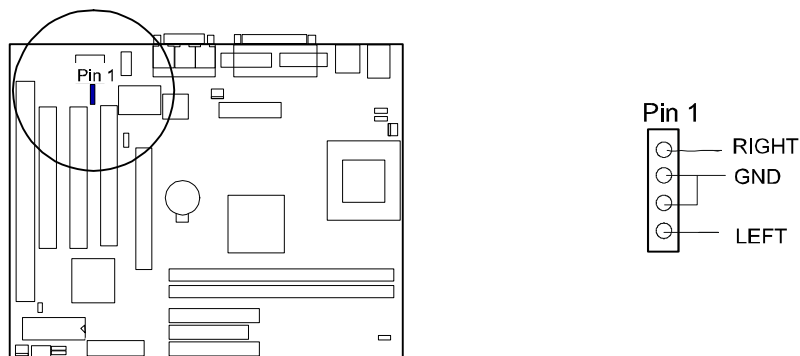
Remote Wake-Up Connector: RWU

This 3-pin connector allows the remote LAN server to wake up the system and then upload or download files to or from the client with a LAN card installed. With this feature, MIS or relevant persons can flexibly perform client maintenance during off-hours so that Total Cost of Ownership (TCO) will be dramatically lowered. Remote Wake-Up is a remote management tool with advantages that can reduce system management workload, provide flexibility to the system administrator job, and then of course save you time-consuming efforts and costs. Refer to the LAN card installation guide for details.



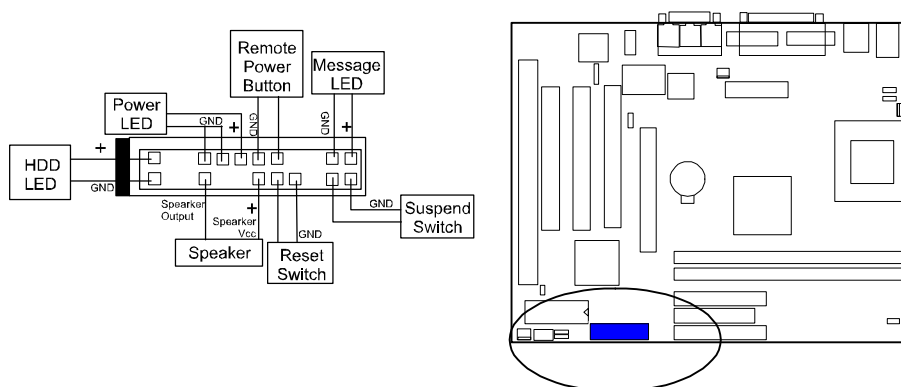
CD-ROM Drive Audio-out Connector: CD_IN

This 4-pin block connector is linked to the AUDIO-OUT port of your CD-ROM drive by a cable which comes with it. Read the CD-ROM drive manual for detailed installation instructions.



Front Panel Block Connector: F_PNL

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 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 Switch 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 is connected with the message LED. When the system is running normally, the indicator is on. When the system hangs up or down, the indicator will be off.

Suspend Switch is connected with suspend mode switch.

Reset Switch is connected to the reset switch. Push this switch to reboot the system instead of turning power switch off and on.

Speaker is connected with the case speaker.

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

Power Connection Procedures

1. After all jumpers and connections are made, close the system case cover.
2. Make sure that all switches are in the off position.
3. Connect the power supply cord into the power supply located at the back of your system case as instructed by the power supply user manual.
4. Connect the power cord into a power outlet that is equipped by a surge protector (if available).
5. You may then turn on your devices in the following order:
 - a. The display monitor
 - b. External SCSI devices (starting with the last device on the chain)
 - c. The system power
6. The power LED on the front panel will light. The monitor LED may light after the system if it complies with "green" standards or if it has a power standby feature. The system will then run power-on tests. While the tests are running, additional messages will appear on the screen. If you do not see anything within 30 seconds from the time you turn on the power, the system may have failed a power-on test (POST). Recheck the jumper settings and verify if the RAM module, hard disk drive, CPU, and add-on cards are connected properly or call the retailer for assistance.
7. During power-on, hold down the <Delete> key to enter BIOS Setup. Follow the next chapter for instructions.

Powering Off the Computer

You must first exit or shut down the operating system before switching off the power switch. For Windows 95/98 users, select "Shut Down the Computer" from the "Start" button and the system will power off automatically after Windows shut down, provided that the item Soft-Off by PWR-BTN under the Power Management Setup is set at *Instant-Off*.

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Setting BIOS Feature

All computer mainboards provide a Setup utility program for specifying the system configuration and settings. If the mainboard came in a computer system, the proper configuration entries may have already been made. If you are installing the mainboard or reconfiguring the system or if you receive a Run Setup message, you will need to enter new setup information.

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

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 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. At power-on RAM testing, the message Press <Delete> key to enter Setup appears. If you are a little bit late pressing the mentioned key, POST (Power-On Self Test) will continue with its test routines, thus preventing you from calling up Setup. If you still need to call Setup, reset the system by simultaneously pressing the <Ctrl>, <Alt> and <Delete> keys, or by pushing the Reset button on the system case. You can also restart by turning the system off and then back on again. But do so only if the first two methods fail. Use the arrow keys to select and press <Enter> key to run the selected program.

Advanced Configuration & Power Interface (ACPI)

The BIOS Setup has built-in ACPI interface which enables and supports reliable power management through improved hardware and operating system coordination. The Specification enables new power management technology to evolve independently in operating systems and hardware while ensuring that they continue to work together. An ACPI compatible BIOS could:

- lower processor clock speed when it determines that running applications do not currently need the CPU to run at full speed
- control mainboard and peripheral device power consumption by turning on devices only when needed
- regulate applications activity through a continually updated demand analysis of running software

Main CMOS Setup

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

ROM FCI/ISA BIOS (2A69JF09) CMOS SETUP UTILITY AWARD SOFTWARE, INC.	
STANDARD CMOS SETUP	INTEGRATED PERIPHERALS
BIOS FEATURES SETUP	SUPERVISOR PASSWORD
CHIPSET FEATURES SETUP	USER PASSWORD
POWER MANAGEMENT SETUP	IDE HDD AUTO DETECTION
PNP/PCI CONFIGURATION	SAVE & EXIT SETUP
LOAD BIOS DEFAULTS	EXIT WITHOUT SAVING
LOAD SETUP DEFAULTS	
Esc : Quit	↑ ↓ → ← : Select Item
F10 : Save & Exit Setup	(Shift)F2 : Change Color

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

Load Defaults

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

Standard CMOS Setup

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

ROM PCI/ISA BIOS (2A69JF09)								
STANDARD CMOS SETUP								
AWARD SOFTWARE, INC.								
Date (mm:dd:yy) : Fri, Feb 20 1998								
Time (hh:mm:ss) : 9 : 43 : 17								
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 : 1.44M, 3.5 in.								
Drive B : None								
Floppy 3 Mode Support : Disabled								
Video : EGA/VGA								
Halt On : All Errors								
					Base Memory: 0K			
					Extended Memory: 0K			
					Other Memory: 512K			
					Total Memory: 512K			
ESC : Quit ↑ ↓ → ← : Select Item PU/PD/+/- : Modify								
F1 : Help (Shift)F2 : Change Color								

The above screen provides you with a list of options. At the bottom are the control keys for this screen. Take note of these keys and their respective uses. User-configurable fields appear in a different color. If you need information on the selected field, press the <F1> key. The help menu will then appear to provide you with the information you need. The memory display at the lower right-hand side of the screen is read-only and automatically adjusts accordingly.

Date

To set the date, highlight the "ate" field and then press the page up/page down or +/- keys to set the current date. Follow the month, day and year format. Valid values for month, day and year are: Month: (1 to 12), Day: (1 to 31), Year: (up to 2079).

Time

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

Hard Disks

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

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

For an IDE hard disk drive setup, you can:

- Use the *Auto* setting for detection during bootup.
- Use the IDE HDD AUTO DETECTION in the main menu to automatically enter the drive specifications.
- Enter the specifications yourself manually by using the "ser" option.

The entries for specifying the hard disk type include CYLS (number of cylinders), HEAD (number of read/write heads), PRECOMP (write precompensation), LANDZ (landing zone), SECTOR (number of sectors) and MODE. The SIZE field automatically adjusts according to the configuration you specified. The documentation that comes with the hard disk should provide you with the information regarding the drive specifications.

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

Auto Detection of Hard Disks on Bootup

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

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

Drive A / Drive B

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

Floppy 3 Mode Support

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

Video

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

Halt On

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

Software Turbo Speed

BIOS supports the Software Turbo Speed feature used for adjusting the speed of play on some DOS games. Simply press the <Ctrl>, <Alt>, and <+> keys simultaneously to enable the Turbo Speed feature; pressing the <Ctrl>, <Alt>, and <-> keys simultaneously will disable this feature.

BIOS Features Setup

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

ROM PCI/ISA BIOS (2A69JF09) BIOS FEATURES SETUP AWARD SOFTWARE, INC.	
Detect Boot Virus By Trend : Enabled CPU Internal Cache : Enabled External Cache : Enabled Quick Power On Self Test : Enabled Boot From LAN First : Enabled Boot Sequence(LS120/ZIP100): A,C,SCSI Swap Floppy Drive : Disabled Boot Up Floppy Seek : Enabled Boot Up NumLock Status : On Typematic Rate Setting : Disabled Typematic Rate (Chars/Sec) : 6 Typematic Delay (Msec) : 250 Security Option : Setup PS/2 mouse function control: Enabled	Video BIOS Shadow : Enabled
OS Select For DRAM > 64MB : Non-OS2	ESC : Quit l-- : Select Item F1 : Help PU/PD/+/- : Modify F5 : Old Values (Shift)F2 : Color F6 : Load BIOS Defaults F7 : Load Setup Defaults

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

Detect Boot Virus By Trend

When enabled, this field allows virus detection on the boot sector of the boot device (FDD/HDD) during bootup. The options are: *Enabled* (default); *Disabled*.

CPU Internal Cache / External Cache

These fields allow you to turn on or off the CPU Internal and External built-in cache. The options are *Enabled* (default); *Disabled*.

Quick Power On Self Test

This field speeds up the Power-On Self Test (POST) routine by skipping re-testing a second, third, and fourth time. A complete test of the system is done on each test. The options are *Enabled* (default); *Disabled*.

Boot From LAN First

This field allows the system to first look for an operating system on the LAN (Local Area Network) if you have a LAN card with boot ROM installed in your system that is connected to a network server which supports this function. The options are: *Enabled* (default); *Disabled*.

Boot Sequence (LS120/ZIP100)

This field determines where the system looks first for an operating system. The setup default setting is to check first the floppy drive, then the hard drive, and then the SCSI device; that is, *A, C, SCSI*. The options are *A, C, SCSI* (default); *LS/ZIP, C; C, only; SCSI, C, A; SCSI, A, C; F, A, SCSI; E, A, SCSI; D, A, SCSI; CDROM, C, A; C, CDROM, A; C, A, SCSI*.

Swap Floppy Drive

When enabled, it allows you to switch the order in which the operating system accesses the floppy drives during boot up. The options are: *Disabled* (default); *Enabled*.

Boot Up Floppy Seek

When enabled, the BIOS will seek the floppy drive one time. The options are *Enabled* (default); *Disabled*.

Boot Up NumLock Status

This field enables user to activate the Number Lock function upon system boot. The options are *On* (default); *Off*.

Typematic Rate Setting

When enabled, you can set the two typematic controls listed next. The options are *Disabled* (default); *Enabled*.

Typematic Rate (Chars/Sec)

This field controls the speed at which the system registers repeated keystrokes. The options are *6* (default); *8; 10; 12; 15; 20; 24; and 30*.

Typematic Delay (Msec)

This field sets the time interval for displaying the first and second characters. The options are *250* (default); *500; 750; and 1000*.

Security Option

This field determines when the system prompts for the password. The default setting is *Setup*, where the system always boots up, and prompts for the Supervisor Password only when the Setup utility is called up. The other option is *System*, where the system prompts for the User Password every time you boot up. You can specify a password by using the *Supervisor Password* or *User Password* option from the main screen as explained later in this section. The options are: *Setup* (default); *System*.

PS/2 Mouse Function Control

This item allows the PS/2 mouse to have exclusive use of IRQ12. The options are: *Enabled* (default); *Disabled*.

OS Select For DRAM > 64MB

Allows you to specify which operating system you are using when installed DRAM is greater than 64MB. If the operating system you are using is IBM® OS/2™, select *OS2*, otherwise, stay with the default setting of *Non-OS2*. The options are: *Non-OS2* (default); *OS2*.

Video BIOS Shadow

This field allows you to change the video BIOS location from ROM to RAM. Relocating to RAM enhances system performance, as information access is faster than the ROM. The options are *Enabled* (default); *Disabled*.

Chipset Features Setup

The “Chipset Features Setup” option controls the configuration of the mainboard chipset. Control keys for this screen are the same as for the previous screen.

ROM PCI/ISA BIOS (2A69JF09) CHIPSET FEATURES SETUP AWARD SOFTWARE, INC.			
Auto Configuration	: Enabled	CPU Clock Frequency	: 66 MHz
DRAM Speed Selection	: 60ns	Spread Spectrum	: Disabled
MA Wait State	: Slow	CPU Warning Temperature	: Disabled
EDO RAS# To CAS# Delay	: 3	Current CPU Temperature	:
EDO RAS# Precharge Time	: 3	Current System Temp.	:
EDO DRAM Read Burst	: x333	Current CPU Fan Speed	:
EDO DRAM Write Burst	: x222	Current Chassis Fan Speed	:
CPU-To-PCI IDE Posting	: Enabled	VCORE :	+3.3(V):
System BIOS Cacheable	: Enabled	+5.0(V):	+12 (V):
Video RAM Cacheable	: Enabled	-12 (V):-	-5.0(V):-
8 Bit I/O Recovery Time	: 1	ESC : Quit	↑↓ →← : Select Item
16 Bit I/O Recovery Time	: 2	F1 : Help	PU/PD/+/- : Modify
Memory Hole At 15M-16M	: Disabled	F5 : Old Values (Shift)	F2 : Color
Delayed Transaction	: Disabled	F6 : Load BIOS Defaults	
AGP Aperture Size (MB)	: 64	F7 : Load Setup Defaults	
SDRAM CAS latency Time	: 3		

Auto Configuration

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

DRAM Speed Selection

This item, which is available only when the above item Auto Configuration is set at *Enabled*, allows you to set the DRAM timing according to the type of DRAM installed in the system. The options are: *60ns* (default); *50ns*.

MA Wait State

This item, which is available only when the above item Auto Configuration is set at *Disabled*, allows you to set the memory address wait state. The options are: *Fast* (default); *Slow*.

EDO RAS# To CAS# Delay

This item, which is available only when the above item Auto Configuration is set at *Disabled*, allows you to define the time delay from DRAM CAS# active to CAS# active, depending on the CPU frequency and DRAM type used, whether 2 clocks or 3 clocks. The options are: *3* (default); *2*.

EDO RAS# Precharge Time

This item, which is available only when the above item Auto Configuration is set at *Disabled*, allows you to select the DRAM RAS# precharge time whether 3 clocks or 4 clocks. The options are: 3 (default); 4.

EDO DRAM Read Burst

This item, which is available only when the above item Auto Configuration is set at *Disabled*, allows you to set the DRAM read burst timing depending on the CPU frequency and DRAM type used. The options are: x333 (default); x222.

EDO DRAM Write Burst

This item, which is available only when the above item Auto Configuration is set at *Disabled*, allows you to set the DRAM write burst timing depending on the CPU frequency and DRAM type used. The options are: x222 (default); x333.

CPU-To-PCI IDE Posting

The default setting of *Enabled* allows data and address access to internal buffer of the Intel® 82443LX chip so that the processor can be released from the wait state. The options are: *Enabled* (default); *Disabled*.

System BIOS Cacheable

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

Video RAM Cacheable

Allows the video RAM to be cached to allow for faster execution. Leave on default setting of *Enabled* for better performance, otherwise *Disabled*. The options are *Enabled* (default), *Disabled*.

8 Bit I/O Recovery Time

This item sets the timing for 8-bit ISA cards. The options are: 1 (default); 2 to 7, NA, 8.

16 Bit I/O Recovery Time

This item sets the timing for 16-bit ISA cards. The options are: 2 (default); 3, NA, 4, 1.

Memory Hole at 15M-16M

Enabling this feature reserves between 15MB and 16MB memory address space for expansion cards that specifically require this setting. This makes the memory for 15MB to 16MB unavailable to the system. Expansion cards can only access memory above 16MB. The options are *Disabled* (default), *Enabled*.

Delayed Transaction

When enabled, it allows the current PCI bus master to retry the current PCI bus master cycle and to accept the new PCI bus master request. It re-accepts the original PCI bus master and returns data to the original PCI bus master, thereby enhancing system performance. The options are: *Disabled* (default); *Enabled*.

AGP Aperture Size (MB)

This item allows you to select the main memory frame size for use by the add-on AGP card. The options are: *64* (default); *128*; *256*; *4*; *8*; *16*; *32*.

SDRAM CAS Latency Time

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 3. The options are: *3* (default); *2*.

CPU Clock Frequency

This item shows you the ratio of the CPU external clock to the PCI bus clock. It is not user-configurable.

Spread Spectrum

This item allows you to take advantage of the center spread-type or down spread-type of spread spectrum. The options are *Disabled*; *Enabled*.

CPU Warning Temperature

This item allows you to set the maximum allowable CPU temperature for system to perform normally. When CPU temperature exceeds this temperature, system will proceed to enter Standby Mode of operation causing system to slowdown. The options are: *Disabled* (default); *50°C/122°F*; *53°C/127°F*; *56°C/133°F*; *60°C/140°F*; *63°C/145°F*; *66°C/151°F*; *70°C/158°F*.

Current CPU Temperature / Current System Temp. / Current CPU Fan Speed / Current Chassis Fan Speed / VCORE: +3.3(V): / +5.0(V): +12 (V): / -12 (V): -5.0(V):

These items allow end users and technicians to monitor data provided by the BIOS on this mainboard. It is not user-configurable.

Power Management Setup

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

ROM PCI/ISA BIOS (2A69JF09) POWER MANAGEMENT SETUP AWARD SOFTWARE, INC.		
Power Management	: Disabled	** Reload Global Timer Events **
PM Control by APM	: Yes	IRQ[3-7,9-15],NMI : Enabled
Video Off Method	: DPMS	Primary IDE 0 : Disabled
Video Off After	: Suspend	Primary IDE 1 : Disabled
MODEM Use IRQ	: 3	Secondary IDE 0 : Disabled
Doze Mode	: Disable	Secondary IDE 1 : Disabled
Standby Mode	: Disable	Floppy Disk : Disabled
Suspend Mode	: Disable	Serial Port : Enabled
HDD Power Down	: Disable	Parallel Port : Disabled
Throttle Duty Cycle	: 62.5%	
VGA Active Monitor	: Disabled	
Soft-Off by PWR-BTTN	: Delay 4 Sec.	
CPUFAN Off In Suspend	: Enabled	
IRQ 8 Break Suspend	: Disabled	
Resume by Ring	: Enabled	
Resume by LAN	: Disabled	ESC : Quit ↑↓←→ : Select Item
Resume by Alarm	: Disabled	F1 : Help PU/PD/+/- : Modify
		F5 : Old Values (Shift)F2 : Color
		F6 : Load BIOS Defaults
		F7 : Load Setup Defaults

Power Management

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

PM Control by APM

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

Video Off Method

This field defines the video off features. *V/H SYNC + Blank* blanks the screen and turns off vertical and horizontal scanning; *DPMS Support* allows the BIOS to control the video display card if it supports the DPMS feature; *Blank Screen* only blanks the screen. Use the latter for display monitors that do not support the "reen" (no power management) feature. Screensaver softwares does not work with this feature. With the CRT monitor shut off, this software cannot display. The options are *DPMS* (default); *Blank Screen*; *V/H Sync + Blank*.

Video Off After

This item allows you to activate the video off feature for the display monitor power management. The options are *Suspend* (default); *Standby*; *Doze*; *NA*.

MODEM Use IRQ

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

Doze Mode/Standby Mode/Suspend Mode

Sets the period of time after which Doze/Standby/Suspend Mode activates. At *Max Saving*, Doze/Standby/Suspend Mode will activate after *1 Min*. At *Min Saving*, Doze/Standby/Suspend Mode will activate after *1 hour*. If Power Management option is set at *User Defined*, user has the option to set it at *1 Min*; *2 Min*; *4 Min*; *8 Min*; *12 Min*; *20 Min*; *30 Min*; *40 Min*; or *1 Hour*. The default value is *Disabled*.

HDD Power Down

This option shuts down any IDE hard drives in the system after a period of inactivity. At *Max Saving*, Doze/Standby/Suspend Mode will activate after *1 Min*. At *Min Saving*, Doze/Standby/Suspend Mode will activate after *15 Min*. If Power Management option is set at *User Defined*, user has the option to set it at *1 Min* to *15 Min*. This feature does not affect SCSI hard drives. The options are *Disabled* (default); *1 Min*; . . . *15 Min*.

Throttle Duty Cycle

This item allows you to set the speed at which the system clock runs during power saving mode. The settings are expressed as the ratio between the normal and power down clock speed. The options are: *62.5%* (default), *75.0%*, *12.5%*, *25.0%*, *37.5%*, *50.0%*.

VGA Active Monitor

When disabled, it allows the system to enter Power Management Mode even if the display monitor is currently active (e.g., running a screensaver program, etc.). The options are: *Disabled* (default); *Enabled*.

Soft-Off By PWR-BTTN

This item is designed for the system case that uses an ATX power supply. The option *Delay 4 Sec.* allows the system to have a power-off delay of 4 seconds upon pressing the power button. The option *Instant-Off* allows the system to shutdown immediately upon pressing the power button. The options are *Delay 4 Sec.* (default); *Instant Off*.

CPUFAN Off In Suspend

When enabled, allows the CPU fan to shutdown when system is in Suspend Mode. The options are: *Enabled* (default); *Disabled*.

IRQ 8 Break Suspend

IRQ8 (Real Time Alarm) is usually set to *Disabled* so that any software alarm clock or event calendar can wake up the system. The options are *Disabled* (default); *Enabled*.

Resume By Ring

If an ATX power supply is installed in your system and this feature is enabled, the system can be turned on from the power-off state by remote phone call via the modem. The options are *Enabled* (default); *Disabled*.

Resume By LAN

If an ATX power supply is installed in your system and this feature is enabled, the system can be turned on from the power-off state by a remote computer via the LAN. The options are *Disabled* (default); *Enabled*.

Resume By Alarm

If an ATX power supply is installed in your system and this feature is enabled, BIOS allows you to set the time the system will be turned back on from the power-off state. The options are: *Disabled* (default); *Enabled*.

Date (of Month) Alarm

This item, which is available only if the above item Resume By Alarm is set at *Enabled*, allows you to set the date when system will be turned back on from the power-off state. The options are: *0* (default); *1* to *31*.

Time (hh:mm:ss) Alarm

This item, which is available only if the above item Resume By Alarm is set at *Enabled*, allows you to set the specific hour, minute, and second of the day when system will be turned back on from the power-off state. The options are: hh: *7* (default), *0* to *23*; mm: *0* (default), *1* to *59*; ss: *0* (default), *1* to *59*.

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

When enabled, this item allows the system to reset power management timer when system activity at IRQ3 to 7 or IRQ9 to 15 is detected. The options are: *Enabled* (default); *Disabled*.

Primary IDE 0

When enabled, this item allows the system to reset power management timer when system activity at the primary (master) IDE is detected. The options are: *Disabled* (default); *Enabled*.

Primary IDE 1

When enabled, this item allows the system to reset power management timer when system activity at the primary (slave) IDE is detected. The options are: *Disabled* (default); *Enabled*.

Secondary IDE 0

When enabled, this item allows the system to reset power management timer when system activity at the secondary (master) IDE is detected. The options are: *Disabled* (default); *Enabled*.

Secondary IDE 1

When enabled, this item allows the system to reset power management timer when system activity at the secondary (slave) IDE is detected. The options are: *Disabled* (default); *Enabled*.

Floppy Disk

When enabled, this item allows the system to reset power management timer when system activity at the floppy disk drive is detected. The options are: *Disabled* (default); *Enabled*.

Serial Port

When enabled, this item allows the system to reset power management timer when system activity at the serial port is detected. The options are: *Enabled* (default); *Disabled*.

Parallel Port

When enabled, this item allows the system to reset power management timer when system activity at the parallel port is detected. The options are: *Disabled* (default); *Enabled*.

PNP and PCI Configuration Setup

The “PNP and PCI Configuration” option configures the PCI bus slots. All PCI bus slots on the system use INTA#, thus all installed PCI cards must be set to this value.

ROM: PCI/ISA BIOS (2A69JF09) PNP/PCI CONFIGURATION AWARD SOFTWARE, INC.	
PNP OS Installed : No Resources Controlled By : Auto Reset Configuration Data : Disabled	Slot 1 Use IRQ No. : Auto Slot 2 Use IRQ No. : Auto PCI IRQ Activate By : Level Init Primary Display: PCI Assign IRQ for VGA : Enabled
ESC : Quit ↑↓++ : Select Item F1 : Help PU/PD/+/- : Modify F5 : Old Values (Shift)F2 : Color F6 : Load BIOS Defaults F7 : Load Setup Defaults	

PNP OS Installed

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

Resources Controlled By

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

Reset Configuration Data

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

Slot 1 Use IRQ No. / Slot 2 Use IRQ No.

Allows you to set the Interrupt Request (IRQ) number to be used by both 32-bit PCI1 and PCI2 bus expansion slots. The options are: *Auto* (default); 3; 4; 5; 7; 9; 10; 11; 12; 14; 15.

PCI IRQ Activated By

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

Init Primary Display

When a display card is installed in both the 32-bit PCI bus expansion slot and the 32-bit AGP bus slot, it allows you to set the priority for VGA display. The options are: *PCI* (default); *AGP*.

Assign IRQ for VGA

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

Used MEM Base Addr (available only if Resoirces Controlled By is set at Manual)

This field allows you to set the base address and block size of a Legacy ISA card that uses any memory segment within the *C800*, *CC00*, *D000*, *D400*, *D800*, and *DC00* address range. If you have such a card, and you are not using an ICU to specify its address range, select a base address from the six available options and the next field will then appear for selecting the block size. The options are: *N/A* (default); *C800*; *CC00*; *D000*; *D400*; *D800*; *DC00*.

Used MEM Length (available only if Used MEM Base Addr is not set at N/A)

If you have more than one Legacy ISA card in the system that requires to use the above address range, you can increase the block size to either *8K*, *16K*, *32K*, or *64K*. If you are using an ICU to accomplish this task, leave the above option Used MEM Base Addr at *N/A*. The options are :*8K* (default); *16K*; *32K*; *64K*.

Load BIOS Defaults

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

ROM PCI/ISA BIOS (2A69JF09) 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	LOAD BIOS DEFAULTS
LOAD BIOS DEFAULTS	LOAD SETUP DEFAULTS
Load BIOS Defaults (Y/N)? Y	
Esc : Quit F10 : Save & Exit Setup	
↑ ↓ → ← : Select Item (Shift)F2 : Change Color	

Load Setup Defaults

The “Load Setup Defaults” option allows you to load the default values to the system configuration fields. These default values are the optimized configuration settings for the system. To load these default values, highlight “Load Setup Defaults” on the main screen and then press the <Enter> key. The system displays a confirmation message on the screen. Press the <Y> key and then the <Enter> key to confirm. Press the <N> key and then the <Enter> key to abort. This feature does not affect the fields on the Standard CMOS Setup screen.

Setting BIOS Feature

ROM PCI/ISA BIOS (2A69JF09) 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	LOAD SETUP Defaults (Y/N) ? Y
LOAD BIOS DEFAULTS	SAVE & EXIT SETUP
LOAD SETUP DEFAULTS	
Esc : Quit F10 : Save & Exit Setup	
↑ ↓ → ← : Select Item (Shift)F2 : Change Color	

Integrated Peripherals

ROM PCI/ISA BIOS (2A69JF09) INTEGRATED PERIPHERALS AWARD SOFTWARE, INC.	
IDE HDD Block Mode : Enabled	POWER ON Function : BUTTON ONLY
On-Chip Primary PCI IDE: Enabled	
On-Chip Secondary PCI IDE: Enabled	
IDE Primary Master PIO : Auto	Onboard FDC Controller : Enabled
IDE Primary Slave PIO : Auto	Onboard Serial Port 1 : 3F8/IRQ4
IDE Secondary Master PIO: Auto	Onboard Serial Port 2 : 2F8/IRQ3
IDE Secondary Slave PIO: Auto	UR2 Mode : Standard
IDE Primary Master UDMA : Auto	Onboard Parallel Port : 378/IRQ7
IDE Primary Slave UDMA : Auto	Parallel Port Mode : SPP
IDE Secondary Master UDMA: Auto	
IDE Secondary Slave UDMA: Auto	Onboard Audio Chip : Enabled
HDD S.M.A.R.T. Capability: Disabled	
USB Controller : Disabled	
ESC : Quit ↑↓←→ : Select Item F1 : Help PU/PD/+/- : Modify F5 : Old Values (Shift)F2 : Color F6 : Load BIOS Defaults F7 : Load Setup Defaults	

IDE HDD Block Mode

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

On-Chip Primary PCI IDE

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

On-Chip Secondary PCI IDE

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

IDE Primary Master PIO (available only when On-Chip Primary PCI IDE is enabled)

Allows an automatic or a manual configuration of the PCI primary IDE hard drive (master) mode. The options are: *Auto* (default); *Mode 0*; *Mode 1*; *Mode 2*; *Mode 3*; *Mode 4*.

IDE Primary Slave PIO (available only when On-Chip Primary PCI IDE is enabled)

Allows an automatic or a manual configuration of the PCI primary IDE hard drive (slave) mode. The options are: *Auto* (default); *Mode 0*; *Mode 1*; *Mode 2*; *Mode 3*; *Mode 4*.

IDE Secondary Master PIO (available only when On-Chip Secondary PCI IDE is enabled)

Allows an automatic or a manual configuration of the PCI secondary IDE hard drive (master) mode. The options are: *Auto* (default); *Mode 0*; *Mode 1*; *Mode 2*; *Mode 3*; *Mode 4*.

IDE Secondary Slave PIO (available only when On-Chip Secondary PCI IDE is enabled)

Allows an automatic or a manual configuration of the PCI secondary IDE hard drive (slave) mode. The options are: *Auto* (default); *Mode 0*; *Mode 1*; *Mode 2*; *Mode 3*; *Mode 4*.

IDE Primary Master UDMA (available only when On-Chip Primary PCI IDE is enabled)

Allows an automatic configuration of the PCI primary IDE hard drive (master) mode if Ultra DMA is supported both on the mainboard and the hard disk. The options are: *Auto* (default); *Disabled*.

IDE Primary Slave UDMA (available only when On-Chip Primary PCI IDE is enabled)

Allows an automatic configuration of the PCI primary IDE hard drive (slave) mode if Ultra DMA is supported both on the mainboard and the hard disk. The options are: *Auto* (default); *Disabled*.

IDE Secondary Master UDMA (available only when On-Chip Secondary PCI IDE is enabled)

Allows an automatic configuration of the PCI secondary IDE hard drive (master) mode if Ultra DMA is supported both on the mainboard and the hard disk. The options are: *Auto* (default); *Disabled*.

IDE Secondary Slave UDMA (available only when On-Chip Secondary PCI IDE is enabled)

Allows an automatic configuration of the PCI secondary IDE hard drive (slave) mode if Ultra DMA is supported both on the mainboard and the hard disk. The options are: *Auto* (default); *Disabled*.

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

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

USB Controller

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

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

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

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 *Mouse Click* 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*; *Mouse Click*.

KB Power ON Password (available only if POWER ON Function is set at 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 down arrow key <fl> 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 (available only if POWER ON Function is set at Hot KEY)

Allows you to set which of the 12 keyboard function keys (<F1> to <F12>) in combination with the <Ctrl> key will be used to power-on the system. The options are: *Ctrl-F1* (default) up to *Ctrl-F12*.

NOTE: When using *Password*, *Hot KEY*, or *Mouse Click* options for the item **POWER ON Function** will render the power button on the system case ineffective. In case user forgets password or hot key setting, use the CMOS_CLR jumper to clear RTC data (refer to section **CMOS Clear: CMOS_CLR** on Chapter 2). Another method is to unplug system power from the AC power outlet and then re-insert the power cord. Previous password and hot key settings will be disabled allowing user to set a new one.

Onboard FDC Controller

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

Onboard Serial Port 1

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

Onboard Serial Port 2

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

UR2 Mode (available only when Onboard Serial Port 2 is not set at Disabled)

Allows you to select the IR modes if the serial port 2 is used as an IR port. Set it at *Standard* when you use COM2 as a serial port instead of an IR port. The options are: *Standard* (default); *IrDA 1.0*; *ASK IR*; *MIR 0.57M*; *MIR 1.15M*; *FIR*.

UR2 Duplex Mode (available only when UR2 Mode is not set at Standard)

This feature allows you to select the infrared data transaction method. The options are: *Half* (default); *Full*.

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*.

Onboard Parallel Mode (available only when Onboard Parallel Port not set at Disabled)

Allows you to connect with an advanced printer. The options are *SPP* (default); *EPP*; *ECP*; *ECP+EPP*.

ECP Mode Use DMA (available only when Parallel Port Mode set at ECP or ECP+EPP)

This feature allows you to select the Direct Memory Access (DMA) channel. The options are *3* (default); *1*.

Onboard Audio Chip

This feature allows you to disable the onboard audio chip if you want to use an add-on audio card on the system. The options are: *Enabled* (default); *Disabled*.

Supervisor Password and User Password

These two options set the system passwords. “Supervisor Password” sets a password that will be used to protect the system and the Setup utility; “User Password” sets a password that will be used exclusively on the system. By default, the system comes without any passwords. To specify a password, highlight the type you want and then press the <Enter> key. A password prompt appears on the screen. Taking note that the password is case sensitive, and can be up to 8 alphanumeric characters long, type in your password and then press the <Enter> key. The system confirms your password by asking you to type it again. After setting a password, the screen automatically reverts to the main screen. If you want to disable either the Supervisor or User password, press the <Enter> key instead of re-typing the new password when the “Enter Password” prompt appears the second time. A message confirms the password has been disabled.

IDE HDD Auto Detection

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

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

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

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

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

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

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

Save & Exit Setup

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

ROM PCI/ISA BIOS (2A69JF09) 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	LOAD BIOS DEFAULTS
LOAD BIOS DEFAULTS	LOAD SETUP DEFAULTS
SAVE to CMOS and EXIT (Y/N)? Y	
SAVING	
Esc : Quit F10 : Save & Exit Setup	
↑ ↓ → ← : Select Item (Shift)F2 : Change Color	

Exit Without Saving

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

ROM PCI/ISA BIOS (2A69JF09) 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	LOAD BIOS DEFAULTS
LOAD BIOS DEFAULTS	LOAD SETUP DEFAULTS
Quit Without Saving (Y/N)? Y	
SAVING	
Esc : Quit F10 : Save & Exit Setup	
↑ ↓ → ← : Select Item (Shift)F2 : Change Color	

BIOS Flash Software

The mainboard package provides a BIOS flash software tool in the software utility CD-ROM disc. This software is used for upgrading the current BIOS used.

1. Run the CD-ROM disc and click on *Browse CD*.
2. Select *Flash* and choose the BIOS vendor that provided the BIOS chip on this mainboard.
3. Print the related README file and read it first.

Update BIOS File

1. Please contact your vendor to get the BIOS file which you need.
2. Format a bootable system floppy diskette by typing the command `format a:/s` in command mode.
3. Select the BIOS file you need and copy 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.

Command: `{flash tool file}{space}{downloaded BIOS file} /cc <Enter>`

Example: `flashxxx 109cd12.awd /cc`

Parameter **CC** stands for **Clear CMOS**. It is most frequently used. You can obtain the list of other parameter switches by adding `"/?"` after the flash utility filename and pressing the **<Enter>** key.

6. Upon pressing the <**Enter**> key, a FLASH MEMORY WRITER menu will appear onscreen. Enter the new BIOS file name with its extension filename into the text box after **File Name to Program**.
7. If you want to save the old BIOS file (perform as soon as system is operational, this is recommended), select **Y** to **Do You Want To Save BIOS**, then type the old BIOS filename and the extension after **FILENAME TO SAVE:**. This option allows you to copy the contents of the Flash memory chip onto a diskette, giving you a backup copy of the original mainboard BIOS in case you need to re-install it. Select **N** to **Do You Want To Save BIOS**, if you do not want to save the old BIOS file.
8. After the decision to save the old BIOS or not is made, select **Y** to **Are you sure to program** when the next menu appears; wait until a message showing **Power Off or Reset the system** appears. Then turn off your system.

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

If you encounter problems while downloading the new BIOS, DO NOT turn off the system since this might prevent your system from booting up. Just repeat the process and if the problem still persists, upload the original BIOS file you saved to disk.

WARNING: If the Flash utility was not able to successfully write to Flash ROM a complete BIOS file, the system may not be able to boot up. If this happens, the system will require service from your dealer.

9. Remove the diskette and restart your computer.
10. Hold down <**Delete**> key to enter BIOS setup. You must select "OAD SETUP DEFAULTS" to activate the new BIOS, then you may set other items from the Main Menu.

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Software Utilities

The mainboard comes with helpful supporting software, contained in the CD Pro, to promote your system performance. This chapter introduces each of them with the installation procedures.

Starting Installation

To run each feature, simply click on the wanted software item in the main menu that will appear on your monitor screen automatically when it is in your CD-ROM drive. Pressing each button will start the installation of the corresponding software tool. If your mainboard did not support the feature, such as onboard video/LAN chip; a message box with "unction is not supported" appears if the corresponding item on the main menu is chosen.

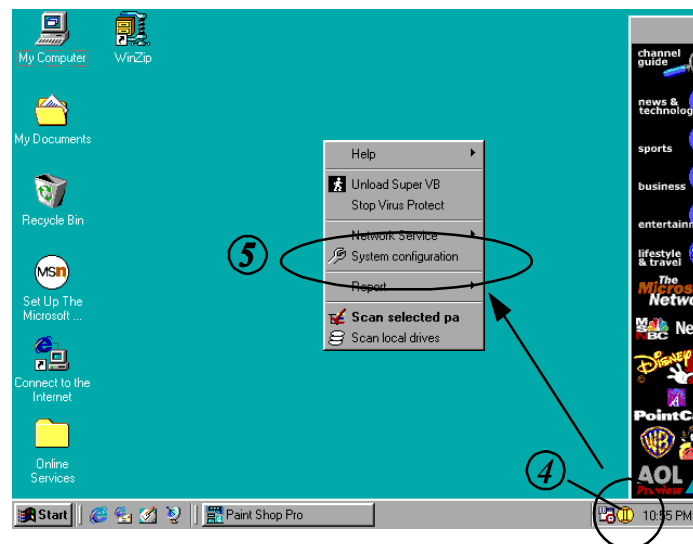
Virus Detection Agent

This mainboard came with a CD-ROM that contained all software tools which helps the mainboard performance. The virus scan tool was changed into **Super VB** that developed by *Paragon Micro International Inc*, instead of **cillin '95/ 97** *Paragon Micro International Inc* tool is

1. Click on the Super VB image to start the installation.
2. Click on this button to make an Emergency boot disk after the system was affected by some computer virus.
3. Click on this button to cancel it.



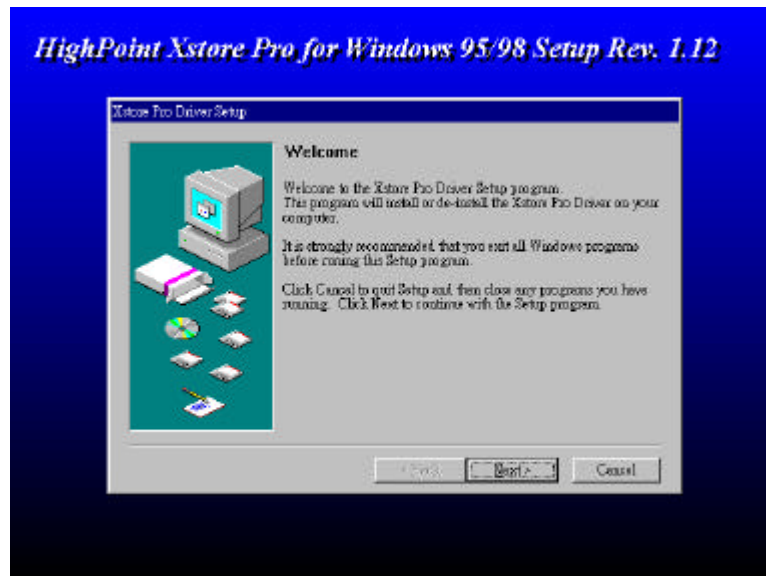
4. Click the right mouse button on the icon after the installation.
5. The item of System Configuration will allow you to set the virus-scanning options. The item Network Service which above System Configuration will help to solve your problem.



IDE Bus Master

The mainboard package provides Bus Master IDE driver in the software utilities for Windows 95/98 and Windows NT to improve the system performance. Please read the related file first by selecting on the Help button on the main menu before install it.

This mainboard supports Ultra DMA/33; therefore installs default 16-bit drivers when the operating system detects the board and the Bus Master IDE driver not installed, information in the circle like the display below indicates the system will treat it as a standard dual PCI IDE controller. It cannot take advantage of the Ultra DMA. (The attached peripheral devices must support UDMA.)



Installation

The installation is straight forward by clicking on *IDE Bus Master* item of the main menu. There is no option to be selected while the installation procedure goes. After the installation, the system should be rebooted.

Patch for Chipset

The mainboard package provides INF update file in the software utilities. This software is needed for the operating system to recognize chipset implemented on this mainboard; otherwise, the question marks in the circle will appear in your Window 95 environment.

The software tool is necessary when

Core Chip	Windows 95	Windows 98
Intel	needed	not needed
VIA	needed	needed

Please also read the related file first by selecting on the Help item on the main menu before install it.



Installation

The installation is straight forward. If your core chip a VIA chip, the three options in above menu must be selected. (For the Intel , they are not needed.) After the installation completed, the system must be rebooted.

Adobe Acrobat Reader

This software tool was given for reading the PDF (Portable Document Format) files.

Browse CD

Selecting this item will allow users to view the contents of this CD Pro.

Install Audio Driver

The option is needed only if your mainboard was equipped Audio/LAN/Video chip. This mainboard provided onboard Yamaha YMF 715E-S audio chip. You need to install its driver for achieving the audio performance. Before installing it, please follow the instructions which listed under the section of *Audio Driver/Yamaha 715* by clicking the Help item on the main menu. When complete the installation, the system need to be rebooted, after that a tiny speaker icon will appear on the bottom (right-hand side).

Click the **Start** item of the Windows top menu, select **Settings**, then **Control Panel** item; find the **System** icon. Double click it, the menu of **System Properties** will pop up. Select the Device Manager, then double click the item of **Sound, video and game controllers**, the messages "AMAHA OPL3-Sax GamePort" and "AMAHA OPL3-Sax Sound System" should be seen.

NOTE : First AID and LANDesk Client Manager introduced below conflict each other. They can not exist in your system at the same time. If one will be installed, the other must be removed first (if it stays there).

First AID

This software utility is used to monitor system's voltages, temperatures and fan speeds for Intel core chips and hardware monitor chips W83782D onboard. It does not cooperate with VIA core chips. It also conflicts with the LDCM software tools. When this utility is installed, the LDCM must be removed first.

The FIRST AID supports

Core Chip	Windows 95	Windows 98	Windows NT
Intel	Yes	Yes	No
VIA	Yes	Yes	No

LANDesk Client Manager CD (optional)

The LDCM software must be installed to use the hardware manager. It is installed for remote management over network and is of no use to non-networked systems.

The LDCM supports

Core Chip	Windows 95	Windows 98	Windows NT
<i>Intel</i>	Yes	Yes	Yes
<i>VIA</i>	No	No	No

Specification Overview

Intel LANDesk Client Manager provides real-time PC health monitoring, alerting and self-diagnostics that will make your PCs more reliable and easier to support. Intel LANDesk Client Manager enables you to:

Review system inventory

Client Manager enables you to view hundreds of inventoried items. Some of these items are software related, while many others are hardware related.

View DMI-compliant component information

Client Manager enables you to view component information that is compliant with the Desktop Management interface (DMI). You can manage third-party DMI-compliant components not included with Client Manager.

Back up and restore system configuration files

Client Manager enables you to back up and restore system configuration files. Whenever you plan on changing the system configuration, You can make a backup set. If the system no longer works correctly, after you change the system configuration, you can simply restore the system configuration with the backup set.

NOTE: By default the Windows 95 and Windows NT registry files aren't part of the snapshot file list. This means the restoration of a snapshot may not be effective.
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Troubleshoot

Since Client Manager enables you to View the system inventory, you can easily troubleshoot system problem.

Receive notifications for system events

Client Manager enables you to receive notification of certain system events. For example, if the system is running low on virtual memory, you are notified of the potential problem.

Transfer files to and from client workstations

You have the ability to transfer files to and from client workstations. This is helpful, when update a client workstation driver is needed.

Remotely reboot client workstations

Administrators also have the ability to remotely reboot a workstation. This is helpful when you want system configuration changes to take effect.

Waking up a computer

You can use Client Manager to "wake up" a remote computer that is powered off or "sleeping" in a reduced-power state.

Two Options of LDCM Setup

LDCM Local Setup: Install software to monitor the *local* system. **(Recommended)** Settings can be auto-detected or changed. The installation of it is straight forward. First select *LDCM Local Setup* in the main menu, then all the way down to the end of the installation. Reboot the system.

LDCM Administrator Setup: Installs software to monitor PC systems on the network within the same bridge address with Local software installed. The installation of it is straight forward. First select *LDCM Administrator Setup* in the main menu, then all the way down to the end of the installation. Reboot the system. The administrator should install both Local and Administrator Software. (First install *Local Setup*, then install *Administrator Setup*.)

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