

# **KA-6110**



## **MAINBOARD MANUAL**

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Part No. : 25-10931-20

## Handling Precautions

**Warning :**

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

Observe the following basic precautions when handling the mainboard 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 edge 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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## Overview

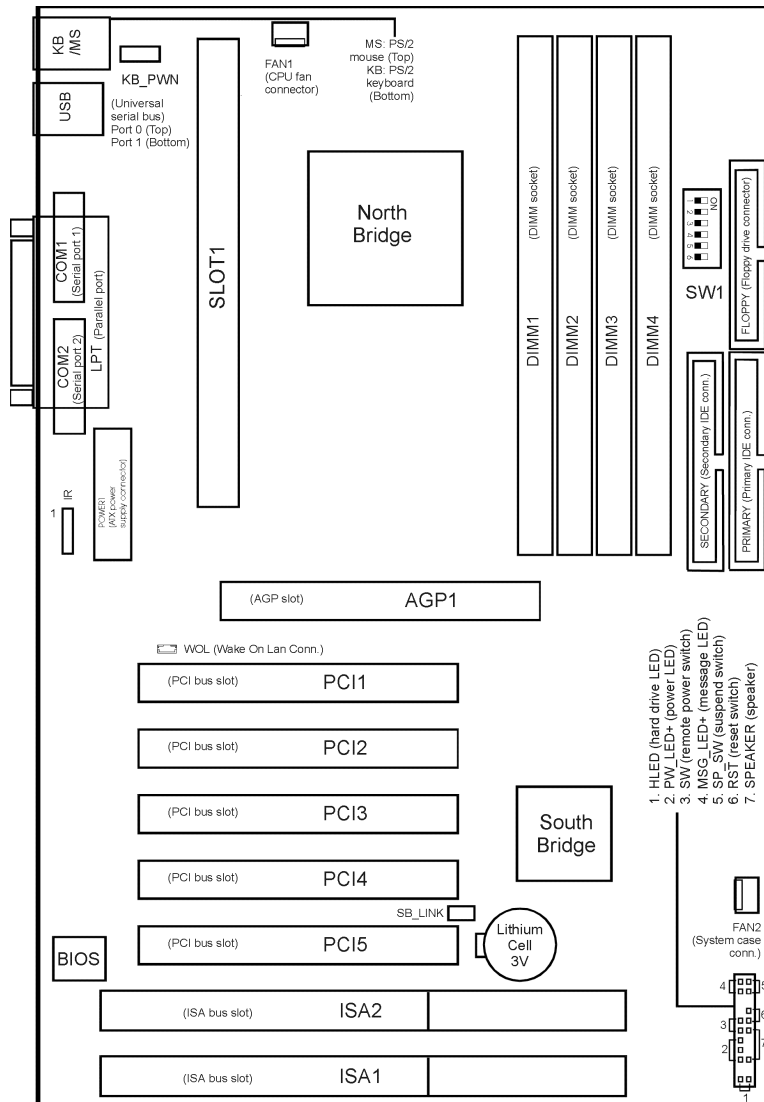
Based on the advanced [VIA Apollo Pro Plus AGPset](#), the KA-6110 combines blistering [Pentium II/III](#) processor performance with support for [Accelerated Graphics Port \(AGP\)](#) interface that provides a dedicated path for memory to deliver faster system performance and arcade-quality 3D graphics. Also, it accepts three host bus frequencies, 66MHz, 100 and 133MHz, to run a range of [Intel Pentium II/III](#) and [Celeron](#) processors. Compliant with the [Microsoft PC97](#) standard at both the hardware and BIOS levels, the KA-6110 comes with support for [ISMP](#) which continuously checks the thermal and voltage status of your system changes where necessary and reports any discrepancies to a network administrator. The KA-6110 reduces the total cost of ownership with support for [DMI \(Desktop Management Interface\)](#) and manufacturing optional [Intel LANDesk Client Manager \(LDCM\)](#) software which allows for optimized system manageability across a network. For the most up-to-date information about your motherboard and the latest FAQs and BIOS updates, visit FIC Online at <http://ww.fic.com.tw>.

### Package Checklist

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

- [The KA-6110 mainboard](#)
- [This user's manual](#)
- [One IDE ribbon cable](#)
- [One floppy disk drive ribbon cable](#)
- [Software utilities](#)

**The KA-6110 Mainboard**



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## Main Features

The 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.

### ■ Easy Installation

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

### ■ Flexible Processor Support

Onboard 242-pin Slot1 and switching voltage regulator support complete range of leading-edge processors:

Intel Pentium® – 450 MHz, Intel Pentium® – 550 MHz,  
and Intel Celeron® 466 MHz processors.

### ■ Various External Bus and CPU/Bus Frequency Ratio Support

The motherboard supports the Bus frequency of 66/100/133MHz and the CPU/Bus frequency ratio of

3.5x/4.0x/4.5x/5.0x/5.5x/6.0x/6.5x/7.0x/7.5x. (Please read **Install the CPU** in Chapter 2 for more information).

### ■ Leading Edge Chipset

VIA APOLLO Pro Plus chipset with integrated DRAM controllers as well as support for Intel's new Dynamic Power Management Architecture (DPMA), Concurrent PCI (PCI 2.0 and 2.1), AGP 1.0 compliant, and USB.

### ■ Versatile Main Memory Support

Accepts up to 1GB DRAM in four banks using DIMMs of 8, 16, 32, 64, 128, and 256MB with support for SDRAM (66MHz, 100MHz and 133MHz) memory. For 133 MHz SDRAMs, the latest Virtual Channel Memory (VCM) SDRAM is also supported.

**■ Onboard IrDA Connector**

An IrDA connector for wireless infrared connections is available.

**■ Lightning-fast SDRAM Performance**

The mainboard supports 66MHz and the new generation of lightning-fast 100MHz/133MHz SDRAM via its onboard 168-pin DIMM sockets. SDRAM delivers an added boost to overall system performance by increasing the CPU-to-memory data transfer rate. SDRAM performance on the mainboard is further boosted by its integrated IC controller, which optimizes the memory timing settings.

**■ Onboard Accelerated Graphics Port (AGP)**

One 32-bit AGP slot supports 1x/2x AGP VGA cards for superior 3D video performance with transfer speeds up to 264MB/second under 1x AGP transfer mode and up to 528MB/second under 2x AGP transfer mode.

**■ USB Support**

Two USB ports integrated in the rear I/O panel allow convenient and high-speed Plug and Play connections to the growing number of USB compliant peripheral devices on the market. One manufacturing optional USB connector that shared with one USB port for the front panel.

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

Integrated VT82C596B super multi-I/O chipset features one high-speed UART 16550 compatible serial port and one serial connector, one EPP/ECP capable parallel port, and one Floppy Disk Drive connector. It is also IrDA 1.0 compliant.

**■ Remote Wake On LAN Support**

Onboard WOL connector allows remote management on your network even the system is power off. This feature provides a simpler and convenient control to LAN-based networks.

**■ Ultra ATA/66 IDE HDD Support**

Ultra ATA/66 IDE hard drives can deliver a maximum data transfer rate of 66 MB/s. With the support for it, system performance can be greatly enhanced.



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- **Intel LANDesk Client Manager (LDCM) Software Support (optional)**

LDCM is a 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 of potential problems.

## ACPI Ready

This mainboard fully implements the new ACPI (Advanced Configuration and Power Interface) 1.0 Hardware and BIOS requirement. If you install ACPI-aware operating systems, such as Windows® 98, you can fully utilize the power saving features under ACPI. It is compatible with all other non ACPI-aware operating systems.

If you want to setup ACPI features under Windows® 98, please follow the instructions below:

Run Windows® 98 setup by typing **setup /p j** at the command prompt for installing Windows® 98 with the ACPI control features.

If you type **setup** without the parameter **/p j**, Windows® 98 will be installed as APM, PnP mode, no ACPI will be used.

For more detailed information, please visit the web site of Microsoft. The URL is <http://www.microsoft.com/hwtest/>.

The following are a few examples about the advantages of ACPI -

- **Soft-Off Support**

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

- **Remote Ring-On**

The Remote Ring-On function allows your computer to be turned on remotely via a modem while it is in sleep mode. This feature is particularly useful when you are expecting a fax late at night and leave only your modem on to minimize power consumption. As soon as the phone rings, the modem automatically turns on the system, which answers the phone and downloads the fax. Then the computer shuts

down again, thereby minimizing its power consumption. The Remote Ring-On function requires a power supply with a soft-off power controller.

■ **RTC Alarm**

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

## **Installation Procedures**

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

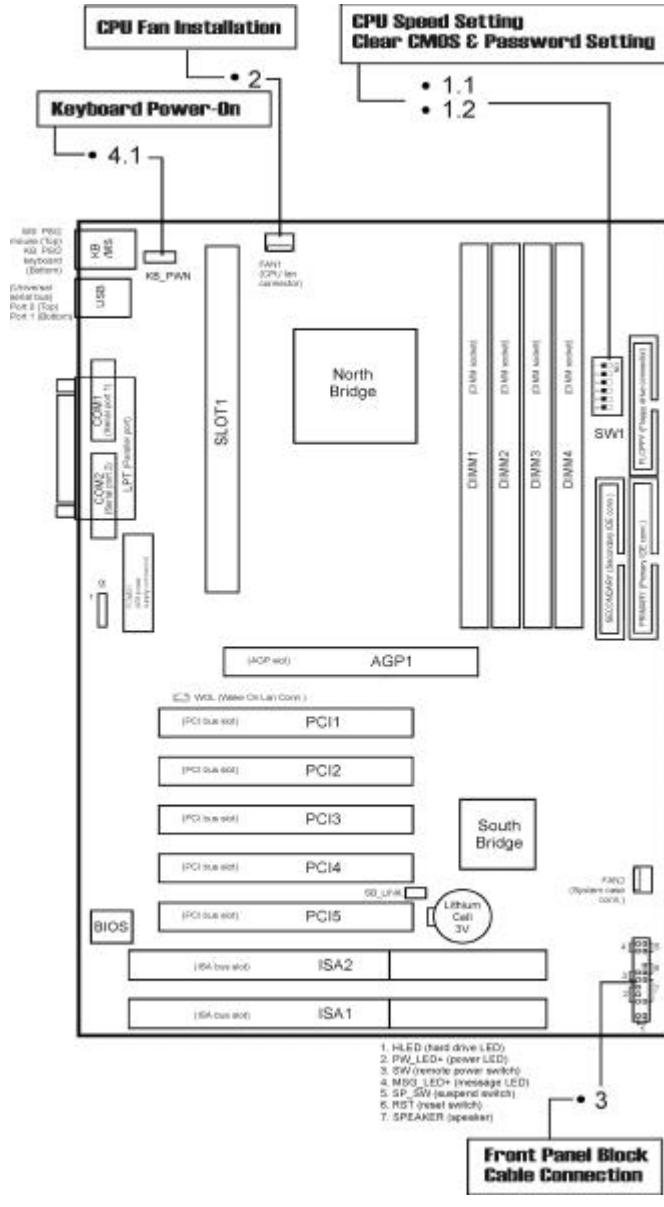
To set up your computer, you should follow these installation steps:

- **Step 1 - Set system jumpers/switches**
- **Step 2 - Install memory modules**
- **Step 3 - Install the CPU**
- **Step 4 - Install expansion cards**
- **Step 5 - Connect devices**
- **Step 6 - Set up BIOS features**

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



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



**Chapter 2  
Installation  
Procedures**

## 1). CPU Speed Setting, Clear CMOS & Password Setting, Host Bus & PCI Bus Frequency Setting

### 1.1 CPU Speed Setting (SW1-1 ~ SW1-4)

**NOTE:**

**ON:** SW ON or Jumper ON

**OFF:** SW OFF or Jumper OFF

RATIO	CPU Speed (Hz)			SW1-1	SW1-2	SW1-3	SW1-4
	133M	100M	66M				
3.5X	466M	350M	233M	ON	OFF	ON	OFF
4.0X	533M	400M	266M	ON	ON	OFF	ON
4.5X	600M	450M	300M	ON	ON	OFF	OFF
5.0X	666M	500M	333M	ON	OFF	OFF	ON
5.5X	733M	550M	366M	ON	OFF	OFF	OFF
6.0X	800M	600M	400M	OFF	ON	ON	ON
6.5X	866M	650M	433M	OFF	ON	ON	OFF
7.0X	933M	700M	466M	OFF	OFF	ON	ON
7.5X	1G	750M	500M	OFF	OFF	ON	OFF

### 1.2 Clear CMOS & Password Setting (SW1-5, SW1-6)

			(Default)
Clear CMOS	SW1-5	ON	OFF
Clear Password	SW1-6	ON	OFF

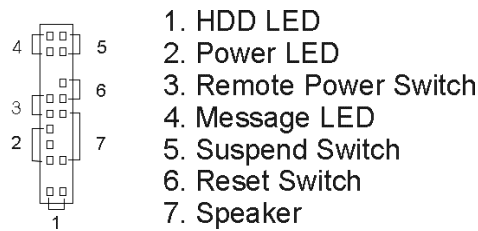
## 2). CPU Fan Installation

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

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

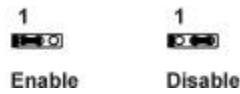
## 3). Front Panel Block Cable Connection

This connector is linked to the CPU fan. When the system is in suspend mode,



## 4). Other Enabled/Disabled Jumpers

### 4.1 KB\_PWN (Keyboard Power-On)



## 5). Load BIOS Setup Default

### Load BIOS Defaults

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

### Load Setup Defaults

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

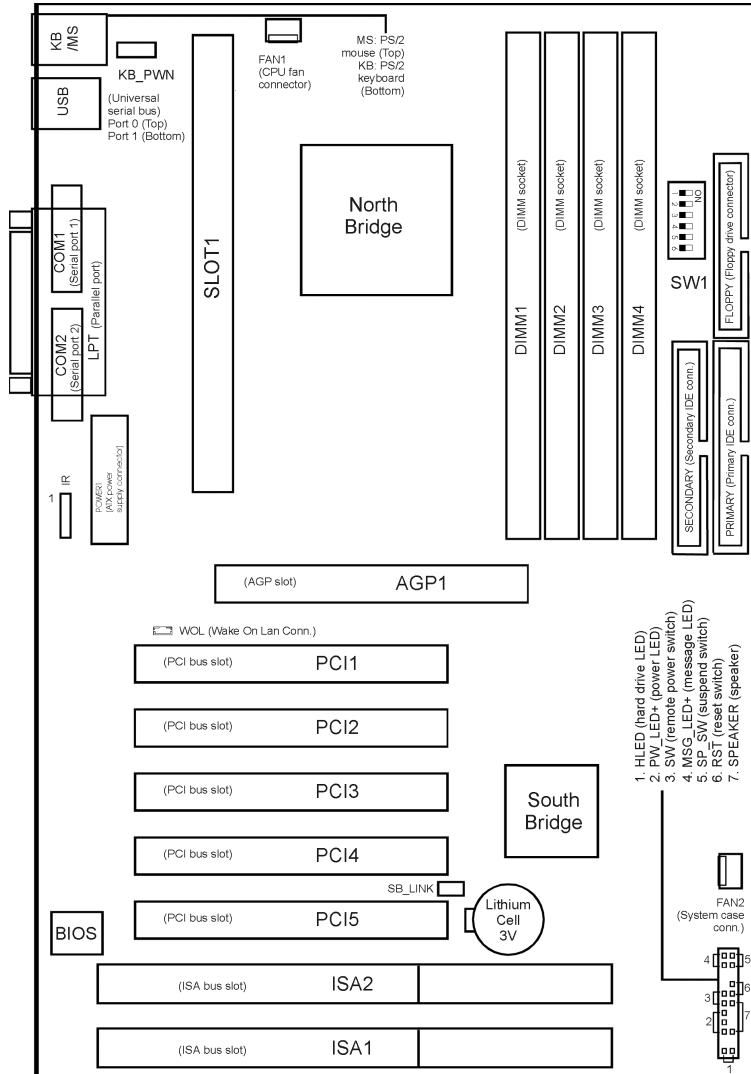
## 6). How to Upgrade BIOS

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

*Do not turn off or reset the computer during the flash process or there will be a problem booting up your system.*



Mainboard Layout



Chapter 2  
Installation  
Procedures

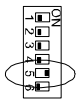
<b>Onboard Mark</b>	<b>FUNCTION</b>	<b>PAGE</b>
SW1-5	Clear CMOS Data	2-9
SW1-6	Clear Password	2-9
KB_PWN	Keyboard and Mouse Power-on Feature	2-11
DIMM1/2/3/4	DIMM Memory Module Support	2-12
SLOT1	Single Edge Connect (SEC) CPU Slot	2-14
SW1-1/2/3/4	CPU Internal Frequency Selection	2-18
AGP	Accelerated Graphic Port Slot	2-19
PCI1/2/3/4/5	PCI Bus Expansion Slot (32-bit)	2-19
ISA1/2	ISA Bus Expansion Slot (16-bit)	2-19
FLOPPY	Floppy Diskette Drive Connector	2-21
PRIMARY, SECONDARY	IDE Device Connector	2-21
POWER	ATX Power Connector	2-22
FAN1	CPU Fan Connector	2-23
WOL	Wake-On-LAN Connector	2-23
SB_LINK	PCI Audio Card Connector	2-24
Front Panel Block Connector	Connectors for LEDs and Switches on Front Panel	2-25
FAN2	Chassis Fan Connectors	2-26
KB	PS/2 Keyboard Connector	2-27
MS	PS/2 Mouse Connector	2-27
COM1/2	Serial Port	2-27
USB0/1	Universal Serial Bus Connector	2-28
IR	Infrared Port Module Connector	2-29
LPT	Printer Connector	2-30

## 1). Set System Jumpers/Switches

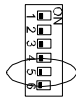
### *Clear CMOS: SW1-5*

The CMOS RAM is powered by the onboard button cell battery. To clear the RTC data: (1). Turn off your computer, (2). Enable this feature by setting the SW1-5 to On position, (3). Turn on your computer to display “CMOS checksum error”, (4). Turn off the computer, (5). Disable the Clear CMOS feature, (6). Turn on the computer. (7). Hold down the Delete key when boots and enter BIOS Setup to re-enter user preferences.

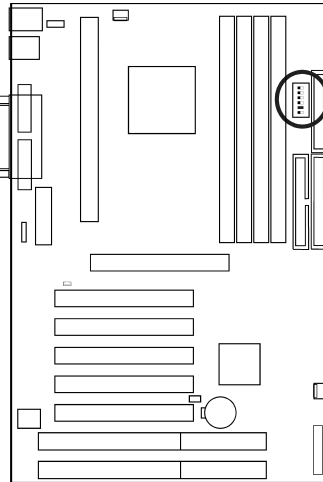
#### **SW5 (Clear CMOS)**



#### **Enable (Clear CMOS)**

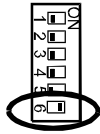


#### **Disable (Default)**

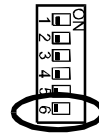


### *Clear Password: SW1-6*

This switch allows you to enable or to disable the password settings. You may need to adjust switch if you forget your password. To clear the password setting: (1). Turn off your computer, (2). Enable this feature by setting the SW1-6 to On position, (3). Turn on your computer to display “CMOS checksum error”, (4). Turn off your computer, (5). Disable the Clear Password feature by setting the SW1-6 to Off position, (6). Turn on your computer, (7). Hold down the Delete key when boots and enter BIOS Setup to re-enter user preferences.



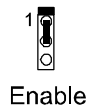
**Enable (Clear Password)**



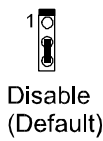
**Disable (Default)**

***Keyboard and Mouse Power-On Feature: KB\_PWN***

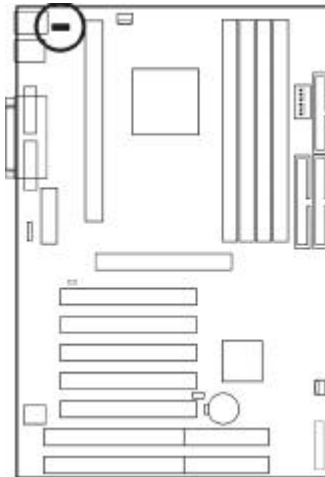
The 3-pin jumper provides you with the capability to power on the system by simply touching your keyboard or mouse. To enable this feature, you have to set this jumper and the related BIOS feature, **POWER ON Function**, Page 3-19, that introduced in **Integrated Peripherals** section in Chapter 3.



**Enable**



**Disable (Default)**



**NOTE:** To use this function and WOL (mentioned in Page 2-23) together, your power supply should have a current of 1A at 5 V Stand-by.

## 2). Install RAM Modules

### RAM Module Configuration

PC100/133 modules may have a serial EEPROM containing a number of critical timing parameters and data regarding the chip and module vendor. This ensures that the chipset will properly recognize the module by reading all of the important timing parameters specified in the EEPROM over the serial presence detect interface. The module supplier must understand these differences in detail and provide the correct information so that the chipset will be programmed properly to control the memory.

The mainboard provides four onboard DIMM sockets for allowing only 3.3V (unbuffered) SDRAM DIMM modules and supports DIMMs with data access time of 12ns, 10ns, 8ns or less. ECC memory and parity check are also supported. If DIMM runs at the speed of 100MHz, it must meet the PC100 Specification. Either 8, 16, 32, 64, 128MB, or 256MB DIMM can be installed on these sockets. (Please use the same memory sizes of DIMM on each socket for better performance.) The maximum total memory supported is up to 1GB.

<i>Socket</i>	<i>Acceptable Memory Module</i>		<i>Total Memory</i>
1	8/16/32/64/128/256MB 168-pin 3.3V SDRAM	x1	
2	8/16/32/64/128/256MB 168-pin 3.3V SDRAM	x1	
3	8/16/32/64/128/256MB 168-pin 3.3V SDRAM	x1	
4	8/16/32/64/128/256MB 168-pin 3.3V SDRAM	x1	

*Total System Memory allowed up to 1GB* =

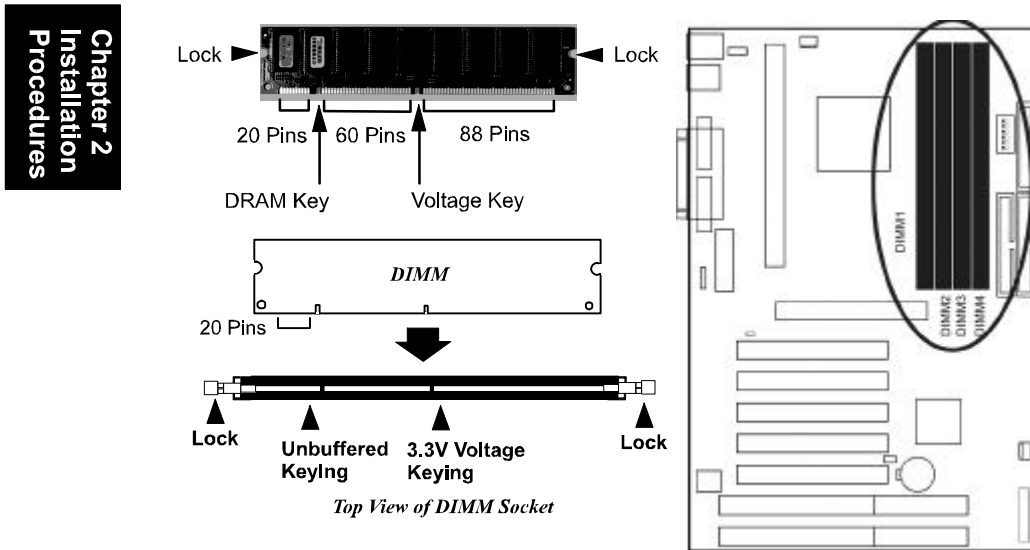
**NOTE:** The latest Virtual Channel Memory (VCM) SDRAM is also supported on this mainboard. Thus with the use of VC-100/133 MHz VCM-SDRAMs, memory performance can be greatly enhanced.

## Install and Remove DIMMs

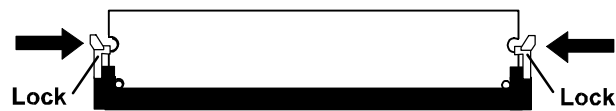
This mainboard supports 100MHz SDRAM DIMMs; when the system frequency set to 100MHz, PC100-compliant SDRAM should be used.

Complete the following procedures to install DIMMs:

1. Locate the DIMM slots on the mainboard.



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



Press the clips with both hands to remove the DIMM.

### 3). Install the CPU

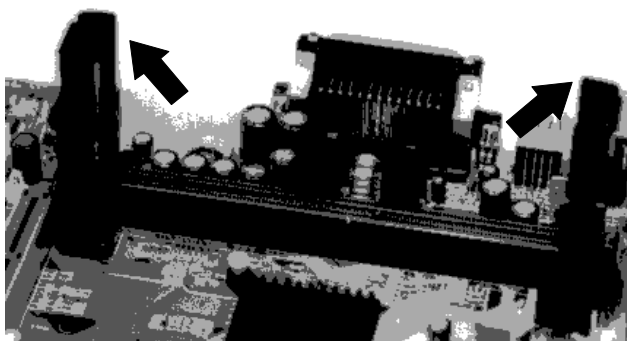
Two options of Retention Mechanism Assembly are offered for installing your CPU on this mainboard. One is installed on the mainboard by the manufacturer. The assemblies are foldable for saving space when shipping and packing.

The other option is the non-foldable Retention Mechanism Assembly (two pieces) and two Retention Mechanism Attachment Mount (two pieces) that are packed in a plastic bag with the board. You need to mount them before installing the CPU module.

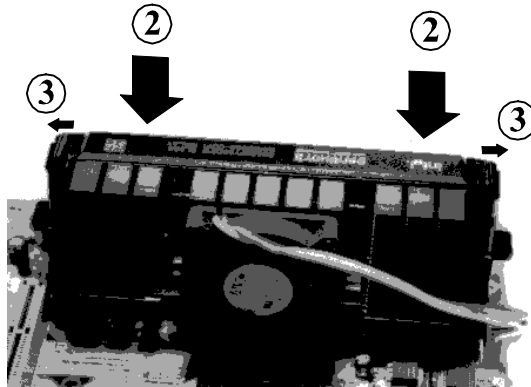
This section introduces you on how to install these devices.

#### *1). Install with Foldable Retention Mechanism Assembly*

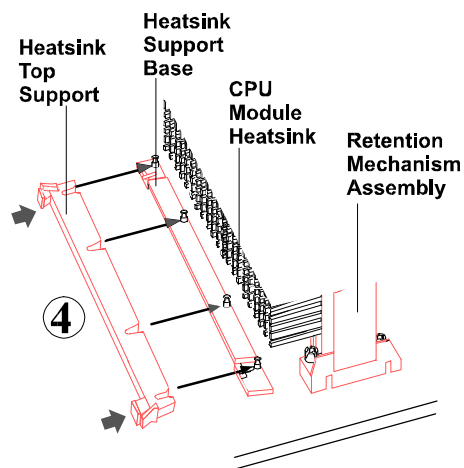
1. Pull out two sets of the Retention Mechanism Assembly upward to the right position.



2. Insert the CPU module onto the SLOT1 along the Retention Mechanism Assembly.



3. Pull the buttons outwards until click to the right positions.
4. Hook the Heatsink Top Support to the Heatsink Support Base to affix the CPU module.

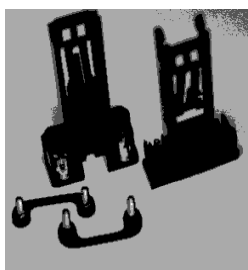




***II). Install with Non-Foldable Retention Mechanism Assembly***

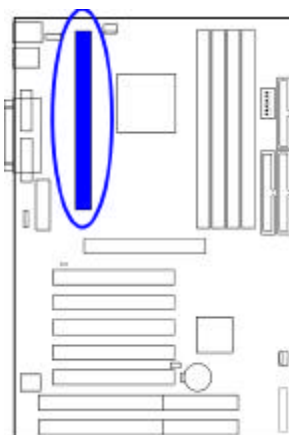
1. Unpack the plastic bag. Take out the Retention Mechanism Assembly (two pieces) and Retention Mechanism Attachment Mount (two pieces).

**Retention  
Mechanism  
Attachment  
Mount**

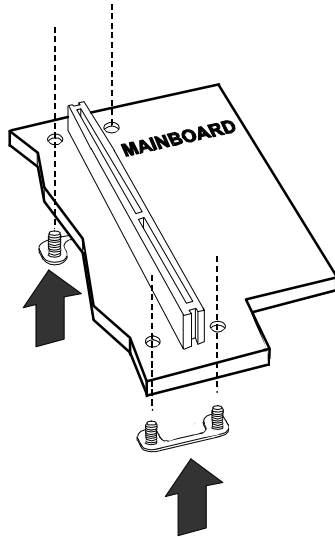


**Retention  
Mechanism  
Assembly**

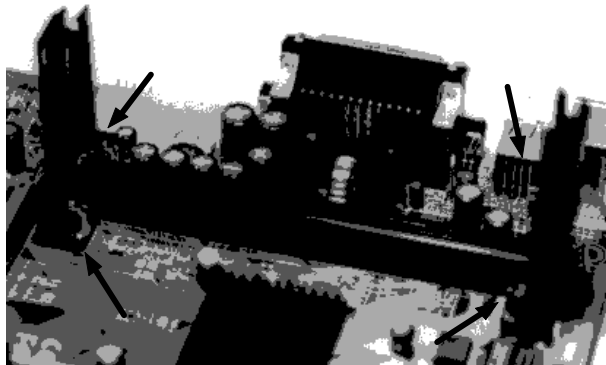
2. Locate SLOT1 on the mainboard.



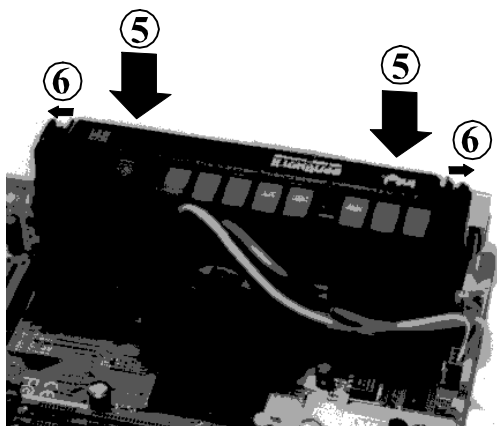
3. Install two Retention Mechanism Attachment Mounts on the board.



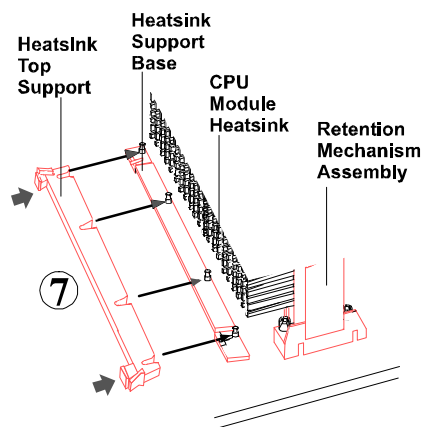
4. Place the Retention Mechanism Assembly on the board, on top of the Retention Mechanism Attachment Mounts. Affix the Retention Mechanism Assembly with four screws. (As the arrows point.)



5. Insert the CPU module onto the SLOT1 along the Retention Mechanism Assembly.

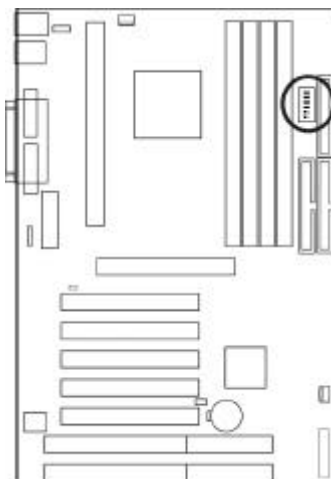


6. Pull the buttons outwards until click to the right positions.
7. Hook the Heatsink Top Support to the Heatsink Support Base to affix the CPU module.



***CPU Internal Frequency Selection:  
SW1-1, SW1-2, SW1-3, SW1-4***

These four switches are used to decide the internal frequency of the CPU.

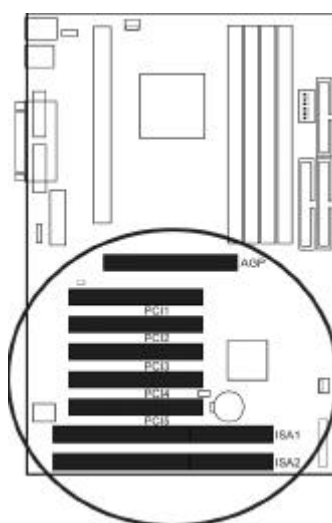


***SW1-1/2/3/4 (CPU Ratio Select)***

RATIO	CPU Speed (Hz)			SW1-1	SW1-2	SW1-3	SW1-4
	133M	100M	66M				
3.5X	466M	350M	233M	ON	OFF	ON	OFF
4.0X	533M	400M	266M	ON	ON	OFF	ON
4.5X	600M	450M	300M	ON	ON	OFF	OFF
5.0X	666M	500M	333M	ON	OFF	OFF	ON
5.5X	733M	550M	366M	ON	OFF	OFF	OFF
6.0X	800M	600M	400M	OFF	ON	ON	ON
6.5X	866M	650M	433M	OFF	ON	ON	OFF
7.0X	933M	700M	466M	OFF	OFF	ON	ON
7.5X	1G	750M	500M	OFF	OFF	ON	OFF

## 4). Install Expansion Cards

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



To install an expansion card, do the following:

1. Remove the computer chassis cover and select an empty expansion slot.
2. Remove the corresponding slot cover from the computer chassis. Unscrew the mounting screw that secures the slot cover and pull the slot cover out from the computer chassis. Keep the slot cover mounting screw nearby.
3. Holding the edge of the peripheral card, carefully align the edge connector with the expansion slot.

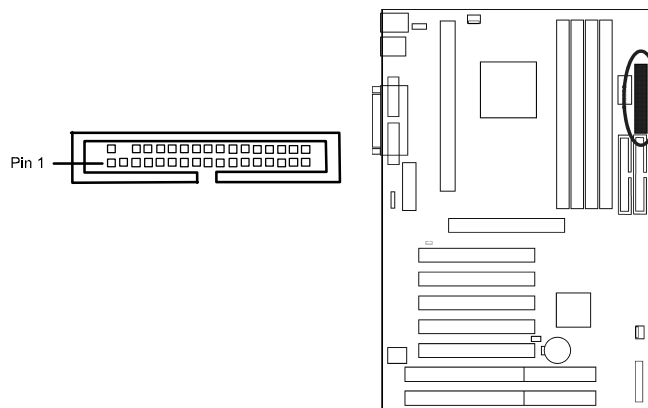
4. Push the card firmly into the slot. Push down on one end of the expansion card, then the other. Use this “rocking” motion until the add-on card is firmly seated inside the expansion slot.
5. Secure the board with the mounting screw removed in Step 2. Make sure that the card has been placed evenly and completely into the expansion slot.
6. Replace the computer system’s cover.
7. Setup the BIOS if necessary.
8. Install the necessary software drivers for the expansion card.

## 5). Connect Devices

### Connectors to Internal Devices

#### *Floppy Diskette Drive Connector: FLOPPY*

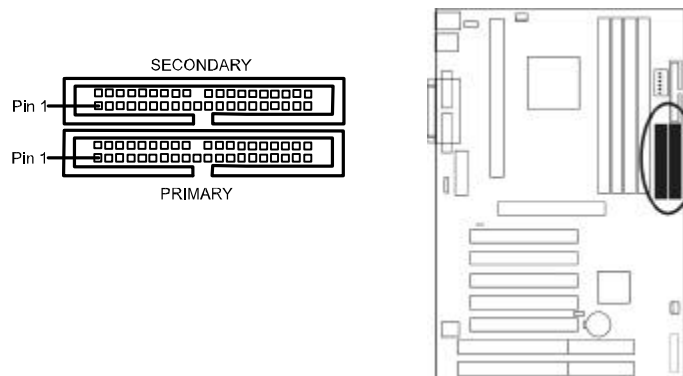
This connector provides the connection with your floppy disk drive.  
The red stripe of the ribbon cable must be the same side with the Pin 1.



#### *IDE HDD Device Connectors: PRIMARY, SECONDARY*

These two connectors are used for your IDE hard disk drives, CD drives, LS-120 drives, or IDE ZIP drives.

The red stripe of the ribbon cable must be the same side with the Pin 1.

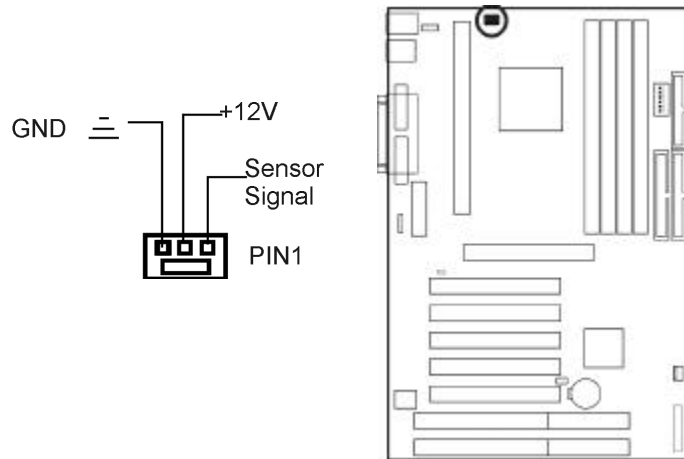






***CPU Fan Connector: FAN1***

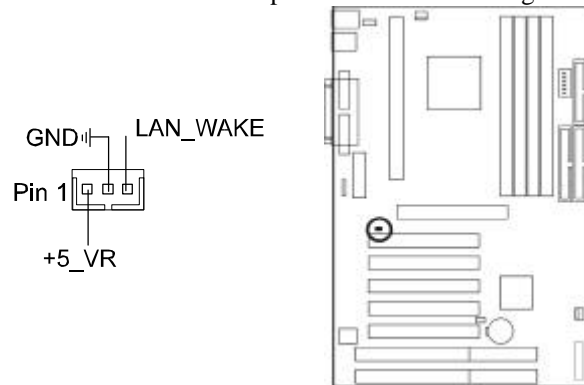
This connector is linked to the CPU fan for cooling the processor temperature. When the system enters the suspend mode, the CPU fan will shut off. Please read the CPU fan installation guide before connection.



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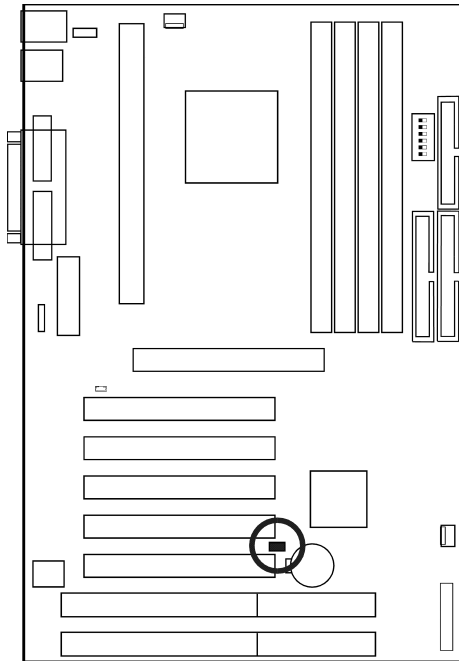
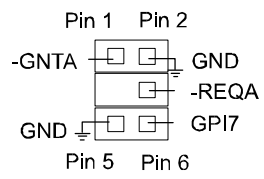
***Wake-On-LAN Connector: WOL***

This 3-pin connector allows remote LAN servers to manage the system that installed this mainboard via a network adapter which also supports WOL. When you install a adapter with WOL connector, please read the network adapter card's installation guide for details.



***PCI Audio Card Connector: SB\_LINK***

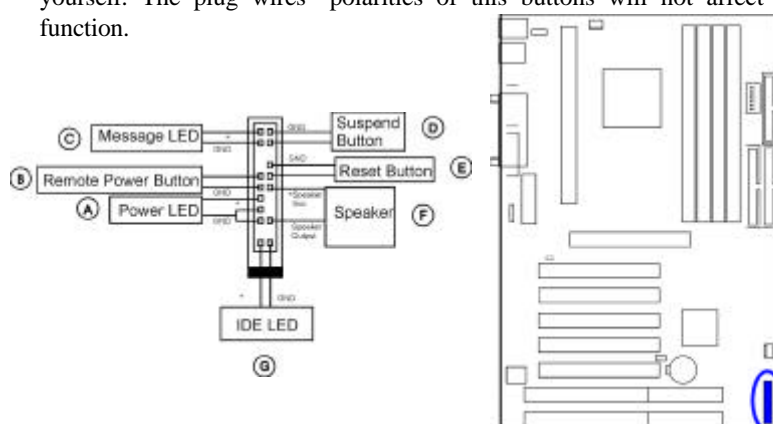
This 6-pin male connector allows you to connect to your Creative®'s sound card or compatibles.



## Connectors to System Case

### *Front Panel Block Connector*

This block connector concludes the connectors for linking with IDE LED, power LED, remote power button, message LED, suspend button, reset button and speaker on the front panel of the system case. Please identify polarities of plug wires for the case speaker and LEDs. Please ask vendor about this information when you buy them and install the system by yourself. The plug wires' polarities of this buttons will not affect the function.



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

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

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

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

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

**Speaker (F)** is connected with the case speaker.

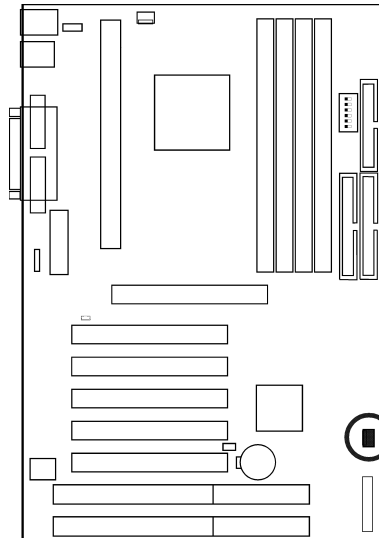
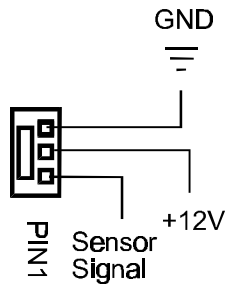
**IDE LED (G)** is connected IDE device indicator. This LED will blink when the hard disk drives are activated.

**Chassis Fan Connector: FAN2**

**WARNING:** Without sufficient air circulation, the CPU may overheat and cause damage to both the CPU and the mainboard. Damage may occur to the mainboard and/or the CPU fan if these pins are incorrectly used. These are not jumpers, do not place jumper caps over these pins.

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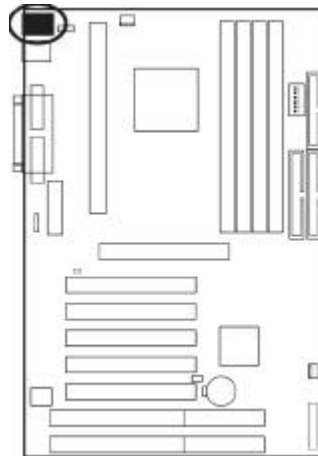
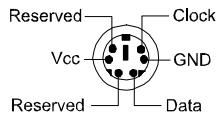
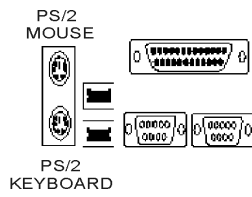
This 3-pin connector available on the board is for user to select one to link to the cooling fan on the system chassis to lower the system temperature.



## Connectors to External Devices

### *PS/2 Keyboard and Mouse Connector: KB, MS*

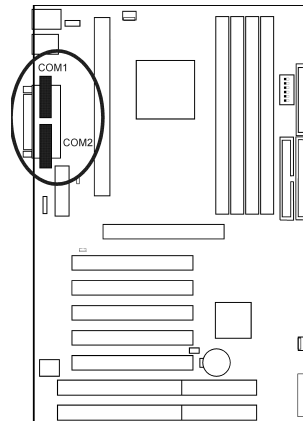
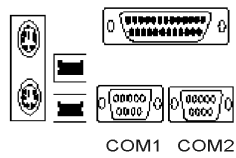
These two 6-pin female connectors are used for your PS/2 keyboard and PS/2 mouse.



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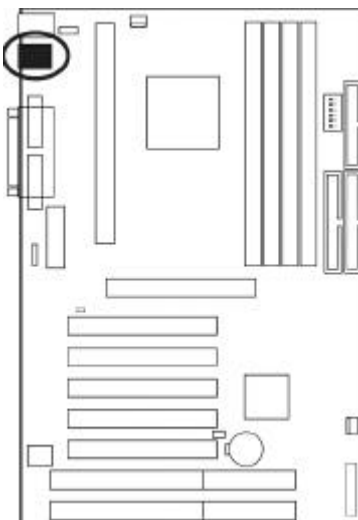
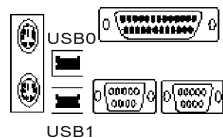
### *Serial Port Connectors: COM1, COM2*

These two 9-pin D-Sub male connectors allow you to connect devices that use serial ports, such as a serial mouse or a modem.



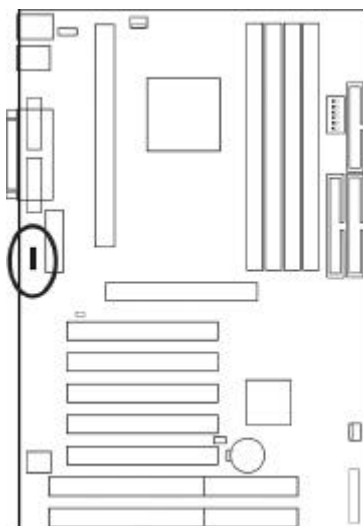
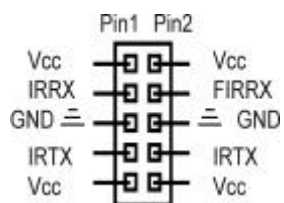
***Universal Serial Bus Connectors: USB0, USB1,***

These two connectors that integrated on the edge of the board are used for linking with USB peripheral devices. Your operating system must support USB features, such as MS Windows 98, MS Windows 95 OSR2.5 with USB Supplement.



***Infrared Connector: IR***

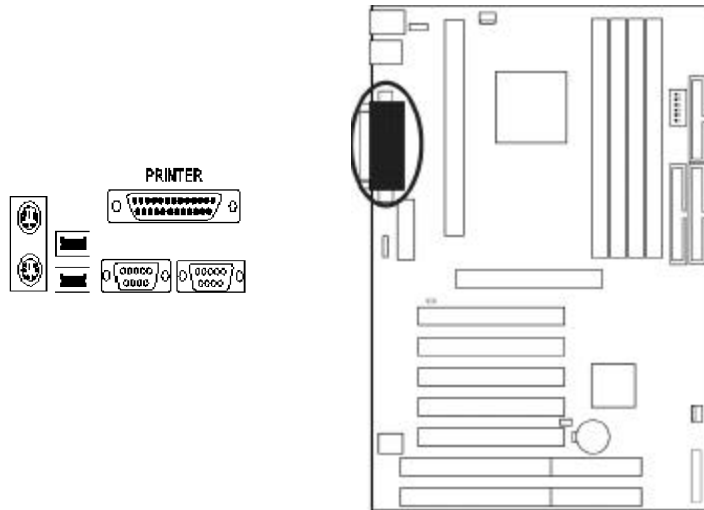
This 5-pin connector is used to link with your IR device.



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***Printer Connector: LPT***

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





## BIOS Setup

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

### CMOS Setup Utility

ROM PCI/ISA BIOS (2A6LFF0A) 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 Setup program, built into the system BIOS, is stored in the CMOS RAM. This Setup utility program allows changes to the mainboard configuration settings. It is executed when the user changes system configuration; user changes system backup battery; or the system detects a configuration error and asks the user to run the Setup program. Use the arrow keys to select and press Enter to run the selected program. The **F5: Menu in BIOS** is a convenient feature for users to refer the board settings in this BIOS top level menu.

## Standard CMOS Setup

ROM PCI/ISA BIOS (2A6LFF0A)									
STANDARD CMOS SETUP									
AWARD SOFTWARE, INC.									
Date (mm:dd:yy) : Mon, May 10 1999									
Time (hh:mm:ss) : 9 : 25 : 52									
HARD DISKS	TYPE	SIZE	CYLS	HEAD	PRECOMP	LANDZ	SECTOR	MODE	
Primary Master	: None	0	0	0	0	0	0	0	-----
Primary Slave	: None	0	0	0	0	0	0	0	-----
Secondary Master	: None	0	0	0	0	0	0	0	-----
Secondary Slave	: None	0	0	0	0	0	0	0	-----
Drive A : None									
Drive B : None									
Video : EGA/VGA									
Halt On : All Errors									
					Base Memory: 640K				
					Extended Memory: 31744K				
					Other Memory: 384K				
					Total Memory: 32768K				
ESC : Quit									
F1 : Help									
↑ ↓ - - : Select Item									
(Shift)F2 : Change Color									
PU/PD/+/- : Modify									

The Standard CMOS Setup screen is displayed above. Each item may have one or more option settings. The system BIOS automatically detects memory size, thus no changes are necessary. Use the arrow keys to highlight the item and then use the PgUp or PgDn keys to select the value you want in each item.

### Hard Disk Configurations

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

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

**CYLS:** The cylinder number of the hard disk.

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

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

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

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

**MODE:** Select Auto to detect the mode type automatically. If your hard disk supports the LBA mode, select LBA or Large. However,

if your hard disk cylinder is more than 1024 and does not support the LBA function, set at Large. Select Normal if your hard disk supporting cylinders is below 1024.

### ***Floppy 3 Mode Support***

This feature allows you to install a 3.5" (1.2MB) NEC 9801 floppy drive.

The options are: Disabled (Default), Drive A.

### ***Software Turbo Speed***

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

## BIOS Features Setup

ROM PCI/ISA BIOS (2A6LFF0A)	
BIOS FEATURES SETUP	
AWARD SOFTWARE, INC.	
Anti-Virus Protection	: Enabled
CPU Internal Cache	: Enabled
External Cache	: Enabled
CPU L2 Cache ECC Checking	: Enabled
CPU Data Update	: Enabled
Boot From LAN First	: Enabled
Boot Sequence	: A,C,SCSI
Swap Floppy Drive	: Disabled
Boot Up Floppy Seek	: Enabled
Boot Up NumLock Status	: On
Gate A20 Option	: Fast
Typematic Rate Setting	: Disabled
Typematic Rate (Chars/Sec)	: 6
Typematic Delay (Msec)	: 250
Security Option	: Setup
PCI/VGA Palette Snoop	: Disabled
OS Select For DRAM > 64MB	: Non-OS2
HDD S.M.A.R.T. capability	: Disabled
Report No FDD For WIN 95	: Yes
Video BIOS Shadow	: Enabled
Processor Number Feature	: Enabled
ESC	: Quit
F1	: Help
F5	: Old Values
F6	: Load BIOS Defaults
F7	: Load Setup Defaults
	: Select Item
PU/PD/+/-	: Modify
(Shift)F2	: Color

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BIOS Setup

### Anti-Virus Protection

This feature starts the virus scan tool to detect if boot virus in boot sector of the first hard disk drive when booting up.

The options are: Enabled (Default), Disabled.

### CPU Internal Cache

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

### External Cache

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

### CPU L2 Cache ECC Checking

This feature allows users to activate the CPU's Level 2 cache's error check and correction function. The options are: Enabled (Default), Disabled.

### CPU Data Update

This option allows the system BIOS to update CPU's microcode.  
The options are: Enabled (Default), Disabled.

### Boot From LAN First

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

### Boot Sequence

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

### Swap Floppy Drive

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

### Boot Up Floppy Seek

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

### Boot Up Numlock Status

When set to On, allows the BIOS to automatically enable the Num Lock Function when the system boots up. The options are: On (Default), Off.

### Gate A20 Option

When set at Fast, allows a faster access response under Protected mode.  
The options are: Normal (Default), Fast.

### Typematic Rate Setting

---

The term typematic means that when a keyboard key is held down, the character is repeatedly entered until the key is released. The options are: Disabled (Default), Enabled.

#### Typematic Rate (Chars/Sec)

This feature is available only if the above item, Typematic Rate Setting, is set at Enabled. Sets the rate of a character repeat when the key is held down. The options are: 6 (Default), 8, 10, 12, 15, 20, 24, 30.

#### Typematic Delay (Msec)

This feature is available only if the item, Typematic Rate Setting, is set at Enabled. Sets the delay time before a character is repeated. The options are: 250 (Default), 500, 750, 1000 millisecond.

#### Security Option

Allows you to set the security level of the system. The options are: Setup (Default), System.

#### PCI/VGA Palette Snoop

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

#### OS Select For DRAM > 64MB

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

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

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

#### Report No FDD For WIN 95

---

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

The options are: No, Yes (Default).

#### Video BIOS Shadow

Allows the BIOS to copy the video ROM code of the add-on video card to the system memory for faster access.

The options are: Enabled (Default), Disabled.

#### Processor Number Feature

If a Pentium III processor is installed on this mainboard, the system BIOS will allow other utilities to access the Intel Pentium III serial number while this feature set at Enabled. The options are: Enabled (Default), Disabled.

## Chipset Features Setup

ROM PCI/ISA BIOS (2A6LFF0A)			
CMOS SETUP UTILITY			
CHIPSET FEATURES SETUP			
SDRAM Controlled by	: SPD	Auto Detect DIMM/PCI CLK	: Enabled
SDRAM Slot-1 Timing	: 3/3/6/3	CPU Host/PCI Clock (MHz)	: Default
SDRAM Slot-2 Timing	: 3/3/6/3	CPU Warning Temperature	: Disabled
SDRAM Slot-3 Timing	: 3/3/6/3	Current System Temp.	:
SDRAM Slot-4 Timing	: 3/3/6/3	Current CPU Temperature	:
SDRAM Clock Selection	: Auto (SPD)	Current CPU FAN Speed	:
DRAM Data Integrity Mode	: ECC	Current Chassis FAN Speed:	:
Memory Hole At 15Mb Addr.	: Disabled	VCore	: VIO
Read Around write	: Disabled	+ 5 V	: +12 V
concurrent PCI/Host	: Enabled	-12 V :-	: - 5 V :-
Video RAM Cacheable	: Disabled	VBAT(V):	5VSB(V):
AGP Aperture Size	: 64M		
AGP-2X Mode	: Enabled		
C2D Post-Write Buffer	: 4-Level		
Read DRAM Prefetch Buf	: 4-Level		
DRAM Read Request Rate	: 3T		
OnChip USB	: Enabled	ESC : Quit	-- : Select Item
USB Keyboard support	: Disabled	F1 : Help	PU/PD/+/- : Modify
		F5 : Old Values (Shift)	F2 : color
		F6 : Load BIOS Defaults	
		F7 : Load Setup Defaults	

### SDRAM Controlled by

This tells whether SDRAM's timing should be controlled automatically by the system or from settings by the user. If manual is selected, SDRAM timing will be determined from the following option.

The options are: SPD (Default), Manual.

### SDRAM slot-1/2/3/4 Timing

If manual is selected in the above option, the system will use settings in his option.

The options are 2, 3, 6 for each slot and the default value is 3/3/6/3.

### SDRAM Clock Selection

This feature provides software configurability of selecting between ECC (ECC generation and checking/correction) mode or non-ECC mode of operation of the DRAM interface.

The options are: Auto (SPD) (Default), 66MHz, 100MHz, 133 MHz.



### DRAM Data Integrity Mode

This feature provides software configurability of selecting between ECC (ECC generation and checking/correction) mode or non-ECC mode of operation of the DRAM interface.

The options are: Non-ECC, ECC (Default).

### Memory Hole at 15Mb Addr.

You can reserve this area of system memory for ISA adapter ROM. When this area is reserved, it cannot be cached. The user information peripherals that need to use this area of system memory usually discusses their memory requirements. The options are: Disabled (Default); Enabled.

### Read Around Write

This feature speeds up data read performance when it stays Enabled.

The options are: Enabled, Disabled (Default).

### Concurrent PCI/Host

If each bus master cycle does not take the same path, it allows for multiple bus master cycles to be activated at the same time.

The options are: Disabled, Enabled (Default).

### Video RAM Cacheable

Selecting Enabled allows caching of the video BIOS ROM at C0000h to C7FFFh, resulting in better video performance. However, if any program writes to this memory area, a system error may result.

The options are: Disabled (Default), Enabled.

### AGP Aperture Size

It allows you to select the main memory frame size for AGP use.

The options are 128, 4, 8, 16, 32, 64 (Default), 128, 256M.

### AGP-2X Mode

This feature allows user to select the AGP mode to be 1x or 2x when an AGP add-in card is installed. However, when set at Enabled

and the AGP card only support 1x mode, the system will fall back 1x mode automatically.

The options are: Enabled (Default), Disabled.

#### C2D Post -Write Buffer

When CPU write to DRAM will keep in the chipset buffer first. The cycle is quick than direct write to DRAM. The 4-Level will get more buffer than the 1-Level does. The options are: 4-Level (Default), 1-Level.

#### Read DRAM Prefetch Buf

The chipset will give different priority for DRAM blocks. If the access is more frequently. The chipset will prefetch the DRAM data automatically. The 4-Level will get more buffer than the 1-Level does.

The options are: 4-Level (Default), 1-Level.

#### OnChip USB

When enabled, this feature allows you to use the onboard USB feature. The options are: Enabled (Default), Disabled.

#### USB Keyboard Support

This feature will appear only if the above item Onchip USB is set at Enabled. Set this feature to Enabled to use a USB keyboard with your system. The options are: Disabled (Default), Enabled.

#### Auto Detect DIMM/PCI Clk

Set this field at Enabled to allow auto detection of DIMM clock speed.

The options are: Enabled (Default), Disabled.

#### CPU Host/PCI Clock (MHz)

Select *Default* or select a timing combination for the CPU and the PCI bus. When set to *Default*, BIOS uses the actual CPU and PCI bus clock values.

The options are: Default (Default), 66.8/33.4 MHz, 75/37.5 MHz, 83.3/41.7 MHz, 90/30 MHz, 100/33.3 MHz, 105/35 MHz, 110/36.7 MHz, 112/37.3 MHz, 115/38.3 MHz, 120/40 MHz,

124/41.3 MHz, 124/31 MHz, 133/33.3MHz, 140/35 MHz,  
150/37.5 MHz.

#### CPU Warning Temperature

This feature allows you to set the temperature to slow down the CPU clock frequency.

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 System Temp. / Current CPU Temperature / Current CPU FAN Speed / Current Chassis FAN Speed/ VCore / VIO / +5V / +12 CV / -12V / -5V / VBAT (V) / 5VSB(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

ROM PCI/ISA BIOS (2A6LFF0A) POWER MANAGEMENT SETUP AWARD SOFTWARE, INC.			
Power Management	: User Define	Primary INTR	: ON
Video Off Option	: Suspend -> Off	IRQ3 (COM 2)	: Primary
Video Off Method	: DPMS Support	IRQ4 (COM 1)	: Primary
MODEM Use IRQ	: 3	IRQ5 (LPT 2)	: Primary
Soft-Off by PWRBTN	: Delay 4 Sec	IRQ6 (Floppy Disk)	: Primary
HDD Power Down	: Disable	IRQ7 (LPT 1)	: Primary
Doze Mode	: Disable	IRQ8 (RTC Alarm)	: Disabled
Suspend Mode	: Disable	IRQ9 (IRQ2 Redir)	: Secondary
PWRON After PWR-Fail	: Former-Sts	IRQ10 (Reserved)	: Secondary
VGA	: OFF	IRQ11 (Reserved)	: Secondary
LPT & COM	: LPT/COM	IRQ12 (PS/2 Mouse)	: Primary
HDD & FDD	: ON	IRQ13 (Coprocessor)	: Primary
DMA/master	: OFF	IRQ14 (Hard Disk)	: Primary
Wake Up On LAN	: Enabled	IRQ15 (Reserved)	: Disabled
Wake On PCI-PM Event	: Disabled		
Modem Ring Resume	: Enabled	ESC : Quit	-- : Select Item
RTC Alarm Resume	: Disabled	F1 : Help	PU/PD/+/- : Modify
		F5 : Old values	(Shift)F2 : color
		F6 : Load BIOS Defaults	
		F7 : Load Setup Defaults	

### Power Management

This item allows you to adjust the power management features. Select Disable for disabling global power management features. Select User Defined for configuring your own power management features.

MIN Saving initiates all predefined timers in their minimum values. MAX Saving, on the other hand, initiates maximum values. The options are: User Define (Default), MIN Saving, MAX Saving.

### Video Off Option

This feature provides the selections of the video display power saving mode. The option Suspend - Off allows the video display to go blank if the system enters Suspend mode. The option All Modes - Off allows the video display to go blank if the system enters Doze mode or Suspend mode.

The option Always On allows the video display to stay in Standby mode even when the system enters Doze or Suspend mode.

The options are: Suspend - Off (Default), All Modes -> Off, Always On.

### Video Off Method

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

#### MODEM Use IRQ

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

The options are: NA, 3 (Default), 4, 5, 7, 9, 10, 11.

#### Soft-Off By PWRBTN

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.

#### HDD Power Down

Selecting Disable will turn off the hard disk drive (HDD) motor. Selecting 1 Min..15 Min allows you define the HDD idle time before the HDD enters the Power Saving Mode. The option When Suspend lets the BIOS turn the HDD motor off when system is in Suspend mode.

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

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

#### Doze Mode

When disabled, the system will not enter Doze mode. The specified time option defines the idle time the system takes before it enters Doze mode.

The options are: Disable (Default), 10, 20, 30, 40 Sec, 1, 2, 4, 6, 8, 10, 20, 30, 40 Min, 1 Hr.

### Suspend Mode

When disabled, the system will not enter Suspend mode. The specified time option defines the idle time the system takes before it enters Suspend mode. The options are Disable (Default), 10, 20, 30, 40 Sec, 1, 2, 4, 6, 8, 10, 20, 30, 40 Min, 1 Hr.

### PWRON After PWR-Fail

When the system is shut down owing to the power failure, the system will not be back to power on by itself. This feature allows you to set the system back to which power status of the system when the system power is resumed.

The options are Former-Sts (Default), Off.

### VGA

*ON* enables the power management timers when a no activity events is detected in the VGA. *OFF* disables the PM timer even if a no activity event is detected. The options are: OFF (Default), ON.

### LPT & COM

*LPT/COM* enables the power management timers when a no activity event is detected in the LPT and COM ports. *LPT (COM)* enables the power management timers when a no activity event is detected in the LPT (COM) ports. *NONE* to disable the PM timer even if a no activity event is detected. The options are: LPT/COM (Default), LPT, COM, NONE.

### HDD & FDD

*ON* will enable the power management timers when no activity event is detected in the hard drive and floppy drive. *OFF* disables the PM timer even if no activity event is detected. The options are: OFF, ON (Default).

#### DMA/master

To set this feature at ON activates that Power Management feature (PM) wake-up event for the DMA or bus master (of the LAN card or/and SCSI card). The options are: OFF (Default), ON.

#### Wake Up On LAN

When set at Enabled, an input signal comes from the other client/server on the LAN awakes the system from a soft off state if connected over LAN.

The options are Disabled (Default) or Enabled.

#### Wake Up on PCI-PM Event

When set at Enabled, any PCI-PM event awakes the system from a PCI-PM controlled state.

The options are Disabled (Default) or Enabled.

#### Modem Ring Resume

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

The options are: Enabled (Default), Disabled.

#### RTC Alarm Resume

*Enabled* allows you to set the time the system will be turned on from the system power-off status. The options are: Enabled, Disabled (Default).

#### Primary INTR

When the Primary interrupt (the Primary option in the feature of IRQ# Activity) generates will make the Power Management feature (PM) wake-up event on. If set at OFF, all the primary interrupt will not wake-up the system. The options are: OFF, ON (Default).

#### IRQ# Activity

After the time period which you set at in Suspend Mode Feature, the system advances from Doze Mode to Suspend Mode in which the CPU clock stops and the screen display is off. At this moment,

if the IRQ activity which is defined as Primary occurs, the system goes back to Full-on Mode directly.

If the IRQ activity which is defined as Secondary takes place, the system enters another low power state, Dream Mode, in which the system will act as Full-on Mode except that the screen display remains off until the corresponding IRQ handler finishes, then back to Suspend Mode.

The options for IRQ 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 14, 15 are: Primary, Secondary, Disabled. The default value for IRQ 8, 15 is: Disabled. The default value for IRQ 3, 4, 5, 6, 7, 12, 13, 14 is: Primary. The default value for IRQ 9, 10, 11 is: Secondary.



## PNP/PCI Configuration

ROM PCI/ISA BIOS (2A6LFF0A) PNP/PCI CONFIGURATION AWARD SOFTWARE, INC.	
PNP OS Installed : No	CPU to PCI Write Buffer : Enabled
Resources Controlled By : Auto	PCI Dynamic Bursting : Enabled
Reset Configuration Data : Disabled	PCI Master 0 WS Write : Enabled
	PCI Delay Transaction : Disabled
	PCI IRQ Activated By : Level
	Assign IRQ For USB : Enabled
	Assign IRQ For VGA : Enabled
	Assign IRQ For ACPI : IRQ10
	Slot 1/5 Use IRQ No. : Auto
	Slot 2 Use IRQ No. : Auto
	Slot 3 Use IRQ No. : Auto
	Slot 4 Use IRQ No. : Auto
ESC : Quit	-- : Select Item
F1 : Help	PU/PD/+/- : Modify
F5 : Old Values (Shift)	F2 : Color
F6 : Load BIOS Defaults	
F7 : Load Setup Defaults	

### PNP OS Installed

If your operating system is a Plug-and-Play one, such as Windows NT, Windows 95, select Yes. The options are: No (Default), Yes.

### Resources Controlled By

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

### Reset Configuration Data

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

### CPU to PCI Write Buffer

When enabled, allows data and address access to the internal buffer of the system controller; so the processor can be released from the waiting state. The options are: Enabled (Default), Disabled.

### PCI Dynamic Bursting

When enabled, the PCI controller allows Bursting PCI transfer if the consecutive PCI cycles come with the address falling in same 1KB space. This improves the PCI bus throughput.

The options are: Disabled, Enabled (Default).

### PCI Master 0 WS Write

When enabled, allows a zero-wait-state-cycle delay when the PCI master drive writes data to DRAM.

The options are: Enabled (Default), Disabled.

### PCI Delay Transaction

The chipset has an embedded 32-bit posted write buffer to support delay transaction cycles. Select Enabled to support compliance with PCI specification version 2.1.

The options are: Disabled (Default), Enabled.

### PCI IRQ Activated By

Leave the IRQ trigger set at *Level* unless the PCI device assigned to the interrupt specifies Edge-triggered interrupts.

The options are: Level (Default); Edge.

### Assign IRQ For USB

If your USB device does not need an IRQ, select Disabled; therefore, an IRQ can be released for the system use.

The options are: Disabled; Enabled (Default).

### Assign IRQ For VGA

If your PCI VGA card does not need an IRQ, select Disabled; therefore, an IRQ can be released for the system use.

The options are: Disabled (Default); Enabled.

### Assign IRQ For ACPI

Assign the IRQ used by your system ACPI device.

The options are: IRQ9, IRQ10 (Default), IRQ11.

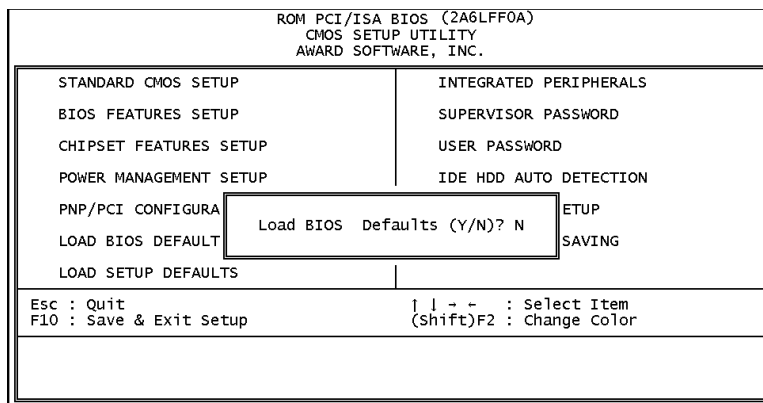
### Slot 1/2/3/4/5 Use IRQ No.

---

Some PCI devices would need to use an IRQ on the PCI bus. Selecting Auto allows the PCI controller to automatically allocate an IRQ.

The options are: Auto (Default); 3 to 5; 7; 9 to 12; 14; 15.

## Load BIOS Defaults



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

## Load Setup Defaults

```

ROM PCI/ISA BIOS (2A6LFF0A)
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 CONFIGURA        Load SETUP Defaults (Y/N)? N  ETUP
LOAD BIOS DEFAULT          SAVING
LOAD SETUP DEFAULTS

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

**Chapter 3**  
**BIOS Setup**

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

## Integrated Peripherals

ROM PCI/ISA BIOS (2A6LFF0A) INTEGRATED PERIPHERALS AWARD SOFTWARE, INC.	
OnChip IDE Channel0 : Enabled	Onboard Serial Port 2 : UART Mode Select : Rx/D , TX/D Active : Hi,Lo
OnChip IDE Channel1 : Enabled	IR Transmittion delay: Enabled
IDE Prefetch Mode : Enabled	Onboard Parallel Port : Parallel Port Mode : ECP Mode Use DMA : 3
IDE HDD Block Mode : Enabled	EPP Mode Select : EPP1.9
Primary Master PIO: Auto	
Primary Slave PIO: Auto	
Secondary Master PIO: Auto	
Secondary Slave PIO: Auto	
Primary Master UDMA: Auto	
Primary Slave UDMA: Auto	
Secondary MasterUDMA: Auto	
Secondary Slave UDMA: Auto	
Init Display First : AGP	
POWER ON Function :	ESC : Quit
KB Power ON Password : Enter	-- : Select Item
Hot Key Power ON : Ctrl-F1	F1 : Help PU/PD/+/- : Modify
KBC input cLock : 8 MHz	F5 : Old Values (Shift)F2 : Color
Onboard FDC Controller: Enabled	F6 : Load BIOS Defaults
Onboard Serial Port 1 : 3F8/IRQ4	F7 : Load Setup Defaults

### OnChip IDE Channel0

When enabled, allows you to use the onboard primary PCI IDE. If a hard disk controller card is used, set at Disabled.

The options are: Enabled (Default), Disabled.

### OnChip IDE Channel1

When enabled, allows you to use the onboard secondary PCI IDE. If a hard disk controller card is used, set at Disabled.

The options are: Enabled (Default), Disabled.

### IDE Prefetch Mode

When set at Enabled, it allows data to be posted to and prefetched from the primary IDE data ports. Data prefetching is initiated when a data port read occurs. The read prefetch eliminates latency to the IDE data ports and allows them to be performed back to back for the highest possible PIO data transfer rates. The first data port read of a sector is called the demand read. Subsequent data port reads from the sector are called prefetch reads. The demand read and all prefetch reads must be of the same size (16 or 32 bits).

The options are: Disabled, Enabled (Default).

### IDE HDD Block Mode

When enabled, the system executes read/write requests to hard disk in block mode. The options are: Disabled, Enabled (Default).

### Primary Master PIO

Allows an automatic or a manual configuration of the PCI primary IDE hard disk (master) mode.

The options are: Auto (Default), Mode 0, Mode 1, Mode 2, Mode 3, Mode 4.

### Primary Slave PIO

Allows an automatic or a manual configuration of the PCI primary IDE hard disk (slave) mode.

The options are: Auto (Default), Mode 0, Mode 1, Mode 2, Mode 3, Mode 4.

### Secondary Master PIO

Allows an automatic or a manual configuration of the PCI secondary IDE hard disk (master) mode.

The options are: Auto (Default), Mode 0, Mode 1, Mode 2, Mode 3, Mode 4.

### Secondary Slave PIO

Allows an automatic or a manual configuration of the PCI secondary IDE hard disk (slave) mode.

The options are: Auto (Default), Mode 0, Mode 1, Mode 2, Mode 3, Mode 4.

### Primary Master UDMA

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

The options are: Disable, Auto (Default).

### Primary Slave UDMA

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

#### Secondary Master UDMA

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

#### Secondary Slave UDMA

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

#### Init Display First

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

#### KB Power On Password

When set the POWER ON Function at Password, this feature will appear on the monitor. It allows you to set a password to power the system. Press the Enter key when you are prompted to set the power-on password. Type it up to five characters and press the Enter key; then confirm it by typing the password again and pressing the Enter key to complete the setting procedures. To disable the power-on password, press the Enter key when it is disabled. When the power-on password is set, the system can not be powered on by the power button, mouse, or hot key. Once the power-on password is set, you can power on the system simply by entering the password. This feature offers the security on your computer system.



### Hot Key Power ON

When set POWER ON Function at Hot Key, this feature will appear on the monitor. It allows you to select a hot key to power on your computer.

The options are: Ctrl-F1 (Default), Ctrl-F2, Ctrl-F3, Ctrl-F4, Ctrl-F5, Ctrl-F6, Ctrl-F7, Ctrl-F8, Ctrl-F9, Ctrl-F10, Ctrl-F11, Ctrl-F12.

### KBC input clock

This feature allows you to select different KBC input clocks which your keyboard actually supported. Please read your keyboard manual also for more information. The options are: 6, 8 (Default), 12, 16 MHz.

### Onboard FDC Controller

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

### Onboard Serial Port 1

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

### Onboard Serial Port 2

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

### UART Mode Select

Allows you to select the IR modes if the serial port 2 is used as an IR port. Set at Normal, if you use COM2 as the serial port as the serial port, instead as an IR port. The options are: Normal (Default), IrDA, ASKIR.

### RxD , TxD Active

This feature is available only if the item, UART 2 Mode, is set at ASKIR or HPSIR. The feature allows you to select the active signals of the reception end and the transmission end. This is for technician use only.

The options are: Hi, Lo (Default); Hi, Hi; Lo, Hi; Lo, Lo.

#### IR Transmission Delay

When Enabled, the transmission delays 4 characters-time (40 bit-time) if SIR is changed from RX mode to TX mode. When Disabled, no transmission delay if SIR is changed from RX mode to TX mode.

The options are: Enabled (Default), Disabled.

#### Onboard Parallel Port

Allows you to select from a given set of parameters if the parallel port uses the onboard I/O controller.

The options are: 378/IRQ7 (Default), 278/IRQ5, 3BC/IRQ7, Disabled.

#### Parallel Port Mode

Allows you to connect with an advanced printer.

The options are: Normal (Default), EPP, ECP, ECP/ ECP.

#### ECP Mode Use DMA

If you select ECP or ECP+EPP in Parallel Port Mode, this feature allows you to select Direct Memory Access (DMA) channel.

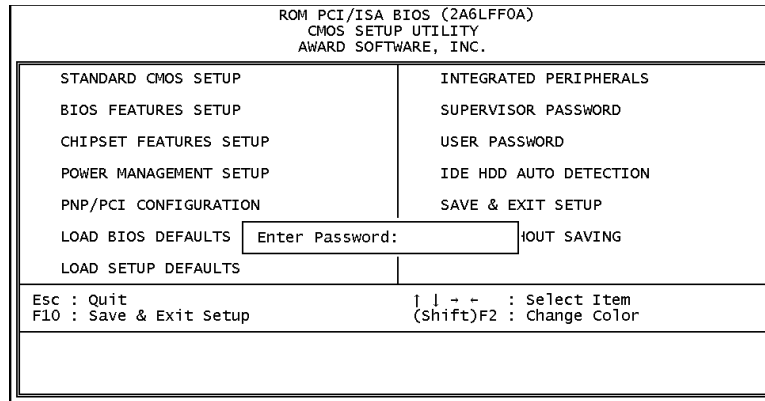
The options are: 3 (Default), 1.

#### EPP Mode Select

If you select EPP or ECP+EPP in Parallel Port Mode, this feature allows you to select the EPP type version.

The options are: EPP1.9 (Default), EPP1.7.

## Supervisor/User Password

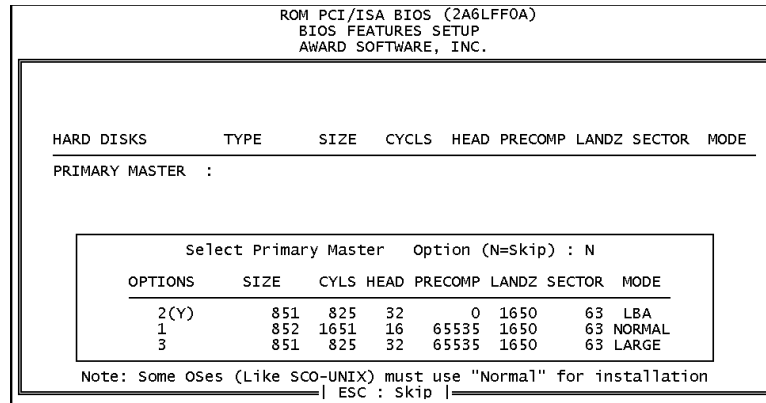


Chapter 3  
BIOS Setup

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

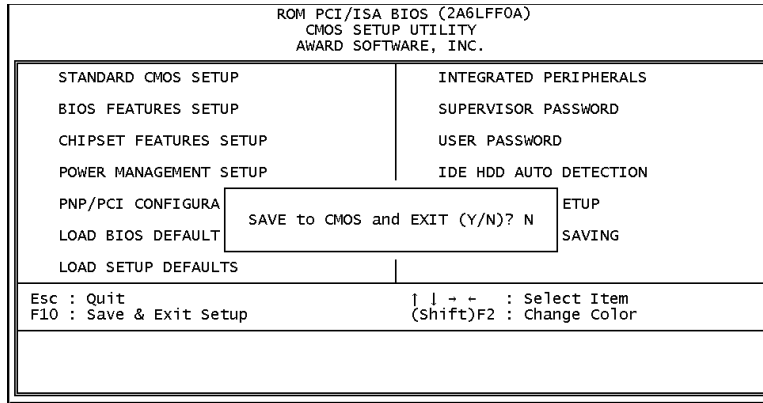
Under the BIOS Feature Setup, if *Setup* is selected under the Security Option field and the Supervisor/User Password is enabled, you will be prompted password every time you try to enter the CMOS Setup Utility. If *System* is selected and the Supervisor/User Password is enabled, you will be requested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

## IDE HDD Auto Detection



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

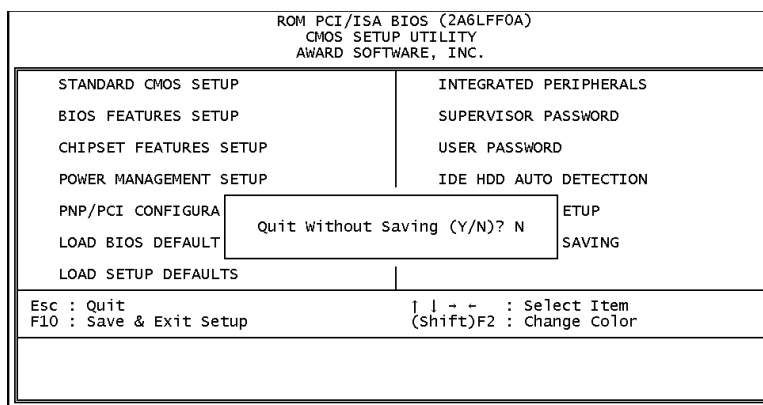
## Save and Exit Setup



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

**SAVE to CMOS and EXIT (Y/N)?**

## Exit without Saving



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

**Quit Without Saving (Y/N)?**

## **General FAQs**

### **How do I know my BIOS version?**

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

### **How to install a PS/2 mouse?**

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

### **How do I know which PCB Revision my mainboard is?**

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

### **Can I use ECC memory?**

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

### **My FIC Pentium-based mainboard PCI 2.1-compliant?**

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

#### [How do I know which FLASH chip I have?](#)

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

#### [What is the purpose of KB\\_LOCK pins located on the front panel connector?](#)

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

#### [What the DMI utility is used for?](#)

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

#### [Is my FIC Pentium-based mainboard PCI 2.1-compliant?](#)

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

#### [Where can I get the drivers for PCI set mainboards?](#)

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

#### [How can I get the USB drivers?](#)

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

#### How do I use DMI Utility?

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

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

#### Why not update BIOS?

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

It is recommended to refrain from updating BIOS without a good reason. If you don't see your problem listed in the fix list, do not

update BIOS - better go to a shareware Web site (winfiles.com, shareware.com, tucows.com) and update your software or do something less dangerous.

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

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

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## BIOS FAQs

### How do I flash a new BIOS?

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

#### *Downloading BIOS File*

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

#### *Upgrading BIOS File*

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

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

The other parameters are listed in the relating README file, please read it if need.

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

### What is "Hardware-based intelligent virus protection"?

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

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

[When I try to flash BIOS I get an error message saying about a wrong part number. Why?](#)

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

- a) you may have used a wrong BIOS or flash utility. Verify that both the BIOS file and the flash utility are the right versions.
- b) the flash utility you used did not recognize the type of flash EPROM installed on your mainboard. Verify that you have the right files and if you're sure in that, ignore the warning.

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

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

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## Windows 98 FAQs

### What's the proper install procedure for VIA-based mainboards?

There are four steps:

- 1) Go to BIOS Setup and enable USB
- 2) Install Win98 on your system
- 3) Download and install the VIA IrQ routing miniport driver from our Drivers and Utilities page
- 4) Download and install the VIA AGP driver from the same page (for MVP3 & VP3 chipsets only).

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

### Why does my VIA chipset-based mainboard crash under Windows98?

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

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

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

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

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

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

### [I flashed BIOS and now Windows won't boot. I get a VxD error message.](#)

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

### [My Sound Blaster Live does not work under DOS. Why?](#)

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

## **Windows 95 FAQs**

### [What is the proper install order of graphics-related VIA drivers?](#)

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

### [Why does my VIA chipset-based system crash when the system attempts to access UDMA HDD?](#)

This problem appears under Windows 95 OSR2 and OSR 2.1. Microsoft made two updated versions of drivers that cause the problem. Please download them at <http://support.microsoft.com/support/kb/articles/q171/3/53.asp>

### [How can I know if a software \(example: WindowsNT\) is compatible with FIC mainboards?](#)

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

### [Windows95 shows an exclamation mark next to USB device on my mainboard. Is there any driver that can help me?](#)

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

## Intel CPU FAQs

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

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

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

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

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