

## 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.

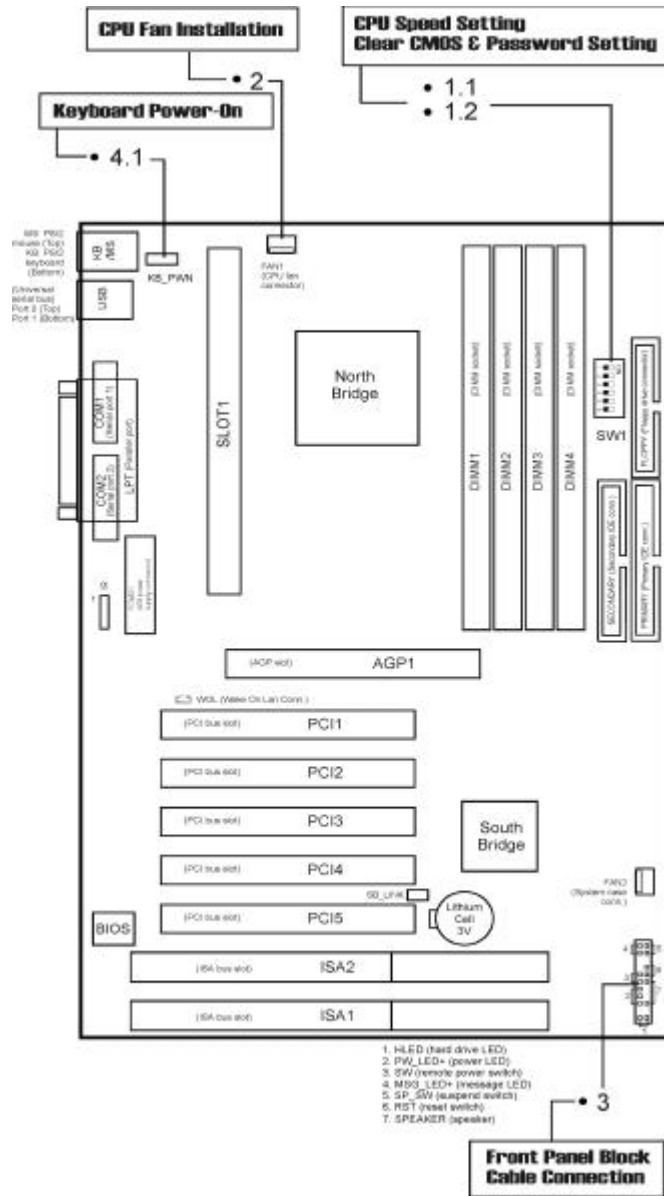
To set up your computer, you should follow these installation steps:

- [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.*



## 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

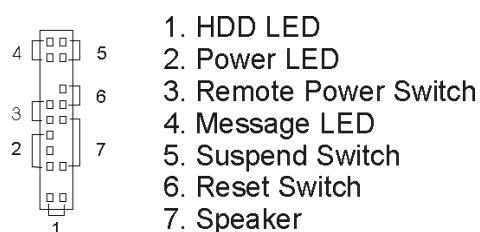
## 2). CPU Fan Installation

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

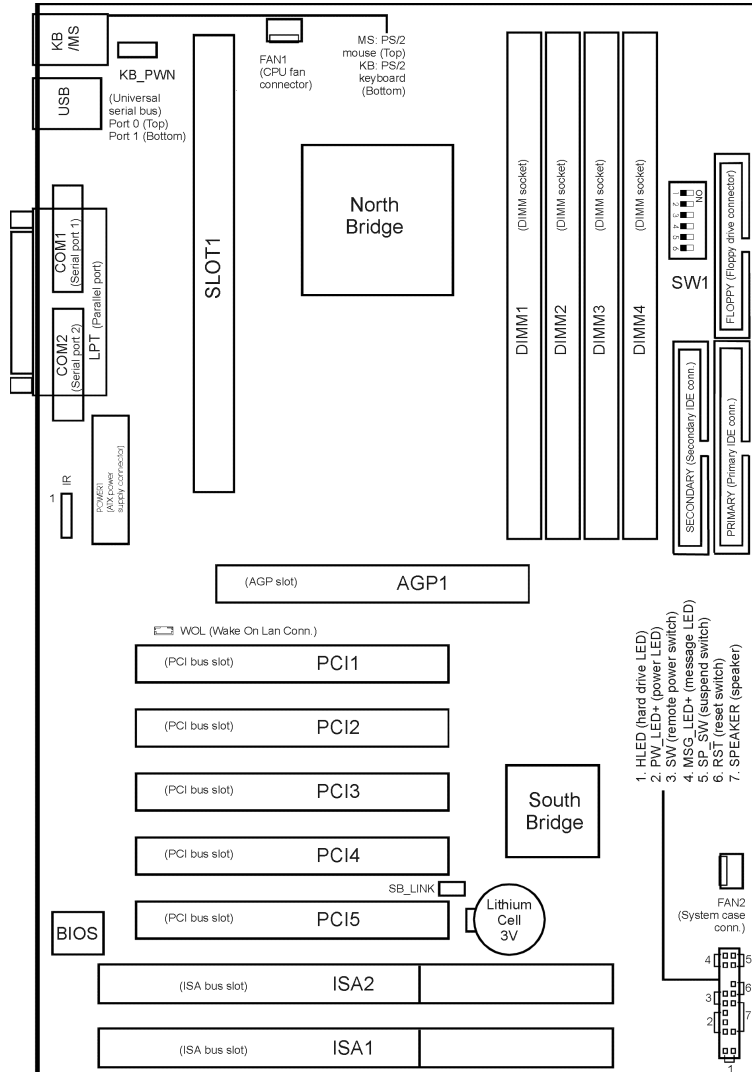
Selecting this field loads the factory defaults for BIOS and Chipset Features which the system automatically detects.

## 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

Onboard Mark	FUNCTION	PAGE
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

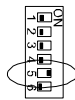


## 1). Set System Jumpers/Switches

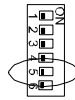
### *Clear CMOS: SW1-5*

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.

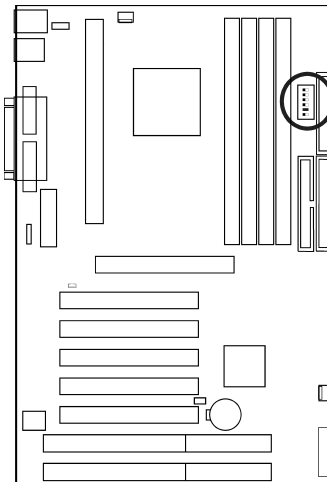
#### **SW5 (Clear CMOS)**



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

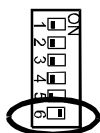
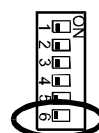


#### **Disable (Default)**



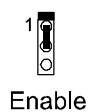
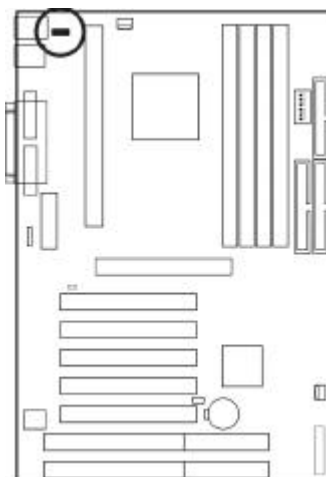
### *Clear Password: SW1-6*

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* =

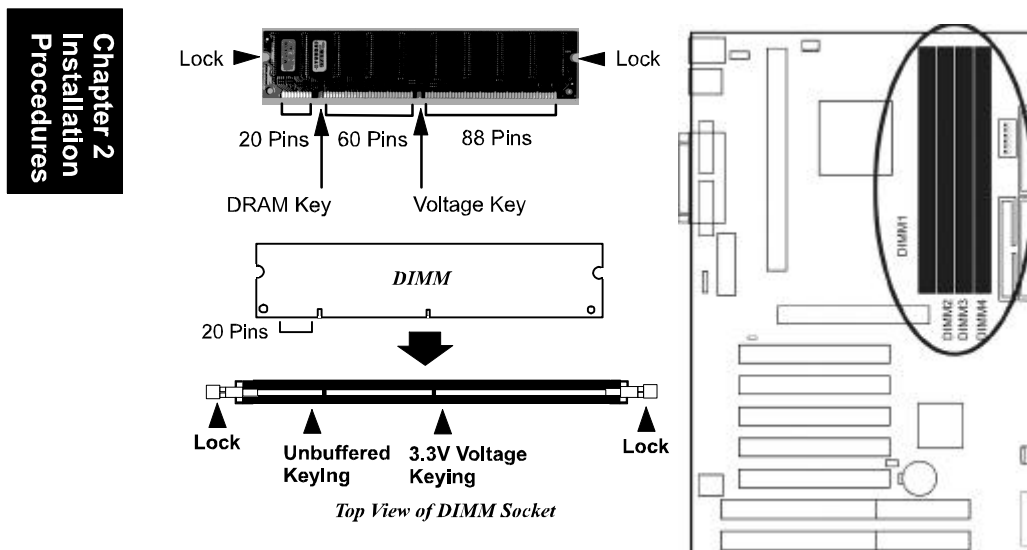
**NOTE:** The latest Virtual Channel Memory (VCM) SDRAM is also supported on this mainboard. Thus with the use of VC-100/133 MHz VCM-SDRAMs, memory performance can be greatly enhanced.

## Install and Remove DIMMs

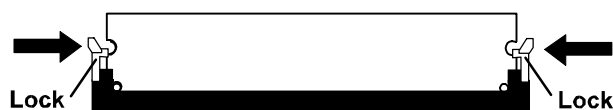
This mainboard supports 100MHz SDRAM DIMMs; when the system frequency set to 100MHz, PC100-compliant SDRAM should be used.

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

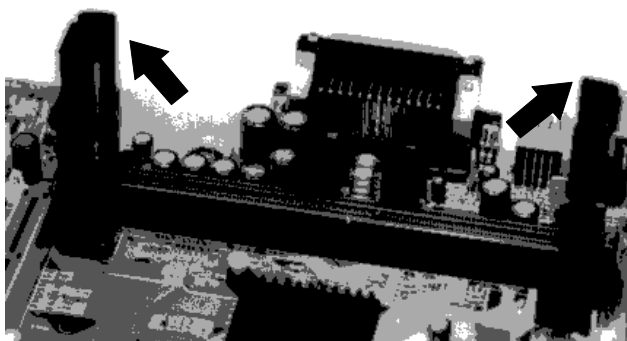
Two options of Retention Mechanism Assembly are offered for installing your CPU on this mainboard. One is installed on the mainboard by the manufacturer. The assemblies are foldable for saving space when shipping and packing.

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.

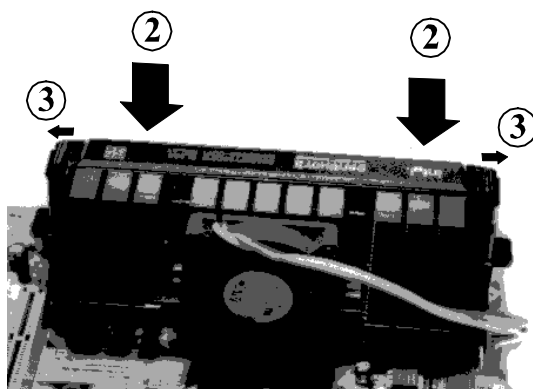
This section introduces you on how to install these devices.

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

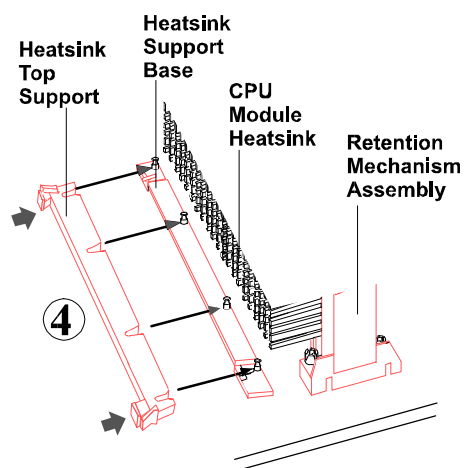
1. Pull out two sets of the Retention Mechanism Assembly upward to the right position.



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



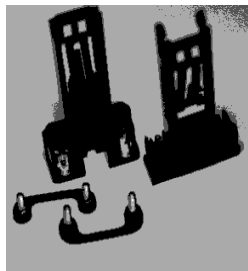
3. Pull the buttons outwards until click to the right positions.
4. Hook the Heatsink Top Support to the Heatsink Support Base to affix the CPU module.



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

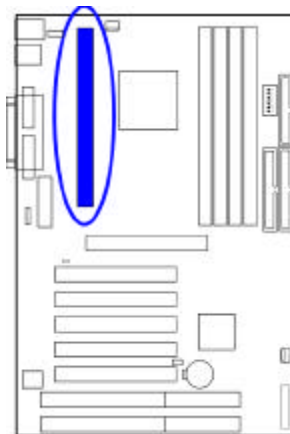
1. Unpack the plastic bag. Take out the Retention Mechanism Assembly (two pieces) and Retention Mechanism Attachment Mount (two pieces).

**Retention  
Mechanism  
Attachment  
Mount**

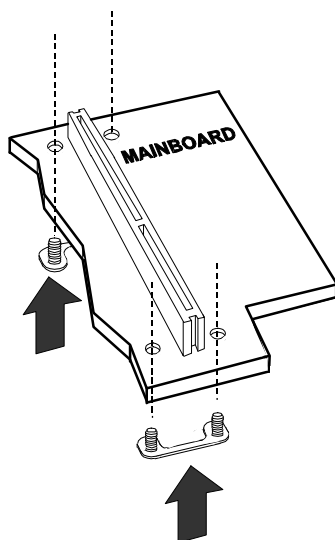


**Retention  
Mechanism  
Assembly**

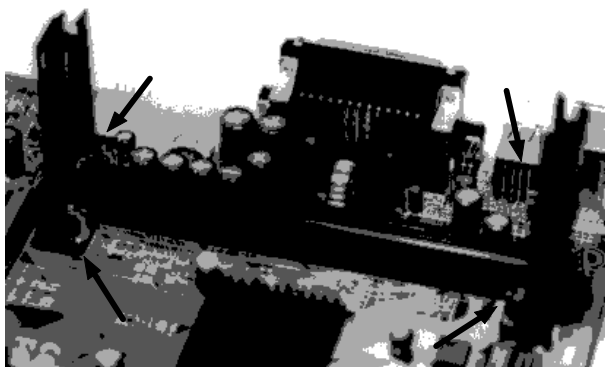
2. Locate SLOT1 on the mainboard.



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

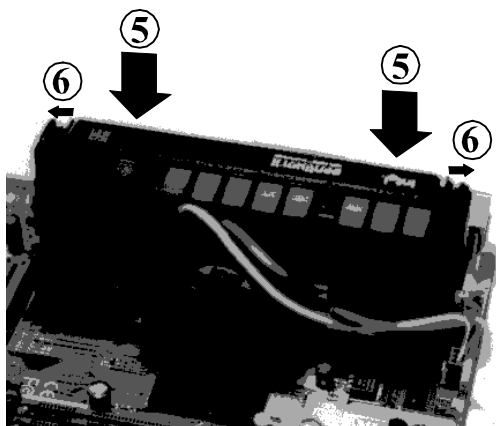


4. Place the Retention Mechanism Assembly on the board, on top of the Retention Mechanism Attachment Mounts.  
Affix the Retention Mechanism Assembly with four screws.  
(As the arrows point.)

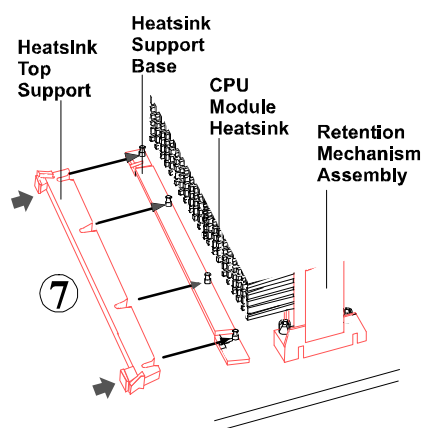




5. Insert the CPU module onto the SLOT1 along the Retention Mechanism Assembly.

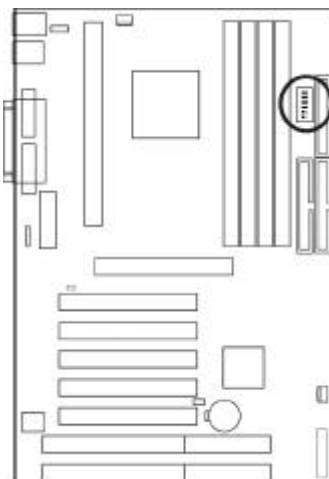


6. Pull the buttons outwards until click to the right positions.
7. Hook the Heatsink Top Support to the Heatsink Support Base to affix the CPU module.



### ***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.

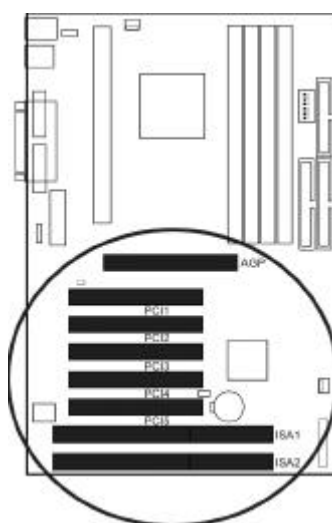


#### **SW1-1/2/3/4 (CPU Ratio Select)**

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.

## KA-6110 Mainboard Manual

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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.

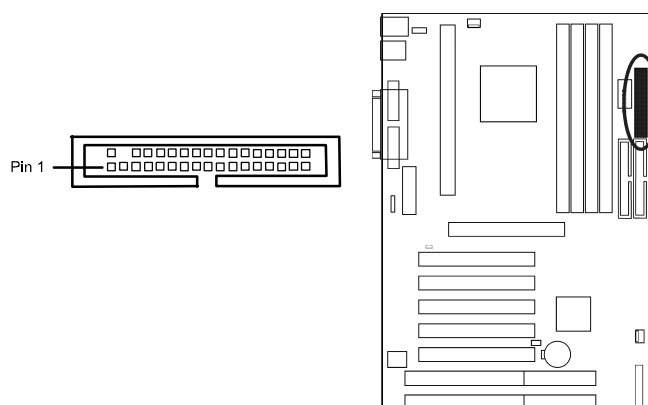
## 5). Connect Devices

### Connectors to Internal Devices

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

This connector provides the connection with your floppy disk drive.

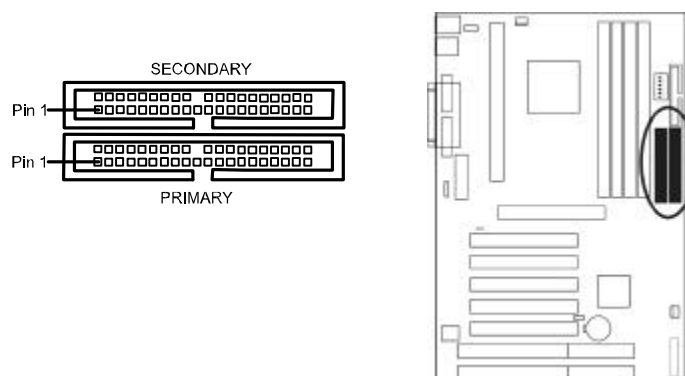
The red stripe of the ribbon cable must be the same side with the Pin 1.

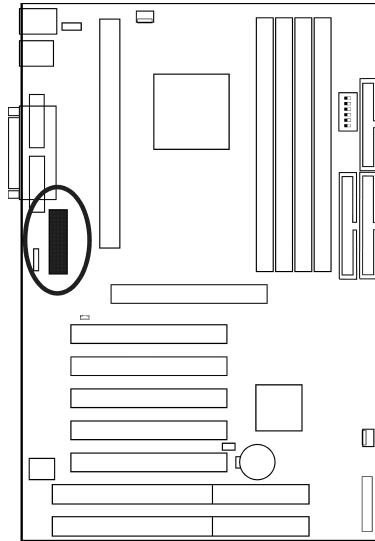


#### *IDE HDD Device Connectors: PRIMARY, SECONDARY*

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.

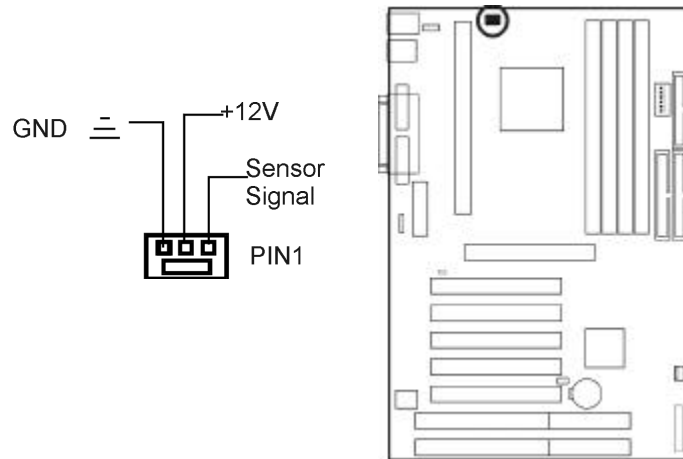




+12V	10	+5V
5V_VR	9	+5V
PWR_GOOD	8	-5V
GND	7	GND
+5V	6	GND
GND	5	GND
+5V	4	-PWR_ON
GND	3	GND
+3.3V	2	-12V
+3.3V	1	+3.3V

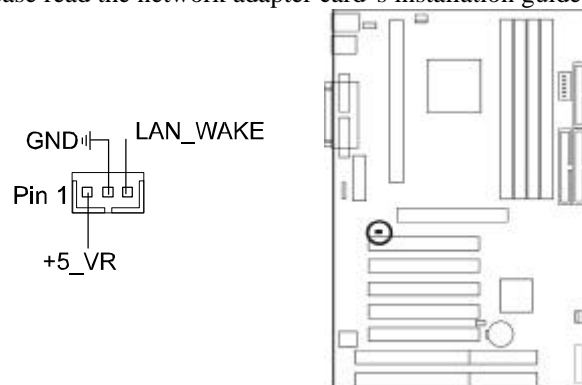
### ***CPU Fan Connector: FAN1***

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.



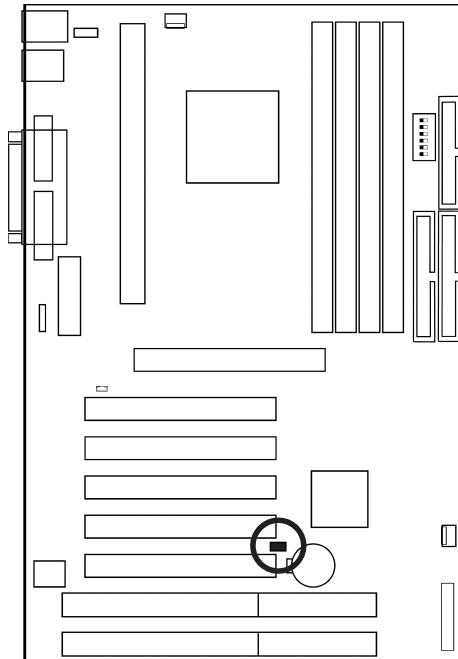
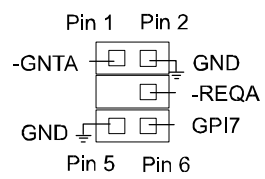
### ***Wake-On-LAN Connector: WOL***

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.

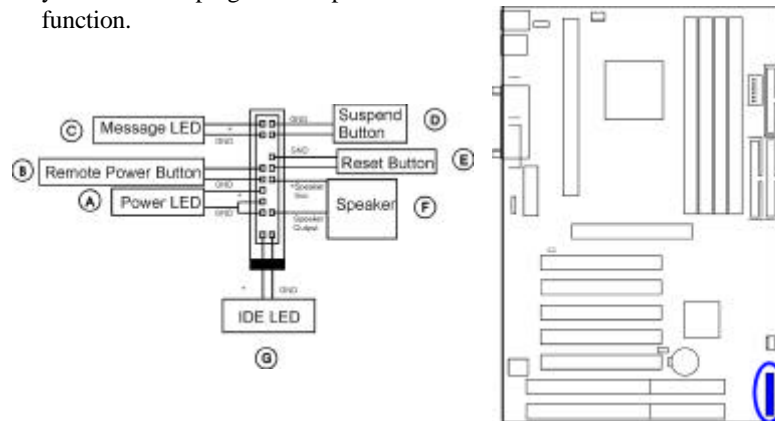




## Connectors to System Case

### 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.

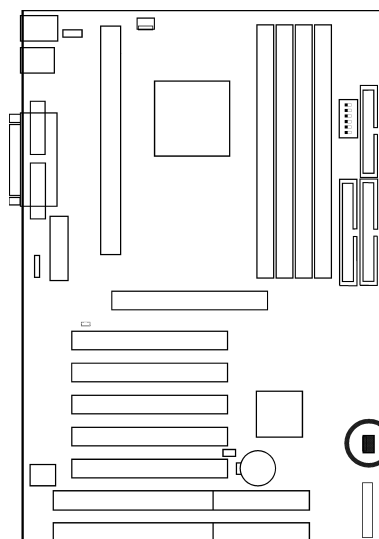
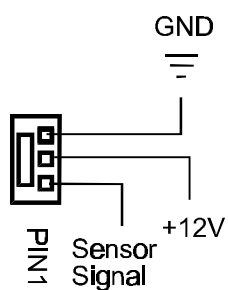
**Speaker (F)** is connected with the case speaker.

**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.

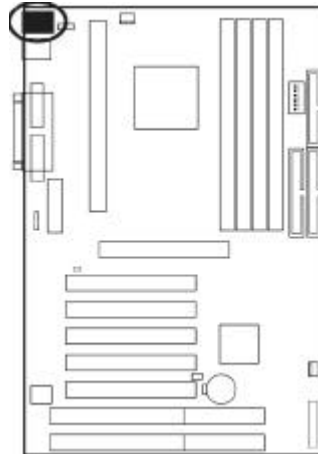
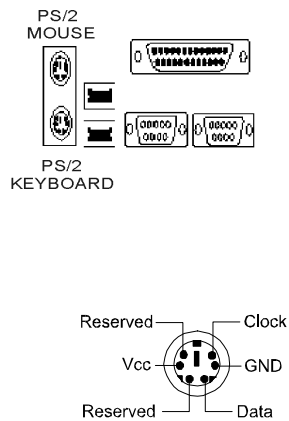
This 3-pin connector available on the board is for user to select one to link to the cooling fan on the system chassis to lower the system temperature.



## Connectors to External Devices

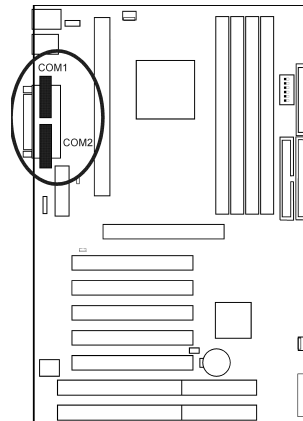
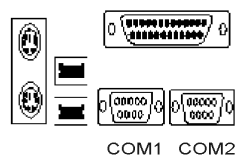
### *PS/2 Keyboard and Mouse Connector: KB, MS*

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



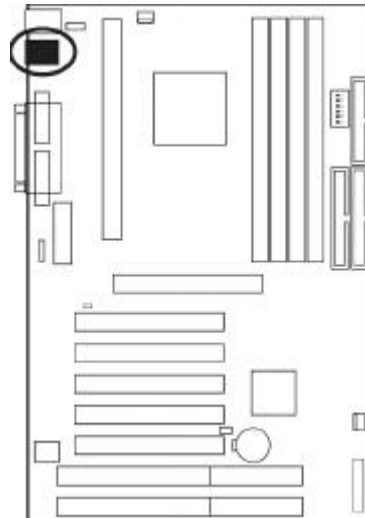
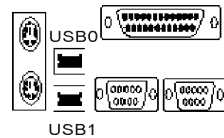
### *Serial Port Connectors: COM1, COM2*

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.



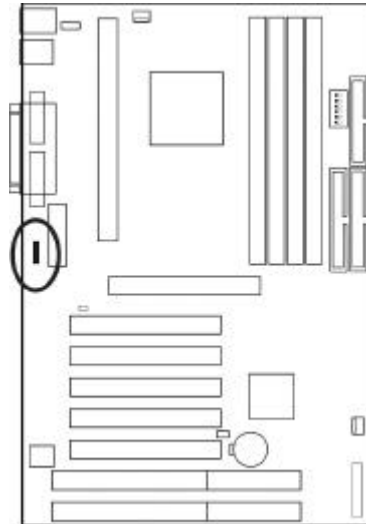
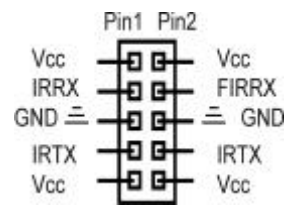
***Universal Serial Bus Connectors: USB0, USB1,***

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.



**Printer Connector: LPT**

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

