

Installation Procedures

The VL-603 has several user-adjustable jumpers on the board that allow you to configure your system to suit your requirements. This chapter contains information on the various jumper settings on your mainboard.

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

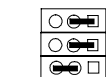
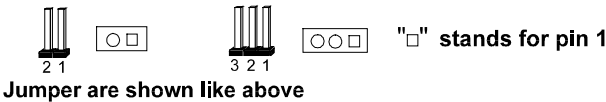
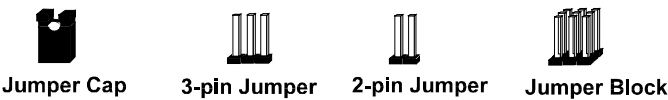
- Step 1 -
Set system jumpers
- Step 2 -
Install system RAM modules
- Step 3 -
Install the Central Processing Unit (CPU)
- Step 4 -
Install expansion cards
- Step 5 -
Connect ribbon cables, cabinet wires, and power supply
- Step 6 -
Set up BIOS software (see Chapter Three)
- Step 7 -
Set up supporting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

WARNING: Excessive torque may damage the mainboard. When using an electric screwdriver on the mainboard, make sure that the torque is set to the allowable range of 5.0 ~ 8.0kg/cm. Mainboard components contain very delicate Integrated Circuit (IC) chips. To prevent static electricity from harming any of the mainboard's sensitive components, you should follow some precautions whenever working on the computer:

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

1). Set System Jumpers

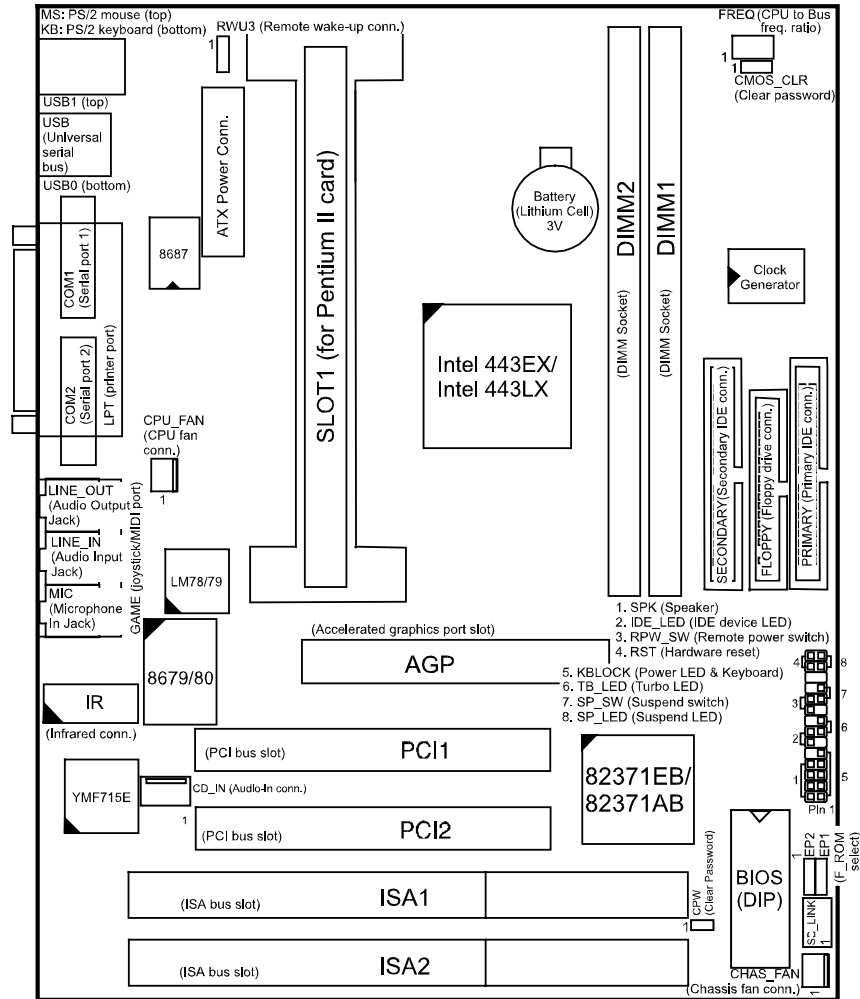
Jumpers are used to select the operation modes for your system. Some jumpers on the board have three metal pins with each pin representing a different function. A “1” is written besides pin 1 on jumpers with three pins. To **set** a jumper, a black cap containing metal contacts is placed over the jumper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



Jumpers in a Block

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

Components That Concern Installation



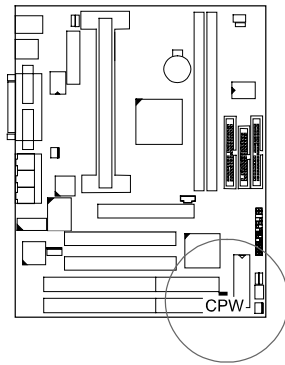
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* includes PW_LED, KB_LOCK, TB_LED, SP_SW, SPK, SP_LED, IDE_LED, RPW_SW, and RST connectors. (See Page 29 for more information.)

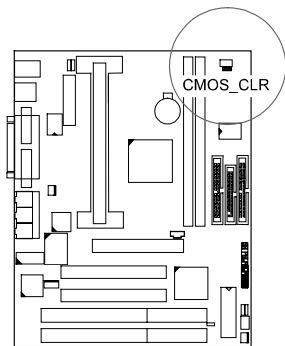
Clear Password: CPW

This jumper allows you to enable or to disable the password configuration. You may need to enable this jumper by shorting it with a jumper cap if you forget your password. To clear the password setting: (1) Turn off your computer, (2) Short this jumper by placing a jumper cap on it, (3) Turn on your computer, (4) Hold down the **<Delete>** key during bootup and enter BIOS Setup to re-enter user preferences, (5) Turn off your computer, (6) Remove the jumper cap, (7) Turn on your computer for the new settings to take effect.




CMOS Clear: CMOS_CLR

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

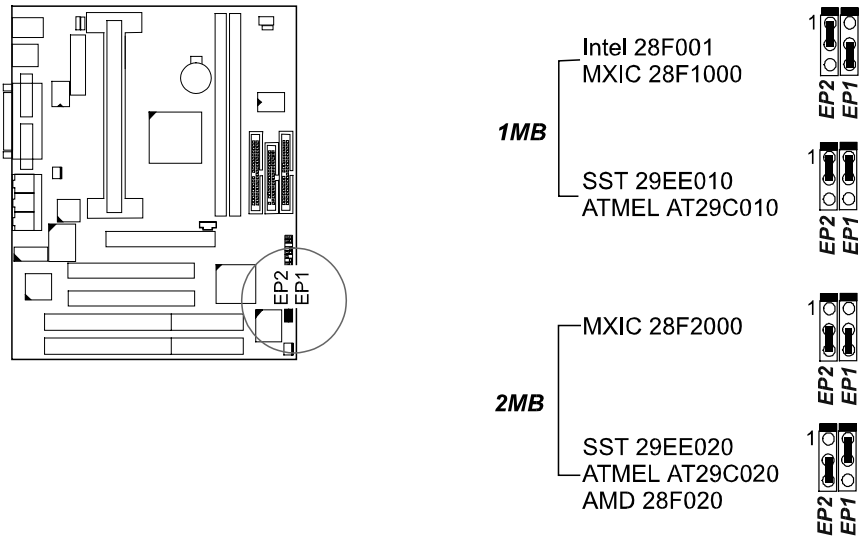


Enable 

Disable
(Default) 

Flash ROM Type Select: EP1, EP2

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



2). Install RAM Modules

SDRAM

The working space of the computer is the Random Access Memory (RAM). The system cannot act upon data unless it is loaded into RAM. When more memory is added, the working memory of the computer is larger, thereby increasing total performance. The mainboard RAM is comprised of two 168-pin Dual In-line Memory Modules (DIMMs). Each DIMM socket is able to support up to 128MB lightning-fast SDRAM.

SDRAM is an advanced new memory technology that helps boost overall system performance with its ability to synchronize all operations with the processor clock signal. This makes the implementation of control interfaces easier, and speeds up column access time. SDRAM features an on-chip burst counter that can be utilized to increment column addresses for very fast burst access, which means that SDRAM allows new memory access to be initiated before the preceding access has been finished.

Installation Procedures

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



DIMM

RAM Module Configuration

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

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

Or one 256MB DIMM on either DIMM1 or DIMM2.

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

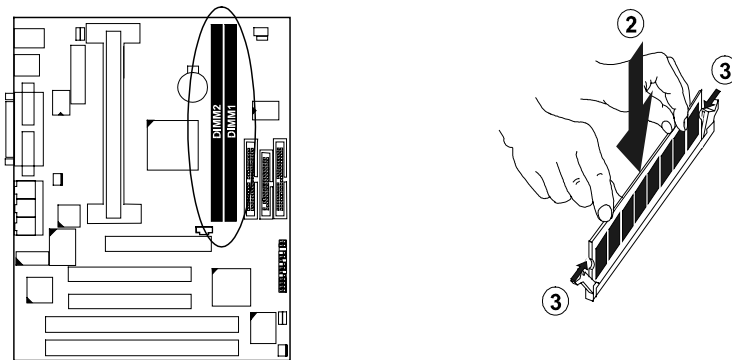
NOTE : This mainboard supports DIMMs with access speeds of 12ns, 10ns, or faster. ECC memory (available if onboard chip is the Intel 82443LX) and parity check is also supported.

Install DIMMs

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

NOTE: Do not use memory modules with more than 24 chips per module. Modules with more than 24 chips exceed the design specifications of the memory subsystem and will be unstable. The notch on the DIMM module will shift between left, center, or right to identify the type and also to prevent the wrong type from being inserted into the DIMM slot on the mainboard. Ask your retailer for the specifications before purchasing.

1. Locate the DIMM slots on the mainboard. (See the following figure.)



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

Remove DIMMs

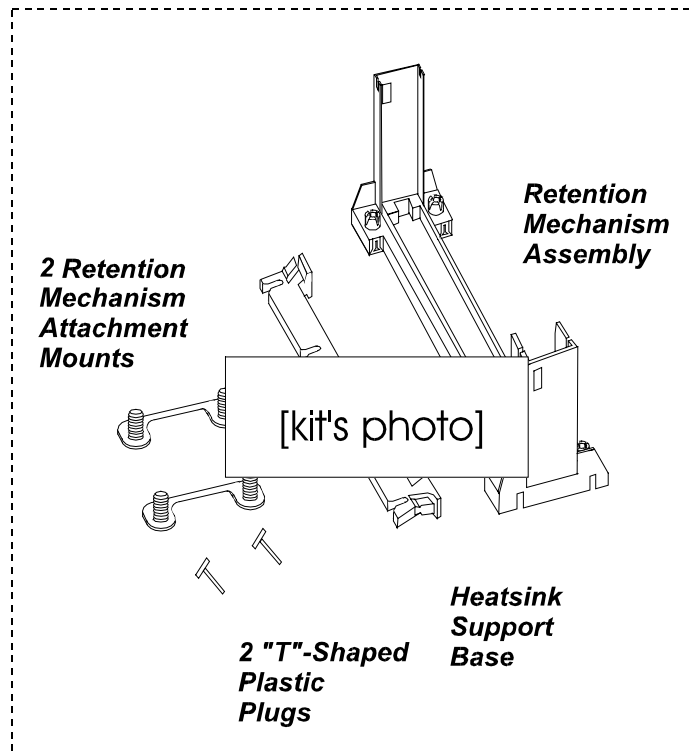
Press the clips with both hands to remove the DIMM.

3). Install the Central Processing Unit (CPU)

The mainboard comes with either a Retention Mechanism Kit for the Pentium® II and Deschutes CPU or a pre-installed Retention Mechanism for the Celeron™ CPU.

Retention Mechanism Kit (for Pentium® II or Deschutes CPU)

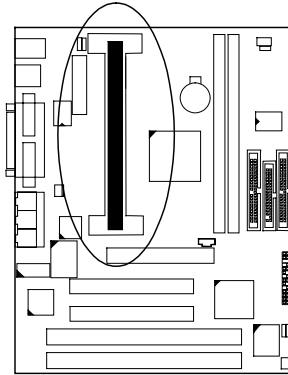
The mainboard comes with a Retention Mechanism Kit as shown below. If any piece is missing, please contact your local mainboard dealer to help you.



NOTE: If the two "T"-shaped plastic plugs and heatsink support base are not in the package, they may be already installed onboard by the manufacturer.

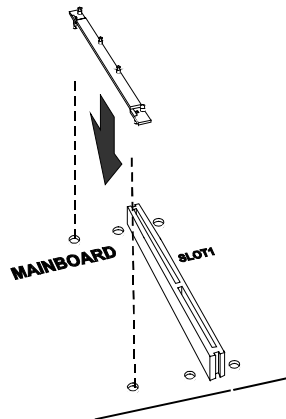
CPU Module Installation

1. Locate Slot1 on the mainboard.



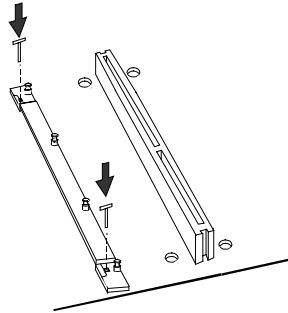
NOTE : If the two “T”-shaped plastic plugs and heatsink support base are already installed onboard by manufacturer, skip steps 2 and 3.

2. Place the Heatsink Support Base on the mainboard as shown.

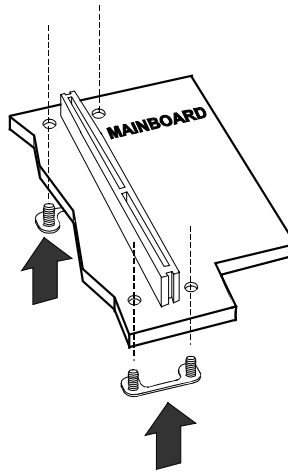


Installation Procedures

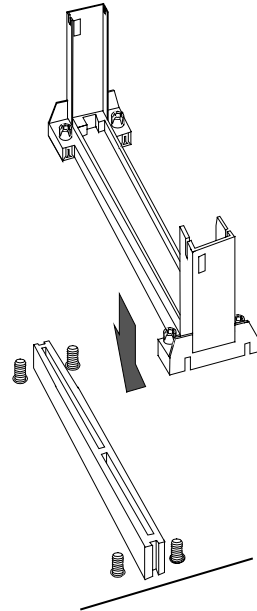
3. Affix it to the mainboard by inserting one “T”-shaped plastic plug into the hole on each end.



4. Install the two Retention Mechanism Attachment Mounts on to the underside of the mainboard.

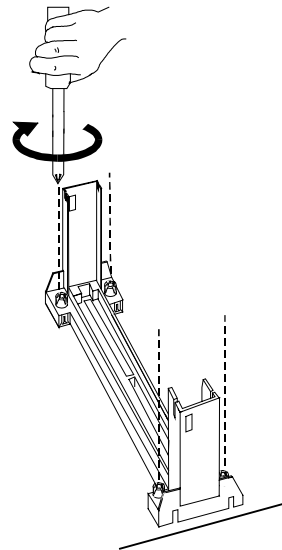


5. Place the Retention Mechanism Assembly on the mainboard, on top of the Retention Mechanism Attachment Mounts.

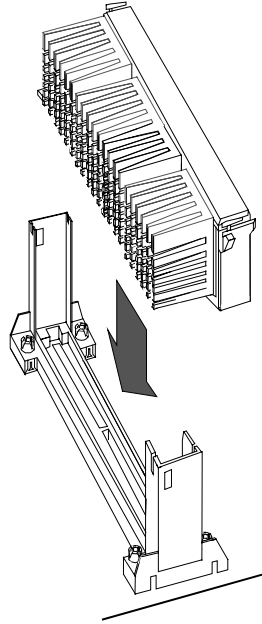


6. Affix the Retention Mechanism Assembly with four screws.

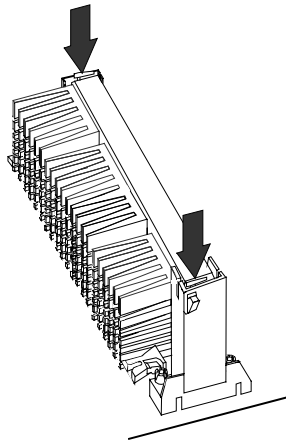
WARNING : Excessive torque may damage the mainboard. Tighten captive nuts to no more than 6 ± 1 inch/pound.



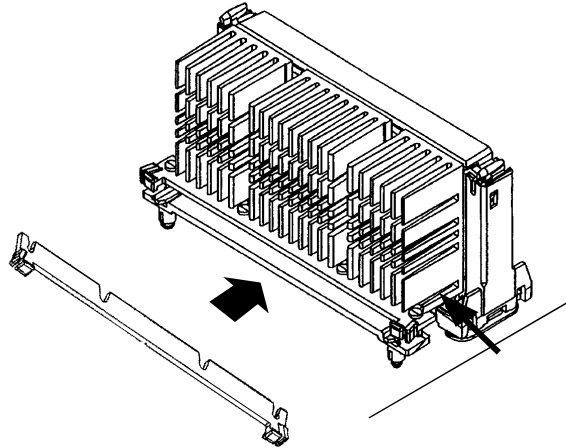
7. Slide the CPU module into the Retention Mechanism Assembly.



8. Press the buttons on either end of the CPU module.



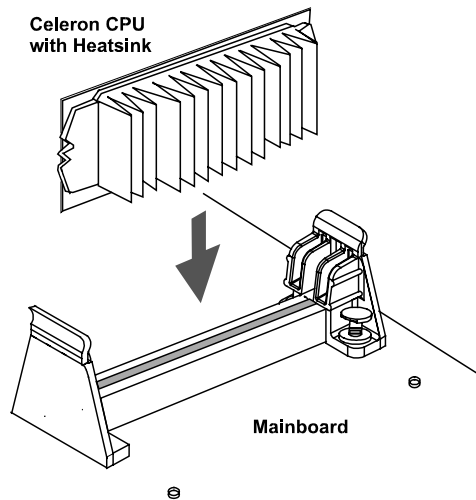
9. Horizontally slide the Heatsink Top Support into the lowest gap on the CPU module heatsink to hook the Heatsink Top Support to the Heatsink Support Base to affix the CPU module.



WARNING: If the heatsink is not mounted tightly against the CPU cartridge, the CPU will overheat.

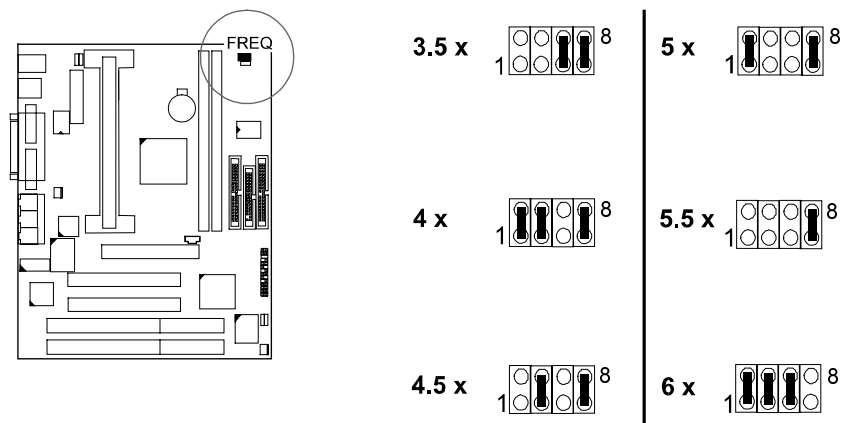
Retention Mechanism (for Celeron™ CPU)

The mainboard comes with a Retention Mechanism for the Celeron™ CPU. Insert the CPU as shown below.



CPU to Bus Frequency Ratio: *FREQ*

This jumper is used set the ratio of the internal frequency of the CPU to the bus clock.

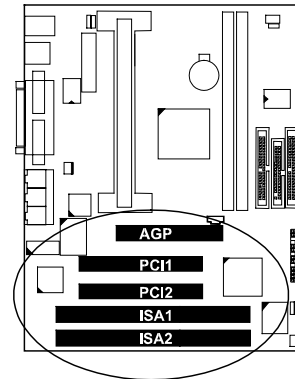


Intel Pentium II CPUs

FREQUENCY	BUS FREQUENCY	RATIO
333 MHz	66 MHz	5 x
300 MHz	66 MHz	4.5 x
266 MHz	66 MHz	4 x
233 MHz	66 MHz	3.5 x

4). Install Expansion Cards

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



CAUTION : Make sure to unplug the power supply when adding or removing expansion cards or other system components. Failure to do so may cause severe damage to both the mainboard and expansion cards.
Always observe static electricity precautions. See “Handling Precautions” at the start of this manual.

To install an expansion card, follow the steps below:

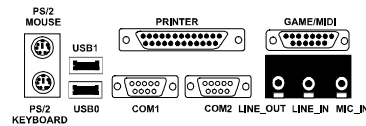
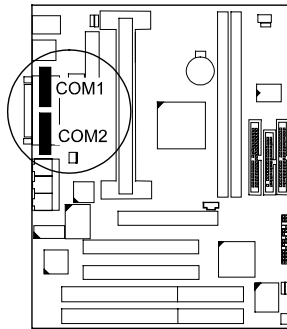
1. Remove the computer chassis cover and select an empty expansion slot.
2. Remove the corresponding slot cover from the computer chassis. Unscrew the mounting screw that secures the slot cover and pull the slot cover out from the computer chassis. Keep the slot cover mounting screw nearby.
3. Holding the edge of the peripheral card, carefully align the edge connector with the expansion slot.
4. Push the card firmly into the slot. Push down on one end of the expansion card, then the other. Use this “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 Cables and Power Supply

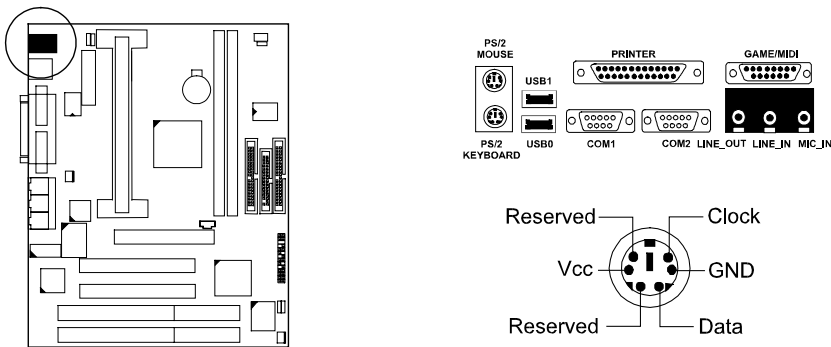
Serial Port Connectors: COM1, COM2

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



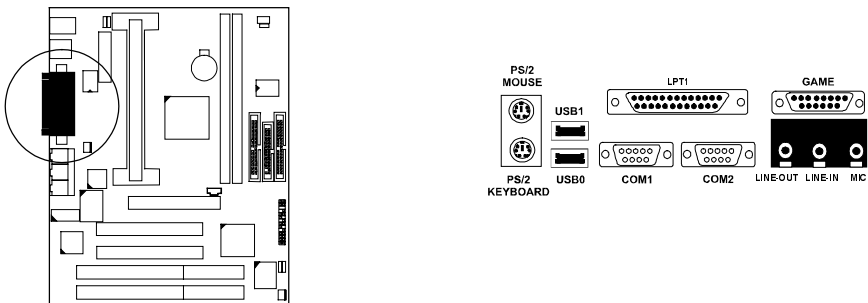
PS/2 Keyboard and Mouse Connector: PS1

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



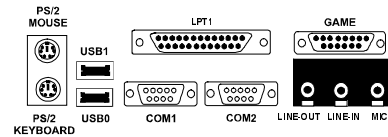
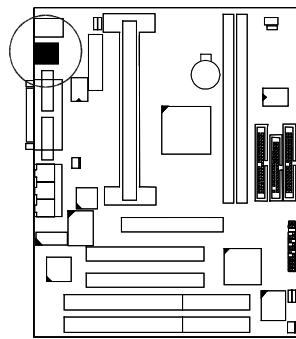
Printer Connector: LPT1

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



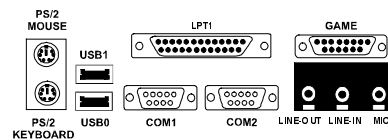
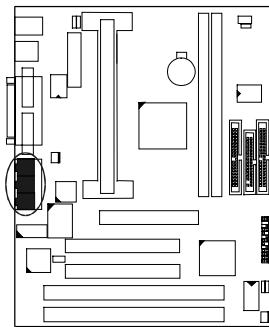
Universal Serial Bus Connectors: USB

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



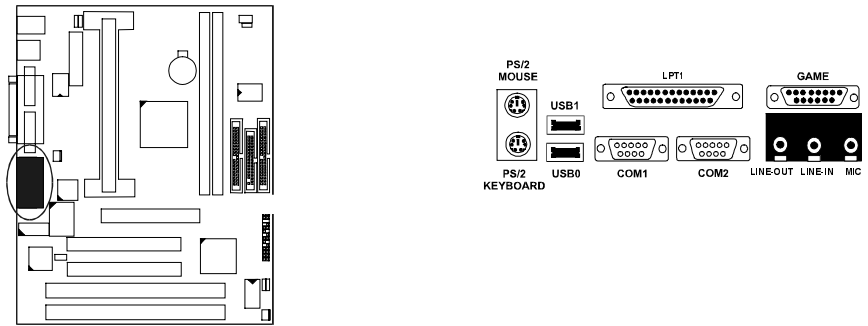
Audio Port Connectors: LINE-OUT, LINE-IN, MIC

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



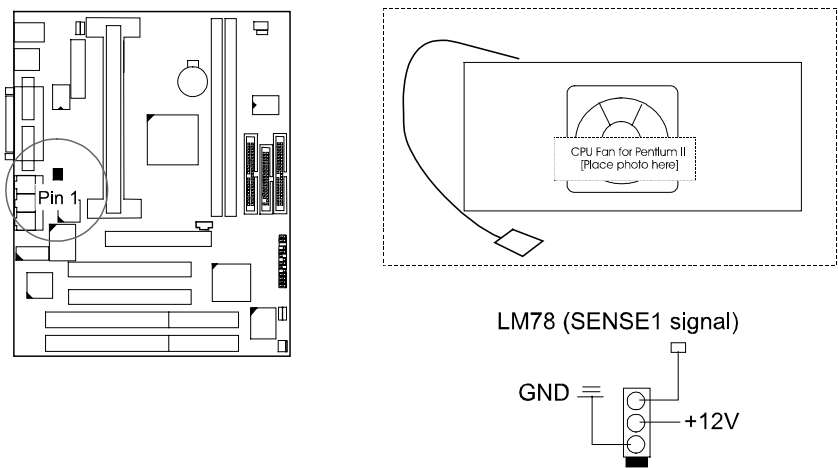
Joystick/MIDI Connector: *GAME*

This 15-pin female connector allows you to connect game joysticks or game pads for playing games. Connect MIDI devices for playing or editing audio.



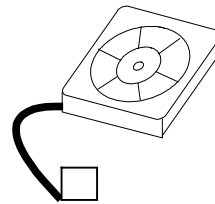
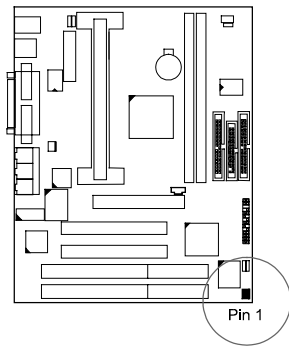
CPU Fan Connector: *CPU_FAN*

This connector is linked to the CPU fan. When the system is in suspend mode, the CPU fan will turn off; when it reverts back to full-on mode, the fan will turn back on. The photo below shows a type of CPU fan for the Pentium II cartridge. The CPU cartridge does not need a heatsink with this type of fan installed. Refer to the CPU fan installation manual for more information.



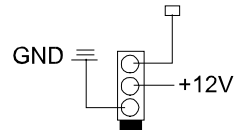
System Case Fan Connector: CHAS_FAN

The 3-pin connector links to your cooling fan on the system case to lower the system temperature. Depending on the fan manufacturer, the wiring and plug may be different. Connect the fan's plug to the mainboard taking into consideration the polarity of the connector.



[case fan photo]

LM78 (SENSE2 signal)

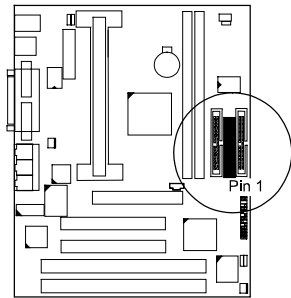


WARNING: Without sufficient air circulation, the CPU cartridge may overheat and cause damage to both the CPU cartridge and the mainboard. Damage may occur to the mainboard and/or the CPU fan if these pins are incorrectly used. These are not jumpers, do not place jumper caps over these pins.

Floppy Diskette Drive Connector: FDD

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

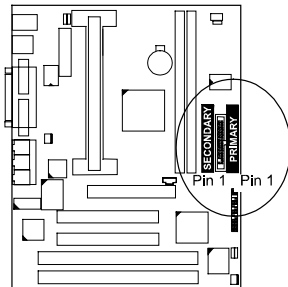
NOTE: Ribbon cables should always be connected with the red stripe on the Pin 1 side of the connector. The four corners of the connectors are labeled on the mainboard. Pin 1 is the side closest to the power connector on hard drives and floppy drives. IDE ribbon cable must be less than 18in. (46cm), with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



IDE HDD Device Connectors: PRIMARY, SECONDARY

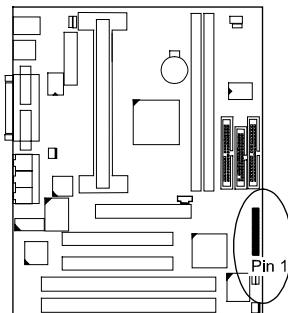
These two connectors, which supports the provided IDE hard disk ribbon cable, are used for your IDE hard disk drives, CD drives, LS-120 drives, or IDE ZIP drives. After connecting the single end to the mainboard, connect the two plugs at the other end to your hard disk(s). If you install two hard disks, you must configure the second drive to Slave mode by setting its jumper accordingly. Refer to the documentation of your hard disk for the jumper settings. BIOS now supports SCSI device or IDE CD-ROM bootup. Pin 20 is removed to prevent inserting in the wrong orientation when using ribbon cables with pin 20 plugged.

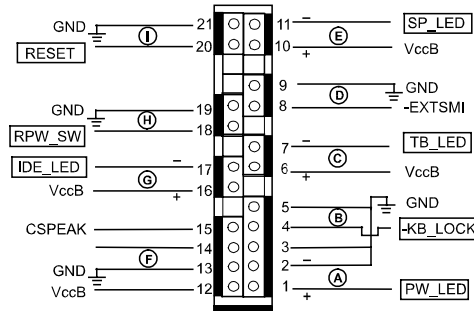
TIP : You may configure two hard disks to be both Masters using one ribbon cable on the primary IDE connector and another ribbon cable on the secondary IDE connector. You may install one operating system on an IDE drive and another on a SCSI drive and select the boot disk through BIOS Setup.



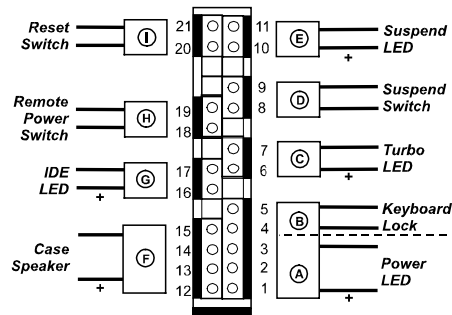
Front Panel Block Connector: F_PNL

This block connector includes: PW_LED, KB_LOCK, TB_LED, SP_SW, SPK, SP_LED, IDE_LED, RPW_SW, and RST connectors.





Pinout Assignment



Connection Diagram

PW_LED (A) – 2-pin male

The system power LED lights when the system is powered on.

KB_LOCK (B) – 2-pin male

Allows the keyboard to access the system; if shorted, prevents keyboard access to the system (this feature is used in combination with the case-mounted keylock).

TB_LED (C) – 2-pin male

Indicates if the system speed is in normal or turbo.

SP_SW (D) – 2-pin male

Suspend mode switch allows user to manually place the system into a suspend mode or “green” mode where system activity will be instantly decreased to save electricity and expand the life of certain components when the system is not in use. This connector connects to the case-mounted suspend switch. Wake-up can be controlled by settings in the BIOS but the keyboard will always allow wake-up (the SP_SW connector cannot wake-up the system).

SP_LED (E) – 2-pin male

Indicates the system is in Suspend mode when LED is lit. In the event that your system case does not have a Suspend LED, you can connect it instead to the Turbo LED.

SPK (F) – 4-pin male

This connector connects with the case-mounted speaker.

IDE_LED (G) – 2-pin male

This connector supplies power to the cabinet’s IDE activity LED. Indicates the IDE HDD I/O (read and write activity by devices connected to the Primary and Secondary IDE connectors) is being accessed when LED is lit. If the case-mounted LED does not light, try reversing the 2-pin plug.

RPW_SW (H) – 2-pin male

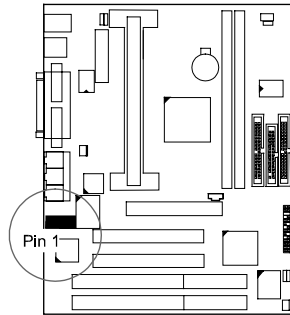
This connector is connected with the remote power (soft power) switch. If an ATX power supply is installed, pushing this switch will turn off and on the system power instead of the power switch on the power supply.

RST (I) – 2-pin male

This connector connects to the case-mounted reset switch for rebooting the system without having to turn off power switch. This is a preferred method of rebooting in order to prolong the life of the system's power supply.

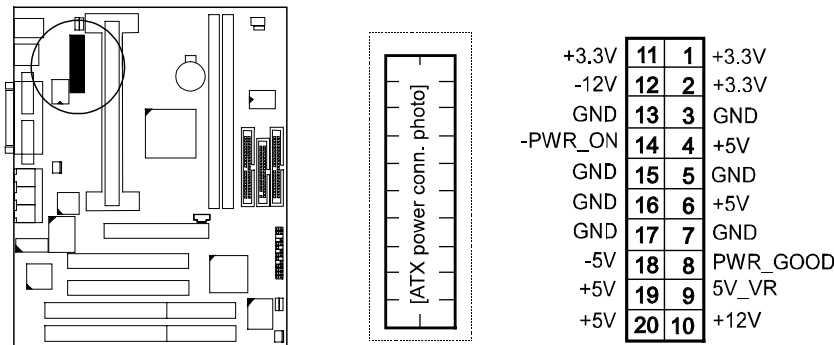
Infrared Connector: IR

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



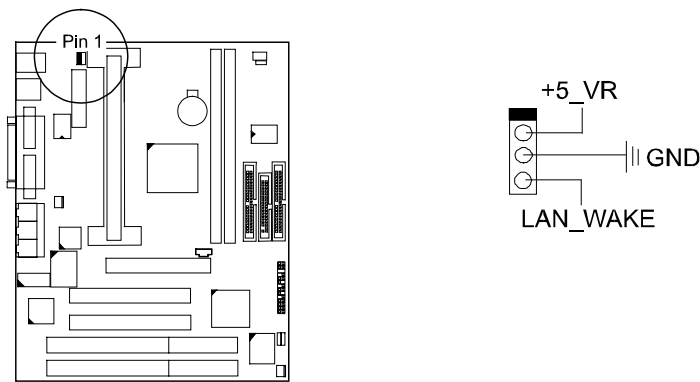
ATX Power Connector: ATX_PWR

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



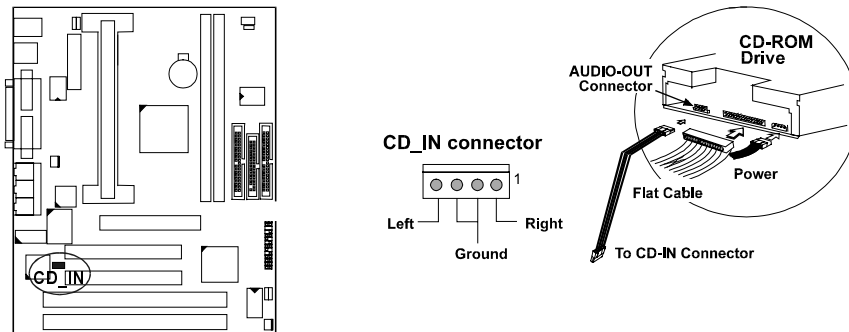
Remote Wake-Up Connector: RWU

This 3-pin connector allows the remote LAN server to wake up the system with a LAN card installed. Refer to the LAN card installation guide for details.



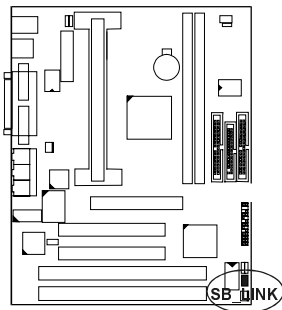
CD-ROM Drive Audio-out Connector: CD_IN

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



PCI Add-on Audio Card Connector: SB_LINK

This 6-pin male connector allows you to connect to your PCI add-on audio card connector cable when not using the onboard sound chip.



Power Connection Procedures

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

Powering Off the Computer

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