

Chapter 2 Hardware Setup

To Get things ready for Hardware setup !

1. We recommend to install your CPU before any other components.
For detailed installation instructions of processor, you can also refer to the pamphlet enclosed in your CPU package.
2. Installing a cooling fan with a good heatsink is a must for proper heat dissipation for your CPU. Get ready an appropriate fan with heatsink for proper installation. Improper fan and installation will damage your CPU.
3. In case CPU Vcore, CPU clock or Frequency Ratio is adjustable on board, please follow the instructions described in the User manual for proper setup. Incorrect setting will cause damage to your CPU.

The following topics are included in this chapter:

2-1 Pentium 4 CPU Installation

2-2 Pentium 4 CPU Fan Installation

2-3 Memory Installation

2-4 HDD/FDD Installation

2-5 AGP 4X (Accelerated Graphic Port) Installation

2-6 ATX 2.03 Power Supply Installation

2-7 Jumper Settings for Devices on board

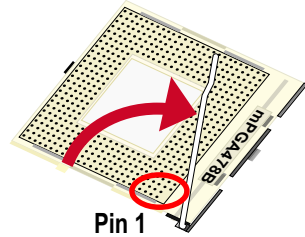
2-8 Other Connectors Configuration

2-1 CPU Pentium 4 Installation with Socket 478

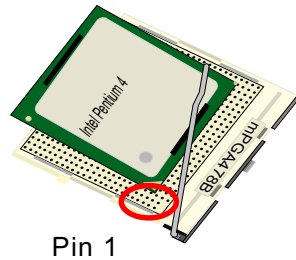
This series of mainboards is built with CPU Socket 478 (with 478 pins) supporting the Intel Pentium 4 CPU:

- Follow the steps described in this section to install the 478-pin Pentium 4 CPU into the on board Socket 478.
- After installation of Pentium 4 CPU, you must also install the specific Pentium 4 CPU fan designed in tandem with this CPU. This CPU Fan installation is described in next section.

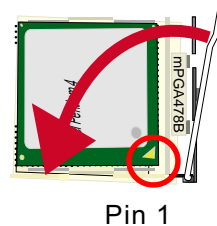
1. First pull sideways the lever of Socket 478, and then turn it up 90° so as to raise the upper layer of the socket from the lower platform.



2. Configure Pin 1 of CPU to Pin 1 of the Socket, just as the way shown in the diagram on the left. Adjust the position of CPU until you can feel all CPU pins get into the socket with ease.



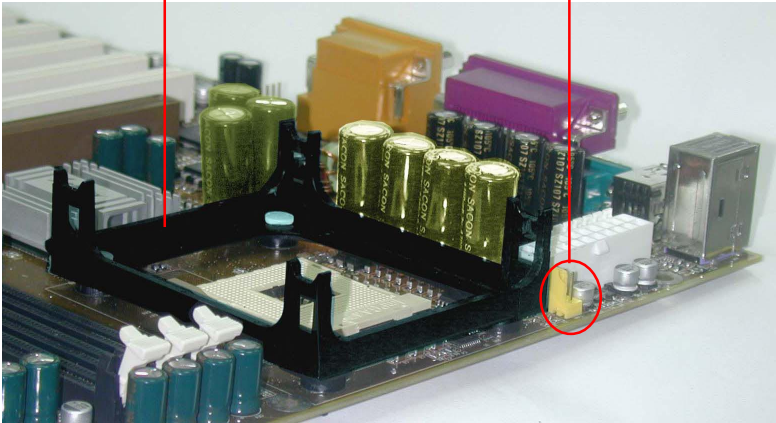
3. Make sure that all CPU pins have completely entered the socket and then lower down the lever to lock up CPU to socket.



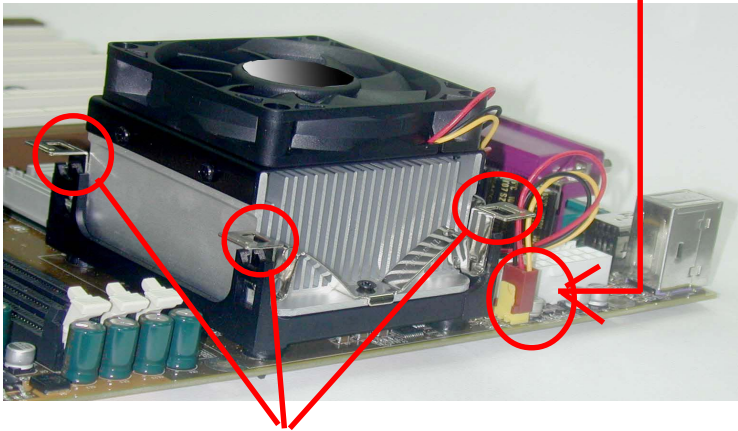
2-2 Pentium 4 CPU Fan Installation:

Pentium 4 Fanbase

CPU Fan Connector



Connect to CPU FAN connector



Press down 4 latches to lock fan to fanbase

2-3 Memory Installation

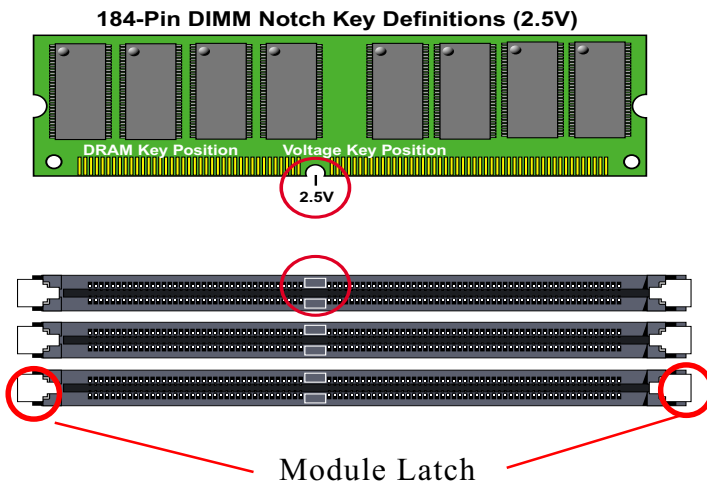
How to tackle with the memory Modules:

- Make sure to unplug your power supply before adding or removing memory module. Failure to do so may cause severe damage to both your main board and the memory module.
- Pay attention to the orientation of the DIMM slots. Forcing a DIMM in a socket improperly will damage the memory module and socket.
- Make sure you have the right type of memory module for your mainboard.

2-3.1 To Install DDR SDRAM Module for this Series :

- This series of mainboards only supports up to 3GB registered DDR SDRAM or 1.5GB unbuffered DDR SDRAM, with 3 DDR DIMM sockets on board. Do not insert other type of modules into these sockets.
- DDR DIMM socket has 184-pins and one notch. Insert a DDR SDRAM vertically into the 184-pin socket with the notch matching the one in the socket. Press the Module down in a gradual way until it surely reaches the bottom and clicks straight up the two latches on the left and right of the socket.

Key Point: Press the module down gradually until it has totally reached the socket bottom and clicked up both two socket latches completely. If any one of the latches has not turned up completely, you should unplug the module and press it down the socket a bit more firmly.



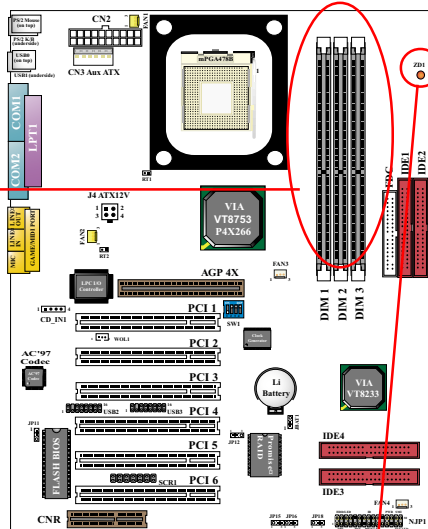
2-3.2 To Remove a DIMM:

Press down the holding latches on both sides of socket and the module will be released from the DIMM socket.

2-3.3 Indicator ZD1 DIMM Socket On:

An indicator ZD1 is designed on board. Whenever system is started or is in STR status (Suspend to RAM), all the DIMM sockets on board will also get powered on with the set voltage, resulting in ZD1 lighting up. This ZD1 indicator is to warn users that, whenever DIMM socket is powered, no memory module should be removed from or added into it.

DDR DIMM Sock-
ets (184-pin)

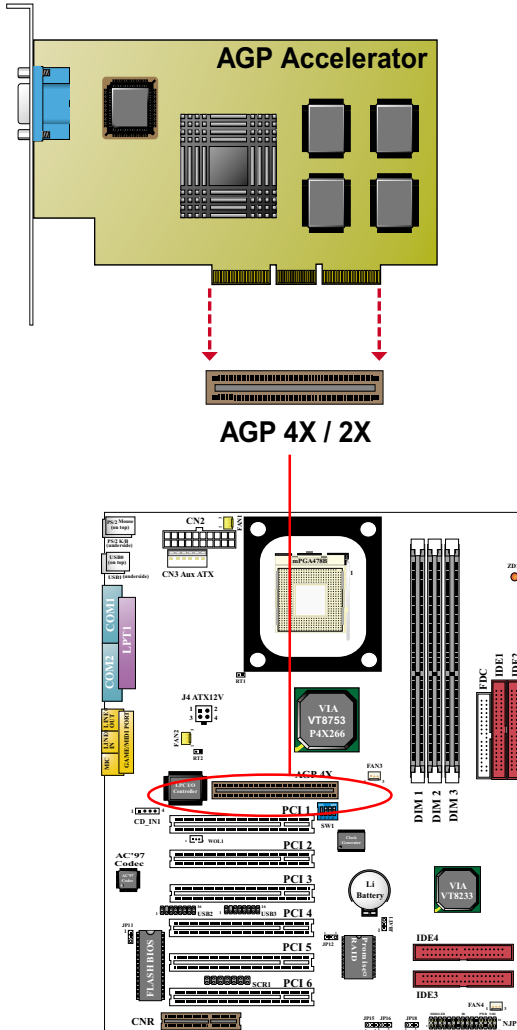


ZD1

DIMM Power On Indicator

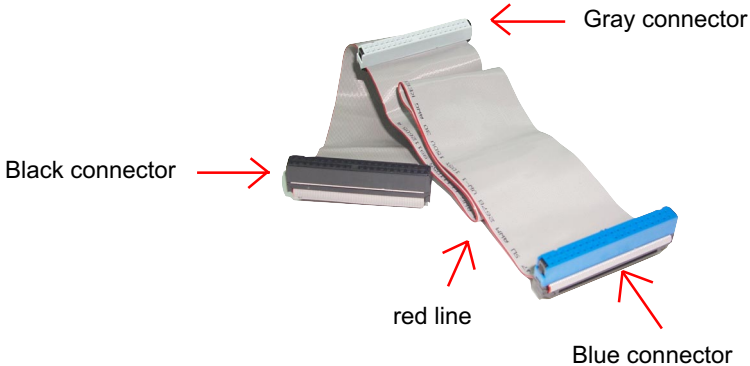
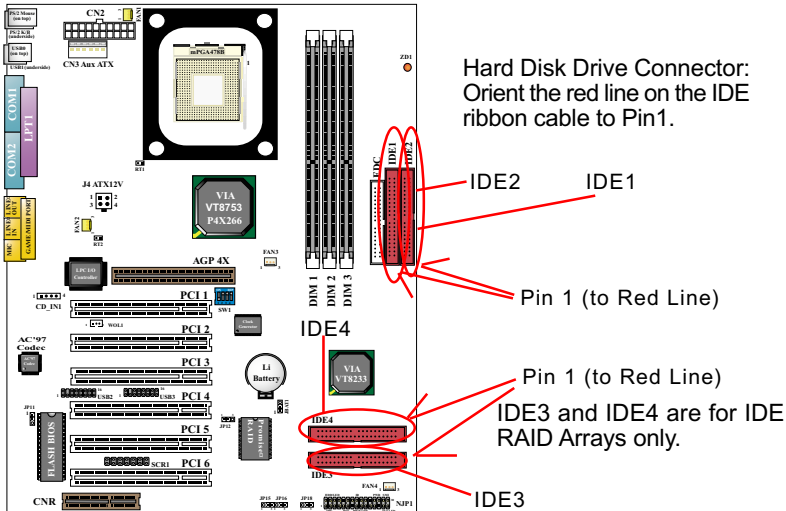
2-4 AGP 4X (Accelerated Graphics Port) Card Installation :

The AGP 4X slot on board supports 4X / 2X AGP card configuration. User can install either a 4X or 2X AGP card.



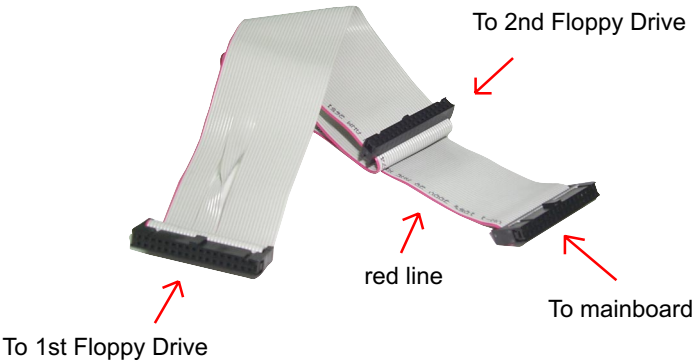
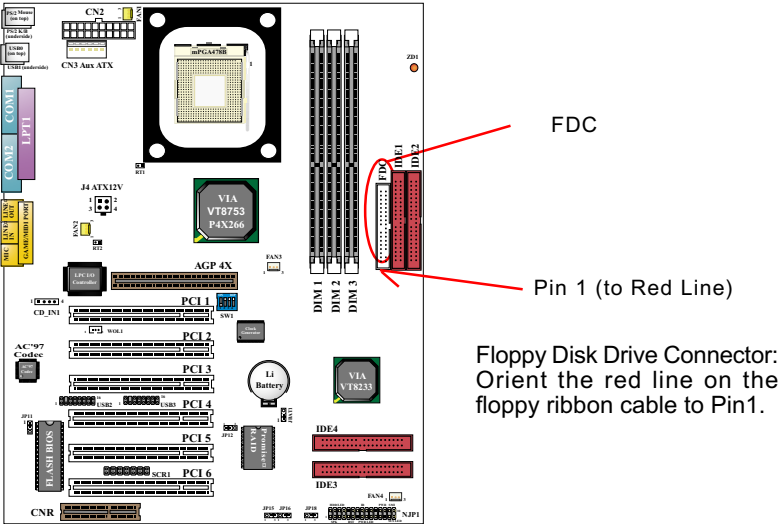
2-5 HDD/FDD Installation

To install HDD (Hard Disk Drive), you may connect the connector of IDE cable to the primary (IDE1) or secondary (IDE2) connector on board, and then connect the gray connector to your slave device and the black connector to your master device. If you install two hard disks, you must configure the second drive to Slave mode by setting its jumpers correctly. Please refer to your hard disk documentation for the jumper settings.



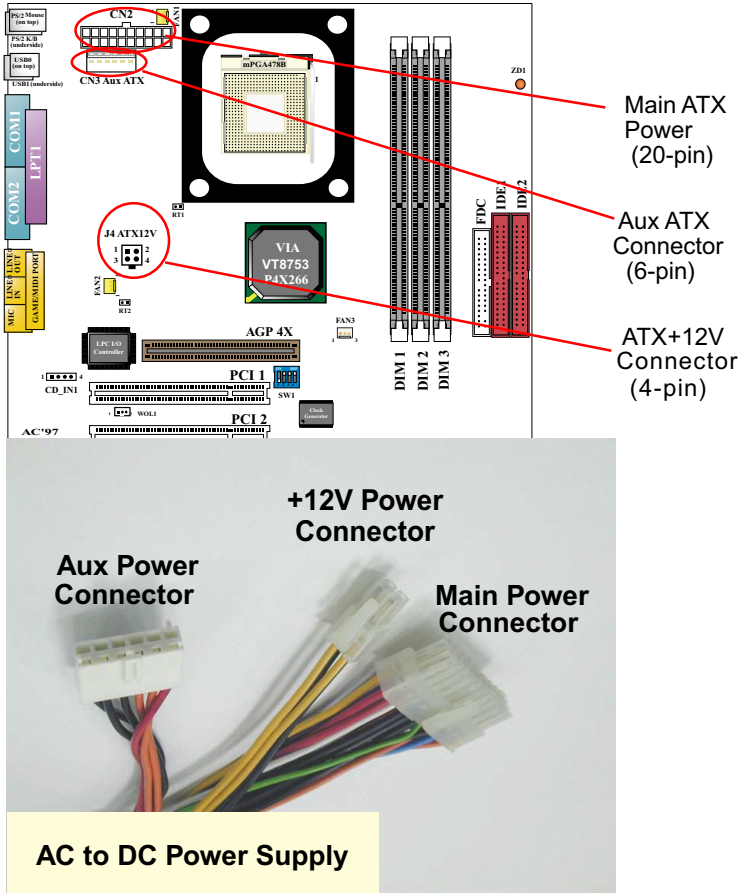
IDE Cable

To install FDD (Floppy Disk Drive), you should connect the end of cable with single connector to the board , and connect the other end with two plugs to the floppy drives.



FDD Cable

2-6 ATX V 2.03 Power Supply Installation



Intel Pentium 4 requires ATX V2.03 Power Supply. To set up ATX2.03 Power Supply on this series, 3 ATX power connectors are needed:

1. Main ATX Power Connector to Main Power DC output of Power Supply;
2. Aux ATX Connector to Aux Power DC output of Power Supply;
3. ATX +12V Connector to +12V DC output of Power Supply;

How to tackle with Jumpers:

- Do not remove the jumper when power is on. Always make sure the power is off before changing any jumper settings. Otherwise, mainboard could be damaged.
- In the Jumper setting diagram, all jumper pins covered with black marks stand for closed pins by jumper caps.

2-7.1 Switch 1 CPU Clock Select

This Series of mainboards are shipped to users with a 5-DIP Switch 1, by which user can select a CPU clock to match with the Pentium 4 processor selected on board. So users are not recommended to take Switch 1 as a tool for overclocking. It is safer and more advisable for users to select the CPU clock as close as possible to the one marked on the selected CPU.

<div> <div>SW1</div> <div>On</div> <div>Off</div> <div> </div> <div>CPU Clock Select</div> </div>				
	1	2	3	4
	Off	On	On	On
	(Default)			
CPU clock (MHz)	S1	S2	S3	S4
100 (default)	off	on	on	on
103	off	on	off	on
107	on	off	off	on
110	off	off	off	on
133	on	off	on	on



• **Advice from our Engineering Team:**

CPU Overclocking should always take all other components on board into account. No matter what Host clock your CPU has, any attempt to set your CPU to higher clock than the host one will get no guaranty of success. Instead, you are taking the risk of breaking the stability of your CPU as well as the mainboard.

2-7.2 JBAT1 Clear CMOS

When you have problem with rebooting your system, you can clear CMOS data and restore it to default value. To clear CMOS with Jumper JBAT1, please follow the steps below:



- (1) Power off system;
- (2) Set JBAT1 to Pin 2-3 closed.
- (3) After 2 or 3 seconds, return the JBAT1 setting to Pin1-2 closed.
- (4) CMOS data are restored to default.
Remember never clear CMOS when system power is on.

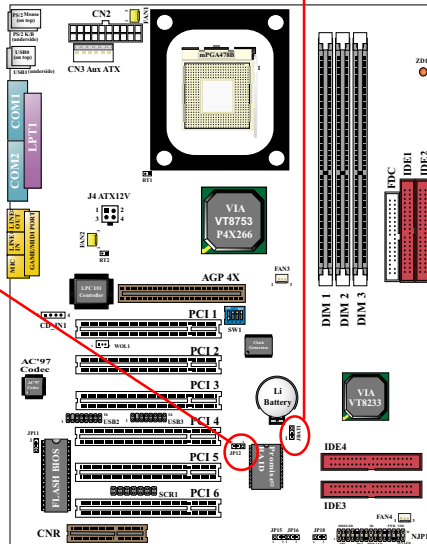
JBAT1	
	2-3 closed
To clear CMOS	
	1-2 closed (default)
To return to normal status	

2-7.3 Jp12 RAID Controller Select:

On board SL-85DRV⁺ and SL-85DRV⁺-X only.

For the mainboards carrying Promise RAID controller, JP12 at Pin1-2 closed is to enable the RAID functions so that users can start to install the RAID arrays and RAID drivers. If JP12 is set at Pin2-3 closed, the RAID controller is disabled.

Jp12 RAID Controller Select	
	Enabled (default)
	Disabled



2-7.4 Jp18 Voice Diagnostic Language Select

On board SL-85DRV-X, and 85DRV⁺-X.


- A Voice Diagnostic Function is incorporated in “Advanced BIOS Features” of the “Award BIOS Setup” as “VD-Tech II Function”. With this function enabled in “Advanced BIOS Features”, it will voice out the problems or conflicts whenever user configures the components or boots up the PC system.
- The voice can be in Chinese or English, depending on the setting of Jumper JP18. Changing the setting of JP18 will change the language of the voice.

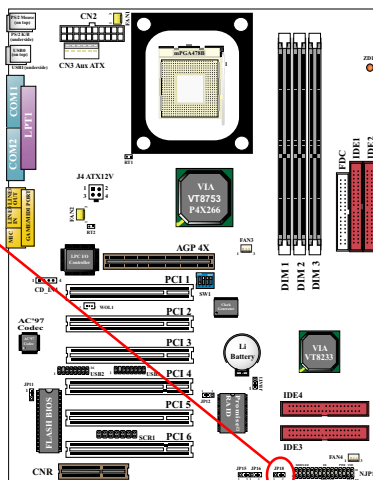
English Voice Content

- 1.The Processor might be damaged or not installed properly.
- 2.The memory module might be damaged or not installed properly.
- 3.The VGA card might be damaged or not installed properly.
- 4.The IDE cable might be damaged or not installed properly.
- 5.Please clear CMOS setting.
- 6.System available.

國語語音內容

- 1.中央處理器可能損壞或未插好
- 2.記憶體模組可能損壞或未插好
- 3.顯示卡可能損壞或未插好
- 4.IDE排線可能損壞或未插好
- 5.請清除CMOS設定
- 6.系統開機成功



Jp18 VD-Tech II Language Select		
1 	1-2 closed	Chinese
1 	2-3 closed	English (default)



2-7.5 Jp16 Suspend to RAM (STR)



Jp16 is designed to support the S3 mode (Suspend to RAM) of ACPI (Advanced Configuration and Power interface) which is usually integrated in such operating systems as Win 98se or Win 2000.

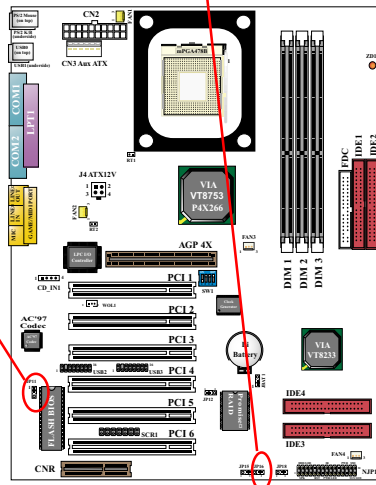
- To enable the STR function, you must first set up Jp16, and then enter "BIOS Setup", then "Power management Setup" to choose the item "ACPI Suspend Type". In this item, choose S3(STR) mode to enable Suspend to RAM function.
- With STR enabled, you power off your system with Standby mode, and you can reboot your system directly to the screen of power-off without going through the reboot procedures.

Jp16 Suspend to RAM		
1		Disabled
1		Enabled (default)

2-7.5 Jp11 Flash ROM Write Protection Select

Jp11 is designed to support the "Flash ROM write Protection" function when you boot your system. Setting Jp11 1-2 closed will protect your Flash ROM from virus attack every time you boot your system.

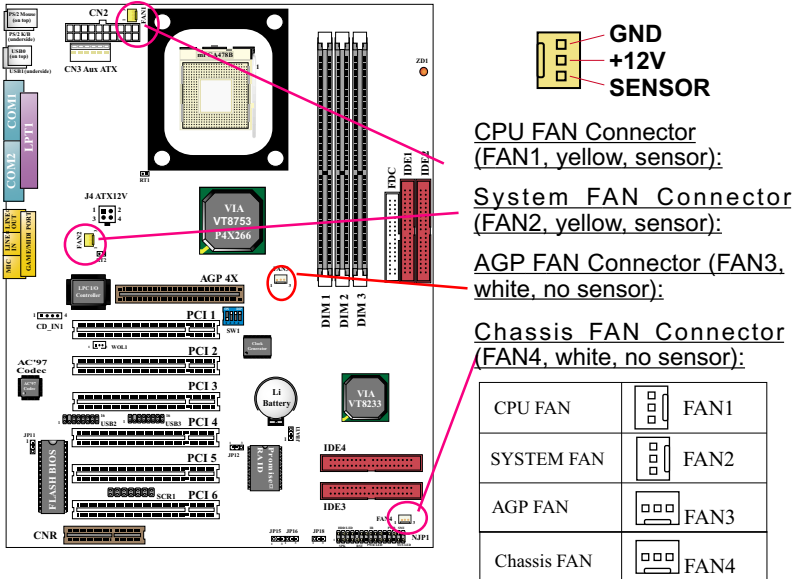
Jp11 Flash ROM Write Protection		
1		Enabled (default)
1		Disabled



2-8 Other Connectors Configuration

This section lists out all connectors configurations for users' reference.

2-8.1 On Board FAN Connectors (FAN1,FAN2, FAN3)

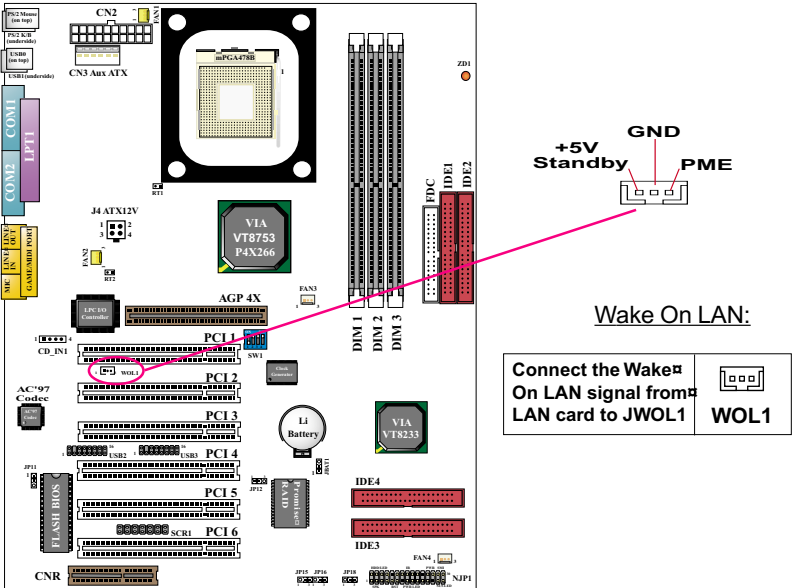


These fan connectors support CPU/System/AGP/Chassis cooling fan with +12V. When connecting the wire to FAN connectors, users should make sure that the red wire is for the positive current and should be connected to pin +12V, and the black wire is Ground and should be connected to pin GND. If your mainboard has Hardware Monitor chipset on board, you must use a specially designed fan with speed sensor to take advantage of the monitoring function.

For fans with speed sensors, each rotation of the fan blades will send out 2 electric pulses, by which System Hardware Monitor will work out the fan rotation speed by counting the pulses.

NOTE : 2 "Yellow" fan connectors are used on this series to mark that they support fan speed sensor function. The other two white fan connectors do not support sensor function.

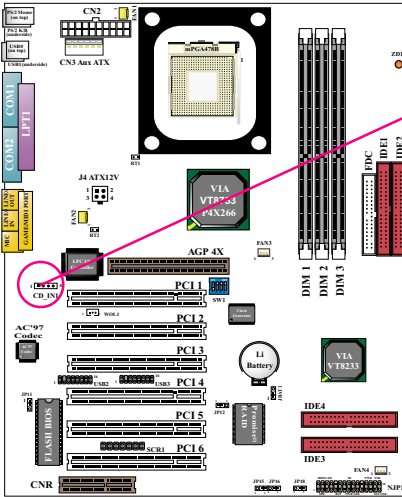
2-8.2 WOL1 Wake On LAN



This connector connects to a LAN card with a Wake On LAN output. The connector powers up the system when it receives a wake-up packet or signal through the LAN card.

This feature requires that Wake On LAN feature is enabled in the BIOS setting called **“Power Management Setup”** and that your system must be on ATX power supply with at least **720mA / +5V** standby power.

2-8.3 CD-ROM Audio Connector (CD_IN1/CD_IN2)

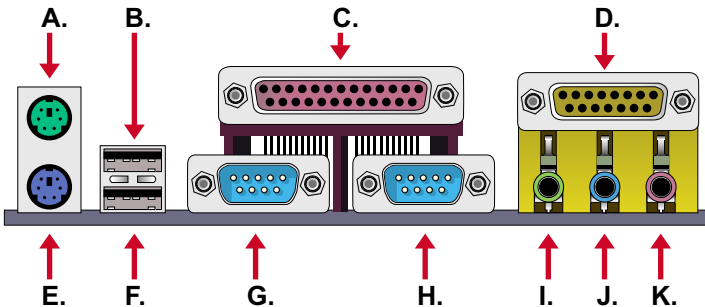


1 ■■■■
CD_IN1

CD-ROM Audio
Pin Assignment

PIN NO.	CD_IN1
PIN 1	Left Channel
PIN 2	GND
PIN 3	GND
PIN 4	Right Channel

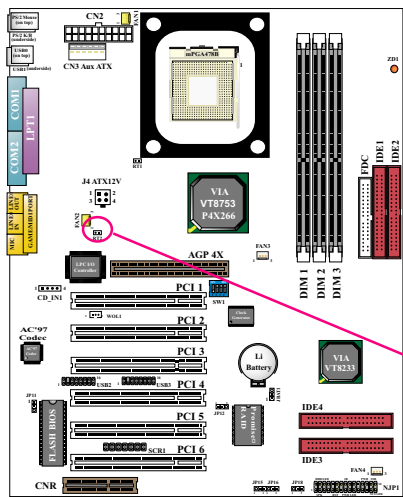
2-8.4 Chassis Panel Connector



A : PS/2 MOUSE PORT
B : USB 0 PORT
C : LPT1 PORT
D : GAME/MIDI PORT
E : PS/2 KEYBOARD PORT
F : USB 1 PORT

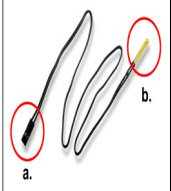
G : COM1 PORT
H : COM2 PORT
I : LINE/SPEAKER OUT
J : LINE IN
K : MICROPHONE INPUT

2-8.5 Thermal Sensor Connector (RT2)




Thermal Sensor Connector (RT2):

RT2: THERMAL SENSOR CONNECTOR



a. b.

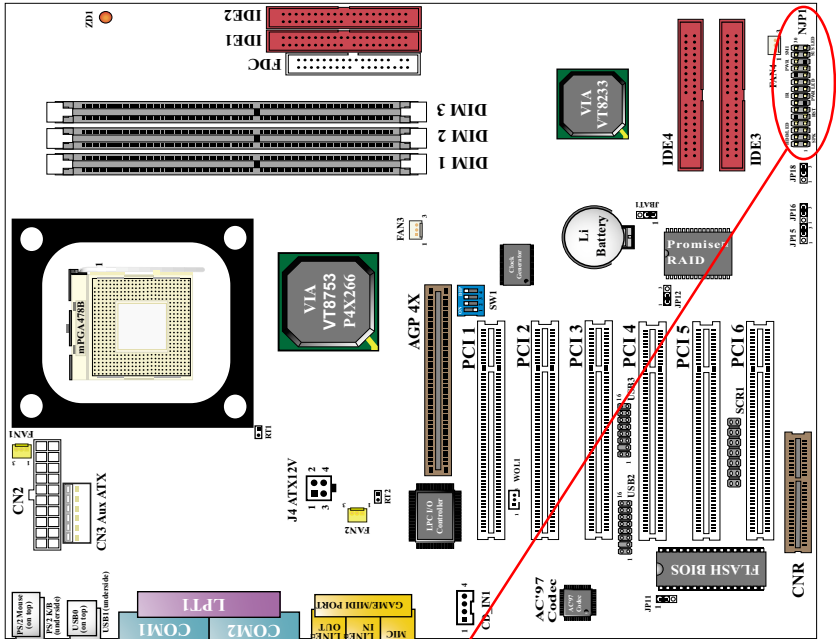
a: Connect to RT2.
b: Connect this thermal sensor to particular device which generates lots of heat such as Hard Driver, VGA chip, etc. When connected, user could observe the temperature change from the BIOS program.

 **RT2**

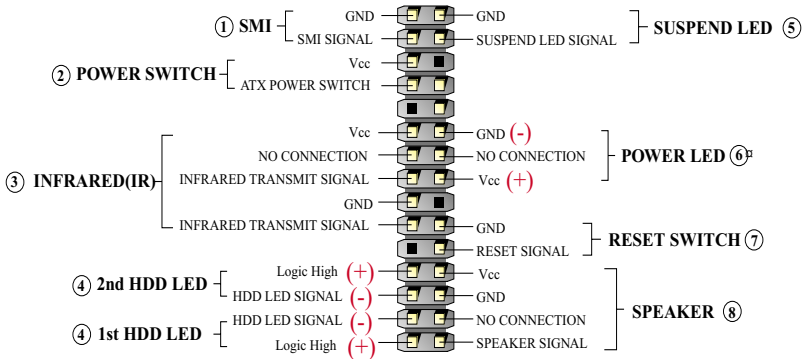
We provide a thermal cable in the mainboard package. This thermal cable is to monitor device generating a lot of heat, such as HDD, Graphics card etc. Please connect the end (a) of the thermal cable to mainboard RT2 header, and tape another end (b) of thermal cable on to the device which you want to monitor. After you have finished the thermal cable installation, you will **see the detected temperature in BIOS setup or Hardware monitor utility.**

2-8.6 Complex Header NJP1

This complex Header consists of 9 connectors providing various supports:



NJP1



1. SMI Connector (System Management Interrupt):

CONNECTION: This 2-pin connector is connected to the case-mounted Suspend Switch.

FUNCTION: Manually placing the system into a Suspend mode or "Green" mode.

2. Power Switch Connector:

CONNECTION: Connected to a momentary button or switch.

FUNCTION: Manually switching the system between "On" and "Soft Off". Pressing the momentary button for more than 4 seconds will also turn the system off.

3. IR Connector (Infrared Connector):

CONNECTION: Connected to Connector IR on board.

FUNCTION: Supporting wireless transmitting and receiving module on board.

4. 1st HDD LED Connector / 2nd HDD LED Connector:

CONNECTION: Connected to HDD LED.

FUNCTION: To supply power to HDD LED.

5. Suspend LED Connector:

CONNECTION: Connected to Suspend indicator.

FUNCTION: To supply power to "Suspend indicator".

6. Power LED Connector:

CONNECTION: Connected to System Power LED.

FUNCTION: To supply power to "System Power LED".

7. Reset Switch Connector:

CONNECTION: Connected to the case-mounted "Reset Switch".

FUNCTION: To supply power to "Reset Switch" and support system reboot function.

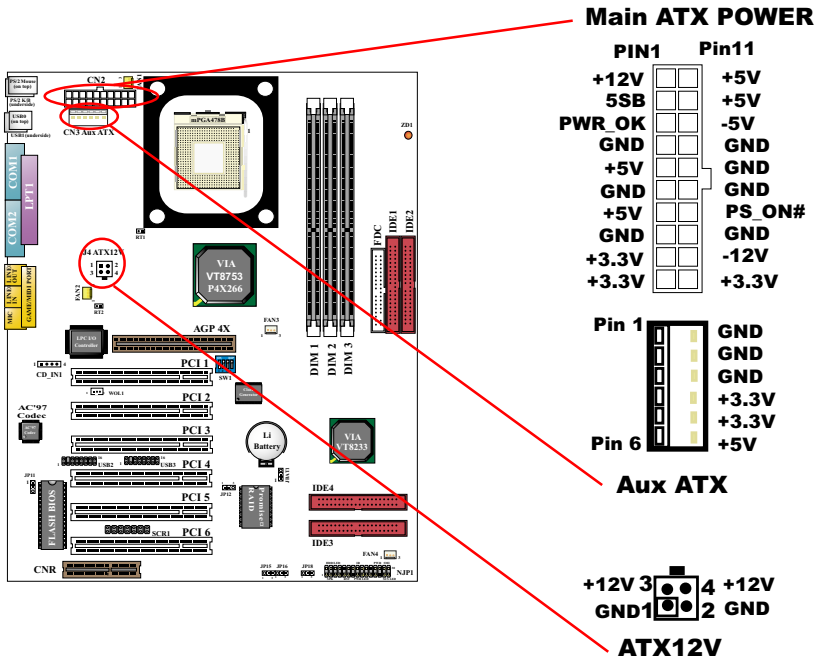
8. Speaker Connector:

CONNECTION: Connected to the case-mounted Speaker.

FUNCTION: To supply power to the case-mounted Speaker.

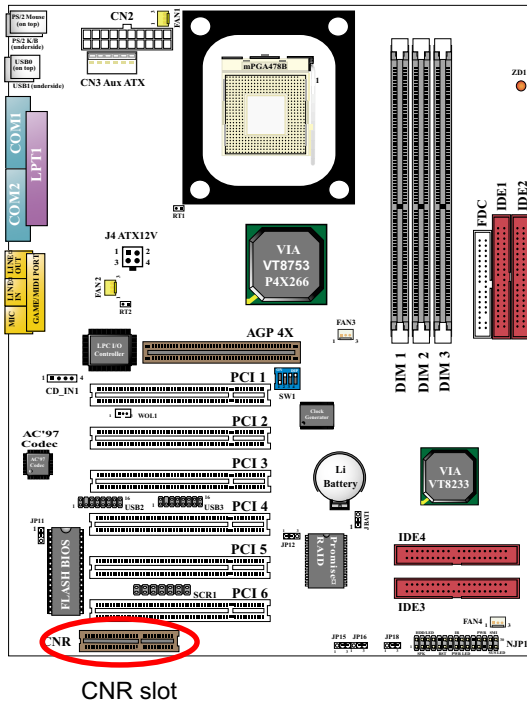
2-8.7 ATX Power Supply Connectors for Pentium 4

- ATX 2.03 Power supply connectors consists of 3 main connectors:
 - (1) Main ATX Power Connector;
 - (2) Aux Power Connector: a 6-pin connector supporting +3.3V and +5V;
 - (3) +12V Power Connector: a 4-pin connector supporting +12V;
- All these three connectors should be connected to an AC to DC Power Supply which supports ATX Power version 2.03.



2-8.8 Communication And Networking Riser Slot (CNR)

This slot on this series of mainboards allows you to use modem or audio riser card only.



Note:

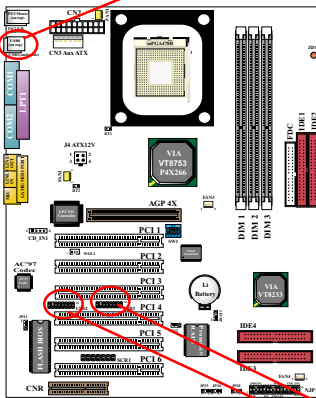
1. If modem CNR card is installed, it must be set as "primary" mode.
2. LAN CNR is not supported on this series of mainboards.
3. If audio CNR card is installed and the on chip AC'97 is enabled at the same time, the Audio CNR must be set as "secondary".
4. CNR card is not to be included in the package of this series.

2-8.9 USB Ports and USB Headers (Header USB 2 & 3)

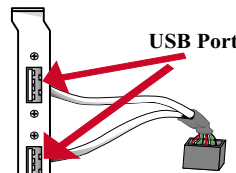
This series of mainboards provides two USB ports USB0 and USB1 on board supporting various USB devices. In addition, 2 USB headers are added on board to provide four additional USB ports by using two additional USB Cables. User can order the additional USB cables from your mainboard dealers or venders.

When plugging the USB cable into Header USB2 / 3, user must make sure the red wire is connected to Pin 1.

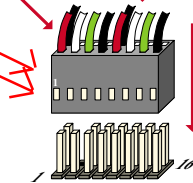
USB Ports USB 0 & 1



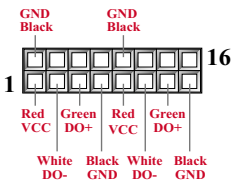
Additional USB Cable (Optional)



Red wire

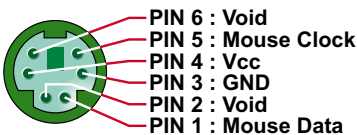


Header USB 2 & 3

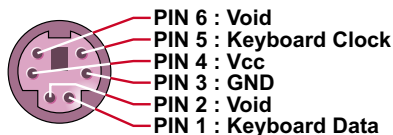


USB Header
Pin Assignment

2-8.10 PS/2 Mouse And PS/2 Keyboard



PS/2 MOUSE



PS/2 KEYBOARD

2-9 IRQ Description

IRQ	Function Description	Priority
IRQ 0	System Timer	1
IRQ 1	Keyboard Controller	2
IRQ 2	Programmable Interrupt	N/A
IRQ 3	Serial Port (COM 2)	11
IRQ 4	Serial Port (COM 1)	12
IRQ 5	Free	13
IRQ 6	Floppy Disk Controller	14
IRQ 7	Parallel Port (LPT1)	15
IRQ 8	Real Time Clock (RTC)	3
IRQ 9	Free	4
IRQ 10	Free	5
IRQ 11	Free	6
IRQ 12	PS/2 Mouse Port	7
IRQ 13	Coprocessor	8
IRQ 14	Primary IDE Channel	9
IRQ 15	Secondary IDE Channel	10

- Both ISA and PCI expansion cards may require IRQs. System IRQs are available to cards installed in the ISA expansion bus first, then any remaining IRQs are available to PCI cards. Currently, there are two types of ISA cards.
- The original ISA expansion card design, now referred to as “Legacy” ISA card, requires you to configure the card’s jumpers manually and then install it in any available slot on the ISA bus. To see a map of your used and free IRQs in Windows 98, the **Control Panel** in **My Computer**, contains a **System** icon, which gives you a **Device Manager** tab. Double-Clicking on a specific hardware device gives you a **Resources** tab which shows the Interrupt number and address. Double-Clicking **Computers** to see all the interrupts and addresses for your system. Make sure that each ISA device should be assigned to one IRQ respectively. If ISA device share IRQ with any other device, your computer will easily get into trouble.