

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 onboard, 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 and Installation

2-2 Pentium 4 CPU Fan Installation

2-3 Memory Installation

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

2-5 HDD Installation

2-6 FDD Installation

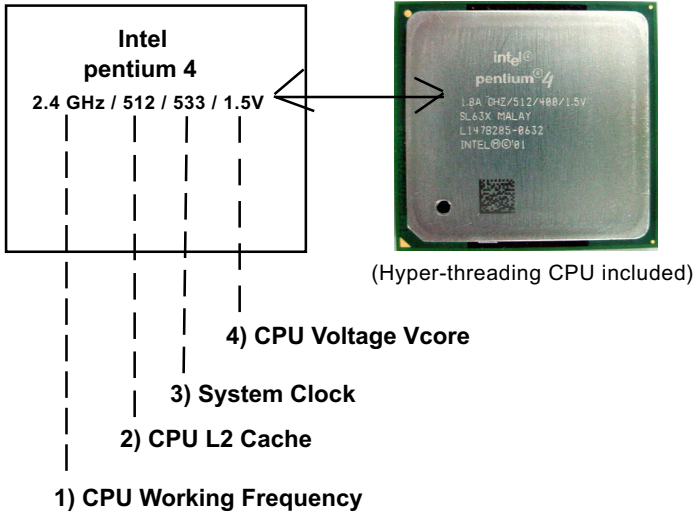
2-7 ATX Power Supply Installation

2-8 Jumper and Switch Settings

2-9 Other Connectors Configuration

2-1 Pentium 4 CPU and Installation

2-1.1 To Identify a Pentium 4 CPU



On the heatsink side of a Pentium 4 CPU, there printed a line of figures to identify its specifications. The line consists of 4 parts:

1. CPU Working Frequency: this part depicts the working frequency of the CPU. For example,
 - 2.4 GHz depicts that this CPU is locked to 2.4 GHz working frequency (18 x 133MHz CPU clock);
 - 2A GHz depicts that this CPU is an A version, locked to 2.0 GHz working frequency (20 x 100MHz CPU clock)
 - 3.06GHz depicts that this is a 3.06GHz hyper-threading CPU
2. CPU L2 Cache: this part depicts the L2 Cache size. For example,
 - 512 stands for 512 KB L2 Cache; 256 stands for 256 KB L2 Cache
3. System Clock: this part depicts the System Clock (Front Side Bus) provided by the CPU. For example,
 - 533 stands for a 533MHz system clock provided by a 133MHz CPU times 4;
 - 400 stands for a 400 system clock provided by a 100 MHz CPU x 4.
4. CPU Voltage Vcore: this part depicts the CPU Voltage. For example,
 - 1.5V stands for a CPU of 1.5V Vcore.

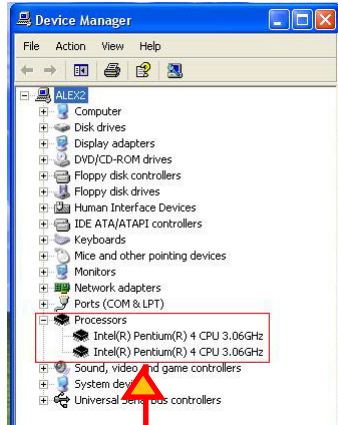
Note: System Clock vs CPU Clock

P4 CPU is a quadpumped CPU. The system bus is provided by the CPU clock x 4. Therefore, users can figure out the P4 CPU clock by the System Clock divided by 4.

2-1.2 Pentium 4 CPU Installation with Socket 478

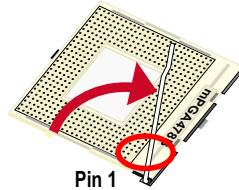
This series is built with CPU Socket 478B (478-pin) supporting the Intel Pentium 4 CPU:

- 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.
- This series supports Hyper-threading dual-in-one CPU, the function of which can be enabled by Windows XP. (See illustration on the right.)

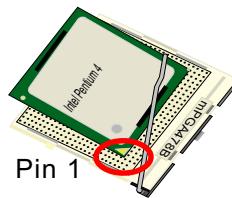


(If Hyper-threading CPU is installed successfully with O/S Win XP, the O/S will enable the dual-in-one CPU function.)

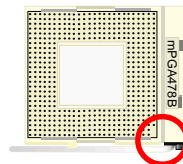
1. First pull sideways the lever of Socket 478, and then turn it up 90° so as to raise the upper layer of the socket from the lower platform.



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

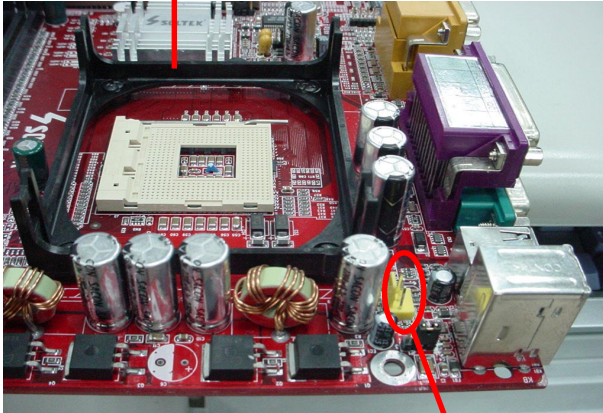


3. Make sure that all CPU pins have completely entered the socket and then lower down the lever to lock up CPU to socket.

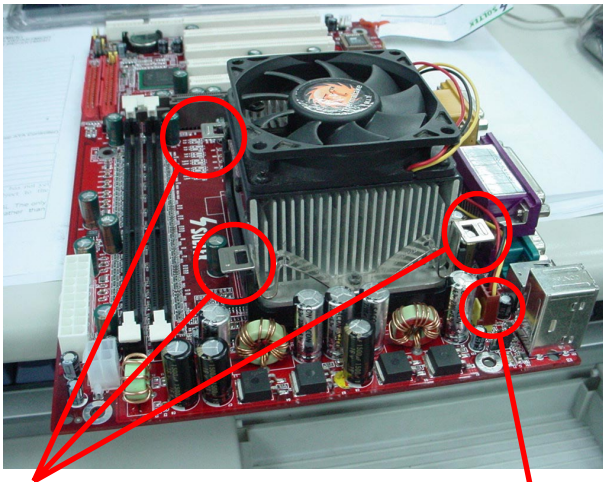


2-2 Pentium 4 CPU Fan Installation:

Pentium 4 Fan Base



Fan Connector



Press down 4 latches to lock fan to fan base

Connect to CPU Fan connector

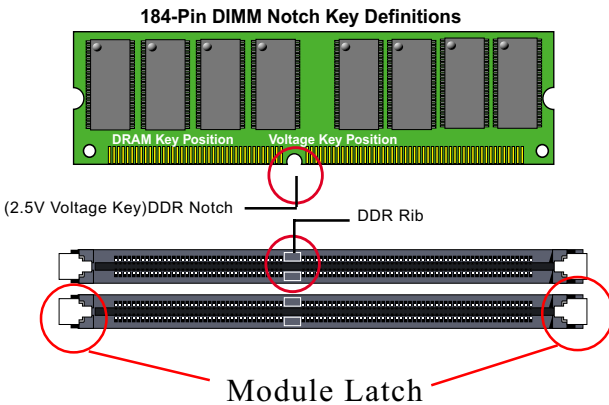
2-3 Memory Installation

How to tackle 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 mainboard and the memory module.
- Pay attention to the orientation of the DIMM slots. Forcing a DIMM into a slot improperly will damage the memory module and the slot itself.
- Make sure you have the right type of memory module for your mainboard.

2-3.1 To Install DIMM Module

- This series only supports up to 2GB unbuffered DDR 266/200MHz SDRAM, with 2 DDR DIMM slots on board. Do not insert other type of memory module into these slots.
- DDR DIMM slot has 184-pins and one notch. Insert a DDR SDRAM vertically into the 184-pin slot with the notch-to-rib matching. 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 slot. If any one of the latches has not turned up completely, you should unplug the module and press it down the slot a bit more firmly.

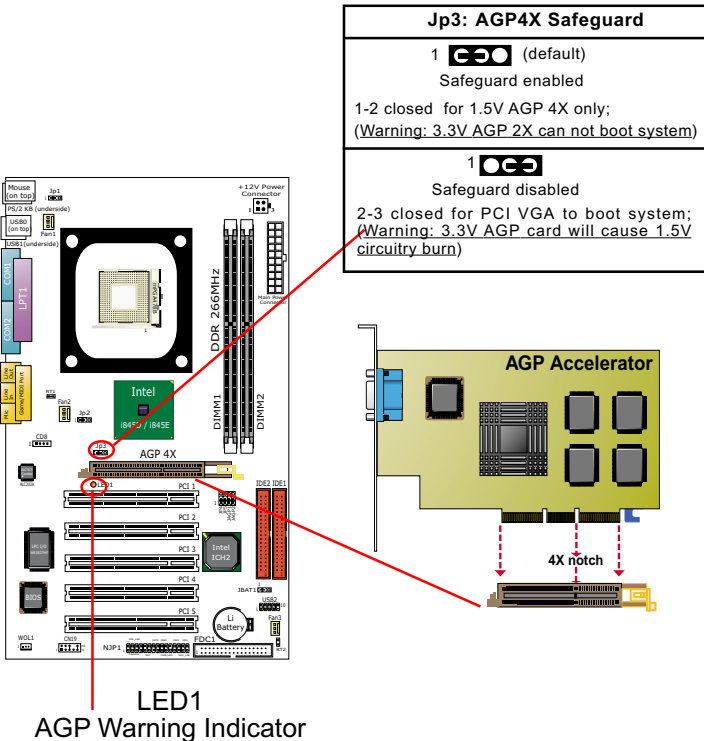


2-3.2 To Remove a DIMM:

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

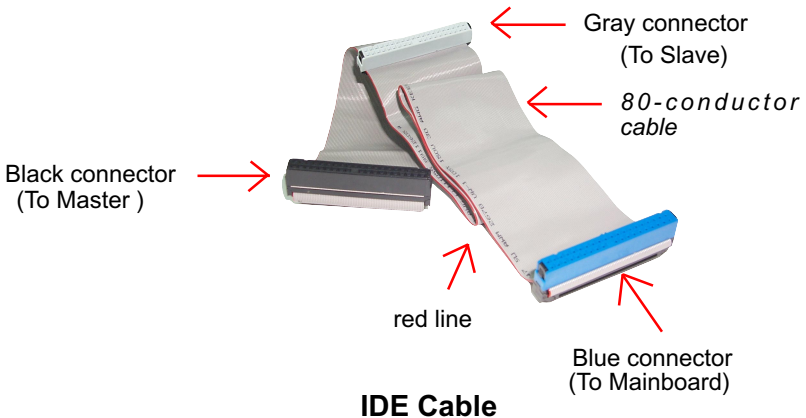
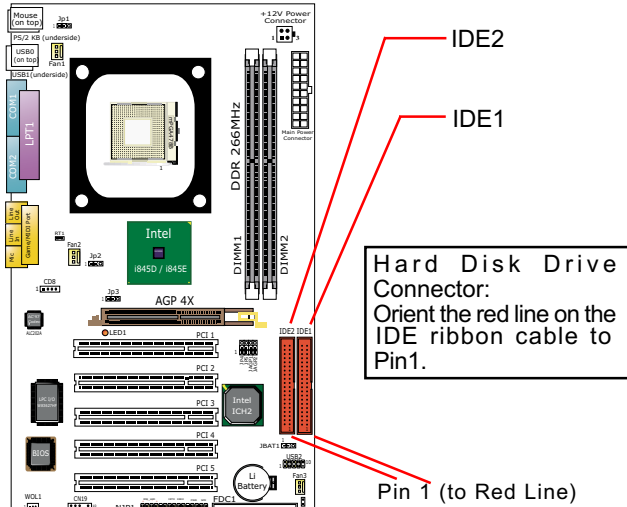
2-4 Install AGP4X with LED & Jumper Safeguard

1. The AGP slot on board supports only AGP 4X card configuration. Users should install an 1.5V AGP 4X card.
2. A safe installation of AGP 4X card is to set Jp3 to 1-2 closed, resulting in allowing only 1.5V AGP 4X card to boot system. In this case, if users cannot boot with an AGP card inserted in the slot, it indicates that the AGP card is not a correct one. The card should be replaced with a 1.5V AGP 4X card.
3. LED1 is a Warning LED. Whenever JP3 is set 1-2 closed for an AGP 4X card installation, and yet the AGP slot is left empty, or the card is not a correct one, LED1 will light up until a proper installation is done.



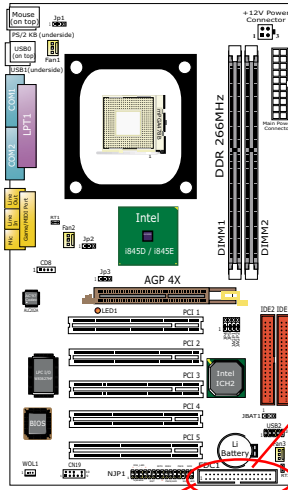
2-5 IDE Connector Installation

To install HDD or CD-ROM 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.



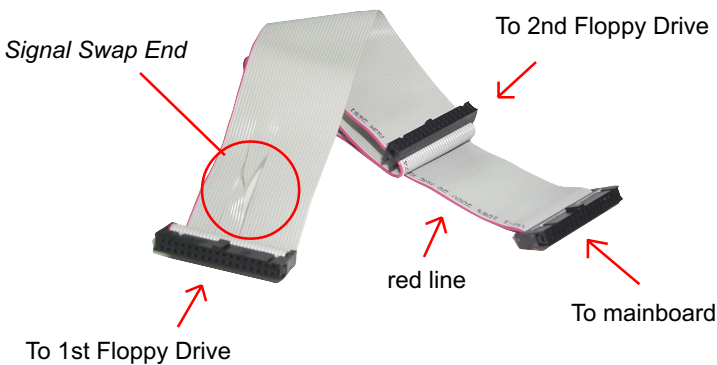
2-6 FDC (Floppy Drive Connector) Installation

To install FDD (Floppy Disk Drive) to FDC, 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.



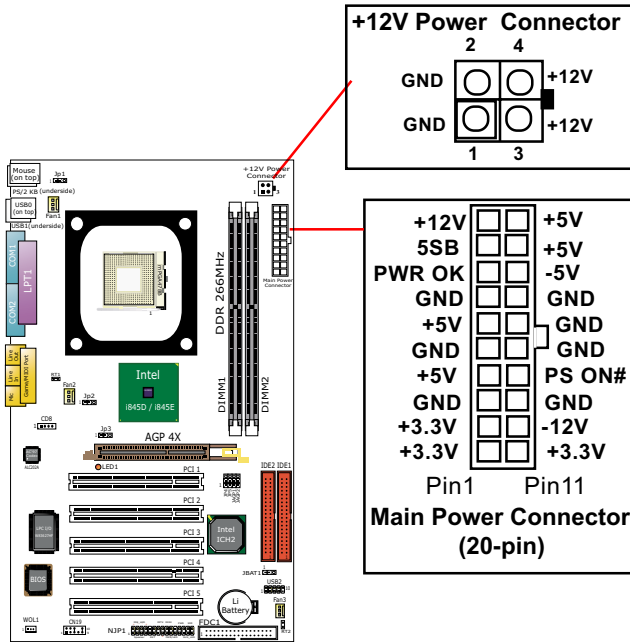
Floppy Drive Connector:
Orient the red line on the floppy ribbon cable to Pin 1.

Pin 1 (to Red Line)



FDD Cable

2-7 ATX V 2.03 Power Supply Installation





ATX V2.03 power supply is strongly recommended for mainboard running with 2GHz or higher CPU.



To set up Power Supply on this mainboard:

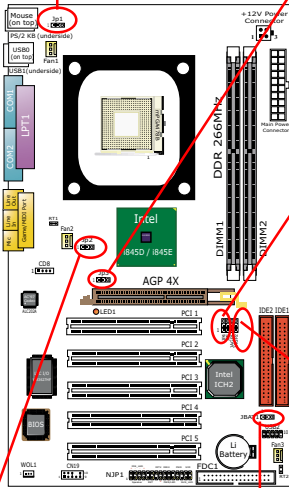
1. Get ready a V2.03 ATX Power Supply which provides a square-shaped +12V Power Connector in addition to the 20-pin Main Power Connector and other peripheral power connectors.
2. Connect the on-board square-shaped +12V Power Connector to the square-shaped +12V Power Connector of the Power Supply.
3. Connect the on-board 20-pin Main Power Connector to the 20-pin Main Power Connector of the Power Supply. Please note that both the +12V Power Connector and the 20-pin Main Power Connector should be connected to Power Supply to power on system.









2-8 Jumper Settings



The following diagrams show the locations and settings of jumper blocks on the mainboard.



Jp1: PS/2 KB/Mouse Power On	
1 	1-2 closed (default) PS/2 KB/Mouse Power On Disabled
1 	2-3 closed PS/2 KB/Mouse Power On Enabled









Jp3: AGP4X Safeguard	
1 	(default) Safeguard enabled 1-2 closed for 1.5V AGP 4X only; (Warning: 3.3V AGP 2X can not boot system)
1 	Safeguard disabled 2-3 closed for PCI VGA to boot system; (Warning: 3.3V AGP card will cause 1.5V circuitry burn)



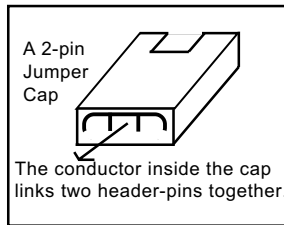
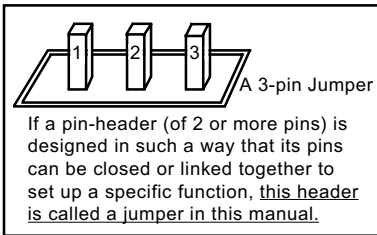
JP4 & JP5:(optional) DIMM Voltage Select		
DIMM Voltage	JP4	JP5
2.5V (default)	1 	1 
2.6V	1 	1 
2.7V	1 	1 
2.8V	1 	1 

Jp2: Front Side Bus Select	
1 	(default) Auto-detect of 533MHz / 400MHz
1 	2-3 closed 533MHz FSB Select

JBAT1: Clear CMOS	
1 	1-2 closed (default) To hold data
1 	2-3 closed To clear CMOS

JAGP1&JAGP2:(optional) AGP Voltage Select		
AGP Voltage	JAGP1	JAGP2
1.5V (default)	1 	1 
1.6V	1 	1 
1.7V	1 	1 
1.8V	1 	1 

2-8.1 How to tackle the Jumpers:



- A Jumper is usually but not necessarily given a “JpX” legend.
- In the Jumper setting diagram, all jumper pins covered with black marks stand for closed pins with jumper cap.





- Do not remove any jumper cap when power is on. Always make sure the power is off before changing any jumper settings. Otherwise, mainboard could be damaged.

2-8.2 Jp2: FSB (Front Side Bus) Select

Jp2 is designed on board as a jumper for system Front Side Bus select.

1. Before selecting the CPU clock, read the Identification Legend on the CPU, find the default (Max) FSB which can be provided by the CPU. If this FSB is divided by 4, the result is the default CPU clock.
2. If Jp2 is set to 1-2 closed, CPU will auto-detect its own (default) CPU clock and run with the default FSB.
3. If Jp2 is set to 2-3 closed, CPU is set to 133MHz and tries to run with 533MHz FSB.
4. If Jp2 2-3 closed cannot boot the system, it means overclocking fails. Please restore Jp2 to 1-2 closed (default) and then clear CMOS with the Clear-CMOS Jumper before trying to reboot system. (See Further Notes on Overclocking.)

Jp2: Front Side Bus Select	
1 	(default) 1-2 closed Auto-detect of 533MHz / 400MHz
1 	2-3 closed 533MHz FSB Select

2-8.3 DIMM Voltage/AGP Voltage Select and CPU Overclock

JP4 & JP5:(optional) DIMM Voltage Select

DIMM Voltage	JP4	JP5
2.5V (default)	1	1
2.6V	1	1
2.7V	1	1
2.8V	1	1

Jp2:

JAGP1&JAGP2:(optional) AGP Voltage Select

AGP Voltage	JAGP1	JAGP2
1.5V (default)	1	1
1.6V	1	1
1.7V	1	1
1.8V	1	1

SL-85DR2-TC/85DR-TC

Jumper is updated with 2.8V setting to enhance chance of CPU overclocking.

Jumper is updated with 1.8V setting to enhance chance of CPU overclocking.

- (1) Above jumper settings will enhance the chance of CPU overclocking.
- (2) Yet the limitations against CPU overclocking still remain as:
 - (a) "JP2 Front Side Bus Select" jumper should be set to 2-3 closed for an attempt to CPU overclock.
 - (b) DDR 333 SDRAM or above should be used for an attempt to CPU overclock.
 - (c) For over 533 MHz FSB overclock, user should use the configuration of CPU Clock in BIOS Setup for higher CPU clock attempt.
 - (d) Doing overclocking always takes all the onboard components into account. There is no guaranty of overclock success with any mainboard. We should always bear in mind that overclocking will risk the stability of your valuable system.

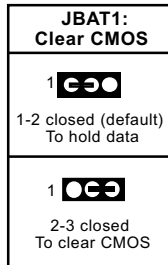
Further Notes on CPU Overclocking:

1. If you have successfully booted system, with or without CPU overclock, you still can try another CPU overclock in BIOS Setup. Please enter BIOS Setup, choose "Frequency/Voltage Control" menu, then configure the "CPU Clock" item to raise your CPU clock.
2. CPU overclocking should take all components on board into account. If you fail in BIOS overclocking, you will not be able to restart system. In such case, Power off system and clear CMOS by JBAT1 and then restart your system. And remember to reconfigure whatever should be reconfigured.
3. If your system is already fixed in a cabinet or case, you may not like to take the trouble to clear CMOS. Then power on your system with the power button on the PC case and simultaneously press down the "Insert" key on the keyboard until you see the initial bootup screen appear. And remember you should also enter CMOS BIOS Setup instantly and choose "Load Optimized Defaults" to restore default BIOS .

2-8.4 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.





2-8.5 JP3: AGP 4X Safeguard

1. The AGP slot on board supports 1.5V AGP 4X card only. Any 3.3V AGP 2X card will burn the 1.5V circuitry. Jp3 is designed on board to safeguard the AGP slot against the 3.3V AGP 2X card.

2. Default setting of Jp3 1-2 closed is to enable the safeguard, allowing 1.5V AGP 4X card to boot system only. In this case, if system cannot boot with an AGP card inserted in AGP slot, it indicates that the AGP card is not one of 1.5V type.



3. Setting Jp3 2-3 closed will disable the safeguard, allowing a PCI VGA card to boot system.

Warning: If a 3.3V AGP 2X card is now mistakenly inserted for booting the system, the high voltage will burn the 1.5V circuitry on board. Never use a 3.3V or an unknow AGP card on this mainboard.

Jp3: AGP4X Safeguard	
1 	(default) Safeguard enabled
1-2 closed for 1.5V AGP 4X only; (Warning: 3.3V AGP 2X can not boot system)	
1 	Safeguard disabled
2-3 closed for PCI VGA to boot system; (Warning: 3.3V AGP card will cause 1.5V circuitry burn)	

2-8.6 Jp1: PS/2 KB/Mouse Power On

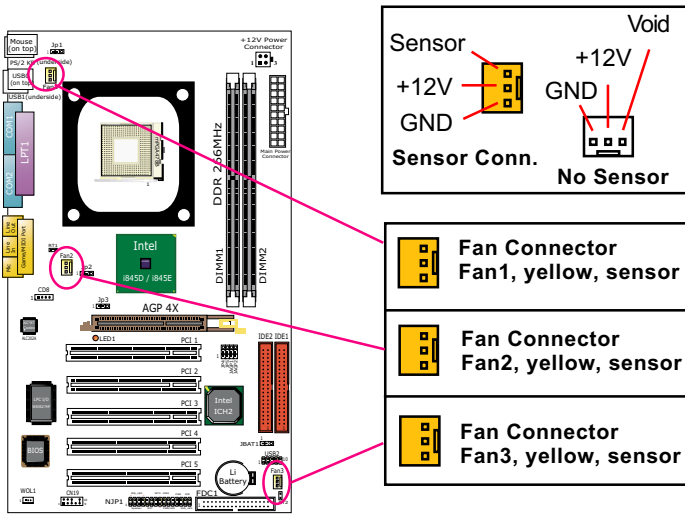
Jp1 is designed to enable / disable PS/2 Keyboard/Mouse Power on function. Setting Jp1 to 1-2 closed will disable this function. Setting Jp1 to 2-3 closed will enable this function. Yet user still has to enter BIOS Setup for choosing the KB/ Mouse Power-on mode. (See Integrated Peripherals” in BIOS Setup.)

Jp1: PS/2 KB/Mouse Power On	
1 	1-2 closed (default) PS/2 KB/Mouse Power On Disabled
1 	2-3 closed PS/2 KB/Mouse Power On Enabled

2-9 Other Connectors Configuration

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

2-9.1 On Board Fan Connectors

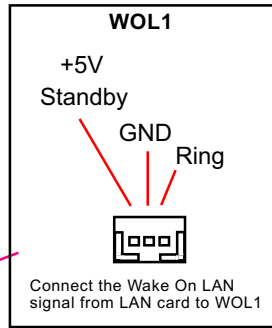
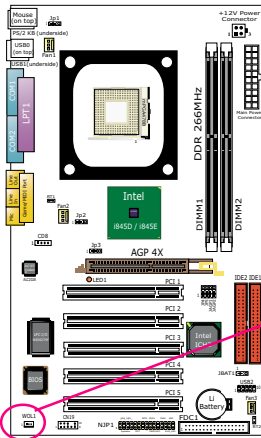


Both Sensor and No-sensor Fan Connectors support CPU/AGP/System/Case cooling fan with +12V mode. When connecting the wire to any Fan Connector, users should make sure that the red wire is for the positive current and should be connected to pin +12V, and the black wire is Ground and should be connected to pin GND.

A Hardware Monitor chipset is on board, with which users can install a Hardware Monitor Utility and read the fan speed transmitted from the sensor fan. Otherwise, users can read the fan speed from the “Hardware Monitor Status” in CMOS BIOS.

A running Fan will send out 2 electric pulses per rotation of its fan blade. A Sensor Fan Connector will count the electric pulses and send the information to the System Hardware Monitor which in turn will work out the fan rotation speed and display it on screen.

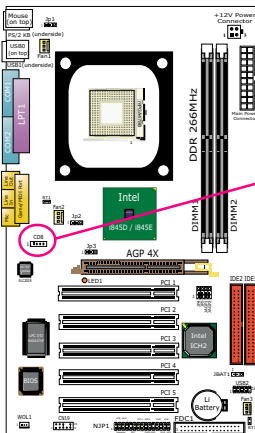
2-9.2 WOL1: Wake On LAN



- This connector connects to a LAN card with a Wake On Ring output. The connector powers up the system when it receives a wake-up packet or signal through the LAN card.
- This feature requires that Resume On Lan feature is enabled in the BIOS setting “Power Management Setup” and that your system must be on ATX power supply with at least 720mA / +5V standby power.

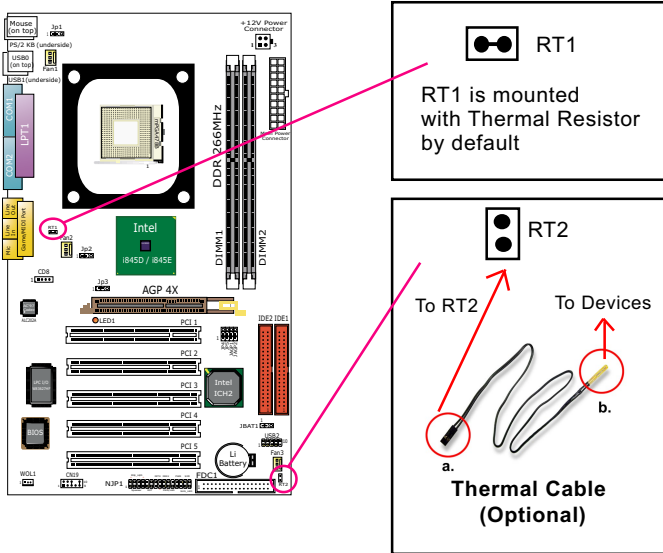
2-9.3 CD-ROM Audio Connector CD8

CD8 is an audio connector connecting CD-ROM audio to mainboard.



CD-ROM Audio Connector	
CD8 	Pin Signal
Pin 1	Left Channel
Pin 2	GND
Pin 3	GND
Pin 4	Right Channel

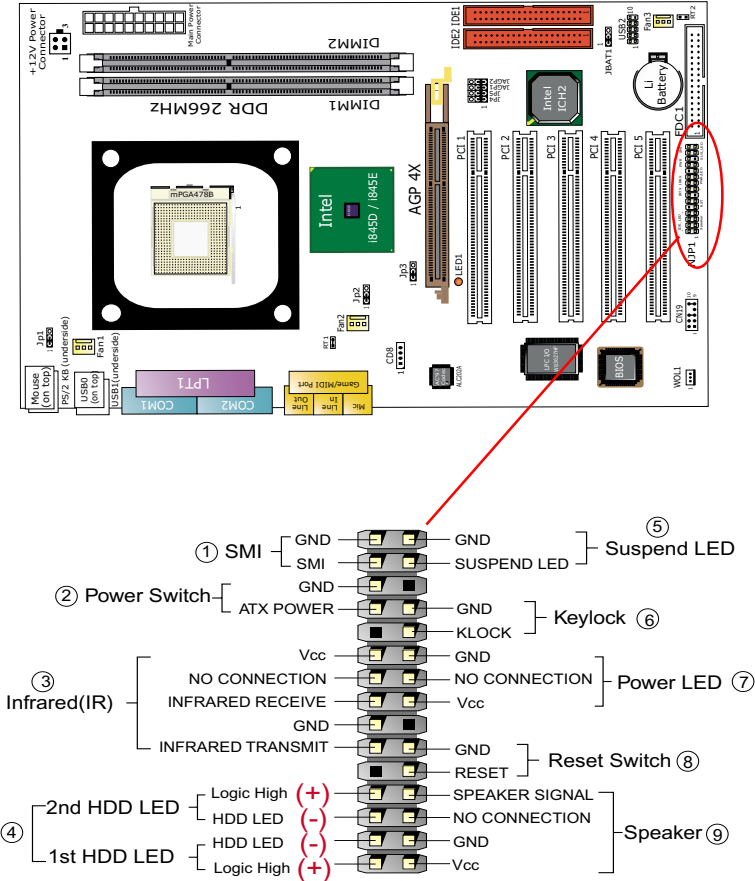
2-9.4 RT1 & RT2: Thermal Resistor and Connector



1. Resistor RT1: A thermal resistor is already soldered to connector RT1 so as to detect the temperature round the mainboard. What RT1 does is to transmit the thermal signal to BIOS or Hardware Monitor.
2. Connector RT2: A thermal cable is needed to connect RT2 to on-board devices such as HDD, Graphics card etc., so as to detect the temperature generated therein. 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.**

2-9.5 Complex Header

- This complex Header consists of 10 connectors providing various supports:



(1) SMI Connector (Optional):

Connection: Connected to the Suspend Switch.

Function: Manually selecting DOS system into the Suspend Mode or “Green Mode” by System Mangement Interrupt.

(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: To support 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) Keylock Connector (Optional):

Connection: Connected to keyboard.

Function: To lock keyboard and disable keyboard function.

(7) Power LED Connector:

Connection: Connected to System Power LED.

Function: To supply power to “System Power LED”.

(8) Reset Switch Connector:

Connection: Connected to “Reset Switch”.

Function: To supply power to “Reset Switch” and support system reboot function.

(9) Speaker Connector:

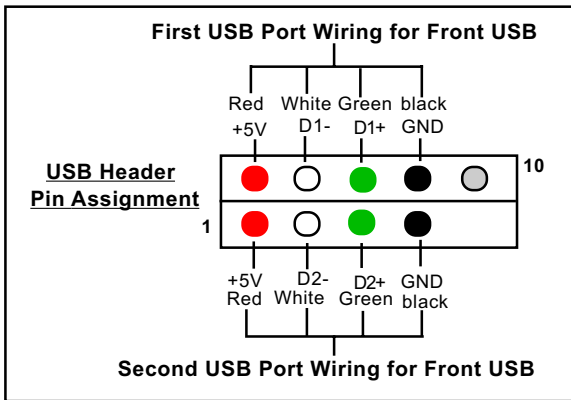
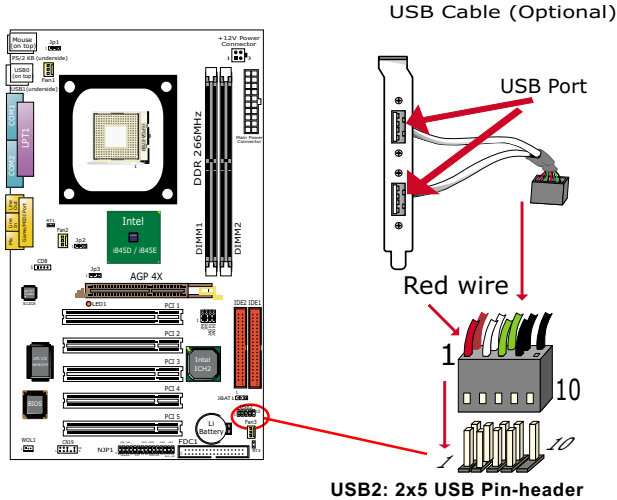
Connection: Connected to the case-mounted Speaker.

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

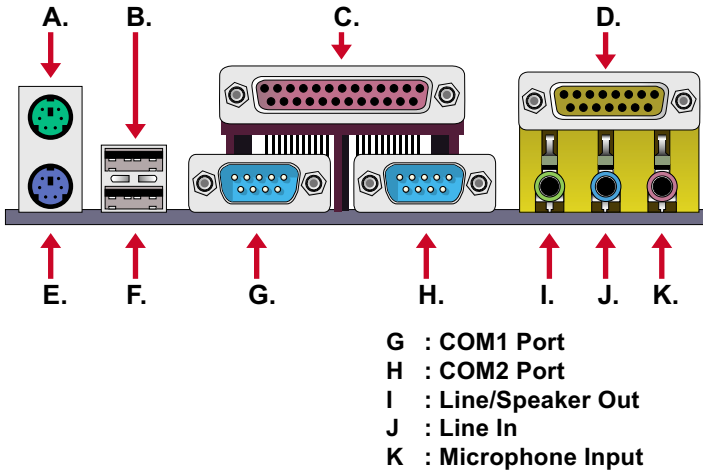
2-9.6 USB Ports and USB Header

This series provides two USB ports USB0 and USB1 on board. In addition, USB2 is an additional USB header to support two additional USB ports by using a USB Cable. User can order the additional USB cable from your mainboard dealers or vendors.

When plugging the USB cable into USB Header, you must make sure the red wire is connected to Pin 1.

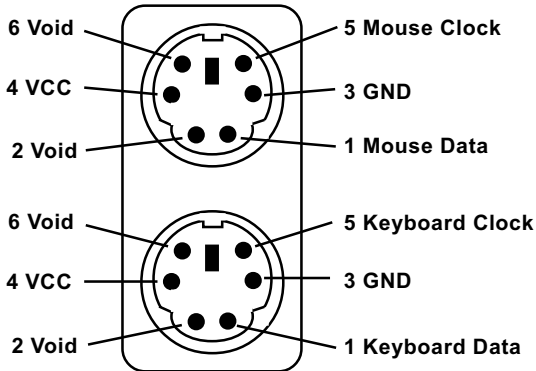


2-9.7 Chassis Panel Connector



2-9.8 PS/2 Mouse and PS/2 Keyboard

PS/2 Mouse Connector (on top, green)



2-9.9 CN19: Front Panel Audio Connector (optional)

This Mainboard is designed with a Front Panel Audio connector “CN19” which provides connection to the Front Panel Audio.

1. When CN19 is set to 5-6 closed and 9-10 closed, this default setting disables this connector and leaves the Back Panel Audio enabled.
2. To use this Front Panel Audio Connector, please open all pins of CN19 and connect it to your chassis.

