CHAPTER 2
HARDWARE SETUP

ATTENTION !!!

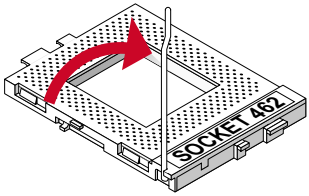
1. **Please refer to your processor installation or other documentation attached to your CPU for detailed installing instruction.**
2. **Installing a heat sink and cooling fan is necessary for proper heat dissipation from your CPU. Incorrect installation may result in overheating and damage of your CPU.**
3. **Before changing the setting of CPU Vcore from BIOS program, user SHOULD make sure of correct specification both of CPU CLOCK and RATIO. Incorrect setting may cause damage to your CPU.**

This chapter contains the following topics :

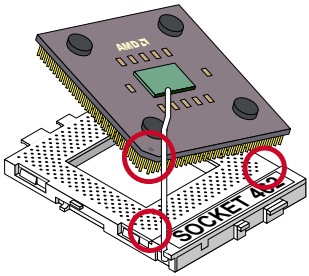
2-1 CPU INSTALLATION

WARNING !!!

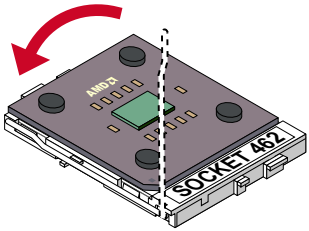
- *Make sure that +5V DCV and +3.3 DCV capabilities of your power supply are suitable for the processor.*
- *Any attempt to operate the AMD Athlon or Duron processor without a suitable cooling Fan will damage processor and other component.*



1 Pull out the lever from the socket, and then raise the lever up to a 90-degree angle.



2 Take notice of the red circles as shown below. While inserting the CPU into the socket, you can find out there is a definite pin orientation for CPU and socket.



3 Make sure that the CPU is placed into the socket tightly. Then lower down the level to complete the CPU installation.

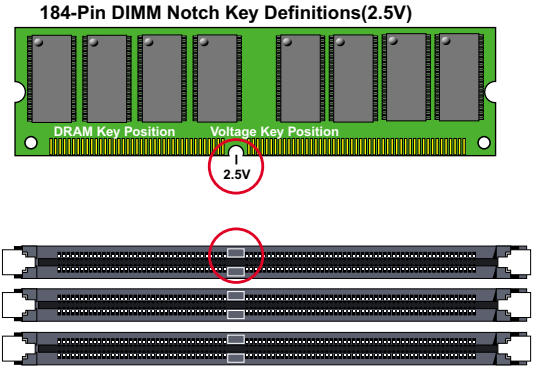
2-2 MEMORY INSTALLATION

WARNING!!!

- *Make sure to unplug your power supply before adding or removing memory modules or other system components. Failure to do so may cause severe damage to both your mainboard and expansion cards.*
- *Be careful when inserting or removing DIMM. Forcing a DIMM in or out of a socket improperly may damage the memory module or the socket. Some DIMMs which contain EDO or FTP DRAM are incompliant with the mainboard. The M/B supports 2.5V DDR SDRAM only.*

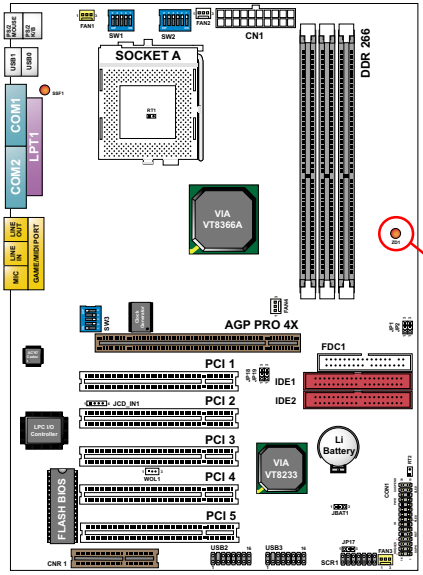
Installing DIMM

- Make sure you have the correct memory module type for your mainboard.
- Insert the module(s) as shown below, DIMMs have 184-pins and one notch that will be matched by the onboard DIMM socket. Memory modules are installed by inserting them straight into the slot until they “click” in the right place. They only fit in one direction, so do not force them in by a wrong direction.



Removing DIMM

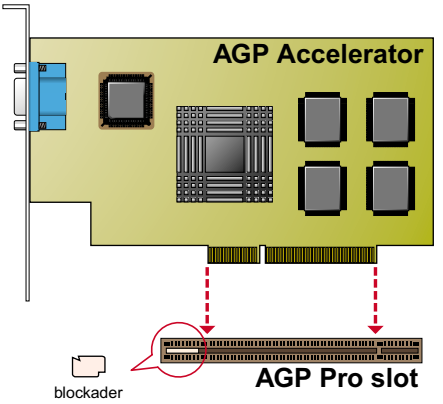
- Press down the holding clips on both sides of a DIMM socket and the module will be released from it.

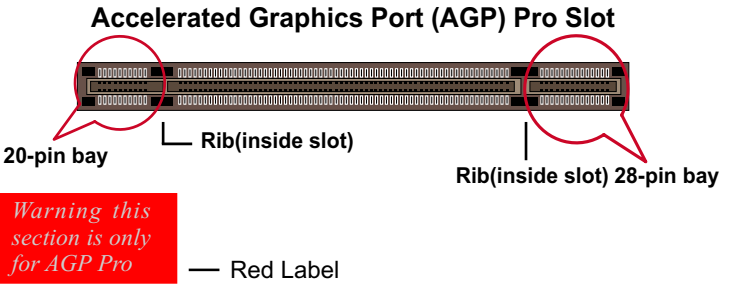


NOTICE : When LED "ZD1" is on, meaning that 2.5V is operating and flowing into DIMM slots, please do not add or remove memory modules .

2-3 ACCELERATED GRAPHICS PORT(AGP) PRO INSTALLATION

- The AGP Pro connector is an extension of the existing AGP connector and it is compatible with existing AGP cards.



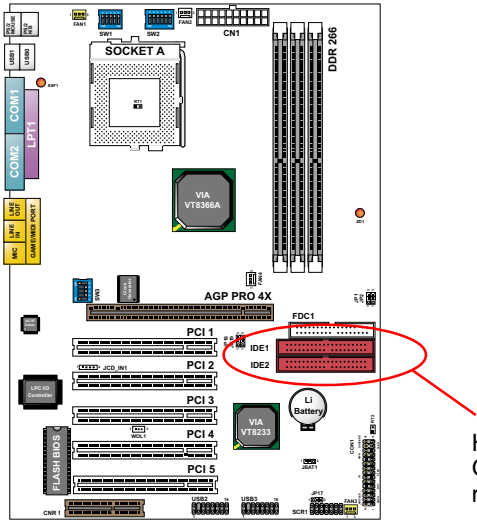


Warning this section is only for AGP Pro — Red Label

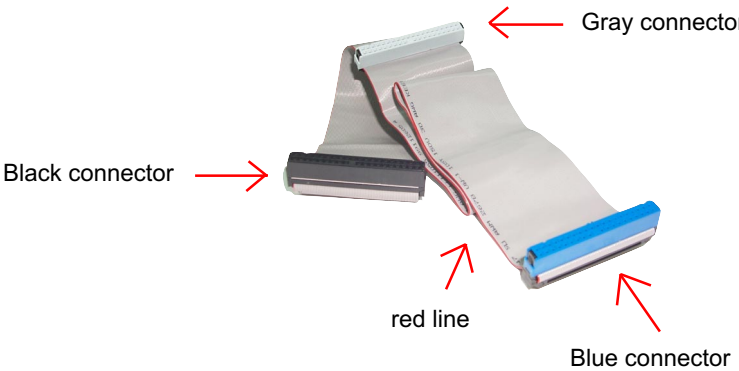
CAUTION!!
The AGP Pro slot comes with a warning label over the 20-pin bay. Do not remove this label and the safety tab underneath if you use an AGP card without a retention notch. Without the labels, AGP cards may be placed into the wrong place, which certainly will damage your card, slot, and mainboard. Remove the label ONLY if you will be using an AGP Pro card.

2-4 HDD/FDD INSTALLATION

- To install HDD (Hard Disk Drive), you may connect the cable's blue connector to the mainboard's primary (IDE1) or secondary (IDE2) connector, 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 jumper accordingly. Please refer to your hard disk documentation for the jumper settings.

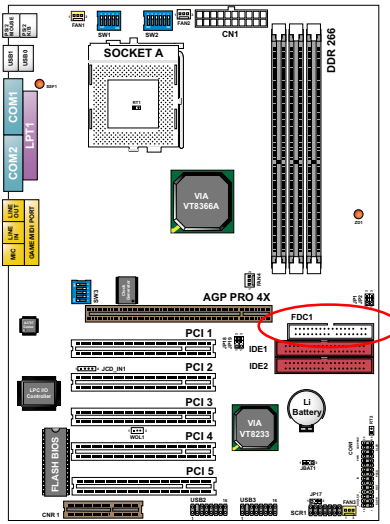


Hard Disk Drive Connector: Orient the red line on the IDE ribbon cable to Pin1.

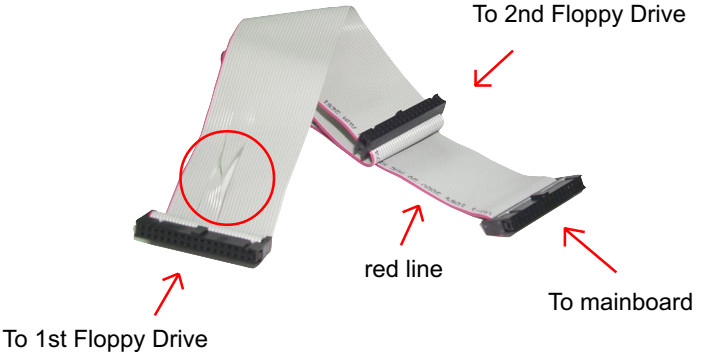


IDE Cable

• To install FDD (Floppy Disk Drive), you may connect the single end to the board , and connect two plugs on the other end to the floppy drives.



Floppy Disk Drive Connector: Orient the red line on the floppy ribbon cable to Pin1.

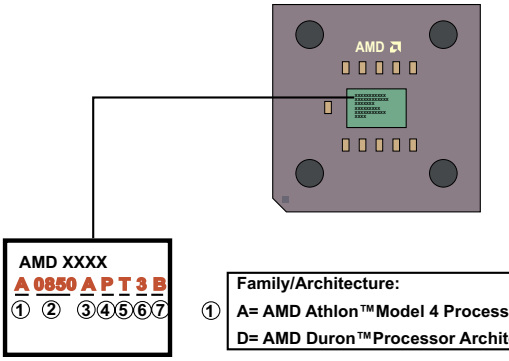


FDD Cable

2-5 SWITCH SETTING FOR CPU FREQUENCY AND VOLTAGE

2-5.1 Information On AMD Socket 462 Processor (Model 4, 5 Products)

• On the AMD Socket 462 Processor, you can find a codified identification marking which is to provide useful information about the CPU. The marking is interpreted as below.



① Family/Architecture:
A= AMD Athlon™Model 4 Processor Architure.
D= AMD Duron™Processor Architecture.

② Speed: 0850= 850MHz, 0900= 900MHz,
1000= 1000MHz, 1100= 1100MHz, etc.

③ Package Type: M= Card Module, A= PGA.

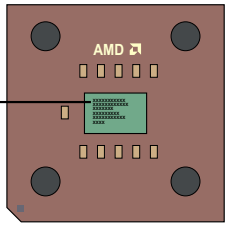
④ Operating Voltage: S= 1.5V, U= 1.6V, P= 1.7V, M= 1.75V, N= 1.8V.

⑤ Case Temperature: Q= 60°C, X= 65°C, R= 70°C, Y= 75°C,
T= 90°C, S=95°C.

⑥ Size of L2 Cache: 1= 64Kbyte, 2= 128Kbyte, 3= 256Kbyte.

⑦ Max FSB: A= B= 200MHz, C or others= 266MHz. (For correct FSB setting, please refer to next chapter)

2-5.2 Information On AMD Socket 462 Processor (Model 6, 7 Products)



AMD XXXX
A HD 1533 A N S 3 C
① ② ③ ④⑤⑥⑦⑧

① Family/Architecture:
A= AMD Athlon™Model 6 Processor Architure.
D= AMD Duron™ Model 7 Processor Architecture.

② Generation: HD=Desktop Processor.

③ Speed: 0900= 900MHz, 1000= 1000MHz, 1100= 1100MHz, 1133=1133MHz, 1200=1200MHz, 1300=1300MHz, 1333=1333MHz, 1400=1400MHz, 1500=1500MHz, 1533=1533MHz etc.

④ Package Type: A= PGA, D=OPGA.

⑤ Operating Voltage: M= 1.75V, N= 1.8V.

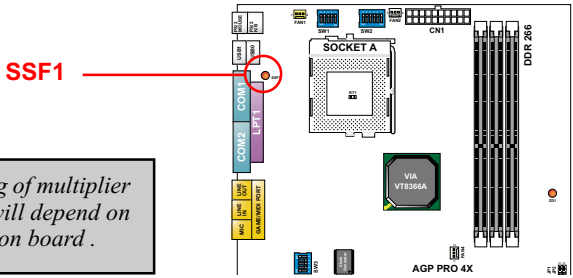
⑥ Case Temperature: T= 90°C, S=95°C.

⑦ Size of L2 Cache: 1= 64Kbyte, 3= 256Kbyte.

⑧ Max FSB: B= 200MHz, C= 266MHz.

2-5.3 Frequency Ratio Select (By SW1 DIP1-DIP5)

- The AMD Athlon and Duron processors provides four Frequency ID signals (FID) for the system controller to indicate the SYSTCLK multiplier at which the processor core operates. Normally, multiplier (or bus ratio) is detected automatically. Therefore, if the processor does not support the function, then "Bus Ratio" can not be selected.
- When DIP5 of SW1 is on, LED "SSF1" will be on, and light is on, it means that Bus Ratio Select Function is enabled. So as long as your CPU supports Bus Ratio Select function, then Bus Ratio can be selected by users.



NOTICE : Setting of multiplier 12.5x or above will depend on the type of CPU on board .

	SW1 DIP1 ~ DIP4 SETTING			SW1 DIP5
5.5x		6.0x		Bus ratio detected by FID (Auto) 
6.5x		7.0x		
7.5x		8.0x		Bus ratio selected by SW1 DIP 1-4 
8.5x		9.0x		
9.5x		10.0x		
10.5x (Default)		11.0x		SW1 DIP 5 allows you to enable or disable the "Frequency Ratio Select" function.
11.5x		12.0x		
* 12.5x or 13.0x		14.0x		

* Setting of will depend on the type of CPU on board Multiplier 12.5x or above.

2-5.4 Processor Core Voltage Select (By SW2 DIP1-DIP6)

- DIP1-DIP6 SW2 allow you to adjust processor core **voltage** manually. **We recommend to leave SW2** DIP1 at default, the default means the correct processor core voltage is generated according to VID of CPU.

SW2 DIP2 ~ DIP6 SETTING						SW2 DIP1
0.0v (Default)		1.100v		1.125v		
1.150v		1.175v		1.200v		
1.225v		1.250v		1.275v		Auto (Default) 
1.300v		1.325v		1.350v		
1.375v		1.400v		1.425v		By DIP 2-6
1.450v		1.475v		1.500v		
1.525v		1.550v		1.575v		
1.600v		1.625v		1.650v		SW2 DIP 1 allows you to enable or disable "Processor Core Voltage Select" function.
1.675v		1.700v		1.725v		
1.750v		1.775v		1.800v		
1.825v		1.850v				

2-5.5 CPU External Frequency Setting (By SW3)

SW3	CPU EXTERNAL CLOCK	PCI CLOCK	FSB CLOCK
	100MHz (Default)	33.3MHz	200MHz
	120MHz	30.0MHz	240MHz
	133.3MHz	33.3MHz	266MHz
	140MHz	35.0MHz	280MHz
	150MHz	37.5MHz	300MHz

IMPORTANT:

- *Do figure out the correct processor type by processor's OPN (Ordering Part Numbers). Correct CPU external frequency is key to ensure reliability of your system.*
- *Incorrect CPU external frequency or overclocking might cause unstable performance, so we strongly recommend to leave "SW1" at default setting or legal operation.*

2-6 JUMPER SETTING FOR DEVICES ON BOARD

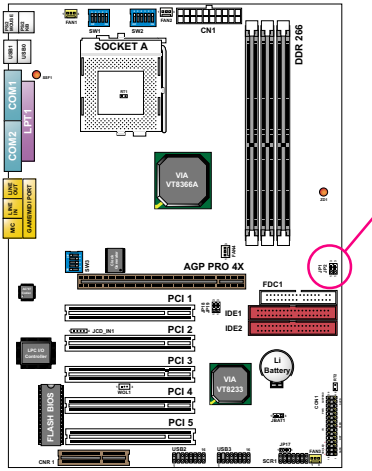
• The following diagrams show the location for jumper blocks on the mainboard.

CAUTION !!

- *Do not remove the jumper when power is on. Always make sure the power is off before changing any jumpers. Otherwise, mainboard could be damaged.*
- ***All jumper pins covered with black marks are closed pins.***

2-6.1 JP1/JP2 Memory Module Voltage Select

This function allows you to select the voltage supplied to the DRAM. The default voltage (2.5V) should be used unless processor overclocking requires a higher voltage.

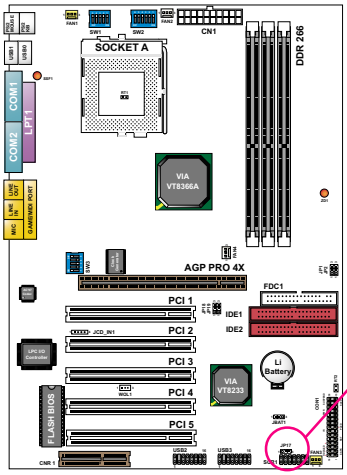


Memory Module Voltage Select:

2.5V (default)	JP1 JP2 (3 / 1)
2.6V	JP1 JP2 (3 / 1)
2.7V	JP1 JP2 (1 / 3)

NOTE: *Using a higher voltage may boost the overclocking performance but this may result in the shortening of your computer components's life. It is strongly recommended that you leave the voltage setting default.*

2-6.2 JP17 Power Lost Resume

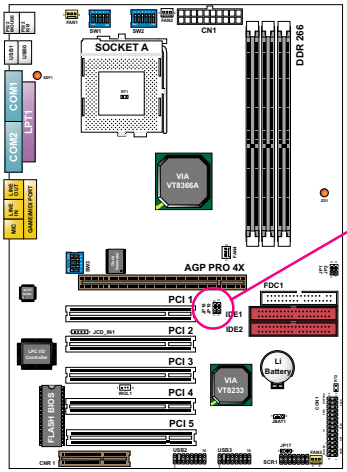


Power Lost Resume:

Normal (default)	**JP17** 1 3
Enabled	**JP17** 1 3

NOTE: This jumper allows user to use the switch of ATX power supply to control ON/OFF switch directly instead of using the power switch on the mainboard.

2-6.3 JP18/19 AGP Voltage Select

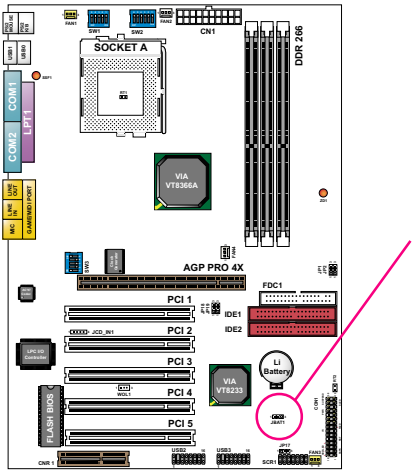


AGP Voltage Select:

1.5V (default)	**JP18** 1 3 **JP19** 1 3
1.6V	**JP18** 1 3 **JP19** 1 3
1.7V	**JP18** 1 3 **JP19** 1 3

2-6.4 JBAT1 For Clear CMOS Data

A battery must be used to retain the mainboard configuration in CMOS RAM.



JBAT1 For Clear CMOS Data:

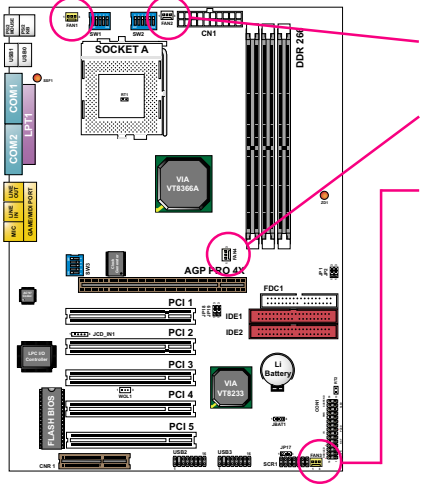
Clear CMOS Data	**JBAT1**	1 3
Retain Data (default)	**JBAT1**	1 3

NOTE: You can clear CMOS by 2-3 pin closed when the system is POWER OFF. Then, return to 1-2 pin closed position (default). You may damage the mainboard if clearing the CMOS with POWER ON. Unplugging the power cord from power supply before clearing CMOS will be a safest bet for user.

2-7 CONNECTORS CONFIGURATIONS

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

2-7.1 On Board FAN Connector (FAN1, FAN2, FAN3, FAN4)

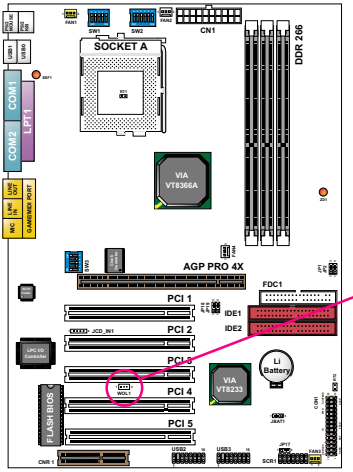


CPU FAN1	**FAN1**
CPU FAN2	**FAN2**
SYSTEM FAN	**FAN3**
CHASSIS FAN	**FAN4**

These fan connectors support CPU/System chassis cooling fan with +12V. When connecting wire to FAN connectors, users should pay attention 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 this 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.

2-7.2 WOL1 Wake On LAN

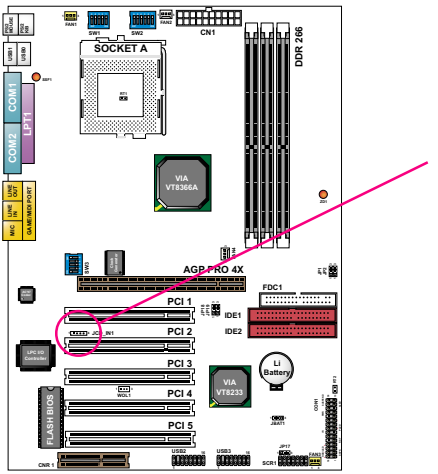


Wake On LAN:

Connect the Wake On LAN signal from LAN card to WOL1	 WOL1

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.

2-7.3 CD-ROM Audio Connector (JCD_IN1)

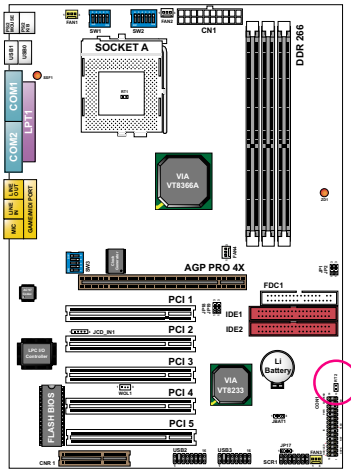


JCD_IN1

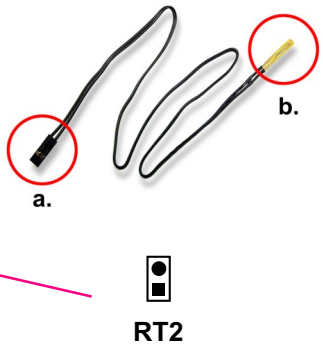
CD-ROM Audio Connector:

PIN NO.	JCD_IN1
PIN 1	Left Channel
PIN 2	GND
PIN 3	GND
PIN 4	Right Channel

2-7.4 Thermal Sensor Connector (RT2)



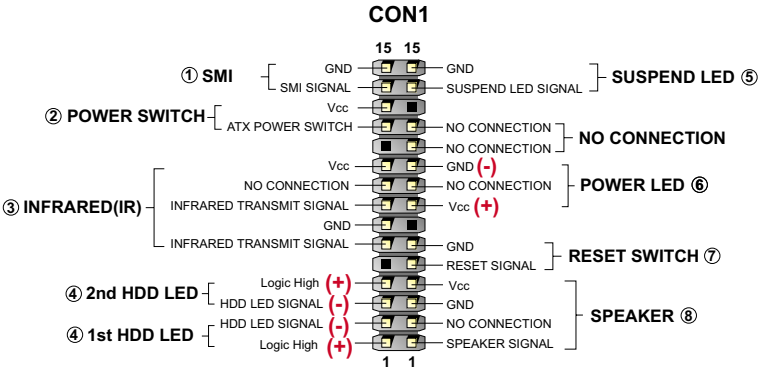
Thermal Sensor Connector (RT2):



We provide a thermal cable in the mainboard package. This thermal cable is to monitor device which will generates a lot of heat, such as HDD, Graphics card etc. Please connect one end of the thermal cable (A) to mainboard RT2 header, and tape another end of thermal cable (B) 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.**

2-7.5 Complex Header CON1

• This complex Header consists of 9 connectors providing various supports:



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 / J2 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".

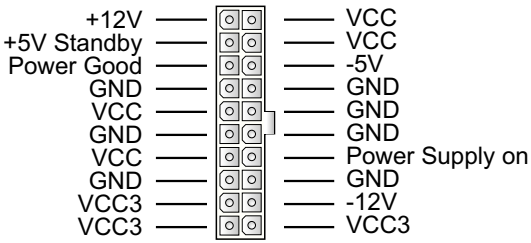
6. Power LED Connector:
CONNECTION: Connected to System Power LED.
FUNCTION : To supply power to “System Power LED”.

7. Reset Switch Connector:
CONNECTION: Connected to the case-mounted “Reset Switch”.
FUNCTION : To supply power to “Reset Switch” and support system reboot function.

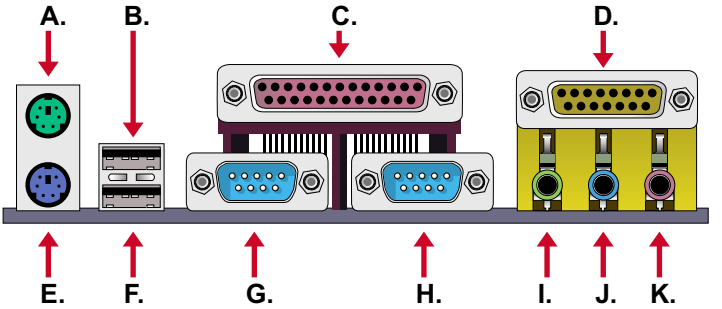
8. Speaker Connector:
CONNECTION: Connected to the case-mounted Speaker.
FUNCTION : To supply power to the case-mounted Speaker.

2-7.6 ATX Power Supply Connector

- This connector connects to an ATX power supply. The plug from the power supply should only be inserted to ATX Power connector in a specific orientation. Find the proper orientation and push it down firmly to make sure that all pins are aligned.
- Your power supply should support at least 10mA on the 5V standby voltage. It may cause difficulty to turn on the system power if the power supply does not support the load.
- **For Wake On LAN function, the power supply should support at least 720mA current.**



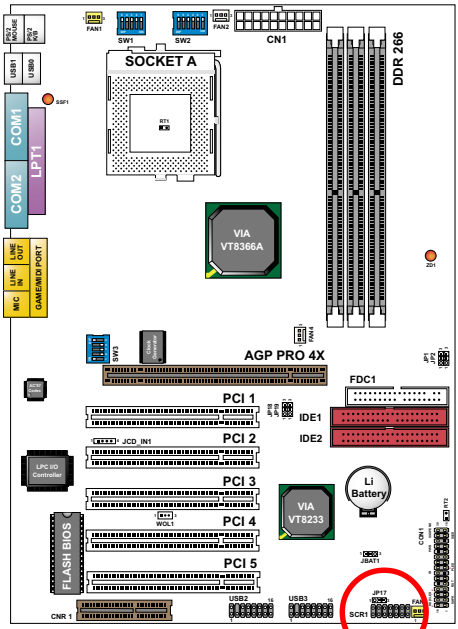
2-7.7 Chassis Panel Connector

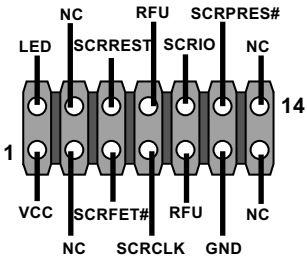


A : PS/2 MOUSE PORT
B : USB 0 PORT
C : LPT1 PORT
D : GAME/MIDI PORT
E : PS/2 KEYBOARD PORT
F : USB 1 PORT
G : COM 1 PORT
H : COM 2 PORT
I : LINE OUT / SPEAKER OUT PORT
J : LINE IN
K : MICROPHONE

2-7.8 Smart Card Reader Connector (SCR1)

- The connector “SCR1” allows you to use Smart Card Reader. It is compliant with Personal Computer Smart Card (PC/SC) working group standard and smart card (ISO 7816) protocols.

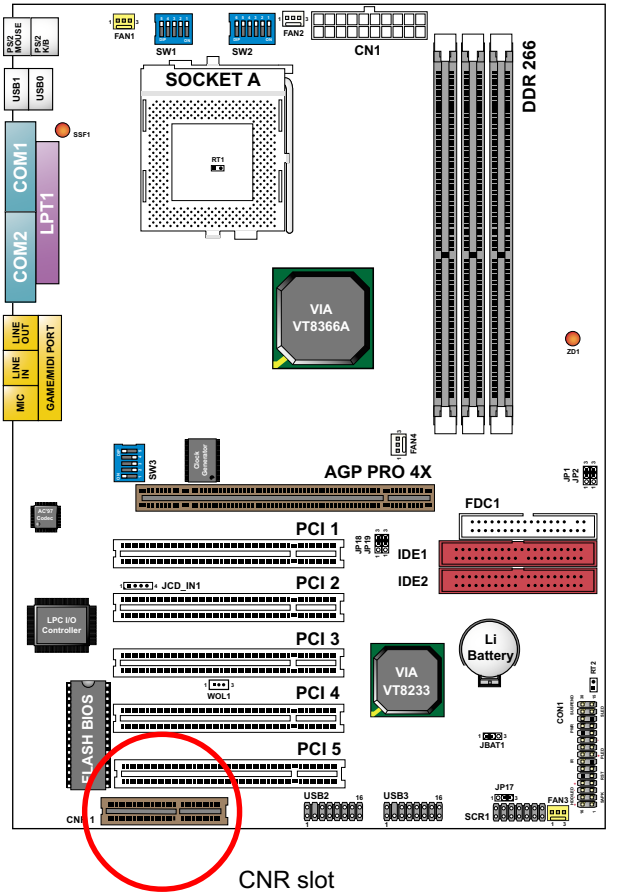




SCR1 pin assignment

2-7.9 Communication And Networking Riser Slot (CNR)

• This connector allows you to use network, modem or audio riser cards.

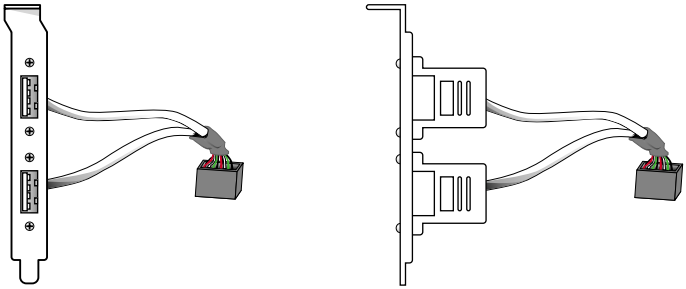


Note:

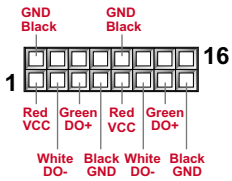
1. If modem CNR is installed, the modem CNR must be set as primary.
2. Only one LAN CNR can be supported.
3. The audio CNR must be set as secondary, if on-chip AC 97 is enabled.
4. CNR devices are not provided with this mainboard.

2-7.10 USB Header (USB2/USB3 Header)

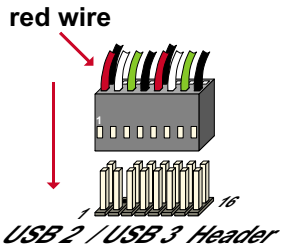
• This header is for connecting the additional USB cable to provides you additional two USB ports. User can order the additional USB cable from your mainboard dealer and vender.



Additional USB Cable (Optional)



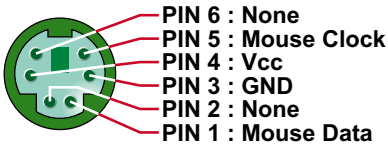
USB 2 / USB3 Header



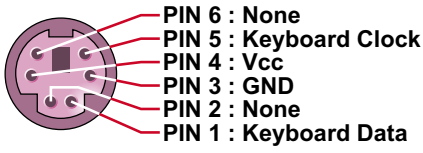
USB 2 / USB 3 Header

• When plugging the USB cable into USB2/USB3 HEADER, users must make sure the red wire is connected to the first pin.

2-7.11 PS/2 Mouse And PS/2 Keyboard



PS/2 MOUSE



PS/2 KEYBOARD