# Introduction

## System Overview

This manual was written to help you start using this product as quickly and smoothly as possbile. Inside, you will find the answers to solve most problems. In order for this reference material to be of greatest use, refer to the "expanded table of contents" to find relevant topics.

This board provides a total PC solution by incorporating the System , I/O , and PCI IDE. The mainboard support single AMD Athlon / Duron processors base PC ATX system, PCI Local Bus, and AGP Bus to upgrades your system performance. It is ideal for multi-tasking and fully supports MS-DOS, Windows, Windows NT , Windows ME, Windows 2000, Novell, OS/2, Windows95/98 , Windows 98SE, UNIX , SCO UNIX etc.

This manual also explains how to install the mainboard for operation, and how to setup your CMOS configuration with the BIOS setup program.

# 1.Motherboard Description

## 1.1 Features

### 1.1.1 Hardware

**CPU**

-Single Socket A for AMD Athlon™ & Duron™ & Palomino™ & Morgan™ processor.

-Support CPU speed from 600MHz to 1.4GHz or higher processor.

-200MHz/266MHz System Interface speed.

**Speed**

-Supports 33MHz PCI Bus speed.

-Supports 1X/2X/4X AGP Bus.

**System Memory**

-2*184 pin DDR socket.

-Supports 200/266MHz Double Date Rate(DDR) SDRAM(2.5V)

-Supports a maximum memory size of 2GB with DDR SDRAM.

**Bus Slots**

-Provide one AGP slot and one AMR slot.

-Five 32-bit PCI bus.

**Universal Serial Bus**

-Supports two back Universal Serial Bus(USB)Ports and two front Universal serial Bus(USB)Ports.

**Hardware Monitor Function**

-CPU Fan Speed Monitor.

-System and CPU Temperature Monitor.

-System Voltage Monitor.

**Flash Memory**

-Support 2 MB flash memory.

-support ESCD Function.

**IDE Bulit-in On Board**

-Supports four IDE devices.

-Supports PIO Mode 5, Master Mode,high performance hard disk drives.

-Support Ultra DMA 33/66/100 Bus Master Mode.

-Supports IDE interface with CD-ROM.

-Supports high capacity hard disk drives.

-Support LBA mode.

**PCI-Based AC 97 Digital Audio Processor**

-AC 97 2.1 interface.

-16 channels of high-quality sample rate conversion.

-Sound Blaster and Sound Blaster Pro emulation.

**I/O Bulit-in On Board**

-Supports one multi-mode Parallel Port.

(1)Standard & Bidirection Parallel Port

(2)Enhanced Parallel Port(EPP)

(3)Extended Capabilities Port

-Supports two serial ports, 16550 UART.

-Supports one Infrared transmission(IR).

-Supports PS/2 mouse and PS/2 Keyboard.

-Supports 360KB, 720KB, 1.2MB, 1.44MB, and 2.88MB floppy disk drivers.

**Voltage Regulator**

VRM 9.0(Auto Detect).

**WOL/WOM (Wake On LAN & Wake On Modem)**

Supports system power up from LAN/Modem ring up .

### 1.1.2 Software

**BIOS**

-AWARD legal BIOS.

-Support DMI 2.3.

-Supports APM 1.2.

-Supports USB Function.

-Supports ACPI

**Operation System**

-Offers the highest performance for MS-DOS,Windows, Windows NT, Windows 2000, Novell, OS/2, Windows ME, Windows95/98, Windows 98SE, UNIX, SCO UNIX etc.

### 1.1.3 Attachments

-HDD UDMA66/100 Cable.

-FDD Cable.

-Flash Memory Written for BIOS Update.

-USB2 Cable **(Option)**.

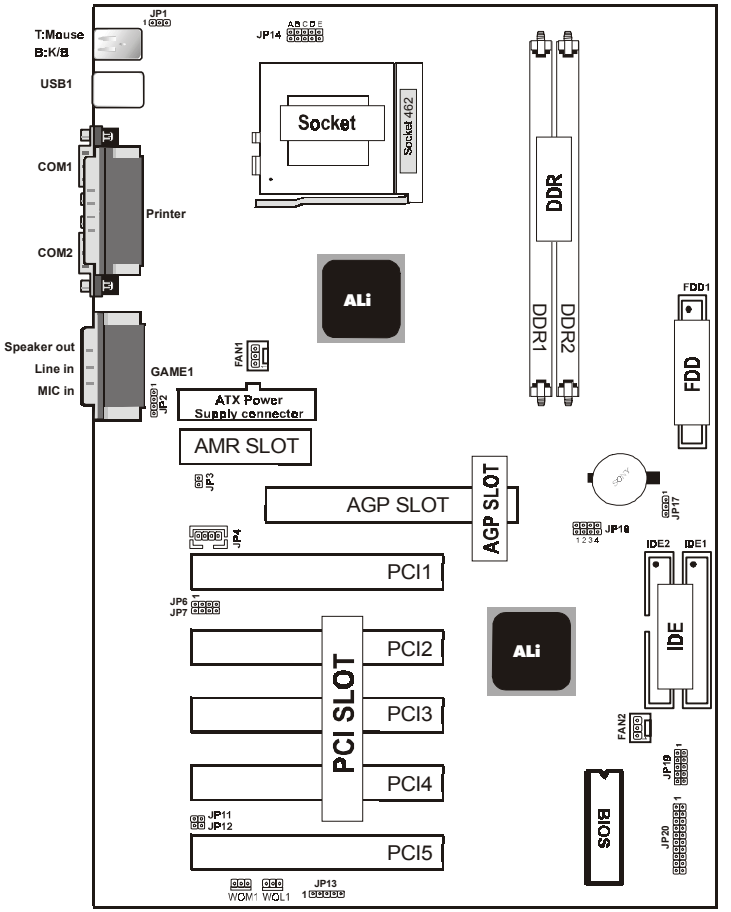
-Fully Setup CD Driver (Ghost, Anitivirus, Adobe Acrobat).

-This manual.

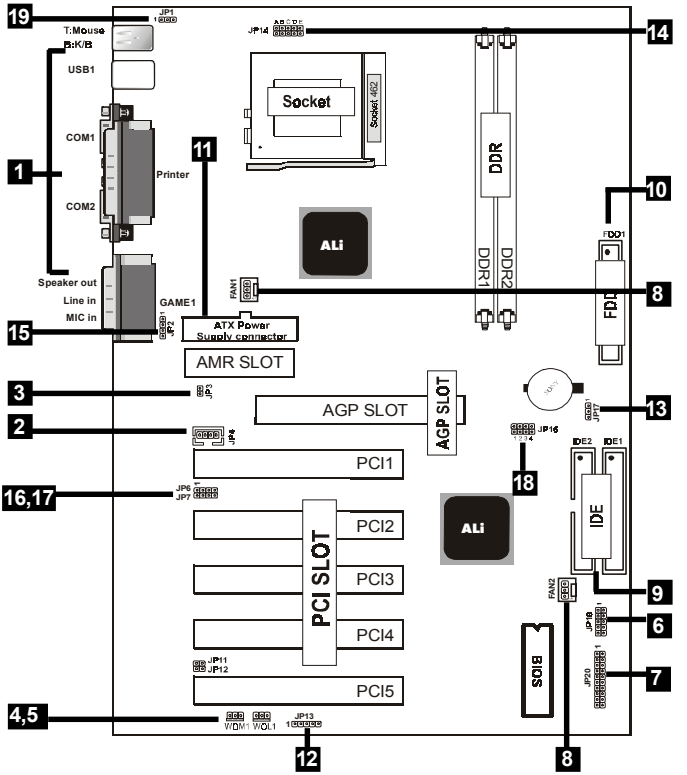
## 1.2 Motherboard Installation

### 1.2.1 Motherboard Map

## 1.2.2 Motherboard Layout

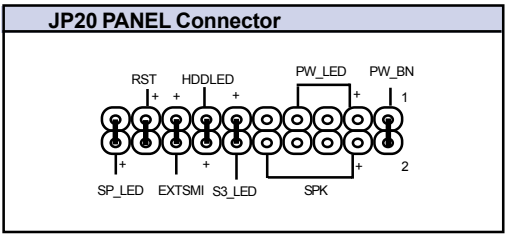


## 1.3 Motherboard Connectors




1.Back Panel I/O Connectors 2.CD Audio-In Connector
3.AMR CODEC Function(JP3) 4.Wake-On Modem Connector
5.Wake-On-LAN Connector 6.Front USB2 Connector
7.Front Panel Connector 8.Fan Connectors(Fan1/2)
9.IDE Connectors 10.Floppy Connector
11.ATX Power Connector 12.IR Connector
13.CMOS Function Select(JP17) 14.CPU Ratio Selection(JP14)
15.Telephone in Connector(JP2) 16.Video Connector(JP6)
17.AUX Audio in Connector(JP7)
18.CPU Clock Frequency Setting(JP16)
19.Keyboard Wake Up Setting(JP1)

### 1.3.1 Front Panel Connector(JP20)




**Speaker Connector (SPK)**

An offboard speaker can be installed onto the motherboard as a manufacturing option. An offboard speaker can be connected to the motherboard at the front pannel connector. The speaker (onboard or offboard) provides error beep code information during the Power Self-Test when the computer cannot use the video interface. The speaker is not connected to the audio subsystem and does not receive output from the audio subsystem.

**Hard Drive LED Connector (HDDLED)**

This connector supplies power to the cabinet IDE activity LED. Read and write activity by devices connected to the Primary or Secondary IDE connectors will cause the LED to light up.

**SMI Suspend Switch Lead (EXTSMI)**

This allows the user to manually place the system into a suspend mode or Green mode where systematic activity will be instantly decreased to save electricity and expand the life of certain components when the system is not in use. This 2-pin connector (see the figure ) connects to the case-mounted suspend switch. If you do not have a switch for the connector, you may use the Turbo Switch" instead since it does not have a function. SMI is activated when it detects a short to open moment. It may require one or two pushes depending on the position of the switch. Wake-up can be controlled by settings in the BIOS but the keyboard will always allow wake-up (the SMI lead cannot wake-up the system). If you want to use this connector, the "Suspend Switch" in the Power Management Setup of the BIOS SOFTWARE section should be on the default setting of Enable.

**ATX Power Switch (PW_BN)**

The system power is controlled by a momentary switch connected to this lead. Pushing the button once will switch the system ON. The system power LED lights when the system's power is on .

**Power LED Lead (PW_LED)**

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

**SMI LED Lead (SP_LED)**

The system SMI LED lights when the system suspend is on.

**S3 LED (S3_LED)**

The system S3 LED flash when the system in S3 mode state.

**Reset Switch Lead (RST)**

The connector can be connected to a momentary SPST type switch that is normally open. When the switch is closed,the motherboard resets and runs the POST.

### 1.3.2 Floppy Disk Connector (FDD1)

This connector supports the provided floppy drive ribbon cable. After connecting the single end to the board, connect the two plugs on the other end to the floppy drives.

### 1.3.3 Hard Disk Connectors (IDE1/IDE2)

These connectors support the provided IDE hard disk ribbon cable. After connecting the single end to the board, connect the two plugs at the other end to your hard disk .

If you install two hard disks, you must configure the second drive to Slave mode by setting its jumper settings. BIOS now supports SCSI device or IDE CD-ROM boot up (see "HDD Sequence SCSI/IDE First" & "Boot Sequence" in the BIOS Features Setup of the BIOS SOFTWARE) (Pin 20 is removed to prevent inserting in the wrong orientation when using ribbon cables with pin 20 plugged) .

### 1.3.4 ATX 20-pin Power Connector (PW1)

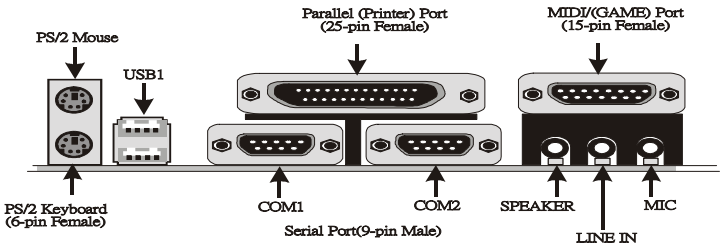
This connector supports the power button on-board. Using the ATX power supply, functions such as Modem Ring Wake-Up and Soft Power Off are supported on this motherboard . This power connector supports instant power-on functionality, which means that the system will boot up instantly when the power connector is inserted on the board.

| Pin | Signal | Pin | Signal |
|---|---|---|---|
| 1 | 3.3V | 11 | 3.3V |
| 2 | 3.3V | 12 | -12V |
| 3 | GND | 13 | GND |
| 4 | 5V | 14 | PS-ON |
| 5 | GND | 15 | GND |
| 6 | 5V | 16 | GND |
| 7 | GND | 17 | GND |
| 8 | PW-OK | 18 | -5V |
| 9 | 5V_SB | 19 | 5V |
| 10 | 12V | 20 | 5V |

### 1.3.5 Infrared Connector (JP13)

After the IrDA interface is configured, files can be transferred from or to portable devices such as laptops, PDAs, and printers using application software.

## 1.4 Back Panel Connectors




### 1.4.1 PS/2 Mouse /Keyboard CONN.

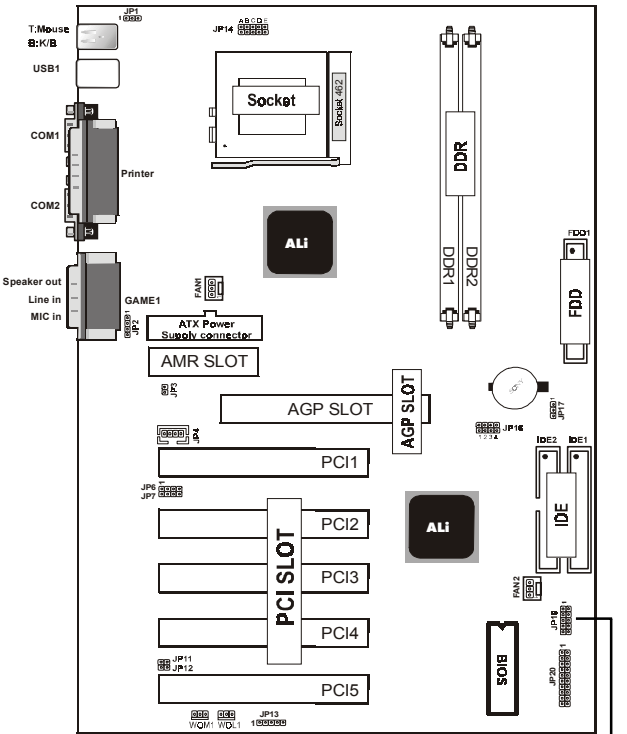
The motherboard provides a standard PS/2 mouse / Keyboard mini DIN connector for attaching a PS/2 mouse. You can plug a PS/2 mouse / Keyboard directly into this connector.

### 1.4.2 USB Connectors: USB1 (USB1/USB2)

The motherboard provides a OHCI(Open Host Controller Interface)Universal Serial Bus Roots for attaching USB devices such as a keyboard, mouse and other USB devices. Plug the USB devices directly into this connector.


| Pin | Signal |
|---|---|
| 1 | +5v |
| 2 | USBP0-(USBP1-) |
| 3 | USBP0+(USBP1+) |
| 4 | GND |

## Front USB2 Connectors: JP19




**JP19**

| | | | | |
|---|---|---|---|---|
| VCC | 1 | 2 | NC |
| P2- | 3 | 4 | GND |
| P2+ | 5 | 6 | P3+ |
| GND | 7 | 8 | P3- |
| NC | 9 | 10 | VCC |

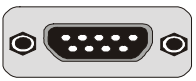
## 1.5 Serial and Parallel Interface Ports

This system equips two serial ports and one parallel port.

### The Serial Interfaces: COM1/COM2

The serial interface port is sometimes refered to as an RS-232 port or an asynchronous communication port. Mice, printers, modems and other peripheral devices can be connected to a serial port. The serial port can also be used to connect your computer system. If you wish to transfer the contents of your hard disk to another system it can be accomplished by using each machine's serial port.

**COM1/COM2**

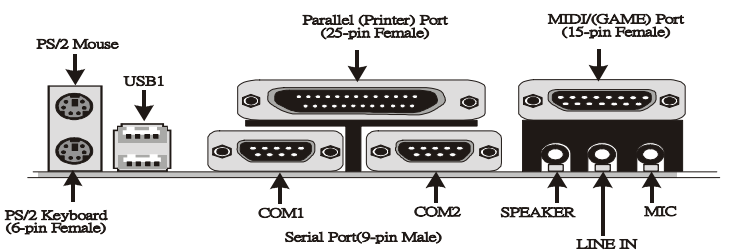


The serial port on this system has one 9-pin connector. Some older computer systems and peripherals used to be equipped with only a 25-pin connector. Should you need to connect your 9-pin serial port to an older 25-pin serial port, you can purchase a 9-to-25 pin adapter.

| Signal | DB9 Pin | DB25 Pin |
|---|---|---|
| DCD | 1 | 8 |
| RX | 2 | 3 |
| TX | 3 | 2 |
| DTR | 4 | 20 |
| GND | 5 | 7 |
| DSR | 6 | 6 |
| RTS | 7 | 4 |
| CTS | 8 | 5 |
| RI | 9 | 22 |

## Parallel Interface Port

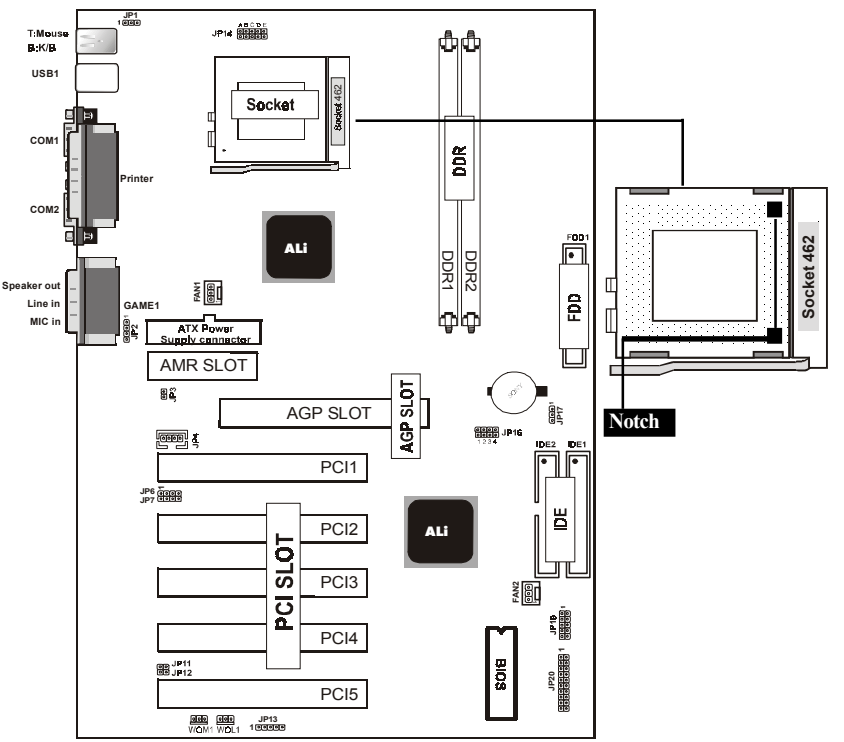
Unlike serial ports, parallel interface ports have been standardized and should not present any difficulty interfacing peripherals to your system. Sometimes called a Centronics port, the parallel port is almost exclusively used with printers. The parallel port on your system has a 25-pin, DB 25 connector(see the picture below).



# 1.6 CPU Installation

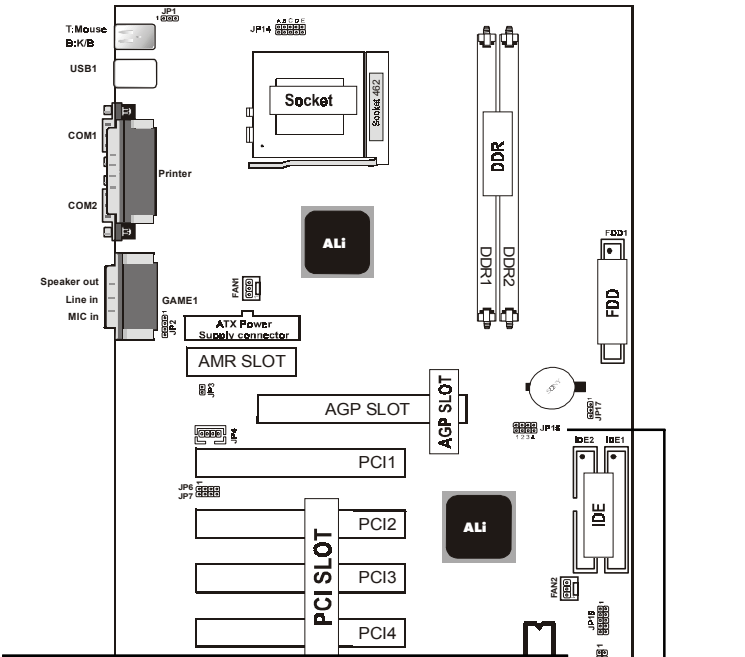
## 1.6.1 CPU Installation Procedure: Socket 462

1. Pull the lever sideways away from the socket then raise the lever to a 90-degree angle.
2. Locate Pin 1 in the socket and look for the white dot or cut edge in the CPU. Match Pin 1 with the white dot/cut edge then insert the CPU.
3. Press the lever down to complete the installation.
4. **Make sure the spec of the heatsink is good enough.**



## 1.6.2 CPU Clock Frequency Setting: JP16

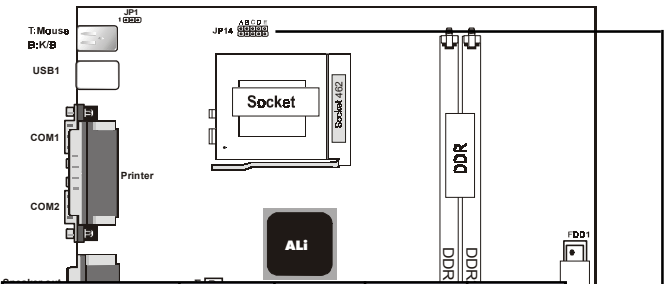
Overclocking is operating a CPU/Processor beyond its specified frequency. JP16 jumper is used for the CPU Front Side Bus Frequencies from 100MHz to 133MHz .



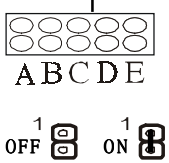

| CPU(MHz) | DDR(MHz) | 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|
| 100 | 100 | ON | ON | OFF | OFF |
| 100 (default) | 133 | ON | OFF | ON | ON |
| 133 | 133 | ON | OFF | OFF | OFF |

## 1.6.3 CPU Ratio Selection: JP14

JP14 jumper is used for the CPU Ratio selection.

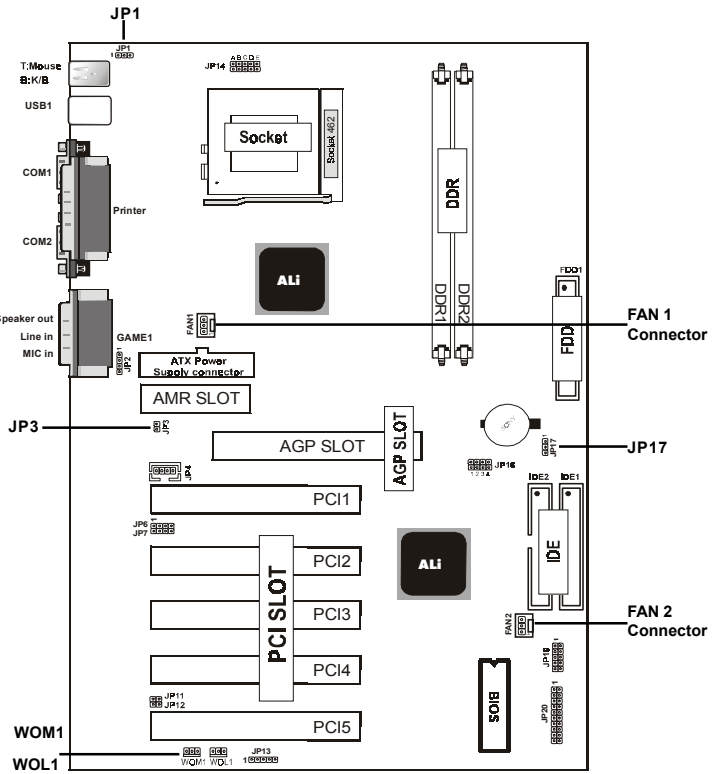



| Ratio | A | B | C | D | E |
|---|---|---|---|---|---|
| Auto (default) | OFF | OFF | OFF | OFF | ON |
| x7 | OFF | ON | ON | ON | OFF |
| x7.5 | OFF | ON | ON | OFF | OFF |
| x8 | OFF | ON | OFF | ON | OFF |
| x8.5 | OFF | ON | OFF | OFF | OFF |
| x9 | OFF | OFF | ON | ON | OFF |
| x9.5 | OFF | OFF | ON | OFF | OFF |
| x10 | OFF | OFF | OFF | ON | OFF |
| x10.5 | OFF | OFF | OFF | OFF | OFF |
| x11 | ON | ON | ON | ON | OFF |
| x11.5 | ON | ON | ON | OFF | OFF |
| x12 | ON | ON | OFF | ON | OFF |
| x12.5 | ON | ON | OFF | OFF | OFF |



## 1.7 Jumper Setting

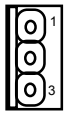
A jumper has two or more pins that can be covered by a plastic jumper cap, allowing you to select different system options.



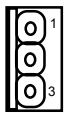

### 1.7.1 CPU/System Fan Connectors: Fan1/2

| Pin | Assignment |
|---|---|
| 1 | Ground |
| 2 | +12VDC |
| 3 | Signal |

### 1.7.2 Wake-On Modem Header: WOM1

| Pin | Assignment |
|---|---|
|  1 | 5V_SB |
| 2 | Ground |
| 3 | Signal |

### 1.7.3 Wake-On LAN Header: WOL1

| Pin | Assignment |
|---|---|
|  1 | 5V_SB |
| 2 | Ground |
| 3 | Signal |

### 1.7.4 AMR Code Function: JP3

| Pin | Assignment |
|---|---|
| ON  | On board CODEC is used (default) |
| OFF  | AMR slot is used |

### 1.7.5 Keyboard Wake up Setting: JP1

The JP1 Jumper is for setting keyboard power.This function is provided by keyboard Wake-up function.

| Pin | Assignment |
|---|---|
| 1-2 | Disabled (default) |
| 2-3 | Enabled |

### 1.7.6 CMOS Function Select: JP17

| Pin | Assignment |
|---|---|
| 1-2 | Normal (default) |
| 2-3 | Clear CMOS |

**NOTE:**

**(Please follow the procedure below to clear CMOS data.)**

(1)Remove the AC power line.
(2)JP17(2-3)Closed.
(3)Wait five seconds.
(4)JP17(1-2) Closed.
(5)AC Power on.
(6)Reset your desired password or clear CMOS data.

## 1.8 DDR SDRAM Installation

### 1.8.1 DDR

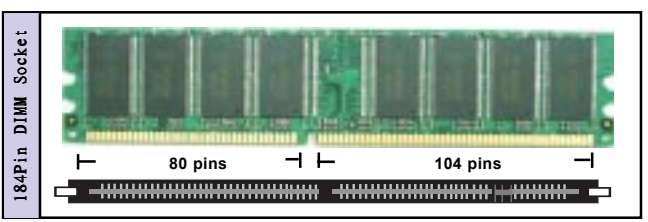
DDR SDRAM Access Time: 2.5V Unbuffered PC1600/ PC2100 Type required.

DDR SDRAM Type: 64MB, 128MB, 256MB, 512 MB, 1GB DDR Module. (184 pin)

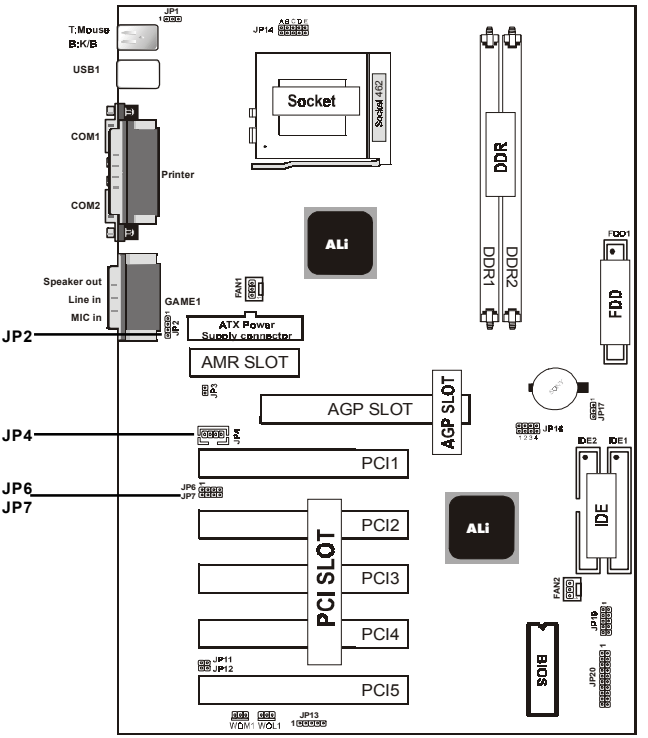
| Bank | Memory module |
|---|---|
| DDR 1 | 64MB, 128MB, 256MB, 512MB, 1GB |
| ( Bank 0-1 ) | 184 pin, 2.5V DDR SDRAM |
| DDR 2 | 64MB, 128MB, 256MB, 512MB, 1GB |
| ( Bank 2-3 ) | 184 pin , 2.5V DDR SDRAM |
| | **Total System Memory (Max 2GB)** |

### 1.8.2 How to install a DDR Module

1. The DDR socket has a “Plastic Safety Tab” and the DDR memory module has an asymmetrical notch”, so the DDR memory module can only fit into the slot in one direction.
2. Push the tabs out. Insert the DDR memory modules into the socket at a 90-degree angle then push down vertically so that it will fit into place.
3. The Mounting Holes and plastic tabs should fit over the edge and hold the DDR memory modules in place.



# 1.9 Audio Subsystem




## 1.9.1 CD Audio-In Connector: JP4

| Pin JP4 | Assignment |
|---|---|
| 1 | CD-L |
| 2 | GND |
| 3 | GND |
| 4 | CD-R |

### 1.9.2 Telephone in Connector: JP2

| Pin JP2 | Assignment |
|---|---|
| 1 | PHONE |
| 2 | GND |
| 3 | GND |
| 4 | MONO_OUT |

### 1.9.3 AUX Audio in Connector: JP7

| Pin JP7 | Assignment |
|---|---|
| 1 | AUX_L |
| 2 | GND |
| 3 | GND |
| 4 | AUX_R |

### 1.9.4 Video in Connector: JP6

| Pin JP6 | Assignment |
|---|---|
| 1 | Video_L |
| 2 | GND |
| 3 | GND |
| 4 | Video_R |