1

Getting Started

Thank you for purchasing the MS-6575 v3.X M-ATX mainboard. The MS-6575 is based on **SiS® 651** & **SiS® 962** chipsets for optimal system efficiency. Designed to fit the advanced **Intel® Pentium 4/Celeron** processor in the 478-pin package, MS-6575 delivers a high performance and professional desktop platform solution.

Mainboard Specifications

CPU
➤ Supports Socket 478 for Intel® Pentium 4/Celeron Willamette & Northwood processors
➤ Core Frequency from 1.5 GHz to 2.4 GHz and up
➤ Supports FSB 400/533 MHz

Chipsets
➤ SiS® 651 chipset
   - High performance host interface (400/533MHz)
   - 64-bit performance DDR333/DDR266 memory controller
   - Integrated AGP compliant target/66 MHz Host-to-PCI bridge
   - Dedicated isochronous response queue
➤ SiS® 962 chipset
   - High performance SiS MuTIOL Technology Interconnecting SiS North bridge and South bridge chips
   - Dual IDE Master/Slave controller
   - Integrated Audio controller with AC'97 interface
   - Universal Serial Bus Host controller (Integrated one USB 2.0 Host controller and three USB 1.1 Host controllers)

Main Memory
➤ Supports two 184-pin unbuffered double-sided DDR DIMMs
➤ Supports up to 2GB DDR 333/DDR266 DDR SDRAMs

Slots
➤ One AGP (Accelerated Graphics Port) 2x/4x slot
   - support 1.5V/3.3V
➤ Three 32-bit PCI bus slots

On-Board IDE
➤ Dual IDE controller integrated in SiS 962
➤ Support PIO, Bus Master and Ultra DMA66/100 operation modes
➤ Can connect up to four IDE devices

On-Board Peripherals
➤ On-Board Peripherals include:
   - 1 floppy port supports 2 FDDs with 360K, 720K, 1.2M, 1.44M and

2.88Mbytes
- 1 serial port and 1 VGA port
- 1 parallel port
- 1 RJ-45 LAN jack (optional)
- 3 audio ports in vertical
- 1 IEEE 1394 pinheader and 1 IEEE 1394 port
- 6 USB ports (Rear * 4/ Front * 2)

Audio
➤ AC97 Codec ALC650F

LAN(optional)
➤ Realtek 8201BL

OnboardIEEE1394
➤ Realtek 8801B

BIOS
➤ The mainboard BIOS provides "Plug & Play" BIOS which detects the pe-ripheral devices and expansion cards of the board automatically.
➤ The mainboard provides a Desktop Management Interface (DMI) function which records your mainboard specifications.

Dimension
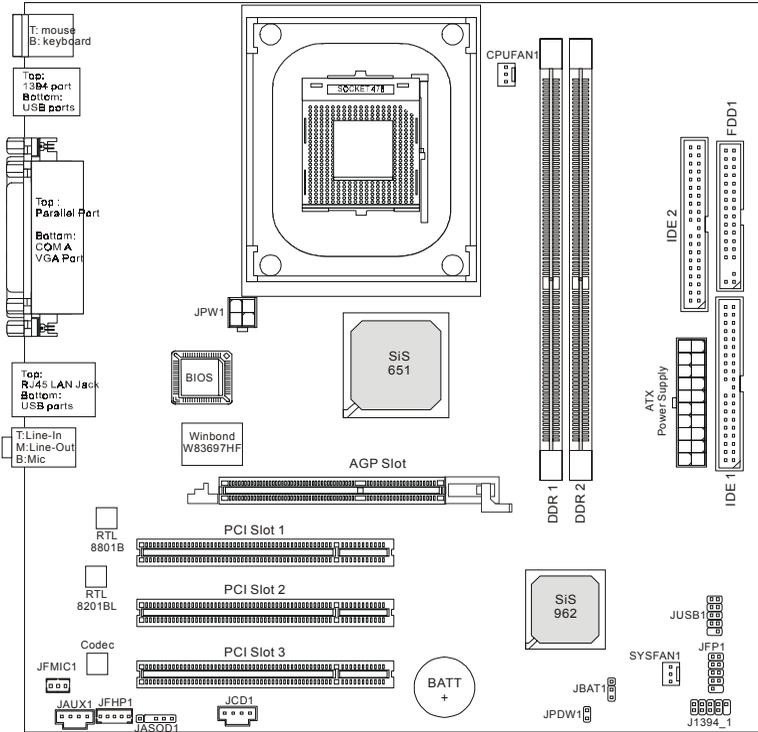➤ M-ATX Form Factor: 24.4 cm (L) x 24.4 cm (W)

Mounting
➤ 6 mounting holes

Others
➤ Support STR/STD (S3/S4)
➤ PC2001 compliant

Mainboard Layout

T: mouse B: keyboard	
Top: 1394 port Bottom: USB ports	CPUFAN1
Top : Parallel Port Bottom: COM A VGA Port	SOCKET 478
	JPW1
Top : RJ45 LAN Jack Bottom: USB ports	BIOS · SiS 651
T:Line-In M:Line-Out B:Mic	Winbond W83697HF

AGP Slot

RTL 8801B — PCI Slot 1

RTL 8201BL — PCI Slot 2

Codec — PCI Slot 3

JFMIC1 · SiS 962

JAUX1 · JFHP1 · JASOD1 · JCD1 · BATT + · JBAT1 · JPDW1 · SYSFAN1 · JFP1 · JUSB1 · J1394_1

DDR 1 · DDR 2 · IDE 2 · FDD1 · ATX Power Supply · IDE 1
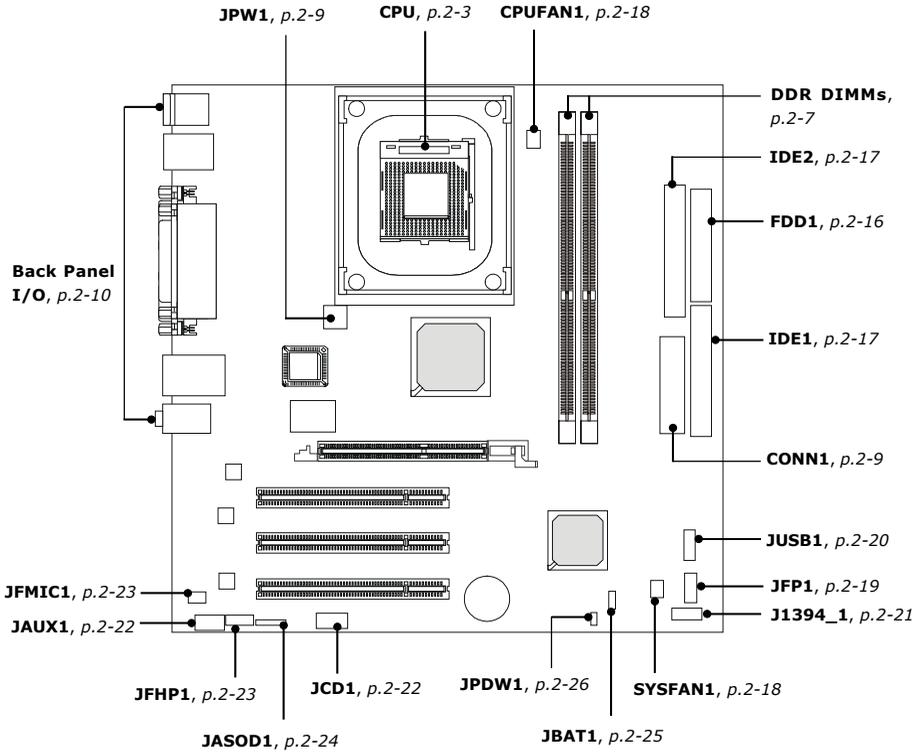
MS-6575 v3.X M-ATX Mainboard

2

Hardware Setup

This chapter tells you how to install the CPU, memory modules, and expansion cards, as well as how to setup the jumpers on the mainboard. Also, it provides the instructions on connecting the peripheral devices, such as the mouse, keyboard, etc.

While doing the installation, be careful in holding the components and follow the installation procedures.

Quick Components Guide

JPW1, *p.2-9*   **CPU**, *p.2-3*   **CPUFAN1**, *p.2-18*

DDR DIMMs, *p.2-7*

IDE2, *p.2-17*

FDD1, *p.2-16*

Back Panel I/O, *p.2-10*

IDE1, *p.2-17*

CONN1, *p.2-9*

JUSB1, *p.2-20*

JFMIC1, *p.2-23*

JFP1, *p.2-19*

JAUX1, *p.2-22*

J1394_1, *p.2-21*

JFHP1, *p.2-23*   **JCD1**, *p.2-22*   **JPDW1**, *p.2-26*   **SYSFAN1**, *p.2-18*

JASOD1, *p.2-24*   **JBAT1**, *p.2-25*

Central Processing Unit: CPU

The mainboard supports Intel® Pentium® 4/Celeron processor in the 478 pin package. The mainboard uses a CPU socket called PGA478 for easy CPU installation. When you are installing the CPU, **make sure the CPU has a heat sink and a cooling fan attached on the top to prevent overheating.** If you do not find the heat sink and cooling fan, contact your dealer to purchase and install them before turning on the computer.
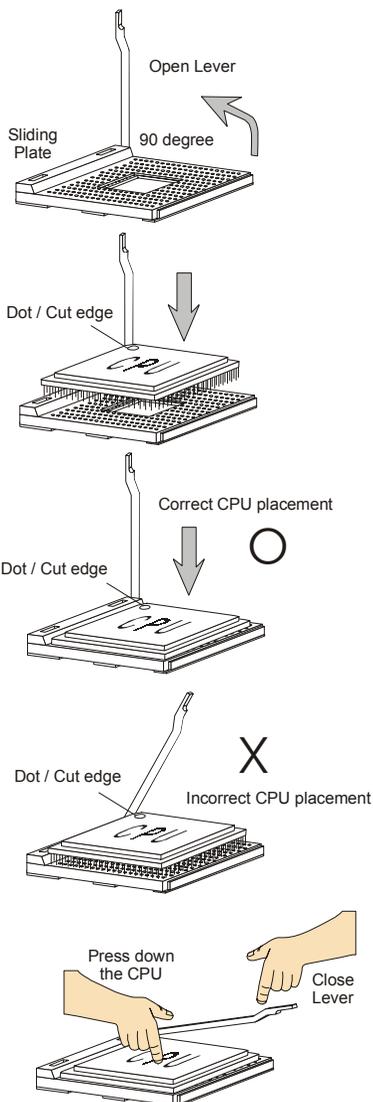
CPU Core Speed Derivation Procedure

CPU Clock multiplied by **Core/Bus ratio** equals the CPU core speed.

For example:
If	CPU Clock	=	100MHz
	Core/Bus ratio	=	14
then	CPU core speed	=	Host Clock x Core/Bus ratio
		=	100MHz x 14
		=	1.4 GHz

CPU Installation Procedures for Socket 478

1. Please turn off the power and unplug the power cord before installing the CPU.

2. Pull the lever sideways away from the socket. Make sure to raise the lever up to a 90-degree angle.

3. Look for the cut edge. The cut edge should point towards the lever pivot. The CPU can only fit in the correct orientation.

4. If the CPU is correctly installed, the pins should be completely embedded into the socket and can not be seen. Please note that any violation of the correct installation procedures may cause permanent damages to your mainboard.

5. Press the CPU down firmly into the socket and close the lever. As the CPU is likely to move while the lever is being closed, always close the lever with your fingers pressing tightly on top of the CPU to make sure the CPU is properly and completely embedded into the socket.

Open Lever

Sliding Plate   90 degree

Dot / Cut edge

Correct CPU placement

Dot / Cut edge

O

Dot / Cut edge

X

Incorrect CPU placement
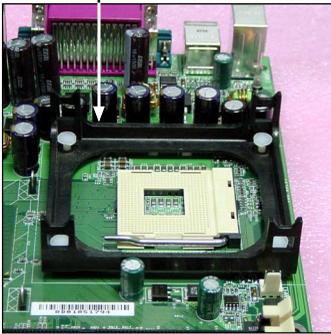
Press down the CPU

Close Lever

Installing the CPU Fan

As processor technology pushes to faster speeds and higher performance, thermal management becomes increasingly important. To dissipate heat, you need to attach the CPU cooling fan and heatsink on top of the CPU. Follow the instructions below to install the Heatsink/Fan:

**1.** Locate the CPU and its retention mechanism on the motherboard.

retention mechanism

2. Position the heatsink onto the retention mechanism.

3. Mount the fan on top of the heatsink. Press down the fan until its four clips get wedged in the holes of the retention mechanism.

4. Press the two levers down to fasten the fan. Each lever can be pressed down in only ONE direction.

levers
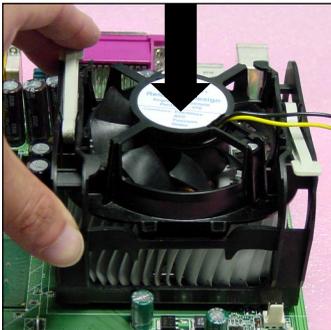
5. Connect the fan power cable from the mounted fan to the 3-pin fan power connector on the board.
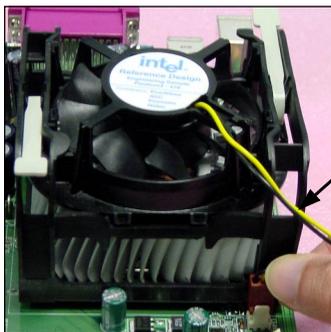
fan power cable

☞ **Note:**

Overheating
Overheating will seriously damage the CPU and system, always make sure the cooling fan can work properly to protect the CPU from overheating.

Replacing the CPU
While replacing the CPU, always turn off the ATX power supply or unplug the power supply's power cord from grounded outlet first to ensure the safety of CPU.

Overclocking
*This motherboard is designed to support overclocking. However, please make sure your components are able to tolerate such abnormal setting, while doing overclocking. Any attempt to operate beyond product specifications is not recommended. **We do not guarantee the damages or risks caused by inadequate operation or beyond product specifications.***

Memory

The mainboard provides 2 slots for 184-pin DDR SDRAM DIMM (Double In-Line Memory Module) modules and supports the memory size up to 2GB. You can install PC2700/DDR333 or PC2100/DDR266 modules on the DDR DIMM slots (DDR 1~2).
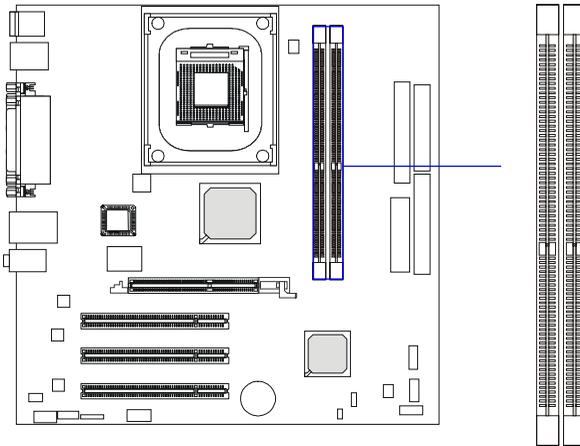
DDR DIMM Slots
(DDR 1~2)

Introduction to DDR SDRAM

DDR (Double Data Rate) SDRAM is similar to conventional SDRAM, but doubles the rate by transferring data twice per cycle. It uses 2.5 volts, and requires 184-pin DIMM modules. High memory bandwidth makes DDR an ideal solution for high performance PC, workstations and servers.

DIMM Module Combination

Install at least one DIMM module on the slots. Memory modules can be installed on the slots in any order. You can install either single- or double-sided modules to meet your own needs.

Memory modules can be installed in any combination as follows:

Slot	Memory Module	Total Memory
DIMM 1 (Bank 0 & 1)	S/D	64MB~1GB
DIMM 2 (Bank 2 & 3)	S/D	64MB~1GB
Maximum System Memory Supported		64MB~2GB

S: Single Side   D: Double Side

Installing DDR Modules

1. The DDR DIMM has only one notch on the center of module. The module will only fit in the right orientation.
2. Insert the DIMM memory module vertically into the DIMM slot. Then push it in until the golden finger on the memory module is deeply inserted in the socket.
3. The plastic clip at each side of the DIMM slot will automatically close.

Volt   **Notch**
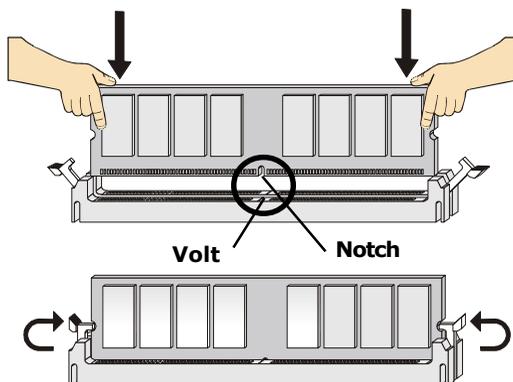
Note:
> *You can barely see the golden finger if the module is properly inserted in the socket.*

Power Supply

The mainboard supports ATX power supply for the power system. Before inserting the power supply connector, always make sure that all components are installed properly to ensure that no damage will be caused.

ATX 20-Pin Power Connector: CONN1

This connector allows you to connect to an ATX power supply. To connect to the ATX power supply, make sure the plug of the power supply is inserted in the proper orientation and the pins are aligned. Then push down the power supply firmly into the connector.

ATX 12V Power Connector: JPW1

This 12V power connector is used to provide power to the CPU.
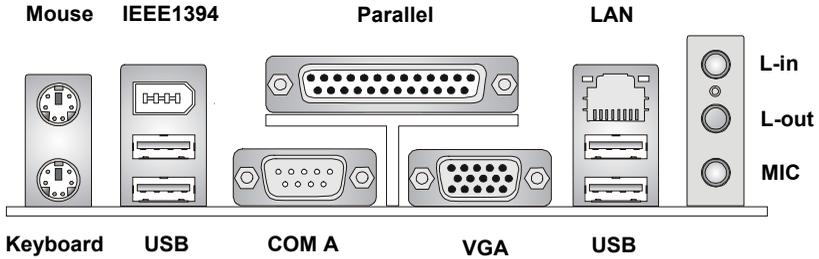

JPW1 Pin Definition

PIN	SIGNAL
1	GND
2	12V
3	12V
4	GND
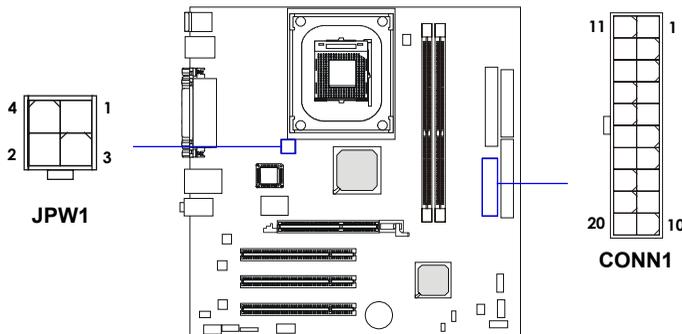
CONN1 Pin Definition

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

Back Panel

The back panel provides the following connectors:

Mouse   **IEEE1394**   **Parallel**   **LAN**

L-in

L-out

MIC

Keyboard   **USB**   **COM A**   **VGA**   **USB**

IEEE 1394 Port

The 6-pin IEEE 1394 port is used to connect 1394-compatible external devices via 6-pin to 6-pin or 6-pin to 4-pin 1394 cables.
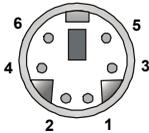
Pin Definition

2 4 6
1 3 5
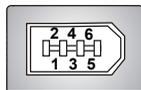
IEEE 1394 Port

PIN	SIGNAL
1	PWR
2	GND
3	TPB-
4	TPB+
5	TPA-
6	TPA+

Mouse Connector

The mainboard provides a standard PS/2® mouse mini DIN connector for attaching a PS/2® mouse. You can plug a PS/2® mouse directly into this connector. The connector location and pin assignments are as follows:
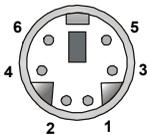
Pin Definition

PIN	SIGNAL	DESCRIPTION
1	Mouse DATA	Mouse DATA
2	NC	No connection
3	GND	Ground
4	VCC	+5V
5	Mouse Clock	Mouse clock
6	NC	No connection

PS/2 Mouse (6-pin Female)

Keyboard Connector

The mainboard provides a standard PS/2® keyboard mini DIN connector for attaching a PS/2® keyboard. You can plug a PS/2® keyboard directly into this connector.
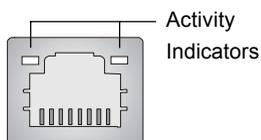
Pin Definition

PIN	SIGNAL	DESCRIPTION
1	Keyboard DATA	Keyboard DATA
2	NC	No connection
3	GND	Ground
4	VCC	+5V
5	Keyboard Clock	Keyboard clock
6	NC	No connection

PS/2 Keyboard (6-pin Female)

RJ-45 LAN Jack (Optional)

The mainboard provides a RJ-45 connector that allows your computer to be connected to a network environment.

Activity
Indicators

LAN Jack
(RJ-45)

Pin	Signal	Description
1	TDP	Transmit differential pair
2	TDN	Transmit differential pair
3	RDP	Receive differential pair
4	NC	Not used
5	NC	Not used
6	RDN	Receive differential pair
7	NC	Not used
8	NC	Not used

USB Connectors

The mainboard provides an OHCI (Open Host Controller Interface) Universal Serial Bus root for attaching USB devices such as keyboard, mouse or other USB-compatible devices. You can plug the USB device directly into the connector.

1 2 3 4

5 6 7 8
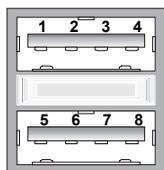
USB Ports

USB Port Description

PIN	SIGNAL	DESCRIPTION
1	VCC	+5V
2	-Data 0	Negative Data Channel 0
3	+Data0	Positive Data Channel 0
4	GND	Ground
5	VCC	+5V
6	-Data 1	Negative Data Channel 1
7	+Data 1	Positive Data Channel 1
8	GND	Ground

Serial Port Connector

The mainboard offers one 9-pin male DIN connector as the serial port. It is 16550A high speed communication port that sends/receives 16 bytes FIFOs. You can attach a serial mouse or other serial device directly to it.
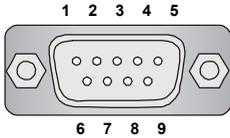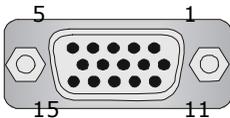
Pin Definition

9-Pin Male DIN Connector

PIN	SIGNAL	DESCRIPTION
1	DCD	Data Carry Detect
2	SIN	Serial In or Receive Data
3	SOUT	Serial Out or Transmit Data
4	DTR	Data Terminal Ready)
5	GND	Ground
6	DSR	Data Set Ready
7	RTS	Request To Send
8	CTS	Clear To Send
9	RI	Ring Indicate

VGA Connector

The mainboard provides a DB 15-pin female connector to connect a VGA monitor.

VGA Connector
(DB 15-pin)

Pin	Signal Description
1	RED
2	GREEN
3	BLUE
4	N/C
5	GND
6	GND
7	GND
8	GND
9	+5V
10	GND
11	N/C
12	SDA
13	Horizontal Sync
14	Vertical Sync
15	SCL

Parallel Port Connector: LPT1

The mainboard provides a 25-pin female centronic connector as LPT. A parallel port is a standard printer port that supports Enhanced Parallel Port (EPP) and Extended Capabilities Parallel Port (ECP) mode.
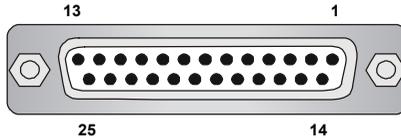

Pin Definition

PIN	SIGNAL	DESCRIPTION
1	STROBE	Strobe
2	DATA0	Data0
3	DATA1	Data1
4	DATA2	Data2
5	DATA3	Data3
6	DATA4	Data4
7	DATA5	Data5
8	DATA6	Data6
9	DATA7	Data7
10	ACK#	Acknowledge
11	BUSY	Busy
12	PE	Paper End
13	SELECT	Select
14	AUTO FEED#	Automatic Feed
15	ERR#	Error
16	INIT#	Initialize Printer
17	SLIN#	Select In
18	GND	Ground
19	GND	Ground
20	GND	Ground
21	GND	Ground
22	GND	Ground
23	GND	Ground
24	GND	Ground
25	GND	Ground

Audio Port Connectors

Line Out is a connector for Speakers or Headphones. **Line In** is used for external CD player, Tape player, or other audio devices. **Mic** is a connector for microphones.
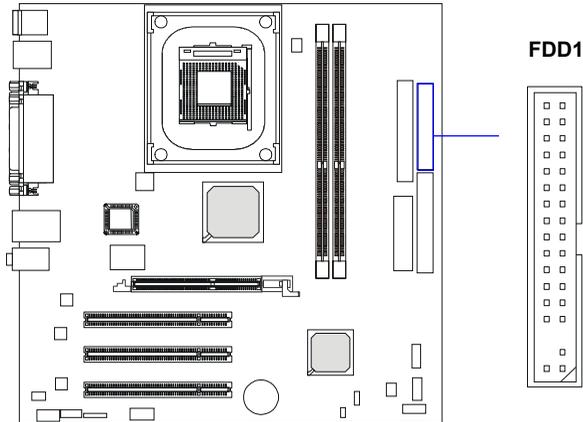
1/8" Stereo Audio Connectors

Line In

Line Out

MIC
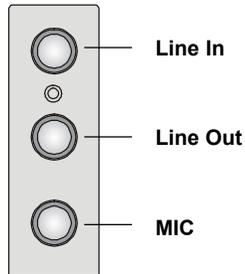
Connectors

The mainboard provides connectors to connect to FDD, IDE HDD, case, modem, LAN, USB Ports, IR module and CPU/System/Power Supply FAN.

Floppy Disk Drive Connector: FDD1

The mainboard provides a standard floppy disk drive connector that supports 360K, 720K, 1.2M, 1.44M and 2.88M floppy disk types.

FDD1

Hard Disk Connectors: IDE1 & IDE2

The mainboard has a 32-bit Enhanced PCI IDE and Ultra DMA 33/66/100 controller that provides PIO mode 0~4, Bus Master, and Ultra DMA 33/66/100 function. You can connect up to four hard disk drives, CD-ROM and other IDE devices.
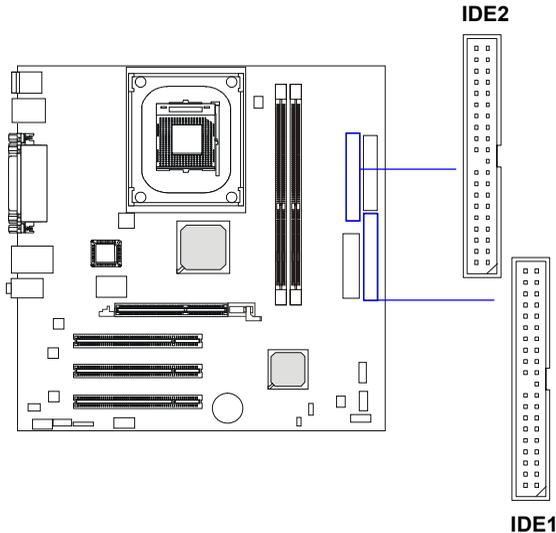
IDE1 (Primary IDE Connector)

The first hard drive should always be connected to IDE1. IDE1 can connect a Master and a Slave drive. You must configure second hard drive to Slave mode by setting the jumper accordingly.

IDE2 (Secondary IDE Connector)

IDE2 can also connect a Master and a Slave drive.

> **Note:**
> *If you install two hard disks on cable, you must configure the second drive to Slave mode by setting its jumper. Refer to the hard disk documentation supplied by hard disk vendors for jumper setting instructions.*

Fan Power Connectors: CPUFAN1/SYSFAN1

The CPUFAN1 (processor fan) and SYSFAN1 (system fan) support system cooling fan with +12V. It supports three-pin head connector. When connecting the wire to the connectors, always take note that the red wire is the positive and should be connected to the +12V, the black wire is Ground and should be connected to GND. If the mainboard has a System Hardware Monitor chipset on-board, you must use a specially designed fan with speed sensor to take advantage of the CPU fan control.
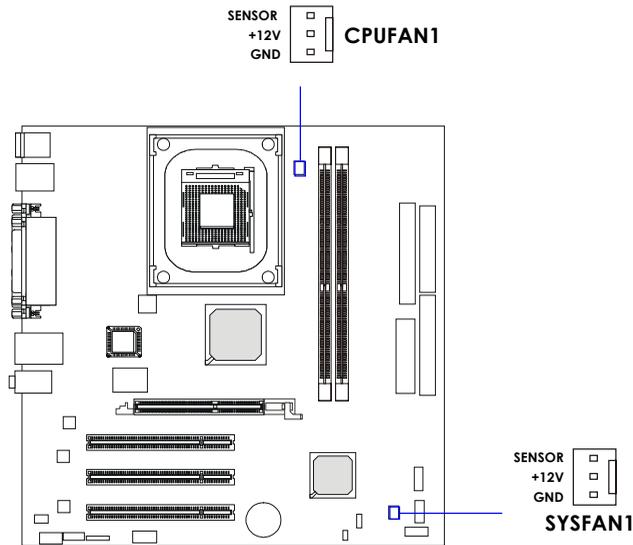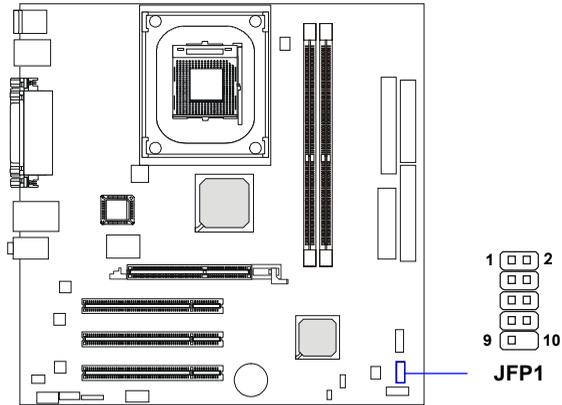

> **Note:**
> *Always consult the vendors for proper CPU cooling fan.*

Front Panel Connector: JFP1

The mainboard provides one front panel connector for establishing electrical connection to the front panel switches and LEDs.
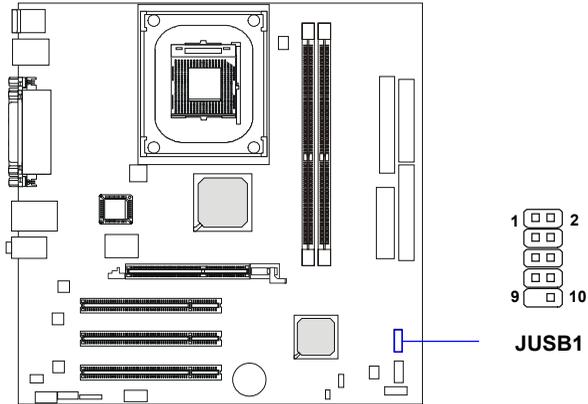

JFP1 Pin Definition

PIN	SIGNAL
1	HD_LED_P
2	PWR_LED_P
3	HD_LED_N
4	PWR_LED_N
5	RST_SW_N
6	PWRBTN#
7	RST_SW_P
8	GND
9	NC
10	KEY (NO PIN)

Front USB Connector: JUSB1

The mainboard provides one front Universal Serial Bus connector for you to connect to USB devices.

1 ▢▢▢ **2**

9 ▢▢ **10**

JUSB1

Pin Definition

Pin	Signal	Pin	Signal
1	V_FP_USBPWR0	2	V_FP_USBPWR0
3	USB_FP_P0-	4	USB_FP_P1-
5	USB_FP_P0+	6	USB_FP_P1+
7	GND	8	GND
9	KEY (NO PIN)	10	USB_FP_OC0

IEEE 1394 Connectors: J1394_1

The mainboard provides one 1394 pin header that allows you to connect optional IEEE 1394 ports.

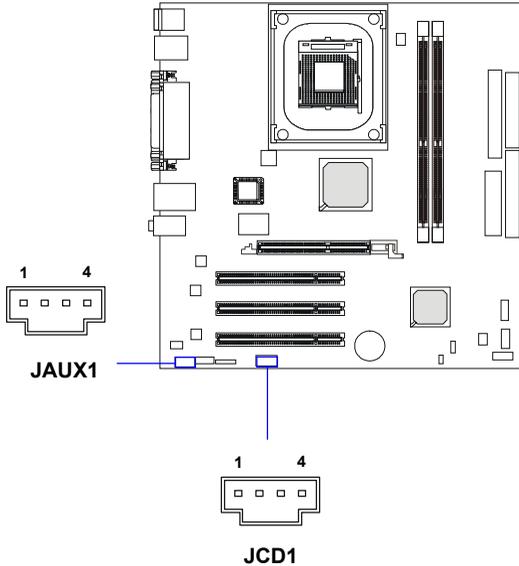**J1394_1**
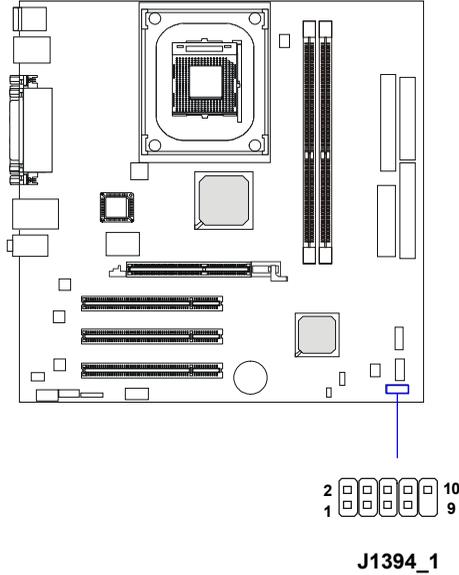
Pin Definition

Pin	Signal	Pin	Signal
1	TPA+	2	TPA-
3	GND	4	GND
5	TPB+	6	TPB-
7	+12V	8	+12V
9	(No pin)	10	GND

CD-In Connector: JCD1

The connector is for CD-ROM audio connector.

Front Line-In Connector: JAUX1

The connector is for DVD add-on card with Line-in connector.

1   4

JAUX1

1   4

JCD1

JAUX1 Pin Definition

Pin	Signal
1	Aux-L Audio
2	AGND
3	AGND
4	Aux-R Audio

JCD1 Pin Definition

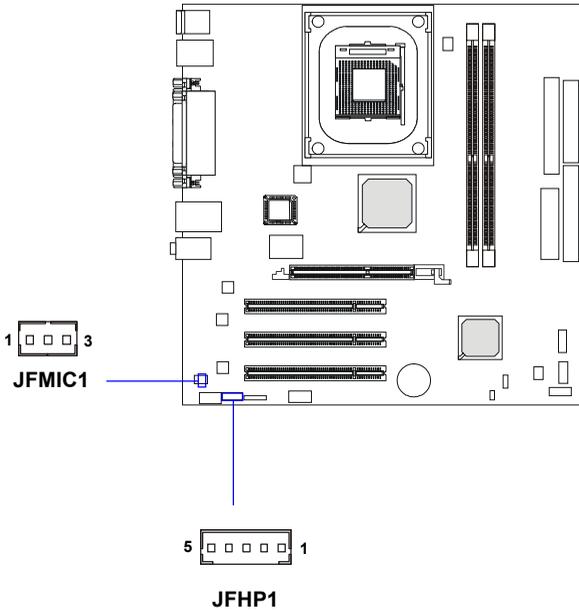| Pin	Signal
1	CD-L Audio
2	CD-GND
3	CD-GND
4	CD-R Audio

Front MIC IN Header: JFMIC1

This connector is used to connect the front panel microphone if available.

Front HeadPhone Header: JFHP1

This connector is used to connect the front headphone if available.

JFMIC1 Pin Definition

Pin	Signal
1	MIC PWR
2	MIC Signal
3	Analog GND

JFHP1 Pin Definition

Pin	Signal
1	HP_R Signal
2	Front Out-R Signal
3	Analog Ground
4	HP_L Signal
5	Front Out-L Signal

Amplified Speaker Out Daughter Card Header: JASOD1

This connector provides speaker output with amplifier via external bracket.

1 ▢ ▢ ▢ ▢ **5**
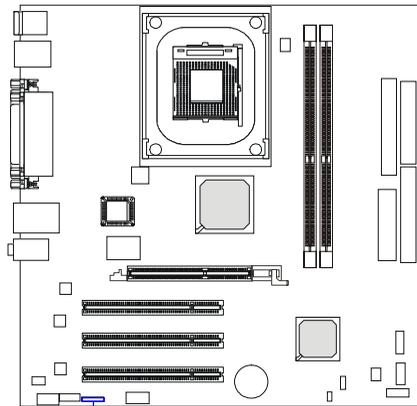
JASOD1

Pin Definition

Pin	Signal
1	+12V
2	NA
3	Speak Out-R Signal
4	Analog Ground
5	Speak Out-L Signal

Jumpers

The motherboard provides the following jumpers for you to set the computer's function. This section will explain how to change your motherboard's function through the use of jumpers.

Clear CMOS Jumper: JBAT1

There is a CMOS RAM on board that has a power supply from external battery to keep the data of system configuration. With the CMOS RAM, the system can automatically boot OS every time it is turned on. That battery has long life time for at least 5 years. If you want to clear the system configuration, use the JBAT1 (Clear CMOS Jumper) to clear data. Follow the instructions below to clear the data:
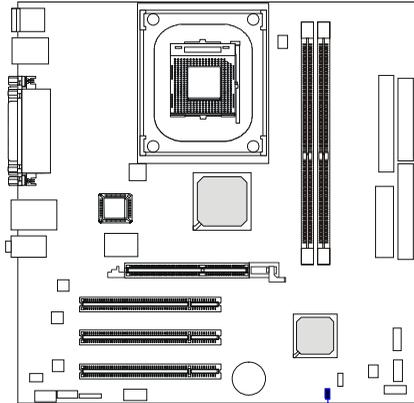

Keep CMOS   Clear CMOS

JBAT1
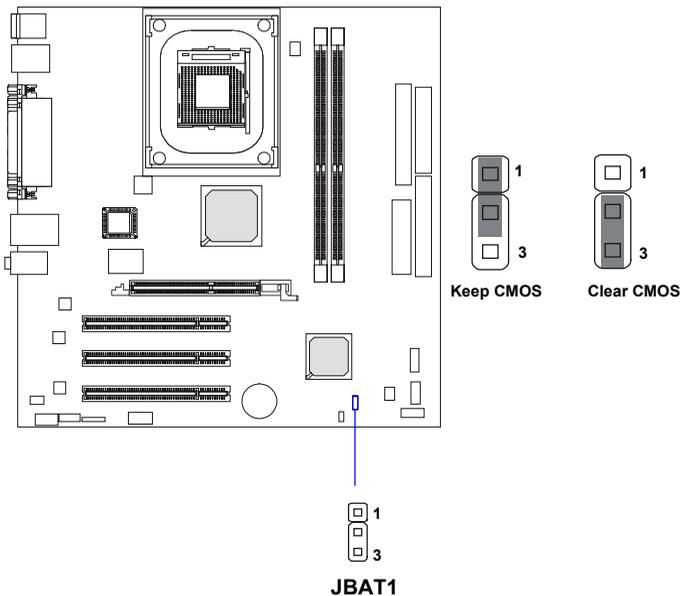
> **Note:**
> *To clear CMOS, first make the #2-3 pin short connected after the system is off. And then power on the system and short connect #1-2 pin before entering the BIOS (Standard CMOS Features) to clear data.*

Clear BIOS Password Jumper: JPWD1

The jumper is used to clear the BIOS password. To clear the password, open the jumper and restart your computer.
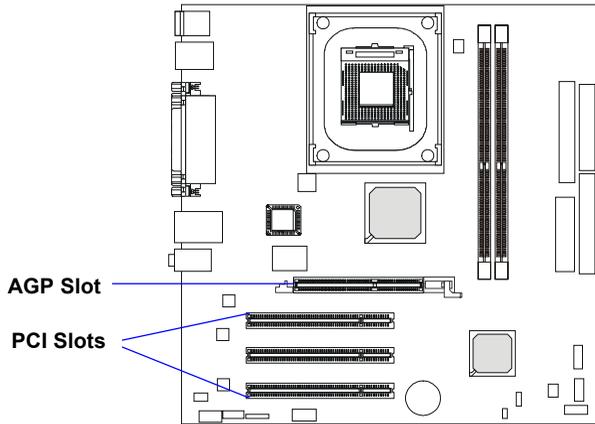

JPWD1

Clear   **Normal**

Slots

The motherboard provides one AGP slot and three 32-bit PCI bus slots.

AGP Slot

PCI Slots

AGP (Accelerated Graphics Port) Slot

The AGP slot allows you to insert the AGP graphics card. AGP is an interface specification designed for the throughput demands of 3D graphics. It introduces a 66MHz, 32-bit channel for the graphics controller to directly access main memory and provides two levels of throughputs: 2x (533Mbps) and 4x (1.07Gbps).

PCI (Peripheral Component Interconnect) Slots

The PCI slots allow you to insert the expansion cards to meet your needs. When adding or removing expansion cards, make sure that you unplug the power supply first. Meanwhile, read the documentation for the expansion card to make any necessary hardware or software settings for the expansion card, such as jumpers, switches or BIOS configuration.

PCI Interrupt Request Routing

The IRQ, abbreviation of interrupt request line and pronounced I-R-Q, are hardware lines over which devices can send interrupt signals to the microprocessor. The PCI IRQ pins are typically connected to the PCI bus INT A# ~ INT D# pins as follows:

	Order 1	Order 2	Order 3	Order 4
PCI Slot 1	INT B#	INT C#	INT D#	INT A#
PCI Slot 2	INT C#	INT D#	INT A#	INT B#
PCI Slot 3	INT D#	INT A#	INT B#	INT C#