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, AMD Athlon / Duron processors base PC ATX system, support single processors with ISA Bus, PCI Local Bus, and AGP Bus to support upgrades to 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 , Windows98SE, 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 AMD Socket 462 Athlon/Duron.

-200MHz/266MHz System Interface speed.

Speed

-Supports 33MHz PCI Bus speed.

-Supports 4X AGP Bus.

DRAM Memory

-Supports 8/16/32/64....MB DIMM module socket.

-Supports Synchronous DRAM(3.3V)

-Supports a maximum memory size of 1.536GB with SDRAM.

Shadow RAM

-A memory controller provide shadow RAM and supports

8-bit ROM BIOS.

Green Function

-Support power management operation via BIOS.

-Power down timer from 1 to 15 mins.

-Wakes from power saving sleep mode at the press of

any key or any mouse activity.

Bus Slots

-Provide one AGP slot and one AMR.

-Five 32-bit PCI bus and one 16-bit ISA.

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 flash memory.

-support ESCD Function.

IDE Built-in On Board

-Supports four IDE hard disk drives.

-Supports PIO Mode 4, 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 (Optional)

-AC 97 2.1 interface.

-16 channels of high-quality sample rate conversion.

-16x8 channel digital mixer.

-Stereo 10 band graphic equalizer.

-Sound Blaster and Sound Blaster Pro emulation.

-64-voice wavetable.

I/O Built-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.

1.1.2 Software

BIOS

-AWARD legal BIOS.

-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,

Windows95/98, Windows98SE, UNIX, SCO UNIX etc.

1.1.3 Attachments

-HDD UDMA66/100 Cable.

-FDD Cable.

-Flash Memory Written for BIOS Update.

-USB2 Cable **(Optional)**.

-COM2 Cable.

-Fully Setup CD Driver (Ghost, Anitivirus,

Adobe Acrobat).

-This manual.

1.2 Motherboard Installation

1.2.1 Layout of Motherboard

T:Mouse
B:K/B

FAN3
JP3

Socket 462

SW2
1 2 3 4

USB1

Socket

SW1

DIMM

COM1

JP4

Printer

IDE1   IDE2

DIMM1 DIMM2 DIMM3

VIA

Speak out
Line in
MIC in

GAME1

ATX Power
Supply connector

IDE

AMR SLOT

AGP SLOT

JP1

CDIN1

AGP SLOT

FAN2

PCI1

IR1

PCI2

VIA

COM2   USB2

PCI SLOT

PCI3

JP2

FDD

FDD1

PCI4

LAN CHIP

PCI5

BIOS

WOM1
WOL1

FAN1

J1

ISA SLOT

ISA SLOT
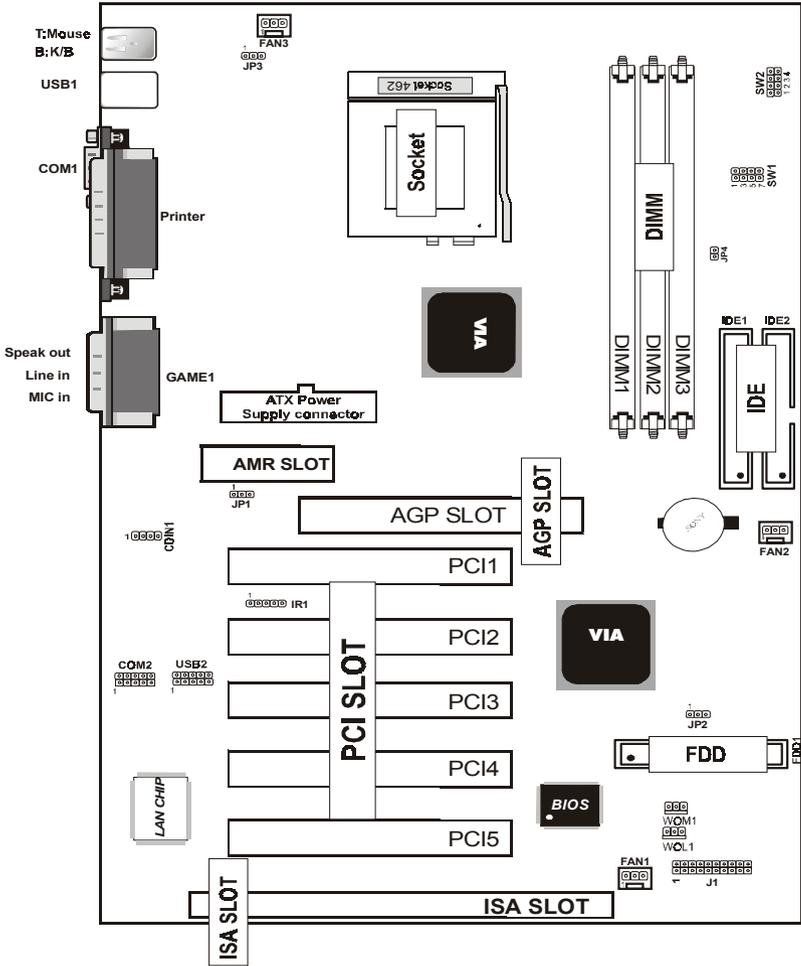
1.3 Motherboard Connectors
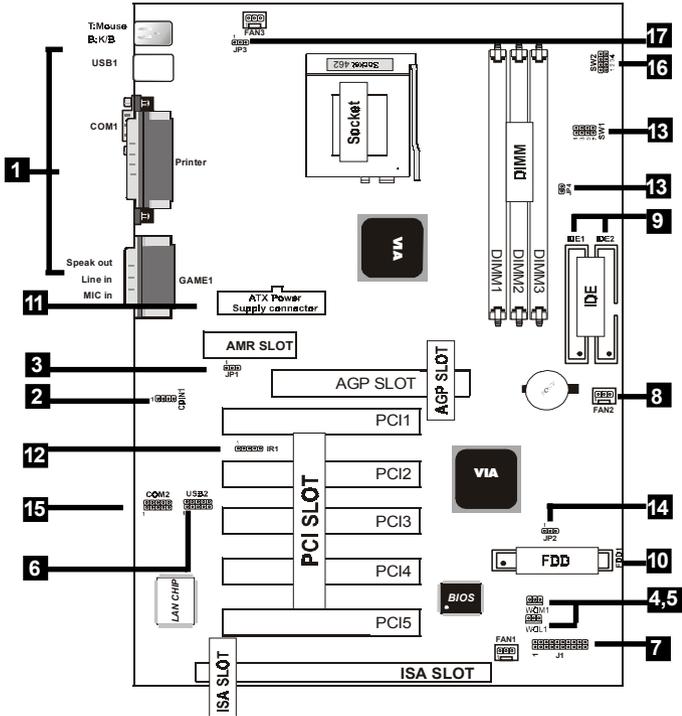
1.Back Panel I/O Connectors   2.CD Audio-In Connector
3.AMR CODEC Function(JP1)   4.Wake-On MODEM Connector
5.Wake-On-LAN Connector   6.Front USB2 Connector
7.Front Panel Connector   8.Fan connectors(Fan1/2/3)
9.IDE Connectors   10.Floppy Connector
11.ATX Power Connector   12.IR Connector
13.CPU Clock Selection(SW1/JP4)
14.CMOS Function Select(JP2)
15.Front COM2 Connector(COM2)
16.CPU Ratio Selection(SW2)
17.Keyboard Wake up Setting(JP3)

1.3.1 Front Panel Connector(J1)

J1 PANEL Connector

RST   HD_LED   PW_LED   PW_BN

G_LED   EXTSMI   SPKR
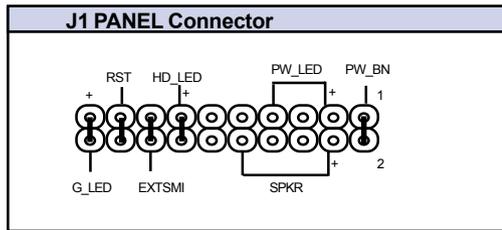
Speaker Connector (SPKR)

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 (HD_LED)

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 of Green mode. System 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. 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 Suspend Switch Lead cannot wake-up the system). If you want to use this connector, the "Suspend Switch" in the Power Management Setup of the BIOS SOFT-WARE 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 (G_LED)
The system SMI LED lights when the system suspend is on.
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 (IR1)

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

Parallel (Printer) Port (25-pin Female)

MIDI/(GAME) Port (15-pin Female)

PS/2 Mouse

USB1

PS/2 Keyboard (6-pin Female)

COM1

Serial Port(9-pin Male)

SPEAKER

LINE IN

MIC
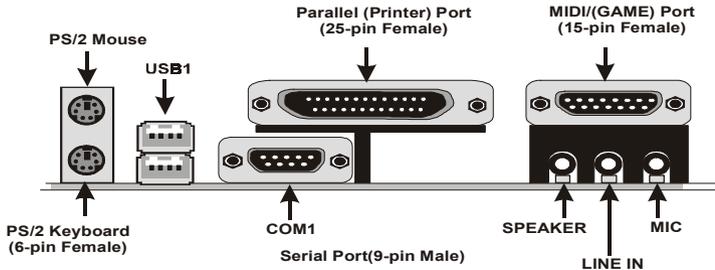
1.4.1 PS/2 Mouse /Keyboard CONN.

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(RJ45+USB)

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. You can plug the USB devices directly into this connector.

1234
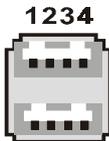
Pin	Signal
1	+5V_SB
2	USBP0-(USBP1-)
3	USBP0+(USBP1+)
4	GND
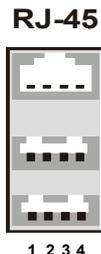
RJ-45

Pin	Signal
1	+5v
2	USBP0-(USBP1-)
3	USBP0+(USBP1+)
4	GND
RJ45	10/100M LAN Port (option)

1 2 3 4

Front Two USB Connectors: USB2

T:Mouse
B:K/B

USB1

COM1

Printer

Speak out
Line in
MIC in

GAME1

Socket 462

DIMM

DIMM1 DIMM2 DIMM3

SW2

SW1

VIA

IDE1 IDE2

IDE

FAN3
JP3

ATX Power
Supply connector

AMR SLOT

JP1

COM1

IR1

COM2 USB2

LAN CHIP

AGP SLOT

AGP SLOT

PCI1

PCI2

PCI3

PCI4

PCI5

PCI SLOT

FAN2

VIA

JP2

FDD

BIOS

WOM1
WOL1

FAN1

J1

ISA SLOT

ISA SLOT

USB 2

VCC	1	⊙⊙	6	GND
P2-	2	⊙⊙	7	GND
P2+	3	⊙⊙	8	P3+
GND	4	⊙⊙	9	P3-
GND	5	⊙⊙	10	VCC
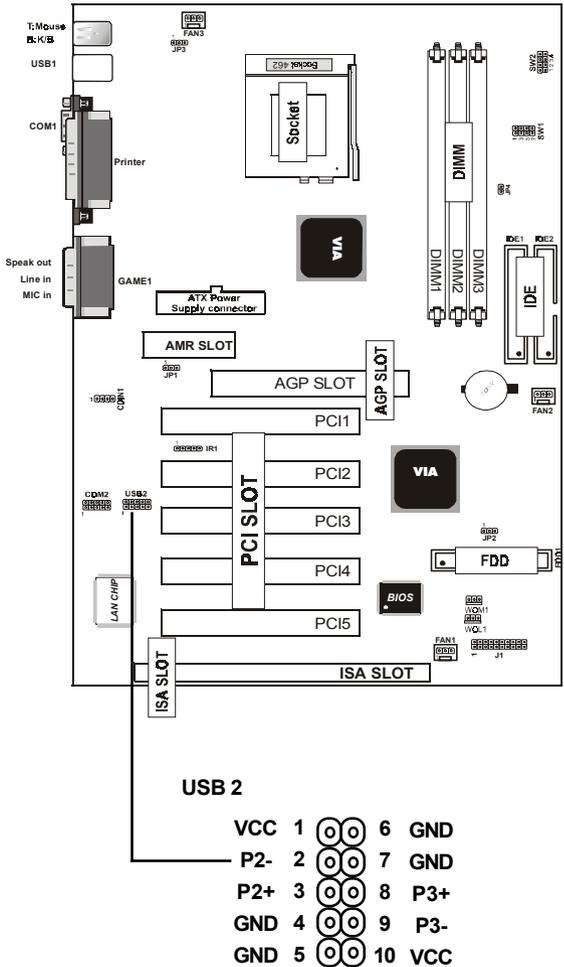
1.5 Serial and Parallel Interface Ports

This system comes equipped with two serial ports and one parallel port. Both types of interface ports will be explained in this chapter.

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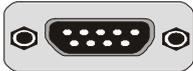
The serial port on this system has one 9-pin connector. Some older computer systems and peripherals used to be equipped with only a 25-pin connector. Should you need to connect your 9-pin serial port to an older 25-pin serial port, you can purchase a 9-to-25 pin adapter.

| 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
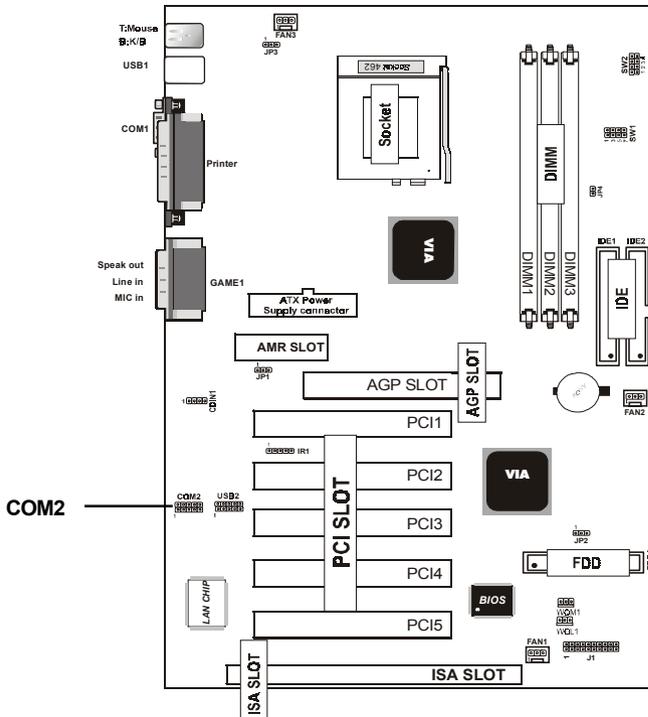
Parallel Interface Port

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 picture below).


Parallel (Printer) Port (25-pin Female)

MIDI/(GAME) Port (15-pin Female)

PS/2 Mouse

USB1

PS/2 Keyboard (6-pin Female)

COM1

Serial Port(9-pin Male)

SPEAKER

LINE IN

MIC
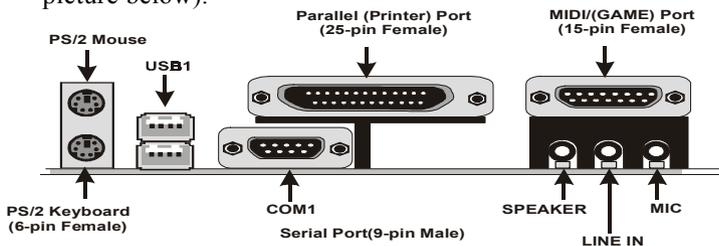
1.6 CPU Installation

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.
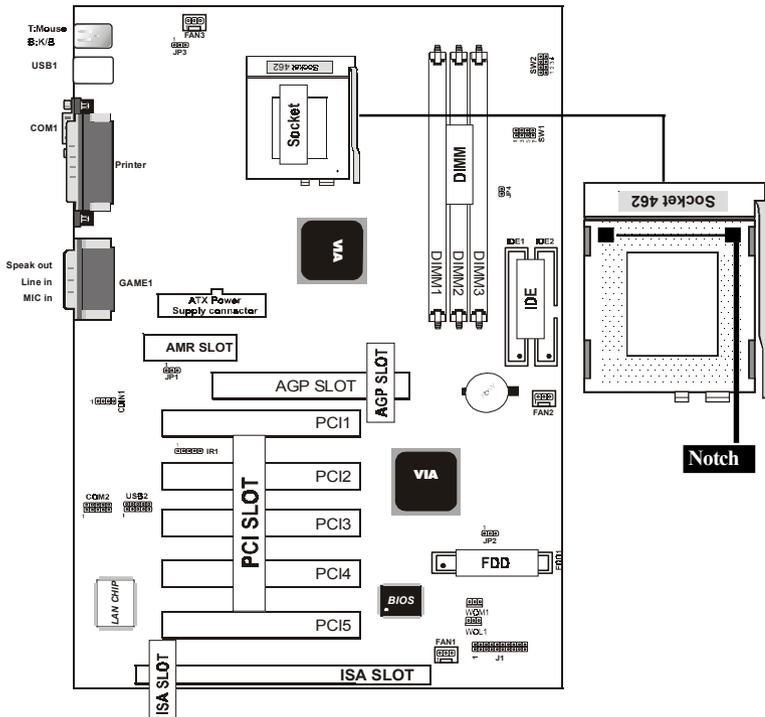
1.6.2 CPU Clock Selection: SW1/JP4
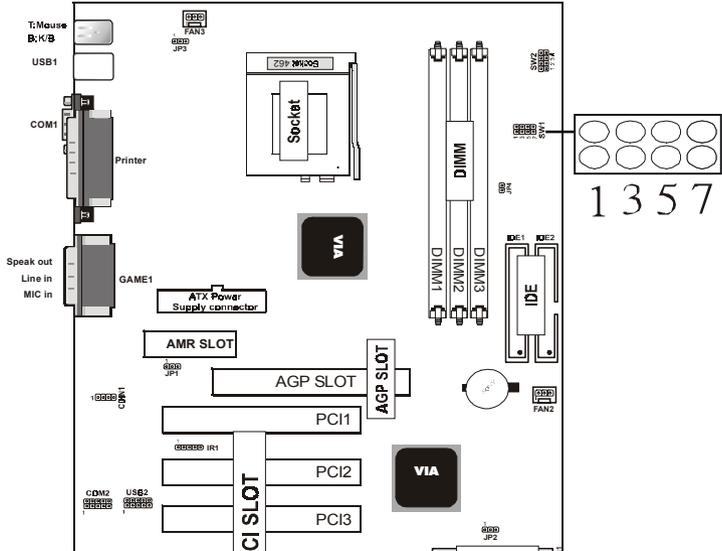
SW1	1	3	5	7	CPU (MHZ)	PCI (MHZ)
1 3 5 7	0	1	0	0	100	33.33
1 3 5 7	0	0	0	0	133.3	33.33

JP4 Pin	Assignment
Close	100MHz(Default)
Open	133MHz

0: Open   1: Close
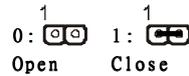
CPU 100MHz JP4 Close, SW1 3-4 Close
CPU 133MHz JP4 Open, SW1 3-4 Open

NOTES:CPU clock speed over spec is not recommended.

1.6.3 CPU Ratio Selection: SW2
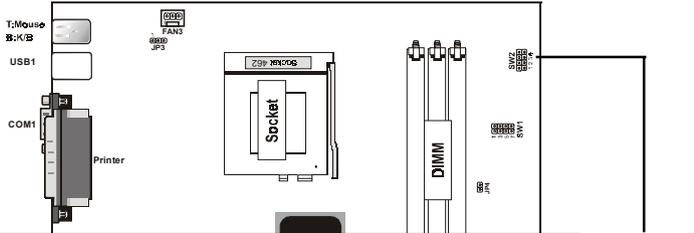
| Clock Multiplier	SW2	1	2	3	4
5.0	1234	1	1	0	1
5.5	1234	0	1	0	1
6.0	1234	1	0	0	1
6.5	1234	0	0	0	1
7.0	1234	1	1	1	0
7.5	1234	0	1	1	0
8.0	1234	1	0	1	0
8.5	1234	0	0	1	0
9.0	1234	1	1	0	0
9.5	1234	0	1	0	0
10.0	1234	1	0	0	0
10.5	1234	0	0	0	0
11.0	1234	1	1	1	1
11.5	1234	0	1	1	1
12.0	1234	1	0	1	1
12.5	1234	0	0	1	1

1 2 3 4

0: Open

1: Close

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.
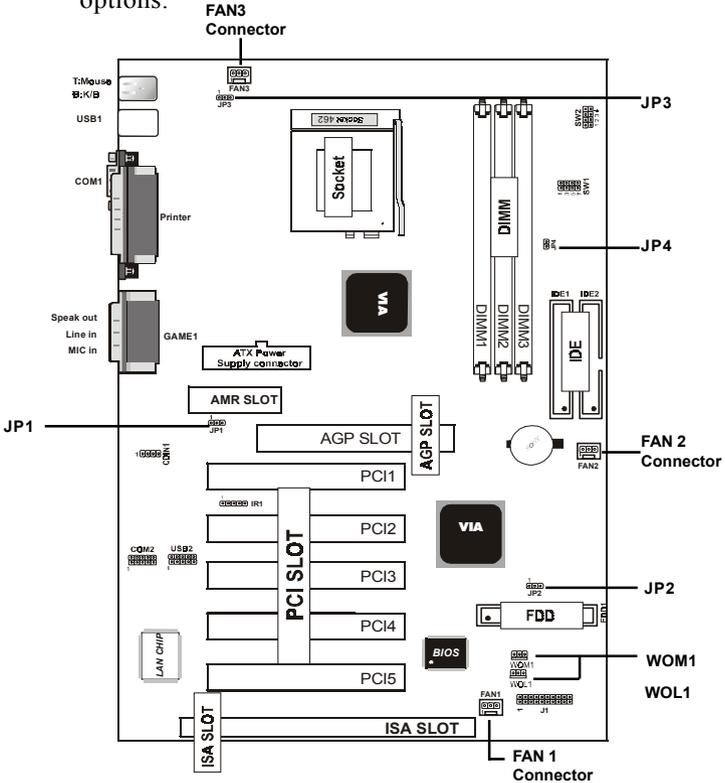
1.7.1 CPU/System Fan Connectors: Fan1/3

Pin	Assignment
1	Ground
2	+12VDC
3	Signal

1.7.1 CPU/System Fan Connectors: Fan2

Pin	Assignment
1	Ground
2	+12VDC
3	Ground

1.7.2 Wake-On Modem Header: WOM1

Pin	Assignment
1	5VSB
2	Ground
3	Signal

1.7.3 Wake-On LAN Header: WOL1

Pin	Assignment
1	5VSB
2	Ground
3	Signal

1.7.4 AMR Code Function: JP1

Pin	Assignment
1-2	On board CODEC
2-3	AMR Primary CODEC

1.7.5 CMOS Function Select: JP2

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)JP2(2-3)Closed.(3)Wait five seconds.(4)JP2(1-2) Closed.(5)AC Power on.(6)Reset your desired password or clear CMOS data.

1.7.6 Keyboard Wake up Setting: JP3

The JP3 Jumper is for setting keyboard power.This function is provided by keyboard Wake-up function.

Pin	Assignment
1-2	Enabled
2-3	Disabled(Default)

## 1.8 DRAM Installation

1.8.1 DIMM

DRAM Access Time: 3.3V Unbuffered SDRAM/ PC66/
PC100 and PC133 Type required.

DRAM Type: 8MB, 16MB, 32MB, 64MB,128MB,
256MB, 512MB DIMM Module.(168 pin)

Bank	Memory module
DIMM 1	16MB, 32MB, 64MB, 128MB, 256MB,512MB
(Bank 0-1)	168 pin, 3.3v SDRAM
DIMM 2	16MB, 32MB, 64MB, 128MB, 256MB,512MB
(Bank 2-3)	168 pin, 3.3v SDRAM
DIMM 3	16MB, 32MB, 64MB, 128MB, 256MB,512MB
(Bank 4-5)	168 pin, 3.3v SDRAM
	Total System Memory(Max 1.536MB)

1.8.2 How to install a DIMM Module

1. The DIMM socket has a "Plastic Safety Tab" and the DIMM
memory module has an asymmetrical notch", so the DIMM
memory module can only fit into the slot in one direction.
2. Push the tabs out. Insert the DIMM 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 DIMM memory modules in place.
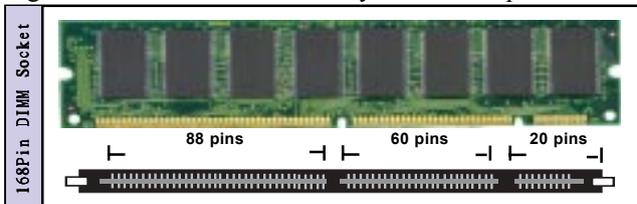
1.9 Audio Subsystem
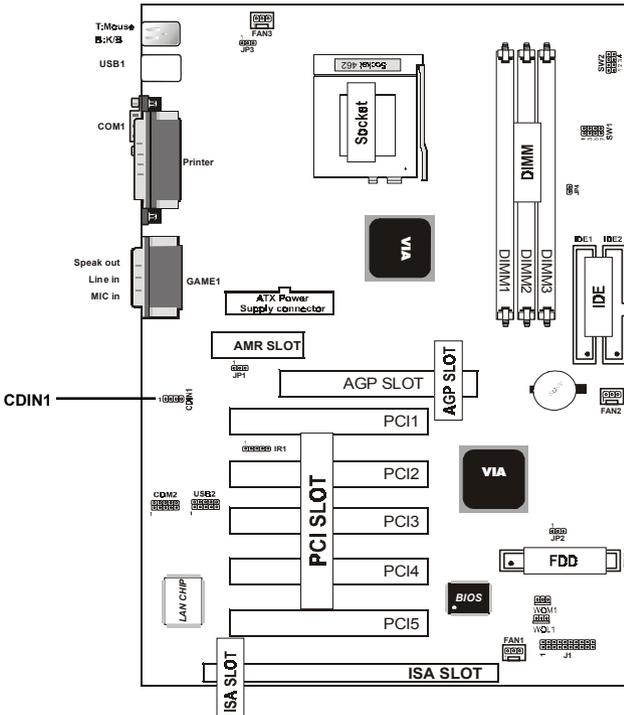
1.9.1 CD Audio-In Connectors: CDIN1

Pin CDIN1	Assignment
1	CD-R
2	GND
3	GND
4	CD-L