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 necessary explanations 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 incorporates the system , I/O , and PCI IDE into one board that provides a total PC solution. The mainboard, Intel Celeron/Coppermine PII/PIII processor 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 , 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

-Socket 370 for Intel Celeron/PIII Processor.

-Intel FC-PGA/PPGA Celeron Processors

300MHz~800MHz or higher processor with 66/100MHz FSB.

-Intel FC-PGA Pentium III Processors 500MHz~1GHz or higher processor with 100/133MHz FSB.

-VIA Cyrix III Processor with 100/133MHz FSB.

Chipset
   -North Bridge System Chipset : Intel 82810E support a 66/100/133 FSB.
   -South Bridge System Chipset : Intel ICH2.

Biggest memory capacity
   6M810E2 is equipped with two DIMM socket to support (8MB to 256MB) 168 pin 3.3v SDRAM SPD(Special Presence Detect).
   Maximum memory up to 512MB.

Bus Slot
   -Provide four 32 bit PCI slots.
   -Provide one CNR slot.

On-Board IDE
   -An IDE controller on the ICH2 chipset provides IDE HDD/ CD-ROM with PIO, Bus Master and Ultra DMA 33/66/ 100 operation modes.
   -Can connect up to four IDE devices.

On-Board Peripherals
- -1 floppy port supports 2 FDD with 360K,720K,1.2M, 1.44M and 2.88M byte.
- -2 serial ports (COM1+COM2).
- -4 USB ports. (2 option)
- -1 VGA ports.
- -1 parallel port supports EPP/ECP mode(LPT1).

Audio
- -ICH2 chip integrated.
- -AC'97 CODEC on board .

BIOS
- The mainboard BIOS provides "Plug & Play" BIOS which detects the peripheral devices and expansion cards of the board automatically.
- The mainboard provides a Desktop Management Interface (DMI) function which records your mainboard specifications.
- BIOS support CD-ROM, SCSI, LAN BOOT, Temperature sensor, Wake on modem, LAN, Alarm Bus CLK setup with BIOS.

Hardware Monitor Function
- -CPU Fan Speed Monitor.
- -CPU Temperature Monitor.
- -System Voltage Monitor.

WOL (Wake On LAN) & WOM (Wake On MODEM)
Supports system power up from LAN ring up and Modem ring up.

Support Ring on by modem/Alarm on
Support System power up from Modem ring up or timer of System. Required enabled in Ring on by modem and Alarm on in BIOS.

Display Cache: (Option)
>   -32-bit data interface.
>   -Support 1M*16 PC 100/133 SDRAM .

Intel Accelerated Hub Architecture :
>   Features a dedicated high speed hub link between the ICH2
>   and GMCH with a bandwidth of 266MB/sec-twice the maxi-
>   mum bandwidth of the PCI bus.

CNR Support :
>   Two Communication and Networking Riser(CNR) slots
>   provide interface to support very affordable multichannel
>   audio,V.90 analog modem, Home PNA, 10/100 Ethernet
>   networking,USB hub, as well as future technologies such
>   as XDSL .

Integrated Graphics :
>   Controller supports 3D hyper pipelined architecture,
>   parallel data processing and compression, precise pixel
>   interpolation, full 2D hardware acceleration, and motion
>   video acceleration.

1.1.2 Software

BIOS

-AWARD legal BIOS.

-Supports APM 1.2.

-Supports USB Function.
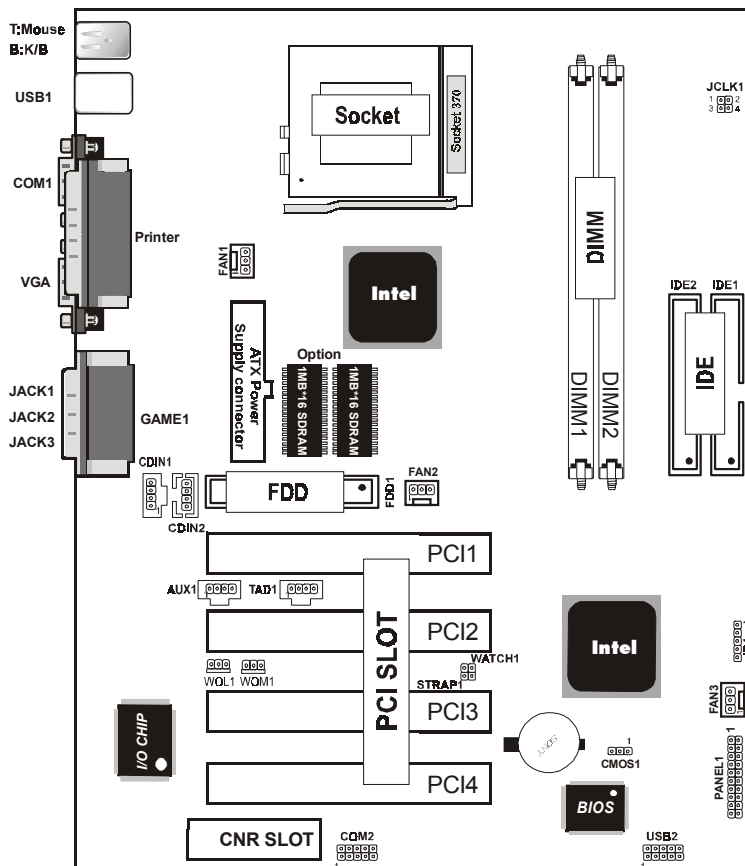
-Supports ACPI.

Operation System

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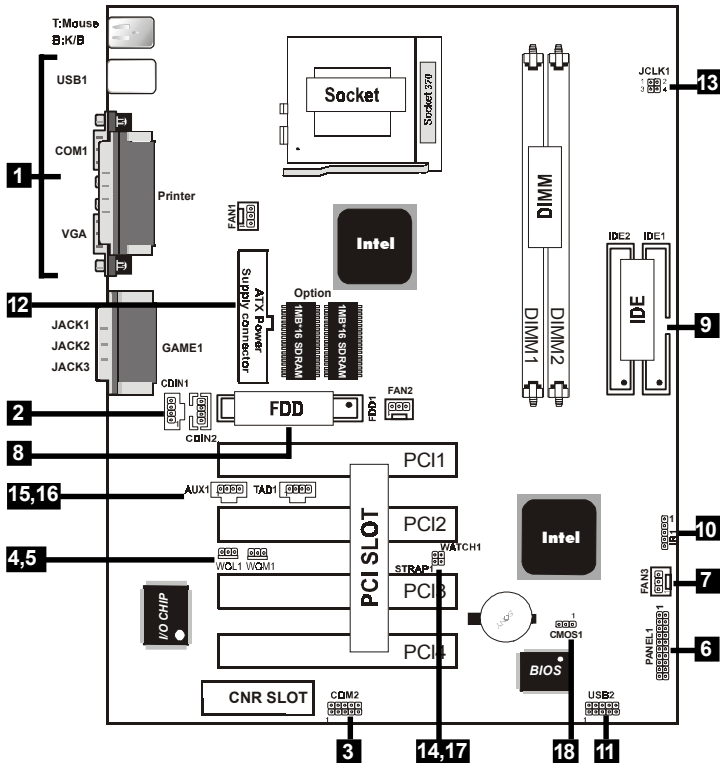
1.1.3 Attachments

-HDD UDMA66/100 Cable.

-FDD Cable.

-Flash Memory Written for BIOS Update.

-COM2 Cable.

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

1.2 Motherboard Installation

1.2.1 Layout of Motherboard

1.3 Motherboard Connectors

1.Back Pannel I/O Connectors 2.CD Audio-In Connector
3.Front COM2 Connector   4.Wake-On LAN Connector
5.Wake-On Modem Connector   6.Front Panel Connector
7.Fan Connectors(Fan1/2/3)   8.Floppy Connector
9.IDE Connectors   10.IR Connector
11.Front USB2 Connector   12.ATX Power Connector
13.CPU Freq. Selection(JCLK1) 14.Speaker Selection(WATCH1)
15.AUX Audio in Connector(AUX1)16.Telephone Connector(TAD1)
17.AC97 Serial data out(STRAP1)
18.CMOS Function Selection(CMOS1)

1.3.1 Front Panel Connector(PANEL1)

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┌──────────────────────────────────────────┐
│            PANEL1 Connector                │
│                                            │
│                      PWLED    PBTN         │
│    RST   IDE  KBLOCK                     1 │
│            +        +      +               │
│   ⊙⊙⊙⊙⊙⊙○○⊙⊙⊙⊙⊙          │
│   ⊙⊙⊙⊙⊙⊙⊙⊙⊙⊙⊙⊙⊙          │
│   +        +         +      2              │
│  GRN     SMI           SPKR                │
│                                            │
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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 (IDE)
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 (SMI)
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 below) 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 (PBTN)

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 (PWLED)

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

Keyboard Lock (KBLOCK)

The header is for setting keyboard locked.

SMI LED Lead (GRN)

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) .

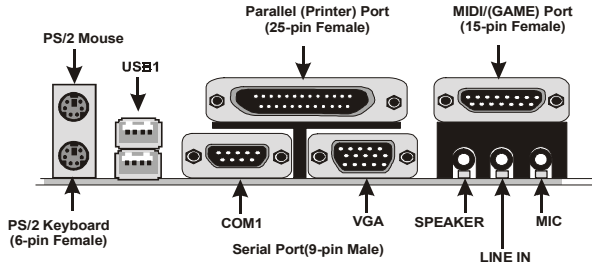### 1.3.4 ATX 20-pin Power Connector(PW1)

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 Pannel 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: USB1/2

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.

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

1.4.3 VGA Interface Connector:VGA(15 Pin)

This connector is for output to VGA-compatible devices.

VGA

Front Two USB Connectors: USB2

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.
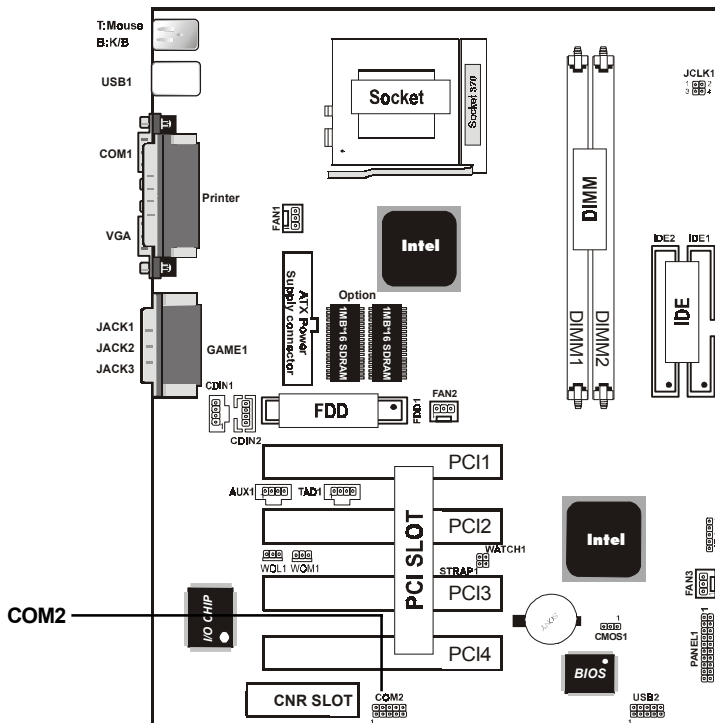
The Serial Interfaces:COM1/COM2

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.
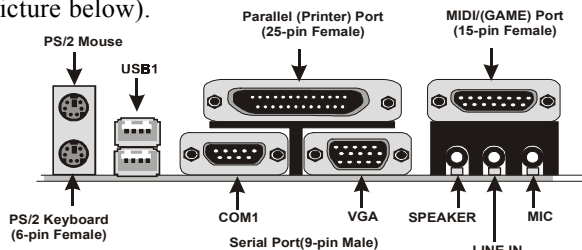

The serial port on this system have one 9-pin connector. Some older computer systems and peripherals used to be equipped with only a 25-pin connector. Should you need to connect your 9-pin serial port to an older 25-pin serial port, you can purchase a 9-to-25 pin adapter.

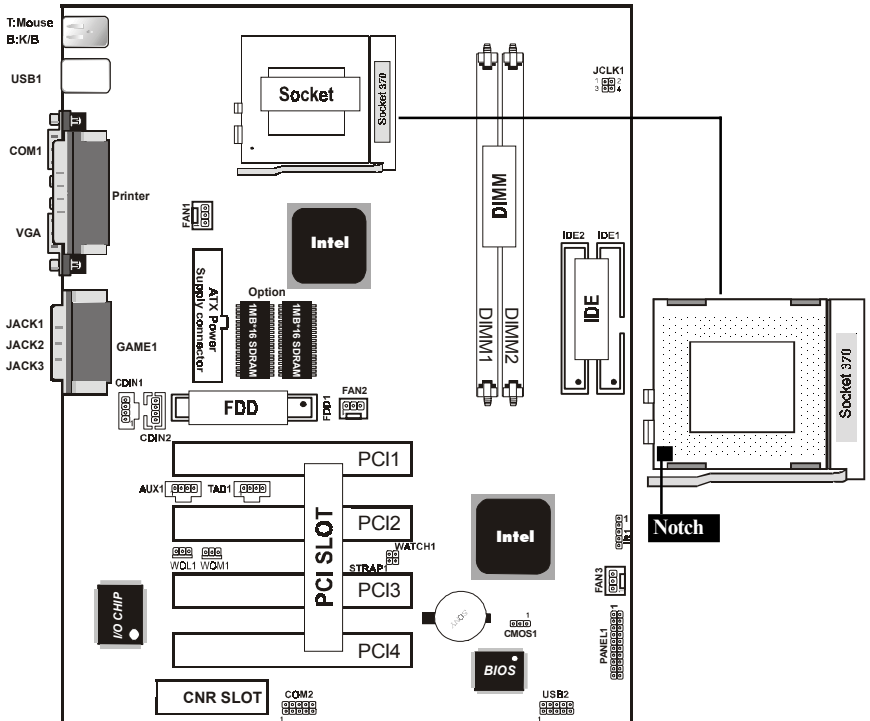| Signal	DB9 Pin	DB25 Pin
DCD	1	8
RX	2	3
TX	3	2
DTR	4	20
GND	5	7
DSR	6	6
RTS	7	4
CTS	8	5
RI	9	22

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).
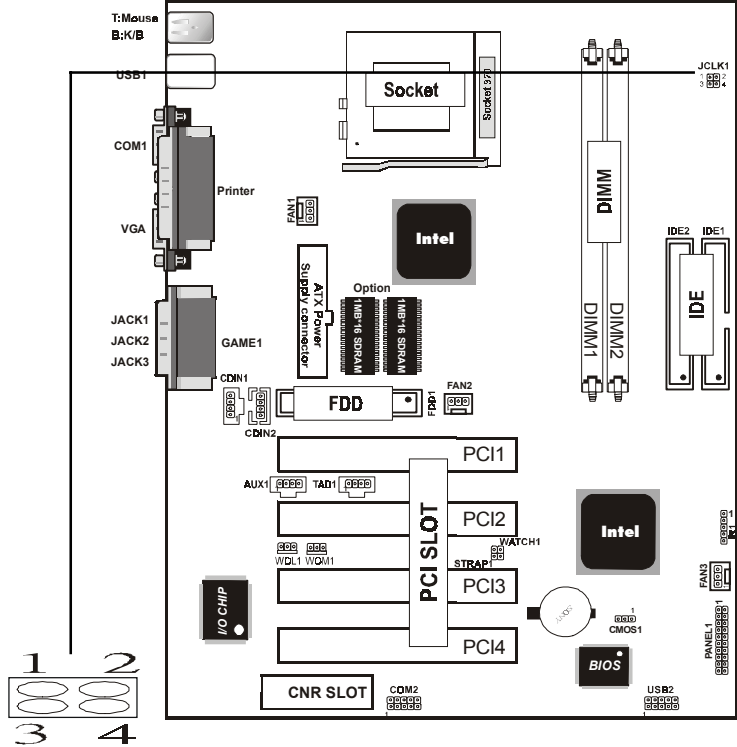
1.6 CPU Installation

1.6.1 CPU Installation Procedure: Socket 370

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.

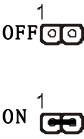**4. Make sure the spec of the heatsink is good enough.**

1.6.2 CPU Frequency Selection: JCLK1

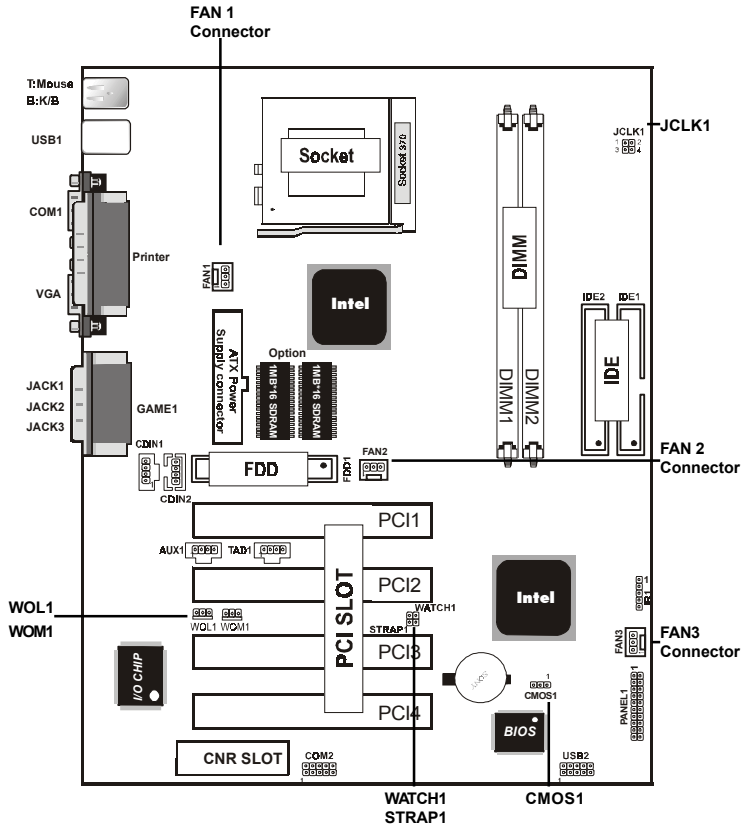Overclocking is operating a CPU/Processor beyond its specified frequency.JCLK1 jumper is used for overclocking.

CPU	SDRAM	PCICLK	1-2	3-4
66	100	33.3	ON	ON
100	100	33.3	OFF	ON
133 (default)	133	33.3	OFF	OFF
Reserve	Reserve	33.3	ON	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.
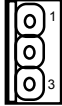

1.7.1 CPU/System Fan Connector: Fan1/2/3

Pin	Assignment
1	Ground
2	+12VDC
3	Signal

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 CMOS Function Selection: CMOS1

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)CMOS1(2-3)Closed.(3)Wait five seconds.(4)CMOS1(1-2) Closed.(5)AC Power on.(6)Reset your desired password or clear CMOS data.

1.7.5 SPEAKER Selection: WATCH1

Pin	Assignment
ON	No Reboot on timeout
OFF	Normal(default), Reboot on timeout

1.7.6 AC97 Serial data out: STRAP1

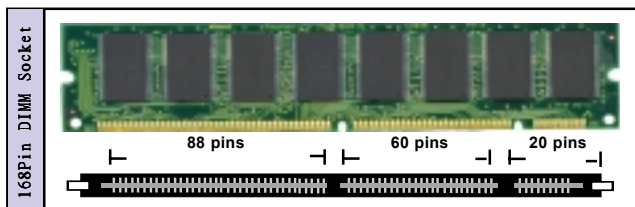| Pin	Assignment
ON	Force CPU to safe mode
OFF	Normal(default), Use register

1.8 DRAM Installation

1.8.1 DIMM

DRAM Access Time: 3.3V Unbuffered SDRAM/ PC66/

PC100 and PC133 Type required.

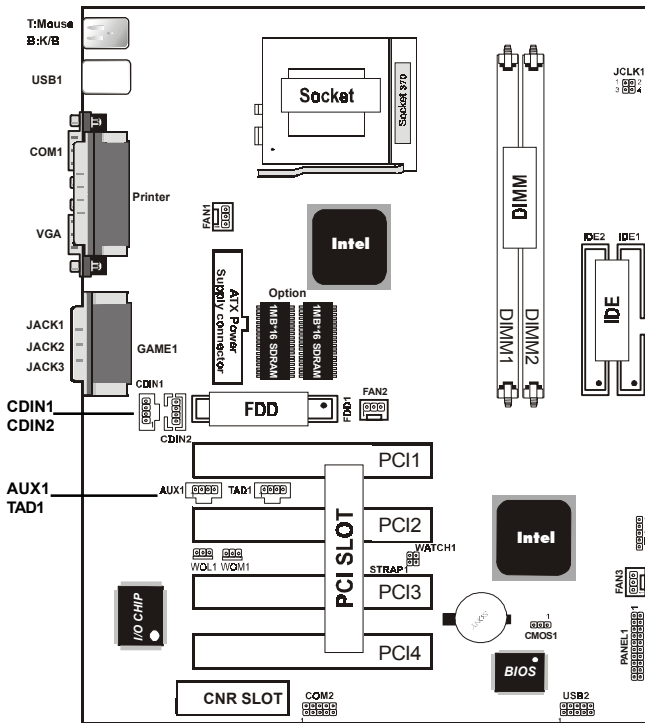DRAM Type: 8MB, 16MB, 32MB, 64MB, 128MB, 256MB

DIMM Module.(168 pin)

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

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/CDIN2

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

Pin CDIN2	Assignment
1	GND
2	CD-L
3	GND
4	CD-R

1.9.2 Telephone in Connector: TAD1

Pin TAD	Assignment
1	PHONE
2	GND
3	GND
4	MONO_OUT

1.9.3 AUX Audio in Connector: AUX1

Pin AUX	Assignment
1	AUX_L
2	GND
3	GND
4	AUX_R