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## Introduction

### System Overview

This manual was written to help you start using this product as quickly and smoothly as possible. 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 is designed for Intel PIII/Celeron/Coppermine processors base PC ATX system, support single processors with ISA Bus, AMR 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 , Windows98SE, 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 PPGA/FC-PGA PII/PIII processor.
- Intel FC-PGA/PPGA Celeron Processors  
300MHz~800MHz or higher processor with 66MHz FSB.
- Intel FC-PGA Pentium III Processors 500MHz~1GHz  
or higher processor with 100/133MHz FSB.
- VIA Cyrix III Processors.

##### Chipset

- North Bridge System Chipset : VT82C694X
- South Bridge System Chipset: VT82C686A/B

##### Biggest memory capacity

**694XT** is equipped with three DIMM socket to support (16MB, 32MB, 64MB, 128MB, 256MB) 168 pin 3.3v SDRAM SPD(Special Presence Detect). Maximum memory up to 768MB.

##### AGP for fast VGA solution

- AGP specification compliant.
- AGP 66 MHz 3.3v/1.5v for 2X/4X device support.

**Note:**

*If an unstable issue occurs, after installing " VIA 4 in 1 driver ". We suggest you to re-install " VIA 4 in 1 driver ", and then select " install VIA AGP VxD in Standard mode " at " VIA\_GART AGP Driver " item.*

##### PCI Expansion Slot

Provide one 16 bit ISA, and three 32 bit PCI slots .

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**On-Board IDE**

- An IDE controller on the VIA VT82C686A Chipset provides IDE HDD/CD-ROM with PIO, Bus Master and Ultra DMA 33/66 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).
- 1 parallel port supports SPP/EPP/ECP mode.
- 1 IrDA/HP connector for SIR.

**Audio**

- AC'97 CODEC on board, support 3D sound.

**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.

**WOL (Wake On LAN)**

- Supports system power up from LAN ring up .

**IrDA Port**

- Support this serial fast communication up to 115.2Kbps.

**Support Ring on by modem/Alarm on (ATX only)**

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

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**Supports ACPI function for ATX Power.**

**Support AT/ATX Power supply (20pin) connector.**

### **1.1.2 Software**

#### **BIOS**

- AWARD legal BIOS.
- Supports APM 1.2.
- Supports USB Function.
- Supports ACPI

#### **Operation System**

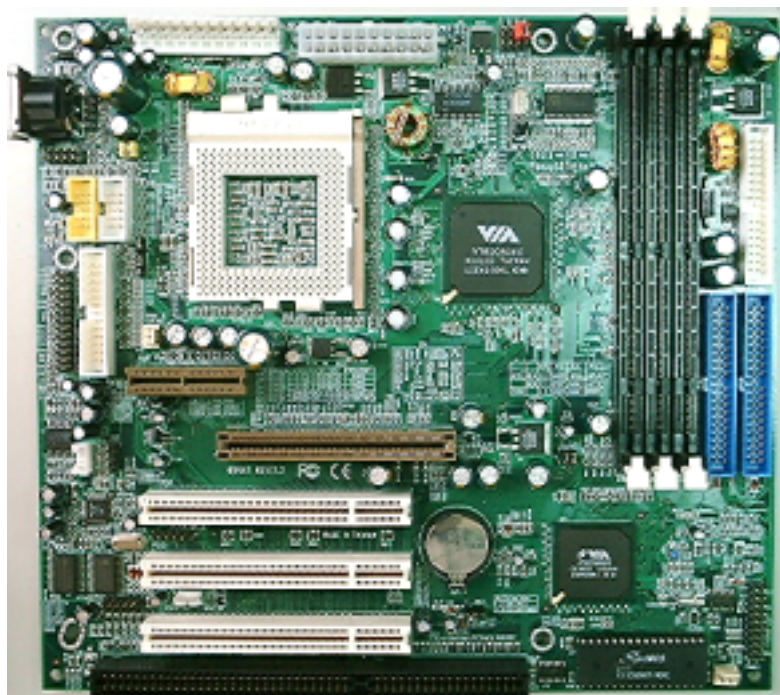
- Offers the highest performance for MS-DOS, Windows, Windows NT, Windows ME, Windows 2000, Novell, OS/2, Windows95/98, Windows98SE, UNIX, SCO UNIX etc.

### **1.1.3 Attachments**

- HDD UDMA66 Cable.
- FDD Cable.
- Flash Memory Written for BIOS Update.
- USB Cable. **(option)**
- Audio Cable.
- PS2/Print Port Cable.
- COM1/COM2 Cable.
- Fully Setup CD Driver built in Utility (Ghost, Anitivirus, Adobe Acrobat, . . ).
- This manual.

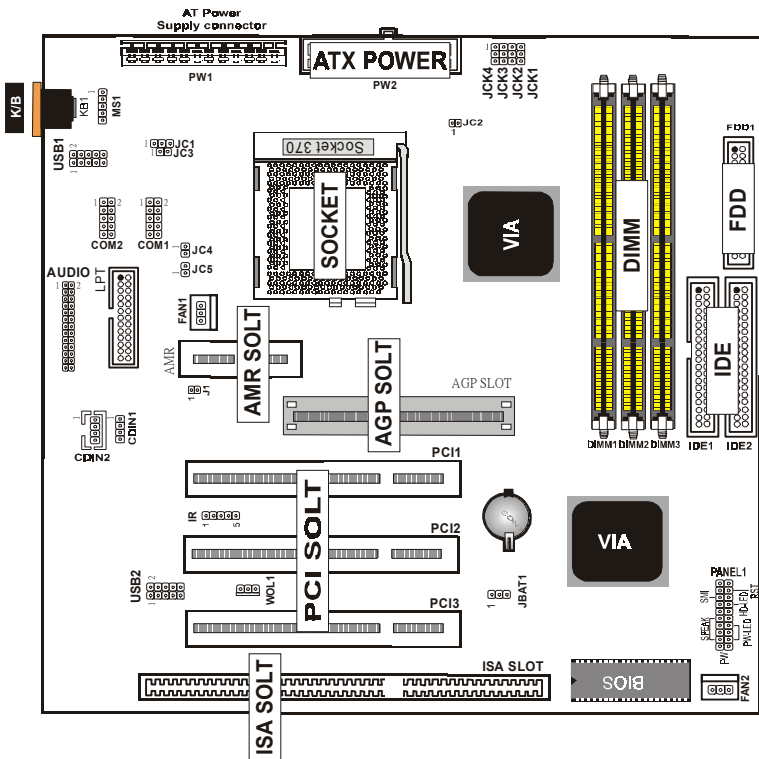
## 1.2 Motherboard Installation

### 1.2.1 Motherboard Map

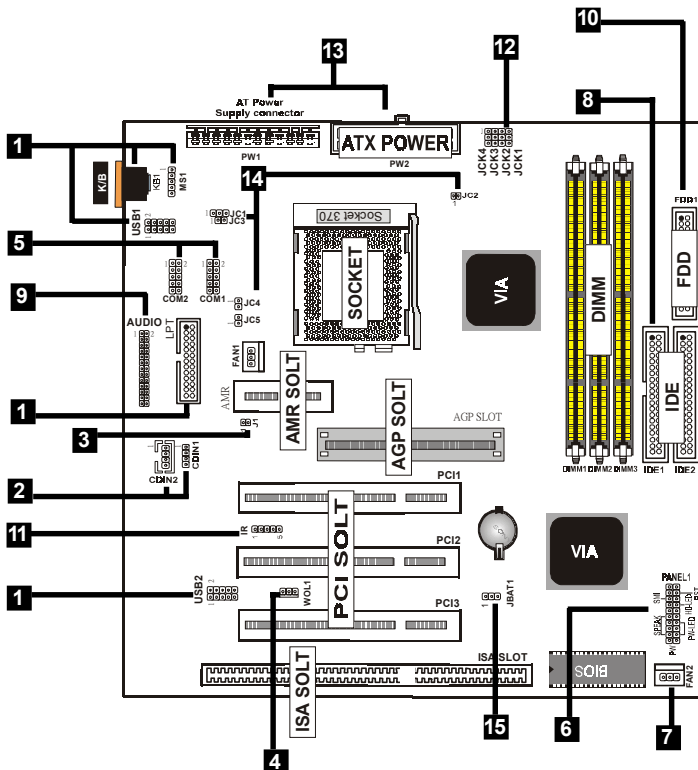


## 1.2 Motherboard Installation

### 1.2.1 Motherboard Layout

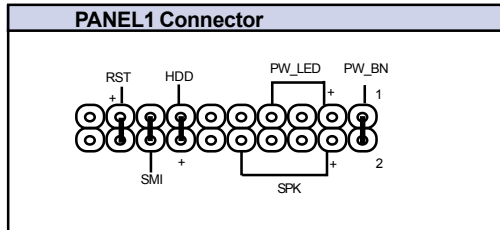


## 1.3 Motherboard Connectors



- |   |                         |
|---|-------------------------|
| 1.Back Panel I/O Connectors               | 2.CD Audio-In Connector |
| 3.AMR CODEC Function(J1)                  | 4.Wake-On-LAN Connector |
| 5.Front Two COM Connectors                | 6.Front Panel Connector |
| 7.Fan Connectors(Fan1/2)                  | 8.IDE Connectors        |
| 9.Audio Connector                         | 10.Floppy Connector     |
| 11.IR Connector                           |                         |
| 12.CPU Clock Selection(JCK1~JCK4,JC1,JC3) |                         |
| 13.AT/ATX Power Connector                 |                         |
| 14.CPU Type Select(JC1~JC2,JC4~JC5)       |                         |
| 15.CMOS Function Selection(JBAT1)         |                         |

### 1.3.1 Front Panel Connector (PANEL1)



#### 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 (HDD)

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 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 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. 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 SOFTWARE section should be on the default setting of Enable.



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**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.

**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/AT Power Supply Connector (20-pin block) (PW1/PW2)

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 (IR)

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 Keyboard CONN.

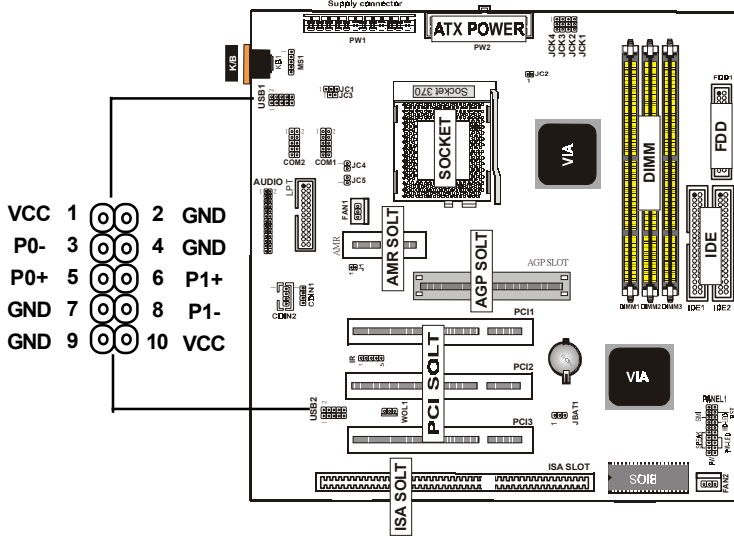
This connector will compatible with standard at AT size (large DIN) keyboard plugs. You may use a DIN to mini DIN adapter on standard AT keyboards.

### Mouse Port

This system will direct IRQ12 to PS/2 mouse.

### 1.4.2 USB Connectors: 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. You can plug the USB devices directly into this connector. Four USB ports are available on the back panel. Therefore, we have a solution to provide a 10 pin ribbon cable with bracket to connect Built-in on-board USB header by optional.



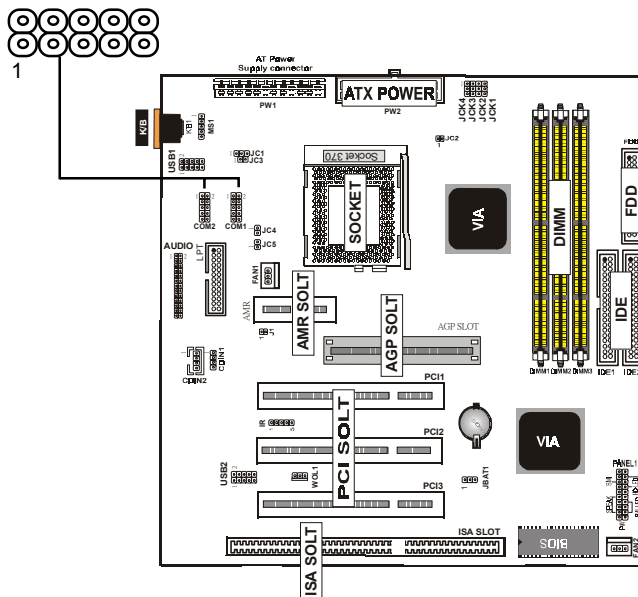
## 1.5 Serial and Parallel Interface Ports

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

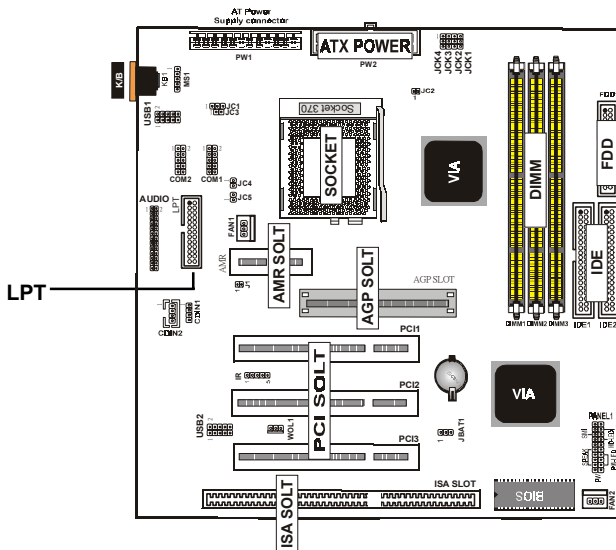
The serial interface port is sometimes referred to as an RS-232 port or an asynchronous communication port. Mice, printers, modems and other peripheral devices can be connected to a serial port. The serial port can also be used to connect your computer system. If you wish to transfer the contents of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

#### COM1/COM2



## Parallel Interface Port

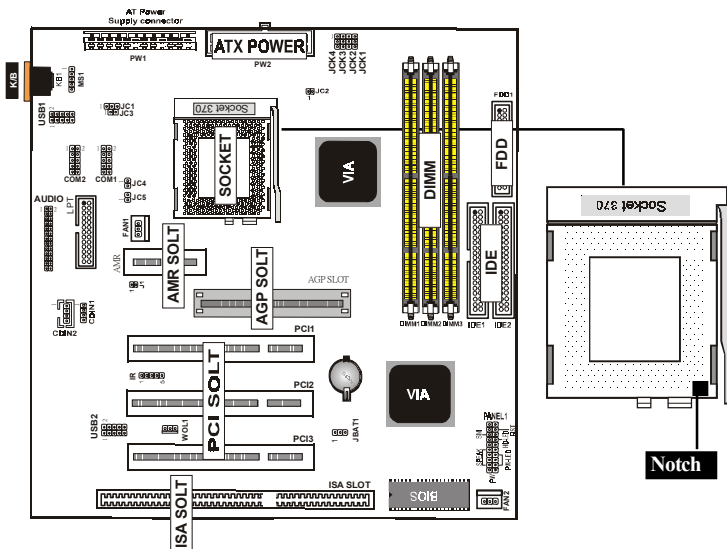
Unlike serial ports, parallel interface ports have been standardized and should not present any difficulty interfacing peripherals to your system. Sometimes called a Centronics port, the parallel port is almost exclusively used with printers.



## 1.6 CPU Installation

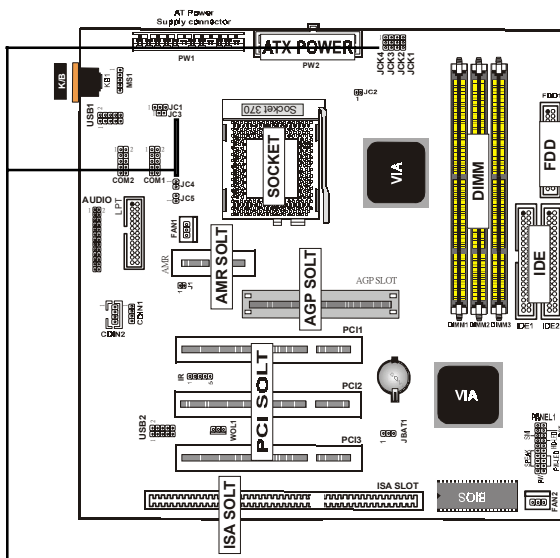
### 1.6.1 CPU Installation Procedure: Socket 370

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 Clock Selection: JCK1~JCK4, JC1, JC3

The JCK1~4 jumpers are used to set the PCI and CPU external bus clock.



FEQ.	JCK1	JCK2	JCK3	JCK4	JC 1	JC 3
66MHz	1-2	1-2	2-3	2-3	OPEN	OPEN
100MHz	1-2	1-2	1-2	2-3	OPEN	OPEN
133MHz	1-2	1-2	1-2	1-2	OPEN	OPEN
Auto (Intel)	1-2	1-2	OPEN	OPEN	2-3	CLOSE
Auto (VIA-Cyrix) samuel 1	1-2	1-2	OPEN	OPEN	1-2	CLOSE

**Close: (SHORT)**



**Open:**

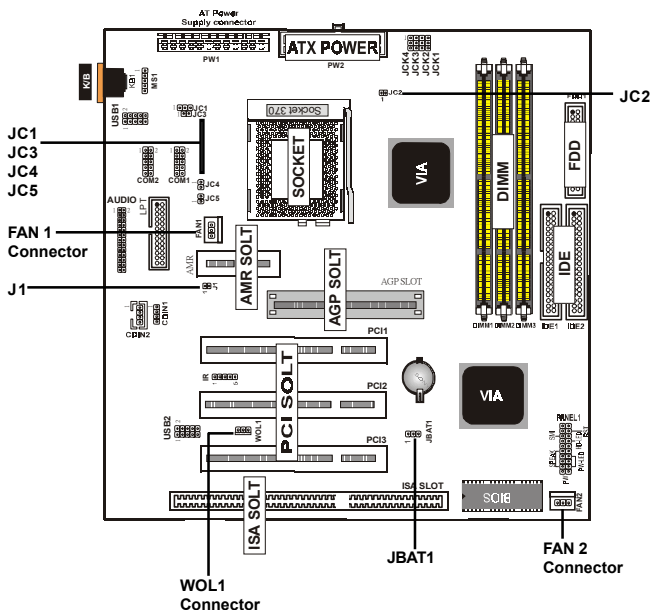


**Note:**

Please select Auto (Intel) in jumper setting if you use VIA Cyrix III samuel 2 processor.

## 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 LAN Header: WOL1**

Pin	Assignment
 1	<b>5VSB</b>
 2	<b>Ground</b>
 3	<b>Signal</b>

**1.7.3 AMR Set Function: J1**

Pin	Assignment
	<b>Enabled AMR Slot (Default)</b>
	<b>Disabled AMR Slot</b>

**1.7.4 CMOS Function Selection: JBAT1**

Pin	Assignment
<b>1-2</b>	<b>Normal (Default)</b>
<b>2-3</b>	<b>Clear CMOS</b>

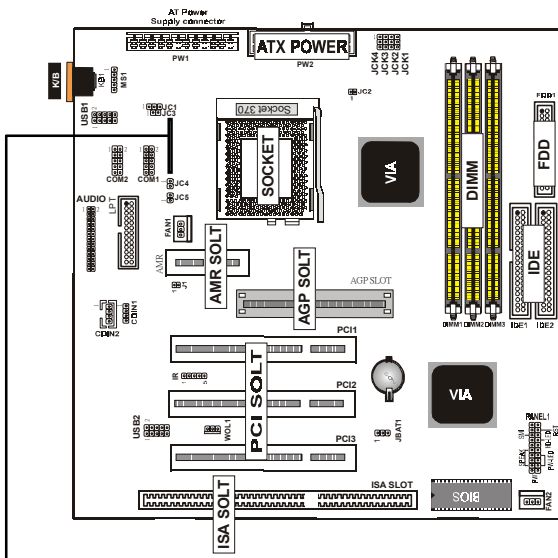
**NOTE:**

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

- (1) Remove the AC power line.
- (2) JBAT1(2-3) Closed.
- (3) Wait five seconds.
- (4) JBAT1(1-2) Closed.
- (5) AC Power on.
- (6) Reset your desired password or clear CMOS data.

### 1.7.5 CPU Type Select: JC1~JC2, JC4~JC5

Current PCI bus in limited to 33MHz, socket370 Celeron processors limited to 66MHz, and SDRAM limited to the DIMM type 66/100/133MHz. Other settings are for experienced users only.



CPU Type	JC1	JC2	JC4	JC5
Intel old (PPGA)	1  JC1	1  JC2	1  JC4	1  JC5
Intel new (FC-PGA)	1  JC1	1  JC2	1  JC4	1  JC5
VIA-Cyrix	1  JC1	1  JC2	1  JC4	1  JC5

## 1.8 DRAM Installation

### 1.8.1 DIMM

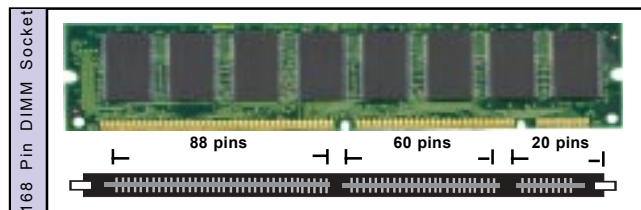
DRAM Access Time: 3.3V Unbuffered SDRAM/ PC66/  
PC100 and PC133 Type required.

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

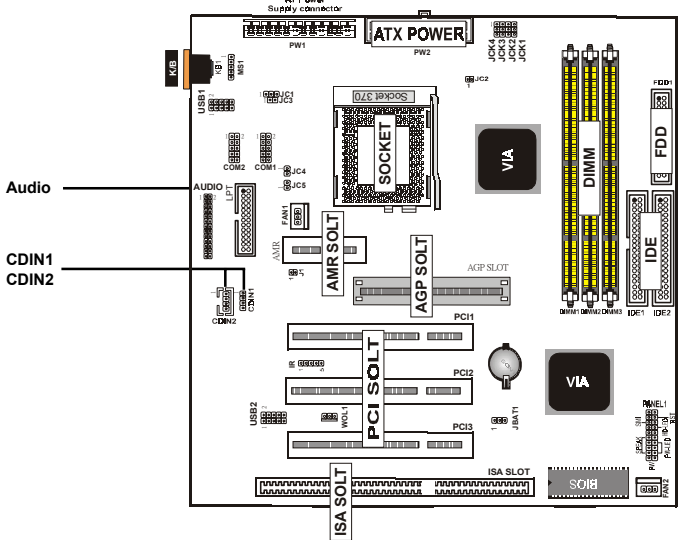
Bank	Memory module
DIMM 1	16MB, 32MB, 64MB, 128MB, 256MB
( Bank 0-1 )	168 pin,3.3v SDRAM
DIMM 2	16MB, 32MB, 64MB, 128MB, 256MB
( Bank 2-3 )	168 pin 3.3v,SDRAM
DIMM 3	16MB, 32MB, 64MB, 128MB, 256MB
( Bank 4-5 )	168 pin 3.3v,SDRAM
	<b>Total System Memory (Max 768MB)</b>

### 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	GND
2	CD-L
3	GND
4	CD-R

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

1.9.2 Audio & Game Port Connector: Audio

This connector is provided for audio input and output signals. Using a ribbon cable, you can connect an audio connector.

