PINE 松景科技

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金板霸

# 使用指南

## PM-V01 主板

## 版　　权



## 用户须知

产品若有任何修改，或对于手册在内容印刷、排版上的错误，恕不另行通知。

## 技术支持

如果您在使用过程中，有任何的意见、建议 或遇到困难,请到松景科技控股有限公司主页 **(http://www.pinegroup.com.cn)**查询或向松景科技控股有限公司技术支持(**mailto:pinesupport@pinegroup.com.cn)**垂询。

## 商　　标

本手册所使用之商标均为该商标所属者所拥有。

**PINE** 是 **PINE** 注册的商标。
Intel 和 Pentium 是 Intel Corporation 注册的商标。
PS/2 和 OS/2 是 IBM Corporation 注册的商标。
Windows95/98 和 Windows NT 是 Microsoft Corporation 注册的商标。
Netware 是 Novell 注册的商标。
AWARD 是 Award Software Inc.注册的商标。
AMD 是 AMD 注册的商标。
Cyrix 是 Cyrix 注册的商标。

# FCC Compliance

Federal Communications Commission Statement

This device complies with FCC Rules Part 15. Operation is subject to the following two conditions:

- This device may not cause harmful interference, and
- This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the manufacturer□s instructions, may cause harmful interference to radio communication. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Re-orient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

**Warning!** The use of shielded cables for the connection of the monitor to the graphics card is required to assure compliance with FCC regulations Changes or modifications to this authority to operate this equipment.

# 安全简介

1. 请详细阅读本手册。
2. 保留本手册以供以后参考。
3. 在安装前请把设备放在平稳的地方。
4. 机箱上的通道是用于空气流通以防止设备过热，不要盖住通道。
5. 在把设备连接到电源接口之前，确认电源的电压是 220V.
6. 確保电源线铺设安全、牢固,且不要用任何物体盖住电源线。
7. 请注意设备上的所有提示和警告。
8. 防止任何液体流入设备，以免发生漏电危险。
9. 如下列的任何情形发生，可与维修人员联系。
   a．电源或插头损坏。
   b．设备中渗入液体。
   c．设备已暴露在湿气中。
   d．设备工作不稳定或根据用户手册设备仍不能运行。
   e．设备掉落以致损坏。
   f．如果设备已有明显的损坏痕迹。
   g．不要把设备放在不适环境中，不要存放在高于 60ºC (140ºF)的环境中，否则可能损坏设备。

**注意:如果电池安装错误，可能会发生爆炸，请只用制造商所指定的同样或相同类型电池。**

**如果在你打开包装时,发现主板有明显的损坏痕迹,请勿通电。**

# 目　　录

# 第一章 简介

此 ATX 主板是基于 Intel® Socket 370 处理器的高性能主板， Intel® Socket 370 处理器支持 MMX™（多媒体扩展技术）。

主板采用高度集成的 VIA VT82C693A 芯片支持提供 Host/AGP 技术。
VIA VT82C596B 芯片集成所有系统控制功能，如 ACPI (高级配置和电源接口)。ACPI 提供更多的能量存储功能用于 OSPM (OS 直接电源管理)功能。VIA 芯片也提高了对 Ultra DMA 33/66 的支持,使得 IDE 以 33 /66MB/秒的速率提供 IDE 传输。

## 1.1 主板特点

**CPU**

- Socket370 支持 Intel®Pentium® III Coppermine、Celeron™、Celeron™A 和 Cyrix® III 处理器。
- 支持 800MHz 以上 CPU 速度。

**芯片集**

- VIA VT82C693A/ VT82C596B 芯片集

**总线频率**

- 66 /100 / 133MHz
- 提供最高 150MHz 外频

**主内存**

- 3 个 168 针 non-buffered DIMM.
- 支持最大内存 768MB
- 支持 3.3V SDRAM DIMM

**扩展槽**

- 1 个 AGP(2X)
- 5 个 PCI
- 2 个 ISA

**板上的 IDE（支持 Ultra DMA 33/66）**

- 一个基于 VT82C596BPCI 芯片的 IDE 控制器提供带有 PIO 的 IDE HDD/CD-ROM，总线控制和 Ultra 33/66 模式。
- 可连接 4 个 IDE 设备

**板上的外围设备连接**

- 1 个 FDD 接口支持 2 个 FDD 设备
- 2 个串行端口
- 1 个并行端口支持 SPP/EPP/ECP 类型设备
- 2 个 USB 端口
- 1 个 IrDA 接口

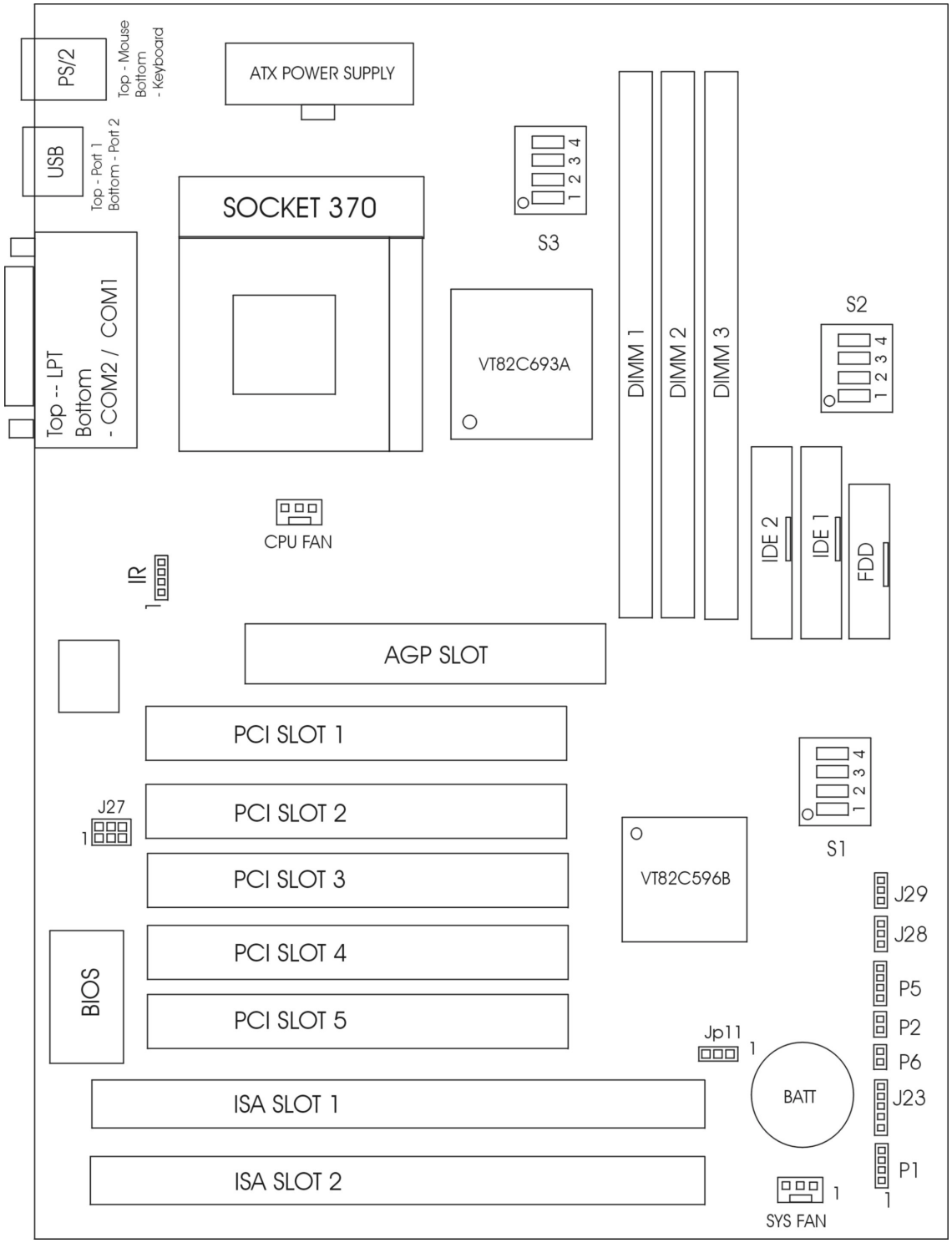
**BIOS**

- 即插即用，桌面管理界面（DMI）功能，高级配置和电源界面（ACPI），Anti-BIOS Virus 功能。

**规格**

- ATX 结构：30cm×19.2cm 4 层 PCB

## 1. 2 主板结构




**PM-V01** 主板结　构图

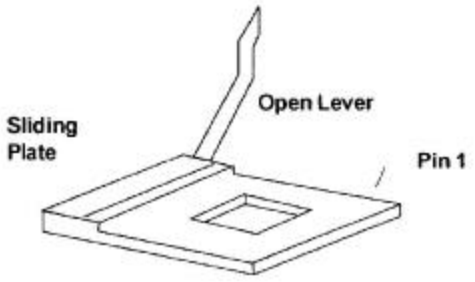
# 第二章 硬件安装

## 2.1 CPU

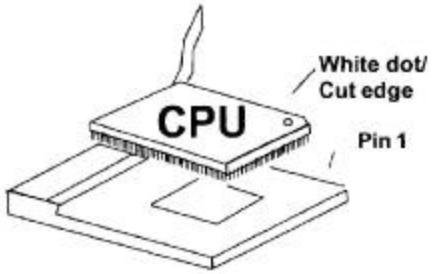
主板可选 Intel® Celeron™或 Pentium® III Coppermine 、Celeron™A 处理器。Socket 370 插座更易进行 CPU 安装。CPU 需配置一个热接收器和一个风扇以防止过热。

### 2.1.1 CPU 安装步骤

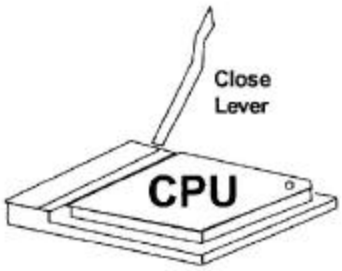
a.托动控制杆平向外侧拉离插座，再向上竖立使与底座成 90 度角。




b.定位插座中 Pin 1 的位置并找到 CPU 上白色的点/剪切口，使 Pin 1 和白点／剪切口相对，然后很平稳插入 CPU。




c.压下固定控制杆并锁定则完成安装。



### 2.1.2 CPU 倍频设置（S1 DIP 开关）

**CPU 主频=CPU 外频×CPU 倍频**

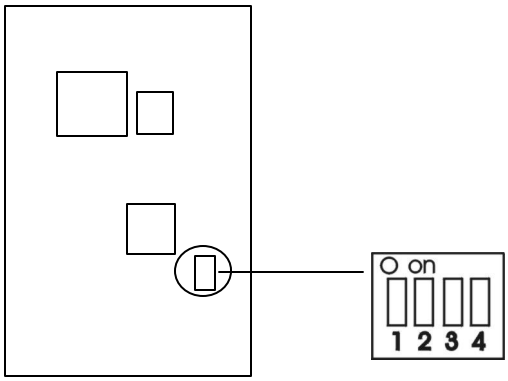
**例：CPU 外频** = 100MHZ

**CPU 倍频** = 5.5

**则 CPU 主频** = 100MHz×5.5

=550MHz

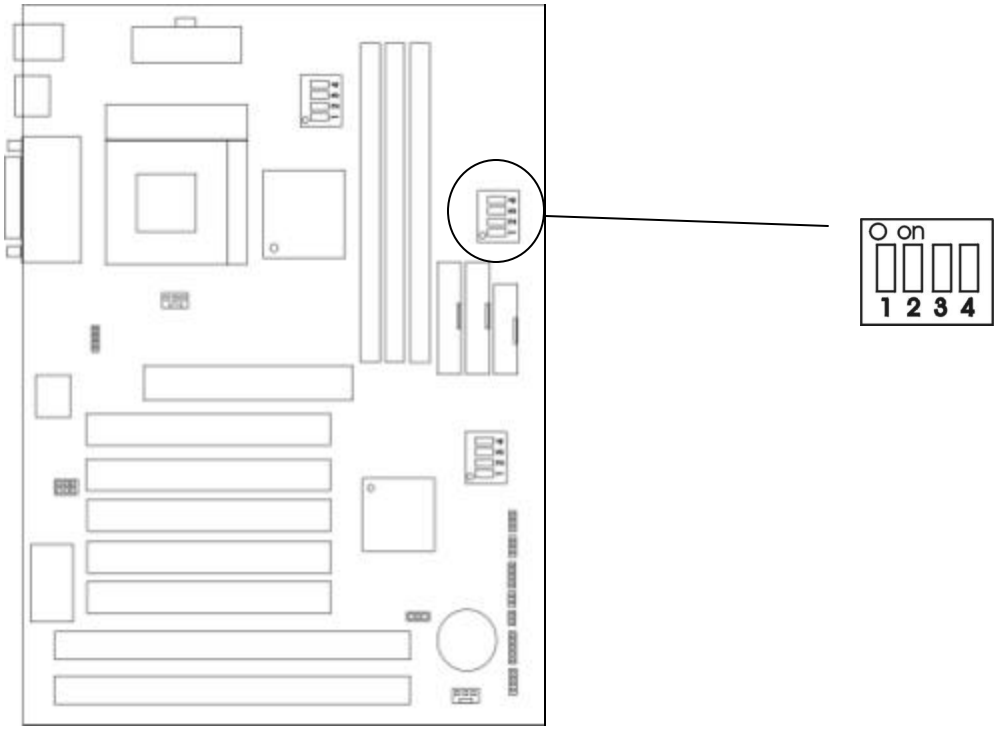
**请调整** S1 DIP **开关改变** CPU **倍频**。




| **CPU 倍频** | **S1 DIP 开关** | | | |
|---|---|---|---|---|
| | 1 | 2 | 3 | 4 |
| 1.5X | On | Off | Off | Off |
| 2X | On | On | On | On |
| 2.5X | On | On | Off | On |
| 3X | On | Off | On | On |
| 3.5X | On | Off | Off | On |
| 4X | Off | On | On | On |
| 4.5X | Off | On | Off | On |
| 5X | Off | Off | On | On |
| 5.5X | Off | Off | Off | On |
| 6X | On | On | On | Off |
| 6.5X | On | On | Off | Off |
| 7X | On | Off | On | Off |
| 7.5X | On | Off | Off | Off |
| 8X | Off | On | On | Off |

### 2.1.3 CPU 外频设置（S2 DIP 开关）

请调整 S2 DIP 开关改变 CPU 外频。



| S2 DIP – CPU 外置 | | | | | | |
|---|---|---|---|---|---|---|
| | CPU 外频 | PCI 外频 | 1 | 2 | 3 | 4 |
| 推 荐 | 66.8 MHz | 33.4 MHz | Off | Off | On | On |
| | 75 MHz | 37.5 MHz | Off | On | On | On |
| | 83.3 MHz | 41.65 MHz | On | Off | On | On |
| | | | | | | |
| 推 荐 | 100.3 MHz | 33.3 MHz | Off | Off | Off | On |
| | 103 MHz | 34.3 MHz | On | On | Off | On |
| | 105 MHz | 35 MHz | Off | Off | On | Off |
| | 110 MHz | 36.67 MHz | On | Off | On | Off |
| | 112 MHz | 37.33 MHz | Off | On | Off | On |
| | 115 MHz | 38.33 MHz | Off | On | On | Off |
| | 120 MHz | 40 MHz | On | On | On | Off |
| | 124 MHz | 31 MHz | On | Off | Off | Off |
| | | | | | | |
| 推 荐 | 133 MHz | 33.25 MHz | Off | Off | Off | Off |
| | 133 MHz | 44.33 MHz | On | Off | Off | On |
| | 140 MHz | 35 MHz | On | On | Off | Off |
| | 150 MHz | 37.5 MHz | Off | On | Off | Off |

**警告：除了在正常的 CPU 外频（被推荐）上，其它的则可用于内部测试或最终用户超频使用，可能会导致你的系统不稳定或硬件严重损坏。**

### 2.1.4 IntelÒ 处理器或 CyrixÒ 处理器：S3 DIP 开关

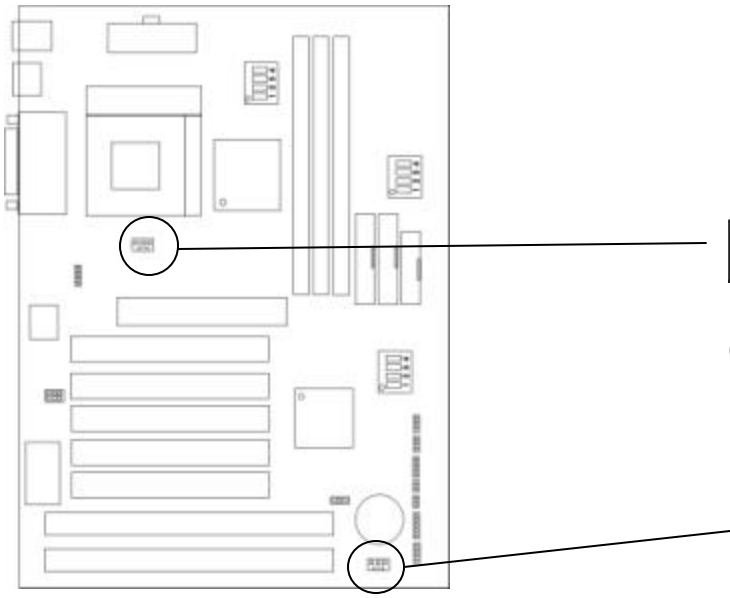
使用 Intel 处理器或 Cyrix 处理器，应按如下表格设置 S3 DIP 开关。

| Intel® CPU | | | |
|---|---|---|---|
| CPU 外频 | S3 DIP 开关 | | |
| | 1 | 3 | 4 |
| 66 MHz /自动检测 | On | Off | On |
| 100 MHz | Off | Off | On |
| 133 MHz | Off | Off | Off |

| Cyrix® CPU | | | |
|---|---|---|---|
| CPU 外频 | S3 DIP 开关 | | |
| | 1 | 3 | 4 |
| 66 MHz / 自动检测 | On | On | Off |
| 100 MHz | Off | On | Off |
| 133 MHz | Off | Off | Off |

### 2.1.5 CPU 风扇接口

此接口支持 +12V 的系统散热风扇，使用三针接口。

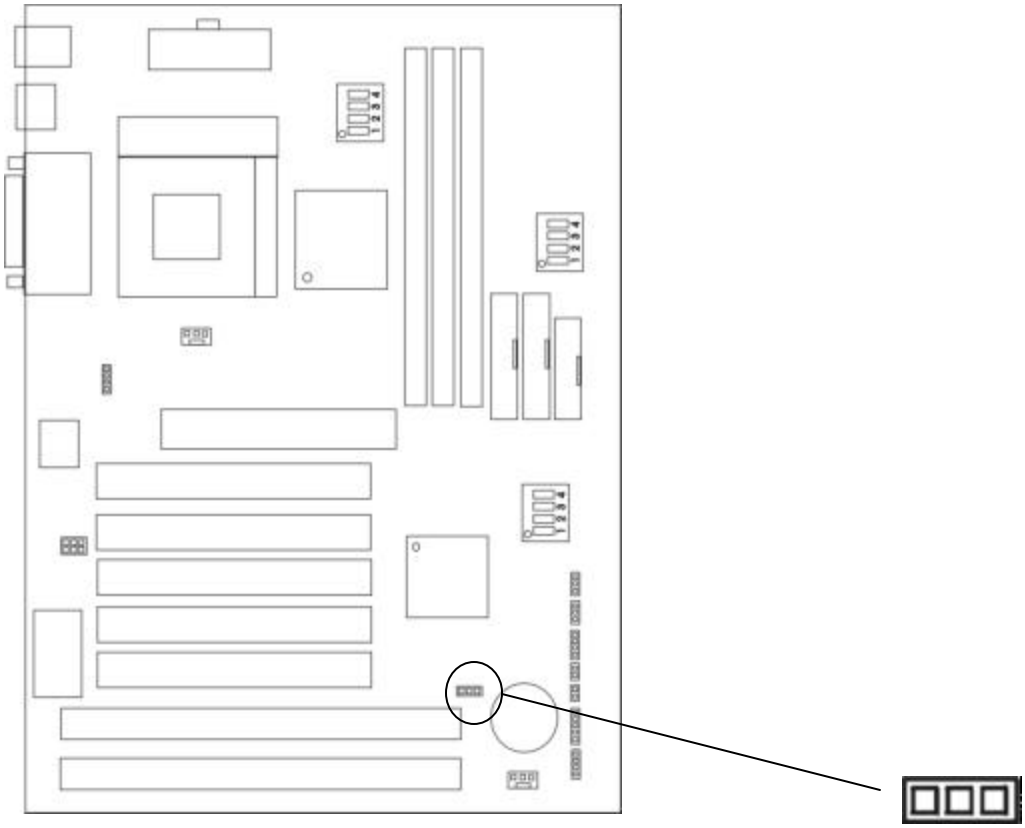


CPU 风扇

SYS / CHASIS 风扇

### 2.1.6 CMOS 跳线：JP11

**电池用来保持主板的** CMOS RAM **设置信息，短接** JP11 **的** 1-2 **针将保持** CMOS **数据。**



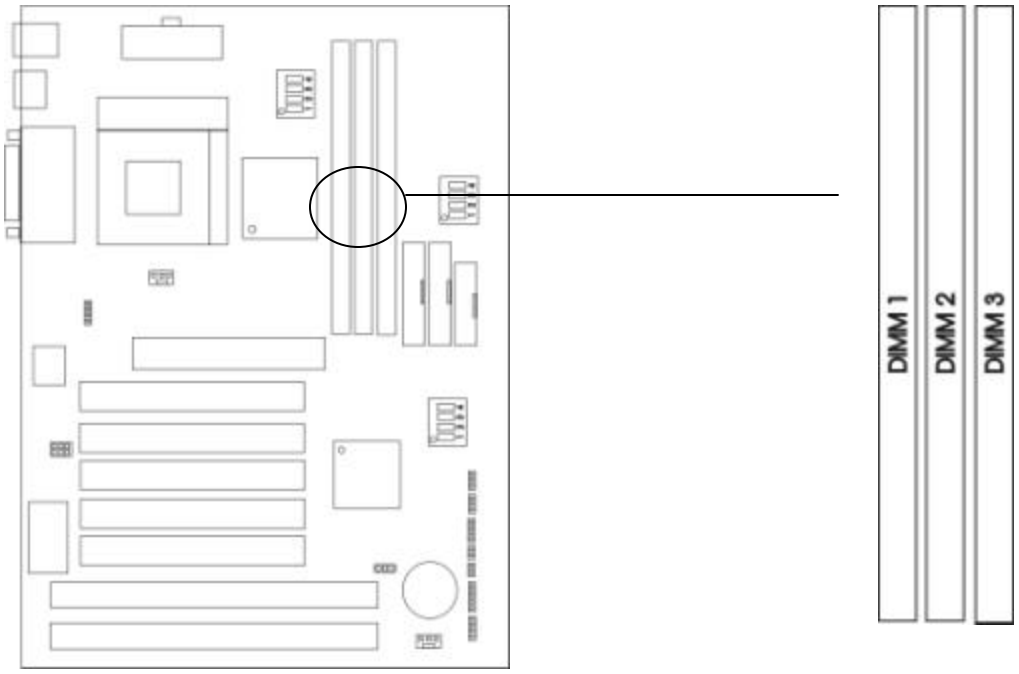

| Short Pin | CMOS |
|---|---|
| 1-2 | Keep Data |
| 2-3 | Clear Data |

**注意：将系统关闭后，你可用短接 2-3pin（5～10 秒）擦除 CMOS，然后重新设成 1-2pin 位置；当系统打开的时候切勿擦除 CMOS 以免损坏主板。**

## 1. 2 内存安装

### 2.2.1 内存组合配置

**主板支持最大的内存为** 768MB（256M×3）,**它提供** 3 **个** 168-pin non-buffered DIMM (Double In-Line Memory Module)**插座。**




**警告：主板支持三种指定的** DIMM（PC133，PC100，PC66）**内存规格。如果你用** 66MHz CPU **总线频率，可支持三种** DIMM **规格；如果你用** 100MHz CPU **总线频率**, **可支持** PC100 **和** PC133 **的** DIMM **规格；如果你用** 133MHz CPU **总线频率**,**仅支持** PC133 **的** DIMM **规格。**

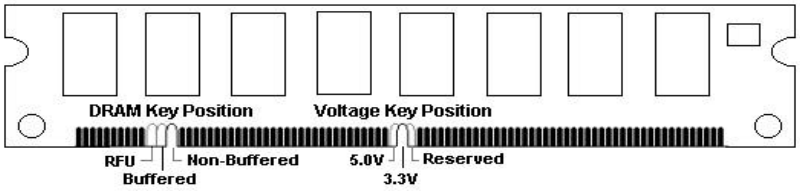
**内存速度正常定位于**：-15，-12，-10，-7，-8，PC-100，PC-133

**解释**： -15=15ns,**最大的时钟是** 66MHz
-12=12ns **最大的时钟是** 83MHz
-10=10ns **最大的时钟是** 100MHz
-8=8ns **最大的时钟是** 125MHz
-7=7ns **最大的时钟是** 142MHz
PC-100/PC133 = **新的** Intel **规格的用于** 100MHz **或更高** CPU **总线时钟的高速内存。**

**此主板支持以上所有内存速度；如果你的系统设置为** 100Mhz **或更高** CPU **总线时钟，为了得到更好的性能和可靠性，我们建议你使用** PC-100 **或更快的** SDRAM。

### 2.2.2 内存安装步骤

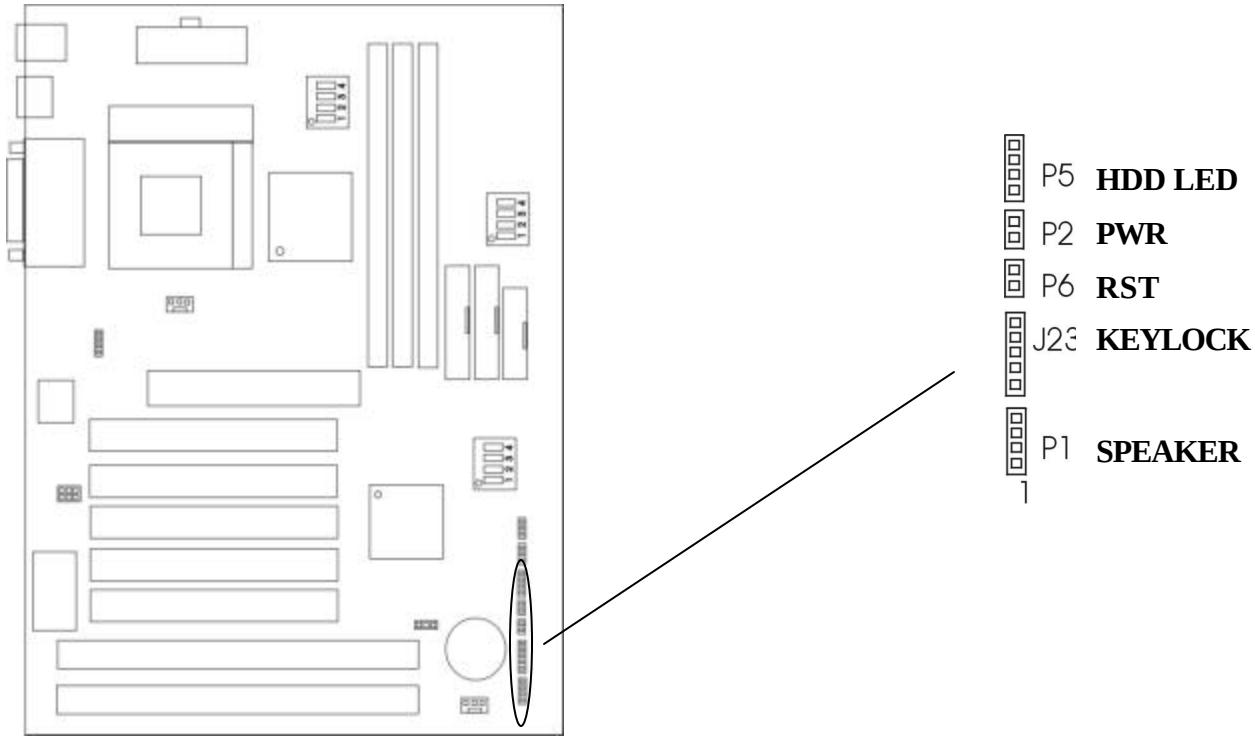
a. DIMM **槽有** 2 **个凹口，所以** DIMM **内存只能适合一个方向。**




b.**把** DIMM **内存模块垂直插入** DIMM **槽，然后平稳、均匀用力下压**

c.**在** DIMM **槽侧面的塑胶夹将自动关闭**

## 2.2 机箱连接口




**硬盘活动指示灯：P5 HDD LED**

HDD LED **显示硬盘的活动状态,当** HDD LED **闪亮的时候要避免关掉电源；你须把** HDD LED **从系统机箱连到** P5 **针。**

| Pin | **说 明** |
|---|---|
| 1 | **Active Signal** |
| 2 | Ground |
| 3 | Ground |
| 4 | Active Signal |

**系统电源开关（适用于 ATX 电源）接口: P2 PWR**
**从机箱上的电源开关连接此针** P2，**它提供开 / 关功能。**

**RESET 接口: P6 RST**

RESET 开关用来重新启动相当于按电源开关 ON/OFF，当 HDD LED 闪烁时,不要重新启动。从机箱上的 RESET 开关连接此针 P6。

| 设置 | 说 明 |
|---|---|
| 打开 | Normal mode |
| 关闭 | Reset system |

**键盘锁和电源指示灯接口：J23 KEYLOCK**

键盘锁允许你为安全用途锁定键盘，可以把 keylock 连接到此针 J23。

| Pin | 说 明 |
|---|---|
| 1 | LED output |
| 2 | N.C. |
| 3 | Ground |
| 4 | Keylock |
| 5 | Ground |

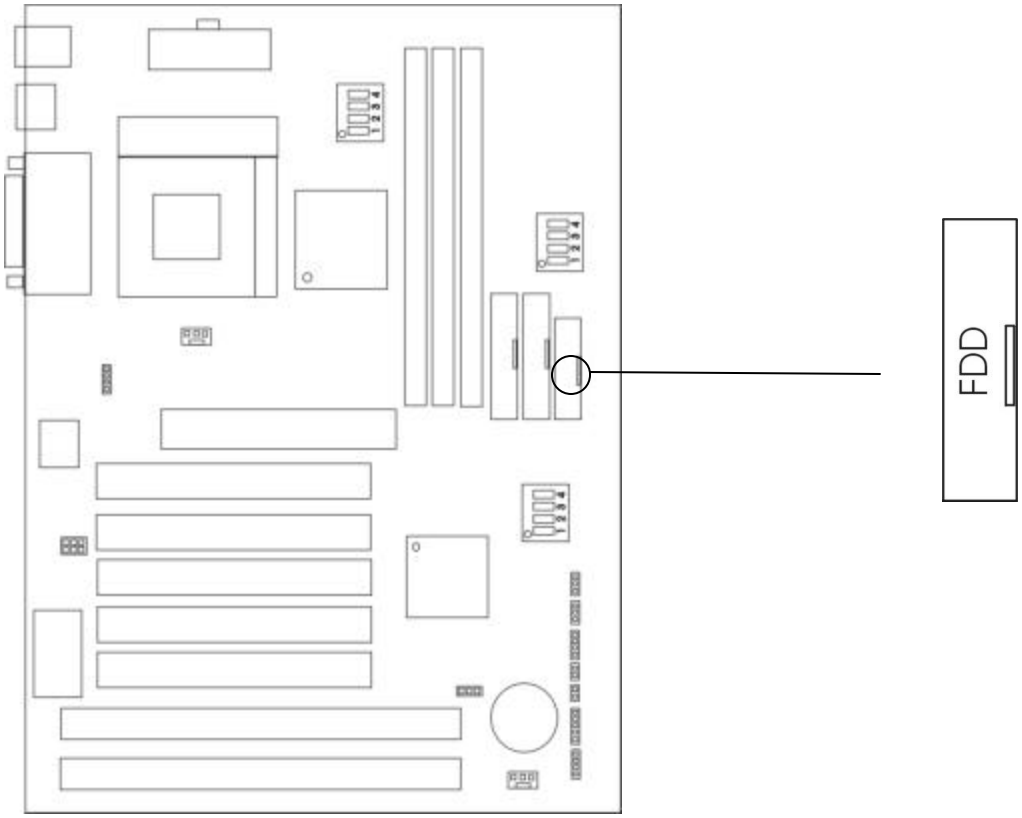
**扬声器接口：P1 SPEAKER**

扬声器从机箱连接到此 P1 针。

| Pin | 说 明 |
|---|---|
| 1 | Data out |
| 2 | N.C. |
| 3 | Ground |
| 4 | +5V |

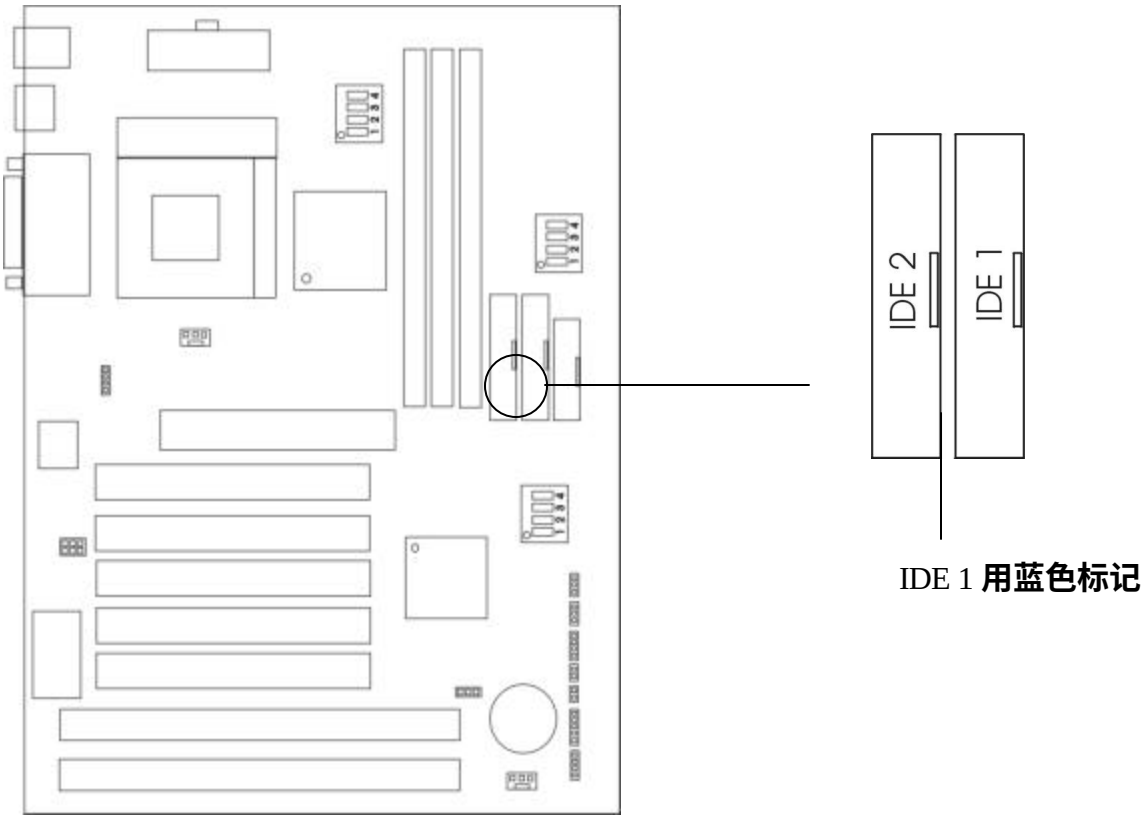
**2．3 软驱接口：FDD**

**主板也提供一个标准的软驱接口**（FDD）,**支持** 360K，720K，1.2M，1.44M **和** 2.88M **软驱及同类型设备**。




## 2．4 硬盘接口：IDE1 和 IDE2

主板有一个 32-bit 增强 IDE 控制器支持 PIO mode 0-4，Bus Master 和 Ultra DMA 33/66 类型设备。它有 2 组 HDD 接口 IDE1（第一组）和 IDE2（第二组），最多可连接 4 个硬盘驱动器、CD-ROM 等设备。




IDE 1 用蓝色标记

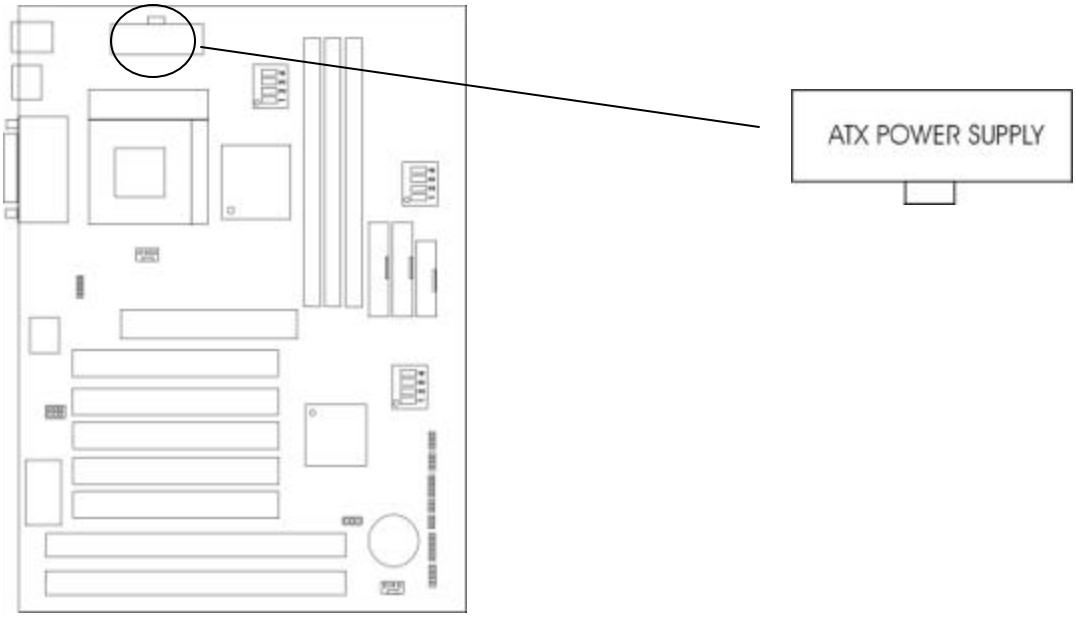
**IDE1（第一组 IDE 接口）**

第一个硬盘驱动器应总是连接到 IDE1。IDE1 能连接一个主驱动器（Master）和一个从驱动器（slave），你必须用设置跳线来配置第二个驱动器成为从盘（Slave）模式。

**IDE2（第二组 IDE 接口）**IDE2 也能连接一个主驱动器（Master）和一个从驱动器（Slave），你必须用设置跳线来配置第二个驱动器成为从盘（Slave）模式。

## 2．5 ATX 电源接头

主板通过此接头与 ATX 电源连接，为板上各设备提供能源。




警告：因为主板有即时电源打开功能，所以在插入电源接口之前请断开电源供电以避免发生危险。

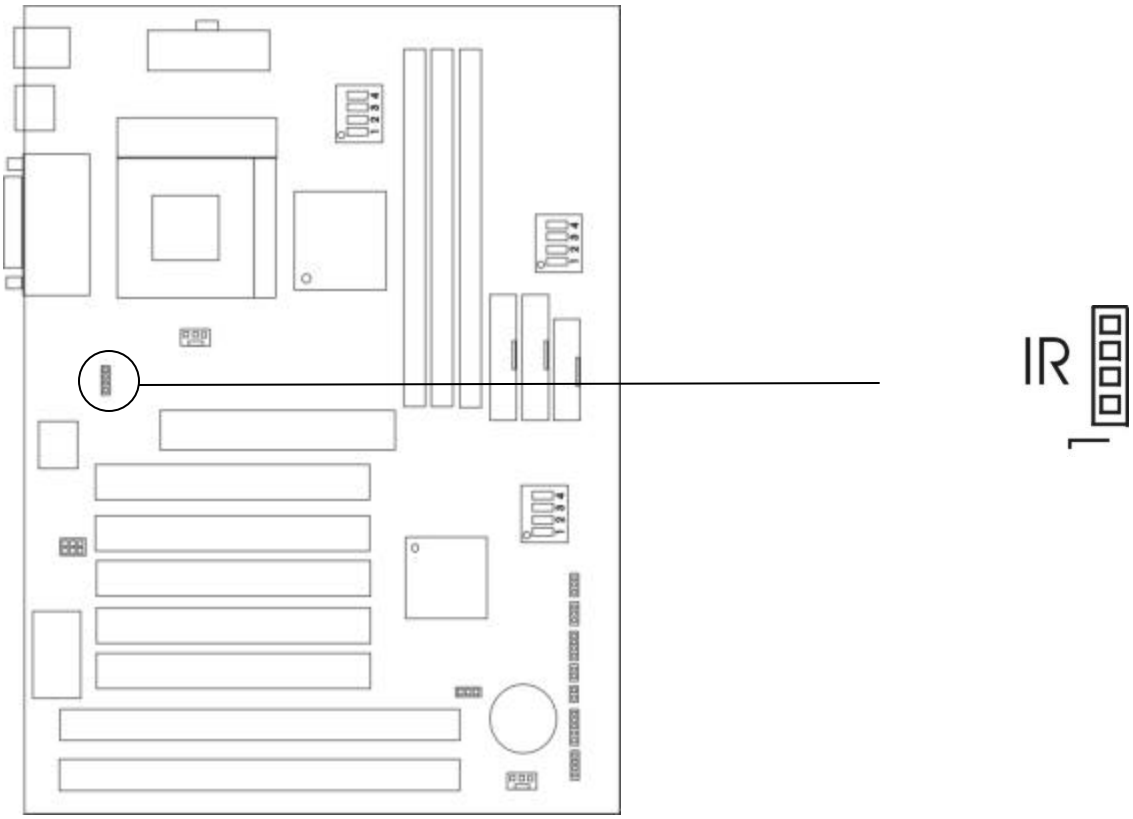
ATX 电源支持一个 20 针接口。

| Pin | Description | Pin | Description |
|---|---|---|---|
| 1 | 3.3V | 11 | 3.3V |
| 2 | 3.3V | 12 | -12V |
| 3 | Ground | 13 | Ground |
| 4 | +5V | 14 | PS-ON |
| 5 | Ground | 15 | Ground |
| 6 | +5V | 16 | Ground |
| 7 | Ground | 17 | Ground |
| 8 | Power OK | 18 | -5V |
| 9 | 5VSB | 19 | +5V |
| 10 | +12V | 20 | +5V |

注意：一些 ATX 电源没有-5V 电压输出，它将影响 ADD－ON 卡设备的功能。

## 2．6 红外线（IrDA Infrared Module）接头连接

**主板提供** 4 **针** IR **模式红外线接头，此接头用于连接无线传输和红外线接收设备，你必须通过** BIOS **设置使用** IR **功能**。




| Pin | **说 明** |
|---|---|
| 1 | VCC |
| 2 | IRRX |
| 3 | Ground |
| 4 | IRTX |

## 2．7 串行、并行、USB、鼠标、键盘接口

**串行端口接口：COM1 和 COM2**

**主板提供的串行端口** COM1 **和** COM2 **为** 2 **个** 9 **针凸出** DIN **接头，这些端口是** 16550A **高速通讯端口，发送/接收** 16 bytes FIFOS，**你可以在此接头连接鼠标或外置** Modem。

**并行端口接头：LPT**

**主板为** LPT **提供一个** 25 **针凹口，此并行端口是一个标准的打印端口同时也支持增强并行端口**（EPP）**和扩展并行端口**（ECP）。

**USB 接口**

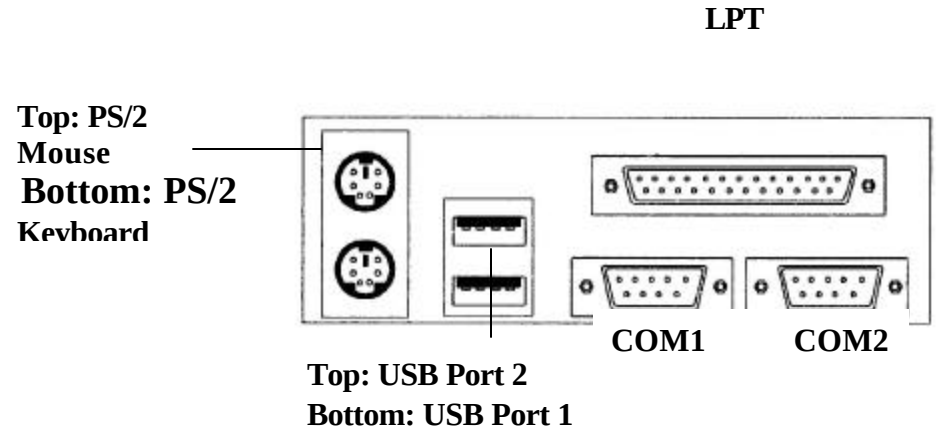
**您可将** USB **设备连接到此接口,此端口最多可支持** 127 **个** USB **设备。**

**鼠标接口**

**主板提供一个标准的** PS/2 **鼠标连接口用于连接** PS/2 **鼠标，你能直接插入一个** PS/2 **鼠标到这个接口。**

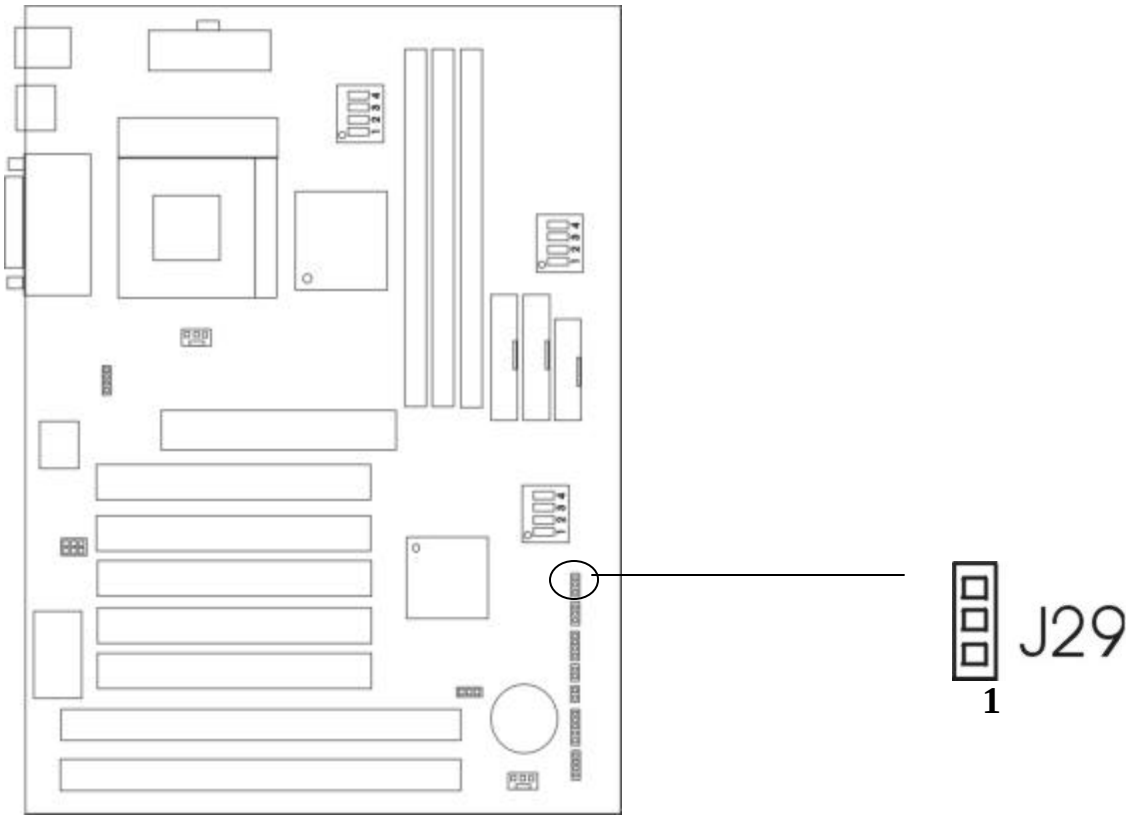
**键盘接口**

**主板提供一个标准的** PS/2 **键盘连接口用于连接** PS/2 **键盘，你能直接插入一个** PS/2 **键盘到这个接口。**




## 2.8 LAN 唤醒：J29 WUL

J29 接口是用网络适配器实现 LAN 唤醒功能，如需使用此功能，你需要在 BIOS Power Management Setup 中将“Wake-up on LAN”设为“Enable”。

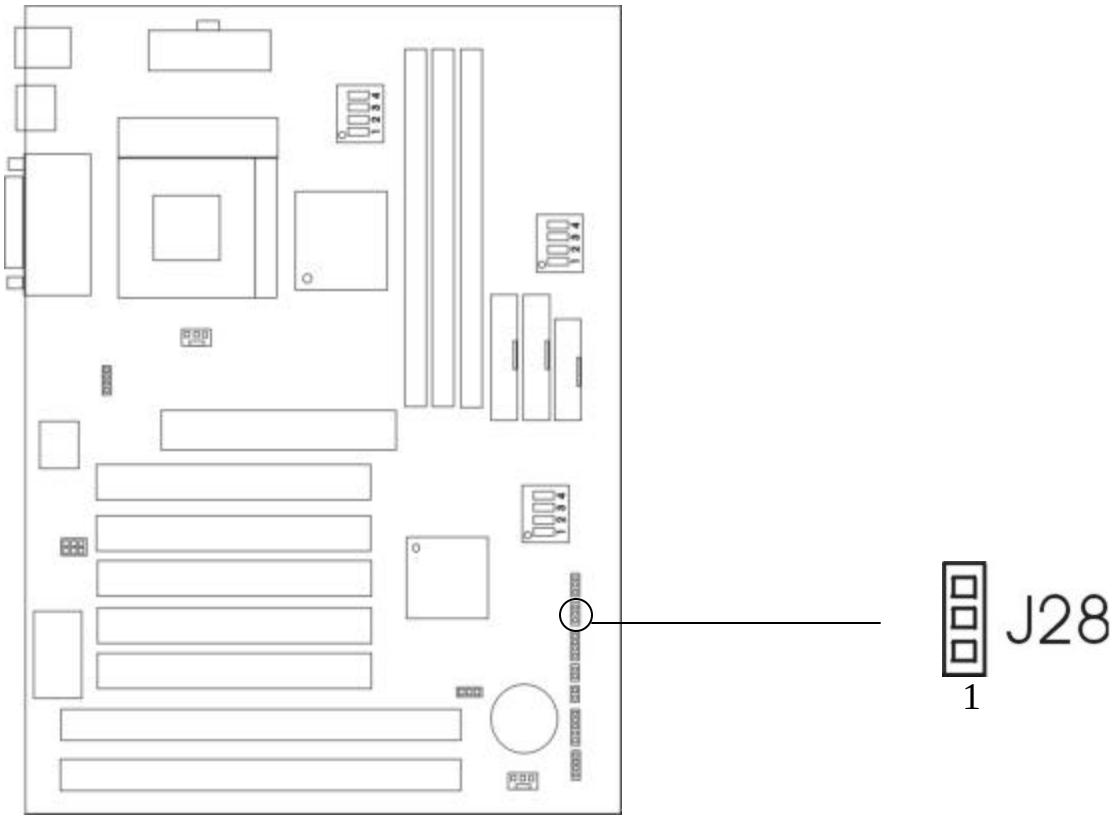



| PIN | SIGNAL |
|---|---|
| 1 | 5VSB |
| 2 | GND |
| 3 | WAKE-UP SIGNAL |

**注意：使用此功能，你需要足够的电源供应，电源必须能够提供 740mA5V Stand-by。**

## 2.9 Modem 唤醒

J28 接口用于支持 Modem 唤醒功能，要使用此功能，你需要在 BIOS Power Management Setup 中将“Modem Ring Resume”设置为“Enable”。




| PIN | SIGNAL |
|---|---|
| 1 | 5VSB |
| 2 | WAKE-UP SIGNAL |
| 3 | GND |

**注意：用此功能，需要有供应足够的电源，电源支持 740mA5V Stand-by。**

Chapter 3 BIOS SETUP

BIOS ROM has a built-in setup program that allows users to modify the basic system configuration. This type of information is stored in battery-backed RAM(CMOS RAM),so that it retains the setup information when the power is turned off.

## 3.1 Entering set up

Power on the computer and press <Del >immediately to allow you to enter Setup . The other way to enter Setup is to power the computer. when the blow messages appears briefly at the bottom of the screen during the POST(PoweerOn Self Test),press<Del>key or simultaneously press<Ctrl><Alt>and<Esc>keys.

TO ENTER SETUP BEFORE BOOT PRESS <CTRL-ALT-ESC> OR <DEL> KEY

If the message disappears before you respond and you still wish to enter Setup,restart the system to try again by turning it OFF then ON or pressing the 'RESET"button on the system case.You may also restart by simultaneously pressing <Ctrl><Alt>and <Delete>keys.If you do not press the keys at the correct time and the system does not boot,an error message will be displayed and you will again be asked to.

PRESS <F1> TO CONTINUE, <CTRL-ALT-ESC> OR <DEL> TO ENTER SETUP

## 3.2 Getting Help

**Main Menu**
The on-line description of the highlighted setup function is displayed at the bottom of the screen.

**Status Page Setup Menu / Option Page Setup Menu**
Press F1 to pop up a small help window that describes the appropriate keys to use and the possible selections for the highlighted item. To exit the Help Window, press <F1> or <ESC>.

## 3.3 The Main Menu

Once you enter BIOS CMOS setup utility, the Main Menu will appear on the screen. The Main Menu allows you to select from eleven setup functions and two exit choices. Use arrow keys to select among the items and press <Enter> to accept or enter the sub-menu.


**Standard CMOS Setup**
This setup page includes all the items in a standard compatible BIOS.

**BIOS Features Setup**
This setup page includes all the items of enhanced features.

**Chipset Features Setup**
This setup page includes all the items of chipset special features.

**Power Management Setup**
This category determines the power consumption for system after setting the specified items. Default value is Disable.

**PNP/PCI Configuration**
This category specifies the IRQ level for PCI and ISA devices.

**Load BIOS Defaults**
Chipset defaults indicates the values required by the system for stable performance.

**Load Setup Defaults**
Chipset defaults indicates the values required by the system for the maximum performance.

**Integrated Peripherals**
Change, set or disable onboard I/O, IRQ and DMA assignment.

**Supervisor Password**
Change, set or disable password. This function allows the user access to the system and setup or just setup.

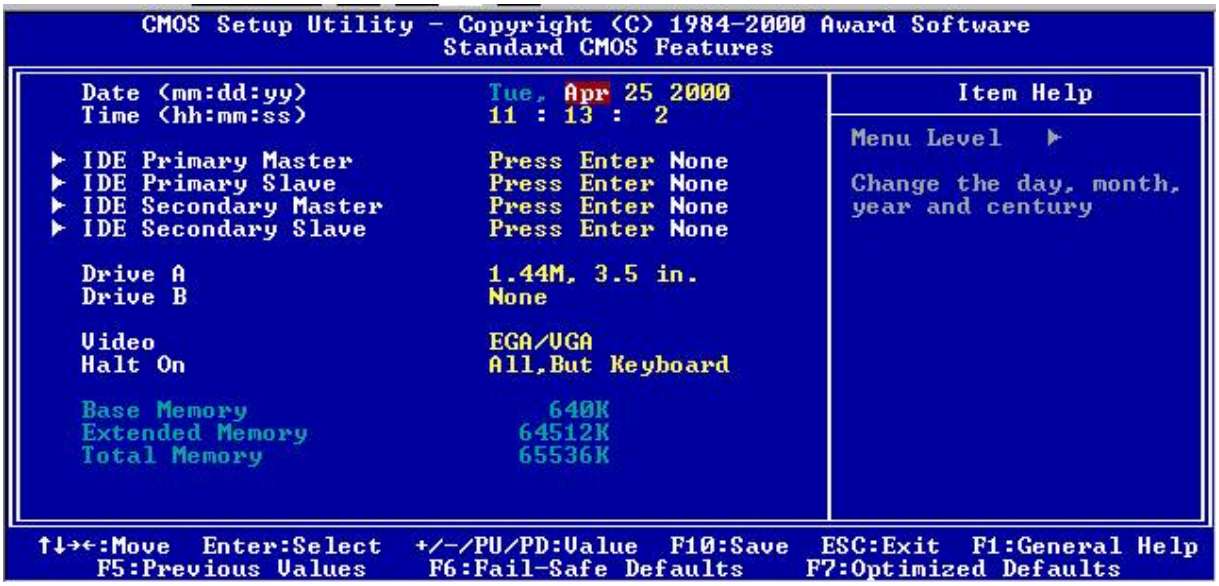
**IDE HDD Auto Detection**
Automatically configure hard disk parameters.

**Save & Exit Setup**
Save CMOS value changes to CMOS and exit setup.

**Exit Without Saving**
Abandon all CMOS value changes and exit setup.

## 3.4 Standard CMOS Setup

The items in Standard CMOS Setup Menu are divided into 10 categories. Each catergory includes no, one or more than one setup items. Use the arrow keys to highlight the item and then use the <PgUp> or <PgDn> keys to select the value you want in each item.




**Date**
The date format is <day><month><date><year>.

**Time**
The time format is <hour><minute><second>.

**Primary Master / Primary Slave**
Secondary Master / Secondary Slave

These categories identify the types of 2 channels that have been installed in the computer. There are 45 pre-defined types and 4 user definable types for Enhanced IDE BIOS. Type 1 to 45 are pre-defined. Type User is user-definable.

Press PgUp or PgDn to select a numbered hard disk type or type the number and press <Enter>. Note that the specifications of your drive must match with the drive table. The hard disk will not work properly if you enter improper information for this

category. If your hard disk drive type is not matched or listed, you can use Type User to define your own drive type manually.

If you select Type User, related information is asked to be entered to the following items. Enter the information directly from the keyboard and press <Enter>. This information should be provided in the documentation from your hard disk vendor or the system manufacturer.

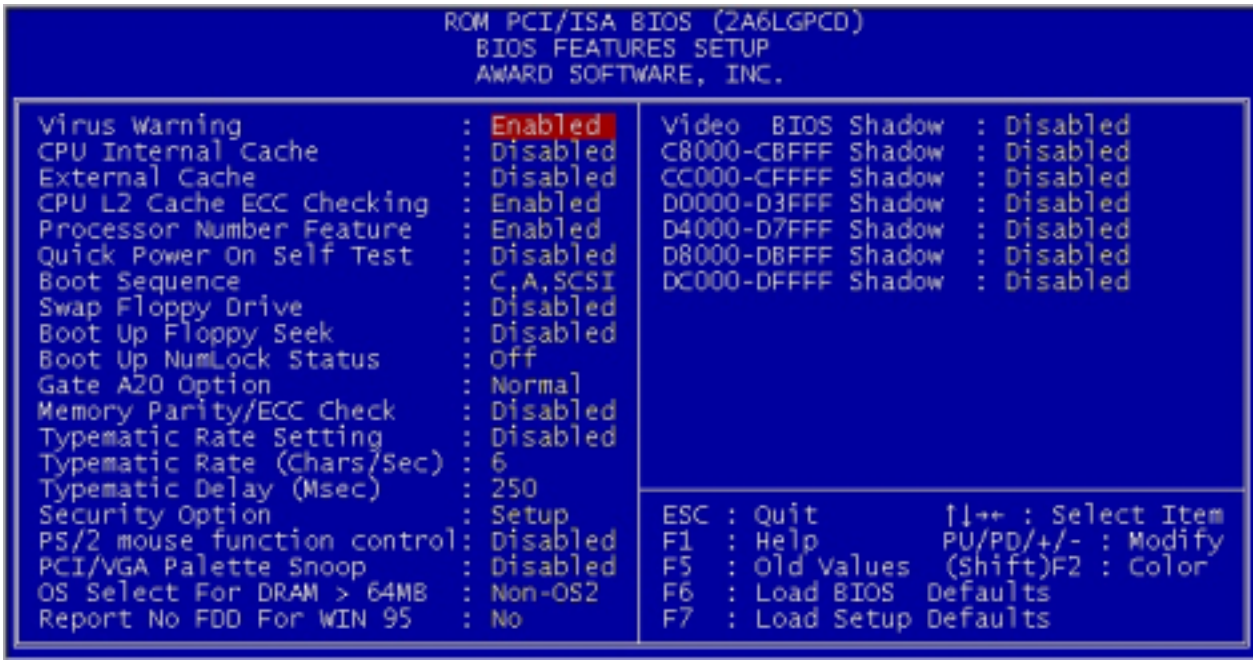
If the controller of HDD interface is ESDI, the selection shall be “TYPE 1”.

If the controller of HDD interface is SCSI, the selection shall be “NONE”.

If the controller of HDD interface is CD-ROM, the selection shall be “AUTO”.

| | |
|---|---|
| CYLS | number of cylinders |
| HEADS | number of heads |
| PRECOMP | write protection |
| LANDZONE | landing zone |
| SECTORS | number of sectors |
| MODE HDD | access mode |

## 3.5 BIOS Features Setup




**Virus Warning**

During and after the system boots up, any attempt to write to the boot sector or partition table of the hard disk drive will halt the system and the following error message will appear. For the meantime, you can run an anti-virus program to locate the problem.

| | |
|---|---|
| Disabled (Default) | No warning message to appear when anything attempts to access the boot sector or hard disk partition table. |
| Enabled | Activates automatically when the system boots up causing a warning message to appear when anything attempts to access the boot sector of hard disk partition table. |

**CPU Internal Cache**

The default value is Enabled.

| | |
|---|---|
| Enabled (Default) | Enable cache |
| Disabled | Disable cache |

Note: The internal cache is built in the processor

**External Cache**
Choose Enabled or Disabled. This option enables the level 2 cache memory.
**CPU L2 Cache ECC Checking**
Choose Enabled or Disabled. This option enables the level 2 cache memory ECC (error check correction). Using 66Mhz CPU Bus Pentium® II processor, set to Enables or Disabled. For Celeron™ processor w/o cache, always set to Disabled.

**Quick Power On Self Test**
This category speeds up Power On Self Test (POST) after you power on the computer. If this is set to Enabled, BIOS will shorten or skip some check items during POST.

| | |
|---|---|
| Enabled | Enable quick POST |
| Disabled (default) | Normal POST |

**Boot Sequence**
This category determines which drive the computer searches first for the disk operation system. Default value is A, C, SCSI.

**Swap Floppy Drive**
Switches the floppy disk drives between being designated as A and B. Default is Disabled.

**Boot Up Floppy Seek**
During POST, BIOS will determine if the floppy disk drive installed is 40 or 80 tracks. 360K type is 40 tracks while 760K, 1.2M and 1.44M are all 80 tracks.

**Boot Up Numlock Status**
The default value is On.

| | |
|---|---|
| On (Default) | Keypad is numeric keys. |
| Off | Keypad is arrow keys. |

**Gate A20 Option**

| | |
|---|---|
| Normal | The A20 signal is controlled by keyboard controller or chipset hardware. |
| Fast (Default) | The A20 signal is controlled by port 92 or chipset specific method. |

**Security Option**
This category allows you to limit access to the system and Setup, or just to Setup.

| | |
|---|---|
| System | The system will not boot and access to Setup will be denied if the correct password is not entered at the prompt. |
| Setup (Default) | The system will boot, but access to Setup will be denied if the correct password is not entered at the prompt. |

**PCI VGA Palette Snooping**
Choose Disabled or Enabled. Some graphic controllers which are not VGA compatible, take the output from a VGA controller and map it to their display as a way to provide the boot information and the VGA compatibility.

However, the color information coming from the VGA controllers is drawn from the palette table inside the VGA controller to generate the proper colors, and the graphic controller needs to know what is in the palette of the VGA controller. To do this, the non-VGA graphic controller watches for the Write access to the VGA palette and registers the snoop data. In PCI based systems, where the VGA controller is on the PCI bus and a non-VGA graphic controller is on an ISA bus, the Write Access to the palette will not show up on the ISA bus if the PCI VGA controller responds to the Writes.

In this case, the PCI VGA controller should not respond to the Write. It should only snoop the data and permit the access to be forwarded to the ISA bus. The non-VGA ISA graphic controller can then snoop the data on the ISA bus. Unless you have the above situation, you should disable the option.

| | |
|---|---|
| Disabled (Default) | Disable the function |
| Enabled | Enable the function |

**OS Select for DRAM > 64MB**
Allows OS2® to be used with > 64MB of DRAM. Setting are non-OS/2 (default) and OS2. Set to OS/2 if using more than 64MB and running OS/2®.

**Report No FDD For Win95**
This function is only used when you are testing SCT for Window® 95 Logo.

**Video BIOS Shadow**
Determines whether video BIOS will be copied to RAM for faster execution. Video Shadow will increase the video performance.

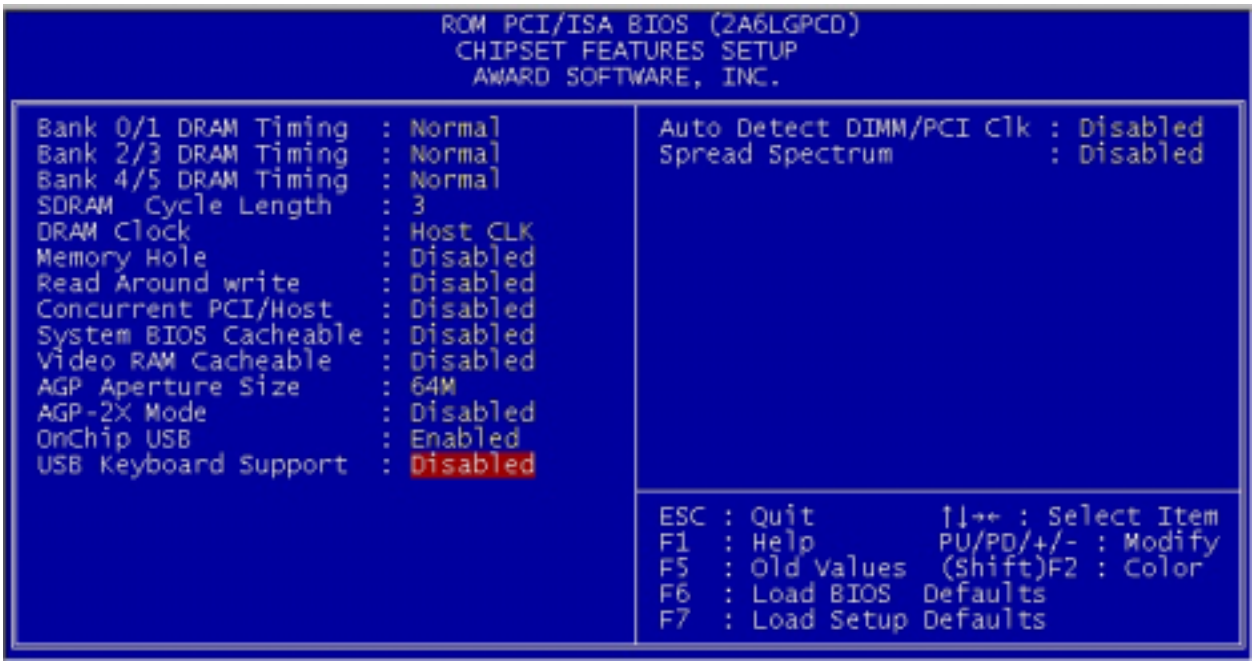
| | |
|---|---|
| Enabled (Default) | Video shadow is enabled. |
| Disabled | Video shadow is disabled. |

**C8000-CBFFF / DC000-DFFFF Shadow**
Determine whether the optiomal ROM will be compiled to RAM for faster execution.

### 3.6 Chipset Features Setup

The Chipset Features Setup option is used to change the values of the chipset registers. These registers control most of the system options in the computer.

Choose the "CHIPSET FEATURES SETUP" from the Main Menu and the following screen will appear.




**Note**: Change these settings only if you are familiar with the chipset.

**Bank 0/1 DRAM Timing / Bank 2/3 DRAM Timing / Bank 4/5 DRAM Timing**

Set the DRAM latency time to SDRAM 10ns, 8ns, Normal, Medium, Fast and Turbo.

**SDRAM Cycle Length**

The item allows you to select the value for SDRAM Cycle delay time. The settings are 2ns or 3ns. The default value is 3ns.

**DRAM Clock**

The defalult value for this item is Host Clk.

| | |
|---|---|
| Host Clk | DRAM Clock equals to host (system clock). |
| HCLK-33M | DRAM Clock equals to host clock minus 33Mhz. |

**Memory Hole At 15M-16M**

In order to improve the system's performance, certain space in memory can be reserved for ISA cards. This memory must be mapped into memory space below 16MB.

| | |
|---|---|
| Enabled | Memory hole supported |
| Disabled | Memory hole not supported |

**Concurrent PCI / Host**

Select Enabled allows caching of the system BIOS ROM at F000h-FFFFFh, resulting in better system performance. However, if any program writes to this memory area, a system error may result.

| | |
|---|---|
| Enabled | BIOS access cached |
| Disabled | BIOS access not cached |

**Video Ram Cacheable**

Select Enabled allows caching of the video RAM, resulting in better system performance. However, if any program writes to this memory area, a system error may result.

**AGP Aperture Size**

Select the size of the Accelerated Graphics Port (AGP) aperture. The aperture is a portion of the PCI memory address range dedicated for graphics memory address space. Host cycles that hit the aperture range are forwarded to the AGP without any translation.

**Onchip USB**

This items allows you to Enable or Disable the USB function. The default value of this item is Enabled.

**USB Keyboard Support**

This items allows you to Enable or Disable the USB keyboard function. The default setting is Disabled.

**Auto Detect DIMM / PCI Clk**

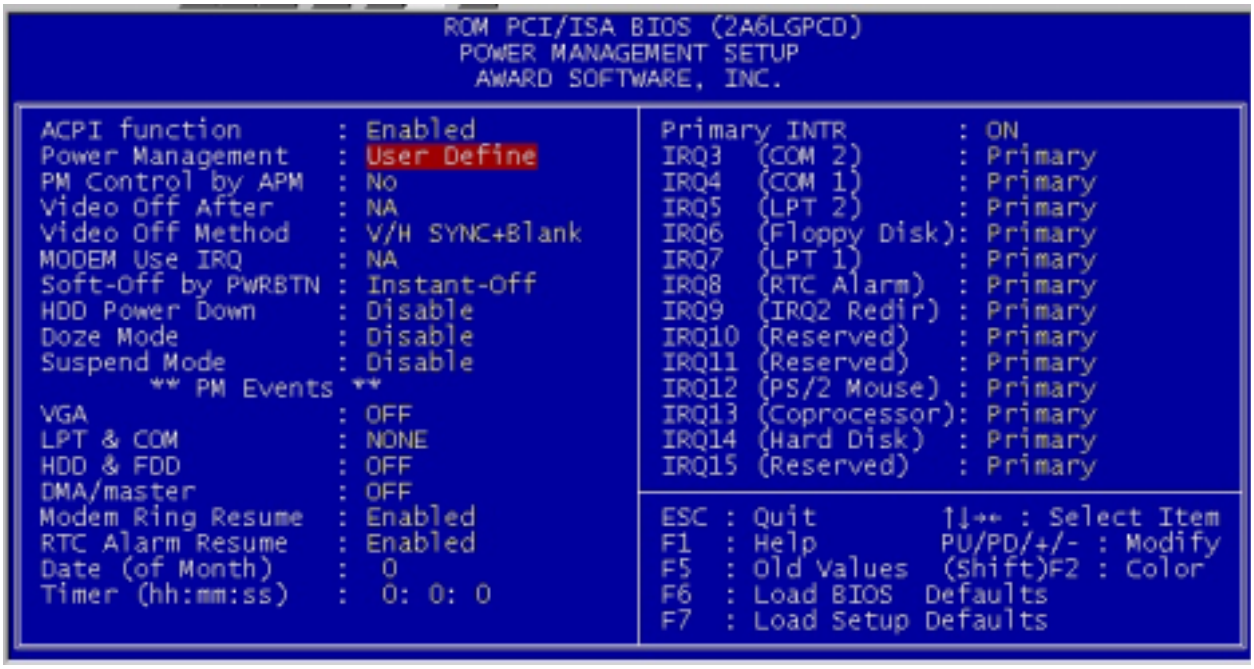
This items allows you to select the DIMM/ PCI clock. The other sockets will not generate when DIMM / PCI cards are not installed. The setting should be set to enabled which works better for EMI.

**Spread Spectrum**

This item allows you to select the clock generator Spread Spectrum function and system bus frequency (CPU Clock). The default is CPU default frequency. If you over-clock the processor, the system will hang-up. (Press F10 to resume to the original value)

## 3.7 Power Management Setup

The Power Management Setup will appear on your screen like this:




**Power Management**
This category determines the power consumption for system after selecting below items. Default value is user define. The following pages tell you the options of each item & describe the meanings of each options.

**ACPI Function**
This item allow you to enable or disable the ACPI function.

| | |
|---|---|
| Enabled (Default) | Enable the ACPI function |
| Disabled | Disable the ACPI function |

**Power Management**

| | |
|---|---|
| Disable | Global power management will be disabled. |
| User Define | Users can configure their own power management. |
| Min Saving | Pre-defined timer values are used such that all timers are in their MAX value. |
| Max Saving | Pre-defined timer values are used such that all timers are in their MIN value. |

**PM Control by APM**

| | |
|---|---|
| No | System BIOS will ignore APM when power managing the system. |
| Yes | System BIOS wil wait for APM's prompt before it enter any PM mode. |

Note: Enable this for OS with APM like Windows® 95/98, Windows® NT etc.

**Video off Method**

| | |
|---|---|
| Blank Screen | The system BIOS will only blank off the screen when disabling video. |
| V/H SYN C+Blank | In addition to (1), BIOS will also turn off the V-SYNC & H-SYNC signals from VGA card t monitor. |
| DPMS | This function is enabled only for VGA card supporting DPMS. |

Note: Green monitors detect the V/H SYNC signals to turn off its electron gun.

**Modem Use IRQ**

Name the interrupt request (IRQ) line assigned to the modem (if any) on your system. Activity of the selected IRQ always awakens the system. The settings are NA, 3, 4, 5, 7, 9, 10 or 11.

**Soft-Off by PWRBTN**

The settings are Delay 4 sec or Instant-Off. During Delay 4 sec, if you push the switch once, the system goes into suspend mode. If you push it more than 4 seconds, the system will be turn off. During Instant-off, the system will turn off once you push the switch.

**HDD Power Down**

| | |
|---|---|
| Disable | HDD's motor will not shut off. |
| Predefined Mins. | Defines the continuous HDD idle time before the HDD enters the power saving mode (motor off). BIOS will turn off the HDD's motor when time is out. |

**Doze Mode**

| | |
|---|---|
| Disable | System will never enter DOZE mode. |
| Predefined Mins. | Defines the continuous System idle time before the system enters DOZD mode. |

**Suspend Mode**

| | |
|---|---|
| Disable | System will never enter Suspend mode. |
| Predefines Mins. | Defines the continuous idle time before the system enters Suspend mode. If any item defined in the options of "Power Down & Resume Events" is enabled & active, Suspend timer will be reloaded. When the system has entered Suspend mode, any of the items enabled in the "Power Down & Resume Events" will trigger the system to wake up. |

**Wake Up On LAN**
To use this function, you need a LAN add-on card which support power on functions.

| | |
|---|---|
| Enabled | Wake up on LAN supported. |
| Disabled | Wake up on LAN not supported. |

**Modem Ring Resume**
To use this function, you need a Modem card which support power on functions.

| | |
|---|---|
| Enabled | Wake up on Internal modem supported |
| Disabled | Wake up on Internal modem not supported |

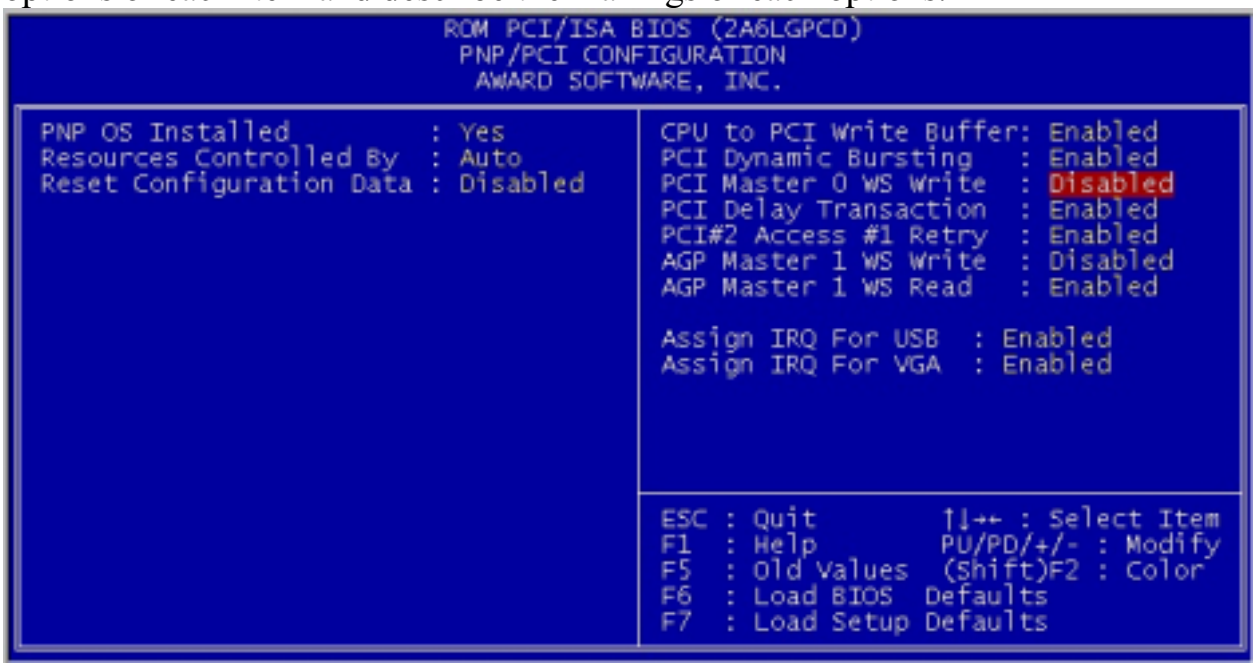
**RTC Alarm Resume**
This function is for setting date and time for your computer to boot up. During disabled, you cannot use this function. During Enabled, choose the Date and Time Alarm:

| | |
|---|---|
| Date (of month) Alarm | You can choose which date the system will boot up, Set to 0, to boot everyday. |
| Time Alarm | You can choose what hour, minute and second the system will boot up. |

Note: If you have change the setting, you must let the system boot up until it goes to the operating system, before this function will work.

## 3.8 PNP/PCI Configuration Setup

You can manually configure the PCI Device's IRQ. The following pages tell you the options of each item and describe the manings of each options.




**PnP OS Installed**

When set to YES, BIOS will only initialize the PnP cards used for booting (VGA, IDE, SCSI). The rest of the cards will be initialized by the PnP operating system like windows® 95/98. When set to NO, BIOS will initialize all the PnP cards. So, for non-PnP operating system (DOS, Netware®), this option must set to NO.

**Resources Controlled By**

By choosing "AUTO", the system BIOS will detect the system resources and automatically assign the relative IRQ and DMA channel for each peripheral.
By choosing "MANUAL" (default), the user will need to assign IRQ and DMA for add-on cards. Be sure that there is no conflict for IRQ/DMA and I/O ports.
Note: When choosing "AUTO", you must be sure that all of the system add-on cards are PnP type.

**Reset Configuration Data**

The system BIOS supports the PnP feature so that the system needs to record which resource is assigned and protect resources from conflict. Every peripheral device has a node which is called ESCD. This node records which resources are assigned to it. The system needs to record and update ESCD to the memory locations. These locations (4K) are reserved at the system BIOS.

If Disabled (default) is chosen, the system's ESCD will update only when the new configuration varies from the last one.
If Enabled is chosen, the system will be forced to update the system's ESCD. Then, this option will be auto-set to Disable.

IRQ-3 assigned to Legacy ISA
IRQ-4 assigned to Legacy ISA
IRQ-5 assigned to PCI/ISA PnP
IRQ-7 assigned to Legacy ISA
IRQ-9 assigned to PCI/ISA PnP
IRQ-10 assigned to PCI/ISA PnP
IRQ-11 assigned to PCI/ISA PnP
IRQ-12 assigned to PCI/ISA PnP
IRQ-14 assigned to PCI/ISA PnP
IRQ-15 assigned to PCI/ISA PnP
DMA-0 assigned to PCI/ISA PnP
DMA-1 assigned to PCI/ISA PnP
DMA-3 assigned to PCI/ISA PnP
DMA-5 assigned to PCI/ISA PnP
DMA-6 assigned to PCI/ISA PnP
DMA-7 assigned to PCI/ISA PnP

The above settings will be shown on the screen only if "Manual' is chosen for the Resources Controlled by function.
Legacy is the the term which signifies that a resource is assigned to the ISA Bus and provides for non PnP ISA add-on card. PCI/ISA PnP signifies that a resource is assigned to the PCI us or provides for ISA PnP add-on cards and peripherals.

**PCI Delay Transaction**

This items allows you to Enable /Disable the PCI delay transaction.

Enabled Delay transaction timing
Disabled Transaction in normal mode

**Assign IRQ for USB**

This item allows the user to Enable/Disable the Assign IRQ for USB.

Enabled Choose which IRQ to assign for USB
Disabled Will not assign IRQ for USB

**Assign IRQ for VGA**

This item allows the user to Enable/Disable the Assign IRQ for VGA.

Enabled Choose which IRQ to assign for VGA
Disabled Will not assign IRQ for VGA

### 3.9 Load BIOS / Setup Defaults

This Main Menu item loads the default system values. If the CMOS is corrupted, the defaults are loaded automatically. Choose this item and the following message appears:

"Load Setup Defaults (Y/N) ? N"

To use the Setup defaults, change the prompt to "Y" and press <Enter>.

Note: The setup defaults can be customized to increase performance. However, the BIOS defaults can always be used as a back up if there is some problem with the mainboard operation.

### 3.10 Integrated Peripherals


**IDE HDD Block Mode**

Enabled/Disabled Enabled allows the Block mdoe access for the IDE HDD.

IDE Primary Master PIO
IDE Primary Slave PIO
IDE Secondary Master PIO
IDE Secondary Slave PIO
Auto / Mode 0 / Mode 1-4

For these 4 IDE options, choose "Auto" to have the system BIOS auto detect the IDE HDD operation mode for POI access.
Note: Some IDE HDD cannot operate at the responding HDD's mode. When the user has selected "Auto" and the system BIOS bas accepted the HDD response mode, the user may degrade the HDD's operation mode. e.g. If the HDD reported that it can operate in mode 4 but it is not operating properly, the user will have to manually change the operation mode to mode 3.
Choosing Mode 1-4 will have the system ignore the HDD's reported operation mode and use the selected mode instead.
**Note:** According to ATA specs. Mode 4 transfer rate is > Mode 3 > Mode 2 > Mode 1 > Mode 0. If the user's HDD can operate at Mode 3 the user can also select a slower Mode (i.e. Mode 0-2) but not a faster Mode (i.e. Mode 4)

**On-Chip Primary PCI IDE / On-Chip Secondary PCI IDE**
Enabled / Disabled
The system provides for an ON-Board ON-Chipset PCI IDE controller that supports Dual Channel IDE (Primary and Secondary). A maximum of 4 IDE devices can be supported. If the user install the Off-Board PCI IDE controller (i.e. add-on cards), the user must choose which channels will be disabled. This will depend on which channel will be used for the Off-Board PCI IDE add-on card.

**Init Display First**

| | |
|---|---|
| PCI Slot | If both PCI VGA card and AGP card are installed, the system will display the PCI VGA card first. |
| AGP | If both PCI VGA and AGP card are installed, the system will show the AGP card first. |

**Onboard FDC Controller**

| | |
|---|---|
| Enabled / Disabled | The system has an on-board Super I/O chip with a FDD controller that supports 2 FDDs for 360K/720K/1.2M/1.44M/2.8M. Choose "Enabled" to use the onboard FDD controller for accessing the FDD. Otherwise choose "Disabled" to use the off-board FDD controller. |

**Onboard Serial Port 1 / Onboard Serial Port 2**
Auto / Disabled / (3F8/IRQ4) / (2F8/IRQ3) / (3E8/IRQ4) / (2E8/IRQ3)
The system has an ON-board Super I/O chispet with 2 serial ports. The On-board serial ports can be selected as:

| | |
|---|---|
| Auto | |
| Disabled | |
| 3F8/IRQ4 | COM 1 uses IRQ4 |
| 2F8/IRQ3 | COM 2 uses IRQ3 |
| 3E8/IRQ4 | COM 3 uses IRQ4 |
| 2E8/IRQ3 | COM 4 uses IRQ3 |

**Note:** Because the ISA interrupt accepts low to high edge trigger, the interrupt request line cannot be shard by multiple sources. If an off-board ISA add-on card with a serial port is installed the user may have to disable the on-board serial port because it will conflict with IRQ request line for the off-board serial port.

**UART Mode Select**

This item is selectable only when the onboard serial port 2 is enabled. The available mode selections for the serial port 2 are Standard, IrDA and ASKIR.

| | |
|---|---|
| Standard (Default) | Configures serial port as normal mode. |
| IrDA | Set to this setting if there is an infrared device connected on the onboard IrDA connector. The max. baud rate of this setting is 115K baud. |
| ASKIR | Set to this setting if there is an infrared device connected on the onboard IrDA connector. The max. baud rate of this setting is 19.2K baud |

**Onboard Parallel Port**

There is a built-in parallel port on the on-board Super I/O chipset that provides Standard, ECP, and EPP features. It has the following options.

| | |
|---|---|
| Disable | |
| 3BCH/IRQ7 | Line Printer port 0 |
| 278H/IRQ5 | Line Printer port 2 |
| 378H/IRQ5 | Line Printer port 1 |

**Onboard Parallel Mode**

| | |
|---|---|
| SPP | Standard Parallel Port |
| EPP | Enhanced Parallel Port |
| ECP | Extended Capability Port |

To operate the onboard parallel port as standard parallel port only, choose “SPP”. To operate the onboard parallel port in the ECP and SPP modes simultaneously, choose “ECP/SPP”. By choosing “ECP”, the onboard parallel port will operate in ECP mode only. Choosing “ECP/EPP” will allow the onboard parallel port to support both the ECP and EPP modes simultaneously. The ECP mode has to use the DMA channel, so choose the onboard parallel port with the ECP feature. After selecting it, the following message will appear: “ECP Mode Use DMA”. At this time, the user can choose between DMA channels 3 or 1. The onboard parallel port is EPP Spec. compliant, so after the user chooses the onboard parallel ort with the EPP function, the following message will be displayed on the screen: “EPP Mode Select”. At this time either EPP1.7 spec. Or EPP 1.9 spec. can be chosen.

### 3.11 Supervisor / User Password Setting

This main menu item lets you configure the system so that a password is required each time the system boots or an attempt is made to enter the Setup program. Supervisor Password allows you to change all CMOS settings but the User Password setting doesn't have this function. The way to set up the passwords for both Supervisor and User are as follow:

1. Choose "Change Password" in the Main Menu and press <Enter>. The following message appears:

   "Enter Password"

2. The first time you run this option, enter your password up to 8 characters only and press <Enter>. The screen will not display the entered characters. For no password, just enter <Enter>.
3. After you enter the password, the following message appears prompting you to confirm the password:

   "Confirm Password"

4. Enter exactly the same password you just typed in to confirm the password and press <Enter>.
5. Move the cursor to Save & Exit Setup to save the password.
6. If you need to delete the password you entered before, choose the Supervisor Password and press <Enter>. It will delete the password that you had before.
7. Move the cursor to Save & Exit Setup to save the option you did. Otherwise, the old password will still be there when you turn on your machine next time.

### 3.12 IDE HDD Auto Detection

You can use this utility to automatically detect the characteristics of most hard drives. When you enter this utility, the screen asks you to select a specific hard disk for Primary Master. If you accept a hard disk detected by the BIOS, you can enter "Y" to confirm and then press <Enter> to check next hard disk. This function allows you to check four hard disks and you may press the <ESC> after the <Enter> to skip this function and go back to the Main Menu.

# Chapter 4 Driver Installation

## *4.1 Mainboard Driver Installation for Windows® 95 / 98 / NT*

The driver will automatically detect and install the latest:

- IDE Bus Master Driver
- VIA AGP Driver
- IRQ ROUTING Driver
- VIA ACPI Registry Driver

1. Insert the Mainboard Driver CD into CD-ROM driver.
2. Click “Start” and “Run”.
3. Input the driver folder name “D:\VIAMA \SETUP.EXE”.
4. Follow system instruction.

## *4.2 BIOS Update*

Please check for the updated BIOS in www.pinegroup.com.cn

## *4.3 Technical Support*

If you need any technical support of the mainboard, please also check the E-mail: pinesupport@pinegroup.com.cn

P/N:73-V01A1110-000
Version:V01A/001/0600