

# P6F169

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## MOTHER BOARD User's Manual

Edition 1.0

February 15, 2004

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## Manual Guide

This manual is designed to help you build a reliable Personal Computer based on the P6F169 platform.

### **Chapter 1—Quick Reference**

This chapter is for advanced users who want to quickly assemble a system. The motherboard layout along with jumper and switch settings, and memory configuration are provided.

### **Chapter 2—Introduction**

This chapter includes an introduction, a checklist of the items that ship with this motherboard, and a summary of the principal features and components.

### **Chapter 3—Hardware Installation**

This chapter explains how to prepare your motherboard for use and how to make the various connections to other computer components and peripheral items.

### **Chapter 4—BIOS Configuration**

This chapter explains how to use the system setup utility that is stored in the motherboard's firmware.

### **Chapter 5—Driver and Utility**

This chapter briefly describes the drivers and utility programs that are packaged with the motherboard.

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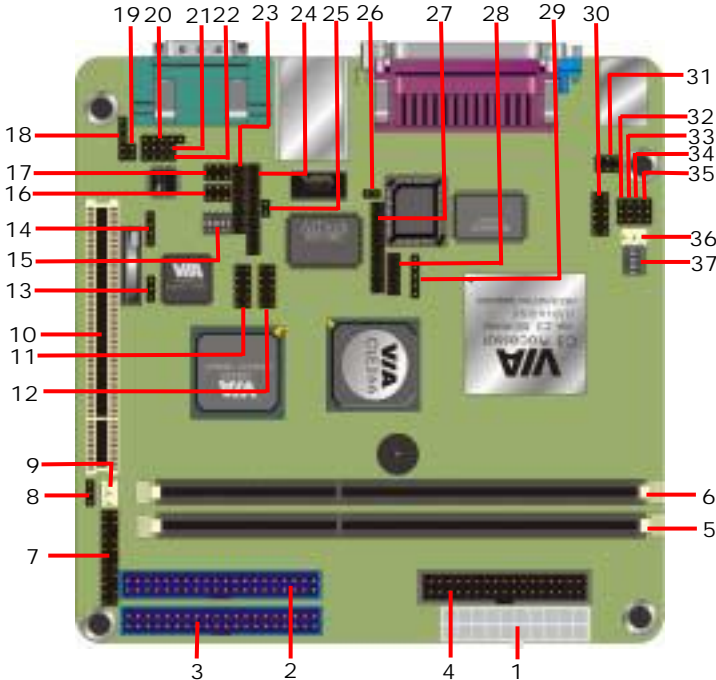
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# 1. P6F169 Quick Reference

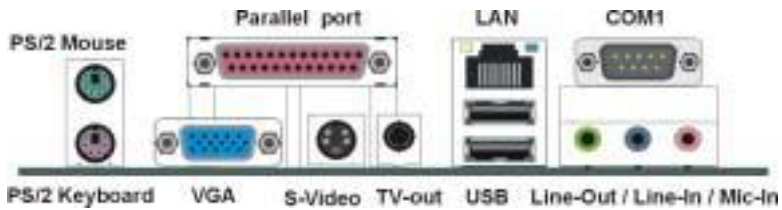
This section is for users to get started using the motherboard straight away.

## 1.1 Motherboard Layout



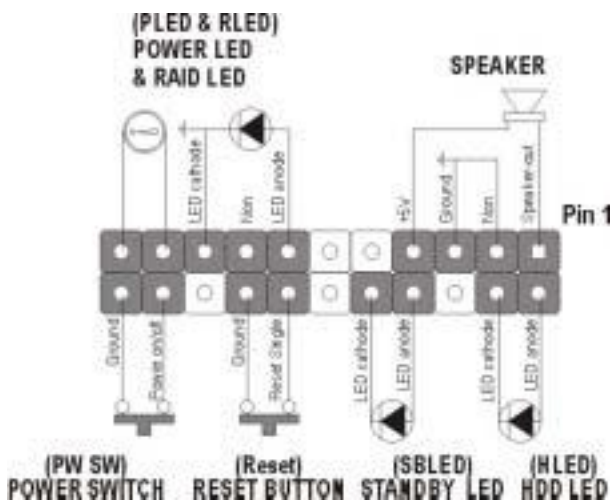
1	ATX Power connector (ATXPWR1)	21	Audio Aux-in connector (J1)
2	IDE connector (PRIMARY1)	22	Audio CD-in connector (J2)
3	IDE connector (SECONDARY1)	23	DVO interface (JP7)
4	Floppy connector (FDD1)	24	TMDS interface (J11)
5	184-pin DDR DIMM socket (DIMM1)	25	I2C interface (J13)
6	184-pin DDR DIMM socket (DIMM2)	26	TV-RST (S3)
7	Front Panel Connectors (JP1)	27	LVDS interface (J12)
8	Compact Flash Type Jumper (JCFSEL1)	28	DVO interface (J10)
9	System Fan (CHIPFAN1)	29	IR interface (IR1)
10	PCI Slot (PC11)	30	COM2 connector (COM2)
11	USB 1/2 connector (USB1/2)	31	COM2 Jumper (J5)
12	USB 3/4 connector (USB3/4)	32	COM2 Jumper (J6)
13	CMOS Clear Jumper (CLEAR_CMOS1)	33	COM2 Jumper (J7)
14	GPIO interface (JP8)	34	COM2 Jumper (J8)
15	TV-out mode switch (SW1)	35	COM2 Jumper (J9)
16	IEEE1394 connector (1394_1)	36	CPU Fan (CPUFAN1)
17	IEEE1394 connector (1394_2)	37	CPU Ratio Switch (SW2)
18	Audio Line-out connector (JP3)	38	
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20	Audio SPDIF connector (J3)	40	

## 1.2 I/O Ports



## 1.3 Front Panel Connector

The following illustration shows the front panel connector pin assignments:





## 1.4 Jumpers

### CLEAR\_CMOS1

#### Mode

1-2 Clear CMOS

2-3 Normal Operation

Default setting

### JCFSEL

#### Compact Flash Mode

1-2 Master

2-3 Slave

Default setting

### SW2

CPU RATIO	1	2	3	4	5
3.0x	OFF	ON	ON	ON	ON
3.5x	OFF	ON	OFF	ON	ON
4.0x	ON	OFF	ON	ON	ON
4.5x	ON	OFF	OFF	ON	ON
5.0x	ON	ON	ON	OFF	ON
5.5x	ON	ON	OFF	ON	ON
6.0x	OFF	OFF	ON	OFF	ON
6.5x	OFF	OFF	OFF	OFF	ON
7.0x	OFF	ON	ON	OFF	ON
7.5x	OFF	ON	OFF	OFF	ON
8.0x	ON	OFF	ON	OFF	ON
8.5x	ON	OFF	OFF	OFF	ON
9.0x	ON	ON	ON	ON	ON
9.5x	OFF	OFF	OFF	ON	ON
10.0x	OFF	OFF	ON	ON	ON
10.5x	OFF	OFF	OFF	ON	OFF
11.0x	OFF	ON	ON	ON	OFF
11.5x	OFF	ON	OFF	ON	OFF

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12.0x	ON	OFF	ON	ON	OFF
12.0x	ON	ON	OFF	OFF	ON
12.5x	ON	OFF	OFF	ON	OFF
13.0x	ON	ON	ON	OFF	OFF
13.5x	ON	ON	OFF	ON	OFF
14.0x	OFF	OFF	ON	OFF	OFF
14.5x	OFF	OFF	OFF	OFF	OFF
15.0x	OFF	ON	ON	OFF	OFF
15.5x	OFF	ON	OFF	OFF	OFF
16.0x	ON	OFF	ON	OFF	OFF
<b>SW1</b>	<b>Switch Number</b>				
RESERVE	1-OFF	Default			
OVERSCAN	2-ON	Enable			
	2-OFF	Disable			
TV-mode			3	4	5
NTSC			ON	ON	ON
NTSC-EIA			ON	OFF	ON
PAL-M			ON	ON	OFF
PAL-BDGI			OFF	OFF	ON
PAL-Comb-N			OFF	OFF	OFF
PAL-N			OFF	ON	ON
<b>COM2 RS232/485/422 Mode jumper setting</b>					
Mode	J5	J6	J7	J8	J9
RS232	1-2	1-2	1-2	1-2	1-2
RS422	5-6	1-2	1-2	2-3	2-3
RS485	3-4	2-3	2-3	1-2	1-2

## 1.5 PCI Frequency Setting

The PCI frequency settings are automatically set by the system

## 1.6 Memory Installation

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**Note:** This motherboard supports up to two double-sided or two single-sided DIMMs when the DDR DRAM interface is operating at 133 MHz. Installing DDR DIMM modules that exceed these specifications requires that the BIOS down-shifts the DRAM clocks to 100 MHz through a two-wire interface of the system clock generator.

---

### 184-Pin DIMM DDR SDRAM Memory Configuration.

Each **184-pin** DIMM bank can install from 64MB up to 1GB of PC1600/PC2100/PC2700 compliant 2.5V single or double side buffered with or without ECC DDR SDRAM modules.

<b>Bank 0 (DIMM1)</b>	64MB, 128MB, 256MB, 512MB, 1GB
<b>Bank 1 (DIMM2)</b>	64MB, 128MB, 256MB, 512MB, 1GB
<b>Total</b>	2 GB

**1.7 Connectors**

<b>Connector</b>	<b>Function</b>	<b>Remark</b>
DIMM1	184-pin DIMM Socket	Standard
DIMM2	184-pin DIMM Socket	Standard
PRIMARY1	40-pin Primary IDE Port	Standard
SECONDARY1	40-pin Secondary IDE Port	Standard
FDD1	34-pin FDD Port	Standard
COM2	10-pin COM2 RS-232/485/422 Serial Port	Standard
USB1/2	10-pin 1 <sup>st</sup> / 2 <sup>nd</sup> Hi-Speed USB 2.0 Port	Standard
USB3/4	10-pin 3 <sup>rd</sup> / 4 <sup>th</sup> Hi-Speed USB 2.0 Port	Standard
IR1	5-pin SIR IrDA Port	Standard
ATXPWR1	20-pin ATX Power Connector	Standard
1394_1	6-pin IEEE1394 port	Standard
1394_2	6-pin IEEE1394 port	Standard
J1	4-pin AUX-in connector	Standard
J2	4-pin CDIN connector for CD-ROM audio input	Standard
J3	5-pin SPDIF connector for Digital Audio Output	Standard
JP2	2-pin MIC-in connector	Standard
JP3	5-pin Line-out connector	Standard
JP7	20-pin DVO interface	Standard
JP8	4-pin General Purpose I/O (GPIO) interface	Standard
J10	12-pin DVO interface	Standard
J11	26-pin TMDS interface	Standard
J12	26-pin LVDS interface	Standard
J13	2-pin I2C interface	Standard
CPUFAN1	CPU FAN connector	Standard
CHIPFAN1	System FAN connector	Standard

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## 2. Introduction

### 2.1 Overview

The high quality **P6F169** is a high-performance, enhanced function motherboard that supports VIA C3/Eden Embedded processor with 133 MHz front side bus (FSB). This motherboard is designed around the latest VIA CLE266 Chipset in Mini-ITX form factor.

The motherboard delivers workstation-level performance with bus mastering EIDE (Enhanced IDE) controller, and concurrent PCI bus. The motherboard accommodates DDR SDRAM (Synchronous DRAM) memory and supports ATA66/100/133.

In addition to superior hardware capabilities, provided with this platform are these features:

- Support VIA C3/Eden Embedded Processor
- Supports a 100/133 memory bus
- Supports up to 2 GB of PC1600/PC2100 DDR SDRAM
- Bus mastering EIDE driver
- Supports 6 x USB ports.
- Supports 5.1 Channel AC97 Audio
- Supports 2 x IEEE1394 firewire connector
- Soft-off APM (Advanced Power Management)
- ACPI (Advanced Configuration and Power Interface)
- BIOS upgrade

## 2.2 Motherboard Specifications and Features

### 2.2.1. Hardware

<b>General Specification</b>	
Form Factor	Mini-ITX at 170 x 170 mm (L x W)
CPU	VIA C3/Eden Embedded processor at 133MHz FSB
Memory	2GBytes DDR200/266 SDRAM on 2 x 184-pin DIMM socket
Chipset	VIA CLE266 and VT8235
BIOS	Phoenix-Award 2Mb PnP flash BIOS
Green Function	Power saving mode includes doze, standby and suspend modes. ACPI version 1.0 and APM version 1.2 compliant
Real Time Clock	VIA VT8235 built-in RTC with lithium battery
Enhanced IDE	PCI enhanced IDE interface supports dual channels and up to 4 ATAPI devices at UltraATA/100/133  Two 40-pin IDE ports
Expansive Slot	One PCI slot supports up to 2 bus master PCI bus interface via the additional riser card
Compact Flash	One Compact Flash Type I/II socket
<b>Multi-I/O Port</b>	
Chipset	VIA VT8235 integrated with Winbond W83697HF Super I/O controller
Serial Port	One external RS-232 serial port with 16C550 compatible UART and 16 bytes FIFO and one internal jumper selectable RS232/485/422 serial port
USB Port	6 x Hi-Speed USB 2.0 ports with 480 Mbps of data transfer rate  2 x external and 4 x internal USB ports
Parallel Port	One external bi-direction parallel port with SPP/ECP/EPP mode
Floppy Port	One FDD port supports up to two FDD
IrDA Port	One IrDA compliant Infrared interface supports SIR
K/B & Mouse	External PS/2 keyboard and mouse ports on rear I/O panel

**VGA Display Interface**

Chipset	VIA CLE266 built-in internal AGP 4X 2D/3D graphics
Frame Buffer Size	BIOS selectable 8/16/32/64MB with system shared memory
2D Engine	128 bit
3D Engine	1 Pipe, 2 Texture, dedicated
MPEG-2 Hardware Acceleration	Slice Layer, IDTC & Motion Compensation
Video Support	2 video stream + Alpha Channel
Dual View Support	2 Contents, 2 Refresh Rates, 2 Resolution
Connector	External DB15 female connector on rear I/O panel Internal 26-pin LVDS connector

**TV-out Interface**

Chipset	VIA CLE266 integrated with AITech AIT2139KL Codec
TV Mode	Support both of NTSC and PAL mode
Connector	External S-video and RCA Jack on rear I/O panel

**Ethernet Interface**

Chipset	VIA PRO/100+ LAN interface with VT6103 PHY
Type	10Base-T / 100Base-TX, auto-switching Fast Ethernet Full duplex, IEEE802.3U compliant
Connector	External RJ45 connector with LED on rear I/O panel

**Audio Interface**

Chipset	VIA VT8235 with Realtek ALC650 AC'97 3D audio codec
Interface	5.1 channel 3D audio with front (R/L), rear (R/L), center and bass S/P DIF digital audio encoding signal input and output Line-in, line-out, CD-in and MIC-in
Connector	External three phone jack for 5.1 channel audio on rear panel External S/P DIF connector on rear panel Internal 10-pin header for line-in/-out, MIC-out, 4-pin header for CD-in

<b>IEEE1394 Interface</b>	
Chipset	VIA VT6307S PCI IEEE1394 controller
Interface	IEEE1394 with 100/200/400 Mbps of data transfer bandwidth
Connector	2 x internal IEEE1394 connector
<b>Power and Environment</b>	
Power Requirement	20-pin ATX power connector
Dimension	170 (L) x 170 (H) mm, Mini-ITX form factor
Temperature	Operating within 0 ~ 60°C (32 ~ 140°F) Storage within -20 ~ 85°C (-4 ~ 185°F)

## 2.2.2 Software

<b>BIOS</b>	AWARD AGP/PCI BIOS 2M-bit Flash BIOS with ESCD (Extended System Configuration Data) block Supports APM, Plug and Play, Multi-Boot, DMI and EIDE devices Supports ACPI Supports high-capacity LS-120 and ZIP removable media drive
<b>Driver and Utility</b>	IDE Bus mastering Ultra DMA driver AC97 codec audio driver Flash utility for BIOS upgrade System Environment Monitoring Utility
<b>Operating System</b>	Operates with MS_DOS, Windows 3.x/9x/ME/XP/2000/NT, OS/2, Novell NetWare/UnixWare 1.1, and SCO Unix 4.2





## Key to Motherboard Function

NO.	Name	Function
1	ATXPWR1	Standard ATX Power Connector
2	PRIMARY1	40-pin IDE1 Connector
3	SECONDARY1	40-pin IDE2 Connector
4	JP1	Front Panel Connector
5	CHIPFAN	System FAN
6	PCI1	32-bit PCI Slot
7	DIMM1	184-pin DDR SDRAM Socket
8	DIMM2	184-pin DDR SDRAM Socket
9	FDD1	26-pin Floppy Connector
10	JP8	4-pin General Purpose I/O Connector
11	JP3	5-pin Line-out Connector
12	JP2	2-pin MIC-in connector
13	J3	5-pin SPDIF connector
14	J1	4-pin AUX-in connector
15	J2	4-pin CD-IN connector
16	1394_1	2 x 3-pin IEEE1394 connector
17	1394_2	2 x 3-pin IEEE1394 connector
18	JP7	20-pin DVO interface
19	J11	26-pin DVO interface
20	J13	2-pin I2C interface
21	USB1/2	10-pin USB1/2 connector
22	USB3/4	10-pin USB3/4 connector
23	S3	TV reset connector
24	J12	26-pin LVDS interface
25	J10	12-pin DVO interface
26	IR1	5-pin IR interface
27	CPUFAN	CPU fan connector

## 2.4 Embedded Processor

The board supports embedded VIA C3/Eden EBG368 processor from 300MHz to 1GHz. The C3 E-series provide best C/P rate performance, and the Eden series provide low power consumption solution.

## 2.5 AC'97 Codec

The board is integrated with Realtek ALC650 codec. The ALC650 is an 18-bit, full duplex, AC'97 2.2 compatible stereo audio codec. The ALC650 incorporates proprietary converter technology to achieve a high SNR, greater than 90 dB. The ALC650 AC'97 CODEC supports multiple CODEC extensions with independent variable sampling rates and built-in 3D effects.

## 2.6 Chipset

The board is integrated with VIA CLE266 and 8235 chipset, supports VIA embedded C3/Eden processor for low power consumption. The key features are below:

- 100/133MHz DDR/SDR Memory bus settings
- Support for Integrated VIA AGP 4X 2D/3D Graphics
- Supports up to 2.0GB DDR200/266 SDRAM
- V-Link 266MB/s high bandwidth North/South Bridge interconnect
- Integrated 6 channel Surround Sound AC-97 Audio Interface
- Integrated 10/100 Ethernet MAC
- Support for ATA 33/66/100/133
- Support for USB 2.0, 6 USB ports, UHCI compliant
- Advanced power management capabilities including ACPI OnNow

## 3. Hardware Installation

This chapter shows how to build your own system of the board. You may need the following components to built a fully function system.

1. Mini-ITX chassis with standard ATX power supply.
2. At least one 184-pin DDR200/266 SDRAM module.
3. One Floppy drive.
4. One Ultra DMA 66/100 EIDE hard drive.
5. One CD-ROM.
6. One CRT monitor.
7. One PS/2 keyboard and mouse.
8. One S-Video or RCA wire to connect with TV.
9. One 10/100Mps Ethernet wire to connect with your ADSL modem or HUB.
10. A speaker.

### 3.1 Packing List

Please check the package list below:

1. 1 x P6F169 motherboard.
2. 1 x IDE 66/100 40-pin ribbon cable.
3. 1 x Floppy 34-pin ribbon cable.
4. 1 x Drivers and Utility CD.
5. 1 x user's manual.

After removing the motherboard from its anti-static bag, place it on a grounded or antistatic surface (component side up). Inspect the motherboard and contact your vendor immediately if it is damaged

## 3.2 Installation

The P6F169 is designed to fit into a standard Mini-ITX ATX form factor chassis. The pattern of the mounting holes and the position of the back panel connectors meet the Mini-ITX ATX system board specification. The chassis comes with various mounting fasteners, which are made of metal or plastic. It is highly recommended to use as many metal fasteners as possible to mount the motherboard in the chassis for better grounding.

To install the motherboard you need to install the DDR memory modules, attach the connectors, and set the correct CPU speed in the CMOS setup.

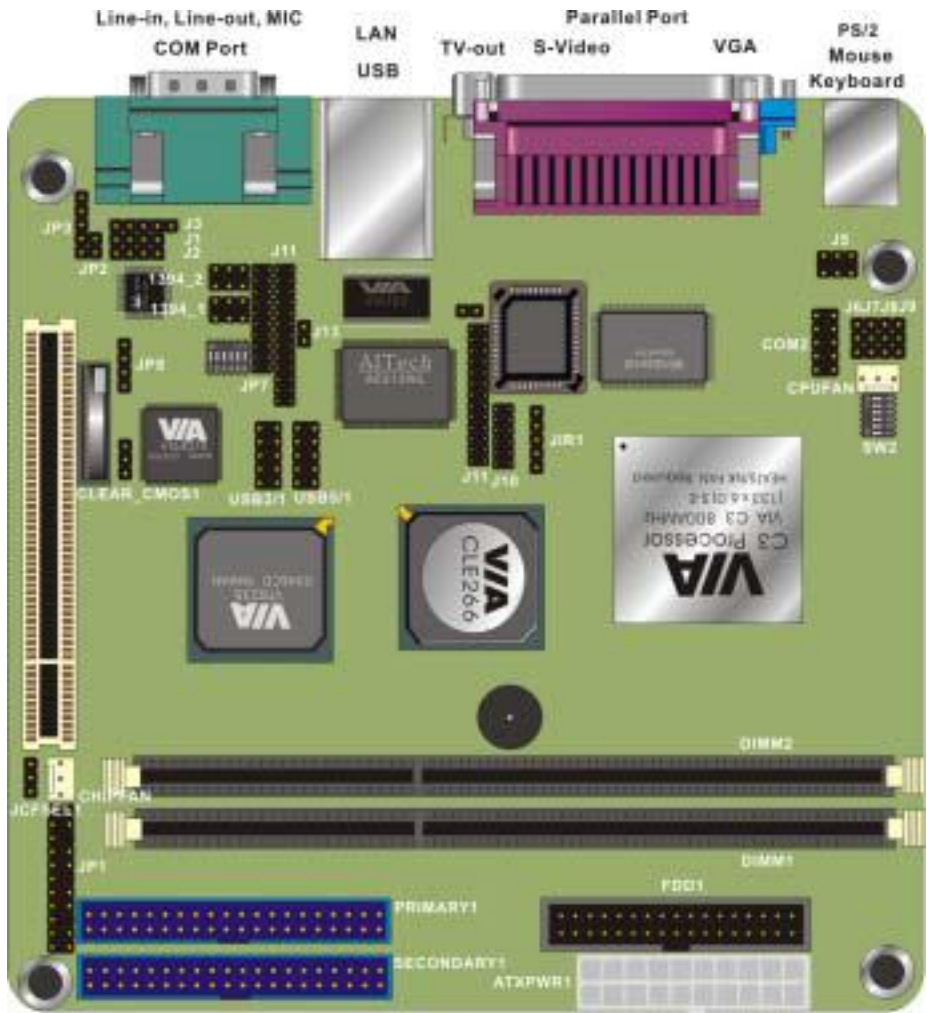
## 3.3 Safety Measures

Computer components and electronic circuit boards can be damaged by discharges of static electricity. Working on computers that are still connected to a power supply can be extremely dangerous. Follow the simple guidelines below to avoid damaging you computer:

1. Always disconnect the motherboard from the ATX power supply, and disconnect the computer from the power outlet whenever you are working inside the computer case.
2. If possible, wear a grounded wrist strap when you are installing the motherboard or working inside the computer case. Alternatively, discharge any static electricity by touching the bare metal chassis of the computer case, or the bare metal body of any other grounded appliance.
3. Hold electronic circuit boards by the edges only. Do not touch the components on the board unless it is necessary to do so. Do not flex or stress the circuit board.

Leave each component inside the static-proof packaging that it ships with until you are ready to use the component for the installation.

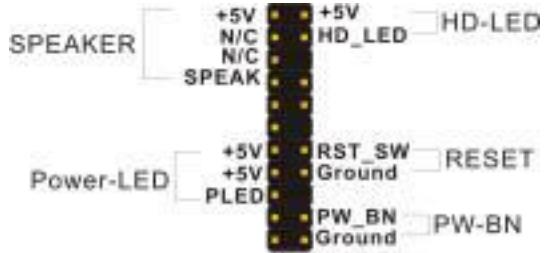
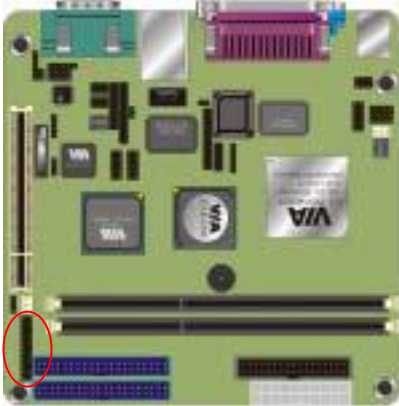
### 3.4 Connector and Jumper Location



### 3.5 Attaching Connectors

#### 3.5.1 Front Panel Connectors (JP1)

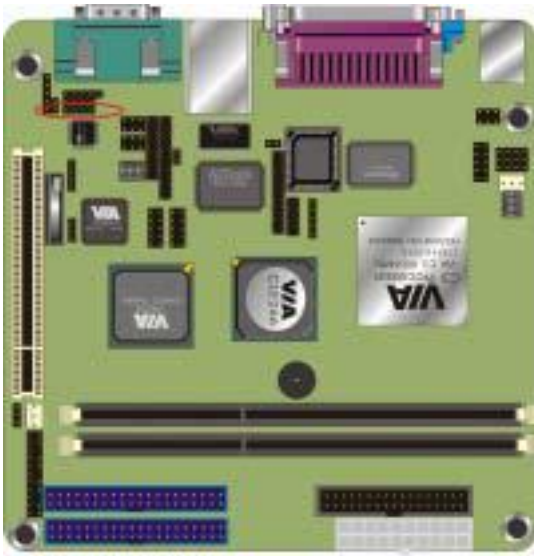
There are seven connectors on the motherboard for speaker, switches, and indicator lights on the system's front panel.



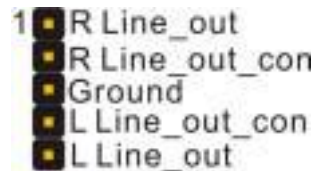
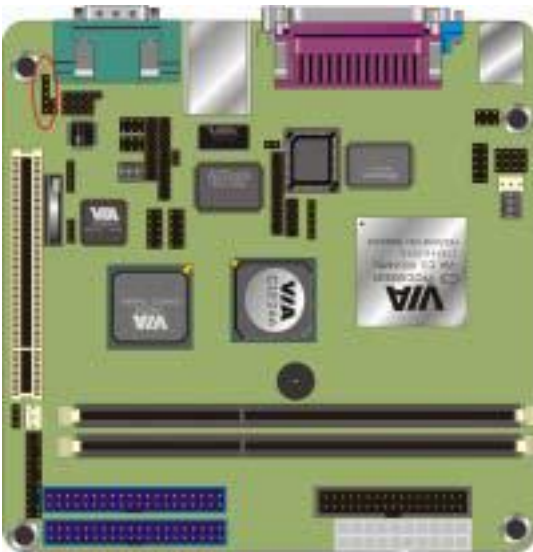
<b>PW SW</b>	This 2-pin connector connects to the case-mounted Power button.
<b>RESET</b>	This 2-pin connector connects to the case-mounted reset switch and is used to reboot the system.
<b>SBLED</b>	This 2-pin connector connects to the case-mounted Standby LED to indicate a standby status. The LED remains Lit even when the system is off to indicate that AC power is available. When the system enters standby mode, the LED starts blinking.
<b>HLED</b>	This 2-pin connector connects to the case-mounted HDD LED to indicate hard disk activity.
<b>PWRLED &amp; RLED</b>	This 5-pin connector connects to the case-mounted and the power LED. The RLED switch is used to indicate Raid activity.
<b>SPEAKER</b>	This 4-pin connector connects to the case-mounted speaker.

### 3.5.2 Audio CD-in connector (J2)

This connector enables you to connect a CD-ROM to the motherboard and receive stereo audio input



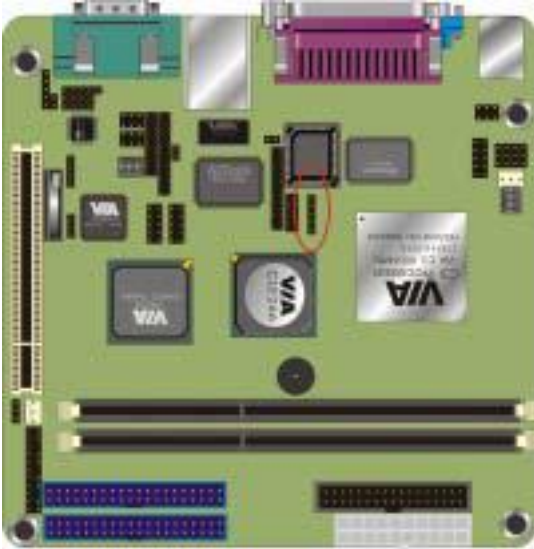
### 3.5.3 Audio Line-out connector (JP3)





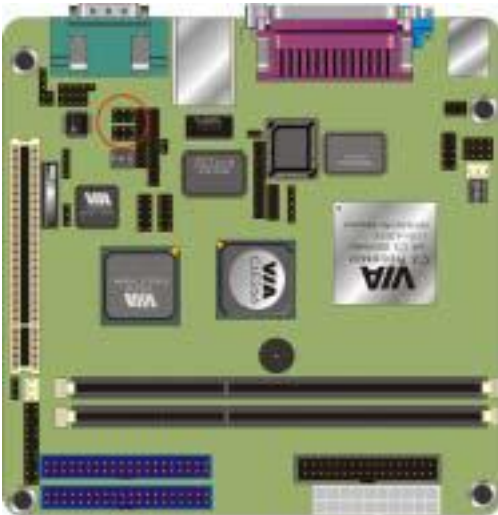
### 3.5.4 Infrared (IR) Connector (IR1)

This 5-pinheader connects to an optional wireless transmitting and receiving infrared module via a cable and a bracket. Configure BIOS to enable the IrDA port if you attach an infrared module to this connector. Refer to Integrated Peripherals in Chapter 4 for details.



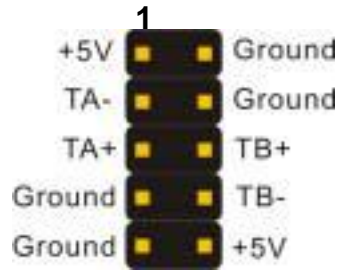
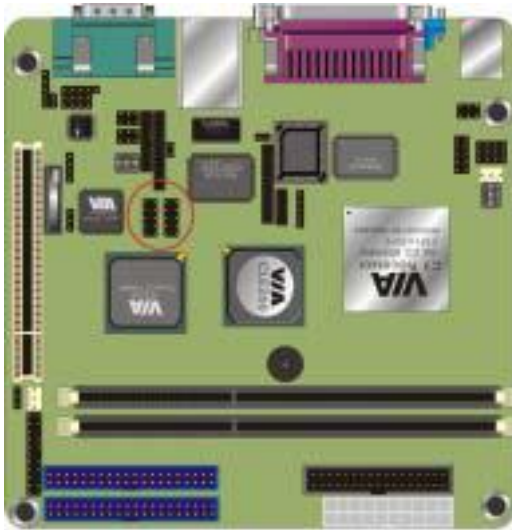
- 1 +5V
- IRRX1
- IRRX
- Ground
- IRTX

### 3.5.5 Front IEEE1394 connectors (1394\_1 & 1394\_2)

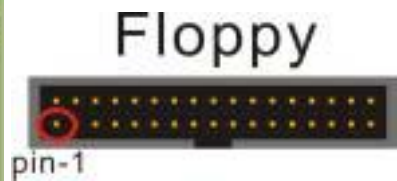
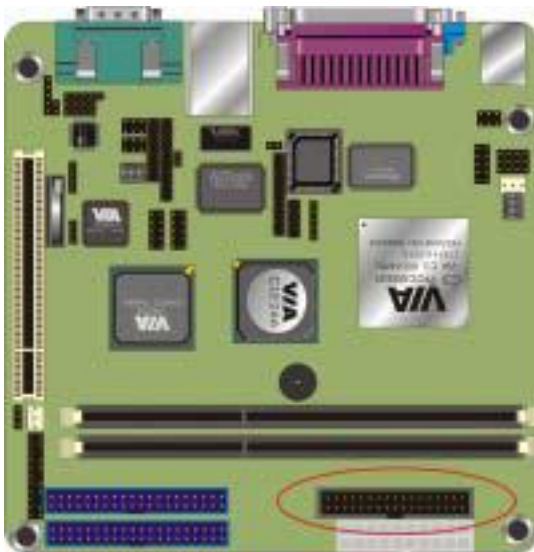


- TP\_A1+
- TP\_B1+
- Ground
- TP\_A1-
- TP\_B1-
- 1394\_VDD

### 3.5.6 Front USB Header (USB1/2 & USB 3/4)



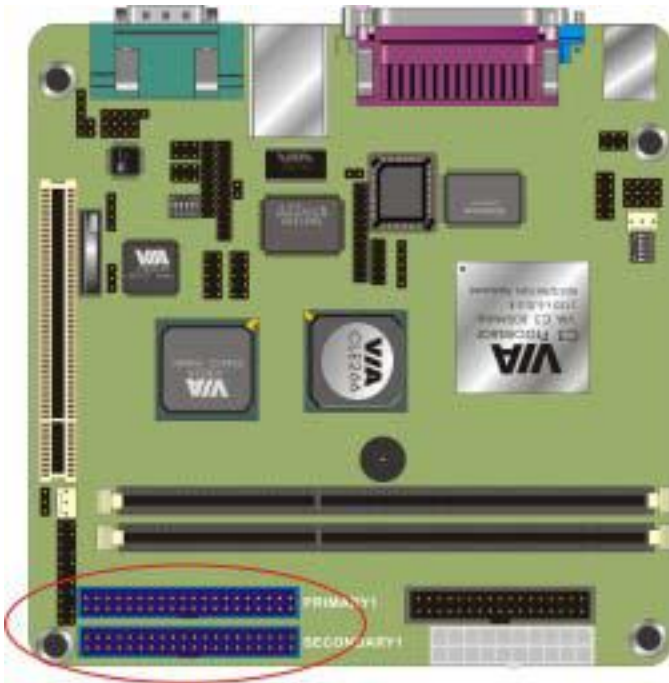
### 3.5.7 Floppy Driver Connector (FDD1)



### 3.5.8 IDE connectors (PRIMARY1 & SECONDARY1)

An IDE drive ribbon cable has two connectors to support two IDE drives. If a ribbon cable connects to two IDE drives at the same time, one of them has to be configured as Master and the other has to be configured as Slave by setting the drive select jumpers on the drive.

Consult the documentation that came with your IDE drive for details on jumper locations and settings. You must orient the cable connector so that the pin 1 (color) edge of the cable corresponds to pin 1 of the I/O port connector.

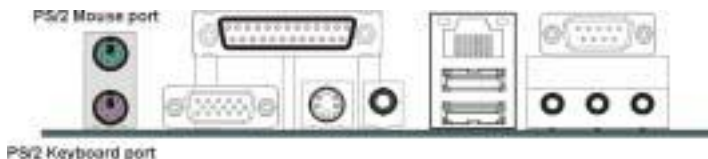


### 3.5.9 Back Panel Connectors

The back panel provides external access to PS/2 style keyboard and mouse connectors, two serial ports, one parallel port, dual USB ports, and audio Line-out, Line-in, MIC-in ports which are integrated on the motherboard. The figures below show the location of the back panel I/O connectors.

#### PS/2 Mouse and PS/2 Key board Ports

Connect a PS/2 mouse to the green 6-pin mini DIN connector. The system will automatically assign IRQ 12 to the PS/2 mouse if one is connected.



Connect a PS/2 keyboard to the purple 6-pin mini DIN connector. If you want to connect a standard AT size (large DIN) connector, you must use an adapter.

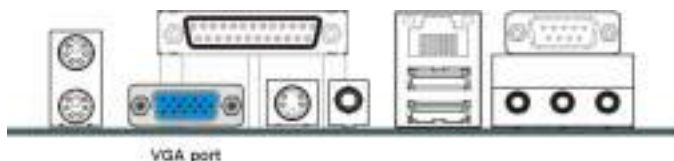
#### Parallel Port

Connect a printer or other parallel device to the burgundy-colored 25-pin parallel port. You can set the parallel port IRQ and parallel port mode in BIOS. Refer to Integrated Peripherals in Chapter 4 for details.



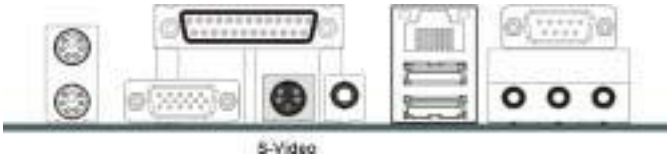
#### VGA Port

Connect an external monitor to the blue 15-pin VGA port.



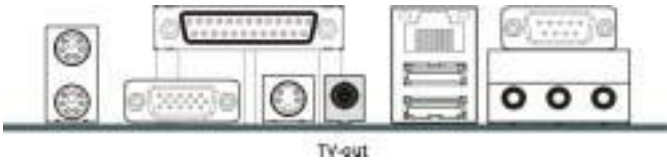
### S-Video Port

You can connect S-Video devices to S-Video port on the back panel.



### RCA Video (TV-Out)

You can connect RCA Video devices to RCA Video port (TV-Out) on the back-panel.



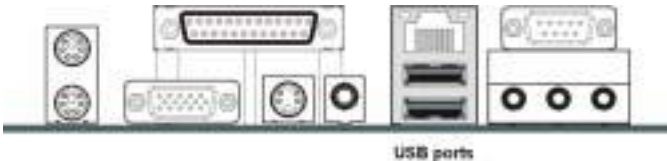
### LAN Port

Connect a device to the LAN port on the back panel.



### Universal Serial Bus Ports

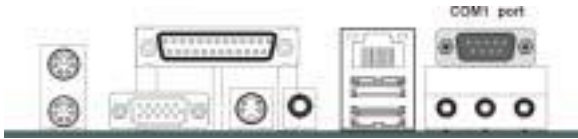
You can connect two USB devices or USB hubs to the USB ports.



The USB ports provide a hardware interface for low-speed peripherals such as the keyboard, mouse, joystick, scanner, printer and telephony devices, and also support MPEG-1 and MPEG-2 digital video. The USB ports have a maximum bandwidth of 480 Mbits/sec (equivalent to 60 Mbytes/sec), and up to 127 devices can be attached. Fast devices can use the full bandwidth, while lower-speed ones can transfer data using a 60 Mbytes/sec sub-channel.

## Serial Port

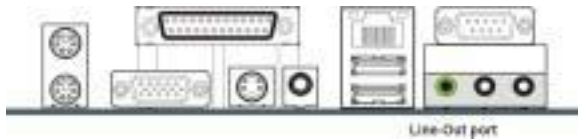
Connect a serial device such as a mouse or modem to the 9-pin serial port. You can set the serial port IRQs in BIOS. Refer to integrated Peripherals in Chapter 4 for details.



**Note:** *Serial printers must be connected to the serial port.*

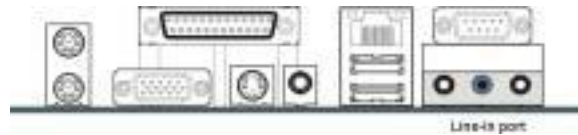
## Audio Line-Out Port

You can connect various audio devices to this audio jack. Connect headphones or powered speakers to the lime-colored lineout connector.



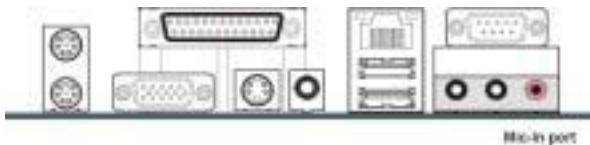
## Audio Line-In Port

You can connect a tape player or another audio source to the light blue Line-in connector to record audio on your computer or to play audio through your computer's sound chip and speakers.



## Audio MIC-In Port

You can connect a microphone to the pink microphone connector to record audio to your computer.

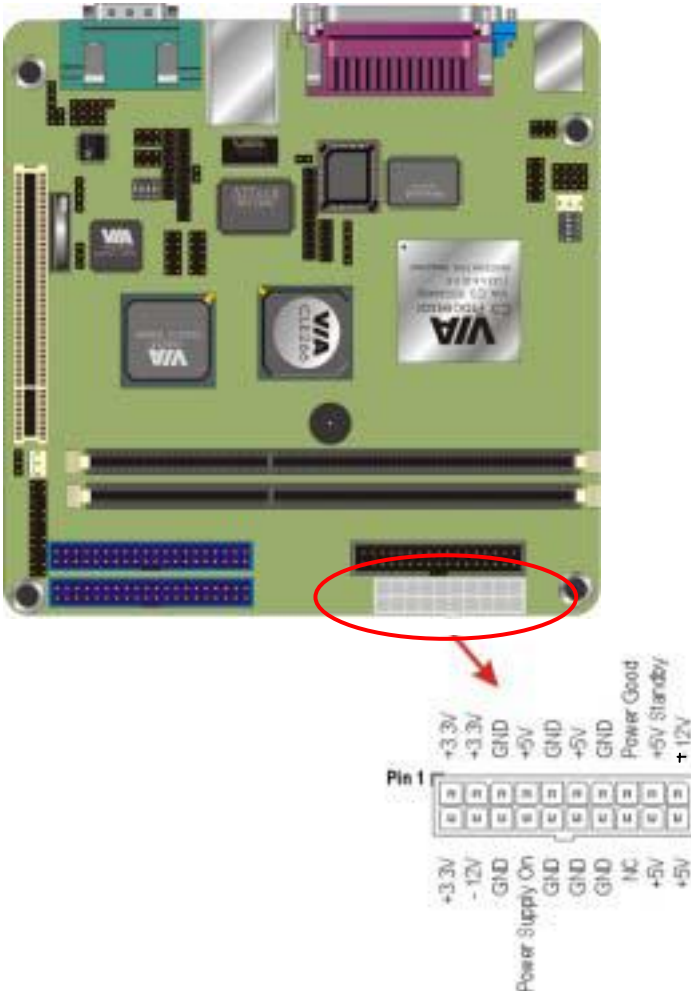


## For 5.1 channel output

This board can support 5.1 channel audio output, when you connect the 5.1 channel speaker set, after installing audio drivers, the Line-out (Green), Line-in (Blue) and MIC-in (Pink) and let you configure to support Front (Green), Rear (Blue) and center (Pink).

### 3.5.10 Power Supply Connector (ATXPWR1)

The ATX power supply has a single lead connector with a clip on one side of the plastic housing. There is only one way to plug the lead into the ATX power connector. Press the lead connector down until the clip snaps into place and secures the lead onto the connector.



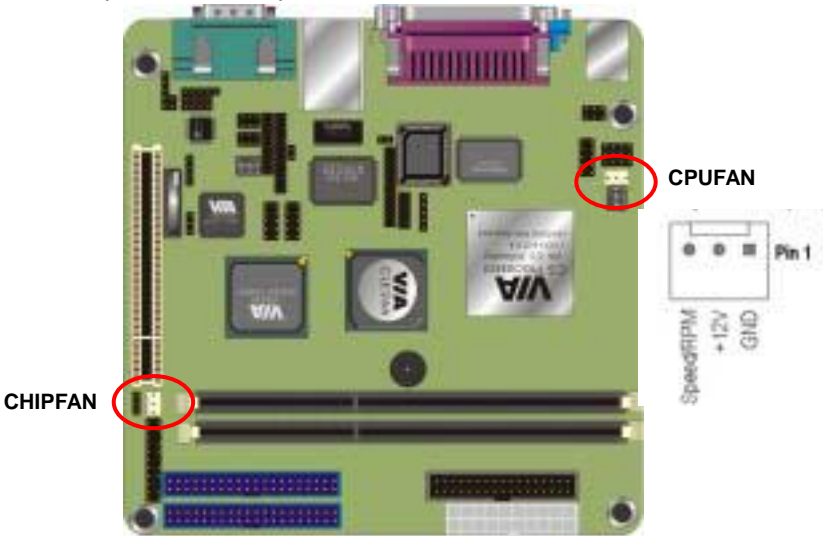

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**Warning:** *Incorrect installation of the power supply could result in serious damage to the motherboard and connected peripherals. Make sure the power supply is unplugged from the AC outlet before connecting the leads from the power supply.*

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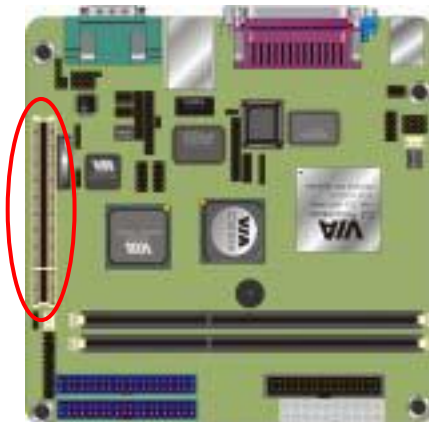
### 3.5.11 CPU/System Fan connectors

There are two fan connectors on the motherboard for the cooling fans. The connectors support fans of 12VDC/500mAMP (six watt) or less. When the system goes into sleep state, fans should be shut down to eliminate audible noise and reduce power consumption.



### 3.5.12 PCI Slot

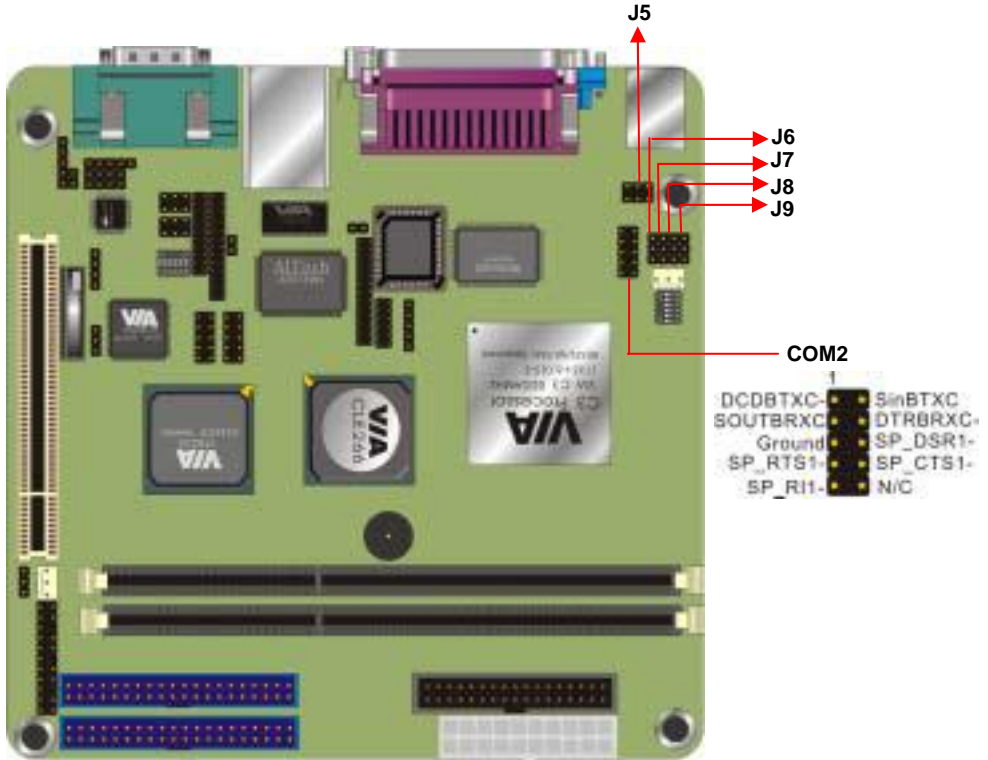
PCI connector is one of equipment interfaces that connect peripheral equipment and motherboard. Its transfer speed is faster than traditional ISA. PCI is the mainstream transfer interface for extra adaptor.





### 3.5.13 Serial COM2 connector (COM2)

The motherboard provides one onboard serial COM2 connector. The COM2 connector has the same signal with COM1 on the back panel. The COM2 also support RS485/422 communication mode. Please follow the jumper setting below to select the mode you need.

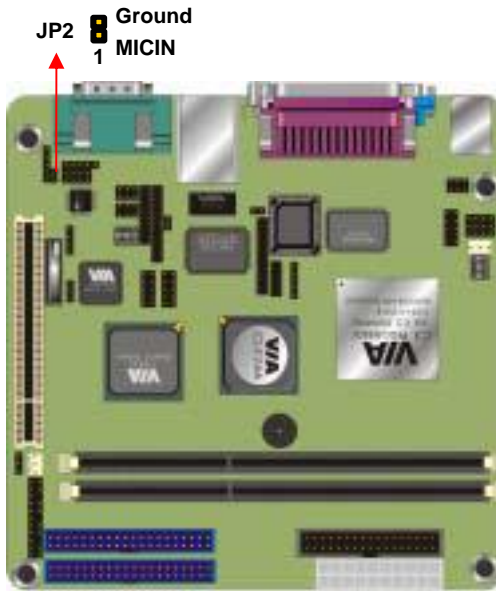


**COM2 RS232/485/422 Mode jumper setting**

Mode	J5	J6	J7	J8	J9
RS232	1-2	1-2	1-2	1-2	1-2
RS422	5-6	1-2	1-2	2-3	2-3
RS485	3-4	2-3	2-3	1-2	1-2

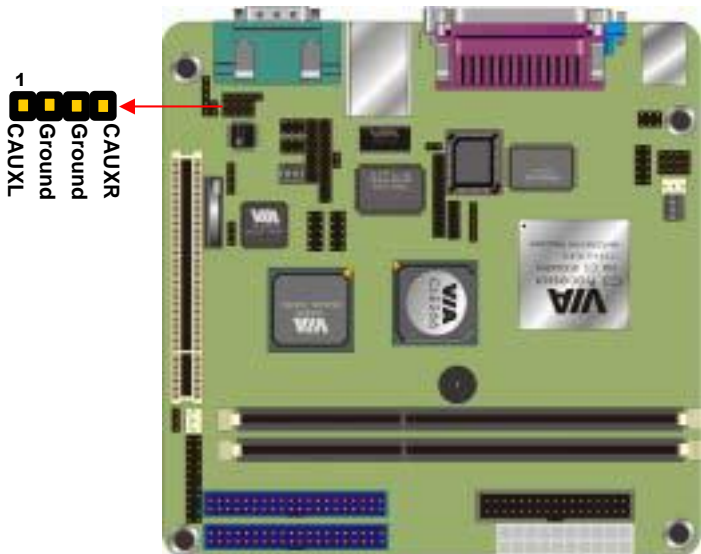
### 3.5.14 Front MIC-in connector (JP2)

Connect a microphone to the pink microphone connector to record audio to your computer.



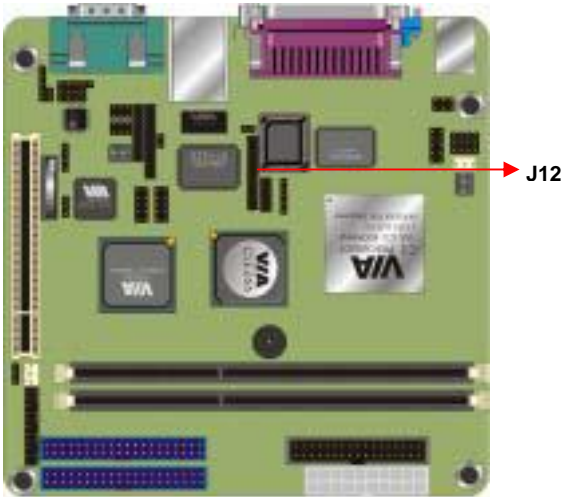
### 3.5.15 Front AUX connector (J1)

Connector the cable attached to line-out connector on front panel. This header shared same signal with line-out back panel.



### 3.5.16 LVDS connector

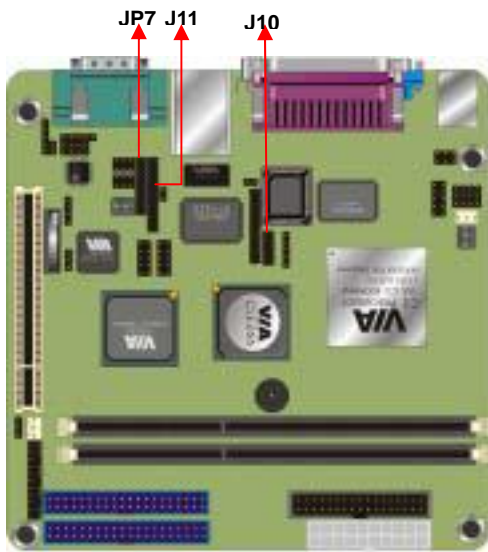
The board supports LCD LVDS interface, you can use a panel through this interface.



Pin NO	Pin Assignment	Pin NO	Pin Assignment
1	+3.3V	2	+3.3V
3	TVD0	4	+2.5V
5	TVD1	6	+2.5V
7	TVD2	8	+5V
9	TVD3	10	+5V
11	TVD4	12	Ground
13	TVD5	14	TVBLK
15	TVD6	16	DISPCLK1
17	TVD7	18	DISPCLK0
19	TVD8	20	TVCLK
21	TVD9	22	TVCLKR
23	TVD10	24	TVVS
25	TVD11	26	TVHS

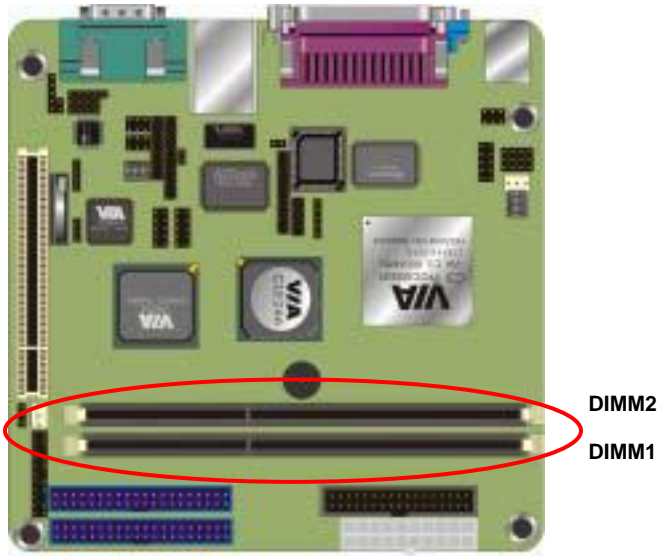
### 3.5.17 Optional DVO interface

The board supports DVO interface to support multimedia video input and output.

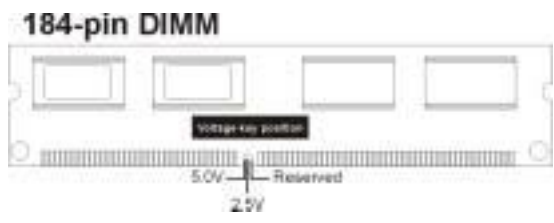


### 3.6 Installing System Memory

Maximum system memory supported by the motherboard is 2GB. The motherboard has two DIMM Sockets. Memory can be installed using 184-pin DDR SDRAM DIMM memory modules. There are no jumper settings required for the memory size or type, which is automatically detected by the BIOS.



The motherboard support DDR200/266 SDRAM. If you install higher frequency RAM module more than 266MHz, the system will force it to run under 266MHz.



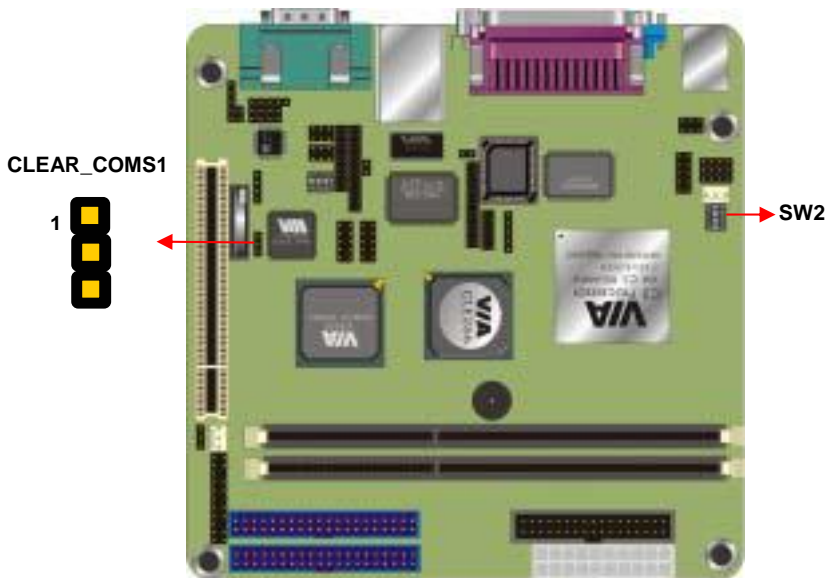
Install the 184-pin DDR SDRAM modules in any combination as follows:

<b>Bank 0 (DIMM1)</b>	64MB/128MB/512MB/1GB
<b>Bank 1 (DIMM2)</b>	64MB/128MB/512MB/1GB
<b>Total System Memory</b>	64MB ~ 2GB

### 3.7 CPU & CMOS Jumper Setting

Refer to the following illustration and instructions to set the jumpers on your motherboard.

Notice: the SW2 can let you configure the CPU ratio, but we have set done this before the board is shipped, please do not attend to overclock, this may due to the system unstable.



CLEAR_CMOS1	Mode
1-2	Clear CMOS
2-3	Normal Operation

Default setting

You may need to clear the CMOS if your system cannot boot up because you forgot your password, the CPU clock setup is incorrect, or the CMOS setting need to reset to default values after the system BIOS has been updated.

Please check the following ratio form of CPU clock ratio if your board runs the wrong frequency of your order.

<b>SW2</b>					
<b>CPU RATIO</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
3.0x	OFF	ON	ON	ON	ON
3.5x	OFF	ON	OFF	ON	ON
4.0x	ON	OFF	ON	ON	ON
4.5x	ON	OFF	OFF	ON	ON
5.0x	ON	ON	ON	OFF	ON
5.5x	ON	ON	OFF	ON	ON
6.0x	OFF	OFF	ON	OFF	ON
6.5x	OFF	OFF	OFF	OFF	ON
7.0x	OFF	ON	ON	OFF	ON
7.5x	OFF	ON	OFF	OFF	ON
8.0x	ON	OFF	ON	OFF	ON
8.5x	ON	OFF	OFF	OFF	ON
9.0x	ON	ON	ON	ON	ON
9.5x	OFF	OFF	OFF	ON	ON
10.0x	OFF	OFF	ON	ON	ON
10.5x	OFF	OFF	OFF	ON	OFF
11.0x	OFF	ON	ON	ON	OFF
11.5x	OFF	ON	OFF	ON	OFF
12.0x	ON	OFF	ON	ON	OFF
12.0x	ON	ON	OFF	OFF	ON
12.5x	ON	OFF	OFF	ON	OFF
13.0x	ON	ON	ON	OFF	OFF
13.5x	ON	ON	OFF	ON	OFF
14.0x	OFF	OFF	ON	OFF	OFF
14.5x	OFF	OFF	OFF	OFF	OFF
15.0x	OFF	ON	ON	OFF	OFF
15.5x	OFF	ON	OFF	OFF	OFF
16.0x	ON	OFF	ON	OFF	OFF

## 4. BIOS Configuration

After the hardware configuration of the motherboard is finished, and the system hardware has been assembled, the system may be powered up. At this point, CMOS setup should be run to ensure that system information is correct.

The motherboard employs the latest Award BIOS CMOS chip with support for Windows Plug and Play. This CMOS chip contains the ROM Setup instructions for configuring the motherboard's BIOS. The BIOS (Basic Input and Output System) Setup program is a menu driven utility that enables you to make changes to the system configuration and tailor your system to suit your individual work needs. It is a ROM-based configuration utility that displays the system's configuration status and provides you with a tool to set system parameters. These parameters are stored in non-volatile battery-backed-up CMOS RAM that saves this information even when the power is turned off. When the system is turned back on, the system is configured with the values found in CMOS.

Using easy-to-use pull down menus, you can configure such items as:

- Hard drives, diskette drives, and peripherals
- Video display type and display options
- Password protection from unauthorized use
- Power management features

The settings made in the Setup program intimately affect how the computer performs. It is important, therefore, first to try to understand all the Setup's options, and second, to make settings appropriate for the way you use the computer. This chapter provides clear explanations for all Setup options.

This program should be executed under the following conditions:

1. When changing the system configuration
2. When a configuration error is detected by the system and you are prompted to make changes to the Setup program
3. When resetting the system clock
4. When setting the CPU clock speed so that it automatically runs either fast or slow
5. When redefining the communication ports to prevent any conflicts
6. When making changes to the Power Management configuration
7. When changing the password or making other changes to the security setup

Normally, CMOS setup is needed when the system hardware is not consistent with the information contained in the CMOS RAM, whenever the CMOS RAM has lost power or the system features need to be changed.



## 4.1 Entering Setup

When the system is powered on, the BIOS will enter the Power-On Self Test (POST) routines. These routines perform various diagnostic checks; if an error is encountered, the error will be reported in one of two different ways:

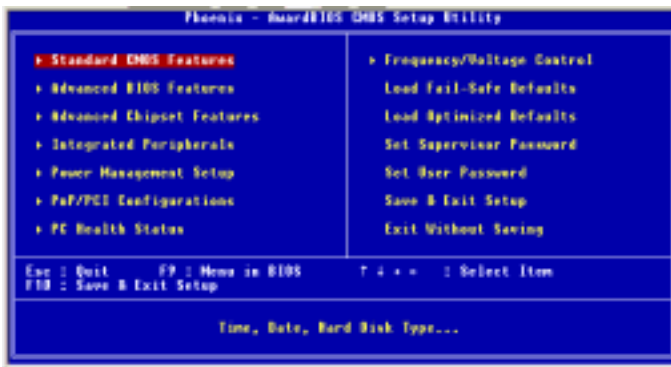
1. If the error occurs before the display device is initialized, a series of beeps will be transmitted.
2. If the error occurs after the display device is initialized, the screen will display the error message.

After the POST routines are completed, the following message appears:  
**“Press DEL to enter SETUP”**

To access the AWARD BIOS SETUP program, press the <DEL> key to display the **“CMOS SETUP UTILITY”** screen:

These screens provide access to the utility's various functions.

Listed below are explanations of the keys displayed at the bottom of the screen:



Key	Function
Esc	<b>Escape key:</b> Exits the current menu
	<b>Cursor keys:</b> Scroll through the items on a menu
+/-/PU/PD	<b>Plus, minus, Page Up and Page Down keys:</b> Modify the selected field's values
F10	<b>F10 key:</b> Saves the current configuration and exits setup
F1	<b>F1 key:</b> Displays a screen that explains all key functions
F5	<b>F5 key:</b> Loads previously saved values to CMOS
F6	<b>F6 key:</b> Loads a minimum configuration for troubleshooting
F7	<b>F7 key:</b> Loads optimum set of values for peak performance

## 4.2 Standard CMOS Features

Standard CMOS Features is the same for all three chipsets. Selecting “**Standard CMOS Features**” on the main program screen displays the following menu:



The Standard CMOS Setup utility is similar for all three chipsets and is used to configure the following features:

**Date:** Month, Day, Year

**Time:** Hour, Minute, and Second. Use 24 Hour clock format (for PM numbers, add 12 to the hour, you would enter 4:30 p.m. As 16:30).

**IDE Devices:** Your computer has two IDE channels (Primary and Secondary) and each channel can be installed with one or two devices (Master and Slave). Use these items to configure each device on the IDE channel. Press **Enter** to display the IDE sub-menu.

**IDE HDD Auto-Detection:** Press **<Enter>** while this item is highlighted if you want the Setup Utility to automatically detect and configure a hard disk drive on the IDE channel.

If your system has an IDE hard drive, you can use this utility to detect its parameters and enter them into the Standard CMOS Setup automatically.

If the auto-detected parameters displayed do not match the ones that should be used for your hard drive, do not accept them. Press the **<N>** key to reject the values and enter the correct ones manually in the Standard CMOS Setup screen.

---

**Note:** *If you are setting up a new hard disk drive that supports LBA mode, more than one line will appear in the parameter box. Choose the line that lists LBA for an LBA drive.*

---

Do not choose "Large" or "Normal" if the hard disk drive is already fully formatted when you installed it. Select the mode that was used to format it.

**IDE Primary/Secondary Master/Slave:** If you leave this item at "Auto," the system will automatically detect and configure any IDE devices it finds. If it fails to find a hard disk, change the value to "Manual" and then manually configure the drive by entering the characteristics of the drive in the items below (Capacity, Cylinder, Head, Precomp, etc.). Refer to your drive's documentation or look on the drive if you need to obtain this information. If no device is installed, change the value to "None."

**Access Mode:** This item defines some special ways that can be used to access IDE hard disks such as LBA (Large Block Addressing). Leave this value at "Auto" and the system will automatically decide the fastest way to access the hard disk drive.

Press **<Esc>** to close the IDE device sub-menu and return to the Standard CMOS Features page.

**Drive A and Drive B:** Select the type of floppy disk drive installed in your system. The options are:

- 360K, 5.25 in
- 1.2M, 5.25in
- 720K, 3.5in
- 1.44M, 3.5in
- 2.88M, 3.5in
- None” (Not Installed)

The “Not Installed” option could be used as an option for diskless workstations.

**Video:** Set this field to the type of graphics card installed in your system. If you are using a VGA or higher resolution card, choose the “EGA/VGA” option. The options are:

- MONO
- CGA 40
- CGA 80
- EGA/VGA

**Halt On:** This setting determines which type of errors will cause the system to halt during boot up. The options are:

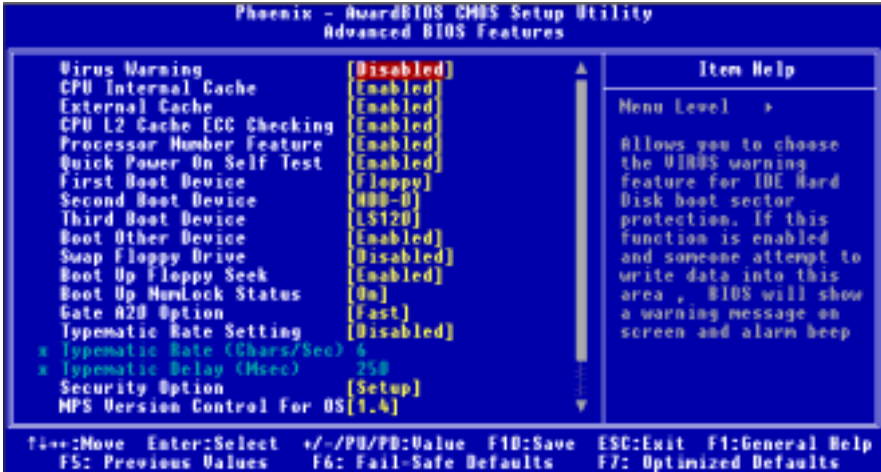
- All Errors
- No Errors
- All, But Keyboard
- All, But Diskette
- All, But Disk / Key”.

**Base/Extended/Total Memory:** These items are automatically detected by the system at start up time. These are display-only fields. You cannot make changes to these fields.

After you have made your selections in the Standard CMOS Setup screen, press **<ESC>** to go back to the main screen.

### 4.3 Advanced BIOS Features

Selecting “**Advanced BIOS Features**” on the main program screen displays this menu, which allows you to define advanced information about your system. You can make modifications to most of these items without introducing fatal errors to your system. Note that the page has a scroll-bar to scroll down to more items.



The following explains the options for each feature:

**Virus Warning:** When enabled, any attempt to write to the boot sector or partition table will halt the system and cause a warning message to appear. If this happens, you can use an anti-virus utility on a virus free, bootable floppy diskette to reboot and clean your system. The default setting is “Disabled”.

**CPU internal Cache:** These settings enable the CPU internal (L1) cache. Enabling these items provides better performance. The default setting is “Enabled”.

**External Cache:** These settings enable the CPU external (L2) cache. Enabling these items provides better performance. The default setting is “Enabled”.

**CPU L2 Cache ECC Checking:** This item enables or disables ECC (Error Correction Code) error checking on the CPU cache memory. The default setting is “Enabled”.

**Processor Number Features:** Some new processors are installed with a unique processor number. This number may be used for verification in Internet transactions and ecommerce. If you prefer not to use or distribute the unique processor number, set this item to Disabled to suppress the processor number. The default setting is “Enabled”.

**Quick Power On Self Test:** This will skip some diagnostic checks during the Power On Self Test (POST) to speed up the booting process. The default setting is "Enabled".

**First Boot Device:** Use this item to select the priority and order of the devices that your system searches for an operating system at start-up time. The default setting is "Floppy".

**Second Boot Device:** Use this item to select the priority and order of the devices that your system searches for an operating system at start-up time. The default setting is "HDD-0".

**Third Boot Device:** Use this item to select the priority and order of the devices that your system searches for an operating system at start-up time. The default setting is "LS120".

**Boot Other Device:** If you enable this item, the system will search all other possible locations for an operating system if it fails to find one in the devices specified under the First, Second, and Third boot devices. The default setting is "Enabled".

**Swap Floppy Drive :** If you have two floppy diskette drives in your system, this item allows you to swap the assigned drive letters so that drive A becomes drive B, and drive B becomes drive A. The default setting is "Disabled".

**Boot Up Floppy Seek:** If this item is enabled, it checks the geometry of the floppy disk drives at start-up time. You don't need to enable this item unless you have an old diskette drive with 360K capacity. The default setting is "Enabled".

**Boot Up Numlock Status :** If set to "Off," the cursor controls will function on the numeric keypad. The default setting is "On".

**Gate A20 Option:** This option accesses memory above 1 MB using the fast gate A20 line when set to "Fast" (default). The other option is "Normal."

**Typematic Rate Setting:** If set to "Enabled," enables you to set the Typematic Rate and Typematic Delay. The default setting is "Disabled".

**Typematic Rate (Chars/Sec):** This setting controls the speed at which the system registers repeated keystrokes. The choices range from 6 to 30 Chars/Sec. The default setting is "6" Chars/Sec.

**Typematic Delay (Msec):** This setting controls the time between the display of the first and second characters. There are four delay choices: 250ms, 500ms, 750ms and 1000ms. The default setting is "250" ms.

**Security Option:** This setting controls the password feature. The options are "Setup" and "System." Selecting "Setup" will protect the configuration settings from being tampered with. Select "System" if you want to use the password feature every time the system boots up. The default setting is "Setup." You can create your password by using the "SUPERVISOR/USER PASSWORD" utility in the main program screen.

**MPS Version Control For OS:** Selects the operating system multiprocessor support version. The default setting is "1.4".

**OS Select For DRAM > 64MB:** Set to "OS2" if the system memory size is greater than 64 MB and the operating system is OS/2. The default setting is "Non-OS2".

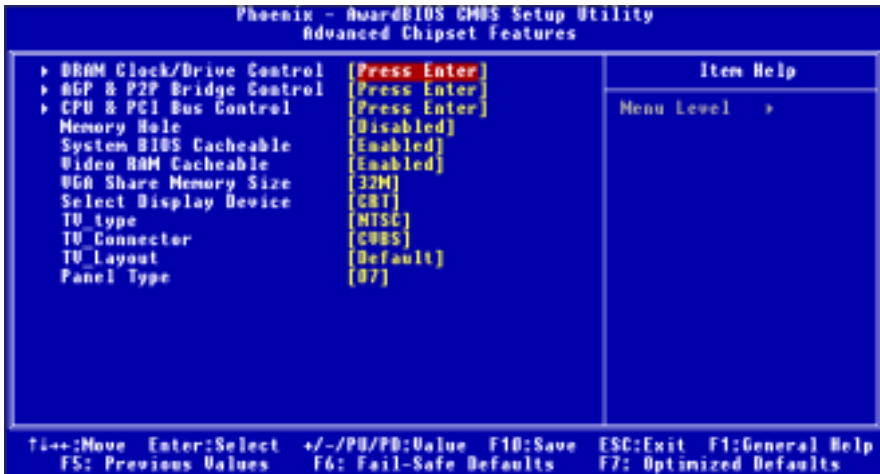
**Video BIOS Shadow:** Determines whether video BIOS will be copied to RAM. However, it is optional depending on chipset design. Video Shadow will increase the video speed. The Default setting is "Enabled".

**Small Logo (EPA) Show:** Enables and disables the EPA logo when booting up. The default setting is "Disabled".

After you have made your selections in the BIOS Features Setup screen, press <ESC> to go back to the main screen.

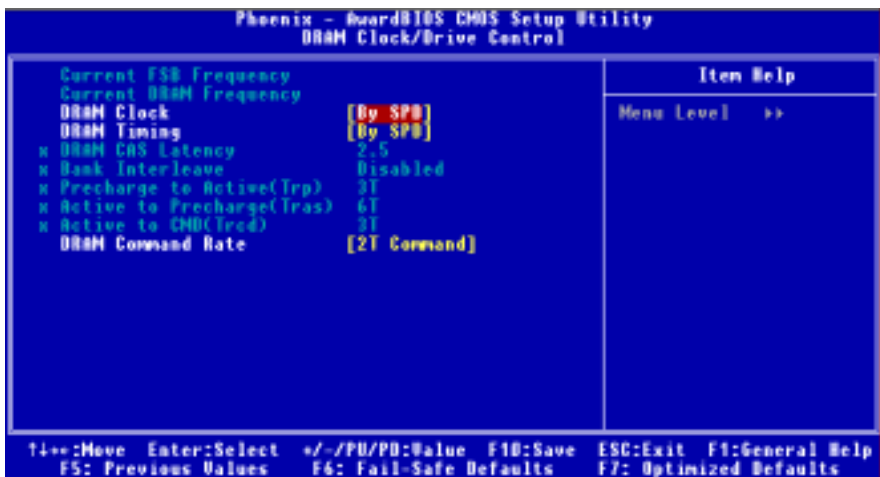
## 4.4 Advanced Chipset Features

Selecting “Advanced Chipset Features” on the main program screen displays this menu:



This option displays a table of items that define critical timing parameters of the mainboard. You should leave the items on this page at their default values unless you are very familiar with the technical specification of your system hardware. If you change the values incorrectly, you may introduce fatal errors or recurring instability into your system.

### 4.4.1 DRAM clock/drive control





**Current FSB frequency:** This option will show your current front-side-bus frequency.

**Current DRAM frequency:** This option will show your current DRAM frequency.

**DRAM Clock:** Enables you to set the DRAM clock manually, or automatically using SPD (Serial Presence Detect).

**DRAM Timing:** Enables you to set the DRAM timing manually, or automatically using SPD (Serial Presence Detect). SPD is an EEPROM chip on the memory module that stores information about the memory chips it contains, including size, speed, voltage, row and column addresses, and manufacturer. We recommend setting this field to By SPD.

**DRAM CAS Latency:** This item enables you to optimize the speed at which data is accessed in a column by defining CAS latency time. The CAS latency defines the time delay (in CLKs) before SDRAM starts a read command after receiving it. Because reading data in a row is twice as fast, reducing this number can increase performance at the expense of stability. We recommend that you leave this item at the default value. The default setting is "2.5".

**Bank Interleave:** The interleave number of internal banks, can be set to 2 way, 4 way interleave or disabled. For VCM and 16Mb type dram chips, the bank interleave is fixed at 2 way interleave. When the dram timing is selected by SPD, it will be set by the value on SPD of the RAM module (DDR or SDR). The default setting is "Disabled".

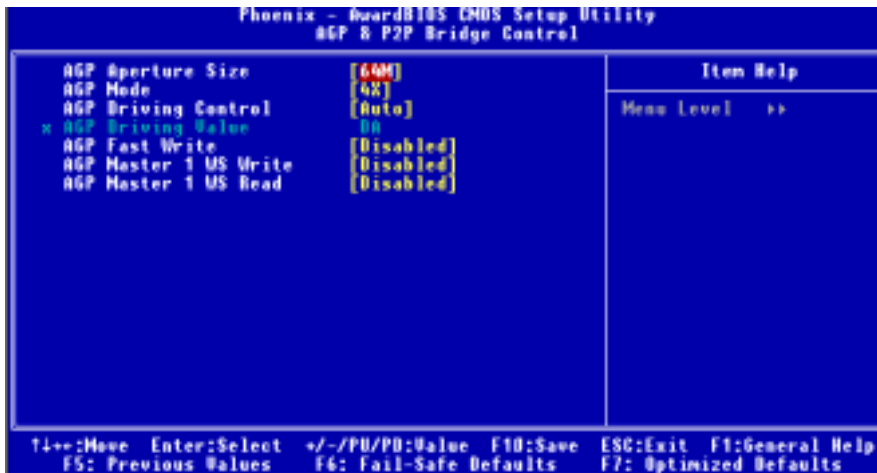
**Precharge to Active:** DRAM must continually be refreshed or it will lose its data. Normally, DRAM is refreshed entirely as the result of a single request. This option allows you to determine the number of CPU clocks allocated for the Row Address Strobe (RAS) to accumulate its charge before the DRAM is refreshed. If insufficient time is allowed, refresh may be incomplete and data lost. The default setting is "3T".

**Active to Precharge:** This item specifies the number of clock cycles needed after a bank active command before a precharge can occur.

**Active to CMD:** This item specifies the minimum required delay between activation of different rows.

**DRAM command rate:** This item enables you to specify the waiting time for the CPU to issue the next command after issuing the command to the DDR memory. We recommend that you leave this item as the default value.

## 4.4.2 AGP &amp; P2P bridge control



**AGP Aperture Size:** This option determines the effective size of the AGP Graphic *Aperture*, where memory-mapped graphic data structures are located. The default setting is “64”, and other options are “4”, “8”, “16”, “32”, “128”, or “256”.

**AGP Mode:** This item allows you to enable/disable the AGP Mode. The default setting is “Enabled”.

**AGP Driving Control:** This item enables the system to automatically select its output buffer drive strength or make it manually selectable by an end user. The default setting is “AUTO”.

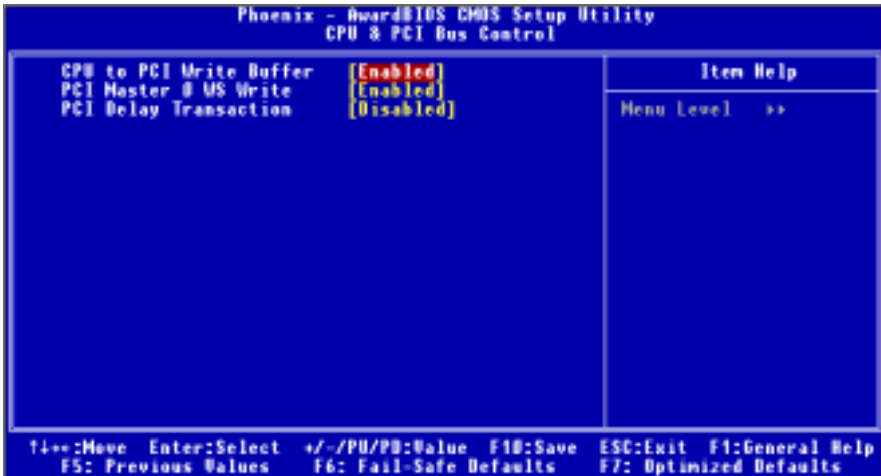
**AGP Driving Value:** This item enables an end user to manually select the AGP output buffer drive strength. Key in a HEX number: Min=0000, MAX=00FF.

**AGP Fast Write:** This item allows you to enable/disable the caching of display data for the video memory of the processor. Enabling this item can greatly improve the display speed. Disable this item if your graphic display card does not support this feature.

**AGP Master 1 WS Write:** When this item enabled, writing to the AGP (Accelerated Graphic Port) is executed with one wait state. The default setting is “Disabled”.

**AGP Master 1 WS Read:** When this item enabled, reading from the AGP (Accelerated Graphic Port) is executed with one wait state. The default setting is “Disabled”.

### 4.4.3 CPU & PCI Bus Control



**CPU to PCI Write Buffer:** When enabled, writes from the CPU to PCI bus are buffered, to compensate for the speed differences between the CPU and PCI bus. When disabled, the writes are not buffered and the CPU must wait until the write is complete before starting another write cycle.

**PCI Master 0 WS Write:** When enabled, writes to the PCI bus are executed with zero wait states.

**PCI Delay Transaction:** The chipset has an embedded 32-bit posted write buffer to support delayed transactions cycles. Select Enabled to support compliance with PCI specification version 2.1. The default setting is “Enabled”.

**Memory Hole** : If Set to “Enabled”, when the system memory size is equal to or greater than 16M bytes, the physical memory address from 15M to 16M will be passed to PCI or ISA and there will be a 1 MB hole in your system memory. This option is designed for some OS with special add-in cards which need 15-16 MB memory space. The default setting is “Disabled”.

**System BIOS Cacheable**: When set to “Enabled”, the System BIOS will be cached for faster execution. The default setting is “Enabled”.

**Video RAM Cacheable**: When set to “Enabled”, the Video BIOS will be cached for faster execution. The default setting is “Enabled”.

**VGA Shared Memory Size**: This item allows you to control the VGA Frame Buffer size. The default setting is “32M”.

**Select Display Device**: This item sets display which activate first. The options are “CRT”, “LCD”, “CRT+LCD”, “TV”, “CRT+TV”, “LCD+TV”, “DVI”, “DVI+CRT”, “DVI+TV”.

**TV\_type**: This item can let you select your TV format. The options are NTSC, PAL, PALM, PALN and PALNC.

**TV\_connector**: This item can let you select your TV connector type. The options are “CVBS”, “S-Video”, “R/G/B, Cr/Y/Cb”, “SDTV-R/G/B”, “SDTV-Pr/Y/Pb” and “S-Video1”.

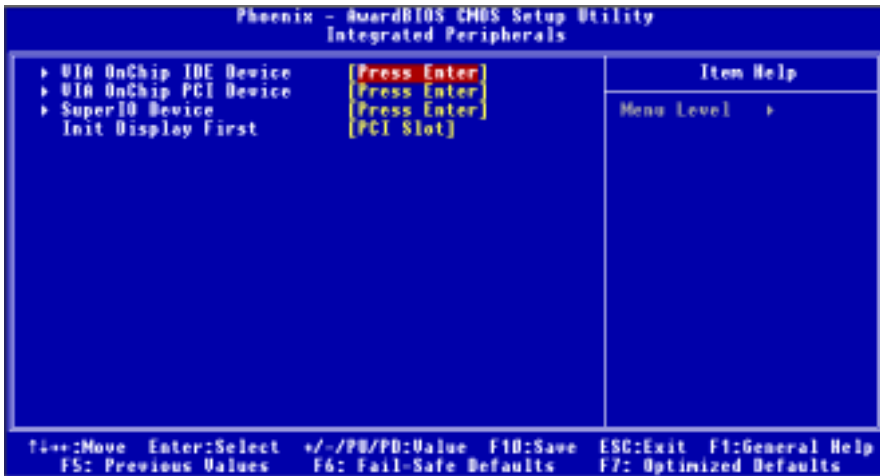
**TV\_layout**: This item can let you select TV layout mode. The options are “Default”, “COMP. +S-Video”, “S-Video+S-Video”, “COMP. +R/G/B”, “COMP. +Y/Cb/Cr”, “COMP. +SDTV-R,G,B”, “COMP. +SDTV-Y,Pb,Pr”.

**Panel Type**: This item can let you select the panel type.

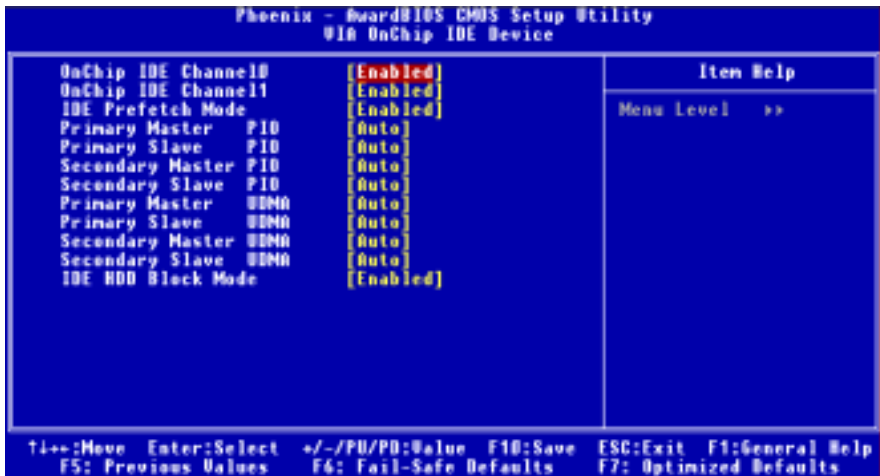
After you have made your selections in the Standard CMOS Setup screen, press <ESC> to go back to the main screen.

## 4.5 Integrated Peripherals

Selecting “Integrated Peripherals” on the main program screen displays field.



### 4.5.1 VIA OnChip IDE Device



**OnChip IDE Channel0:** These options enable or disable the primary onboard IDE controllers. The default setting is “Enabled.”

**OnChip IDE Channel1:** These options enable or disable the secondary onboard IDE controllers. The default setting is “Enabled.”

**IDE Prefetch Mode:** The onboard IDE drive interface supports IDE prefetching, for faster drive access. If you install a primary and secondary add-on IDE interface, set this field to disabled if the interface does not support prefetching. The default setting is "Enabled".

**Primary Master PIO:** This item can let you assign which kind of PIO (Programmed Input/Output) is used by IDE devices. Choose select a PIO mode from 0-4.

**Primary Slave PIO:** This item can let you assign which kind of PIO (Programmed Input/Output) is used by IDE devices. Choose select a PIO mode from 0-4.

**Secondary Master PIO:** This item can let you assign which kind of PIO (Programmed Input/Output) is used by IDE devices. Choose select a PIO mode from 0-4.

**Secondary Slave PIO:** This item can let you assign which kind of PIO (Programmed Input/Output) is used by IDE devices. Choose select a PIO mode from 0-4.

**Primary Master UDMA:** Each IDE channel supports a master device and a slave device. This mainboard supports Ultra DMA technology, which provides faster access to IDE devices.

**Primary Slave UDMA:** Each IDE channel supports a master device and a slave device. This mainboard supports Ultra DMA technology, which provides faster access to IDE devices.

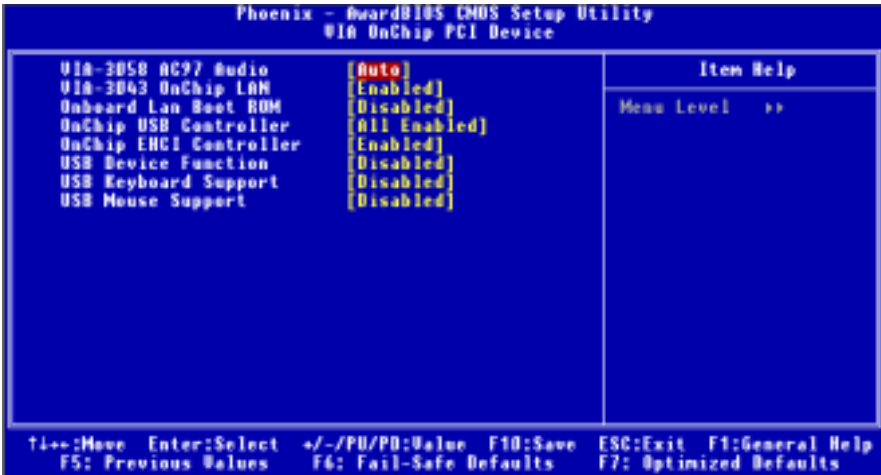
**Secondary Master UDMA:** Each IDE channel supports a master device and a slave device. This mainboard supports Ultra DMA technology, which provides faster access to IDE devices.

**Secondary Slave UDMA:** Each IDE channel supports a master device and a slave device. This mainboard supports Ultra DMA technology, which provides faster access to IDE devices.

If you install a device that supports Ultra DMA, change the appropriate item on this list to "Auto". You may have to install the Ultra DMA driver supplied with this mainboard in order to use an Ultra DMA device.

**IDE Block Mode:** Enable this field if your IDE hard drive supports block mode. Block mode enables BIOS to automatically detect the optimal number of block reads and writes per sector that the drive can support and improve the speed of access to IDE devices.

## 4.5.2 VIA OnChip PCI Device



**VIA-3058 AC97 Audio:** Set these items to “Auto” when you are using the on-board AC’97 audio chip. If you are using an audio add-in card, you should disable this item.

**VIA-3043 OnChip LAN:** Set these items to “Enable” when you are using the on-board LAN chip. If you are using an LAN add-in card, you should disable this item.

**Onboard LAN Boot Rom:** If you want to use the boot-on-LAN function, please enable this option, and set the first boot device as LAN.

**OnChip USB Controller:** Enables the USB controller. Leave this at the default “All Enabled” if you want to connect USB devices to your computer.

**OnChip EHCI Controller:** Enables the USB 2.0 controller. Leave this at the default “Enabled” if you want to connect USB 2.0 devices to your computer.

**USB Device Function:** Enables USB device support for legacy operating systems. The default setting is “Disabled”.

**USB Keyboard Support:** Enables USB keyboard support for legacy operating systems. The default setting is “Disabled”.

**USB Mouse Support:** Enabled this function when a USB mouse is used. Set to “Disabled” (default) when a PS/2 mouse is being used.

## 4.5.3 SuperIO Device



**Onboard FDC Controller:** This option enables the onboard floppy driver controller.

**Onboard Serial Port 1:** This option is used to assign the I/O address and interrupt request (IRQ) for onboard serial port 1 (COM1).

**Onboard Serial Port 2:** This option is used to assign the I/O address and interrupt request (IRQ) for onboard serial port 2 (COM2).

**UART Mode Select:** This field is available if the Onboard Serial Port 2 field is set to any option but Disabled. UART Mode Select enables you to select the infrared communication protocol-Normal (default), IrDA, or ASKIR. IrDA is an infrared communication protocol with a maximum baud rate up to 115.2K bps. ASKIR is Sharp's infrared communication protocol with a maximum baud rate up to 57.6K bps.

**RxD, TxD Active:** Define the voltage level for Infrared module RxD(receive) mode and TxD(transmit) mode. This setting has to match the requirements of the infrared module used in the system. The options are:

- Hi, Lo (default)
- Lo, Hi
- Lo, Lo
- Hi, Hi

**IR Transmission Delay:** When set to "Enabled"(default), utilizes the capability of the mainboard to allow faster infrared transmission rates. The options are "Enabled" and "Disabled"



**UR2 Duplex Mode:** This field is available when UART 2 Mode Selects is set to either ASKIR or IrDA. This item enables you to determine the infrared (IR) function of the onboard infrared chip. The options are "Full" and "Halt" (default). Full-duplex means that you can transmit and send information simultaneously. Half-duplex is the transmission of data in both directions, but only one direction at a time.

**Use IR Pins:** Use this item to set the IR pins. The options are "IR-Rx2Tx2" (default) and "Rx2, Tx2".

**Onboard Parallel Port:** This option is used to assign the I/O address for the onboard parallel port. The options are:

- 378 / IRQ7 (default)
- 278 / IRQ5
- 3BC / IRQ7
- Disabled (disables the onboard parallel port).

**Parallel Port Mode:** There are four options: "SPP" (Standard Parallel Port), "EPP" (Enhanced Parallel Port), "ECP" (Extended Capabilities Port) and "ECP+EPP" and "Normal". Change the mode from "SPP" (default) to the enhanced mode only if your peripheral device can support it.

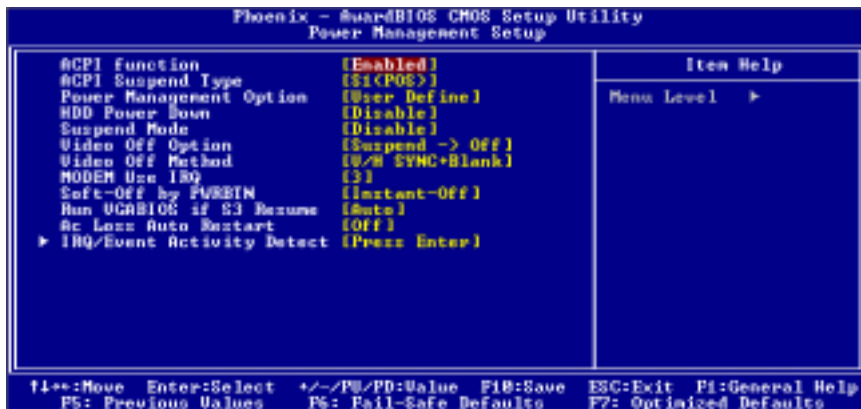
**EPP Mode Select:** Sets the EPP specification. There are two options "EPP1.7" (default) and "EPP1.9".

**ECP Mode Use DMA:** When the onboard parallel port is set to ECP mode, the parallel port can use DMA "3" or DMA "1".

**Init Display First:** Use this item to specify whether your graphics adapter is installed in one of the PCI slots or is integrated on the motherboard.

## 4.6 Power management Setup

This option lets you control system power management. The system has various power-saving modes including powering down the hard disk, turning off the video, suspending to RAM, and software power down that allows the system to be automatically resumed by certain events.



**ACPI Function:** When set to “Enabled”, turns on the ACPI Function. The default setting is “Disabled”.

**Note:** *ACPI (Advanced Configuration and Power Interface) is a power management specification that makes hardware status information available to the operating system. ACPI enables a PC to turn its peripherals on and off for improved power management. It also allows the PC to be turned on and off by external devices, so that mouse or keyboard activity wakes up the computer.*

**ACPI Suspend Type:** Use this item to define how your system suspends. If set to S1(POS) (default), the suspend mode is equivalent to a software power down. If set to S3(STR), the suspend mode is a suspend to RAM the system shuts down with the exception of a refresh current to the system memory.

**Power Management Option:** This item acts like a master switch for the power-saving modes and hard disk timeouts. If this item is set to Max Saving, power-saving modes occur after a short timeout. If this item is set to Min Saving, power-saving modes occur after a longer time-out. If the item is set to User Define, you can insert your own timeouts for the power-saving modes. There are four options:

User Define: allows you to customize all power saving timer features

Max Saving: recommended setting for general use

Min Saving: sets power saving at minimum values

**HDD Power Down:** The IDE hard drive will spin down if it is not accessed within a specified length of time. Options are from 1 Min to 15 Min and Disable.

**Suspend Mode:** The CPU clock will be stopped and the video signal will be suspended if no Power Management events occur for a specified length of time. Full power function will return when a Power Management event is detected. Options are from "1 Min" to "1 Hour" and "Disable". The default is "Disable".

**Video Off Option:** Set this to "Suspend -> Off" (default) if you want the Video display to turn off during suspend mode.

**Video Off Method :** This setting controls the video off method in power saving mode. The setting "V/H SYNC+Blank" disables V/H SYNC signals and blanks the screen. Other options are "DPMS" and "Blank Screen." The "DPMS" option allows the BIOS to control the video card if it has the DPMS (Display Power Management System) feature. The "Blank Screen" option is used when you do not have a "Green" monitor.

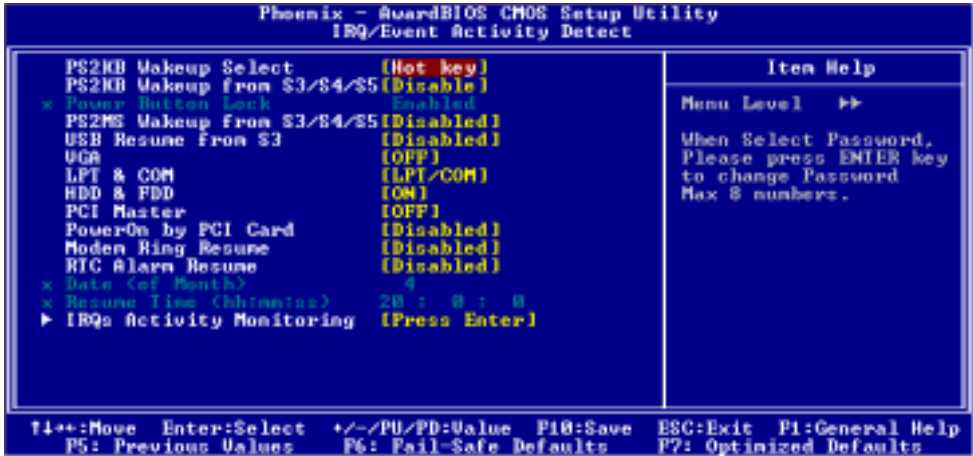
**MODEM Use IRQ :** If you want an incoming call on a modem to automatically resume the system from a power-saving mode, use this item to specify the interrupt request line (IRQ) that is used by the modem. You might have to connect the fax/modem to the mainboard Wake On Modem connector for this feature to work

**Soft-Off by PWR-BTTN :** When set to "Instant-Off" (default), pressing the power button will turn off the system power. When set to "Delay 4 Sec." you have to press the power button and hold it for more than 4 seconds to turn off the system power. Otherwise, the system just goes into suspend mode. The options are "Instant-Off" and "Delay 4 Sec".

**Run VGABIOS if S3 Resume:** The options are "Auto", "Yes", "NO", This item sets to run VGA BIOS when S3 mode resume.

**AC Loss Auto Restart:** This item is to set the ATX power supply status when power resume after unexpected power fail. When Off is selected, power supply will maintain on soft-off status; when ON is selected, power supply will turn on, and when Auto is selected, power supply will maintain on the status before unexpected power fail. The default setting is "Off".

## 4.6.1 IRQ/Event Activity Detect



**PS2KB Wakeup Select:** When select password, please press Enter key to change passwords. The maximum words are 8.

**PS2KB Wakeup from S3/S4/S5:** You can select S3/S4/S5 status wakeup from keyboard or not.

**Power Button Lock:** You can enable or disable power button function.

**PS2MS Wakeup from S3/S4/S5:** You can select S3/S4/S5 status wakeup from PS2 mouse or not.

**USB Resume from S3:** Use this item to enable USB activity to wakeup the system from a power saving mode. The default setting is “Disabled”.

**VGA:** When set to “ON”, the system will resume the system from a power saving mode if there is any VGA activity. Default is “Off”.

**LPT & COM:** When this item is enabled, the system will restart the power saving timeout counters when any activity is detected on the serial ports, or parallel port.

**HDD & FDD:** When set to “ON”, any activity from one of the listed system peripheral devices wake up the system.

**PCI Master:** When set to “Off”, any PCI device set as the Master will not power on the system.

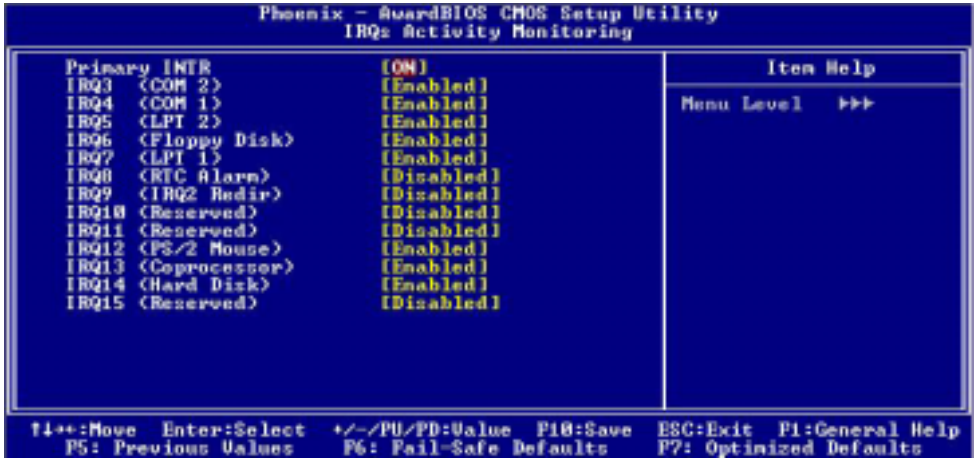
**Power On by PCI Card:** Use the item to enable PCI activity to wakeup the system from a power saving mode.

**Modem Ring Resume:** When set to “Enabled”, any activity on the Modem port will wake up the system from a power saving mode. The options are “Enabled” and “Disabled”.

**RTC Alarm Resume:** When set to Enabled, the following two fields become available and you can set the date (day of the month), hour, minute and second to turn on your system. When set to 0 (zero) for the day of the month, the alarm will power on your system every day at the specified time.

### 4.6.1.1 IRQs Activity Monitoring

Scroll to this item and press <Enter> to view the following screen.



This screen enables you to set IRQs that will resume the system from a power saving mode.

Set any IRQ to Enabled to allow activity at the IRQ to wake up the system from a power saving mode.

Press <ESC> to return to the previous screen.

Press <ESC> to return to the main screen.



**PCI/VGA Palette Snoop:** This item is designed to overcome problems that can be caused by some non-standard VGA cards. This board includes a built-in VGA system that does not require palette snooping so you must leave this item disabled.

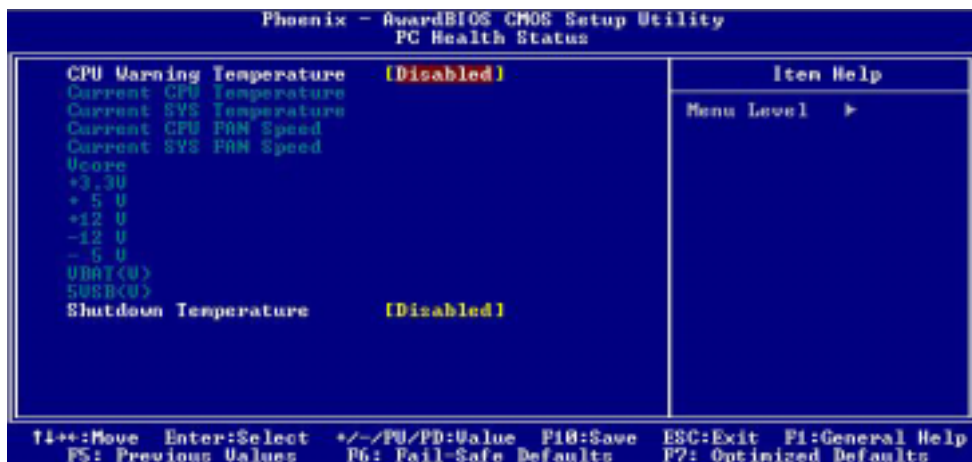
**Assign IRQ for VGA/USB:** Names the interrupt request (IRQ) line assigned to the USB/VGA (if any) on your system. Activity of the selected IRQ always awakens the system.

Press <ESC> to return to the previous screen.

## 4.8 PC Health Status

On motherboards the support hardware monitoring, this item lets you monitor the parameters for critical voltages, critical temperatures and fan speeds:

Selecting "PC Health Status" on the main program screen displays this menu:



**CPU Warning Temperature:** This feature enables you to set the warning temperature for CPU overheating. When the CPU temperature exceeds the set temperature, the PC speaker will beep. The beep sound will not turn off unless you power down the computer and allow your CPU to cool down.

**System Component Characteristics:** These fields provide you with information about the systems current operating status. You cannot make changes to these fields. The following information is displayed:

- Current CPU Temperature
- Current SYS Temperature
- Current CPU FAN Speed
- Current SYS FAN Speed
- Vcore
- + 3.3V
- + 5V
- +12V
- 12V
- VBAT(V)
- 5VSB(V)

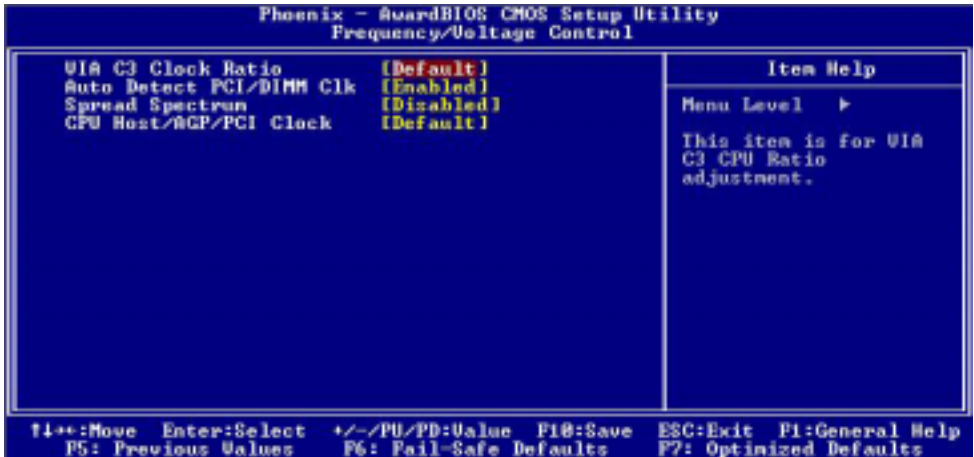
**Shutdown Temperature:** Enables you to set the maximum temperature the system can reach before powering down.

After you have made your selections in the PC Health Status Setup, press <Esc> to go back to the main program screen.



## 4.9 Frequency/Voltage Control

This item enables you to set the clock speed and system bus for your system. The clock speed and system bus is determined by the kind of processor you have installed in your system.



**VIA C3 Clock Ratio:** Use this item to select a multiplier (3x ~ 16x) for the system front side bus (FSB) frequency. The value of the multiplier must be set so that: Multiplier x Front side Bus Frequency = CPU Clock Speed.

For example, if you have a processor that is rated to run at 450 MHz and the system is running a front side bus frequency of 100 MHz, you should select a multiplier of 4.5 so that: 4.5 (Multiplier) x 100 MHz (front side bus) = 450 MHz (CPU clock)

**Auto Detect PCI/DIMM Clk:** When this item is enabled, BIOS will disable the clock signal of free DIMM and PCI slots.

**Spread Spectrum:** If you enable spread spectrum, it can significantly reduce the EMI (Electro-Magnetic Interference) generated by the system.

**CPU Host/AGP/PCI Clock:** This item appears if you have set the CPU Internal Core Speed to Manual. Use the CPU/PCI Clock to set the system bus frequency for the installed processor. The values for this field range from 100/66/33 MHz to 160/80/40 MHz.

After you have made your selections in the Frequency / Voltage Control Setup, press the <Esc> to return to the previous screen.

## 4.10. Load Fail-Safe Defaults Option

This option opens a dialog box that lets you install fail-safe defaults for all appropriate items in the Setup Utility:

Press <Y> and then <Enter> to install the defaults. Press <N> and then <Enter> to not install the defaults. The fail-safe defaults place no great demands on the system and are generally stable. If your system is not functioning correctly, try installing the fail-safe defaults as a first step in getting your system working properly again. If you only want to install fail-safe defaults for a specific option, select and display that option, and then press <F6>.

## 4.11. Load Optimized Defaults

This option opens a dialog box that lets you install optimized defaults for all appropriate items in the Setup Utility. Press <Y> and then <Enter> to install the defaults. Press <N> and then <Enter> to not install the defaults. The optimized defaults place demands on the system that may be greater than the performance level of the components, such as the CPU and the memory. You can cause fatal errors or instability if you install the optimized defaults when your hardware does not support them. If you only want to install setup defaults for a specific option, select and display that option, and then press <F7>.

## 4.12. Set Supervisor/User Passwords

The “**Supervisor/User Password**” utility sets the password.

The mainboard is shipped with the password disabled. If you want to change the password, you must first enter the current password, then at the prompt enter your new password. The password is case sensitive. You can use up to eight alphanumeric characters.

Press <Enter> after entering the password. At the next prompt, confirm the new password by retyping it and pressing <Enter> again.

To disable the password, press <Enter> instead of entering a new password when the “Enter Password” dialog box appears. A message appears confirming that the password has been disabled.

If you have set supervisor and user passwords, only the supervisor password allows you to enter the BIOS Setup Program.

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*Note: If you forget your password, the only way to solve this problem is to discharge the CMOS memory by turning power off and placing a shunt on jumper CLEAR\_COMS1 to short pin 2 and pin 3 for five seconds, then putting the shunt back to pin 1 and pin 2 of CLEAR\_CMOS1.*

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### **4.13. Save & Exit Setup Option**

Selecting this option and pressing <Enter> will save the new setting information in the CMOS memory and continue with the booting process.

### **4.14. Exit Without Saving**

Selecting this option and pressing <Enter> will exit the Setup Utility without recording any new values or changing old ones.

This concludes Chapter 4. Chapter 5 describes the drivers and utility programs that are packaged with the motherboard.

## 5. Driver and Utility

### 5.1 Flash Utility

The BIOS of the P6F169 motherboard can be upgraded by using a Flash utility. A new version of the BIOS can be downloaded from the factory's BBS and Web site. The system BIOS is stored in a 2 M-bit Flash EEPROM that can be erased and reprogrammed by the Flash utility.

There are two files in the D:\DRIVER\FLASH directory:

- FLASH.EXE           Flash utility for AWARD BIOS upgrade
- README.TXT        Text File of instructions

The Flash utility will not work with any memory manager software running in the system. In order to make sure no memory manager software is running, boot your system from a bootable floppy diskette which does not contain CONFIG.SYS and AUTOEXE.BAT files. If you are using MS-DOS 6.x, you can press the <F5> function key when the "Starting MS-DOS." Message appears on the screen to by pass the CONFIG.SYS and AUTOEXEC.BAT.

## 5.2 CD Driver Overview

The mainboard has drivers and utilities designed for the Intel CLE266 chipset. You can install AGP, IRQ, ACPI and IDE drivers together from the manufacturer support CD. The support CD has an easy to use menu that enables you to automatically install the drivers and software that you want.

The P6F169 CD include

1. Install Mainboard Software (VIA)
2. Install display device driver (S3 CLE266)
3. Install Audio Device software (ALC)
4. Install LAN Driver (CLE266)
5. Install VIA USB2 driver
6. Read Manual
7. Introduction to Products Feature



### 5.2.1 VIA 4in1 driver

This folder has 4in1 drivers for Windows ME/2000/98/NT

The installation steps:

1. Insert the manufacture's CD-ROM into your CD-ROM driver.
2. Click Driver Install.
3. Select the folder Driver\Via\4in1driver for WIN2000/9X/ME or NT to start installation.
4. Follow the instructions on the screen to complete the installation.  
After setup is completed, you need to restart the computer.

### 5.2.2 VIA S3G UniChrome display driver

This folder has the software and drivers for the graphics system built into the VIA S3G UniChrome chipset.

The installation steps:

1. Insert the manufacture's CD-ROM into your PC's CD-ROM drive.
2. Click Driver Install.
3. Select the folder Driver\Via\Video\CLE266 driver for WIN2KXP/9X to start the installation.
4. Follow the instructions on the screen to complete the installation.  
After setup is completed, you need to restart the computer.

### 5.2.3 ALC650 Audio Driver

Software and drivers are provided for the VIA8325 codec sound system that is integrated on this mainboard. The VIA 8325 codec allows the system to generate optimal sound effects. Drivers are provided for Windows 98SE / ME / NT / 2000 / XP.

The manual Installation Steps:

1. Insert the manufacturer CD-ROM into your PC CD-ROM drive.
2. Click Driver Install.
3. Select the folder Driver\Sound\ALC driver for WIN98 / ME / NT / 2000 / XP to start the installation:
4. Follow the instructions on the screen to complete the installation. After setup is completed, you need to restart the computer.

### **5.2.4 LAN Driver**

Software and drivers are provided for the Realtek RTL8100 controller that is integrated on this motherboard. The Realtek RTL8100 controller allows the system to transmit effects. Drivers are provided for Windows WIN 95 / 98 / ME / NT / 2000 / XP.

The installation Steps:

1. Insert the manufacturer CD-ROM into your PC CD-ROM drive.
2. Click Driver Install.
3. Select the folder Driver\LAN\8100 driver for WIN95 / 98 / ME / NT / 2000 / XP to start the installation:

### **5.2.5 USB2.0 Driver**

Software and drivers are provided for the VIA USB 2.0 controller that is integrated on this motherboard. The VIA USB2.0 controller allows the system to transmit effects. Drivers are provided for Windows WIN 98 / ME / .

PS. Windows XP and 2000 do not need the drivers for USB2.0; please update the last service pack to support USB2.0

### **5.3 Online Service**

Flexus Computer Technology, under the Freetech brand name, has consistently won recognition for excellence in the design and manufacturing of high quality mainboards!

Our products are globally recognized among the leading cost-performance mainboards in the industry today and we are a certified ISO-9002 manufacturer!

Our customers are our partners! Flexus practices partnership service “not customer service”! Our attention to partnership service is aggressive and proactive, by using our global partnership service system. We create value for our partners in the high-end market and we are always ready to see to our partners' requirements, because at Flexus, we believe our partners' success is our success!

If you need technical support, information on products, or updated versions of the BIOS, drivers and utilities access the Internet and point your browser to:

***[www.freetech.com](http://www.freetech.com)***