

PV 2208

User Manual

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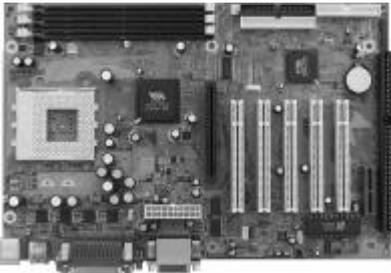
Item Checklist

Prior to beginning the installation of your mainboard, please insure that the following materials have been provided:

- ?? One PV 2208 main board.
- ?? This user manual.
- ?? One Floppy disk drive cable.
- ?? One Ultra DMA/100 IDE cable.
- ?? One Software & Utility Pack CD.

If any of the above items are either damaged or missing, please contact your retailer.

PV 2208 Mainboard



PV 2208 Manual



Floppy Disk Drive Cable



Software & Utility Pack CD

Ultra DMA/100 IDE Cable



Contents

1 Introduction	
1-1 Introduction.....	4
1-2 Specifications.....	5
1-3 Main Board Layout.....	7
2 Installation Procedures	
2-1 Setting System Jumpers.....	9
2-2 System Memory (DIMM).....	10
2-3 Central Processing Unit (CPU).....	11
2-4 Expansion Cards.....	13
2-5 External Connectors.....	14
2-6 Power Connection Procedures.....	18
3 Award BIOS Setup	
3-1 Introduction.....	19
3-2 Main Menu.....	22
3-3 Standard CMOS Setup.....	24
3-4 Advanced BIOS Features Setup.....	27
3-5 Chipset Features Setup.....	31
3-6 Power Management Setup.....	34
3-7 PNP/PCI Configuration.....	38
3-8 Defaults Menu.....	39
3-9 CPU Speed Setting.....	40
3-10 Integrated Peripherals.....	41
3-11 PC Health Status.....	43
3-12 Password Setting.....	44
3-13 IDE HDD Auto Detection.....	44
3-14 Exit Selecting.....	44

1-1 Introduction

This mainboard contains the KT133 chipset from VIA Technologies (www.via.com.tw). The VIA Apollo KT133 chipset unleashes the full performance potential of AMD's Duron and Athlon Thunderbird Socket A processors by providing an extensive high-end feature-set that includes 200MHz FSB, AGP4X, PC133 memory and ATA-100.

The Best Choice for AMD Socket A Processors

The VIA Apollo KT133 is the first chipset available supporting the new AMD Duron and Athlon Thunderbird Socket A processors. Building on the success of the VIA Apollo KX 133 VIA's first Athlon chipset, the VIA Apollo KT133 supports the same high-end features:

Blistering AGP4X Graphics Performance

The VIA Apollo KT133 supports AGP4X, the latest high-performance graphics bus technology, on the AMD Athlon processor platform. The AGP4X interface enables the graphics controller to access the main memory at double the speed of previous platforms, ensuring rich 3D graphics and video performance on your AMD Athlon processor-based PC system.

High-Speed PC133 Memory

Through its advanced memory controller architecture, the VIA Apollo KT133 chipset supports up to 1.5G of the latest high-speed PC133 SDRAM and VC133 DRAM. These leading-edge memory technologies provide the bandwidth and performance necessary for even the most demanding Internet and 3D graphics applications at a minimal cost premium over PC100 SDRAM.

Ultra-Fast 200MHz Front Side Bus

With its 200MHz Front Side Bus, the VIA Apollo KT133 chipset helps boost system performance by providing a high-speed connection to the new generation of ATA-100 Hard Disk Drives, delivering maximum sustained data transfer rates of 100MB/sec.

This manual is designed for reference only. It is not a training guide for new users for system assembly. Only trained technicians should install and setup a computer system. Warranty for this board does not cover improper installations!

1-2 Specifications

CPU

- AMD Socket A Athlon Thunderbird processors from 700 to 1.2GHZ (pinout optimized for Socket-462). 256K second level cache on dir.
- AMD Duron (Spitfire) processors from 600MHz to 850MHz. 64K second level on die.

Chipset

- Apollo KT 133, consisting of:
- VT8363 Memory/AGP/PCI North Bridge Controller
- VT82C686B PCI Super-I/O Integrated Peripheral South Bridge Controller.

Memory

- 3 × 168-pin DIMM Sockets.
- Supports 100MHz & 133MHz SDRAM 32MB~1.5GB.
- Supports 3.3V SDRAM DIMM.
- Supports SDRAM, VCM SDRAM memory types.

Optional Audio

- SoundBlaster Pro Compatible Hardware and Direct Sound Ready AC97 Digital Audio Controller.
- Hardware SoundBlaster Pro for Windows DOS box and real-mode DOS legacy compatibility.
- Supports two-channel speaker mode.
- MPU-401 game/MIDI port and SoundBlaster 16 compatible.

I/O Control

- Integrated Super I/O Controller in the VT82C686B.

Expansion Slot

- Five 32-bit PCI slots support Master mode & PCI 2.2 compliant.
- One AGP slot supports 4X mode & AGP 2.0 compliant.
- One ISA slot.
- One AMR (Audio Modem Riser) slot.

PV 2208 User Manual

I/O Interface

- PCI Bus master IDE interface on board with two connectors supports 4 IDE devices in 2 channel, the PCI IDE Controller supports PIO Mode 0 to 4, Bus master IDE DMA Mode 2 and Ultra DMA 33/66/100.
- On board super Multi-I/O chip that support 2 serial port with ECP capabilities, and a floppy disk drive interface.
- On board support PS/2 mouse connector.
- On board support PS/2 keyboard connector.
- On board 4 USB ports. (2 external ports & 2 internal pin header)
- On board IrDA connector.
- Floppy port supports 2 FDD with 360K, 720K, 1.2M, 1.44M & 2.88M bytes. Supports LS-120 floppy disk device.

Other Function

- Supports Modem Ring Power On.
- Supports Wake On LAN.

Power Supply

- On board 3V, 5V and 12V 20-pin ATX power connector.
- Use switching regulator to support CPU core voltage.

Optional Hardware Monitoring

- CPU/Power Supply/Chassis Fan Revolutions detecting.
- CPU Fan Control.
- System Voltage Detect.
- Display Actual Current Voltage.

BIOS

- Licensed AWARD BIOS, 2M bit FLASH RAM.
- ACPI ready for PC98/Windows 98.
- System BIOS supports ACPI function and Green feature function, DMI, Plug & Play Flash ROM.

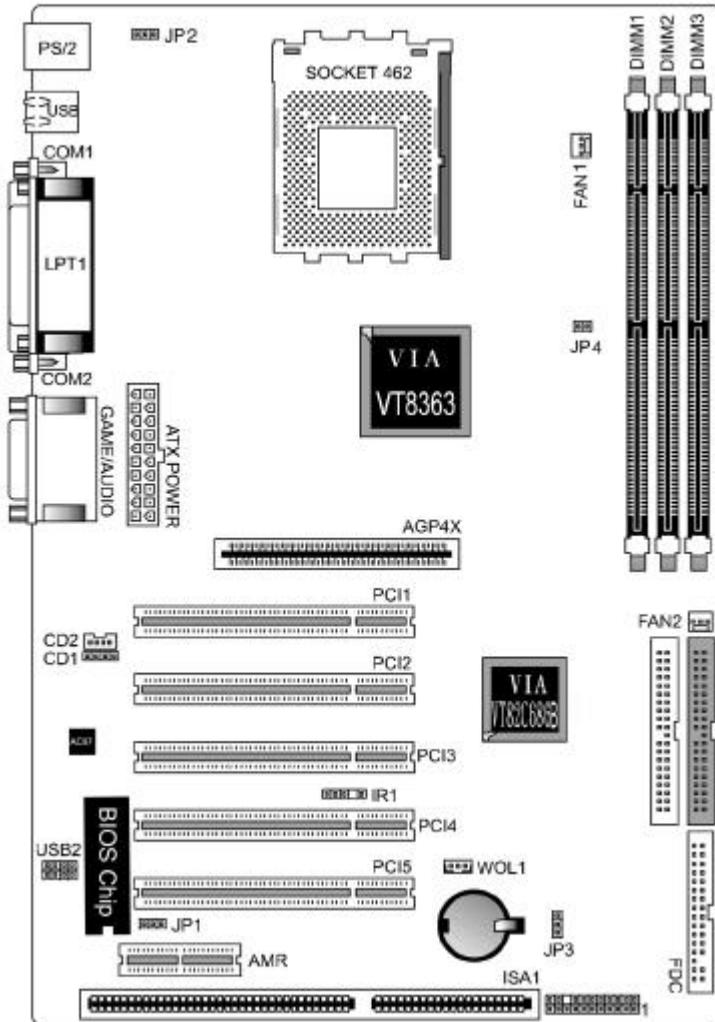
Form Factor

- ATX Form Factor.
- Dimensions 305mm × 200mm.
- 4 layer PCB.

Drivers

- VIA 4 in 1 Service
- VIA Audio Driver

1-3 Main Board Layout



Chapter 2 **Installation Procedures**

Warning: Always disconnect the power cord from your computer whenever you are working on it. Failure to do so may result in sensitive electronic components being damaged.

Note: Always ground yourself to remove any static charge before touching any electronic components in the system. Place all electronic components on a static free surface or in an anti static bag when they are not being handled or installed in the computer.

User adjustable jumpers have been installed on the mainboard to allow for user configuration of the mainboard to meet your specific needs. Information pertaining to all jumper configurations has been included in the following chapter.

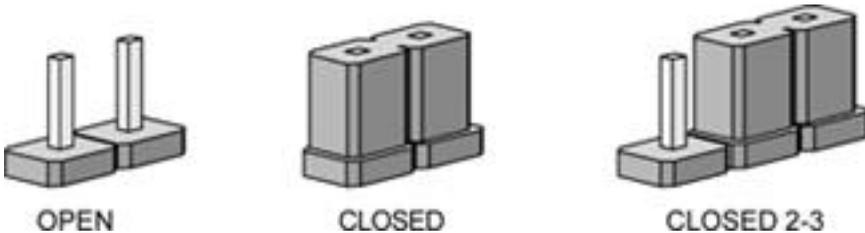
To correctly install your mainboard into your computer, use the following steps:

1. Set the jumpers on your mainboard to the correct configuration.
2. Install RAM.
3. Install CPU & Fan.
4. Install expansion cards.
5. Locate and install external devices.
6. Perform power on procedures.

2-1 Setting System Jumpers

Warning: Incorrect jumper configurations may damage the CPU, the mainboard and other sensitive electronic components. It is advisable to consult product literature before configuring the jumpers on the PV 2208 mainboard.

The PV 2208 mainboard has four jumpers (JP1, JP2, JP3 & JP4) that enable the user to set-up the mainboard for optimal performance based on their computing needs. A jumper is the simplest type of electrical switch. It consists of two metal pins and a metal clip, which is covered by a plastic cover. You may set up you mainboard to match the needs of your applications by setting the jumpers. To *open* a jumper, you remove the clip. To *close* a jumper, you connect the pins by using the clip.



The jumper settings are presented above.

Clearing The CMOS:

In order to clear the data stored in the CMOS, first turn off the computer and remove the power cord. Next, ground yourself and locate JP2 on you mainboard. Then remove the jumper from pins 2 & 3 and place the jumper on pins 1 & 2 (3V battery back up). Reattach the power cord and restart the computer.

2-2 System Memory

The PV 2208 mainboard can support up to 1.5GB of 100MHz or 133Mhz SDRAM. Installing memory modules requires no system setup what so ever.

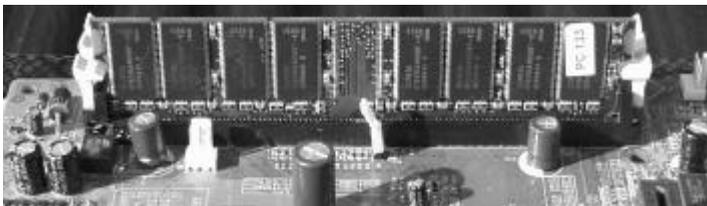
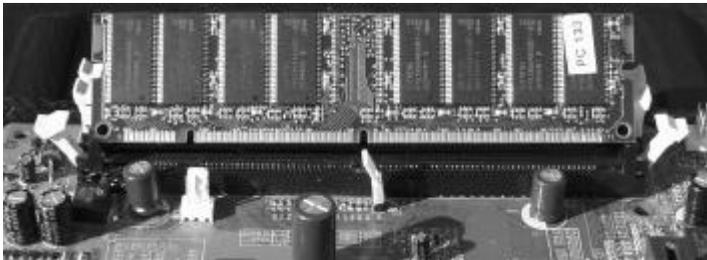
Note:

1. The PV 2208 mainboard can only accommodate DIMMs (Dual Inline Memory Modules). The DIMM sockets on the PV 2208 are for 3.3V (power level) SDRAM (Synchronous Dynamic Random Access Memory).
2. Due to the strict timing issues involved under this speed, you must insure that SDRAM is 100/133MHz compliant.

Installing System Memory

Insert the DIMM as illustrated in the diagram below. Due to the number of pins between each of the breaks in the module, the DIMM will only fit into the socket one way. Please insure that the DIMMs that you are using are 3.3V.

To insert the DIMM into the socket, first the DIMM socket levers (the white levers on either side of the DIMM socket) must be pushed out away from the socket itself. Then line up the pins on the DIMM to the corresponding pins in the socket. Push the DIMM securely down into the socket. As the DIMM slides into the socket, the DIMM socket levers will snap back in toward the DIMM socket securing the DIMM into place.



2-3 CPU (Central Processing Unit)

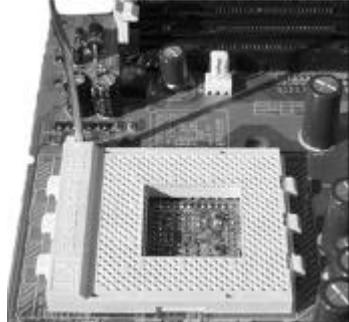
The PV 2208 mainboard is a Socket A mainboard. This refers to 462-pin socket that the board utilizes to accommodate the CPU. The CPU that is in use or you are going to use should have a cooling fan attached to it to prevent overheating. If your CPU does not have a fan, please ensure that you purchase and install a CPU cooling fan prior to turning on your computer for the first time. After installing the cooling fan, make sure that there is sufficient airflow around the fan to ensure proper cooling. If there is insufficient air circulation, the processor can overheat and damage not only the CPU, but also the mainboard.

Caution: The faster your processor is, the more heat it. A suitable cooling fan for your specific processor must be used.

CPU Installation Procedures

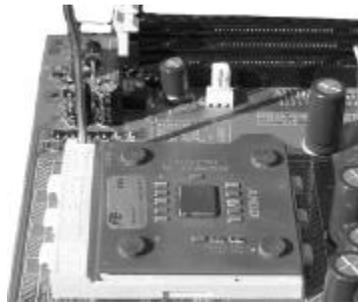
Step 1

Open the socket by raising the actuation lever.



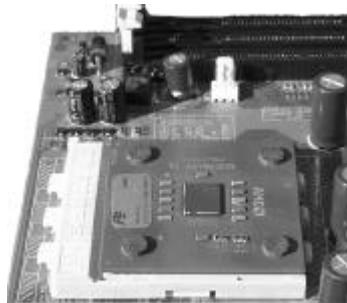
Step 2

Insert the processor. Ensure proper pin 1 orientation by aligning the FC-PGA corner marking with the socket corner marking closest to the actuation arm tip. The pin field is keyed to prevent mis-oriented insertion. Do not force the processor into the socket. If it does not go in easily, check for mis-orientation and debris. Make sure the processor is fully inserted into the socket on all sides.



Step 3

Close the socket by closing the actuation lever.



2-4 Expansion Cards

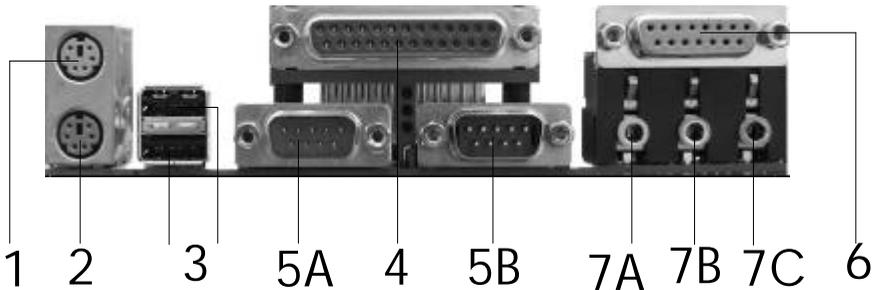
Warning: Always disconnect the power cord from your computer whenever you are working on it. Failure to do so may result in sensitive electronic components being damaged.

Note: Always ground yourself to remove any static charge before touching any electronic components in the system. Place all electronic components on a static free surface or in an anti static bag when they are not being handled or installed in the computer.

The PV 2208 mainboard has 1 AGP, 5 PCI, 1 ISA & 1 AMR expansion slots. To install an AGP, PCI, ISA or AMR card, please follow the following procedure:

1. Read any documentation that is accompanied with the expansion card.
2. Ensure that any hardware setup such as jumper configuration has been completed.
3. Remove the computer cover and unscrew and remove the bracket plate that accompanies the slot to which you want to install the expansion card into.
4. With great care align the card connectors with the socket connectors and press the expansion card firmly into place.
5. Secure the card by replacing the screw from the bracket plate. Replace the computer cover.
6. Perform any BIOS updating necessary.
7. Install any drivers and/or software necessary for the operation of your expansion card.

2-5 External Connectors



1. PS/2 Mouse Connector:

The PV 2208 mainboard has a built in mini-DIN mouse connector, which is designed for a PS/2 style mouse.

2. PS/2 Keyboard Connector:

The PV 2208 mainboard has a built in mini-DIN keyboard connector, which is designed for a PS/2 style keyboard. This connector will not accommodate a standard AT (large-DIN) keyboard plug.

3. USB Ports 1 & 2 (Universal Serial BUS):

The PV 2208 mainboard has two built in USB ports for connecting USB devices.

4. Parallel Port Connector:

The PV 2208 mainboard has a built in parallel port, which is used to connect the computer to the printer.

5. Serial Ports COM1 & COM2:

The PV 2208 mainboard has two built in serial ports, the COM1 and COM2 ports.

- A. The COM1 port is ready for a mouse or other serial devices.
- B. The COM2 port is ready for a mouse or other serial devices.

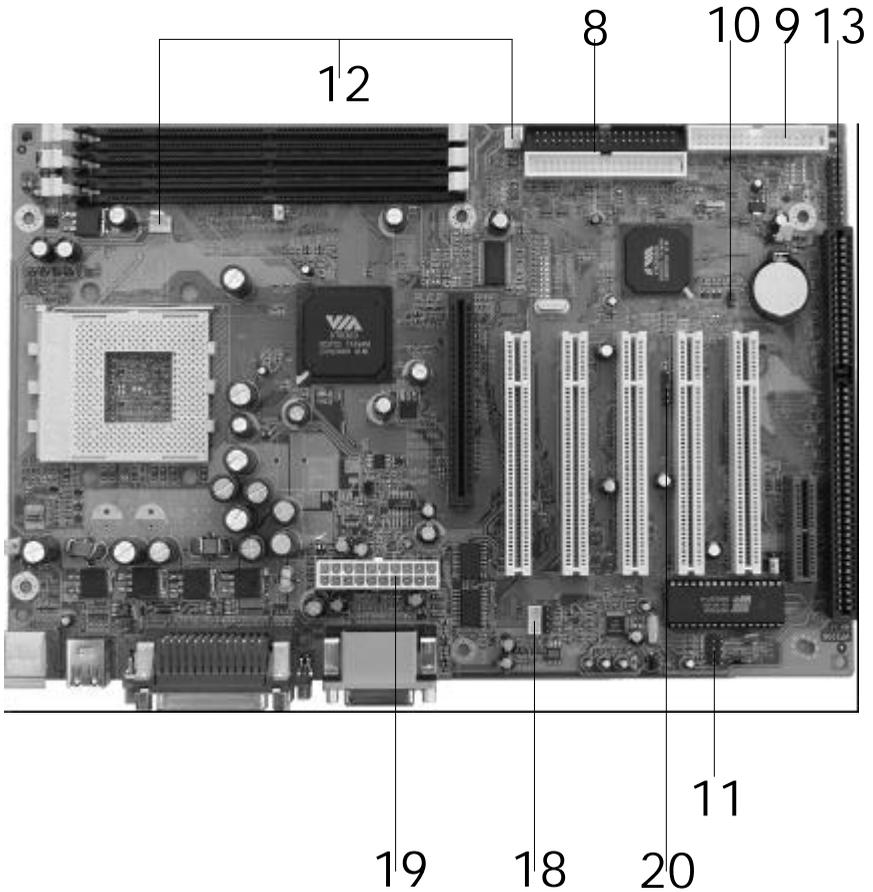
6. Optional Joystick/MIDI Connector:

The PV 2208 mainboard has an optional built in Joystick/MIDI connector that allows you to connect joysticks or game pads to your computer. You can also use this connector for connecting MIDI devices for playing and editing audio.

7. Optional Audio Port Connectors:

The PV 2208 mainboard has three optional built in $\frac{1}{8}$ " Game-Audio connectors.

- A. The optional Line Out is designed to be connected to either headphones or powered speakers.
- B. The optional Line In is designed to allow your computer to record or play from external sources such as CD player or other audio source.
- C. The optional Mic In is designed to be connected to a microphone to allow the inputting of voices into the system.



8. Primary/Secondary IDE Connectors (IDE1 & IDE2):

The PV 2208 mainboard has two built in Ultra DMA/100 IDE connectors that support up to four IDE devices such as Hard Disk Drives, CD Drives, Tape Backups and other IDE devices. In order to connect your mainboard to an IDE device you must use an Ultra DMA/100 IDE cable, which was provided to you with your mainboard. If you are installing two hard disks, you must configure the second drive to slave mode by setting its jumper accordingly. Please refer to you hard disk documentation for correct jumper settings.

9. Floppy Disk Drive Connector (FDC):

The PV 2208 mainboard has a built in Floppy Disk Drive Connector that allows up to two floppy drives to be connected to the mainboard. In order to connect your mainboard to a floppy drive you must connect it using the floppy disk drive cable that was provided to you with your mainboard. The drive A:\ should be connected at the end of the cable and if you have a second floppy drive, drive B:\ should be connected in the middle of the cable.

10. Wake On LAN (WOL)/Wake On Modem (WOM) Connector (WOL1):

The PV 2208 mainboard has a built in Wake On LAN and Wake On Modem connector. This connector allows the system to power up when a wakeup packet or signal is received through the LAN/modem card.

11. USB2 PIN Header (Universal Serial Bus 2):

The PV 2208 mainboard has a built in connector for two additional USB ports by means of a USB PIN Header.

12. CPU/AGP Fan Connectors (Fan1 & Fan2):

The PV 2208 mainboard has two built in fan connectors for connecting up to two cooling fans to the mainboard. One fan should always be used for cooling your CPU, while another fan connector could be utilized for an AGP card cooling fan or a chassis fan or not at all. Depending upon the type of fan that you have, the wiring and the plug may be different. Usually, but not always, the red is positive, while the black is ground. Connect the fan plug to the board while ensuring to connect the positive pin to the positive pin and the negative pin to the negative pin.

FOR CONNECTORS 13 – 17 SEE NEXT PAGE

18. Internal Audio Connectors:

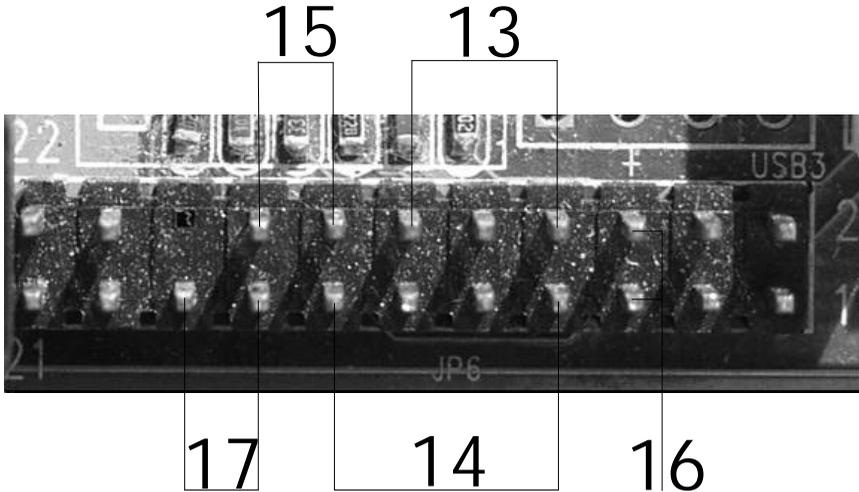
These two connectors allow direct stereo input into your mainboard from such sources as a CD-ROM, a TV-Tuner and/or an MPEG Card.

19. ATX Power Connector:

This connector connects the PV 2208 mainboard to the ATX power supply in your computers chassis. The ATX power connector can only be inserted one way, so to insert the ATX power connector, line up the pins and push down firmly.

20. IR1 (IR Pin Header):

The PV 2208 has an IR (Infrared) connector for use with IR modules. You can connect your mainboard to an optional wireless IR transmitting and receiving module. The IR function must be configured using the BIOS.



13. Power LED Lead:

The Power LED indicates whether the system is *ON* or *OFF*. When the computer is *ON*, the LED will light up and when the computer is *OFF*, the LED will remain unlit.

14. System Warning Speaker Connector:

This 4-pin connector connects the mainboard to the case speaker.

15. ATX Power Switch Lead:

The ATX Power Switch controls the power status of the computer. A momentary switch is connected to this lead and pushing this button once while the computer is off will power the computer on and pushing the button for more than 4 seconds while the system is powered on will power the computer off. The Power LED shows the *ON/OFF* status of the computer.

16. HDD LED Lead:

This connector is connected to the IDE activity LED. This LED illuminates whenever there is any read/write activity occurring on any of the primary or secondary IDE devices.

17. Reset Switch Lead:

This connector is connected to the Reset switch on the outside of your computer case. This switch is designed for rebooting your computer without having to turn the power off and then back on again. This is the preferred method of rebooting your computer over turning the power off and then back on again as it will extend the life of your power supply.

2-6 Power Connection Procedures

Once all the connections on the mainboard have been made, ensure that all other connections are made in the rest of the system and replace the computer case cover. Turn all switches off and plug the computer power cord back into the back of the computer. Check to see that the other end of your power cord is properly connected to the wall via a surge protector. Now you may begin to power up you system in this order:

1. Your monitor.
2. Your external devices.
3. Your computers ATX power supply.
4. Your computers power button.

At this point your Power LED on the front on your case should illuminate. The system will now be running its Power On Self Tests. During the self-tests, various messages will appear on you monitor. If you do not receive any of these messages and if your computer does not appear to powering up properly within 30 seconds, power the system off. Check that all cables are connected and that the jumper settings are correct and/or contact your retailer for further assistance.

To power your computer off, first you must exit or shut down your operating system before pushing the power button down for four seconds. If you are using Windows 95 or a newer Windows version, left click on the *Start* button and select *Shut Down* and then once again select *Shut Down The Computer*. At this point your screen will display *You can now safely turn OFF your computer*. At this point you may power off your computer by depressing the power button for four seconds or your computer will simply power itself off automatically.

Chapter 3

AWARD BIOS Setup

3-1 Introduction

The Award(tm) Setup program allows users to modify the basic ROM BIOS system configuration. Stored in battery-backed RAM this special information retains the Setup information while powered off.

In your computer system's ROM (Read Only Memory) is an Award BIOS™ custom version of an industry standard BIOS. It supports all processors by Intel/Cyrix/AMD in standard IBM-AT compatible input output Systems. Disk drives and serial ports receive critical low-level support for standard devices from the BIOS. Your Award BIOS™ is optimized by adding important nonstandard, features such as special support, and for detailed fine-tuning of the chipset controlling the entire system as well as virus and password protection. The rest of this manual is intended to guide you through the process of configuring your system using setup.

Starting Setup

Activating your computer will automatically initiate the Award BIOS™, it will then begin to check and configure your system by reading information in the CMOS. Once complete, the computers' operating system will be loaded and begin to take over the setup process. There are two different ways to begin the setup program while the BIOS is still in control of the computer, they are both listed below:

1. You can press the key right after the system has been powered on,
or
2. Wait for the POST (Power on Self-Test) message to appear at the bottom of the screen then press the key. It will read as follows: Press DEL to enter SETUP

If while the system is powering on you miss the message, and you need to restart you can do so by pressing the RESET button on the computers case, powering the system off via the ON/OFF button or, pressing <Ctrl>, <Alt> and key at the same time. If you miss the aforementioned opportunities to enter the setup an error message will display letting you know the system did not boot, the following will appear: PRESS F1 TO CONTINUE, OR DEL TO ENTER SETUP

PV 2208 User Manual

Using Setup

Navigating through the menu bar used left and right arrows to choose menu you want to be in. The main keys you will need to navigate the setup are as follows:

Key	Function
Enter	To select highlighted item
Page Up	To change entries, increase the numeric value
Page Down	To change entries, decrease the numeric value
Esc	To quit and not save changes in the CMOS Status Page Setup Menu and Option Setup Menu – quit page and return to Main Menu
Up Arrow	Move to previous item
Down Arrow	Move to next item
Left Arrow	Move to the item on the left hand
Right Arrow	Move to the item on the right hand
+ Key	Increase the numeric values, or makes changes
- Key	Decrease the numeric values, or makes changes
F1 Key	General help, only for Status Pages Setup Menu and Option Page Setup Page
(Shift) F2 Key	Change color from 16, F2 to select color forward, (Shift) F2 to select color back
F3 Key	Calendar, only for Status Page Setup Menu
F4 Key	Reserved
F5 Key	Restore the previous CMOS value from CMOS only for Option Page Setup Menu
F6 Key	Load the default CMOS value from BIOS default table, for only Options Page Setup Menu
F7 Key	Load the default
F8 Key	Reserved
F9 Key	Reserved
F10 Key	Save all the CMOS changes, only from the Main Menu

To display sub menu

Use the arrow keys to manipulate the cursor to the sub menu of your choice, then press enter.

Getting Help

Press F1 to in-list a help window, this window describes a few possible solutions and key to press and the selections for the highlighted item. To exit the Help Window press <Esc> or the F1 key again.

In Case of Problems

If, after making and saving system changes with Setup, you discover that your computer no longer is able to boot, the Award BIOS™ supports an override to the CMOS settings, which resets your system to its defaults.

Our recommendation is that you only make changes which you fully understand, we also advise that you do not make any changes to the chipset defaults as that may cause you unforeseen problems. The best performance and reliability for your system would be to use the default settings that have been set by both your system manufacturer as well as Award. Even a seemingly small change to the chipset setup has the potential for causing to use the override.

A Last Note on Setup

The majority of systems have a different Setup, the look and basic functions of the Setup program may appear to be the same on all system, however individual motherboards and chipsets need to custom configurations. Not all of the examples used in this manual may be executable by your Setup; there are simply features that are not supported or configurable on your system.

The OEM (Original Equipment Manufacturer) decides upon the final look of the Setup program. If the OEM decided that certain items would only be available only to their technical experts, those items may very well be removed entirely form the Setup program.

3-2 MAIN MENU

When you first enter the Award BIOS™ CMOS Setup Utility, the first thing to appear will be the Main Menu. This Menu will then allow you to select many different setup options and two exit choices. To navigate through the menu you will use the arrow keys; they will then be highlighted, to select the highlighted item simply press the <Enter> key. While an item is highlighted a brief description of that item will appear in the bottom portion of the screen, once you select an item a sub-menu will appear.



SETUP ITEMS

Although not all systems will have the same setup categories the main menu will most likely include the following sub-menu items.

STANDARD CMOS FEATURES

This category is for basic system configuration.

ADVANCED BIOS FEATURES

This category is to set Advanced Features available on your system.

ADVANCED CHIPSET FEATURES

This category will be used to change values in the chipset registers and to optimize system's performance.

INTEGRATED PERIPHERALS

This category includes all the items of IDE hard drive and Programmed I/O features.

POWER MANAGEMENT SETUP

Use this section to specify your settings for power management.

PnP / PCI CONFIGURATION

This entry appears if your system supports PnP / PCI's. (PnP – Plug and Play)(PCI – Peripheral Card Interface)

PC HEALTH STATUS

This category shows your PC health status.

LOAD FAIL-SAFE DEFAULTS

This menu category is used to load the BIOS default values that are factory settings for your system to run at optimal efficiency. Award has designed a custom BIOS to maximize performance; the OEM has the right to change these defaults to meet their specific needs.

FREQUENCY / VOLTAGE CONTROL

Use this category to specify your settings for CPU/DIMM frequency/voltage control.

SUPERVISOR/USER PASSWORD SETTING

This category is used to set User and Supervisor Passwords for your system.

IDE HDD AUTODETECTION

This will automatically configure hard disk parameters.

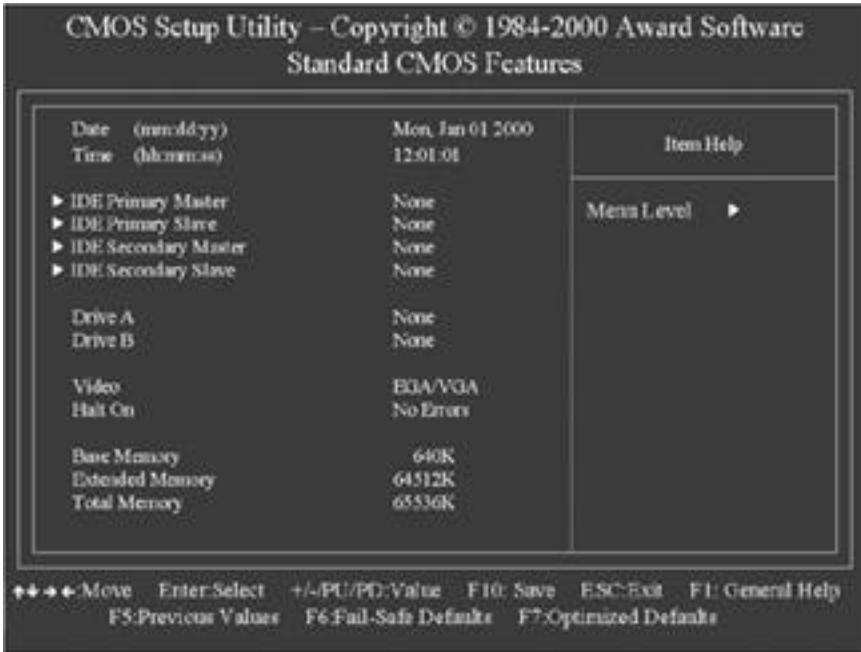
SAVE & EXIT SETUP

Save CMOS value changes to CMOS and exit setup.

EXIT WITHOUT SAVE

Abandon all CMOS value changes and exit setup.

3-3 STANDARD CMOS SETUP



Standard CMOS Setup Menu is divided into 10 sub-menu categories. Every sub-menu includes no, one or more than one setup items. Use the arrow keys to navigate the menu.

DATE

The format that is used for the date is as follows

<day>, <date>, <month><year>. To see the calendar press F3.

Day	The day from Sun to Sat determined by the BIOS and is display only.
Date	The date, from 1 to 31 (or the maximum allowed in a month).
Month	The month, Jan to Dec.
Year	The year, from 1900 to 2099

TIME

The format that is used for the time is as follows

<hour><minute><second>. The time is calculated based on the 24-hour military clock.

PRIMARY

MASTER/PRIMARY

SLAVE/SECONDARY

MASTER/SECONDARY SLAVE

These sub-menus are for identifying the 2 channel types that have been installed in the computer. There are 4 user definable and 45 predefined types for the Enchanted IDE BIOS.

To select the hard disk you can either press the Page Up or Page Down buttons or simply enter in the number of the hard disk and press <Enter>. It is important the specifications of your selected drive match those of the drive table. The hard disk will not work properly if the incorrect drive information is entered. If you cannot find your drive type on the drive table you may use “User” to define your drive type manually.

In order to use “User” type for drive type, you must have certain drive information; the required information is listed below. Enter the information using the keyboard and simply press <Enter>. Either the hard disk vendor or the system manufacturer will most likely have provided this information for you.

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

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

If you select Type “Auto”, BIOS will Auto-Detect the HDD & CD-ROM Drive at the POST stage and showing the IDE for HDD & CD-ROM Drive.

TYPE	drive type
CYLS.	number of cylinders
HEADS	number of heads
PRECOMP	write precom
LANDZONE	landing zone
SECTORS	number of sectors
MODE	mode type

If there is no hard drive installed select NONE and press <Enter>.

Drive A Type / Drive B Type

This sub-menu identifies the types of floppy disk drive A or Drive B that have been installed into the computer.

360K, 5.25 in	5-1/4 inch PC-type standard drive; 360 kilobyte capacity.
1.2M, 5.25 in	5-1/4 inch AT-type high-density drive; 1.2 megabyte capacity.
720K, 3.5 in	3-1/2 inch double-sided drive; 720 kilobyte capacity.
1.44M, 3.5 in	3-1/2 inch double-sided drive; 1.44 megabyte capacity.
2.88M, 3.5 in	3-1/2 inch double-sided drive; 2.88 megabyte capacity.

If there is no floppy drive installed select NONE and press <Enter>.

Video

This sub-menu selects the type of video adapter is used for the primary system monitor. Although secondary monitors are supported you do not have to select the type in Setup.

EGA/VGA	Enhanced Graphics Adapter/Video Graphics Array. For EGA, VGA, SEGA, or PGA monitor adapters.
CGA 40	Color Graphics Adapter, power up in 40 column mode.
CGA 80	Color Graphics Adapter, power up in 80 column mode.
MONO	Monochrome adapter includes high-resolution monochrome adapters.

Halt On

This sub-menu determines whether the computer will stop if any error is detected during powering up.

No errors	The system boot will not be supported for any error that may be detected.
All errors	Whenever the BIOS detects a non-fatal error the system will be stopped and you will be prompted.
All, But Keyboard	The system boot will not stop for a keyboard error; it will stop for all other errors.
All, But Diskette	The system boot will not stop for a disk error; it will stop for all other errors.
All, But Disk/Key	The system boot will not stop for a keyboard or disk error; it will stop for all other errors.

Memory

This sub-menu is display-only, which is determined by POST of the BIOS.

Base Memory

From the system boot, the POST will find how much base (or conventional) memory is installed on your system. The value of base memory is typically the same amount as installed on the mainboard.

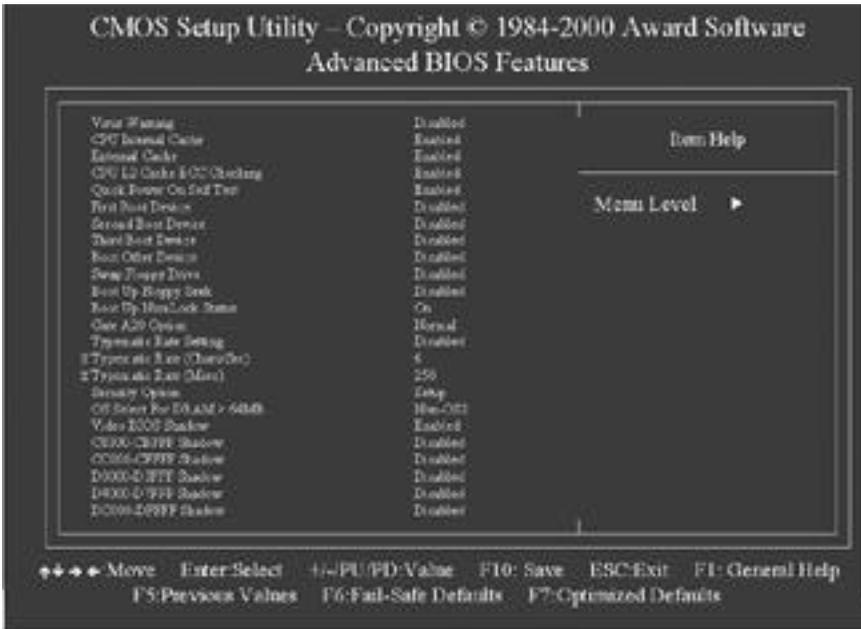
Extended Memory

During the POST the BIOS will determine how much of extended memory is on the system. This is the amount of memory located above the 1MB in the CPU's memory address map.

Other Memory

Other Memory is describing memory located in the 640K to 1024K address space. This is memory that can be used for different applications. DOS uses this area to load device drivers in an effort to keep as much base memory free for application programs. RAM is most frequently used by the BIOS are since this is where it shadows RAM.

3-4 ADVANCED BIOS FEATURES SETUP



All the basic configurations for your system are done in this area. System default speed, boot-up, sequence, keyboard operation, shadowing and security are all set up in Advanced BIOS Features Setup Menu.

Virus Warning

Enabling this feature is important; the Award BIOS will monitor the boot sector and partition table of the hard disk drive for any attempt at modification. If the following error message appears, the Virus Warning is telling you that an attempt has been made to modify the boot sector. Following the warning, if deemed you will be able to run an anti-virus program to eliminate the problem before any damage is done.

!! WARNING !!

Disk boot sector is to be modified
Type "Y" to accept write or "N" to abort write
Award Software Inc.

PV 2208 User Manual

Enabled	Activates automatically when the system boots up causing a warning message to appear when anything attempts to access the boot sector or hard disk partition table.
Disabled	No warning message will appear when anything attempts to access the boot sector or hard disk partition table.

NOTE: If you are going to be running some sort of a disk diagnostic program we recommend that you disable the warning message. The reason for this is that most of those types of programs need to access the boot sector before running that type of program.

CPU Internal Cache/External Cache

The following sub-menus speed up memory access. This is something that depends on CPU/chipset design; the default value is enable.

Enabled	Enable Cache
Disabled	Disable Cache

CPU L2 Cache ECC Checking

This item allows you to Enable/Disable CPU L2 Cache EC checking the choices are to either enabled, or disabled.

Quick Power On Self-Test

This sub-menu speeds up POST after you power up the computer, if it is enabled, BIOS will shorten or skip some check during the POST.

Enabled	Enable quick POST
Disabled	Normal POST

Boot From LAN First

This sub-menu allows the user to choose to Enable/Disable power up the system through a network by sending a wake-up frame or a signal; the choices are to Enabled/Disabled.

Boot Sequence (First boot; Second boot; Third boot device)

This sub-menu determines which drive to search first for a disk operating system; the default is floppy, HDD-0, LS120.

Swap Floppy Drive

This sub-menu allows you to determine whether to enable the swap floppy drive or not, the choice again is; Enabled, Disabled.

Boot Up Floppy Seek

BIOS will figure out if the floppy disk drive installed is 40 or 80 tracks, it will process this during POST. 80 tracks is for 760K, 1.2M and 1.44M, while 360K is a 40 track.

PV 2208 User Manual

Enabled	BIOS searches for floppy disk drive to determine if it is 40 or 80 tracks. Note that BIOS cannot tell from 720K, 1.2M or 1.44M drives, as they are all 80 tracks.
Disabled	BIOS will not search for the drive type of floppy disk drive by track number. Note that there will not be any warning message if the drive installed is 360K.

Boot Up NumLock Status

This will tell you the default state of the numeric keypad, by default the system will boot up with the NumLock on.

On	Keypad is number keys.
Off	Keypad is arrow keys.

IDE HDD Block Mode

Most new drivers support block mode, which when Enabled will automatically detect the optimal number of block read/writes per sector the drive can support. It is also referred to as block transfer, multiple commands or multiple sector read/write. The choices are Enabled or Disabled.

Gate A20 Option

This will allow you to select how the GateA20 is handled; it is a device, which is used to address memory above 1 Mbytes. It was first handled via a pin on the keyboard, now it is more common and faster for the system chipset to handle the support GateA20.

Normal	keyboard
Fast	chipset

Memory Parity/ECC Check

This item allows you to Enable/Disable Memory Parity/ECC check.

Typematic Rate Setting

Determines whether or not typematic rate is to be used or not. When disabled, continually holding down a key on your keyboard will tell the BIOS that the key is down. Opposed when enabled it will tell the BIOS the key is down, then it will inform the BIOS the key is being repeatedly being pushed down.

Enabled	Enabled typematic rate
Disabled	Disabled typematic rate

Typematic Rate (Chars/Sec.)

This will help to select the rate at which keys are accelerated, when typematic rate is enabled only.

6	6 characters per second
8	8 characters per second
10	10 characters per second
12	12 characters per second
15	15 characters per second
20	20 characters per second
24	24 characters per second
30	30 characters per second

Typematic Delay (Msec)

When enabled, the typematic rate will allow you to select the delay between when the key was first depressed and when to acceleration should begin.

250	250 msec
500	500 msec
750	750 msec
1000	1000 msec

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	The system will boot, but access to Setup will be denied if the correct password is not entered at the prompt.

Note: To disable the security, select PASSWORD SETTING at Main Menu and then you will be asked to enter password. Don not type anything and just press <Enter>, it will disable security. Once the security is disabled, the system will boot and you can enter Setup freely.

OS Select for DRAM>64MB

This sub-menu will allow you to access the memory over 64MB in OS/2; the choices will be either, Non-OS/2, or OS2.

Video BIOS Shadow

Will figure out whether video BIOS will be copied to RAM, it is optional depending upon the chipset design. Video Shadow will increase the video speed.

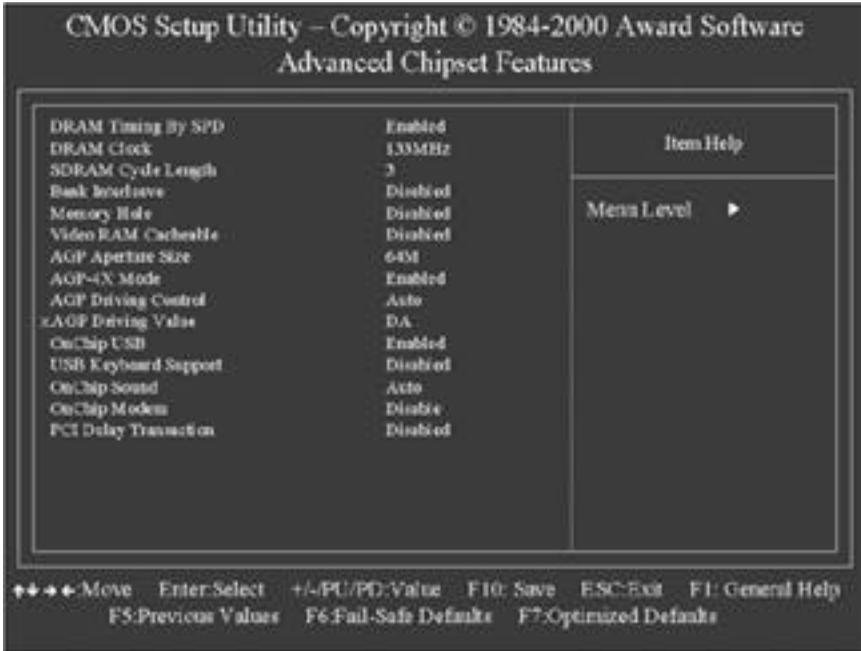
Enabled	Video shadow is enabled.
Disabled	Video shadow is disabled.

C8000-CBFFF Shadow/DC000-DFFFF Shadow

This category will determine whether option ROM's will be copied.

Enabled	Optional shadow is enabled.
Disabled	Optional shadow is disabled.

3-5 CHIPSET FEATURES SETUP



We recommend that only system designers, service personnel, and technically component users make changes to this screen. Resetting, or changing any on the values make cause unforeseen changes to the system.

NOTE: Due to the variety of different system board designers all the fields described in this section may not be included in your BIOS software.

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

The DRAM timing of Bank 0/1, 2/3, 4/5, 6/7 in this field is set by the system board manufacturer, depending on whether the board has fast paged DRAMs or EDO (extended data output) DRAMs.

The Choice: SDRAM 10ns,SDRAM 8ns,Normal, Medium, Fast, Turbo.

SDRAM Cycle Length

This category will allow you to set the SDRAM system length; your choices are 2, or 3.

DRAM Clock

This category allows you to set the DRAM clock using, Host CLK, or HCLK+33M.

Memory Hole

For you to improve performance, certain space in memory can be reserved for ISA cards. This memory must be mapped into the memory space below 16 MB.

15M-16M	Memory hole supported.
Disabled	Memory hole not supported.

AGP Aperture Size (MB)

Determines the size of the AGP (Accelerated Graphics Port) 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. see www.agpforum.org for AGP information, your aperture choices are 4, 8, 16, 32, 64, 128.

AGP-4X Mode

This item allows you select AGP speed with your choices being either: Enabled, Disabled.

AGP Driving Control

This category allows you to adjust the AGP driving force. Choose Manual to key in an AGP Driving Value in the next selection. The default setting is auto, which is recommended, setting auto help avoiding any error in your system.

AGP Driving Control

This category allows you to adjust the AGP driving force.

OnChip USB

This selection should be enabled if your system has USB installed on the system board, and you wish to use it. Even when so equipped, if you add a higher performance controller, you will need to disable this feature. So you have two choices; enabled and disabled.

USB Keyboard Support

Should be enabled from boot, if you have a USB (Universal Serial Bus) controller and a USB keyboard. So you have two choices; enabled and disabled. The disabled setting is for if you do not have a USB keyboard, or a USB controller.

OnChip Sound

This section allows you to Enable/Disable the onchip AC97 sound. You can either choose to enable or disable the onchip sound, by simply selecting the appropriate option.

OnChip Modem

This section allows you to Enable/Disable the onchip modem. You can either enable or disable the onchip modem, by selecting the appropriate option.

CPU to PCI Write Buffer

When this field is selected, it writes from the CPU to the PCI bus is buffered, to compensate for the differences between the CPU and the PCI bus. When disable, the writes are not buffered and the CPU must wait until the write is complete before starting another cycle. The default setting is Enable.

PCI Delay Transaction

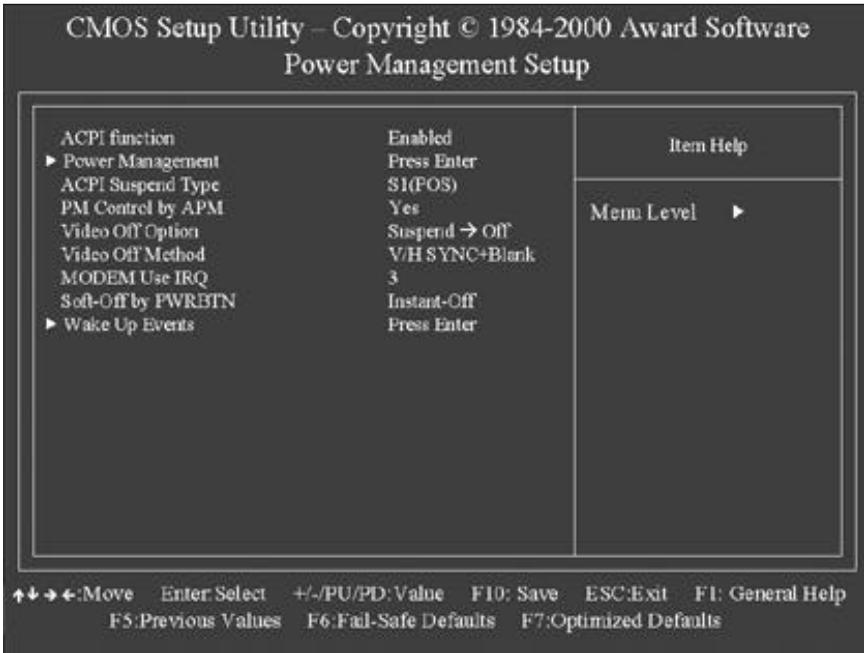
The chipset has an embedded 32-bit posted write buffer to support delay transactions cycles. Select enable to support compliance with PCI specification version 2.1; you may either enable or disable these settings.

Memory Parity/ECC Check

This item when enabled detects the memory parity and ECC (Error Checking and Correction); your available settings are enabled or disabled.

3-6 POWER MANAGEMENT SETUP

The Power Management Setup allows the user to manually configure your system to achieve the highest level of energy saving desired.



ACPI FUNCTION

This option allows the user to enable or disable the Advanced Configuration and Power Management (ACPI)

POWER MANAGEMENT

This option allows the user to select the desired level of power saving. The Power Management menu will offer the user three choices directly related to the following modes:

- Doze Mode
- HDD Power Down Mode
- Suspend Mode

There are three levels of Power Saving:

Min. Power Saving Lowest level of active power saving
Suspend mode = 1hr
Standby mode = 1hr
Doze mode = 1hr
HDD Power Down = 15min

Max. Power Saving Highest level of active power saving
Suspend mode = 1min
Standby mode = 1min
Doze mode = 1min
HDD Power Down = 1min

User Defined Saving Allows user to manually select desired level of Power Saving
The user will also have the option to disable (default) the Power Management option.

ACPI Suspend Type
This option allows the user to select the type of ACPI suspend used.

S3(STR) Suspend to Ram
The S3 state causes all system context including CPU, chipset and cache to be lost. Only the hardware memory and some CPU and L2 configuration will be retained.

PM Controlled by APM
When enabled, an Advanced Power Management device will enhance the Max. Power Saving mode and stop the internal CPU clock.

Video Off Option
This option allows the user to select the Power Saving mode, which shuts down the monitor during periods of extended inactivity.

NA Monitor will remain on during Power Saving activity
Suspend Monitor will be blanked when system enters the suspend mode
Doze Monitor will be blanked when system enters any Power Saving mode

Video Off Method
This option determines in what way the monitor will be shut down

V/H SYNC + Blank This option will cause the system to turn off the vertical and horizontal synchronization ports and write blanks to the video buffer.

Blank Screen This option will only write blanks to the video buffer

DPMS Support Initial display power management signaling

Mode Use IRQ

This option determines the IRQ, which the modem will use.

Soft-Off by PWRBTN

When enabled, this option allows the user to place the system in a very-low power usage state simply by using the ON/OFF power button. By pressing the OFF button the system will receive only enough power to detect power button activity as well as Resume by Ring activity. The Soft-Off by PWRBTN allows you to select two options **Instant Off** and **Delay 4 Sec.**

HDD Power Down

When selected, this option will power down the Hard Drive after a given time. The user may choose 1-15 minute time frames.

Doze Mode

After a set time of system inactivity this option when selected, will slow down the CPU clock while all other devices operate at full speed. The user may select **Disable**, **10sec-1hour**

Suspend Mode

When selected this option will shut down all devices except the CPU. The user has the option to Disable this function or to manually set the time after which the devices will be shut down. The user may select **Disable**, **10sec-1hour**

VGA

When set to ON (default), any event occurring at a VGA port will awaken a system, which has been powered down.

The Choice: ON, OFF

LPT & COM

When set to LPT/COM (default), any event occurring at a hard or floppy drive port will awaken a system, which has been powered down.

The Choice: LPT/COM, NONE, LPT, COM

HDD & FDD

When set to ON (default), any event occurring at a hard or floppy drive port will awaken a system, which has been powered down.

The Choice: ON, OFF

PCI Master

When set to On (default, any event occurring at a hard or floppy drive port will awaken a system, which has been powered down.

The Choice: ON, OFF

Wake Up on LAN/Ring

When set to Enabled, any event occurring to the Modem Ring will awaken a system, which has been powered down.

The Choice: Enabled, Disabled

RTC Alarm

When Enabled, you can set the date and time at which the RTC (real time clock) will awaken the system from Suspend Mode.

The Choice: Enabled, Disabled

Primary NTR

When set to On (default) any event occurring at will awaken a system, which has been powered down.

The Choice: ON, OFF

Active Monitoring

This is a list of IRQ's (Interrupt Requests) that can be exempted much as the COM ports and LPT ports above can. When an I/O device wants to gain the attention of the operating system, it signals the operating system by causing an IRQ to occur. When the operating system is ready to respond to the request, it interrupts itself and performs the task.

As shown above, the choices are Enabled or Disabled. Disabled is the default.

When set to Enabled, activity will neither prevent the system from going into a power management mode nor awaken it.

IRQ 3	(COM 2)
IRQ 4	(COM 1)
IRQ 5	(LPT 2)
IRQ 6	(Floppy Disk)
IRQ 7	(LPT 1)
IRQ 8	(RTC Alarm)
IRQ 9	(IRQ2 Redir)
IRQ 10	(Reserved)
IRQ 11	(Reserved)
IRQ 12	(PS/2 Mouse)
IRQ 13	(Coprocessor)
IRQ 14	(Reserved)
IRQ 15	(Reserved)

3-7 PNP/PCI Configurations



This section outlines the procedures for configuring the PCI (Personal Computer Interconnect) bus system. The PCI bus system allows I/O devices to operate at speeds nearing the speed the CPU itself uses when communicating with its own special components. It is recommended that only experienced users make any changes to the default settings, as the items covered in this section are very technical.

PNP OS Installed

Select Yes if the system operating environment is Plug-and Play aware.

The Choice: Yes, No.

Resource Controlled by

The Award Plug and Play BIOS can automatically configure the entire boot and Plus and Play - compatible devices. If you select Auto, all the interrupt requests (IRQ) and DMA assignment fields disappear, as the BIOS automatically assigns them.

The Choice: Auto, Manual

Reset Configuration Data

Normally, you have this field Disabled. Select Enabled to reset Extended System Configuration Data (ESCD) when you exit Setup if you have installed a new add-on and the system configuration has caused such as serious conflict that the operating system cannot boot.

The Choice: Enabled, Disabled

IRQ n Assigned to

When resources are controlled manually, assign each system interrupt as one of the following types, depending on the type of device using the interrupt:

Legacy ISA Devices compliant with the original PC AT bus specification, requiring a specific interrupt (such as IRQ4 for serial port 1).

The Choice: Enabled, Disabled

DMA n Assigned to

When resources are controlled manually, assign each system DMA channel as one of the following types, depending on the type of device using the interrupt:

Legacy ISA Devices compliant with the original PC AT bus specification, requiring a specific DMA channel
PCI/ISA PnP Devices compliant with the Plug and Play standard, whether designed for PCI or ISA bus architecture.

PCI Delay Transaction

The chipset has an embedded 32-bit posted write buffer to support delay transaction cycles. Select Enabled to support compliance with PCI specification version 2.1.

The Choice: Enabled, Disabled

Assign IRQ For USB/VGA/ACPI

Name the IRQ line assigned to the USB/VGA/ACPI (if any) on your system. Activity of the selected IRQ always awakens the system.

The Choice: Enabled, Disabled

3-8 Defaults Menu

After selecting “Defaults” from the main menu, there will be two options.

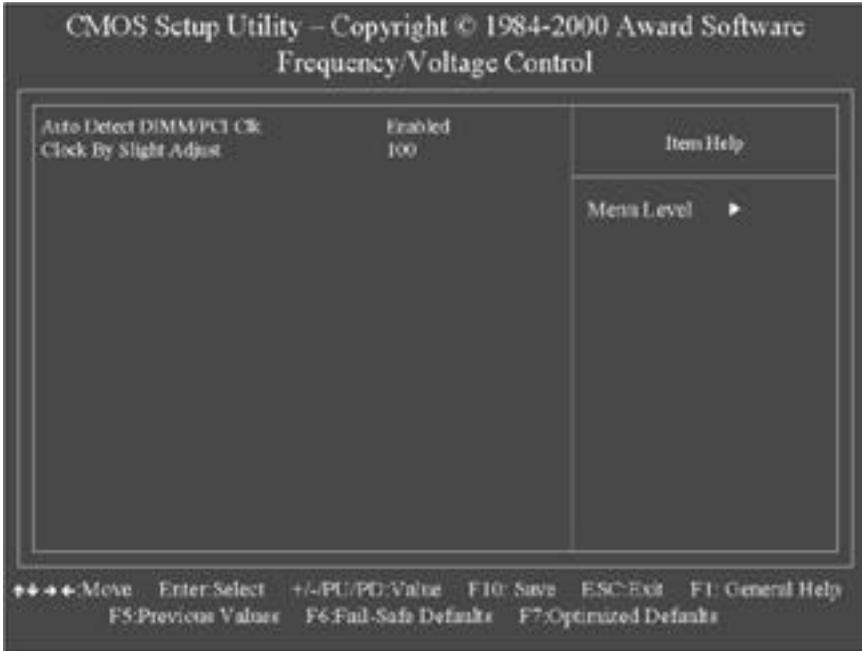
LOAD FAIL-SAFE DEFAULTS

This will load the most stable default bios settings. These settings will give you minimal system performance. This setting is mainly used for troubleshooting errors.

LOAD OPTIMIZED DEFAULTS

This will load the optimal factory default settings.

3-9 CPU Speed Setting



Auto Detect DIMM/PCI Clock

Used to Enable/Disable the system auto detect DIMM/PCI clock.

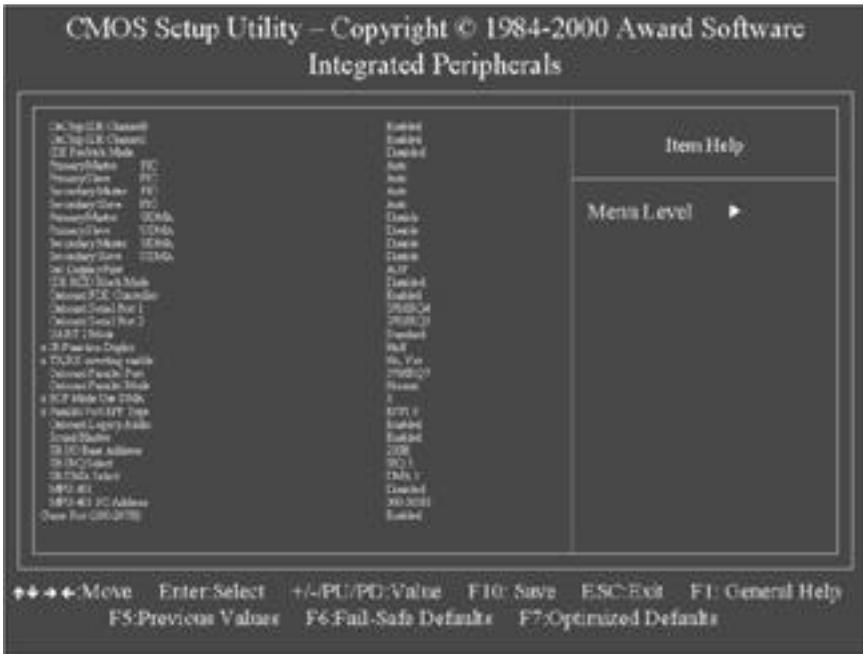
Spread Spectrum

Used to Enable/Disable the Clock Spread Spectrum.

CPU Host Clock

Here you have the option to change the CPU and PCI frequencies. It will allow you to control fan rotations, voltages, and temperatures.

3-10 Integrated Peripherals



OnChip IDE Channel0/Channel 1

This gives you the option to Enable/Disable either the primary or secondary IDE port.

Channel 0 = Primary Channel 1 = Secondary

IDE Prefetch Mode

IDE prefetching is used to access the IDE hard drive faster. You will need to disable this mode if there is an add-in IDE card that does not support prefetching.

IDE Primary/Secondary Master/Slave PIO

PIO (Input/Output) is the mode for which your hard drive supports. Newer IDE devices are usually Mode 3 or 4. When set to AUTO, the system will determine the most efficient mode.

IDE Primary/Secondary Master/Slave UDMA

This option may be enabled only if your IDE device supports DMA 33 and you are running Windows 95 OSR2 or higher or a third-party IDE bus master driver.

Init Display First

Here you have to tell the system what type of video card interface you are using. Choose PCI/AGP if you choose to use a PCI based graphics card or AGP/PCI if you have an AGP based graphics card.

IDE Block Mode

Most new IDE drives support block transferring for faster access. If you choose “Enable” then the system will automatically detect the optimal block read/writes per sector.

Onboard FDD Controller

To enable the on-board floppy controller, this option must be set to “enable”. If you have a faster add-in floppy controller then you will have to “disable” the on-board controller.

UART 2 Mode

This gives you the options to set your on-board IR (infra-red) port chip. The choices are standard, ASKIR, HPSIR

IR Function Duplex

Here you can set the IR port function to either full duplex or half duplex.

TX, RX Inverting enable

Depending on different hardware requirements, this is used to invert the transmit/receive settings. To avoid system errors, it is recommended that you do not change the default settings.

Onboard Parallel Port

Here you can change the on-board parallel port address.

378H/IRQ7: LPT1

278H/IRQ5: LPT2

3BCH/IRQ7: LPT3

or you can choose disable the on-board port.

Onboard Parallel Port Mode

The external parallel devices determine the parallel port mode.

EPP (Extended Parallel Port)

ECP (Extended Capabilities Port)

SPP (Standard Parallel Port)

ECP Mode Use DMA

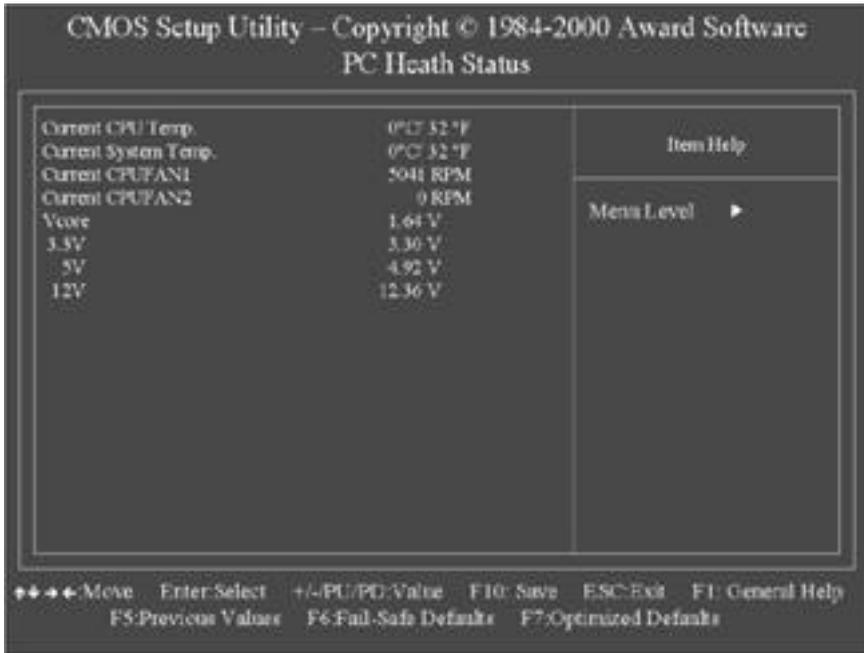
Choose a DMA (Direct Memory Access) channel for the port.

Parallel Port EPP Type

Choose version 1.7 or 1.9 for EPP mode.

3-11 PC HEALTH STATUS

The mainboard contains sensors, which read the systems temperature settings and fan rotation speeds.



3-12 PASSWORD SETTING

For added security, your system has BIOS password options to prohibit unwanted individuals from making harmful changes to your BIOS.

Supervisor password: Gives full access to view and make changes.

User password: Allows viewing of bios setting but changes cannot be made.

If you wish to disable either of the above choices then you can hit <enter> either on supervisor or user password.

The password option may also be used to keep unwanted parties from using the system. If you choose “system” in the Security option under the BIOS features Setup Menu, a password will be required to start up the system. If you choose “setup” then a password will only be required to enter the bios setup.

3-13 IDE HDD AUTO DETECTION

This option will automatically detect the parameters of an IDE hard disk drive and will enter them into the Standard CMOS setup option.

3-14 EXIT SELECTING

SAVE & EXIT SETUP

To save all CMOS selections to memory and restart the system, choose (Y)es.

EXIT WITHOUT SAVING

To exit the CMOS setup and restarting the system without saving any changes made.