Advanced Socket 462 Motherboard

GT133KT

User's Manual

http://www.bcmcom.com

Declaration

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WARNING: Replace your system's CMOS RAM battery only with the identical CR-2032 3V Lithium-Ion coin cell (or equivalent) battery type to avoid risk of personal injury or physical damage to your equipment. Always dispose of used batteries according to the manufacturer's instructions, or as required by the local ordinance (where applicable).

References:

This manual is created and written by Matthew Erickson based, but not limited, to the information from the GT133KT External Production Specifications, and GT133KT Specifications. If any comments, suggestions, or errors for this manual, please write e-mail to manual@bcmcom.com.

Compliance & Certificate

ISO 9001 Certificate:

This device was produced in our plant with advanced quality system certified by DNV QA Ltd. in according to ISO 9001. This Certificate is valid for:
DESIGN & MANUFACTURE OF MOTHERBOARD AND PERSONAL COMPUTERS.

CE Declaration:

CE marking is a visible declaration by the manufacturer or his authorized representatives that the electrical equipment to which it relates satisfies all the provisions of the 1994 Regulations.

Federal Communications Commission Statement:

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

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

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

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

The use of shielded cables for connection of the monitor to the graphics card or port is required to assure compliance with FCC regulations. Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

Easy Installation

Easy Installation Steps

The following "Easy Installation" steps are for users accustomed to the assembly of a computer system. For those individuals requiring more specific information, please refer to the more detailed descriptions located within the latter chapters of this manual.

Note: You must keep your power cable unplugged until the following installation steps are completed.

Getting Started

Touch a grounded metal surface to release static electricity stored in your body before unpacking your motherboard. For details please refer to Precaution section in Chapter 3.

Install the CPU by correctly aligning the CPU with the Socket 462 as noted in the motherboard diagram. Once aligned, press down on the CPU gently but firmly and lock it. Next, install the 3.3 volt un-buffered SDRAM into the 168 pin DIMM slots. Please see Sec. 3.4.

Plug in any peripheral card(s) that you want to be included in the setup. Please see Sec. 3.5.

Plug in all cables included in the package except for the power cord. Please see Sec. 3.6.

Please recheck all steps to ensure no mistakes have been made and then plug in the power cord and turn on the power to enter the BIOS setup, Chapter 4.

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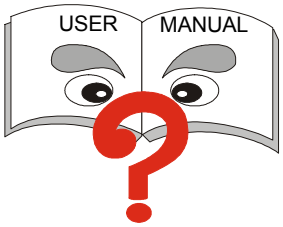
1. Introduction

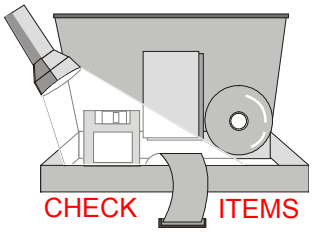
1.1 How To Use This Manual

This manual provides information necessary for Original Equipment Manufacturers (OEMs) and home users to build a ATX compatible system using Intel Socket 462 CPU motherboard. Follow the installation procedure presented on the **Easy Installation Page** and refer to the section number following each step if you require more detailed instructions.



1.2 Check Your Device Items

The standard package should contain the following items. If you find any of these items be missing or damaged, please contact your retailer.



- 1 GT133KT motherboard
- 1 IDE ribbon cable (80-pin for ATA66)
- 1 floppy ribbon cable
- 1 CD with drivers for GT133KT Motherboard and all of the components
- 1 Users Manual (this manual)
- 1 Norton Anti Virus (optional)

2. Features

2.1 Features Of The Motherboard

This product is based on the Micro ATX form factor. It features the advanced multimedia function and provides support for business PC maker. This motherboard incorporates VIA KZ133 chipset. Providing features such as 200MHz FSB, 4X AGP support, Ultra DMA 33/66 IDE interface, PC-133 memory support, ACPI Power Management, 10/100 Mb/s LAN (Optional), USB connectivity, and soft sound support.

Processor

- Single AMD Socket-462 mechanism for AMD Athlon and Duron Processors
- 200 MHz FSB

Core Logic Chipset

- The VIA KZ133 Chipset: VIA VT8363 North Bridge, VIA VT82C686A Super South Bridge

System Memory

- Two DIMM Sockets: 1GB Memory Capacity
- Supports Double-Sided DIMM Modules: X8, X16, and X32 Device Widths
- Supports 100 and 133 MHz System Memory Bus Frequency
- Unbuffered, Non-ECC DIMM

PCI Bus Master IDE Controller

- Two PCI Busmaster IDE Connectors: 4 IDE Devices Maximum
- Supports Ultra-DMA: 33Mb/s, and 66Mb/s

Integrated I/O

- VIA VT82C686A Integrated Super I/O Controller
- 1 Parallel Port: SPP, ECP, EPP, and ECP+EPP
- 1 Serial Port: 16C550 Fast UART Compatible – 115Kb/s
- 1 Serial Connector: 16C550 Fast UART Compatible – 115Kb/s
- 1 PS/2 Mouse and Keyboard Ports
- 1 Floppy Connector
- 2 Standard Rear USB Ports and 2 Front USB Connectors
- 3 Fan Connectors
- 1 IrDA TX/RX Connector

Features

System BIOS

- 2Mb Flash Award BIOS
- PC-99 and PnP (Plug 'n Play) Compatible
- Supports ACPI (Advanced Configuration and Power Interface), and APM (Advanced Power Management)
- Bootable from CD-ROM, SCSI, IDE, FDD, ZIP, and LS-120

LAN (Optional)

- Realtek RTL8139 10/100 Mb/s LAN controller with 1 RJ45 connector.

Green Features

- Power Management APM Version 1.2
- Intelligent Power Management Fully Supported by Windows 2000 with On-Now and Supports All Wake-Up States: S1, S2, S3, S4, and S5
- Supports WOL (Wake On LAN), WOR (Wake On Ring), Keyboard, Mouse, and USB Wake-Up

Sound System

- AC97 Revision 2.1 Included In VT82C686A
- 3 Audio Phone Jacks (Line-Out, Line-In, and Mic-In) and 1 MIDI/Game port
- Includes One of Each: Modem-In, CD-In, and Aux-In

Expansion Slots

- 1 AGP (2x/4x) Slot
- 3 PCI Slots

Other Features

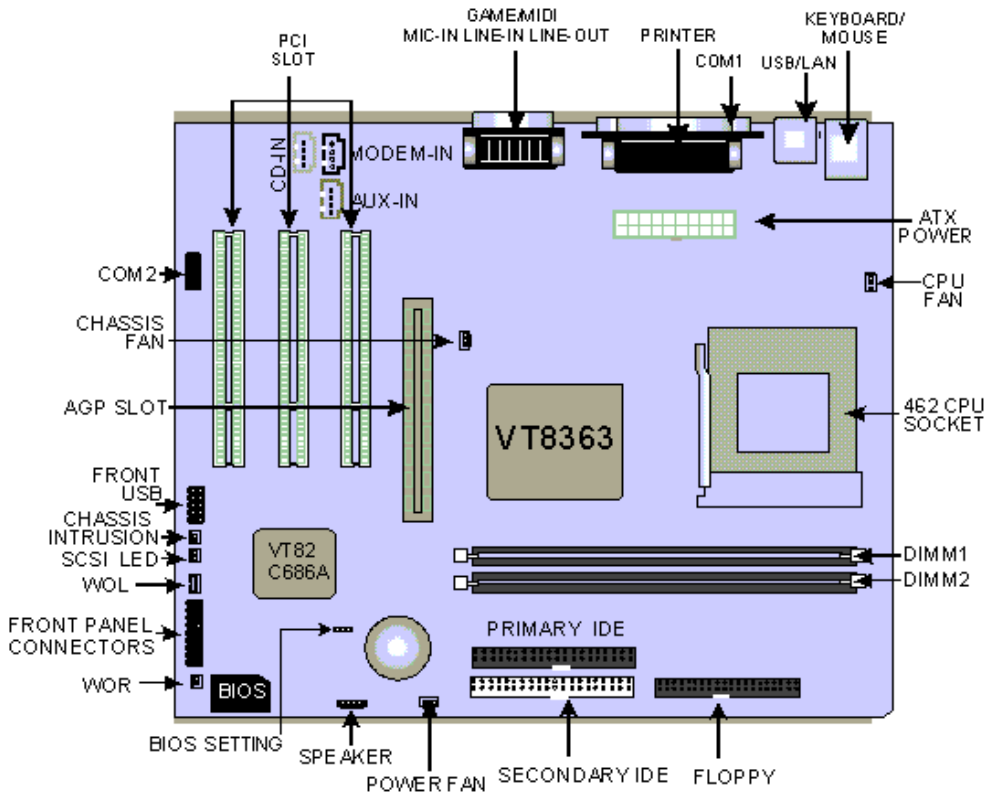
- On Board Buzzer
- Hardware Monitor Subsystem
- Y2K Compliant
- Auto Time Adjust for Daylight Saving and Leap Year
- SMBIOS 2.3 Compliant
- BIOS Recovery Via Floppy
- ACPI S3 Suspend To RAM and S4 Suspend To Disk

Mechanical

- This motherboard complies with the Micro ATX Form Factor specification and has a four layers with dimensions of 9.6" x 8.9"

3. Installation

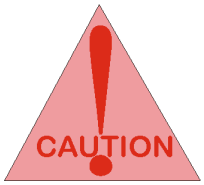
3.1 Motherboard Layout & Main Parts



Installation

Precaution Before Start

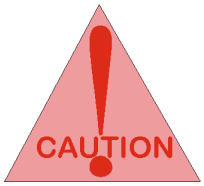
Static Electricity Damage:



Static electricity can easily damage your motherboard. Observing a few basic precautions can help safeguard against damage that could result in expensive repairs. Follow the simple measures below to protect your equipment from static electricity damage.

1. Keep the motherboard and other system components in their anti-static packaging until you are ready to install them.
2. Touch a grounded surface before you remove any system component from its protective anti-static packaging. Unpacking and installation should be done on a grounded, anti-static mat. The operator should be wearing an anti-static wristband, grounded at the same points as the anti-static mat.
3. After removing the motherboard from its original packaging, only place it on a grounded, anti-static surface component side up. Immediately inspect the board for damage. Due to shifting during shipping, it is suggested that the installer press down on the entire socket ICs to ensure they are properly seated. Do this only with the board placed on a firm flat surface.
4. During configuration and installation touch a grounded surface frequently to discharge any static electrical charge that may have built up in your body. The best precaution is to wear a grounded wrist strap. Avoid touching the components when handling the motherboard or a peripheral card. Handle the motherboard and peripheral cards either by the edges or by the peripheral card case-mounting bracket.

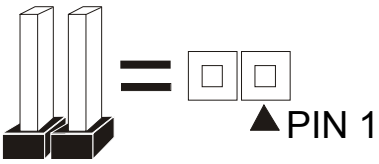
Misplaced Jumper Damage:

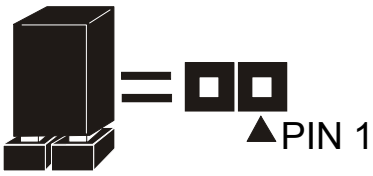


There are critical headers used for connectors or power sources. These are clearly marked separately from the jumpers listed in Motherboard Layout. Incorrect setting jumpers and connectors may lead to damage to your motherboard. Please pay special attention not to connect these headers in wrong directions

3.2 Connectors and Jumpers

This motherboard requires jumper setting for some features. The following graphic shows you how to set a proper jumper setting.





Note: In the following pages, the triangle ▲ mark stands for pin 1 of the connector or header.

Connectors/Jumpers List

J1: USB1, USB2, and LAN (Optional)
J3: Keyboard, and Mouse Ports
J4: Game/MIDI Port
J5: Sound Ports
J6: Parallel Port
J8: PCI 3 Slot
J9: PCI 2 Slot
J10: PCI 1 Slot
J11: AGP Slot
J12: Front USB Header
J13: Chassis Intrusion Connector
J14: DIMM 1 Slot
J15: DIMM 2 Slot
J16: Primary IDE Connector
J17: Secondary IDE Connector
J18: Floppy Connector
JP1: Serial Port
JP2: MODEM-IN Connector (Green)
JP3: CD-In Connector (Black)
JP4: Aux-In Connector (White)
JP5: ATX Power Connector
JP6: Serial Port 2 Connector
JP7: CPU Fan Connector
JP8: Chassis Fan Connector
JP9: Socket 462 CPU Socket
JP10: SCSI LED Connector
JP11: WOL (Wake On LAN) Connector
JP12: Front Panel Connector
JP13: Clear Password Header
JP15: WOR (Wake On Ring) Connector
JP16: Power Fan Connector
JP17: Speaker Connector

3.3 CPU (Central Processing Unit)

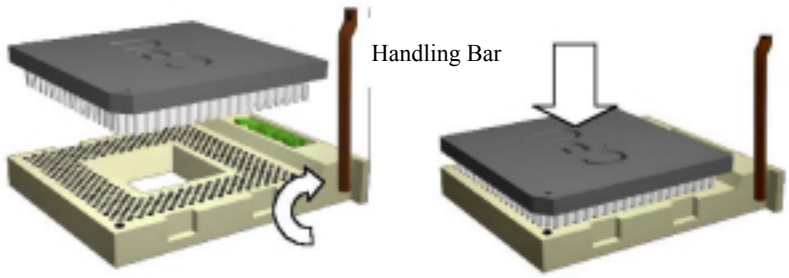
This motherboard supports a PGA 462 AMD Athlon family processor. To complete CPU installation, please install CPU to socket firmly, presented in Sec. 3.3.1.

3.3.1 Install a CPU

Please follow the below steps to install your CPU.

Step 1: Pull the handling bar of the socket upward to the other end to loosen the socket's openings.

Step 2: Place the CPU on the middle of the socket, orienting its beveled corner to line up with the socket's beveled corner. Make sure the pins of the CPU fit evenly to the socket openings.



Step 1 Step 2

Step 3: Press the handling bar downward to fasten the CPU to the socket.

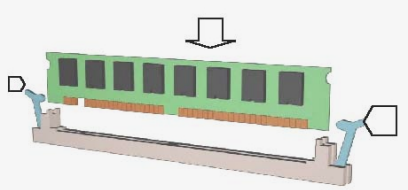
Warning: It is strongly recommended that a heatsink and CPU cooling fan be used to prevent the CPU from overheating. Applying a thermal of jelly between the CPU and the heatsink/fan will further cool the CPU.

3.4 System Memory (DRAM)

3.4.1 DIMM (Dual Inline Memory Module)

The motherboard features two 168-pin DIMM sockets, share memory module. If you have only one DIMM RAM, note that you must insert it into DIMM 1. You can configure the system memory size from 16MB to 1GB in a variety of ways by using different combinations of the two 168-pin DIMMs.

3.4.2 Installation Procedure



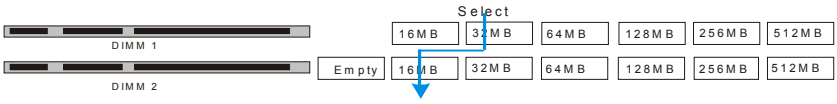
Step1: Make sure Pin 1 of the DIMM match with pin 1 of the DIMM socket.

Step2: Insert the DIMM module into the DIMM socket vertically. After inserting the DIMM module completely into the socket, push up on the socket latches securing the DIMM into place. If the pin 1 of the DIMM module does not line up with pin 1 of the socket, the DIMM module will not be inserted correctly into the socket.

Be careful not to misfit the DIMM into DIMM socket in wrong direction. This module can be inserted into the socket only one way. To release the memory module, push both latches down and carefully rock the module forward and backward while slowly lifting it upward.

3.4.3 DIMM Combinations

Each DIMM socket can be inserted with 8MB, 16MB, 32MB, 64MB, 128MB, 256MB, and 512MB. For example, the following figure shows you one way to insert your DIMMs.



Select DIMM 1: 32MB
DIMM 2: 16MB

Total
32+16=48MB

Select 1 out of 6 Choices (16MB, 32MB, 64MB, 128MB, 256MB, and 512MB) in DIMM 1. Then, repeat again in DIMM 2 for 7 choices (Empty, 16 MB, 32 MB, 64 MB, 128MB, 256MB, and 512MB).

3.5 Expansion Slots

This motherboard contains 4 expansion slots. One AGP and three 32-bit PCI expansion slots.

AGP Expansion Slot

The Accelerated Graphics Port (AGP) is a high performance interconnect targeted at 3D graphical display applications and is based on a set of performance extensions or enhancements to the PCI bus. (AGP interface specification Rev. 2.0 compliant.)

Note: The motherboard supports AGP 1X/2X/4X mode.

To install expansion cards, please read the expansion card's documentation for instructions and cautions.

PCI Expansion Slots

All PCI expansion slots accept PCI bus master cards and are fully supported by the PCI 2.1 and PCI 2.2 specifications.

3.5 Connectors, Headers, and Ports

This motherboard contains IDE, floppy, power connector, front panel, and additional connectors.

3.6.1 Primary IDE Connector (J16, 39-pin block, Black)

This connector supports two primary channel IDE devices as well as the LS120 floppy, Zip, CD-ROM, and DVD-ROM drives via a ribbon cable. When two IDE devices are installed using the primary IDE connector, make sure that the second IDE device is set to slave mode as indicated in the device's manual.

3.6.2 Secondary IDE Connector (J17, 39-pin block, White)

This connector supports two secondary channel IDE devices as well as the LS120 floppy, Zip, CD-ROM, and DVD-ROM drives via a ribbon cable. When two IDE devices are installed using the secondary IDE connector, make sure that the second IDE device is adjusted to slave mode as indicated in the device's manual.

Warning: When you connect a ribbon cable to these ports, you must orient the cable connector so that the PIN 1 edge of the cable is at the PIN 1 edge of the on-board connector.

3.6.3 Floppy Drive Connector (J18, 33-pin block)

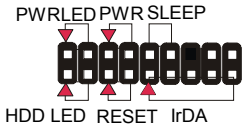
The FDC sub-system can control three types of floppy drives (1.2, 1.44, and 2.88 MB) and/or compatible tape drives. The connection to the floppy drive is via a header (J14). The floppy disk interface includes 48mA current support and inputs on the drive interface.

3.6.4 ATX Power Connector (JP5, 20-pin block)

This connector supports one standard ATX power supply. When connecting, make sure the lock key matches the hook attached on a power supply cable. The power cord should be unplugged when you connect it.

3.6.5 Front Panel Header (JP12, 17-pin block)

Front Panel includes headers for the following six I/O connectors: Power Switch, Power LED, Reset, Sleep, IrDA, and HDD LED.



IrDA Header (Pins 9, 11, 13, 15, and 17)

The motherboard offers an IrDA infrared header that supports third party infrared modules. The case must reserve space for the IR module if you want to use the IrDA function. This option supports wireless transmission and reception of infrared data. The module mounts in a small opening on the system case that supports this feature. The efficient distance is 100cm and the transfer rate is 115,200 bits/s.

Reset Switch Header (Pins 5, and 7)

This connector supports the front panel case-mounted reset button. It is advised that the reset switch be used for rebooting the system in order to extend the life of the system's power supply.

HDD LED Header (Pins 1, and 3)

The motherboard supports one 2-pin header for connecting to front Panel Hard Disk activity LED indicator.

Sleep Switch Header (Pins 10, and 12)

When the APM (Advanced Power Management) feature is enabled in the system BIOS and the operating system's APM driver is loaded, the system can enter the sleep (standby) mode in one of the following ways:

- Optional front panel sleep/resume button
- Prolonged system inactivity using the BIOS inactivity timer feature

The 2-pin header supports a front panel sleep/resume switch, which must be a momentary SPST type that is normally open

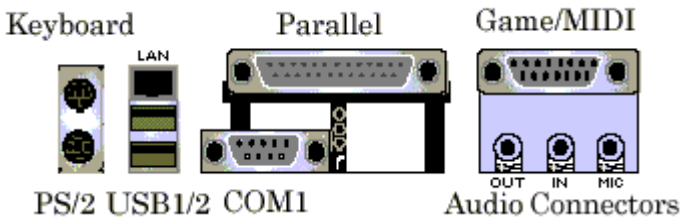
Power Switch Header (Pins 6, and 8)

This connector supports the ATX case-mounted Power Switch, which in turn supports System Suspend function. When the BIOS sets the Power Button function to "Suspend", the system can be set to the suspended mode once you push the power switch for no longer than 4 seconds. If the power switch is pushed down for over 4 seconds, the system will be totally powered off. When this BIOS setting sets to "Instant-off", then Power Switch function work as a regular power switch.

Power LED Header (Pins 2, and 4)

This header can be connected to a 2-color LED that will light yellow or green when the computer is in "Suspend" or "Normal" operation.

3.6.6 Back Panel Connectors



PS/2 Keyboard and Mouse Ports (J3)

The motherboard offers 1 PS/2 Keyboard Port and 1 PS/2 Mouse Port.

USB (Universal Serial Bus) and LAN (Local Area Network) (Optional) (J1)

The motherboard has two USB ports. USB devices provide a more convenient operating environment and improve data transferring capacity. True Plug & Play. This new bus technology will support over 127 different peripherals through a hub. This also supports combination of both low and high speed devices (version 1.0a). The LAN is optional, if installed, it will support 10/100 Mb/s transmission using RJ45 jack.

Parallel Port (J6)

The motherboard includes a parallel port (SPP, EPP, and ECP compatible). The parallel port is capable of being disabled or remapped to either the secondary LPT address or the primary LPT address through BIOS if another parallel port is installed.

Serial Port (JP1)

The motherboard has one serial port. The electrical characteristics are compliant with the EIA-232-D Serial Communications Specifications. The serial port may be disabled through the BIOS.

Sound Ports (J5)

The motherboard also provides external sound system through an user accessible stereo jack connector soldered to the PWA. This jack allow the connection of self-amplified speakers, Line-In voice input and Mic-In voice input.

Game/MIDI Port (J4)

The motherboard integrates a Game/MIDI port. This port can let you plug a joystick or a MIDI device.

3.6.7 Additional Connectors and Headers

Front USB Connector (J12, 9-pin)

The motherboard offers you to hook up front USB ports via chassis. It is always enabled.

Clear Password Header (JP13, 3-pin)

To clear CMOS. By closing JP13, pins 1 and 2 will clear the CMOS. Under the normal operation, leave JP13, pins 2 and 3 closed.

WOR (Wake On Ring) Connector (JP15, 2-pin)

This connector is used for resuming from either the APM sleep mode or the ACPI S1 state. It requires only one call to access the computer. In addition, it detects incoming call similarly for external and internal modems. It also requires modem interrupt to be unmasked for correct operation.

WOL (Wake On LAN) Connector (JP11, 3-pin)

This connector is used for remote wakeup of the computer through a network. WOL requires a PCI add-in network interface card (NIC) with remote wakeup capabilities. The remote wakeup connector on the NIC must be connected to the onboard WOL connector. For Wake on LAN, the 5-V standby line for the power supply must be capable of delivering 5V at 720mA.

Chassis Intrusion Connector (J13, 2-pin)

This connector is for a chassis designed for chassis intrusion detection. After-market toggle switches may also be installed to the chassis panel or on any removable components. Two wires should be available from the chassis to connect to this connector. When any chassis component is removed, the contact should open and the motherboard will record a chassis intrusion event. The event can then be processed by software such as LDCM.

Power Fan Connector (JP16, 3-pin)

This connector is used for chassis fan or power fan if needed.

Chassis Fan Connector (JP8, 3-pin)

This connector is used for chassis fan or power fan if needed.

CPU Fan Connector (JP7, 3-pin)

The CPU may have an attached heatsink and fan; connect the CPU fan assembly power to this connector.

CD-In Connector (JP3, 4-pin, Black)

A connector is available for audio input from CD-ROM drives.

Aux-In Connector (JP4, 4-pin, White)

Access the Aux-In connection for audio input from the auxiliary devices.

MODEM-In Connector (JP2, 4-pin, Green)

Access the MODEM connection for audio input from the modem.

Serial Port 2 Connector (JP6, 9-pin)

For 2nd COM connection.

Speaker Connector (JP17, 4-pin)

For external speaker connection, but not part of Audio Codec.

Are You Ready To Turn On The System?

Check Again

1. Is the CPU installed exactly and firmly into the socket (Sec. 3.3)?
2. Are all the DRAM modules installed properly (Sec. 3.4)?
3. Are you sure that all the connectors (described in Sec. 3.6) have been connected to their related devices (Sec. 3.6)?

Yes, I have checked and assured the above steps!

Now get ready to turn on your device by following the steps below.

1. Mount your motherboard to the chassis frame and close the case cover.
2. Connect the power supply cord into inlet of the system case.
3. Connect the power supply cord into an outlet of power supply.
4. Connect Monitor signal cable to the system VGA port and the monitor power cord to power outlet.
5. Now turn on the monitor and system power.

After Power On, the power LED on the front panel of the system case will light. For ATX power supplies, the system LED will light when the ATX power switch is pressed.

The system will then do a power-on-self-test, and additional messages will appear on screen. If the screen blinks or the tests stop more than 30 seconds, the system may have failed the power-on-self-test. If so, please recheck the above steps or call your retailer for assistance.

If the power-on-self-test goes well, hold down <F2> key on the keyboard to enter BIOS Setup. Next, follow the instructions in the next chapter: **BIOS SETUP.**

4. BIOS Setup

The motherboard uses AWARD BIOS, stored in a flash EEPROM. All of the configuration information stored in the CMOS.

4.1 BIOS Setup

The AWARD BIOS is immediately activated when you first turn on the computer. The BIOS reads system configuration information in CMOS RAM and begins the process of checking the system and configuring it through the Power-On-Self-Test (POST). When these preliminaries are finished, the BIOS seek an operation system on the data storage devices (hard drive, floppy drive, etc.). The BIOS launches the operating system and hands over control of system operation to it.

To start Setup, press the <Del> key during boot-up before or while a message similar to this appears briefly at the bottom of the screen during the POST: **Press <DEL> key if you want to enter SETUP**

If the above message disappears before you have responded and you still wish to enter Setup, reboot the system to try again by pressing the "RESET" button on the system case. You may also restart by simultaneously pressing the <CTRL>, <ALT> and <DEL> keys.

Setup Keys

The keys below help you navigate in Setup.

<↑> , <↓>	Move to previous or next item.
<←> , <→>	Move to the item in the left or right hand.
<ESC>	Main Menu – Quit and not save changes into CMOS.
<ESC>	Other Pages – Exit current page and return to Main Menu.
<PgUp> / <+>	Increase the numeric value or make changes.
<PgDn> / <–>	Decrease the numeric value or make changes.
<F1>	General help.
<F2>	Change color from total 16 colors. Press <F2> to select color forward, Press <Shift> and <F2> to select color backward.
<F10>	Save all the CMOS changes, only for Main Menu .

Getting Help

Press <F1> key to pop up a small help window that describes the appropriate keys to use, and the possible selections for each highlighted item. To exit the Help Window press <ESC> or the <F1> key again.

4. BIOS Setup

4.2 Main Setup Menu

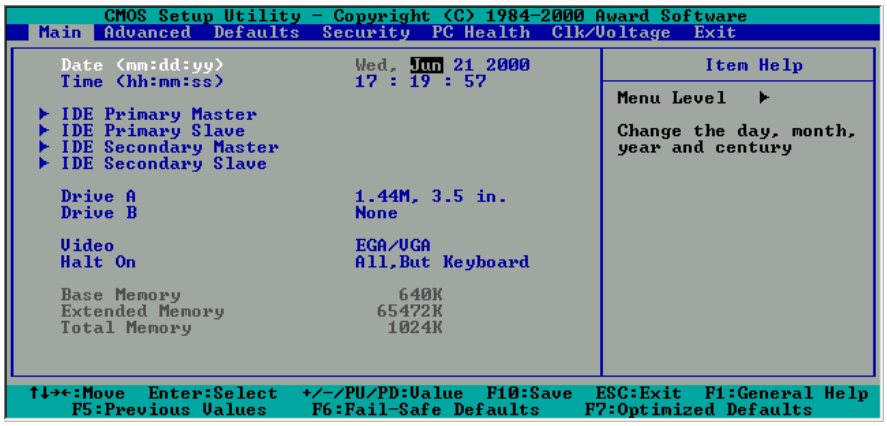
When you enter the Award BIOS CMOS Setup Utility, a Main Menu appears on the screen. The Main Menu allows you to select from several Setup functions and two exit choices. Use the arrow keys to select among the items and press <ENTER> key to accept and enter the sub-menu.

Following is a brief summary of each Setup category.

Menu Item	Description
Main	Options in the original PC AT-compatible BIOS.
Advanced	
Advanced BIOS Features	AWARD enhanced BIOS options.
Advanced Chipset Features	Options specific to your system chipset.
Integrated Peripherals	I/O subsystems that depend on the integrated peripherals controller in your system.
Power Management Setup	Power Management options.
PnP/PCI Configurations	Plug and Play standard and PCI Local Bus configuration options.
Default	
Load Fail-Safe Defaults	AWARDBIOS will automatically set all AWARDBIOS Setup options to a complete set of default settings when you choose this option.
Load Optimized Defaults	Setup defaults are factory settings for optimal-performance system operations.
Security	
Change Supervisor Password	Once this item is set with a password.
Change User Password	Change, set, or disable a password. In BIOS versions that allow separate user and supervisor passwords, only the supervisor password permits access to Setup. The user password generally allows only power-on access.
PC Health	Monitors the status for the system.
Frequency/Voltage Control	Displays the information for frequency/voltage.
Exit	
Save & Exit Setup	Save settings in nonvolatile CMOS RAM and exit Setup.
Exit Without Saving	Abandon all changes and exit Setup.

4.3 Standard CMOS Features Menu

In the Standard CMOS Menu, you can set the system clock and calendar, record disk drive parameters and the video subsystem type, and select the type of errors that stop the BIOS POST.



Date

The BIOS determines the day of the week from the other date information. This field is for information only. Press the left or right arrow key to move to the desired field (date, month, year). Press <PgUp> or <PgDn> key to increment the setting, or type the desired value into the field.

Time

The time format is based on the 24-hour military-time clock. For example, 1 p.m. is 13:00:00. Press the left or right arrow key to move to the desired field. Press the <PgUp> or <PgDn> key to increment the setting, or type the desired value into the field.

Hard Disks

The BIOS supports up to four IDE drives. This section does not show information about other IDE devices, such as a CD-ROM drive, or about other hard drive types, such as SCSI drives.

NOTE: We recommend that you select type AUTO for all drives.

The BIOS can automatically detect the specifications and optimal operating mode of almost all IDE hard drives. When you select type AUTO for a hard drive, the BIOS detect its specifications during POST, every time the system boots.

If you do not want to select drive type AUTO, other methods of selecting the drive type are available:

1. Match the specifications of your installed IDE hard drive(s) with the preprogrammed values for drive types 1 through 45.
2. Select USER and enter values into each drive parameter field.
3. Use the IDE HDD AUTO DECTECTION function in Setup.

Here is a brief explanation of drive specifications:

- Type: The BIOS contains a table of pre-defined drive types. Each defined drive type has a specified number of cylinders, number of heads, write precompensation factor, landing zone, and number of sectors, Drives whose specifications do not accommodate any pre-defined type are classified as type USER.
- Size: Disk drive capacity (approximate). Note that this size is usually slightly greater than the size of a formatted disk given by a disk-checking program.
- Cyls: Number of cylinders
- Head: Number of heads
- Precomp: Write precompensation cylinder
- Landz: Landing zone
- Sector: Number of sectors
- Mode: Auto, Normal, large, or LBA
- Auto: The BIOS automatically determines the optimal mode.
- Normal: Maximum number of cylinders, heads, and sectors supported are 1024, 16 and 63.
- Large: For drives that do not support LBA and have more than 1024 cylinders.
- LBA (Logical Block Addressing): During drive accesses, the IDE controller transforms the data address described by sector, head, and cylinder number into a physical block address, significantly improving data transfer rates. For drives with greater than 1024 cylinders.

Drive A/B type

Select the correct specifications for the diskette drive(s) installed in the computer.

None	No diskette drive installed.
360K, 5.25 in	5-1/4 inch AT-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.

Memory

RAM is the computer's working memory, where the computer stores programs and data currently being used, so they are accessible to the CPU.

Base Memory

Typically 640 KB which is called a conventional memory. The DOS operating system and conventional applications use this area.

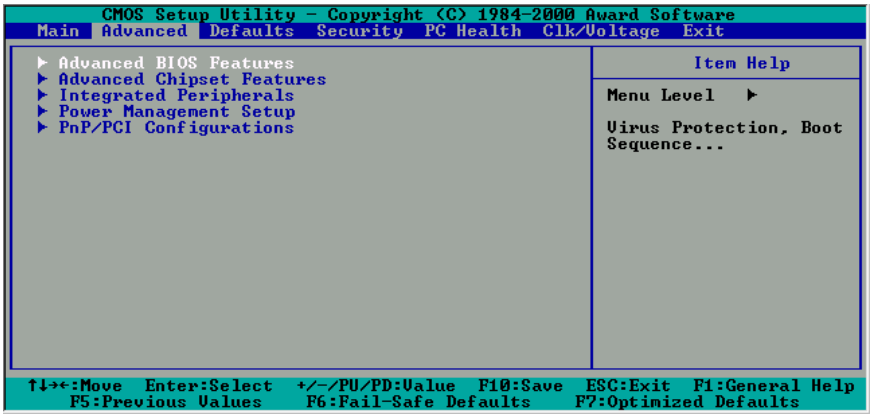
Extended Memory

Above the 1 MB boundary. Early IBM personal computers could not use memory above 1 MB, but current PCs and their software can use extended memory.

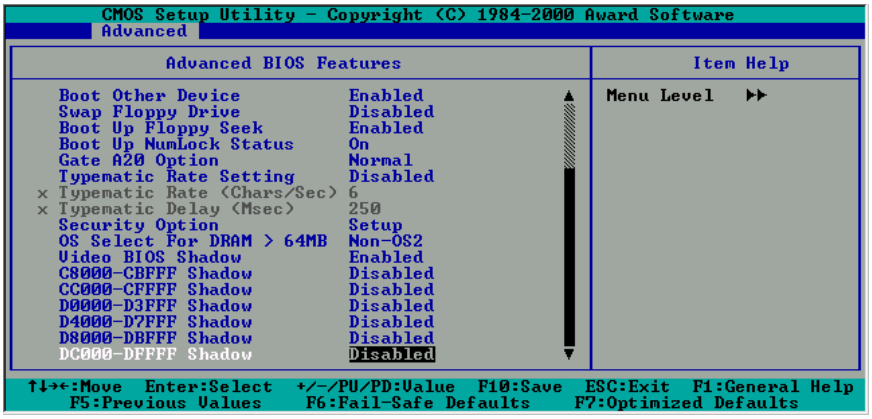
Total Memory

System total memory is the sum of base memory, extended memory, and other memory.

4.4 Advanced BIOS Features Menu



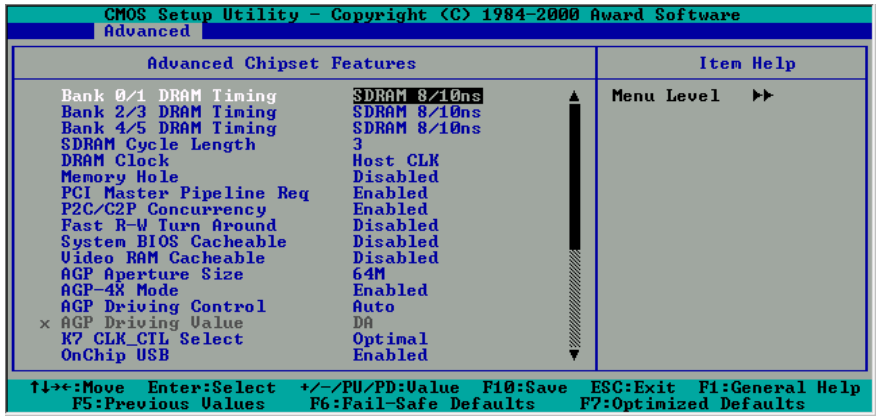
4. BIOS Setup

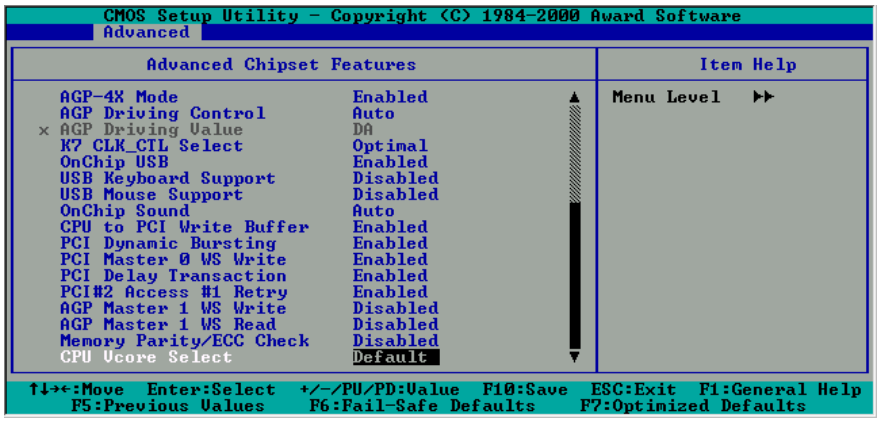


Menu Item	Setting	Description
Virus Warning	Disabled	No warning message will appear when anything attempts to access the boot sector or hard disk partition table.
	Enabled	Activates automatically when the system boots up and causes a warning message to appear when anything attempts to access the boot sector or hard disk partition table.
CPU Internal Cache	Disabled	Disable cache.
	Enabled	Enable cache.
External Cache	Disabled	Disable cache.
	Enabled	Enable cache.
CPU L2 Cache ECC Checking	Disabled	Disable this function.
	Enabled	Enable CPU L2 Cache ECC(Error Correction Code) checking.
Quick Power On Self Test	Disabled	Normal POST
	Enabled	Enable quick POST
First Boot Device	Floppy, LS120, HDD-0, SCSI, CDROM,HDD-1 ~ HDD-3, ZIP100, LAN, Disabled	As the first boot drive after AWARDBIOS POST completes
Second Boot Device	Same as above	As the second boot drive after AWARDBIOS POST completes
Third Boot Device	Same as above	As the third boot drive after AWARDBIOS POST completes

Boot Other Device	Disabled	Disable this function.
	Enabled	Load the operating system from other system devices.
Swap Floppy Drive	Enabled	Switch the floppy disk drives between being designated as A and B
	Disabled	Default setting.
Boot Up Floppy Seek	Enabled	Determines if the floppy disk drive installed is 40 or 80 tracks
	Disabled	Speeds up the booting process.
BootUp Num-Lock	On	Turns the Num Lock key on when the computer is booted
	Off	Turns the Num Lock key off when the computer is booted
Gate A20 Option	Fast	Lets chipset control GateA20
	Normal	A pin in the keyboard controller controls GateA20
Typematic Rate Setting	Enabled	Key strokes repeat at a rate determined by the keyboard controller. The typematic rate and delay can be selected when set at *Enabled.*
	Disabled	Disables this function.
Typematic Rate (Chars/Sec)	6,8,10, 12, 15, 20, 24, 30	Sets the number of times per second that a keystroke is repeated when the key is held down.
Typematic Delay (Msec)	250, 500, 750, 1000	Sets the delay time after the key is held down, before it begins to repeat the keystroke.
Security Option	Setup	The system will boot, but access to Setup will be denied if the correct password is not entered at the prompt.
	System	The system will not boot and access to Setup will be denied if the correct password is not entered at the prompt.
OS Select For DRAM>64MB	Non-OS2 OS/2	Selects the operating system that is running with greater than 64MB of RAM on the system.
Video BIOS Shadow	Enabled	Enabled the Video BIOS Shadow
	Disabled	Closes this function.

4.5 Advanced Chipset Features Menu



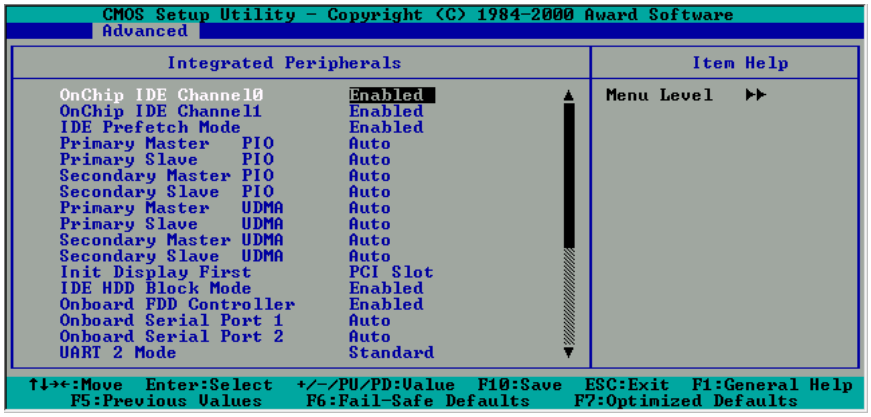


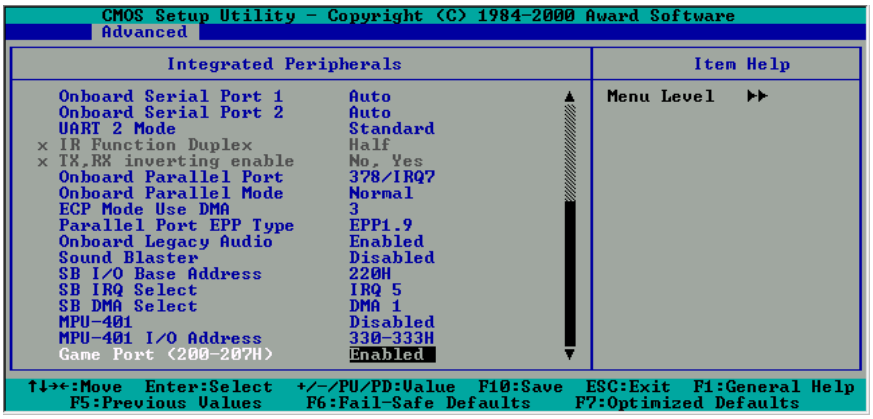
Menu Item	Setting	Descriptions
Bank 0/1 DRAM Timing	SDRAM 8/10ns	It allows you to select the value in the field, depending on whether the board has paged DRAMs or EDO (extended data output) DRAMs.
Bank 2/3 DRAM Timing	SDRAM 8/10ns	
Bank 4/5 DRAM Timing	SDRAM 8/10ns	
SDRAM Cycle Length	3, 2	3 is for slower SDRAM DIMM module. 2 is for faster SDRAM DIMM module.
DRAM Clock	Host Clock, HCLK-33M	Allows you to control the DRAM speed.
Memory Hole	Disabled	Closes this function.
	Enabled	In order to improve performance, certain space in memory is reserved for ISA cards. This memory must be mapped into the memory space below 16MB.
PCI Master Pipeline Req	Enabled	
	Disabled	
P2C/C2P Concurrency	Enabled	Enables the PCI to CPU, CPU to PCI concurrency.
	Disabled	Closes this function.
Fast R-W Turn Around	Enabled	Enables the fast read, write turn around.
	Disabled	Closes this function.
System BIOS Cacheable	Disabled	Closes this function.
	Enabled	Allows for the caching of the system BIOS ROM at F0000h-FFFFFh, resulting in better system performance.
Video RAM Cacheable	Disabled	Closes this function.
	Enabled	Allows for the caching of the video RAM, resulting in better system performance.
AGP Aperture Size	64MB, 32MB	Means the AGP Graphics Aperture Size is 64MB or 32MB.
AGP 4X Mode	Enabled	Enable this function.
	Disabled	Closes this function.
AGP Driving Control	Auto	
	Manual	

AGP Driving Value	DA~DF, E0~E9, EA~EF, F0~9, FA~FF, 00~09, 0A~0F, 10~19, 1A~1F,…….	
K7 CLK_CTL Select	Default	
	Optimal	
OnChip USB	Disabled	Closes this function.
	Enabled	It should be enabled if your system has a USB installed on the system board and you want to use it. Even when so equipped, if you add a higher performance controller, you will need to disable this feature.
USB Keyboard Support	Disabled	Disable the USB keyboard.
	Enabled	Chooses this item to enable USB keyboard.
USB Mouse Support	Disabled	Disable the USB Mouse.
	Enabled	Chooses this item to enable USB Mouse.
OnChip Sound	Disabled	Closes this function.
	Enabled	It allows you to control the onboard AC97 audio.
CPU to PCI Write Buffer	Disabled	The writes are not buffered and the CPU and the CPU must wait until the write is complete before starting another write cycle.
	Enabled	It writes from the CPU to the PCI bus are buffered, to compensate for the speed difference between the CPU and the PCI bus.
PCI Dynamic Bursting	Disabled	Closes this function.
	Enabled	It allows you to enable the PCI dynamic bursting function.
PCI Master 0 WS Write	Disabled	Closes this function.
	Enabled	It writes to the PCI bus are executed with zero wait states.
PCI Delay Transaction	Disabled	Closes this function.
	Enabled	The chipset has an embedded 32-bit posted write buffer to support delay transactions cycles. It supports compliance with PCI specification version 2.1.

PCI#2 Access #1 Retry	Disabled	The PCI#2 will not be disconnected until access finished(default).
	Enabled	The PCI#2 will be disconnected if max retries are attempted without success.
AGP Master 1 WS Write	Disabled	Closes this function.
	Enabled	It writes to the AGP (Accelerated Graphics Port) are executed with one wait states.
AGP Master 1 WS Read	Disabled	Closes this function.
	Enabled	It reads to the AGP (Accelerated Graphics Port) are executed with one wait states.
Memory Parity/ECC Check	Disabled	Closes this function.
	Enabled	Adds a parity check to the boot-up memory tests.

4.6 Integrated Peripherals





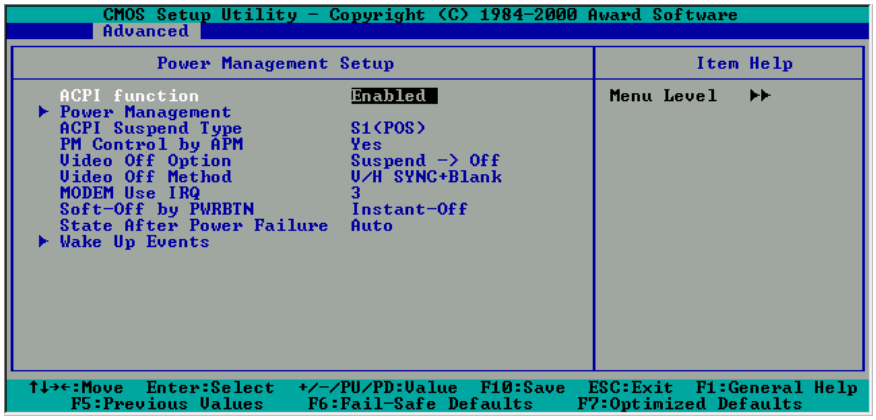
Menu Item	Setting	Descriptions
OnChip IDE Channel 10	Enabled	Activates the primary IDE interface.
	Disabled	Deactivates this interface.
OnChip IDE Channel 11	Enabled	Activates the primary IDE interface.
	Disabled	Deactivates this interface.
IDE Prefetch Mode	Enabled	Activates the primary IDE interface.
	Disabled	Deactivates this interface.
Primary Master PIO	Auto, Mode 0 ~ Mode 4	The four IDE PIO (Programmed Input/Output) fields let you set a PIO mode from 0 to 4 for each of the IDE devices supported by the onboard IDE interface. Modes 0 through 4 provide successively increased performance. In Auto mode, the system automatically determines the best mode for each device.
Primary Slave PIO	Auto, Mode 0 ~ Mode 4	
Secondary Master PIO	Auto, Mode 0 ~ Mode 4	
Secondary Slave PIO	Auto, Mode 0 ~ Mode 4	
Primary Master UDMA	Auto	Enables BIOS support, if your hard drive and system software both support Ultra DMA/33.
	Disabled	Closes this function.
Primary Slave UDMA	Auto	Enables BIOS support, if your hard drive and system software both support Ultra DMA/33.
	Disabled	Closes this function.
Secondary Master UDMA	Auto	Enables BIOS support, if your hard drive and system software both support Ultra DMA/33.
	Disabled	Closes this function.
Secondary Slave UDMA	Auto	Enables BIOS support, if your hard drive and system software both support Ultra DMA/33.
	Disabled	Closes this function.
Init Display First	PCI Slot	Decides to activate the PCI Slot first.
	Onboard/AGP	Decides to activate the AGP first.
IDE HDD Block Mode	Enabled	Automatically detects the optimal number of block read and writes per sector that the drive can support.
	Disabled	Closes this function.
Onboard FDD Controller	Enabled	Enables the floppy drive controller on the motherboard.
	Disabled	Closes this function.

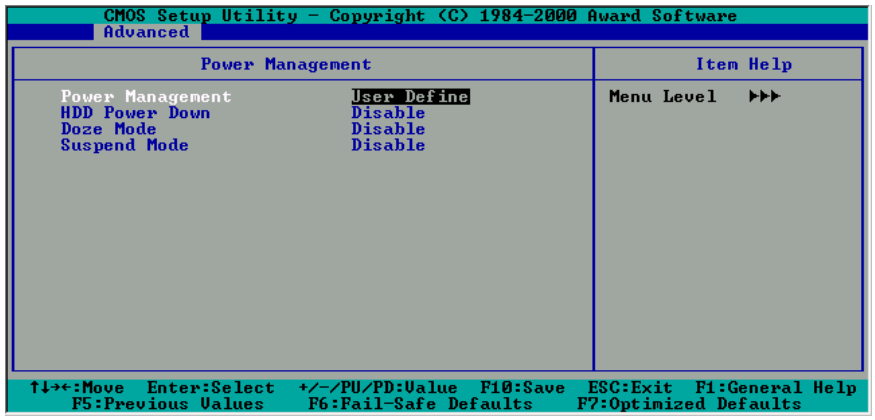
On Board Serial Port 1, 2	Auto	The default setting.
	Disabled	Closes this function.
	3F8/IRQ4 2F8/IRQ3 3E8/IRQ4 2E8/IRQ3	Specifies the base I/O port address of serial port A on the motherboard.
UART 2 Mode	Standard, HPSIR, ASKIR	Set onboard I/O chip UART to the mode you choose.
IR Function Duplex	Half, Full	IR Function Duplex Half or Full.
TX, RX inverting enable	No, Yes Yes, No Yes, Yes No, No	It allows you to enable the TX, RX inverting which depends on different H/W requirement. This field is not recommended to change its default setting for avoiding any error in your system.
Onboard Parallel Port	378/IRQ7, 278/IRQ5, 3BC/IRQ7	Enables onboard LPT port and address is the value you choose.
Onboard Parallel Mode	SPP, EPP, ECP, ECP+EPP	The parallel port can be used with devices that adhere to the Enhanced Parallel Port (EPP) specification. EPP uses the existing parallel port signals to provide asymmetric bi-directional data transfer driven by the host device. It also can be used with devices that adhere to the Extended Capabilities Port (ECP) specification. ECP uses the DMA protocol to achieve data transfer rates up to 2.5 Megabits per second. ECP provides symmetric bi-directional communication.
ECP Mode Use DMA	3, 1	Determines which DMA the ECP mode uses.
Parallel Port EPP Type	EPP1.9, 1.7	
Onboard Legacy Audio	Enabled	It controls the onboard legacy audio.
	Disabled	Closes this function.
Sound Blaster	Enabled	
	Disabled	
SB I/O Base Address	220H, 240H, 269H, 280H,	
SB IRQ Select	IRQ 5, 7, 9,10	

SB DMA Select	DMA 12,3,0	
MPU-401	Enabled	
	Disabled	
MPU-401 I/O Address	330-333H, 300-303H,310-313H. 320-323H	
Game Port (200-207H)	Enabled	
	Disabled	

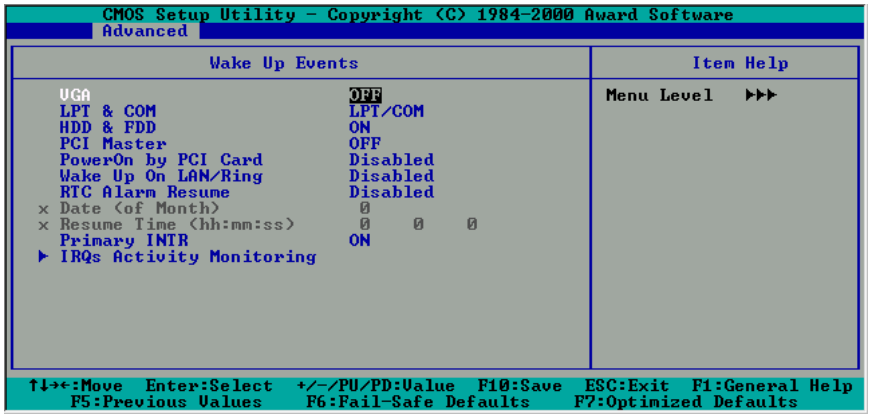
4.7 Power Management Setup Menu

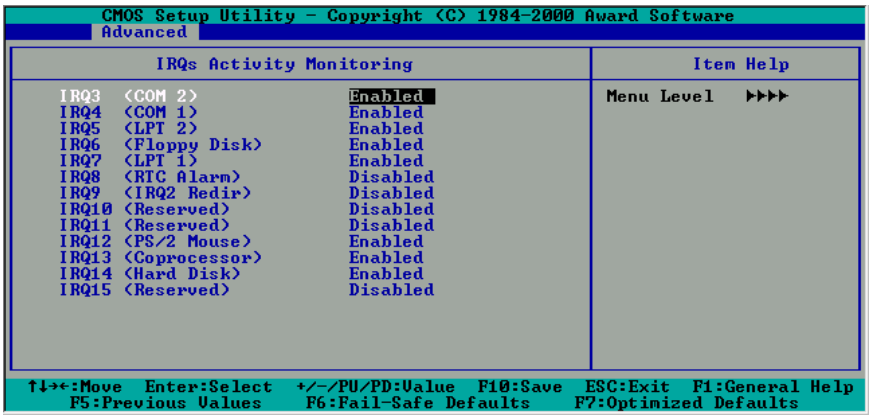
The Power Management Setup allows you to configure your system to most effectively save energy while operating in a manner consistent with your own style of computer use.





4. BIOS Setup

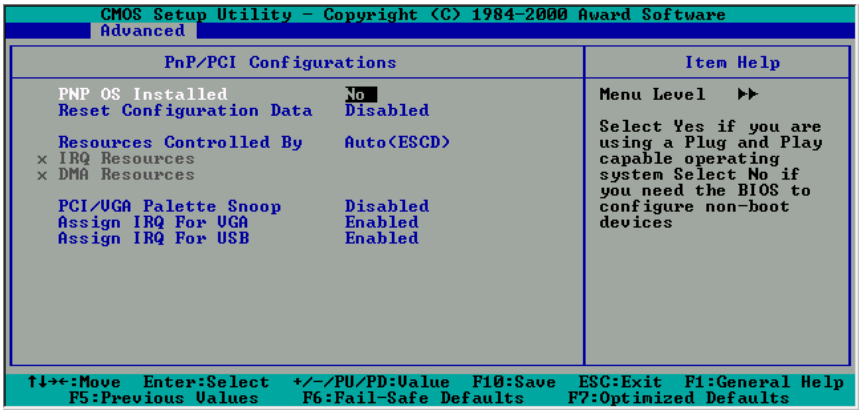

CMOS Setup Utility - Copyright (C) 1984-2000 Award Software
Advanced
Wake Up Events
Item Help
VGA OFF
LPT & COM LPT/COM
HDD & FDD ON
PCI Master OFF
PowerOn by PCI Card Disabled
Wake Up On LAN/Ring Disabled
RTC Alarm Resume Disabled
x Date (of Month) 0
x Resume Time (hh:mm:ss) 0 0 0
Primary INTR ON
▶ IRQs Activity Monitoring
Menu Level ▶▶▶
↑↓→←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults


CMOS Setup Utility - Copyright (C) 1984-2000 Award Software
Advanced
IRQs Activity Monitoring
Item Help
IRQ3 (COM 2) Enabled
IRQ4 (COM 1) Enabled
IRQ5 (LPT 2) Enabled
IRQ6 (Floppy Disk) Enabled
IRQ7 (LPT 1) Enabled
IRQ8 (RTC Alarm) Disabled
IRQ9 (IRQ2 Redir) Disabled
IRQ10 (Reserved) Disabled
IRQ11 (Reserved) Disabled
IRQ12 (PS/2 Mouse) Enabled
IRQ13 (Coprocessor) Enabled
IRQ14 (Hard Disk) Enabled
IRQ15 (Reserved) Disabled
Menu Level ▶▶▶▶
↑↓→←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults

Menu Item	Setting	Descriptions
ACPI Function	Enabled	Enables the ACPI function.
	Disabled	Closes this function.
Power Management	User Defined	Allows you to set each mode individually. When not disabled, each of the ranges are from 1 min. to 1 hr. except for HDD Power Down which ranges from 1 min. to 15 min. and disable.
	Min Saving	Minimum power management. Doze Mode = 1 hr. Standby Mode = 1 hr., Suspend Mode = 1 hr., and HDD Power Down = 15 min.
	Max Saving	Maximum power management -- **ONLY AVAILABLE FOR SL CPU's**. Doze Mode = 1 min., Standby Mode = 1 min., Suspend Mode = 1 min., and HDD Power Down = 1 min.
ACPI Suspend Type	S1(POS)	Set ACPI Suspend type to S1.
	S3(STR)	Set ACPI Suspend type to S3.
PM Control by APM	Yes	An advanced power management device will be activated to enhance the Max. Power Saving mode and stop the CPU internal clock. If Advance Power Management(APM) is installed on your system, selecting Yes gives better power savings.
	No	Chooses this option while the Max. Power Saving is not enabled.
Video Off Option	Suspend -> Off	Monitor blanked when the system enters the Suspend mode.
	All Modes-> Off	Monitor blanked when the system enters either Suspend or Standby modes.
	Always On	Monitor will remain on during power saving power.
Video Off Method	DPMS	Initial displays power management signaling.
	Blank Screen,	This option only writes blanks to the video buffer.
	V/H SYNC+Blank	This selection will cause the system to turn off the vertical and horizontal synchronization ports and write blanks to the video buffer.

MODEM Use IRQ	3, 4, 5, 7, 9, 10, 11, NA	Determines which IRQ the MODEM can use.
Soft-Off by PWR-BTN	Instant-Off	Pressing the power button to force the system off when the system has “hung.”
	Delay 4 Sec.	Pressing the power button for more than Four seconds forces the system to enter the Soft-Off state when the system has “hung.”
State After Power Failure	Off	The PC will not boot after a power failure.
	Auto	The PC will restart after a power failure.

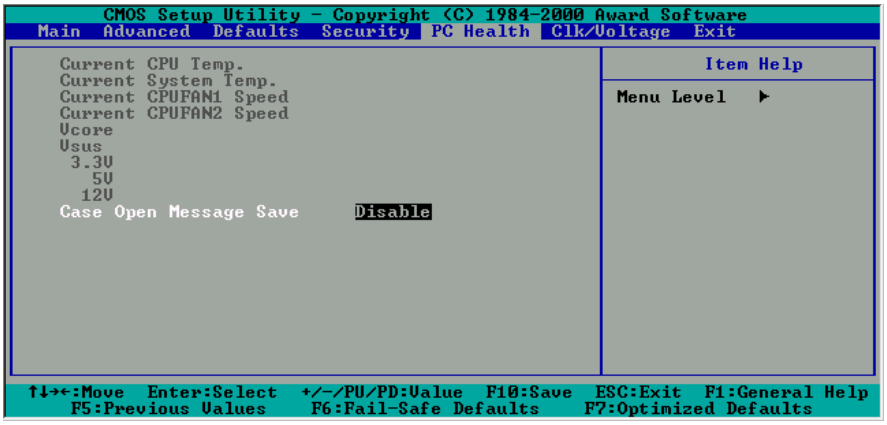
4.8 PnP/PCI Configurations Menu



Menu Item	Setting	Descriptions
PNP OS Installed	No	Chooses No if you need the BIOS to configure non-boot devices.
	Yes	Chooses Yes if you are using a Plug and Play capable operating system.
Reset Configuration Data	Disabled	Closes this function. This is the default setting.
	Enabled	Normally, this field is set to *Disabled*. However, if you have installed a new add-on and the system reconfiguration results in a conflict so serious that the system can not boot, changing the setting to *Enabled* will allow you to reset the ESCD (Extended System Configuration Data) when exiting Setup.
Resources Controlled By	Manual	Chooses specific resources by going into each of the sub menus in the field.
	Auto (ESCD)	Automatically choose resources for system.
IRQ Resources	Press Enter	When resources are controlled manually, assign each system interrupt a type, depending on the type of device using the interrupt. Press enter to invoke the function.

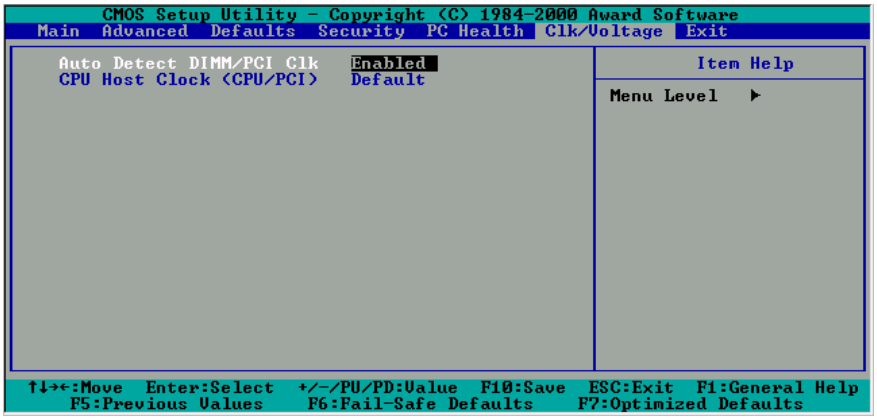
DMA Resources	Press Enter	When resources are controlled manually, assign each system DMA channel a type, depending on the type of device using the DMA channel. Press enter to invoke the function.
PCI/VGA Palette Snoop	Disabled	Closes this function.
	Enabled	Invokes PCI/VGA Palette Snoop.
Assign IRQ For VGA	Disabled	Closes this function.
	Enabled	Enables to assign IRQ for VGA.
Assign IRQ For USB	Disabled	Closes this function.
	Enabled	Enables to assign IRQ for USB.

4.9 PC Health Status



Menu Item	Setting	Descriptions
Current CPU Temperature	Variable	The temperature here will vary according to the current CPU Temperature.
Current System Temp	Variable	The temperature here will vary according to the current system.
Current CPUFAN1 Speed	Variable	Displays current CPUFAN1 speed. The unit is RPM.
Current CPUFAN2 Speed	Variable	Displays current CPUFAN2 speed. The unit is RPM.
Vcore, Vsus, 3.3V, 5V, 12V		Displays voltage value.
Case Open Message Save	Disable	Closes this function.
	Enable	
	Reset	

4.10 Frequency/Voltage Control



Auto Detect DIMM/PCI Clk

Keeping this feature at Enabled allows the system to detect the DIMM clock automatically. The choices are: Enabled (Default) and Disabled.

CPU Host Clock (CPU/PCI)

This feature to adjust the clock speed between CPU and the PCI slots. Recommended to leave it default. The options are: Default, 115/37MHz(Spd off), 110/35MHz(Spd off), 100/33MHz(Spd on). NOTICE: This setting may be missing from your current BIOS setup. For stability reason, do not change this setting and leave it at its default setting.

4.11 Load Optimized Defaults

The chipset defaults are settings, which provide for maximum system performance. While Award has designed the custom BIOS to maximize performance, the manufacturer has the right to change these defaults to meet their needs.

4.12 Set User Password

When you select this function, a message appears at the center of the screen:

ENTER PASSWORD:

Type the password, up to eight characters, and press Enter. Typing a password clears any previously entered password from CMOS memory. Now the message changes:

CONFIRM PASSWARD:

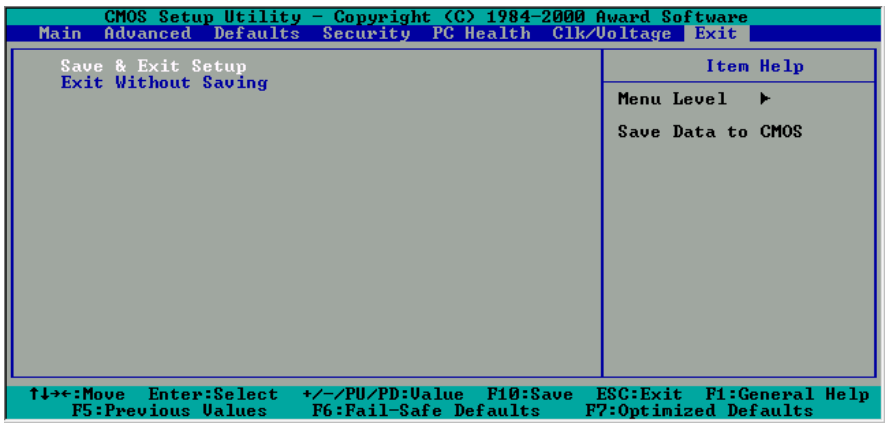
Again, type the password and press Enter. To abort the process at any time, press Esc.

In the Security Option item in the **BIOS Features** Setup screen select System or Setup:

- System: Enter a password each time the system boots and whenever you enter Setup.
- Setup: Enter a password whenever you enter Setup.

NOTE: To clear the password, simply press Enter when asked to enter a password. Then the password function is disabled.

4.13 Save & Exit Setup



This feature allows the changes to be made to the CMOS setup to be saved. The system will resume booting after a successful save.

4.14 Exit Without Saving

Abandon all CMOS value change without saving. acquaintances