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This equipment has been tested and found to comply with the limits of a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense. However, there is no guarantee that interference will not occur in a particular installation.

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Chapter 1. Getting Started

1.1 Introduction to Your Motherboard

Thank you for choosing this motherboard! This motherboard is designed to take advantage of the latest industry technology to provide you with the ultimate solution in data processing. In the tradition of its predecessors, this motherboard continues a commitment to reliability and performance and strives for full compliance and compatibility with industry software and hardware standards.

1.2 KM266 Series Features:

- 1. Contains on board I/O facilities which include a serial port, a VGA port, a parallel port, a PS/2 mouse port, a PS/2 keyboard port, audio ports, USB ports and a game port.
- 2. Contains on board IDE facilities for IDE devices such as hard disks and CD-ROM Drives.
- 3. Supports the Athlon[™], Athlon [™] XP, Duron [™] processor, a leading edge processor. Complies with PC Micro-ATX form factor specifications.
- 4. Supports popular operating systems such as Windows 9X, Windows ME, Windows 2000, Windows XP.

Chapter 2. Motherboard Specifications

2.1 Hardware

CPU:

- Provides Slot A (Socket 462) socket.
- Supports Athlon[™], Athlon[™] XP, Duron[™] processor.

Speed:

- Running at 200/266 MHz Front Side Bus frequency.
- DDR 200/266 supported.
- Supports 66 MHz V-Link client interface with peak bandwidth of 266 MB/sec (for KM266) and 533 MB/sec (for KM266 PRO)
- 66MHz AGP 2.0 compliant interface supports 1x, 2x and 4x data transfer mode.
- 33MHz 32 bit PCI 2.2 compliant.

Chipset:

- North_bridge VIA VT8375.
- South_bridge VIA VT8233A (for KM266)/ VIA VT8235 (for KM266 PRO).
- I/O Controller Winbond W83697HF.
- Audio Codec Realtek ALC201A (for KM266)/ Realtek ALC650 (for KM266 PRO).

DRAM Memory:

- Support PC 2100 (266)/ PC 1600 (200) DDR (Double Data Rate) Synchronous DRAM.
- Supports up to 2 Double-sided DIMM (register and unbuffer).
- Up to 1GB per DIMM with Max. memory size up to 2GB.
- Not support ECC function.

Graphics Contorller

- Optimized Shared Memory Architecture (SMA)
- Equivalent 8x AGP internal performance.
- 8/ 16/ 32 MB frame buffer using system memory.
- 2D/3D resolutions up to 1920x1440.

Green Functionality:

- Supports PHOENIX-AWARD™ BIOS power management functionality.
- Has a power down timer from 1 to 15 minutes.
- Wakes from power saving sleep mode with any keyboard or mouse activity.

BUS Slots:

- Contains 1 AGP slot.
- Contains 1 CNR slot (AMR Type).
- Contains 3 32-bit PCI bus slots.

Flash Memory:

- Supports flash memory functionality.
- Supports ESCD functionality.

Built in IDE Facilities:

- Supports four IDE hard disk drives.
- Supports PIO Mode 0-4 and high performance hard disk drives.
- Supports disk transfer rates up to 133 MB/second.
- Supports Ultra DMA 33, Ultra DMA 66, Ultra DMA 100 and Ultra DMA 133 Bus Master Modes.
- Supports IDE interface with CD-ROM.
- Supports high capacity hard disk drives.
- Supports LBA mode.

Hardware Monitor Function:

- Monitors CPU Temperature.
- Monitors CPU Fan Speed.
- Monitors Chasis Fan Speed.
- Monitors System Voltage.
- Monitors Case Open.

Infrared:

- Support IrDA Version 1.0 SIR Protocol with Max. baud rate up to 115.2K bps.
- Support SHARP ASK-IR Protocol with Max. baud rate up to 57600 bps.

AC'97 Sound Codec Onboard:

- AC-LINK protocol compliance.
- Digital S/PDIF output (KM266 & KM266 PRO)/ output (KM266 PRO).
- KM266 PRO have 6 channels slot selectable DAC output for multi-channel applications.

I/O facilities:

- One multi-mode Parallel Port capable of supporting the following specifications:
 - 1. Standard & Bidirection Parallel Port.
 - 2. Enhanced Parallel Port (EPP).
 - 3. Extended Capabilities Port (ECP).
 - 4. Normal
- Supports two serial ports, 16550 UART.
- Supports Infrared Data Transmission using IrDA.
- Supports PS/2 mouse and PS/2 keyboard.
- Supports 360KB, 1.2MB, 1.44MB, and 2.88MB floppy disk drives.

Universal Serial Bus:

- Supports two back panel Universal Serial Bus Ports and two front panel Universal Serial Bus 1.1 Ports for KM266.
- Supports two back panel Universal Serial Bus Ports and four front panel Universal Serial Bus 2.0 Ports for KM266 PRO.

Dimensions (Micro ATX form-factor):

• 22.0cm x 24.4cm (WxL)

2.2 BIOS

- PHOENIX-AWARD™ BIOS.
- Supports APM 1.2.
- Supports USB Legacy function.
- Supports ACPI power management.

2.3 Software

Operating System:

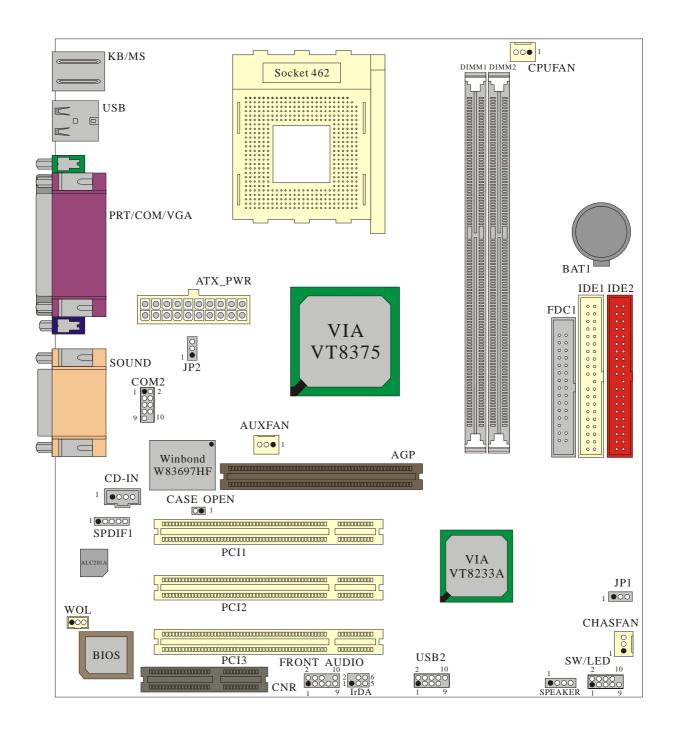
Offers the highest performance for Windows 9X, Windows ME, Windows 2000, Windows XP.

2.4. Package Contents

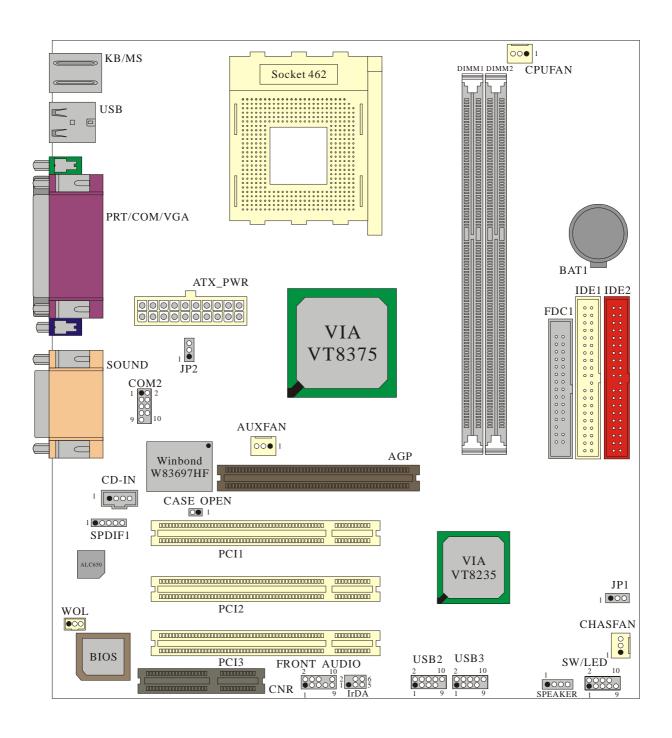
- HDD Cable.
- FDD Cable.
- Rear I/O Panel for Micro-ATX Case (Optional).
- Fully Setup Driver CD.

Chapter 3. Motherboard Configuration

Layout of KM266



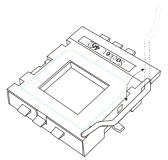
Layout of KM266 PRO



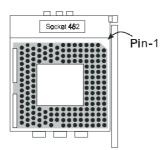
3.1 CPU Configuration

CPU Socket-A Configuration Steps:

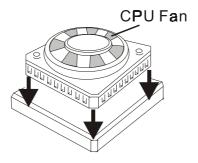
1. Please find the CPU socket on your motherboard and pull the lever sideways away from the socket, then raise the lever up to a 90-degree angle.



2. Find Pin-1 in the socket and look for the white dot or cut edge in the CPU. Match Pin-1 with the white dot/cut edge then insert the CPU.



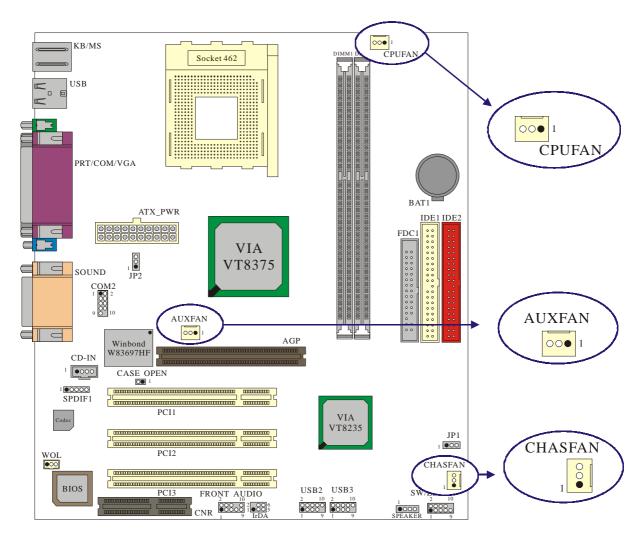
3. Press the lever down. Then Put the CPU fan on the CPU socket and clasp it with the socket. When the CPU fan is fixed to the CPU socket, put the fan's power port into the CPUFAN. After finishing all these steps, the CPU is ready for use.



CPU Headers Installation

These three headers introduced here are most related to your CPU installation. They are the power headers to all the cooling fans on your motherboard. These fans play an important role on decreasing the temperature of your system.





* The layout is KM266 PRO

CPU Fan Header: CPUFAN

Pin No.	Assignment			
1	Ground			
2	+12V			
3	Sense			

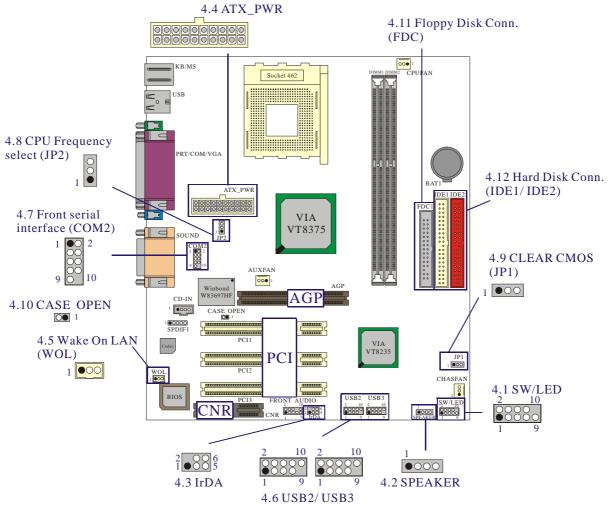
System Fan Header: CHASFAN

Pin No.	Assignment		
1	Ground		
2	+12V		
3	Sense		

North Bridge Chipset Fan Header: AUXFAN

Pin No.	Assignment		
1	Ground		
2	+12V		
3	NC		

Chapter 4. Introduction to Jumpers, Headers, Connectors and Slots



* The layout is KM266 PRO

4.1 Front Panel Indicator: SW/LED

Pin No.	Assignment	Function	Pin No.	Assignment	Function
1	HD LED (+)	Hard Drive	2	Power LED (+)	POWER
3	HD LED (-)	LED	4	Power LED (-)	LED
5	Reset Control (-)	Reset	6	Power Button(+)	Power-on
7	Reset Control(+)	Button	8	Power Button(-)	Button
9	NC	NC	10	NC	NC

HD LED (Hard Drive LED Connector)

This connector can be attached to an LED on the front panel of a computer case. The LED will flicker during disk activity. This disk activity only applies to those IDE drives directly attached to the system board.

RST (Reset Button)

This connector can be attached to a momentary SPST switch. This switch is usually open and when closed will cause the motherboard to reset and run the POST (Power On Self Test).

ACPI PWR-LED (ACPI Power LED Connector)

This connector can be attached to an LED on the front panel of a computer case. The LED will illuminate while the computer is powered on and it will flashing during power saving mode.

PWR ON (Power Button)

This connector can be attached to a front panel power switch. The switch must pull the Power Button pin to ground for at least 50 ms to signal the power supply to switch on or off. (The time required is due to internal debounce circuitry on the system board). At least two seconds must pass before the power supply will recognize another on/off signal.

4.2 SPEAKER (Speaker Connector)

PIN	Assignment	PIN	Assignment
1	+5V	3	NC
2	GND	4	PC_BEEP

An offboard speaker can be installed on the motherboard as a manufacturing option. An offboard speaker can be connected to the motherboard at the front panel connector. The speaker (onboard or offboard) provides error beep code information during the Power On Self-Test when the computer cannot use the video interface. The speaker is not connected to the audio subsystem and does not receive output from the audio subsystem.

4.3 IrDA (Infrared Connector)

PIN	Assignment	PIN	Assignment
1	NC	4	GND
2	NC	5	IR_RX
3	+5V	6	IR_TX

This IrDA connector can be configured to support wireless infrared module, it is used to attach to an infrared sensing device. After the IrDA interface is configured, connectionless data transfer to and from portable devices such as laptops, PDAs is possible.

4.4 ATX 20-pin Power Connector: ATX_PWR

This ATX power supply uses 20-pin connector. During your configuration, please plug it into the right direction.

PIN	Assignment	PIN	Assignment
1	+3.3V	11	+3.3V
2	+3.3V	12	-12V
3	GND	13	GND
4	+5V	14	PS_ON
5	GND	15	GND
6	+5V	16	GND
7	GND	17	GND
8	PW_OK	18	-5V
9	5V_SB	19	+5V
10	+12V	20	+5V

4.5 Wake On LAN Header: WOL

This motherboard supports Wake On LAN function. To use this function, a network card with chipset that supports this feature is needed. Meanwhile, you have to connect a cable from LAN card to your motherboard WOL connector.

Pin No.	Assignment		
1	5V SB		
2	Ground		
3	Wake up		

4.6 Front USB Headers: USB2/(USB3 only for KM266 PRO)

Pin	Assignment	Pin	Assignment
1	5VSB	2	5VSB
3	DATA_A-	4	DATA_B-
5	DATA_A+	6	DATA_B+
7	Ground	8	Ground
9	NC	10	NC

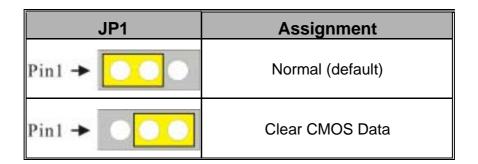
4.7 Front Serial interface Header: COM2

For more details please refer to CH 6.3. (Page 23)

4.8 CPU Frequency Selection: JP2

JP2	CPU Frequency
Pin1 →	100.0MHz
Pin1 →	133.0MHz

4.9 Clear CMOS Jumper: JP1





The following procedures are for resetting the BIOS password. It is important to follow these instructions closely.

- 1. Turn off your system and remove AC power line.
- 2. Set JP1 to OFF (2-3 Closed).
- 3. Wait several seconds.
- 4. Set JP1 to ON (1-2 closed).
- 5. Connect the AC power line and turn on your system.
- 6. Reset your desired password or clear CMOS data.

4.10 Case Open Warning function: CASE OPEN

If this function is set to "Enabled" in BIOS and the case is opened by others, the system will automatically show alert messages on the screen display when you power on your computer. On the contrary, if this function is set to "Disabled" in BIOS, the system will not show alert messages when you power on your computer even if the case is opened by others.

On the other hand, your PC case must be have the Case Open front panel.

Case Open	Assignment	
1	INTRUDR -	
2	GND	

4.11 Floppy Disk Connector: FDC

The motherboard provides a standard floppy disk connector (FDC) that supports 360K, 1.2M, 1.44M and 2.88M floppy disk types. This connector supports the provided floppy drive ribbon cables.

4.12 Hard Disk Connectors: IDE1/IDE2

This motherboard has a 32-bit Enhanced PCI IDE Controller that provides PIO Mode 0~4, Bus Master, and Ultra DMA / 33, Ultra DMA / 66, Ultra DMA / 100, Ultra DMA / 133 functionality. It has two HDD connectors IDE1 (primary) and IDE2 (secondary).

IDE1 (Primary IDE Connector)

The first hard drive should always be connected to IDE1. IDE1 can connect a Master and a Slave drive. You must configure the second hard drive on IDE1 to Slave mode by setting the jumper accordingly.

IDE2 (Secondary IDE Connector)

The IDE2 controller can also support a Master and a Slave drive. The configuration is similar to IDE1. The second drive on this controller must be set to slave mode.

4.13 Slots

The slots in this motherboard are designed to hold expansion cards and connect them to the system bus. Expansion slots are a means of adding or enhancing the motherboard's features and capabilities. With these efficient facilities, you can increase the motherboard's capabilities by adding hardware that performs tasks that are not part of the basic system.

AGP (Accelerated Graphics Port) Slot

This motherboard is equipped with an Accelerated Graphics Port (AGP) to support video cards.

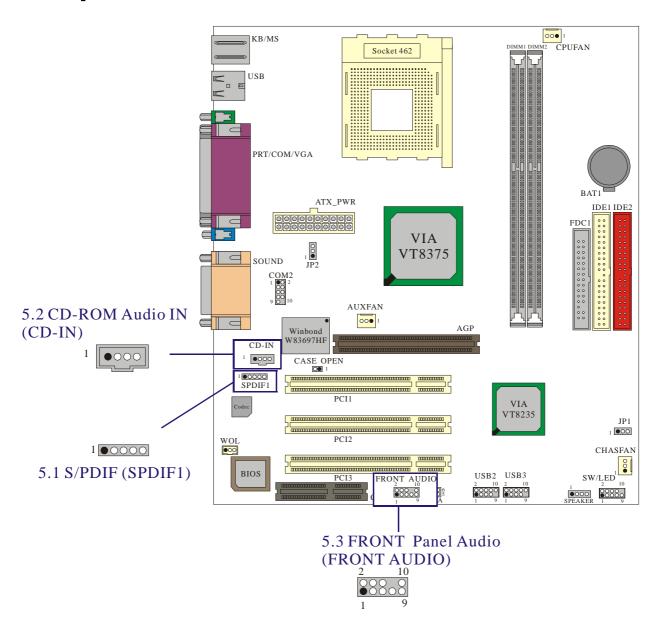
CNR (Communication Network Riser) Slot(AMR type)

The CNR specification is an open Industry Standard Architecture and that defines a hardware scalable riser card interface, which supports audio and modem only.

PCI (Peripheral Component Interconnect) Slots

This motherboard is equipped with 3 standard PCI slots. PCI stands for Peripheral Component Interconnect and is a bus standard for expansion cards, which has, for the most part, supplanted the older ISA bus standard. This PCI slot is designated as 32 bit.

Chapter 5: Audio Function



^{*} The layout is KM266 PRO

5.1 S/PDIF (Sony/Philips Digital Interface) Connector: SPDIF

S/PDIF (Sony/Philips Digital Interface) is a newest audio transfer file format, which provides impressive quality through optical fiber and allows you to enjoy digital audio instead of analog audio. Normally there are S/PDIF outputs as shown, one for RCA connector and one for optical fiber connector, the most common one used for consumer audio products. Through a specific audio cable, you can connect the S/PDIF connector to other end of the S/PDIF audio module, which bears S/PDIF digital output. However, you must have a S/PDIF supported speaker and decoder with S/PDIF digital input to connect to the S/PDIF digital output to make the most out of this function.

SPDIF	Assignment
1	PWR
2	NC
3	SPD_OUT
4	GND
5	SPD_IN (only in KM266 PRO)

Super 5.1 Channel Audio Effect (only for KM266 PRO)

This motherboard comes with an ALC650 Codec which supports high quality of 5.1 Channel audio effect, bringing you a brand new audio experience. On the strength of the innovative design of ALC650, you're able to use standard line-jacks for surround audio output without connection any external module. To apply this function, you have to install the audio driver in the bonus Pack CD as well as an audio application supporting 5.1 Channel. Picture below represents the standard location of all speakers in 5.1 Channel sound track. Please connect the plug of your front speakers to the green "Speaker out" port, rear speakers' plug to the blue "Line in" port and both of the center and subwoofer speakers to the red "MIC in" port.

For more details, please refer to CH 6.5.

5.2 CD-ROM Audio-In Header: CD-IN

Pin No.	Assignment
1	Left Channel Input
2	GND
3	GND
4	Right Channel Input

5.3 Front Panel Audio Header: FRONT AUDIO

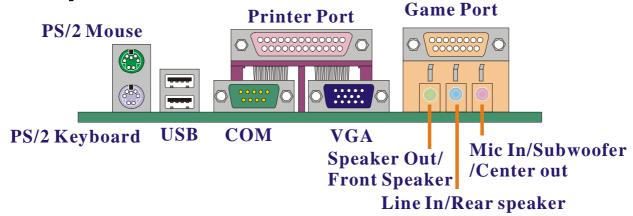
If your housing has been designed with an Audio port on the front panel. You have to remove the jumper caps before connecting the front panel Audio port; then you can use either panel. At the same time, you can plug the microphone cable into Pin 1 & 3, and plug the earphone L/R channels into Pin 9 & 5. On the other hand, if your housing does not have Audio port on the front panel, please *do not remove* the jumper caps.

Pin No.	Assignment	Pin No.	Assignment
1	FP_MIC	2	GND
3	FP_VREF	4	+5V
5	SPOUT_R	6	SPOUT_R
	(From IC)		(To Connector)
7	NC	8	NC
9	SPOUT_L	10	SPOUT_L
	(From IC)		(To Connector)



If you maintain the caps place, jumper cap 1 is on pin5, pin6 and jumper cap2 is on pin9, pin 10.

Chapter 6: Back Panel Features



6.1 PS/2 Mouse / Keyboard Connector: KB/MS

The motherboard provides a standard PS/2 mouse / Keyboard mini DIN connector for attaching a PS/2 mouse. You can plug a PS/2 mouse / Keyboard directly into this connector. The connector location and pin definition are shown below:

PS/2 Mouse / Keyboard Connectors

Pin	Assignment
1	Data
2	No connect
3	Ground
4	+5 V (fused)
5	Clock
6	No connect

6.2 USB Connectors: USB

The motherboard provides a OHCI (Open Host Controller Interface) Universal Serial Bus Roots for attaching USB devices such as: keyboard, mouse and other USB devices. You can plug the USB devices directly into this connector.

USB Connector (the below one)

Pin	Assignment
1	+5 V (fused)
2	USBP0-
3	USBP0+
4	Ground

USB Connector (the above one)

Pin	Assignment
5	+5 V (fused)
6	USBP1-
7	USBP1+
8	Ground

6.3 Serial and Parallel Interface Ports

This system comes equipped with two serial port (one in back panel and one in front panel), one VGA port and one parallel port. all types of interface ports will be explained in this chapter.

The Serial Interface: COM/ COM2

The serial interface port is sometimes referred to as an RS-232 port or an asynchronous communication port. Mice, printers, modems and other peripheral devices can be connected to a serial port. The serial port can also be used to connect your computer with another computer system.

Parallel Interface Port: PRT

Unlike the serial ports, parallel interface port has been standardized and should not present any difficulty interfacing peripherals to your system. Sometimes called centronics port, the parallel port is almost exclusively used with printers. The parallel port on your system has a 25-pin, DB25 connector.

Video Graphics Array Connector: VGA

This motherboard has built in video facilities. Your monitor will attach directly to VGA Connector on the motherboard.

6.4 Game Port Connector: SOUND

This connector allows you to connect a joystick or game pad for playing computer games. Also, you may play or edit professional music by connecting MIDI devices.

6.5 Audio Port Connectors

- **1. Speaker Out** is used to connect speakers or headphones for audio output. On the other hand, when you installed Super 5.1 driver, the Speaker Out would be the Front Speaker.
- **2. Line In** can be connected to the external CD player, Tape player or other audio devices for audio input. On the other hand, when you installed Super 5.1 driver, the Line In would be the Rear Sperker.
- **3. Mic In** is used to connect a microphone, which allows you to input sounds and voices. On the other hand, when you installed Super 5.1 driver, the Mic In would be the Subwoofer/ Center out.

Chapter 7: RAM Module Configuration

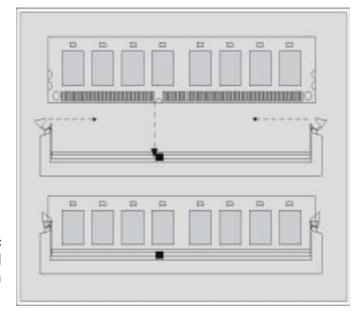
7.1 DDR DIMM

DDR SDRAM Access Time: 2.5V PC 2100/1600 Unbuffered/ Registered without ECC DDR SDRAM required.

DDR SDRAM Type: 64MB/ 128MB/ 256MB/ 512MB/ 1GB DIMM Module (184 pin).

7.2 DIMM Module Configuration

- The DIMM socket has a "Plastic Safety Tab" and the DIMM memory module has an asymmetrical notch", so the DIMM memory module can only fit into the slot in one direction.
- 2. Push the tabs out. Insert the DIMM memory modules into the socket at a 90-degree angle then push down vertically so that it will fit into place.
- 3. The Mounting Holes and plastic tabs should fit over the edge and hold the DIMM memory modules in place.



Chapter 8: BIOS Setup

Introduction

This manual discussed PHOENIX-AWARD™ Setup program built into the ROM BIOS. The Setup program allows users to modify the basic system configuration. This special information is then stored in battery-backed RAM so that it retains the Setup information when the power is turned off.

The PHOENIX-AWARD™ BIOS installed in your computer system's ROM (Read Only Memory) is a custom version of an industry standard BIOS. This means that it supports IntelTM processors input/output system. The BIOS provides critical low-level support for standard devices such as disk drives and serial and parallel ports.

Adding important has customized the PHOENIX-AWARD™ BIOS but nonstandard, features such as virus and password protection as well as special support for detailed fine-tuning of the chipset controlling the entire system.

About the defaults of BIOS on manual is just for reference, please refer to the BIOS installed on board, for update information.

The rest of this manual is intended to guide you through the process of configuring your system using Setup.

Plug and Play Support

These PHOENIX-AWARD™ BIOS supports the Plug and Play Version 1.0A specification. ESCD (Extended System Configuration Data) write is supported.

EPA Green PC Support

This PHOENIX-AWARD™ BIOS supports Version 1.03 of the EPA Green PC specification.

APM Support

These PHOENIX-AWARD™ BIOS supports Version 1.1&1.2 of the Advanced Power Management (APM) specification. Power management features are implemented via the System Management Interrupt (SMI). Sleep and Suspend power management modes are supported. Power to the hard disk drives and video monitors can be managed by this PHOENIX-AWARD™ BIOS.

PCI Bus Support

This PHOENIX-AWARD™ BIOS also supports Version 2.1 of the Intel PCI (Peripheral Component Interconnect) local bus specification.

DRAM Support

DDR (Double Data Rate) SDRAM (Synchronous DRAM) are supported.

Supported CPUs

This PHOENIX-AWARDTM BIOS supports the AMD AthlonTM, AthlonTM XP and DuronTM CPUs.

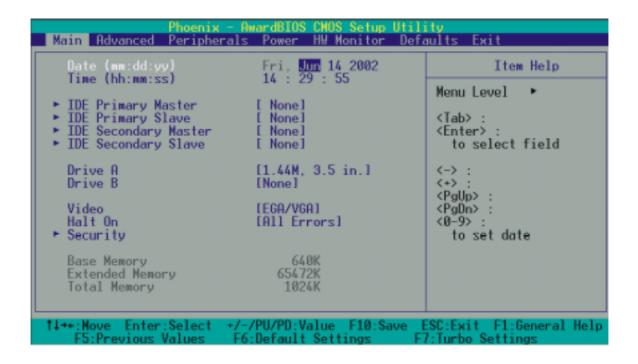
Key Function

In general, you use the arrow keys to highlight items, press <Enter> to select, use the <PgUp> and <PgDn> keys to change entries, press <F1> for help and press <Esc> to quit. The following table provides more detail about how to navigate in the Setup program by using the keyboard.

Keystroke	Function
Up arrow	Move to previous item
Down arrow	Move to next item
Left arrow	Move to the item on the left (menu bar)
Right arrow	Move to the item on the right (menu bar)
Esc	Main Menu: Quit without saving changes
	Submenus: Exit Current page to the next higher level menu
Move Enter	Move to the item you desired
PgUp key	Increase the numeric value or make changes
PgDn key	Decrease the numeric value or make changes
+ Key	Increase the numeric value or make changes
- Key	Decrease the numeric value or make changes
Esc key	Main Menu – Quit and not save changes into CMOS
	Status Page Setup Menu and Option Page Setup Menu – Exit
	Current page and return to Main Menu
F1 key	General help on Setup navigation keys
F5 key	Load previous values from CMOS
F6 key	Load the fail-safe defaults from BIOS default table
F7 key	Load the optimized defaults
F10 key	Save all the CMOS changes and exit

8.1 Main Menu

When you enter PHOENIX-AWARD™ BIOS CMOS Setup Utility, the Main Menu will appear on the screen. The Main Menu allows you to select from several setup functions. Use the arrow keys to select among the items and press <Enter> to accept and enter the sub-menu.

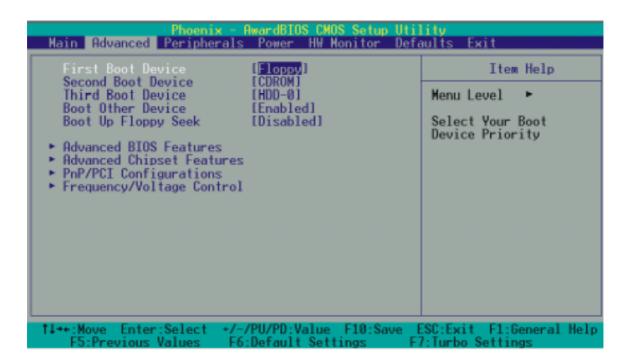


Main Menu Setup Selections

The table shown below are the selections which you can make on this Main Menu setup.

Item	Options	Description
Date	mm dd yyyy	Set the system date. Note that the 'Day' automatically changes when you set the date.
Tme	Hh: mm: ss	Set the current time of the system.
IDE Primary Master	Options are in its sub menu.	Press <enter> to enter the sub menu of detailed options.</enter>
IDE Primary Slave	Options are in its sub menu.	Press <enter> to enter the sub menu of detailed options.</enter>
IDE Secondary Master	Options are in its sub menu.	Press <enter> to enter the sub menu of detailed options.</enter>
IDE Secondary Slave	Options are in its sub menu.	Press <enter> to enter the sub menu of detailed options.</enter>
Drive A	360K, 5.25 in 1.2M, 5.25 in 1.44M, 3.5in 2.88M, 3.5 in	Select the type of floppy disk drive installed in your system.
Drive B	None	
Video	EGA/VGA CGA 40 CGA 80 MONO	Select the default video device.
Halt On	All Errors No Errors All, but Keyboard All, but Diskette All, but Disk/ Key	Select the situation in which you want the BIOS to stop the POST process and notify you.
Security	Options are in its sub menu.	Press <enter> to enter the sub menu of detailed options.</enter>
Base Memory	N/A	Displays the amount of conventional memory detected during boot up.
Extended Memory	N/A	Displays the amount of extended memory detected during boot up.
Total Memory	N/A	Displays the total memory available in the system.

8.2 Advanced BIOS Features



Advanced Features

First /Second/Third/ Boot Other Device

Select your Boot Device Priority.

The Choices: Floppy, LS120, HDD-0, SCSI, CDROM, HDD-1, HDD-2, HDD-3, ZIP100, USB-FDD, USB-ZIP, USB-CDROM, USB-HDD, LAN, Disabled.

Boot Up Floppy Seek

Setting to enabled allows the system to try to boot from other devices if the system fails to boot from the 1st/2nd/3rd boot devices..

The Choices: Enabled, Disabled(default).

Advanced BIOS Features

Virus Warning

Allows you to choose the VIRUS warning feature for IDE Hard Disk boot sector protection. If this function is enabled and someone attempt to write data into this area, BIOS will show a warning message on screen and alarm beep.

The Choices:

Disabled (default) Virus protection is disabled. Enabled Virus protection is activated.

CPU Internal Cache

Depending on the CPU/chipset in use, you may be able to increase memory access time with this option.

The Choices:

The Choices: Enabled (default), Disable.

External Cache

This option you to enable or disable "Level 2" secondary cache on the CPU which may improve performance.

The Choices:

Enabled (default) Enable cache.

Disabled Disable cache.

CPU L2 Cache ECC Checking

This item allows you to enable/disable CPU L2 Cache ECC Checking.

The Choices: Disabled, Enabled (default).

Quick Power On Self Test

Allow the system to skip certain tests while booting. This will decrease the time needed to boot the system.

The Choices:

Enabled (default) Enable quick POST.

Disabled Normal POST.

Swap Floppy Drive

If the system has two floppy drives, choose.enable to assign physical drive B to logical drive A and vice-versa.

The Choices: Disabled (default), Enabled.

Boot Up NumLock Status

Selects power on state for NumLock.

The Choices:

On (default) Numpad is number keys.
Off Numpad is arrow keys.

Gate A20 Option

Fast – let chipset control GateA20 and Normal – a pin in the keyboard controller controls GateA20.

The Choices:

Normal (default) A pin in the keyboard controller

controls Gate A20.

Fast Lets chipset control Gate A20.

Typematic Rate Setting

Keystrokes repeat at a rate determined by the keyboard controller – when enabled, the typematic rate and typematic delay can be slelcted.

The Choices: Disabled (default), Enabled.

Typematic Rate (Chars/Sec)

The rate at which character repeats when you hold down a key. The Choices: 6 (default), 8,10,12,15,20,24,30.

Typematic Delay (Msec)

The delay before keystrokes begin to repeat. The Choices: 250 (default), 500,750,1000.

APIC Mode

Enabling this option, MPS version control for OS can be configured.

The Choices: Disabled, Enabled (default).

MPS Version Control For OS

1.1 version is the elder version, it supports 8 more IRQ in Windows NT. Choose the new 1.4 version for Windows 2000 and Windows xp.

The Choices: 1.4 (default), 1.1.

OS Select For DRAM > 64MB

Select OS2 only if you are running OS/2 operating system with greater than 64MB of RAM on the system.

The Choices: Non-OS2 (default), OS2.

HDD S.M.A.R.T. Capability

Self Monitoring Analysis and Reporting Technology is a technology that enabled a PC to in some cases predict the future failure of storage drives..

The Choices: Disabled (default), Enabled.

Small LOGO (EPA) Show

This item allows you to show or hide the small LOGO of EPA.

The Choices:

Disabled (default), Enabled.

Advanced Chipset Features

DRAM Clock/Drive Control

This sub-menu is to let you control the Clock/Drive. If you highlight the literal "Press Enter" next to the "DRAM Clock/Drive Control" label and then press the enter key, it will take you a submenu with the following options:

DRAM CAS Latency

This item determines DRAM CAS Latency. When synchronous DRAM is installed, the number of clock cycles of CAS latency depends on the DRAM timing. Do not reset this field from the default value specified by the system designer.

The Choices: 2.5 (default), 2.

DRAM Timing

This item determines DRAM clock/ timing follow SPD or not.

The Choices: By SPD (default), Manual.

Precharge to Active (Trp)

The Choices: 3T (default), 2T.

Active to Precharge (Tras)

The Choices: 6T (default), 5T.

Active to CMD (Trcd)

The Choices: 3T (default), 2T.

DRAM Burst Length

This item determines DRAM Burst Length.

The Choices: 4 (default), 8.

DRAM Queue Depth

This item determines DRAM Queue Depth. The Choices: 4 level(default), 2 level, 3 level.

DRAM Command Rate

This item determines DRAM Command Rate.

The Choices: 2T Command(default), 1T Command

AGP & P2P Bridge Control

If you highlight the literal "Press Enter" next to the "AGP & P2P Bridge Control" label and then press the enter key, it will take you a submenu with the following options:

AGP Aperture Size

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

The Choices: 64M (default), 256M, 128M, 32M, 16M, 8M, 4M.

AGP Mode

This item allows you to select the AGP Mode.

The Choices: 2X, 4X (default), 1X.

AGP Driving Control

By choosing "Auto" the system BIOS will the AGP output Buffer Drive strength P Ctrl by AGP Card. By choosing "Manual", it allows user to set AGP output Buffer Drive strength P Ctrl by manual.

The Choices: Auto (default), Manual.

AGP Driving Value

While AGP driving control item set to "Manual", it allows user to set AGP driving.

The Choices: DA (default).

AGP Fast Write

The Choices: Disabled (default), Enabled.

AGP Master 1 WS Write

When Enabled, writes to the AGP (Accelerated Graphics Port) are executed with one wait states.

The Choices: Disabled (default), Enabled.

AGP Master 1 WS Read

When Enabled, read to the AGP (Accelerated Graphics Port) are executed with one wait states.

The Choices: Disabled (default), Enabled.

CPU & PCI Bus Control

If you highlight the literal "Press Enter" next to the "CPU & PCI Bus Control" label and then press the enter key, it will take you a submenu with the following options:

PCI1/2 Master 0 WS Write

When Enabled, writes to the PCI bus are executed with zerowait states.

The Choices: Enabled (default), Disabled.

PCI Delay Transaction

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

The Choices: Disabled (default), Enabled.

Memory Hole

When enabled, you can reserve an area of system memory for ISA adapter ROM. When this area is reserved, it cannot be cached. Refer to the user documentation of the peripheral you are installing for more information.

The Choices: Disabled (default), Enabled.

System BIOS Cacheable

When enabled, accesses to system BIOS ROM addressed at F0000H-FFFFFH are cached, provided that the cache controller is enabled.

The Choices: Enabled, Disabled (default).

Video RAM Cacheable

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

The Choices: Enabled, Disabled (default).

VGA Share Memory Size

This item allows you to share the DIMM memory size for VGA memory.

The Choices: 32MB (default), 16MB, 8MB, Disabled.

PnP/PCI Configurations

PNP OS Installed

When set to YES, BIOS will only initialize the PnP cards used for the boot sequence (VGA, IDE, SCSI). The rest of the cards will be initialized by the PnP operating system like WindowTM 95. When set to NO, BIOS will initialize all the PnP cards. For non-PnP operating systems (DOS, NetwareTM), this option must set to NO.

The Choices: No (default), Yes.

Reset Configuration Data

Default is Disabled. Select Enabeld to reset Extrended System Configuration Data (ESCD) when you exit Setup if you have installed a new add-on and the system reconfiguration has caused such a serious conflict that the OS cannot boot.

The Choices: Disabled (default), Enabled.

Resources Controlled By

BIOS can automatically configure all the boot and Plug and Play compatible devices. If you choose Auto, you cannot select IRQ DMA and memory base address fields, since BIOS automatically assigns them.

The Choices: Auto < ESCD > (default), Manual.

IRQ Resources

When resources are controlled manually, assign each system interrupt a type, depending on the type of device using the interrupt. This is only configurable when "Resources Controlled By" is set to "Manual".

,	
IRQ-3	assigned to: PCI device
IRQ-4	assigned to: PCI device
IRQ-5	assigned to: PCI device
IRQ-7	assigned to: PCI device
IRQ-9	assigned to: PCI device
IRQ-10	assigned to: PCI device
IRQ-11	assigned to: PCI device
IRQ-12	assigned to: PCI device
IRQ-14	assigned to: PCI device
IRQ-15	assigned to: PCI device

PCI / VGA Palette Snoop

Some graphic controllers that are not VGA compatible take the output from a VGA controller and map it to their display as a way to provide boot information and VGA compatibility.

The Choices: Disabled (default), Enabled.

PCI Latency Timer (CLK)

This item allows you to set up the PCI Latency Time (0-255) and when you select 32 PCI Clock it can make your PCI Speed fastest.

The Choices: 0-255, 32 (default)

PCI1/2/3 IRQ Assignment

This item allows you to assignment the PCI Slot's IRQ.

The Choices: Auto (default), 3, 4, 5, 7, 9, 10, 11, 12, 14, 15.

Frequency/Voltage Control

CPU Speed Detected

This item shows the CPU speed information; which detected by the system.

Spread Spectrum

This item allows you to enable/disable the Spread Spectrum function.

The Choices: Enabled (default), Disabled.

CPU Clock

This item shows the CPU Host Clock.

DDR: CPU Ratio

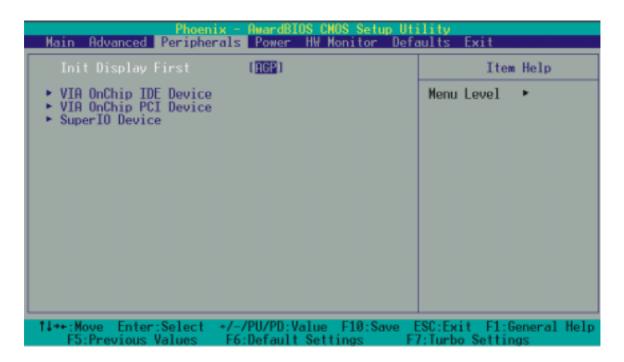
This item allows you to adjust your DRAM: CPU Clock Ratio.

The Choices: Auto (default), 2.00, 2.66.

DDR Speed (strobe/sec)

This item shows the DDR Speed. (CPU Clock * CPU Ratio)

8.3 Integrated Peripherals



Init Display First

With systems that have multiple video cards, this option determines whether the primary display uses a PCI Slot or an AGP Slot.

The Choices: AGP (default), PCI Slot.

VIA OnChip IDE Device

If you highlight the literal "Press Enter" next to the "VIA Onchip IDE Device" label and then press the enter key, it will take you a submenu with the following options:

IDE Channel 0/1

The motherboard chipset contains a PCI IDE interface with support for two IDE channels. Select "Enabled" to activate the first and/or second IDE interface. Select "Disabled" to deactivate an interface if you are going to install a primary and/or secondary add-in IDE interface.

The Choices: Enabled (default), Disabled.

IDE Prefetch Mode

The "onboard" IDE drive interfaces supports IDE prefetching for faster drive access. If the interface does not support prefetching. If you install a primary and/or secondary add-in IDE interface, set this option to "Disabled".

The Choices: Enabled (default), Disabled.

Primary / Secondary / Master / Slave PIO

The IDE PIO (Programmed Input / Output) fields let you set a PIO mode (0-4) for each of the IDE devices that the onboard IDE interface supports. Modes 0 to 4 will increased performance progressively. In Auto mode, the system automatically determines the best mode for each device.

The Choices: Auto (default), Mode0, Mode1, Mode2, Mode3, Mode4.

Primary / Secondary / Master / Slave UDMA

Ultra DMA/100 functionality can be implemented if it is supported by the IDE hard drives in your system. As well, your operating environment requires a DMA driver (Windows 95 OSR2 or a third party IDE bus master driver). If your hard drive and your system software both support Ultra DMA/100, select Auto to enable BIOS support.

The Choices: Auto (default), Disabled.

IDE HDD Block Mode

Block mode is otherwise known as block transfer, multiple commands, or multiple sector read/write. Select the "Enabled" option if your IDE hard drive supports block mode (most new drives do). The system will automatically determine the optimal number of blocks to read and write per sector.

The Choices: Enabled (default), Disabled.

VIA OnChip PCI Device

If you highlight the literal "Press Enter" next to the "VIA OnChip PCI Device" label and then press the enter key, it will take you a submenu with the following options:

AC97 Audio

This option allows you to control the onboard AC97 audio.

The Choices: Auto (default), Disabled.

Onboard Audio Codec

This option allows you to control the onboard audio codec.

The Choices: Enabled (default), Disabled.

AC97 Modem

This option allows you to control the onboard AC97 modem.

The Choices: Auto (default), Disabled.

USB Controller

This option should be enabled if your system has a USB installed on the system board. You will need to disable this feature if you add a higher performance controller.

The Choices: Enabled (default), Disabled.

USB Device Support

Enables support for USB attached keyboards.

The Choices: Disabled (default), Enabled.

Super IO Device

If you highlight the literal "Press Enter" next to the "Super IO Device" label and then press the enter key, it will take you a submenu with the following options:

Onboard FDC Controller

Select Enabled if your system has a floppy disk controller (FDC) installed on the system board and you wish to use it. If install and FDC or the system has no floppy drive, select Disabled in this field.

The Choices: Enabled (default), Disabled.

Onboard Serial Port 1

Select an address and corresponding interrupt for the first and second serial ports.

The Choices: Disabled, 3F8/IRQ4 (default), 2F8/IRQ3, 3E8/IRQ4, 2E8/IRQ3, Auto.

Onboard Serial Port 2

Select an address and corresponding interrupt for the first and second serial ports.

The Choices: Disabled, 2F8/IRQ3 (default), 3F8/IRQ4, 3E8/IRQ4, 2E8/IRQ3, Auto.

UART Mode Select

This item allows you to determine which Infra Red (IR) function of onboard I/O chip.

The Choices: Normal (default), AS KIR, IrDA.

RxD, TxD Active

This item allows you to determine which Infrared (IR) function of onboard I/O chip.

The Choices: Hi / Lo (default), Hi / Hi, Lo / Hi, Lo / Lo.

IR Transmission Delay

This item allows you to enable/disable IR transmission delay.

The Choices: Enabled (default), Disabled.

UR2 Duplex Mode

Select the value required by the IR device connected to the IR port. Full-duplex mode permits simultaneous two-direction transmission. Half-duplex mode permits transmission in one direction only at a time.

The Choices: Half (default), Full.

Onboard Parallel Port

This item allows you to determine access onboard parallel port controller with which I/O Address.

The Choices: 378/IRQ7 (default), 278/IRQ5, 3BC/IRQ7, Disabled.

Parallel Port Mode

The default value is ECP.

The Choices: ECP(default). ECP means that using Parallel port as Extended Capabilities Port.

as Extended Capabilities Port.

EPP Using Parallel I

EPP Using Parallel Port as Enhanced Parallel Port.

SPP Using Parallel port as Standard Printer Port.

ECP+EPP Using Parallel port as ECP & EPP mode.

EPP Mode Select

Select EPP port type 1.7 or 1.9.

The Choices: EPP 1.7(default), EPP1.9.

ECP Mode Use DMA

Select a DMA Channel for the port.

The Choices: 3 (default), 1.

Game Port Address

Game Port I/O Address.

The Choices: 201 (default), 209, Disabled.

Midi Port Address

Midi Port Base I/O Address.

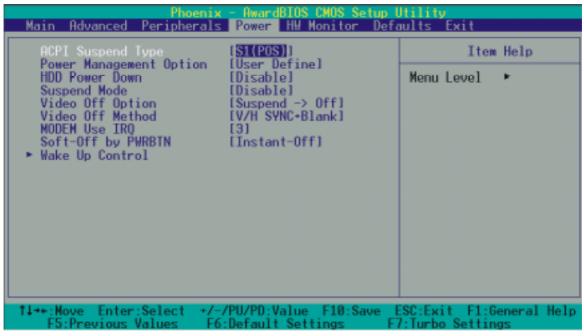
The Choices: 330 (default),300, 290, Disabled.

Midi Port IRQ

This determines the IRQ in which the Midi Port can use.

The Choices: 5 (default), 10.

8.4 Power Management



The Power Management Setup Menu allows you to configure your system to utilize energy conservation and power up/power down features.

ACPI Suspend Type

The item allows you to select the suspend type under the ACPI operating system.

The Choices: S1 (POS) (default) Power on Suspend

S3 (STR) Suspend to RAM

S1 & S3

Power Management Option

This category allows you to select the type (or degree) of power saving and is directly related to the following modes:

- 1. HDD Power Down.
- 2. Suspend Mode.

There are three options of Power Management, three of which have fixed mode settings:

Min. Power Saving

Minimum power management.

Suspend Mode = 1 hr.

HDD Power Down = 30 min

Max. Power Saving

Maximum power management only available for sl CPU's.

Suspend Mode = 1 min.

HDD Power Down = 6 min.

User Defined (default)

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.

HDD Power Down

When enabled, the hard disk drive will power down and after a set time of system inactivity. All other devices remain active.

The Choices: Disabled (default), 1 Min, 2 Min, 3 Min, 4 Min, 5 Min, 6 Min, 7 Min,8 Min, 9 Min, 10 Min, 11 Min, 12 Min, 13 Min, 14 Min, 15 Min.

Suspend Mode

The item allows you to select the suspend type under ACPI operating system.

The Choices: Disabled (default), 1 Min, 2 Min, 4 Min, 6 Min, 8 Min, 10 Min, 20 Min, 30 Min, 40 Min, 1 Hour.

Video Off Option

This field determines when to activate the video off feature for monitor power management.

The Choices: Suspend Off (default), Always On.

Video Off Method

This option determines the manner in which the monitor is goes blank.

The Choices:

V/H SYNC+Blank (default)

This selection will cause the system to turn off the vertical and horizontal synchronization ports and write blanks to the video buffer.

Blank Screen

This option only writes blanks to the video buffer.

DPMS Support

Initial display power management signaling.

Modem Use IRQ

This determines the IRQ, which can be applied in MODEM use.

The Choices: 3 (default), 4, 5, 7, 9, 10, 11, NA.

Soft-Off by PWRBTN

Pressing the power button for more than 4 seconds forces the system to enter the

Soft-Off state when the system has "hung."

The Choices: Delay 4 Sec, Instant-Off (default).

Wake Up Control

If you highlight the literal "Press Enter" next to the "Wake Up Control" label and then press the enter key, it will take you a submenu with the following options:

PWRON After PWR-Fail

Set if restart the system after power fail. Choose On, the system will start whether the system was on before power failed. Choose Former-Sts, the system will restore to the status before the power failed.

The Choices: Off (default), On, Former-Sts.

PS2KB Wake Up Select

There are 2 options: Hot Key, Password.

"Password" When select Password, please press

ENTER key to change Password MAX 8

numbers.

"Hot Key" Use PS2KB devices to awaken the system

from S1-S5 Mode.

PS2KB Wake Up from S1-S5

You can use PS2KB devices to awaken the system from S1 Mode, S2 Mode, S3 Mode (Suspend to RAM), S4 Mode (Suspend to Disk) and S5 Mode (Shutdown).

USB Wake Up

This item allows you to select USB devices to awaken the system from suspend mode.

The Choices: Disabled (default), Enabled.

VGA

When set to On, any event occurring at a VGA Port will awaken a system which has been powered down.

The Choices: OFF (default), On.

LPT & COM

When this option is set to On, any event occurring at a COM(serial)/LPT (printer) port will awaken a system which has been powered down.

The Choices: LPT/COM (default), COM, LPT, NONE.

HDD & FDD

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

The Choices: ON (default), OFF.

PCI Master

When set to On, you need a LAN add-on card which supports the power function. It should also support the wake-up on LAN jumper.

The Choices: OFF (default), ON.

LAN Wake Up

To use this function, you need a LAN add-on card which support power on function. It should also support the wake-up on LAN jumper.

The Choices: Disabled (default), Enabled.

PCI PME Wake Up

When you select Enabled, a PME signal from PCI card returns the system to Full ON state.

The Choices: Disabled (default), Enabled.

RTC Wake Up

When "Enabled", you can set the date and time at which the RTC (real-time clock) alarm awakens the system from Suspend mode.

The Choices: Enabled, Disabled (default).

Date (of Month)

You can choose which month the system will boot up. This field is only configurable when "RTC Resume" is set to "Enabled".

Resume Time (hh: mm: ss)

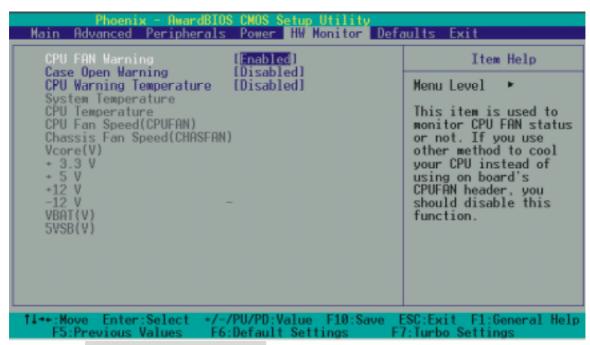
You can choose the hour, minute and second the system will boot up. This field is only configurable when "RTC Resume" is set to "Enabled".

IRQs Activity Monitoring

Press Enter to access another sub menu used to configure the different wake up events (i.e. wake on LPT & COMM activity).

On
Enabled
Disabled
Disabled
Disabled
Disabled
Enabled
Enabled
Enabled
Disabled

8.5 Hardware Monitoring



CPU FAN Warning

This item is used to monitor CPU FAN status or not. If you use other method to cool your CPU instead of using on board's CPUFAN header, you should disable this function.

The Choices: Enabled (default), Disabled.

Case Open Warning

If this function is set to "Enabled" and the case is opened by others, the system will automatically show alert messages on the screen display when you power on your computer. On the contrary, if this function is set to "Disabled", the system will not show alert messages when you power on your computer even if the case is opened by others.

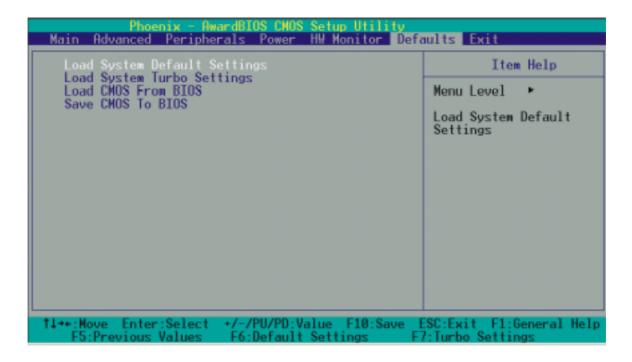
The Choices: Disabled (default), Enabled.

CPU Warning Temperature

This item allows you to set the over temperature limit of your CPU. When the CPU temperature is higher than this setting, the warning mechanism will be activated.

The Choices: Disabled (default), Enabled.

8.6 Load Defaults



Load System Default Settings

Load System Default Settings.

Load System turbo Settings

Load System Turbo Settings.

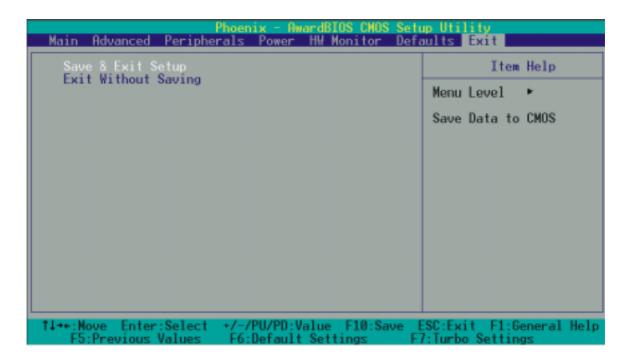
Load CMOS From BIOS

Load defaults from flesh ROM for batteryless.

Save CMOS To BIOS

Save defaults to flesh ROM for batteryless.

8.7 Exit Menu



Save & Exit Setup

Save all configuration changes to CMOS(memory) and exit setup. Confirmation message will be displayed before proceeding.

Exit Without Saving

Abandon all changes made during the current session and exit setup. Confirmation message will be displayed before proceeding.

Chapter 9: Software Setup

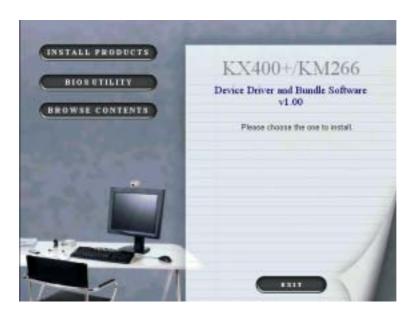
9.1 Software List

Category	Platform	Location in CD
VIA Service Pack (4 In 1)	Windows 9X/ ME/ 2000/ XP	\VIA\Driver\4 in 1
Onboard VGA Driver		\VIA\Driver\ProSavage DDR
Onboard Audio Driver		\VIA\Driver\Relatek Audio
WinXP USB Wake from S3 Driver		\VIA\Driver\WinXP USB Wake from S3
BIOS files		\VIA\Driver\BIOS\
PC-cillin 2002		\VIA\Utility\PC- Cillin2002
Acrobat Reader		\VIA\Utility\PC- Cillin2002\Acrobat

9.2 Software Installation

You can simply put Driver CD into CD-ROM drive and the Installation Utility will auto-run or you can launch the Driver CD Installation Utility manually. The steps shown below are for reference:

1. Once the Driver CD auto-runs, you will see the screen at first, there are three buttons optional.



2. Click CHASTALL PRODUCTS on the first picture, and then you can see the screen like the picture below.



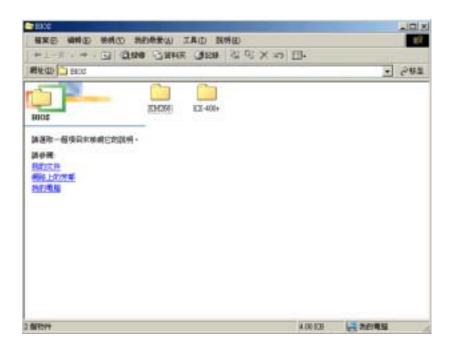
3. Click on the second picture, you can choose to install the drivers of VIA 4in1 Service PACK, VGA and AUDIO. Click the driver you need to install.



4. By clicking on the second picture, you will have two programs to choose and install. Follow the description after clicking the button.



5. If you click the button on the first page, you will see this screen. To repair bios, if you need to, the files are in this folder.



6. Clicking the third button , we can browse all the files in the Drive CD.



7. You can click to finish using the Drive CD.



Chapter 10: Troubleshooting

Problem 1:

No power to the system at all. Power light does not illuminate, fan inside power supply does not turn on. Indicator light on keyboard does not turn on.

Causes:

- 1. Power cable is unplugged.
- 2. Defective power cable.
- 3. Power supply failure.
- 4. Faulty wall outlet; circuitbreaker or fuse blown.

Solutions:

- 1. Make sure power cable is securely plugged in.
- 2. Replace cable.
- 3. Contact technical support.
- 4. Use different socket, repair outlet, reset circuit breaker or replace fuse.

Problem 2:

System inoperative. Keyboard lights are on, power indicator lights are lit, hard drive is spinning.

Causes:

Memory DIMM is partially dislodged from the slot on the motherboard.

Solutions:

Using even pressure on both ends of the DIMM, press down firmly until the module snaps into place.

Problem 3:

System does not boot from hard disk drive, can be booted from CD-ROM drive.

Causes:

- 1. Connector between hard drive and system board unplugged.
- 2. Damaged hard disk or disk controller.
- 3. Hard disk directory or FAT is scrambled.

Solutions:

1. Check cable running from disk to disk controller board. Make sure both ends are securely plugged in; check the drive type in the standard CMOS setup.

- 2. Contact technical support.
- 3. Backing up the hard drive is extremely important. All hard disks are capable of breaking down at any time.

Problem 4:

System only boots from CD-ROM. Hard disk can be read and applications can be used but booting from hard disk is impossible.

Causes:

Hard Disk boot program has been destroyed.

Solutions:

Back up data and applications files. Reformat the hard drive. Re-install applications and data using backup disks.

Problem 5:

Error message reading "SECTOR NOT FOUND" or other error messages not allowing certain data to be retrieved.

Causes:

A number of causes could be behind this.

Solutions:

Back up any salvageable data. Then low level format, partition, and high level format the hard drive. Re-install all saved data when completed.

Problem 6:

Screen message says "Invalid Configuration" or "CMOS Failure."

Causes:

Incorrect information entered into the configuration (setup) program.

Solutions:

Review system's equipment . Make sure correct information is in setup.

Problem 7:

The Screen is blank.

Causes:

No power to monitor.

Solutions:

Check the power connectors to monitor and to system.

Problem 8:

No screen.

Causes:

- 1. Memory problem.
- 2. Computer virus.

Solutions:

- 1. Reboot computer. Reinstall memory, make sure that all memory modules are installed in correct sockets.
- 2. Use anti-virus programs to detect and clean viruses.

Problem 9:

Screen goes blank periodically.

Causes:

Screen saver is enabled.

Solutions:

Disable screen saver.

Problem 10:

Keyboard failure.

Causes:

Keyboard is disconnected.

Solutions:

Reconnect keyboard. Check keys again, if no improvement replace keyboard.

Problem 11:

No color on screen.

Causes:

- 1. Faulty Monitor.
- 2. CMOS incorrectly set up.

Solutions:

- 1. If possible, connect monitor to another system. If no color replace monitor.
- 2. Call technical support.

Problem 12:

The screen shows "C: drive failure."

Causes:

Hard drive cable not connected properly.

Solutions:

Check hard drive cable.

Problem 13:

Cannot boot system after installing second hard drive. Causes:

- 1. Master/slave jumpers not set correctly.
- 2. Hard drives not compatible / different manufacturers.

Solutions:

- 1. Set master/slave jumpers correctly.
- 2. Run SETUP program and select correct drive types. Call drive manufacturers for compatibility with other drives.

Problem 14:

Missing operating system on hard drive.

Causes:

CMOS setup has been changed.

Solutions:

Run setup and select correct drive type.

Problem 15:

Certain keys do not function.

Causes:

Keys jammed or defective.

Solutions:

Replace keyboard.