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KV-85

AMD Athlon™ 64 System Board
Socket 754

User's Manual

Rev. 1.00

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If you do not properly set the motherboard settings, causing the motherboard to malfunction or fail, we cannot guarantee any responsibility.

Table of Contents

Chapter 1. Introduction 1-1

1-1. Features & Specifications 1-1

1-2. Layout Diagram 1-3

Chapter 2. Hardware Setup 2-1

2-1. Install The Motherboard 2-1

2-2. Install CPU, Heatsink and Fan Assembly 2-2

2-3. Install System Memory 2-4

2-4. Connectors, Headers and Switches 2-5

(1). ATX Power Input Connectors 2-5

(2). FAN Connectors 2-6

(3). CMOS Memory Clearing Header 2-7

(4). Front Panel Switches & Indicators Headers 2-8

(5). Additional USB Port Headers 2-9

(6). Front Panel Audio Connection Header 2-10

(7). Serial ATA Connectors 2-11

(8). Accelerated Graphics Port Slot 2-12

(9). Internal Audio Connectors 2-12

(10). Floppy and IDE Disk Drive Connectors 2-13

(11). Back Panel Connectors 2-14

Chapter 3. BIOS Setup 3-1

3-1. Standard CMOS Features 3-3

3-2. Advanced BIOS Features 3-6

3-3. Advanced Chipset Features 3-8

3-4. Integrated Peripherals 3-11

3-5. Power Management Setup 3-15

3-6. PnP/PCI Configurations 3-17

3-7. PC Health Status 3-19

3-8. Load Fail-Safe Defaults 3-20

3-9. Load Optimized Defaults 3-20

3-10. Set User Password 3-20

3-11. Save & Exit Setup 3-20

3-12. Exit Without Saving 3-20

Chapter 4. Driver Installation 4-1

4-1. Setup Items.....4-2

Appendix A. How to Get Technical Support..... A-1

Chapter 1. Introduction

1-1. Features & Specifications

1. **CPU**
   - Supports AMD Socket 754 Athlon 64/Sempron Processor with 1600MHz Hyper-Transport
   - Supports AMD K8 CPU Cool 'n' Quiet Technology
2. **Memory**
   - 2 x 184-pin DIMM sockets
   - Supports Dual channel DDR400/333 Un-buffered ECC/ Non-ECC memory
   - Supports maximum memory capacity up to 2GB
3. **Chipset**
   - VIA K8M800 + VT8237R
4. **Graphics**
   - Integrated UniChrome Pro Graphics with 2D/3D/Video controller
5. **SATA RAID**
   - Serial ATA 1.5Gb/s data transfer rate
   - Supports SATA RAID 0/1
6. **LAN**
   - On board 10/100M PHY
7. **Audio**
   - Onboard 5.1-channel Audio CODEC
8. **Internal I/O Connectors**
   - 1x AGP 8X slot
   - 3x PCI slots
   - 1x Floppy port supports up to 2.88MB
   - 2x Ultra DMA 133/100/66/33 connectors
   - 2x Serial ATA 1.5Gb/s connectors
   - 2x USB 2.0 headers
   - 1x CD-IN
   - 1x FP-Audio header

9. Back Panel I/O

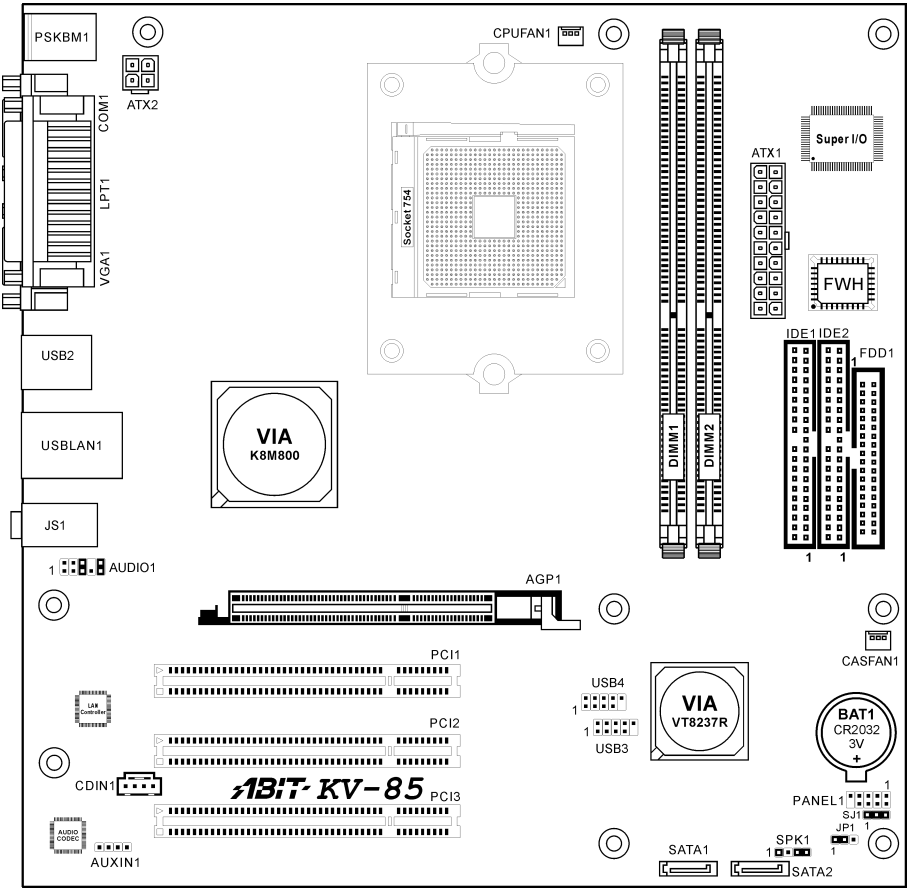
- 1x PS/2 keyboard, 1x PS/2 mouse
- 1x Parallel Port, 1x Serial Port,
- 1x VGA Connector
- 4x USB 2.0 Connectors
- 1x RJ-45 LAN Connector
- 1x Audio connector (Line-out, Line-in, MIC-in)

10. Miscellaneous

- mATX form factor: 244 x 244 mm

✸ **Specifications and information contained herein are subject to change without notice.**

1-2. Layout Diagram



MEMO

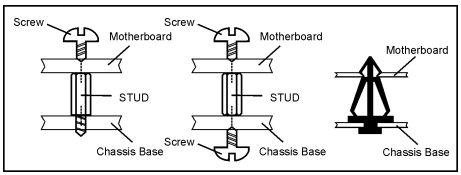
Chapter 2. Hardware Setup

Before the Installation: Turn off the power supply switch (fully turn off the +5V standby power), or disconnect the power cord before installing or unplugging any connectors or add-on cards. Failing to do so may cause the motherboard components or add-on cards to malfunction or damaged.

2-1. Install The Motherboard

Most computer chassis have a base with many mounting holes to allow motherboard to be securely attached on and at the same time, prevented from short circuits. There are two ways to attach the motherboard to the chassis base:

1. use with studs
2. or use with spacers



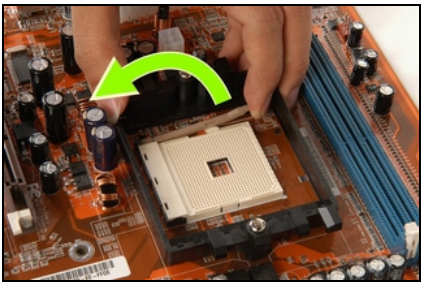
In principle, the best way to attach the board is to use with studs. Only if you are unable to do this should you attach the board with spacers. Line up the holes on the board with the mounting holes on the chassis. If the holes line up and there are screw holes, you can attach the board with studs. If the holes line up and there are only slots, you can only attach with spacers. Take the tip of the spacers and insert them into the slots. After doing this to all the slots, you can slide the board into position aligned with slots. After the board has been positioned, check to make sure everything is OK before putting the chassis back on.

ATTENTION: To prevent shorting the PCB circuit, please REMOVE the metal studs or spacers if they are already fastened on the chassis base and are without mounting-holes on the motherboard to align with.

2-2. Install CPU, Heatsink and Fan Assembly

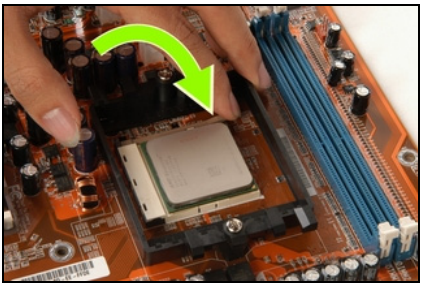
Please pay attention to the following notices before installing the CPU and heatsink/fan assembly.

1. ***Always use the processor with the Heatsink and Fan Assembly installed.***
2. ***Do not touch the pins on the processor.***
3. ***If you ever need to reinstall the Heatsink and fan Assembly, please clean the heatsink surface and apply new thermal interface material first.***

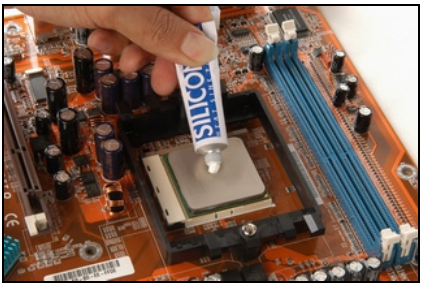


1. Pull out the socket locking lever slightly, then lift it up.

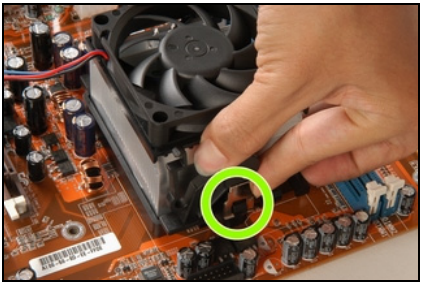
2. Align the corner with triangle mark of the processor with the marking on the motherboard, and then place the processor vertical down into the socket.



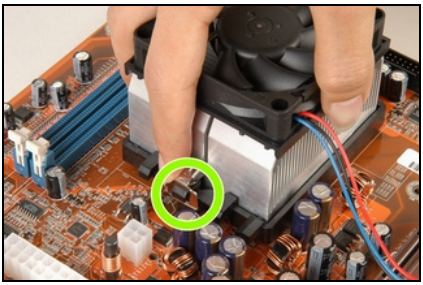
3. Lower the locking lever to the fully locked position.



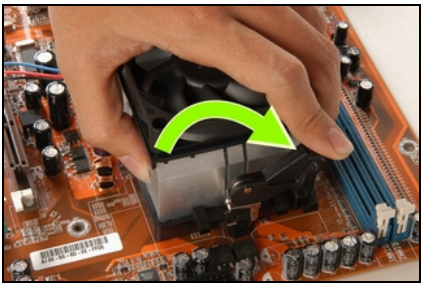
4. Apply thermal interface material.



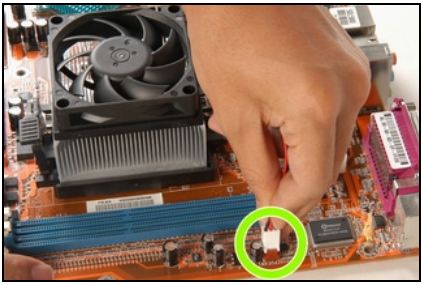
5. Place the heatsink and fan assembly onto the retention frame. Match the heatsink clip with the socket mounting lug. Hook the spring clip to the mounting lug.



6. On the other side, push the retention clip straight down to lock into the plastic lug on the retention frame.



7. Turn the cam lever to lock into the retention frame.

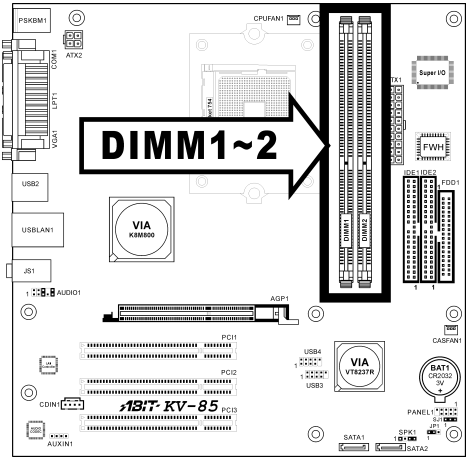


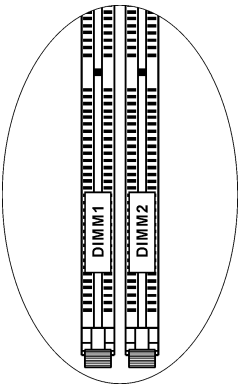
8. Attach the four-pin power plug from the heatsink and fan assembly to the CPU FAN connector.

For detailed information on how to install your heatsink and fan assembly, please refer to the instruction manual came packed with the heatsink and fan assembly you bought.

2-3. Install System Memory

This system board provides two 184-pin DDR DIMM slots for DDR400 memory modules with memory expansion size up to 2GB.

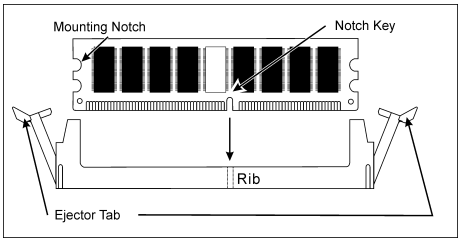




Bank	Memory Module	Total Memory
Bank 0, 1 (DIMM1)	256MB, 512MB, 1GB	256MB ~ 1GB
Bank 2, 3 (DIMM2)	256MB, 512MB, 1GB	256MB ~ 1GB
Total System Memory		256MB ~ 2GB

NOTE: Usually there is no hardware or BIOS setup require after adding or removing memory modules, but you will have to clear the CMOS memory first if any memory module related problem occurs.

Power off the computer and unplug the AC power cord before installing or removing memory modules.



1. Locate the DIMM slot on the board.
2. Hold two edges of the DIMM module carefully, keep away of touching its connectors.
3. Align the notch key on the module with the rib on the slot.
4. Firmly press the module into the slots until the ejector tabs at both sides of the slot automatically snaps into the mounting notch. Do not force the DIMM module in with extra force as the DIMM module only fit in one direction.
5. To remove the DIMM modules, push the two ejector tabs on the slot outward simultaneously, and then pull out the DIMM module.

ATTENTION: Static electricity can damage the electronic components of the computer or optional boards. Before starting these procedures, ensure that you are discharged of static electricity by touching a grounded metal object briefly.

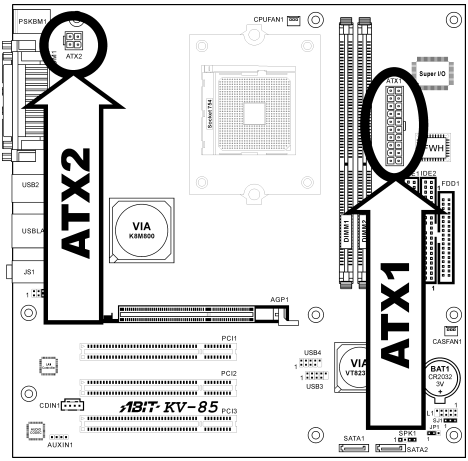
2-4. Connectors, Headers and Switches

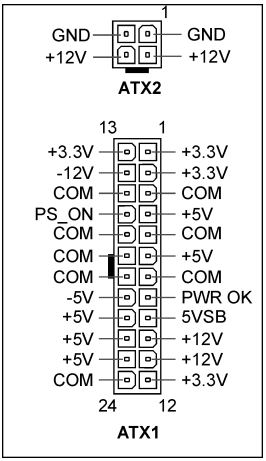
Here we will show you all of the connectors, headers and switches, and how to connect them. Please read the entire section for necessary information before attempting to finish all the hardware installation inside the computer chassis. A complete enlarged layout diagram is shown in Chapter 1 for all the position of connectors and headers on the board that you may refer to.

WARNING: Always power off the computer and unplug the AC power cord before adding or removing any peripheral or component. Failing to so may cause severe damage to your motherboard and/or peripherals. Plug in the AC power cord only after you have carefully checked everything.

(1). ATX Power Input Connectors

This motherboard provides two power connectors to connect to an ATX12V power supply.





NOTE: It is recommended to connect to a power supply with 350W, 20A +5VDC capacity at least for heavily loaded system, and 2A +5VSB capacity at least for supporting wake-up features.

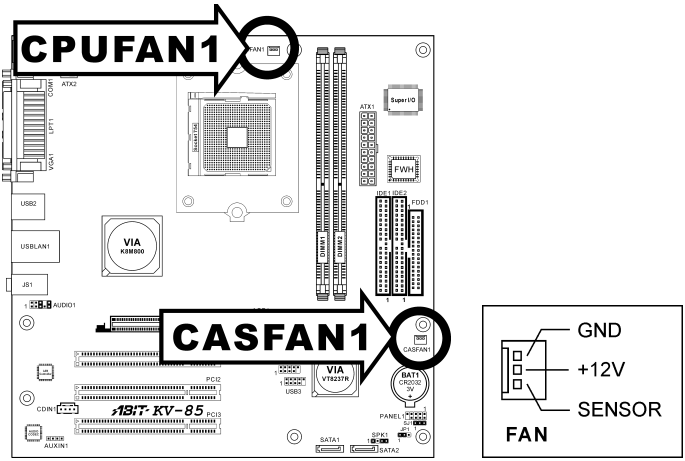
(2). FAN Connectors

These 3-pin connectors each provide power to the cooling fans installed in your system.

The CPU must be kept cool by using a powerful fan with heatsink. The system is capable of monitoring the speed of the CPU fan.

- CPUFAN1: CPU Fan Power Connector
- CASFAN1: Auxiliary Fan Power Connector

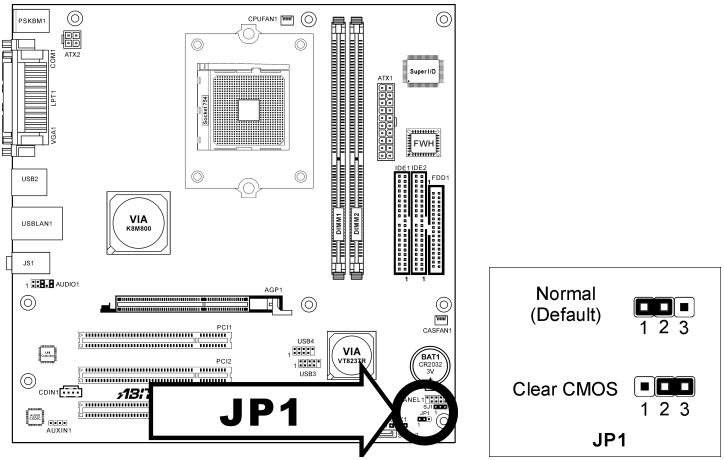
WARNING: These fan connectors are not jumpers. DO NOT place jumper caps on these connectors.



(3). CMOS Memory Clearing Header

This header uses a jumper cap to clear the CMOS memory.

- Pin 1-2 shorted (default): Normal operation.
- Pin 2-3 shorted: Clear CMOS memory.

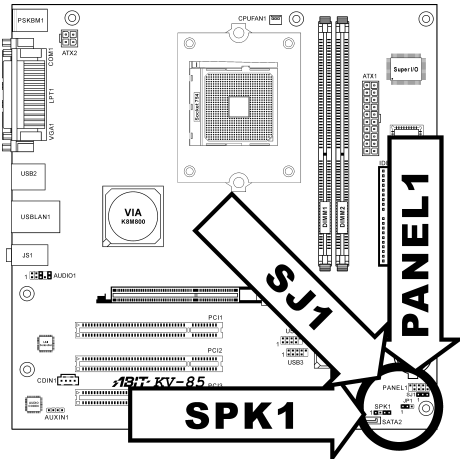


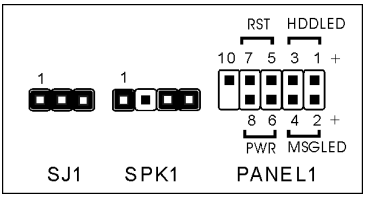
WARNING: Turn the power off first (including the +5V standby power) before clearing the CMOS memory. Failing to do so may cause your system to work abnormally or malfunction.

(4). Front Panel Switches & Indicators Headers

These headers are used for connecting switches and LED indicators on the chassis front panel.

Watch the power LED pin position and orientation. The mark "+" align to the pin in the figure below stands for positive polarity for the LED connection. Please pay attention to connect these headers. A wrong orientation will only cause the LED not lighting, but a wrong connection of the switches could cause system malfunction.

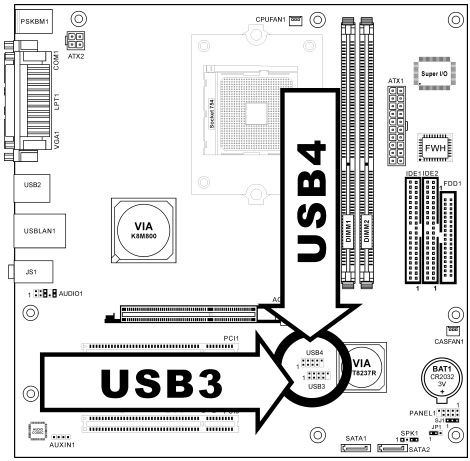


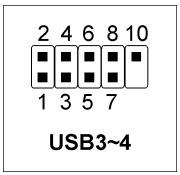


- **SJ1:**
  Connects to ACPI LED cable of chassis front panel.
- **SPK1:**
  Connects to the System Speaker cable of chassis.
- **HDDLED (Pin 1, 3):**
  Connects to the HDD LED cable of chassis front panel.
- **RST (Pin 5, 7):**
  Connects to the Reset Switch cable of chassis front panel.
- **MSGLED (Pin 2, 4):**
  Connecting pins 2 and 4 to a single or dual color front panel mounted LED provides power on/off, sleep, and message waiting indication.
- **PWR (Pin 6, 8):**
  Connects to the Power Switch cable of chassis front panel.

(5). Additional USB Port Headers

These headers each provide 2 additional USB 2.0 ports connection through an USB cable designed for USB 2.0 specifications.



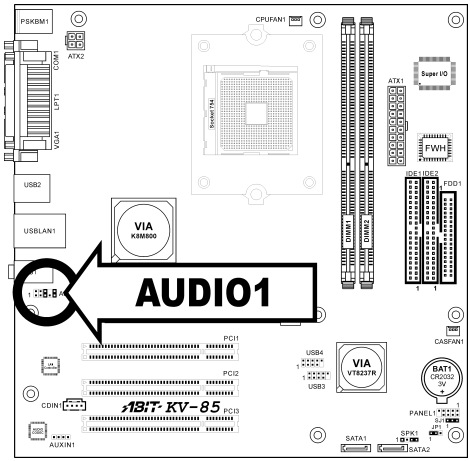


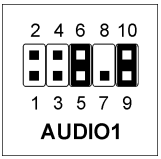
Pin	Pin Assignment	Pin	Pin Assignment
1	VCC	2	VCC
3	Data0 -	4	Data1 -
5	Data0 +	6	Data1 +
7	Ground	8	Ground
9	NC	10	NC

(6). Front Panel Audio Connection Header

This header provides the connection to audio connector at front panel.

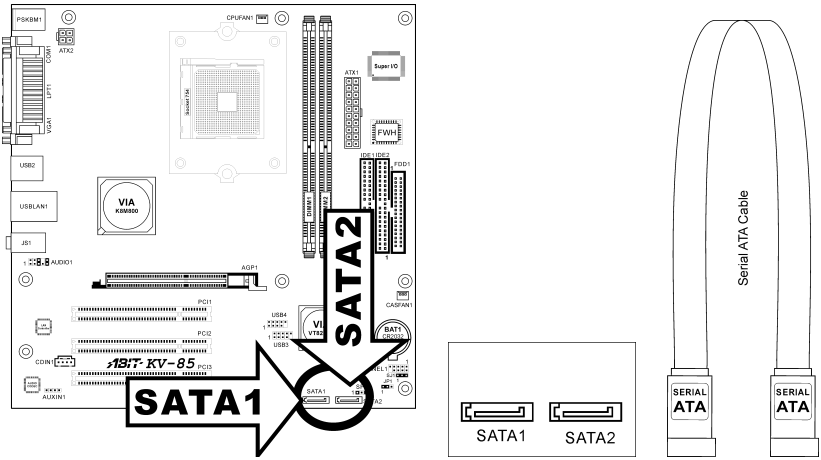
- To use the audio connector at front panel, remove all the jumpers on this header, and then connect to front panel by the extension cable provided with the chassis.
- To use the audio connector at rear panel, disconnect the extension cable, attach the jumpers back at pin 5-6, and pin 9-10 (default setting).



	Pin	Pin Assignment	Pin	Pin Assignment
	1	Audio Mic.	2	Ground
	3	Audio Mic. Bias	4	VCC
	5	Speaker Out Right Channel	6	Speaker Out Right Channel Return
	7	X	8	NC
	9	Speaker Out Left Channel	10	Speaker Out Left Channel Return

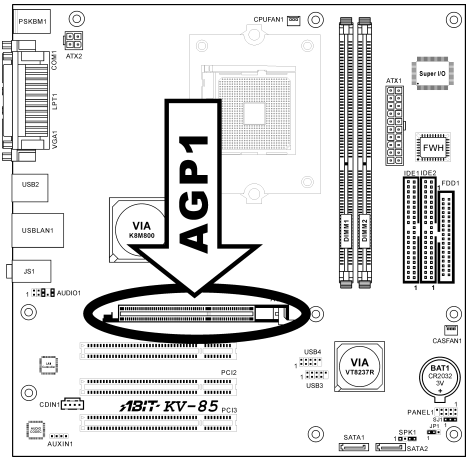
(7). Serial ATA Connectors

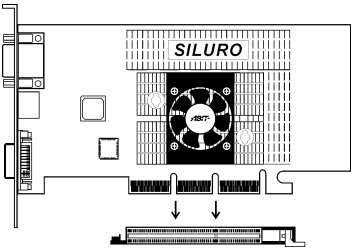
These connectors are provided to attach one Serial ATA device at each channel via Serial ATA cable.



(8). Accelerated Graphics Port Slot

This slot supports an optional AGP graphics card up to AGP 8X mode.

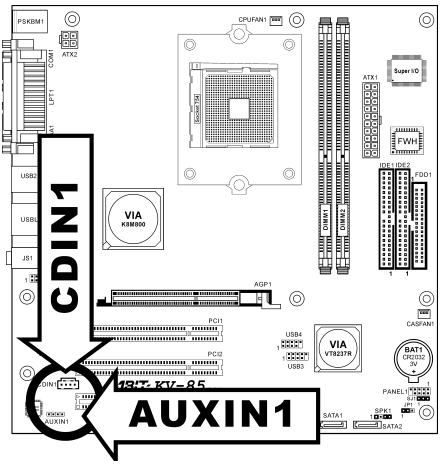


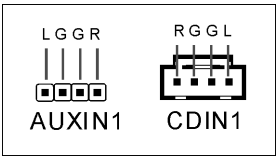


ATTENTION: This motherboard does not support 3.3V AGP cards. Use only 1.5V or 0.8V AGP cards.

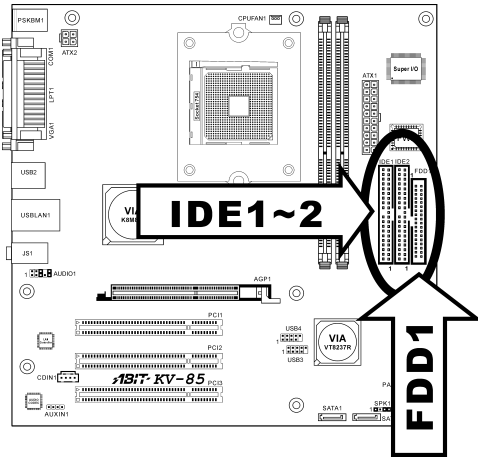
(9). Internal Audio Connectors

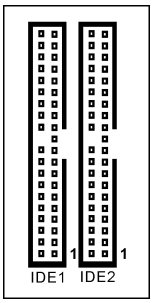
These connectors connect to the audio output of internal CD-ROM drive or add-on card.

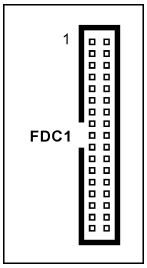




(10). Floppy and IDE Disk Drive Connectors





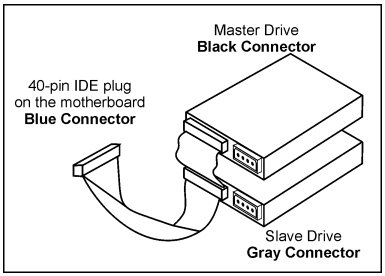


The FDC1 connector connects up to two floppy drives with a 34-wire, 2-connector floppy cable. Connect the single end at the longer length of ribbon cable to the FDC1 on the board, the two connectors on the other end to the floppy disk drives connector. Generally you need only one floppy disk drive in your system.

NOTE: The red line on the ribbon cable must be aligned with pin-1 on both the FDC1 port and the floppy connector.

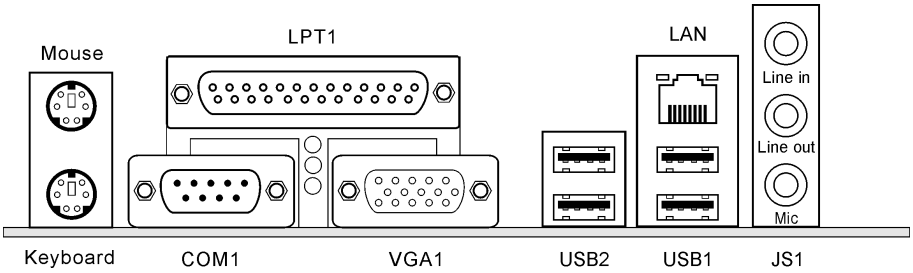
Each of the IDE port connects up to two IDE drives at Ultra ATA/100 mode by one 40-pin, 80-conductor, and 3-connector Ultra ATA/66 ribbon cables.

Connect the single end (blue connector) at the longer length of ribbon cable to the IDE port of this board, the other two ends (gray and black connector) at the shorter length of the ribbon cable to the connectors of your hard drives.



NOTE: Make sure to configure the “Master” and “Slave” relation before connecting two drives by one single ribbon cable. The red line on the ribbon cable must be aligned with pin-1 on both the IDE port and the hard-drive connector.

(11). Back Panel Connectors



- **Mouse:** Connects to PS/2 mouse.
- **Keyboard:** Connects to PS/2 keyboard.
- **LPT1:** Connects to printer or other devices that support this communication protocol.
- **COM1:** Connects to external modem, mouse or other devices that support this communication protocol.
- **VGA1:** Connects to monitor input.
- **LAN:** Connects to Local Area Network.
- **USB1/USB2:** Connects to USB devices such as scanner, digital speakers, monitor, mouse, keyboard, hub, digital camera, joystick etc.
- **JS1:**
  Line-In: Connects to the line out from external audio sources.
  Line-Out: Connects to the front left and front right channel in the 5.1-channel or regular 2-channel audio system.
  Mic-In: Connects to the plug from external microphone.

Chapter 3. BIOS Setup

This motherboard provides a programmable EEPROM that you can update the BIOS utility. The BIOS (Basic Input/Output System) is a program that deals with the basic level of communication between processor and peripherals. Use the BIOS Setup program only when installing motherboard, reconfiguring system, or prompted to "Run Setup". This chapter explains the Setup Utility of BIOS utility.

After powering up the system, the BIOS message appears on the screen, the memory count begins, and then the following message appears on the screen:

PRESS DEL TO ENTER SETUP

If this message disappears before you respond, restart the system by pressing <Ctrl> + <Alt> + <Del> keys, or by pressing the Reset button on computer chassis. Only when it failed by these two methods can you restart the system by powering it off and then back on.

After pressing <Del> key, the main menu screen appears.

Phoenix - AwardBIOS CMOS Setup Utility	
▶ Standard CMOS Features	▶ Frequency/Voltage Control
▶ Advanced BIOS Features	Load Fail-Safe Defaults
▶ Advanced Chipset Features	Load Optimized Defaults
▶ Advanced Chipset Features	Set User Password
▶ Power Management Setup	Save & Exit Setup
▶ PnP/PCI Configurations	Exit Without Saving
▶ PC Health Status	
Esc : Quit F10 : Save & Exit Setup	↑ ↓ → ← : Select Item 6A7L1A1Z
Time, Date, Hard Disk Type	

NOTE: In order to increase system stability and performance, our engineering staffs are constantly improving the BIOS menu. ***The BIOS setup screens and descriptions illustrated in this manual are for your reference only, and may not completely match with what you see on your screen***.

In the BIOS Setup main menu, you can see several options. We will explain these options step by step in the following pages of this chapter, but let us first see a short description of the function keys you may use here.

Esc:

Press this button to quit the BIOS Setup.

↑ ↓ ← →:

Press these buttons to choose, in the main menu, the option you want to confirm or to modify.

F10:

When you have completed the setup of BIOS parameters, press this button to save these parameters and to exit the BIOS Setup menu.

3-1. Standard CMOS Features

This section contains the basic configuration parameters of the BIOS. These parameters include date, hour, VGA card, FDD, and HDD settings.

```
          Phoenix - Award WorkstationBIOS CMOS Setup Utility
                        Standard CMOS Features
  Date (mm:dd:yy)                Thu. Jan 1 2005        Item Help
  Time (hh:mm:ss)                12 : 34 : 56

▶ IDE Channel 1 Master           None
▶ IDE Channel 1 Slave            None
▶ IDE Channel 2 Master           None
▶ IDE Channel 2 Slave            None
▶ IDE Channel 3 Master           None
▶ IDE Channel 4 Master           None

  Drive A                        1.44M, 3.5 in.
  Drive B                        None
  Halt On                        All, But keyboard

  Base Memory                        640K
  Extended Memory                1046520K
  Total Memory                   1047552K

↑↓:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5: Previous Values   F6: Fail-Safe Defaults   F7: Optimized Defaults
```

Date (mm:dd:yy):

This item sets the date you specify (usually the current date) in the format of [Month], [Date], and [Year].

Time (hh:mm:ss):

This item sets the time you specify (usually the current time) in the format of [Hour], [Minute], and [Second].

IDE Channel 1 Master/Slave, IDE Channel 2 Master/Slave, IDE Channel 3/4 Master:

Click <Enter> key to enter its submenu:

```
Phoenix - Award WorkstationBIOS CMOS Setup Utility
IDE Channel 1 Master
IDE HDD Auto-Detection        Press Enter        Item Help

IDE Channel 1 Master          Auto
Access Mode                   Auto

Capacity                      0 MB

Cylinder                      0
Head                          0
Precomp                       0
Landing Zone                  0
Sector                        0

↑↓:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5: Previous Values   F6: Fail-Safe Defaults   F7: Optimized Defaults
```

IDE HDD Auto-Detection:

This item allows you to detect the parameters of IDE drives by pressing <Enter> key. The parameters will be shown on the screen automatically.

IDE Channel 1 Master/Slave, IDE Channel 2 Master/Slave, IDE Channel 3/4 Master:

When set to [Auto], the BIOS will automatically check what kind of IDE drive you are using. If you want to define your own drive by yourself, set it to [Manual] and make sure you fully understand the meaning of the parameters. Please refer to the instruction manual provided by the device's manufacturer to get the setting right.

Access Mode:

This item selects the mode to access your IDE devices. Leave this item to its default [Auto] setting to detect the access mode of your HDD automatically.

Capacity:

This item displays the approximate capacity of the disk drive. Usually the size is slightly greater than the size of a formatted disk given by a disk-checking program.

Cylinder:

This item configures the numbers of cylinders.

Head:

This item configures the numbers of read/write heads.

Precomp:

This item displays the number of cylinders at which to change the write timing.

Landing Zone:

This item displays the number of cylinders specified as the landing zone for the read/write heads.

Sector:

This item configures the numbers of sectors per track.

Back to Standard CMOS Features Setup Menu:

Drive A & Drive B:

This item sets the type of floppy drives (usually only Drive A) installed.

Halt On:

This item determines whether the system stops if an error is detected during system boot-up.

[All Errors]: The system-boot will stop whenever the BIOS detect a non-fatal error.

[No Errors]: The system-boot will not stop for any error detected.

[All, But Keyboard]: The system-boot will stop for all errors except a keyboard error.

[All, But Diskette]: The system-boot will stop for all errors except a diskette error.

[All, But Disk/Key]: The system-boot will stop for all errors except a diskette or keyboard error.

Base Memory:

This item displays the amount of base memory installed in the system. The value of the base memory is typically 640K for system with 640K or more memory size installed on the motherboard.

Extended Memory:

This item displays the amount of extended memory detected during system boot-up.

Total Memory:

This item displays the total memory available in the system.

3-2. Advanced BIOS Features

```
Phoenix - Award WorkstationBIOS CMOS Setup Utility
Advanced BIOS Features
▶ Hard Disk Boot Priority        Press Enter        Item Help
  Quick Power on Self Test       Enabled
  First Boot Device              Floppy
  Second Boot Device             Hard Disk
  Third Boot Device              CDROM
  Boot Other Device              Enabled
  Swap Floppy Drive              Disabled
  Boot Up Floppy Seek            Disabled
  Boot Up NumLock Status         On
  Security Option                Setup
  Small Logo(EPA) Show           Disabled

↑↓:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5: Previous Values   F6: Fail-Safe Defaults   F7: Optimized Defaults
```

Hard Disk Boot Priority:

This item selects the hard disks booting priority. By pressing <Enter> key, you can enter its submenu where the hard disks detected can be selected for the booting sequence to boot up system.

This item functions only when there is the option of [Hard Disk] in any one of the First/Second/Third Boot Device items.

✸ **Bootable Add-in Device:**

This item selects the priority of bootable add-in devices.

Quick Power On Self Test:

When set to [Enabled], this item speeds up the Power On Self Test (POST) after powering on the system. The BIOS shorten or skip some check during the POST.

First Boot Device / Second Boot Device / Third Boot Device / Boot Other Device:

Select the drive to boot first, second and third in the [First Boot Device], [Second Boot Device], and [Third Boot Device] items respectively. The BIOS will boot the operating system according to the sequence of the drive selected. Set [Boot Other Device] to [Enabled] if you wish to boot from another device other than these three items.

Swap Floppy Drive:

When set to [Enabled], and the system is booting from the floppy drive, the system will boot from drive B instead of the regular drive A. There must be two floppy drives connected in the system to use this function.

Boot Up Floppy Seek:

When set to [Enabled], the BIOS will check whether the floppy disk drive is installed or not.

Boot Up NumLock Status:

This item determines the default state of the numeric keypad at system booting up.

[On]: The numeric keypad functions as number keys.

[Off]: The numeric keypad functions as arrow keys.

Security Option:

This item determines when the system will prompt for password - every time the system boots or only when enters the BIOS setup.

[Setup]: The password is required only when accessing the BIOS Setup.

[System]: The password is required each time the computer boots up.

NOTE: Don't forget your password. If you forget the password, you will have to open the computer case and clear all information in the CMOS before you can start up the system. But by doing this, you will have to reset all previously set options.

Small Logo(EPA) Show:

Enables or disables the display of the EPA logo during boot.

3-3. Advanced Chipset Features

```
Phoenix - Award WorkstationBIOS CMOS Setup Utility
Advanced Chipset Features
▶ AGP & P2P Bridge Control      Press Enter        Item Help
▶ DRAM Clock/Drive Control      Press Enter
▶ LDT & PCI Bus Control         Press Enter
  Vlink Data Rate               8X
  Init Display First            PCI Slot

↑↓:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5: Previous Values   F6: Fail-Safe Defaults   F7: Optimized Defaults
```

AGP & P2P Bridge Control:

Click <Enter> key to enter its submenu:

```
Phoenix - Award WorkstationBIOS CMOS Setup Utility
Advanced Chipset Features
  AGP Aperture Size             128M               Item Help
  AGP 2.0 Mode                  4X
  AGP Driving Control           Auto
X AGP Driving Value             DA
  AGP Fast Write                Disabled
  AGP Master 1WS Write          Disabled
  AGP Master 1WS Read           Disabled
  AGP 3.0 Calibration cycle     Disabled

↑↓:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5: Previous Values   F6: Fail-Safe Defaults   F7: Optimized Defaults
```

AGP Aperture Size:

This option specifies the amount of system memory that can be used by the AGP device. The aperture is a portion of the PCI memory address range dedicated for graphics memory address space.

AGP 2.0 Mode:

This item selects the data transfer rate of AGP device. A higher rate delivers faster and better graphics to your system. Make sure your graphics card supports the mode you select.

AGP Driving Control:

Leave this item to its default setting.

✷ AGP Driving Value:

Leave this item to its default setting.

AGP Fast Write:

Two options are available: Disabled ➔ Enabled. The default setting is *Enabled*. If your AGP adapter can support this function, then you can choose *Enabled*. Otherwise, choose *Disabled*.

AGP Master 1 WS Write:

Two options are available: Disabled ➔ Enabled. The default setting is *Disabled*. This implements a single delay when writing to the AGP Bus. When you set it to *Enabled*, two-wait states are used by the system, allowing for greater stability.

AGP Master 1 WS Read:

Two options are available: Disabled ➔ Enabled. The default setting is *Disabled*. This implements a single delay when reading to the AGP Bus. When you set it to *Enabled*, two-wait states are used by the system, allowing for greater stability.

AGP 3.0 Calibration cycle:

Leave this item to its default setting.

↳ DRAM Clock/Drive Control:

Click <Enter> key to enter its submenu:

```
          Phoenix - Award WorkstationBIOS CMOS Setup Utility
                        DRAM Clock/Drive Control
  Current CPU Frequency                              Item Help
  Current DRAM Frequency
  DRAM Clock(Mhz)                Auto
  DRAM Command Rate              Auto
  DRAM CAS# latency Time         Auto

↑↓:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5: Previous Values   F6: Fail-Safe Defaults   F7: Optimized Defaults
```

Current CPU Frequency:

This item will show you the current system front side bus speed.

Current DRAM Frequency:

This item will show you the current DRAM bus speed.

DRAM Clock (Mhz):

This item sets the DRAM clock of your DRAM module. The system may be unstable or unable to boot up if your DRAM module does not support the clock you set.

DRAM Command Rate:

When the host (northbridge) locates the desired memory address, it then processes the wait state of commands.

DRAM CAS# latency Time:

You can select SDRAM CAS (**C**olumn **A**ddress **S**trobe) latency time according your SDRAM specification.

LDT & PCI Bus Control:

Click <Enter> key to enter its submenu:

```
          Phoenix - Award WorkstationBIOS CMOS Setup Utility
                              LDT & PCI Control
  LDT Bus Frequency                800mhz                    Item Help
  PCI Delay Transaction

↑↓:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5: Previous Values   F6: Fail-Safe Defaults   F7: Optimized Defaults
```

LDT Bus Frequency:

This item allows you to select LDT Bus Frequency.

PCI Delay Transaction:

Two options are available: Disabled or Enabled. The default setting is *Enabled*. The chipset has an embedded 32-bit posted write buffer to support delay transactions cycles. Select *Enabled* to support compliance with PCI specification version 2.2.

Back to Advanced Chipset Features Setup Menu:

Vlink Data Rate:

This item can let you select the Vlink Data Rate between northbridge and southbridge.

Init Display First:

This item selects to initialize AGP or PCI Slot first when the system boots.

[PCI Slot]: When the system boots, it will first initialize PCI.

[AGP]: When the system boots, it will first initialize AGP.

3-4. Integrated Peripherals

```
Phoenix - Award WorkstationBIOS CMOS Setup Utility
Integrated Peripherals
▶ OnChip IDE Device          Press Enter        Item Help
▶ OnChip PCI Device          Press Enter
▶ SuperIO Device             Press Enter

↑↓:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5: Previous Values   F6: Fail-Safe Defaults   F7: Optimized Defaults
```

OnChip IDE Device:

Click <Enter> key to enter its submenu:

```
Phoenix - Award WorkstationBIOS CMOS Setup Utility
VIA OnChip IDE Device
Onboard SATA Mode Select     IDE                Item Help
IDE DMA transfer access      Enabled
OnChip IDE1 Controller       Enabled
OnChip IDE2 Controller       Enabled
IDE Prefetch Mode            Enabled
IDE HDD Block Mode           Enabled

↑↓:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5: Previous Values   F6: Fail-Safe Defaults   F7: Optimized Defaults
```

Onboard SATA Mode Select:

This item selects the mode of Serial ATA.

IDE DMA transfer access:

This item selects the DMA mode for devices connected through IDE channels.

On-Chip IDE1/IDE2 Controller:

This item allows you to enable or disable the primary (IDE1) and secondary (IDE2) IDE controller. Select [Disabled] if you want to add a different hard drive controller.

IDE Prefetch Mode:

Two options are available: Disabled or Enabled. The default setting is *Enabled*. The onboard IDE drive interfaces supports IDE prefetching for faster drive accesses. If you install a primary and/or secondary add-in IDE interface, set this field to *Disabled* if the interface does not support prefetching.

IDE HDD Block Mode:

Enable this filed if your IDE hard drive support block mode. Block mode enables BIOS to automatically detect the optimal number of block read and writes per sector that the drive can support and improves the speed of access to IDE devices.

OnChip PCI Device:

Click <Enter> key to enter its submenu:

```
Phoenix - Award WorkstationBIOS CMOS Setup Utility
VIA OnChip IDE Device

OnChip Audio Controller      Enabled          Item Help
OnChip LAN Controller        Enabled
-LAN Boot ROM                Disabled
OnChip USB Controller        All Enabled
-USB 2.0 Support             Enabled
-USB Keyboard Support via    OS
-USB Mouse Support via       OS

↑↓:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5: Previous Values   F6: Fail-Safe Defaults   F7: Optimized Defaults
```

OnChip Audio Controller:

This option enables or disables the audio controller.

OnChip LAN Controller:

This option enables or disables the LAN controller.

LAN Boot ROM:

This item enables or disables the Boot ROM on LAN controller.

OnChip USB Controller:

This option enables or disables the USB controller.

USB 2.0 Support:

This option enables or disables the USB 2.0 controller.

USB Keyboard Support via:

This item allows you to select [**BIOS**] for using USB keyboard in DOS environment, or [**OS**] in OS environment.

✷ **USB Mouse Support via:**

This item allows you to select [**BIOS**] for using USB mouse in DOS environment, or [**OS**] in OS environment.

↳ SuperIO Device:

Click <Enter> key to enter its submenu:

```
          Phoenix - Award WorkstationBIOS CMOS Setup Utility
                              SuperIO Device
  Onboard FDD Controller        Enabled                  Item Help
  Onboard Serial Port           3F8/IRQ4
` Onboard Parallel Port         378/IRQ7
  -Parallel Port Mode           ECP
  -ECP Mode Use DMA             3
↑↓:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5: Previous Values   F6: Fail-Safe Defaults   F7: Optimized Defaults
```

Onboard FDD Controller:

This option enables or disables the onboard FDC controller.

Onboard Serial Port:

This item determines which I/O addresses the onboard Serial Port controller will access.

[Auto]: The system automatically select an I/O address for the onboard Serial Port.

[3F8/IRQ4, 2F8/IRQ3, 3E8/IRQ4, 2E8/IRQ3]: Allows you to manually select an I/O address for the onboard Serial Port.

[Disabled]: Disables the onboard Serial Port.

Onboard Parallel Port:

This item specifies the I/O address used by the parallel port.

[Disabled]: This option prevents the parallel port from accessing any system resources. When the value of this option is set to [Disabled], the printer port becomes unavailable.

[378/IRQ7]: This option allows the parallel port to use [378/IRQ7] as its I/O port address. The majority of parallel ports on computer systems use IRQ7 and I/O Port 378H as the standard setting.

[278/IRQ5]: This option allows the parallel port to use [278/IRQ5] as its I/O port address.

[3BC/IRQ7]: This option allows the parallel port to use [3BC/IRQ7] as its I/O port address.

✸ **Parallel Port Mode:**

This item specifies the parallel port mode.

[SPP]: (Standard Parallel Port) Allows bi-directional parallel port operation at normal speed.

[EPP]: (Enhanced Parallel Port) Allows bi-directional parallel port operation at maximum speed.

[ECP]: (Extended Capabilities Port) Allows bi-directional parallel port operation at a speed faster than the normal mode's data transfer rate.

[ECP+EPP]: Allows parallel port operation at ECP and EPP mode.

[Normal]: Allows the standard parallel port mode to be used.

✸ **ECP Mode Use DMA:**

This item selects the DMA channel of the parallel port.

3-5. Power Management Setup

```
Phoenix - Award WorkstationBIOS CMOS Setup Utility
Power Management Setup

Power Button Function          Instant-Off          Item Help
Restore on AC Power Loss       Power Off
AMD K8 Cool'n'Quiet control    Auto
Wake Up by PME# of PCI         Disabled
Wake Up by Ring                Disabled
Wake Up by Alarm               Disabled
-Date(of Month) Alarm          0
-Time(hh: mm: ss:) Alarm       0 : 0 : 0

↑↓:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5: Previous Values   F6: Fail-Safe Defaults   F7: Optimized Defaults
```

Power Button Function:

This item selects the method of powering off your system:

[Delay 4 Sec.]: Pushing the power button for more than 4 seconds will power off the system. This will prevent the system from powering off in case you accidentally hit or pushed the power button.

[Instant-Off]: Pressing and then releasing the power button at once will immediately power off the system.

PWRON After PWR-Fail:

This item selects the system action after an AC power failure.

[Power Off]: When power returns after an AC power failure, the system's power remains off. You must press the Power button to power-on the system.

[Power On]: When power returns after an AC power failure, the system's power will be powered on automatically.

[Last State]: When power returns after an AC power failure, the system will return to the state where you left off before power failure occurs. If the system's power is off when AC power failure occurs, it will remain off when power returns. If the system's power is on when AC power failure occurs, the system will power-on when power returns.

AMD K8 Cool 'n' Quiet Control:

This option enables or disables the AMD K8 cool and quiet function.

Wake Up by PME# of PCI:

When set to [Enabled], access to the onboard LAN or a PCI card such as a modem or LAN card will cause the system to wake up. The PCI card must support the wake up function.

Wake Up by Ring:

When set to [**Enabled**], any event affecting from Modem Ring will awaken a system that has been powered down.

Wake Up by Alarm:

When set to [**Enabled**], you can set the date and time you would like the Soft-Off PC to power-on in the "**Date (of Month) Alarm**" and "**Time (hh:mm:ss) Alarm**" items. However, if the system is being accessed by incoming calls or the network (Resume On Ring/LAN) prior to the date and time set in these items, the system will give priority to the incoming calls or network instead.

✹ **Date (of Month) Alarm/ Time (hh:mm:ss) Alarm:**

You can set the Date (month) Alarm and Time Alarm (hh:mm:ss). Any event occurring will awaken a system that has powered down.

3-6. PnP/PCI Configurations

```
          Phoenix - Award WorkstationBIOS CMOS Setup Utility
                          PnP/PCI Configurations
  Resources Controlled By        Auto(ESCD)                Item Help
x IRQ Resources                  Press Enter

  PCI/VGA Pallete Snoop          Disbaled
  Assign IRQ For USB             Enabled

 ↑↓:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
 F5: Previous Values   F6: Fail-Safe Defaults   F7: Optimized Defaults
```

Resources Controlled By:

This item configures all of the boot and Plug-and-Play compatible devices.

[Auto(ESCD)]: The system will automatically detect the settings.

[Manual]: Choose the specific IRQ resources in the "IRQ Resources" menu.

✷ **IRQ Resources:**

Click <Enter> key to enter its submenu:

```
          Phoenix - Award WorkstationBIOS CMOS Setup Utility
                              IRQ Resourses
  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

 ↑↓:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
 F5: Previous Values   F6: Fail-Safe Defaults   F7: Optimized Defaults
```

This item sets each system interrupt to either [PCI Device] or [Reserved].

PCI/VGA Palette Snoop:

This item determines whether the MPEG ISA/VESA VGA cards can work with PCI/VGA or not.

[Enabled]: MPEG ISA/VESA VGA cards work with PCI/VGA.

[Disabled]: MPEG ISA/VESA VGA cards do not work with PCI/VGA.

Assign IRQ For USB:

Names the IRQ assigned to the USB on your system. Activity of the selected IRQ always awakens the system.

3-7. PC Health Status

```
                Phoenix - AwardBIOS CMOS Setup Utility
                          PC Health Status
 Shutdown Temperature          Disabled                 Item Help
 CPU Core Voltage
 DDR Voltage                   2.5V
 ATX +3.3V                     3.3V
 ATX +5V                       5.0V
 ATX +12V                      +12V
 Battery Voltage
 System Temperature
 CPU Temperature
 CPU FAN Speed

↑↓:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5: Previous Values   F6: Fail-Safe Defaults   F7: Optimized Defaults
```

Shutdown Temperature:

This item sets the temperature that would shutdown the system automatically in order to prevent system overheats.

All Voltages, Fans Speed and Thermal Monitoring:

These unchangeable items list the current status of the CPU and environment temperatures, fan speeds, and system power voltage.

Frequency/Voltage Control:

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

```
                Phoenix - AwardBIOS CMOS Setup Utility
                       Frequency/Voltage Control
 DIMM Voltage Adjust           2.60V                    Item Help
 CPU Clock                     200MHz

↑↓:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5: Previous Values   F6: Fail-Safe Defaults   F7: Optimized Defaults
```

DIMM Voltage Adjust:

This item adjusts the voltage delivered to the DIMM memory.

CPU Clock:

Use the CPU Host Clock to set the frontside bus frequency for the installed processor (Min 200 MHz, Max 232 MHz).

3-8. Load Fail-Safe Defaults

This option loads the BIOS default values for the most stable, minimal-performance system operations.

3-9. Load Optimized Defaults

This option loads the BIOS default values that are factory settings for optimal-performance system operations.

3-10. Set User Password

This option protects the BIOS configuration or restricts access to the computer itself.

3-11. Save & Exit Setup

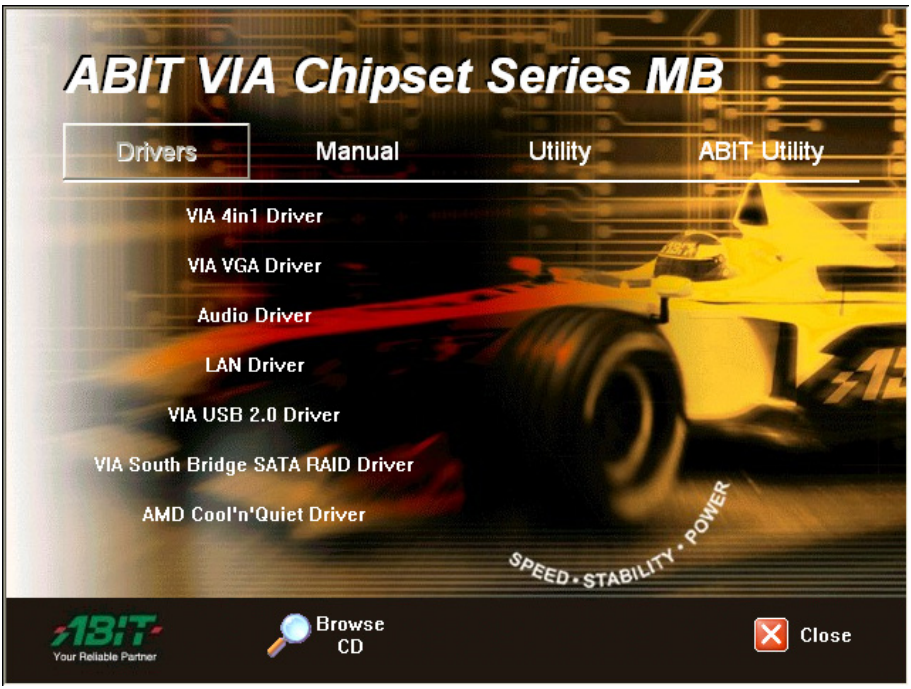
This option saves your selections and exits the BIOS setup menu.

3-12. Exit Without Saving

This option exits the BIOS setup menu without saving any change.

Chapter 4. Driver Installation

All the necessary drivers are included within the Drivers & Utilities CD that came packed with the motherboard. The display shown in the following figure should appear after inserting the Drivers & Utilities CD into your CD-ROM drive, if not, enter ➔ [My Computer] ➔ [CD-ROM] Drive ➔ double click [**autorun.exe**]. Please follow the on-screen instruction.



4-1. Setup Items

Drivers:

- **VIA 4in1 Driver**
  Install the VIA 4-in-1 driver for Windows Operating System.
- **VIA VGA Driver**
  Install the VIA VGA graphic driver for Windows Operating System.
- **Audio Driver**
  Install the audio driver for Windows Operating System.
- **LAN Driver**
  Install the LAN driver for Windows Operating System.
- **VIA USB 2.0 Driver**
  (1) Install the VIA USB 2.0 driver for Windows 98/ME Operating System.
  (2) The installation of USB 2.0 driver for Windows XP or Windows 2000 is currently available by updating the latest service pack from Microsoft's website.
- **VIA South Bridge SATA RAID Driver**
  Install the VIA Serial ATA RAID driver for Windows Operating System.
- **AMD Cool'n'Quiet Driver**
  Install the AMD Athlon 64 Processor driver for Windows Operating System.

Manual:

- View the user's manual in PDF file.

Utility:

- Click to enter the sub-screen for installing software like Award Flash, Acrobat Reader, DirectX, and LoFormat utility.

ABIT Utility:

- This model does not support ABIT Utility.

Browse CD:

- Browse the contents of this CD-ROM.

Close:

- Exit the CD setup Items Menu.

Appendix A. How to Get Technical Support

(From our website) http://www.abit.com.tw
(In North America) http://www.abit-usa.com
(In Europe) http://www.abit.nl

Thank you for choosing ABIT products. ABIT sells all our products through distributors, resellers and system integrators; we have no direct sales to end-users. Before sending email for tech support please check with your resellers or integrators if you need any services, they are the ones who sold you your system and they should know best as to what can be done, how they serve you is a good reference for future purchases.

We appreciate every customer and would like to provide the best service to you. Providing fast service to our customers is our top priority. However we receive many phone calls and a huge amount of email from all over the world. At the present time it is impossible for us to respond to every single inquiry.

We have done many compatibility tests and reliability tests to make sure our products have the best quality and compatibility. In case you need service or technical support, please understand the constraints that we have and **always check with the reseller who sold the product to you first.**

To expedite service, we recommend that you follow the procedures outlined below before contacting us. With your help, we can meet our commitment to provide the best service to the greatest number of ABIT customers:

1. **Check the Manual.** It sounds simple but we have taken a lot of care in making a well-written and thorough manual. It is full of information that doesn't only pertain to motherboards. The CD-ROM included with your board will have the manual as well as drivers. If you don't have either one, go to our Program Download area of the website or our FTP server.

2. **Download latest BIOS, software or drivers.** Please go to our Program Download area on our website to check to see if you have the latest BIOS. They are developed over periods of time to fixes bugs or incompatibilities. **Also please make sure you have the latest drivers from your peripheral card makers!**

3. **Check the ABIT Technical Terms Guide and FAQ on our website.** We are trying to expand and make the FAQs more helpful and information rich. Let us know if you have any suggestions. For hot topics, check out our HOT FAQ!

4. **Internet Newsgroups.** These are a great source of information and many people there can offer help. ABIT's Internet News group, alt.comp.periphs.mainboard.abit, is an ideal forum for the public to exchange information and discuss experiences they have had with ABIT products. Many times you will see that your question has already been asked before. This is a public Internet news group and it is reserved for free discussions. Here is a list of some of the more popular ones:

   alt.comp.periphs.mainboard.abit
   comp.sys.ibm.pc.hardware.chips
   alt.comp.hardware.overclocking
   alt.comp.hardware.homebuilt
   alt.comp.hardware.pc-homebuilt

5. **Ask your reseller.** Your ABIT authorized distributor should be able to provide the fastest solution to your technical problem. We sell our products through distributors who sell to resellers and stores. Your reseller should be very familiar with your system configuration and should be able to solve your problem much more efficiently than we could. After all, your reseller regards you as an important customer who may purchase more products and who can urge your friends to buy from him or her as well. They integrated and sold the system to you. They should know best what your system configuration is and your problem. They should have reasonable return or refund policies. How they serve you is also a good reference for your next purchase.

6. **Contacting ABIT.** If you feel that you need to contact ABIT directly you can send email to the ABIT technical support department. First, please contact the support team for the branch office closest to you. They will be more familiar with local conditions and will have better insight as to which resellers offer what products and services. Due to the huge number of emails coming in every day and other reasons, such as the time required for problem reproduction, we will not be able to reply to every email. Please understand that we are selling through distribution channels and while we don't have the resources to serve every end-user, we will do our best to help every customer. Please also remember that for many of our technical support team English is a second language. You will have a better chance of getting a helpful answer if your question can be quickly understood. Be sure to use very, simple, concise language that clearly states the problem, avoid rambling or flowery language, and always list your system components and operating system. Here is the contact information for our branch offices:

North America and South America	***ABIT Computer (U.S.A.) Corporation*** 2901 Bayview Drive Fremont, CA 94538, U.S.A. Tel: 1-510-623-0500 Fax: 1-510-623-1092 Sales: sales@abit-usa.com Latin America Sales: ventas@abit-usa.com Marketing: marketing@abit-usa.com Web Site: http://www.abit-usa.com ***RMA Center:*** http://rma.abit-usa.com/
UK and Ireland	***ABIT Computer (U.K.) Corporation Ltd.*** Unit 3, 24-26 Boulton Road, Stevenage, Herts SG1 4QX, UK Tel: 44-1438-228888 Fax: 44-1438-226333 E-mail: sales@abitcomputer.co.uk
Germany and Benelux (Belgium, Netherlands, Luxembourg), France, Italy, Spain, Portugal, Greece, Denmark, Norway, Sweden, Finland, and Switzerland	***AMOR Computer B.V. (ABIT's European Office)*** Jan van Riebeeckweg 15, 5928LG, Venlo, The Netherlands Tel: 31-77-3204428 Fax: 31-77-3204420 Sales: sales@abit.nl Web Site: http://www.abit.nl
Austria, Czech, Romania, Bulgaria, Slovakia, Croatia, Bosnia, Serbia, and Macedonia	***Asguard Computer Ges.m.b.H*** Schmalbachstrasse 5, A-2201 Gerasdorf / Wien, Austria Tel: 43-1-7346709 Fax: 43-1-7346713 E-mail: asguard@asguard.at
Shanghai	***ABIT Computer (Shanghai) Co. Ltd.*** Tel: 86-21-6235-1829 Fax: 86-21-6235-1832 Web Site: http://www.abit.com.cn
Russia and CIS	***ABIT Computer (Russia) Co. Ltd.*** Sales: sales@abit.ru Info: info@abit.ru Web Site: http://www.abit.ru

Poland	***ABIT Computer (Poland) Co. Ltd.*** Przedstawicielstwo w Polsce ul. Wita Stwosza 28, 50-149 Wrocław Tel: 48 71 780 78 65 / 66 Fax: 48 71 372 30 87
Japan	Web Site: http://www.abit4u.jp
Taiwan Head Office *(Serving all other territories not listed above. Taiwan is 8+ GMT time, and may have different holiday calendar from yours.)*	***ABIT Computer Corporation*** No. 323, Yang Guang St., Neihu, Taipei, 114, Taiwan Tel: 886-2-8751-8888 Fax: 886-2-8751-3382 Sales: sales@abit.com.tw Marketing: market@abit.com.tw Web Site: http://www.abit.com.tw

7. **RMA Service.** If your system has been working but it just stopped, but you have not installed any new software or hardware recently, it is likely that you have a defective component. Please contact the reseller from whom you bought the product. You should be able to get RMA service there.

8. **Reporting Compatibility Problems to ABIT**. Because of tremendous number of email messages we receive every day, we are forced to give greater weight to certain types of messages than to others. For this reason, any compatibility problem that is reported to us, giving detailed system configuration information and error symptoms will receive the highest priority. For the other questions, we regret that we may not be able to reply directly. But your questions may be posted to the Internet news group in order that a larger number of users can have the benefit of the information. Please check the news group from time to time.

Thank You

ABIT Computer Corporation

http://www.abit.com.tw