

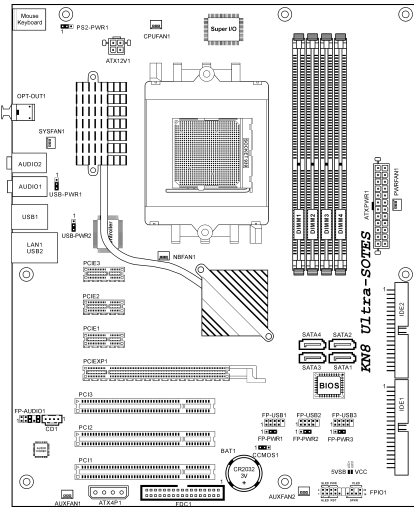
# KN8 Ultra-SOTES

# KN8 Ultra

# KN8

Motherboard  
AMD Socket 939

## User's Manual



Introduction

Hardware Setup

BIOS Setup

Driver & Utility CD

Appendix

- AMD Socket 939 K8 Dual Core ATX Motherboard**
- NVIDIA Chipset:  
NF4 Ultra/NF4 Single Chip**
- 2GHz HT**
- Dual DDR 400 DIMM Slots**
- GbE LAN w/Firewall**
- 4x SATA 3Gb/s with  
RAID 0/1/0+1**
- ABIT Silent OTESTM Technology**
- 7.1 Channel Audio**

\* See the "Features & Specifications" of each model in this manual for details.

### About this Manual:

This user's manual contains all the information you may need for setting up this motherboard. To read the user's manual of PDF format (readable by [Adobe Reader](#)), place the "Driver & Utility CD" into the CD-ROM drive in your system. The auto-run screen will appear, click the "Manual" tab to enter its submenu. If not, browse the root directory of the CD-ROM via the File Manager, and double click the "AUTORUN" file.

## **KN8 Ultra-SOTES, KN8 Ultra, KN8**

User's Manual

English, 2<sup>nd</sup> Edition

May, 2006

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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.

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# 1. Introduction

## 1.1 Features & Specifications

### CPU

- Supports AMD Athlon 64/64FX Dual Core 939-pin K8 CPU with 2GHz system bus using Hyper Transport Technology
- Supports AMD K8 CPU Cool 'n' Quiet Technology

### Chipset

- NVIDIA NF4 Ultra single chip *(For model "KN8 Ultra-SOTES" and "KN8 Ultra" only)*
- NVIDIA NF4 single chip *(For model "KN8" only)*

### Memory

- Supports 4 DIMM Dual DDR 400 non-ECC un-buffered memory
- Supports maximum memory capacity up to 4GB

### NV SATA RAID

- Supports SATA RAID 0/1/0+1
- Support SATA 1.5Gb/s data transfer rate. *(For model "KN8" only)*
- Support SATA 3Gb/s data transfer rate. *(For model "KN8 Ultra-SOTES" and "KN8 Ultra" only)*

### NV GbE LAN

- NVIDIA Gigabit Ethernet with NV Firewall ActiveArmor *(For model "KN8 Ultra-SOTES" and "KN8 Ultra" only)*
- NVIDIA Gigabit Ethernet *(For model "KN8" only)*

### Audio

- Onboard 7.1 CH Audio CODEC
- Supports auto jack sensing
- Supports optical S/PDIF Out *(For model "KN8 Ultra-SOTES" and "KN8 Ultra" only)*

### ABIT Engineered

- ABIT SoftMenu™ Technology
- ABIT CPU ThermalGuard™ Technology
- ABIT Silent OTES™ Technology *(For model "KN8 Ultra-SOTES" only)*

### Expansion Slots

- 1x PCI-E X16 slot
- 3x PCI-E X1 slots
- 3x PCI slots

### Internal I/O Connectors

- 1x Floppy port supports up to 2.88MB

- 2x Ultra DMA 133/100/66/33 IDE connectors
- 4x SATA 3Gb/s connectors (*For model "KN8 Ultra-SOTES" and "KN8 Ultra" only*)
- 4x SATA 1.5Gb/s connectors (*For model "KN8" only*)
- 3x USB 2.0 headers
- 1x FP-AUDIO header
- 1x CD-IN header

### **Rear Panel I/O**

- ABIT Silent OTES™ (*For model "KN8 Ultra-SOTES" only*)
- 1x PS/2 Keyboard connector
- 1x PS/2 Mouse connector
- 1x Serial port (*For model "KN8 Ultra" and "KN8" only*)
- 1x Parallel port (*For model "KN8 Ultra" and "KN8" only*)
- 1x S/PDIF Out (*For model "KN8 Ultra-SOTES" and "KN8 Ultra" only*)
- 1x AUDIO1 connector (Mic-In, Line-In, Line-Out)
- 1x AUDIO2 connector (Surround-Left / Surround-Right, Rear-Left / Rear-Right, Center/Subwoofer)
- 1x RJ-45 Gigabit LAN port
- 4x USB 2.0 ports

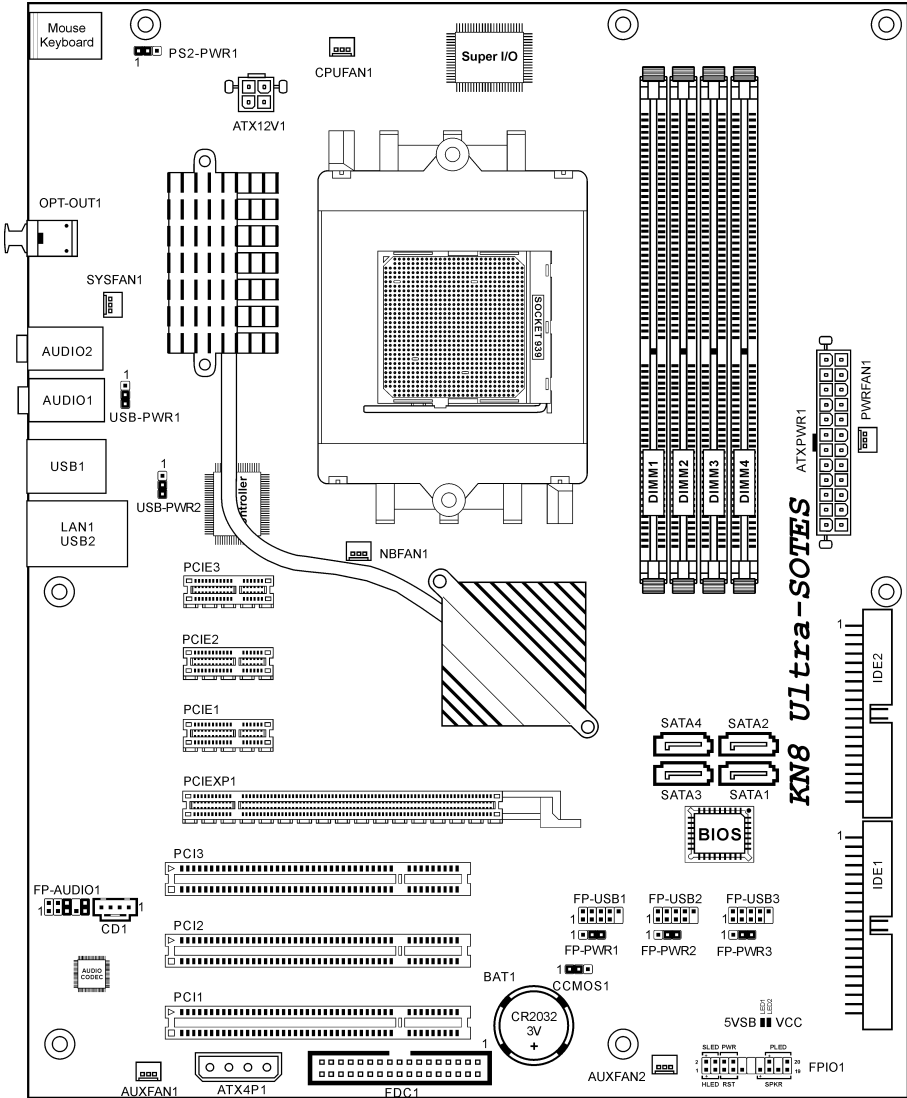
### **Miscellaneous**

- ATX form factor (305mm x 245mm)

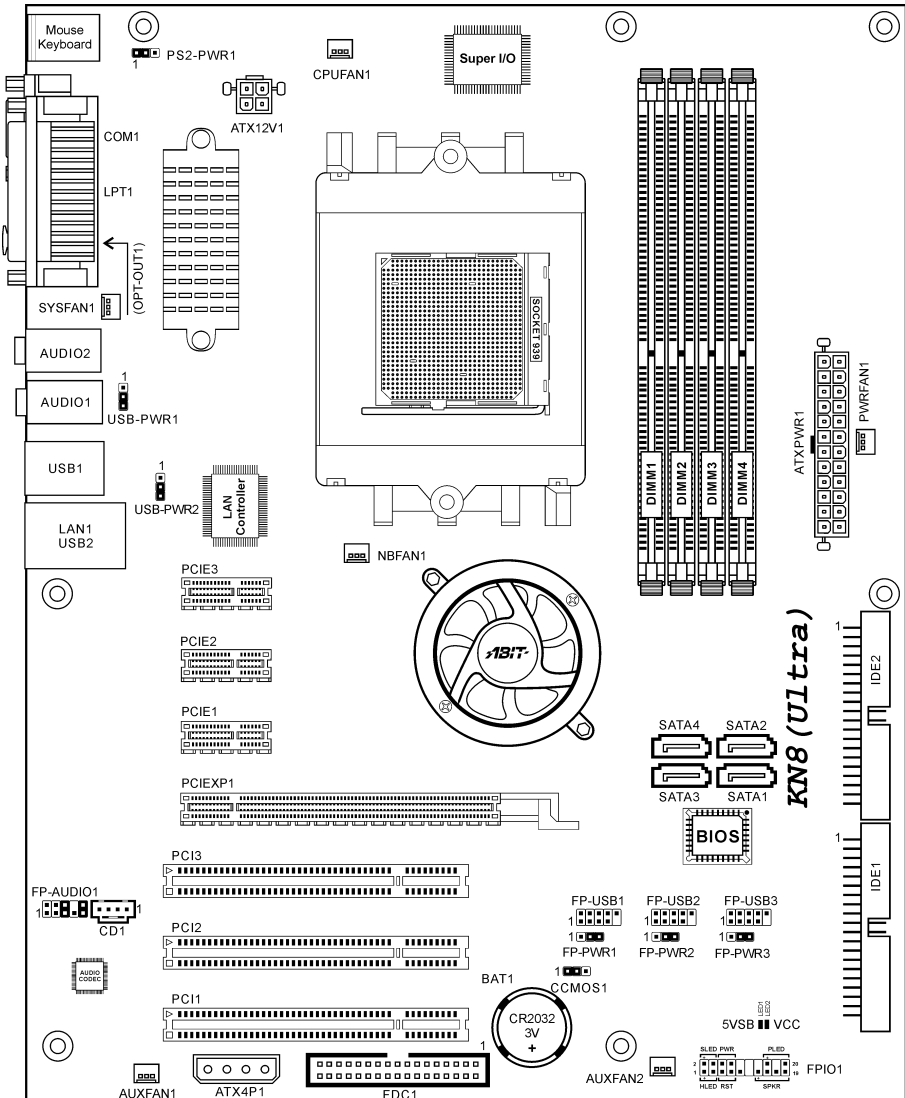
※ **Specifications and information contained herein are subject to change without notice.**

## 1.2 Motherboard Layout

### 1.2.1 KN8 Ultra-SOTES



## 1.2.2 KN8 Ultra/KN8





## 2. Hardware Setup

In this chapter we will elaborate all the information you need upon installing this motherboard to your computer system.

- ✘ **Always power off the computer and unplug the AC power cord before adding or removing any peripheral or component. Failing to do so may cause severe damage to your motherboard and/or peripherals. Plug in the AC power cord only after you have carefully checked everything.**
- ✘ **Unless stated additionally, the motherboard layout in this chapter relies mainly on KN8 Ultra-SOTES.**

### 2.1 Choosing a Computer Chassis

- This motherboard carries an ATX form factor of 305 x 245 mm. Choose a chassis big enough to install this motherboard.
- As some features for this motherboard are implemented by cabling connectors on the motherboard to indicators and switches or buttons on the chassis, make sure your chassis supports all the features required.
- If there is possibility of adopting some more hard drives, make sure your chassis has sufficient power and space for them.
- Most chassis have alternatives for I/O shield located at the rear panel. Make sure the I/O shield of the chassis matches the I/O port configuration of this motherboard. You can find an I/O shield specifically designed for this motherboard in its package.

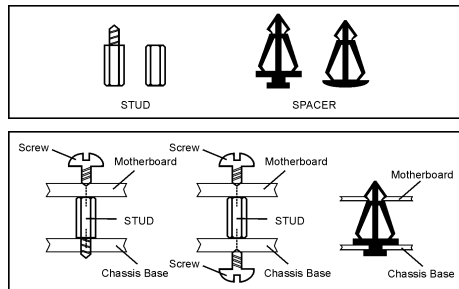
### 2.2 Installing Motherboard

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

1. with studs
2. or with spacers

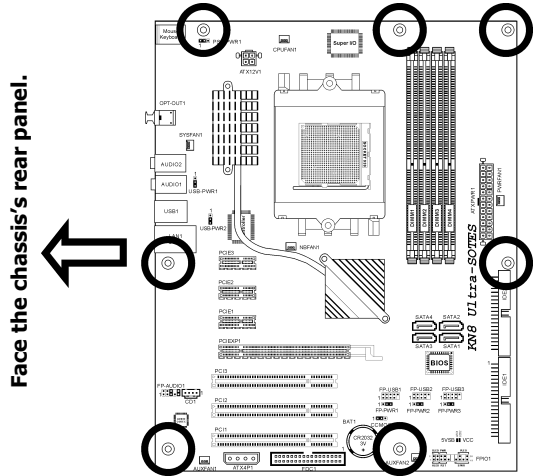
In principle, the best way to attach the board is to use studs. Only if you are unable to do this should you attach the board with spacers.

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.



### To install this motherboard:

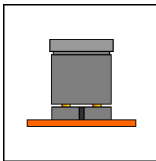
1. Locate all the screw holes on the motherboard and the chassis base.
2. Place all the studs or spacers needed on the chassis base and have them tightened.
3. Face the motherboard's I/O ports toward the chassis's rear panel.
4. Line up all the motherboard's screw holes with those studs or spacers on the chassis.
5. Install the motherboard with screws and have them tightened.



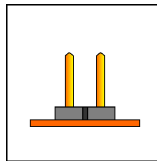
※ To prevent shorting the PCB circuit, please REMOVE the metal studs or spacers if they are already fastened on the chassis base and are without mounting-holes on the motherboard to align with.

## 2.3 Checking Jumper Settings

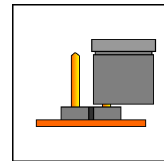
For a 2-pin jumper, plug the jumper cap on both pins will make it CLOSE (SHORT). Remove the jumper cap, or plug it on either pin (reserved for future use) will leave it at OPEN position.



SHORT

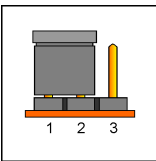


OPEN

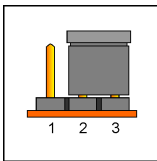


OPEN

For 3-pin jumper, pin 1~2 or pin 2~3 can be shorted by plugging the jumper cap in.



Pin 1~2 SHORT



Pin 2~3 SHORT

### 2.3.1 CMOS Memory Clearing Header and Backup Battery

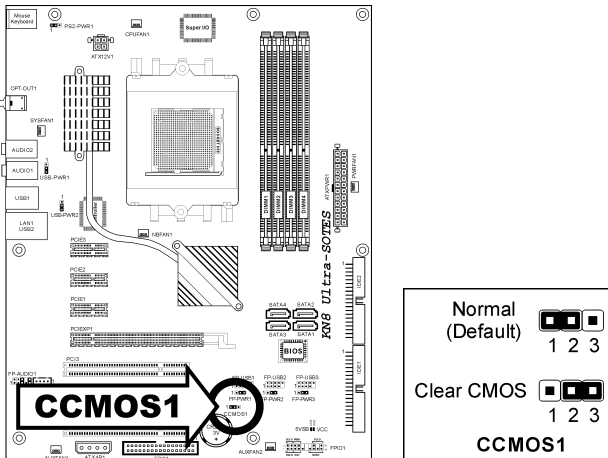
The time to clear the CMOS memory occurs when (a) the CMOS data becomes corrupted, (b) you forgot the supervisor or user password preset in the BIOS menu, (c) you are unable to boot-up the system because the CPU ratio/clock was incorrectly set in the BIOS menu.

This header uses a jumper cap to clear the CMOS memory and have it reconfigured to the default values stored in BIOS.

- **Pins 1 and 2 shorted (default):** Normal operation.
- **Pins 2 and 3 shorted:** Clear CMOS memory.

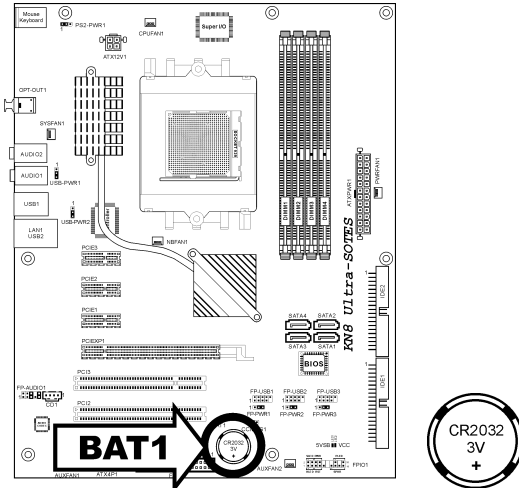
#### To clear the CMOS memory and load in the default values:

1. Power off the system and disconnect with AC power source.
2. Set pin 2 and pin 3 shorted by the jumper cap. Wait for a few seconds. Set the jumper cap back to its default settings --- pin 1 and pin 2 shorted.
3. Power on the system.
4. For incorrect CPU ratio/clock settings in the BIOS, press <Del> key to enter the BIOS setup menu right after powering on system.
5. Set the CPU operating speed back to its default or an appropriate value.
6. Save and exit the BIOS setup menu.



## CMOS Backup Battery:

An onboard battery saves the CMOS memory to keep the BIOS information stays on even after disconnected your system with power source. Nevertheless, this backup battery exhausts after some five years. Once the error message like "**CMOS BATTERY HAS FAILED**" or "**CMOS checksum error**" displays on monitor, this backup battery is no longer functional and has to be renewed.



### To renew the backup battery:

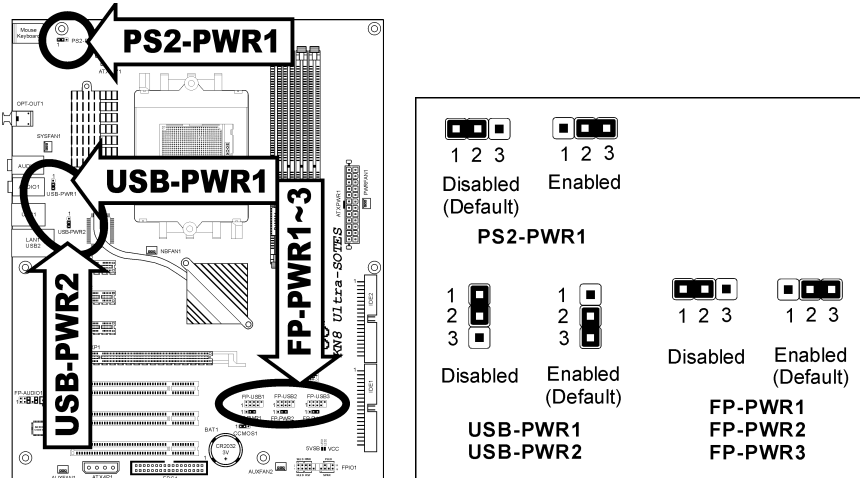
1. Power off the system and disconnect with AC power source.
2. Remove the exhausted battery.
3. Insert a new CR2032 or equivalent battery. Pay attention to its polarity. The "+" side is its positive polarity.
4. Connect AC power source and power on the system.
5. Enter the BIOS setup menu. Reconfigure the setup parameters if necessary.

### CAUTION:

- ⌘ **Danger of explosion may arise if the battery is incorrectly renewed.**
- ⌘ **Renew only with the same or equivalent type recommended by the battery manufacturer.**
- ⌘ **Dispose of used batteries according to the battery manufacturer's instructions.**

## 2.3.2 Wake-up Headers

These headers use a jumper cap to enable/disable the wake-up function.

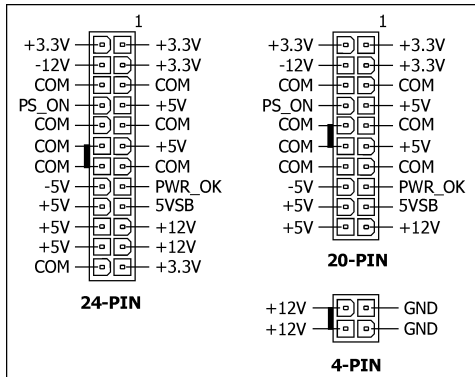
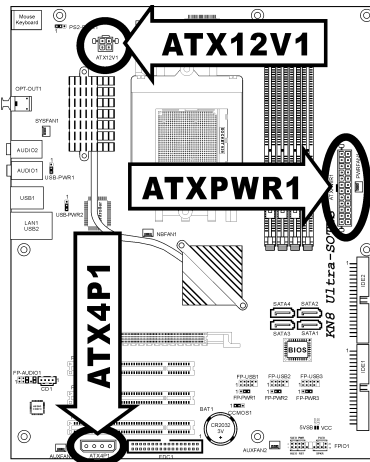


- PS2-PWR1:**
  - Pin 1-2 shorted (Default): Disable wake-up function support at Keyboard/Mouse port.
  - Pin 2-3 shorted: Enable wake-up function support at Keyboard/Mouse port.
- USB-PWR1:**
  - Pin 1-2 shorted: Disable wake-up function support at USB1 port.
  - Pin 2-3 shorted (Default): Enable wake-up function support at USB1 port.
- USB-PWR2:**
  - Pin 1-2 shorted: Disable wake-up function support at USB2 port.
  - Pin 2-3 shorted (Default): Enable wake-up function support at USB2 port.
- FP-PWR1:**
  - Pin 1-2 shorted: Disable wake-up function support at FP-USB1 port.
  - Pin 2-3 shorted (Default): Enable wake-up function support at FP-USB1 port.
- FP-PWR2:**
  - Pin 1-2 shorted: Disable wake-up function support at FP-USB2 port.
  - Pin 2-3 shorted (Default): Enable wake-up function support at FP-USB2 port.
- FP-PWR3:**
  - Pin 1-2 shorted: Disable wake-up function support at FP-USB3 port.
  - Pin 2-3 shorted (Default): Enable wake-up function support at FP-USB3 port.

## 2.4 Connecting Chassis Components

### 2.4.1 ATX Power Connectors

These connectors provide the connection from an ATX power supply. As the plugs from the power supply fit in only one orientation, find the correct one and push firmly down into these connectors.



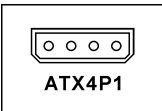
#### ATX 24-Pin Power Connector:

The power supply with 20-pin or 24-pin cables can both be connected to this 24-pin connector. Connect from pin-1 for either type. However, a 20-pin power supply may cause the system unstable or even unbootable for the sake of insufficient electricity. A minimum power of 300W or higher is recommended.

#### ATX 12V 4-Pin Power Connector:

This connector supplies power to CPU. The system will not start without connecting power to this one.

#### Auxiliary 12V Power Connector:

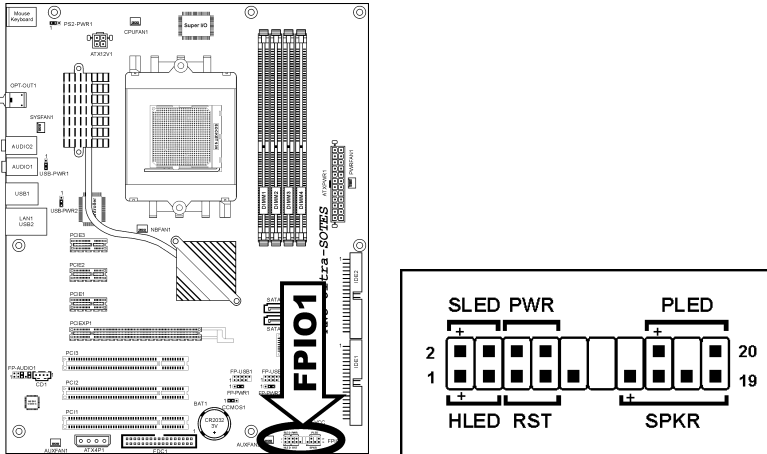


This connector provides an auxiliary power source for devices added on PCI Express slots.

## 2.4.2 Front Panel Switches & Indicators Headers

This header is 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.



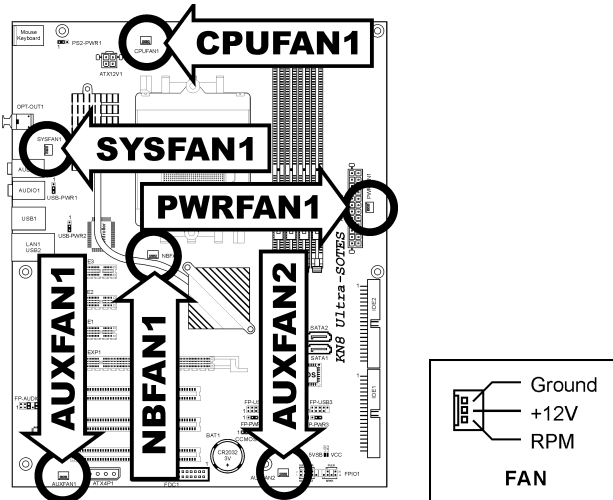
- **HLED (Pin 1, 3):**  
Connects to the HDD LED cable of chassis front panel.
- **RST (Pin 5, 7):**  
Connects to the Reset Switch cable of chassis front panel.
- **SPKR (Pin 13, 15, 17, 19):**  
Connects to the System Speaker cable of chassis.
- **SLED (Pin 2, 4):**  
Connects to the Suspend LED cable (if there is one) of chassis front panel.
- **PWR (Pin 6, 8):**  
Connects to the Power Switch cable of chassis front panel.
- **PLED (Pin 16, 18, 20):**  
Connects to the Power LED cable of chassis front panel.

## 2.4.3 FAN Power Connectors

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

- **CPUFAN1:** CPU Fan Power Connector
- **NBFAN1:** Chipset Fan Power Connector
- **SYSFAN1:** System Fan Power Connector
- **PWRFAN1, AUXFAN1~2:** Auxiliary Fan Power Connector

✘ **These fan connectors are not jumpers. DO NOT place jumper caps on these connectors.**





## 2.5 Installing Hardware

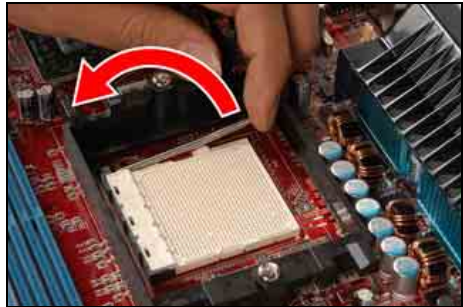
- ※ **DO NOT scratch the motherboard when installing hardware. An accidentally scratch of a tiny surface-mount component may seriously damage the motherboard.**

### 2.5.1 CPU Socket 939

- ※ **DO NOT touch or bend the delicate pins on the CPU whenever you are holding it.**

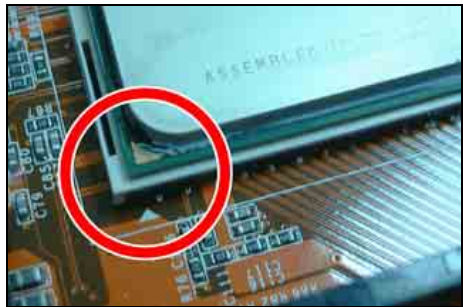
The installation procedures vary with different types of CPU fan-and-heatsink assembly. The one shown here is served for **DEMO** only. For detailed information on how to install the one you bought, refer to its installation guidelines.

1. Pull out the socket lever away from the socket and fully lift it up over 90-degree angle.



2. Locate and align the triangle mark with both the CPU and the socket body. Vertically place the CPU with its pin-side down into the socket.

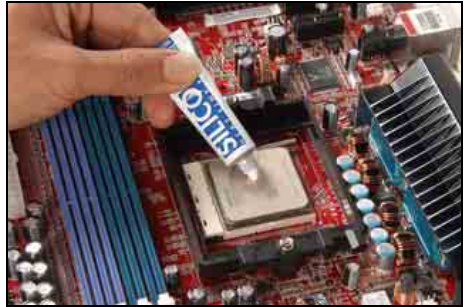
Be careful to insert the CPU into the socket. The CPU only fits in one orientation with the socket. **DO NOT** force the CPU into the socket.



3. After placing the CPU into position, push the socket lever down into its locked position to secure the CPU. The lever clicks when it's locked into position.



4. The heatsink for CPU may have thermal interface material attached to its bottom. If not, applying a few squeeze of thermal paste to the CPU die will help to increase the contact.



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.

Put the CPU Fan down on the retention module and snap the four retention legs of the cooling fan into place.



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



7. Flip the lever over to lock the heat sink in place.



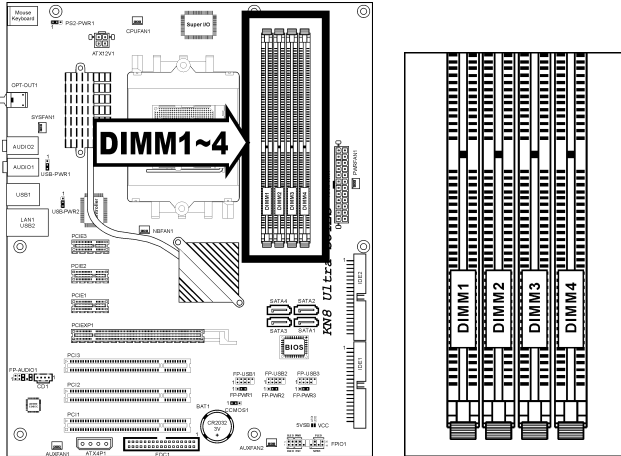
8. Connect the CPU cooling fan power cable to the CPUFAN connector on this motherboard.



- ※ The motherboard in this illustration is served for DEMO only, may not be the same type or model as the one described in this user's manual.
- ※ A higher fan speed will be helpful for better airflow and heat-dissipation. Nevertheless, stay alert to touch any heatsink since the high temperature generated by the working system is still possible.

## 2.5.2 DDR Memory Slots

This motherboard provides four 184-pin DDR DIMM slots for Single/Dual Channel DDR 400/333/266 memory modules with memory expansion size up to 4GB.



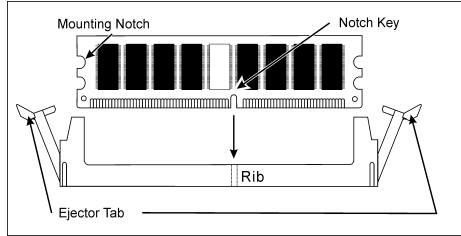
To reach the performance of Dual Channel DDR, the following rules must be obeyed:

- **For a 2-DIMM dual-channel installation:**  
Populate DIMM modules of the same type and size on slots [DIMM1]+[DIMM2], or slots [DIMM3]+[DIMM4].
  - **For a 4-DIMM dual-channel installation:**  
Populate 2 DIMM modules of the same type and size on slots [DIMM1]+[DIMM2], and another 2 DIMM modules of the same type and size on slots [DIMM3]+[DIMM4].
- ※ [DIMM1] and [DIMM2] slots are made of the same color.  
[DIMM3] and [DIMM4] are made of another same color.

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

**To install system memory:**

1. Power off the computer and unplug the AC power cord before installing or removing memory modules.
2. Locate the DIMM slot on the board.
3. Hold two edges of the DIMM module carefully, keep away of touching its connectors.
4. Align the notch key on the module with the rib on the slot.

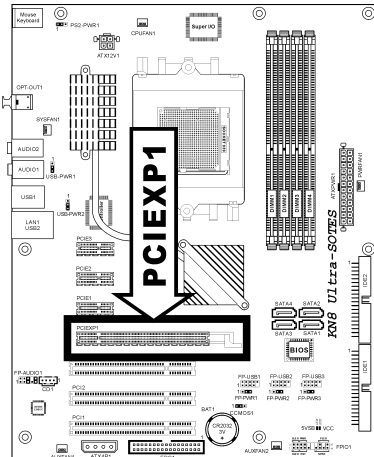


5. Firmly press the module into the slots until the ejector tabs at both sides of the slot automatically snaps into the mounting notch. Do not force the DIMM module in with extra force as the DIMM module only fit in one direction.
6. To remove the DIMM modules, push the two ejector tabs on the slot outward simultaneously, and then pull out the DIMM module.

※ **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.**

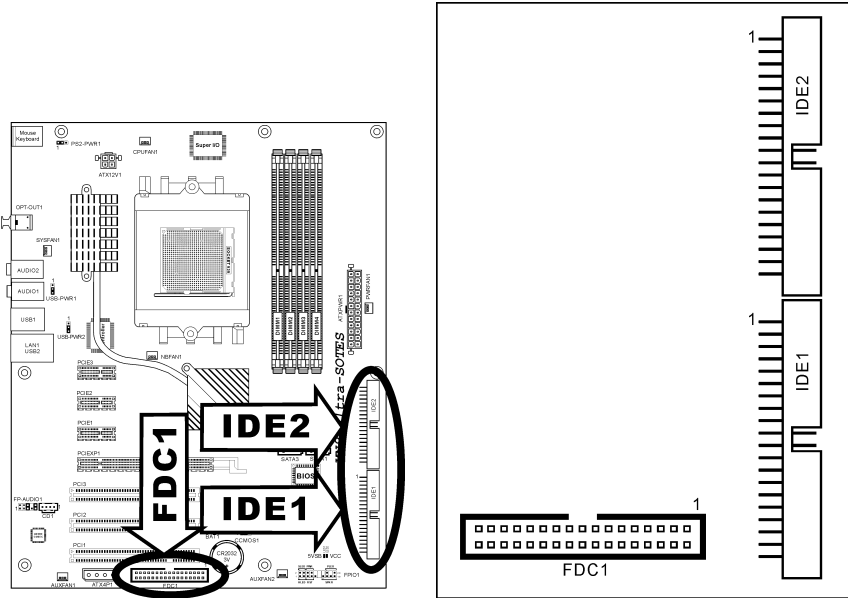
**2.5.3 PCI Express X16 Add-on Slot (Install Graphics Card)**

This slot supports one PCI-Express X16 graphics card that complies with PCI Express specifications. Insert your PCI-Express X16 graphics card into this slot.



## 2.6 Connecting Peripheral Devices

### 2.6.1 Floppy and IDE Disk Drive Connectors



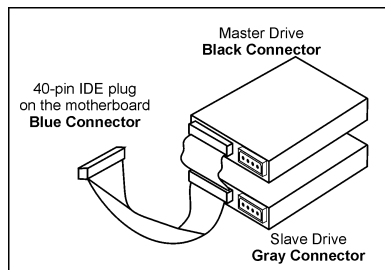
The FDC1 connector connects up to two floppy drives with a 34-wire, 2-connector floppy cable. Connect the single end at the longer length of ribbon cable to the FDC1 on the board, the two connectors on the other end to the floppy disk drives connector. Generally you need only one floppy disk drive in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

✘ **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.

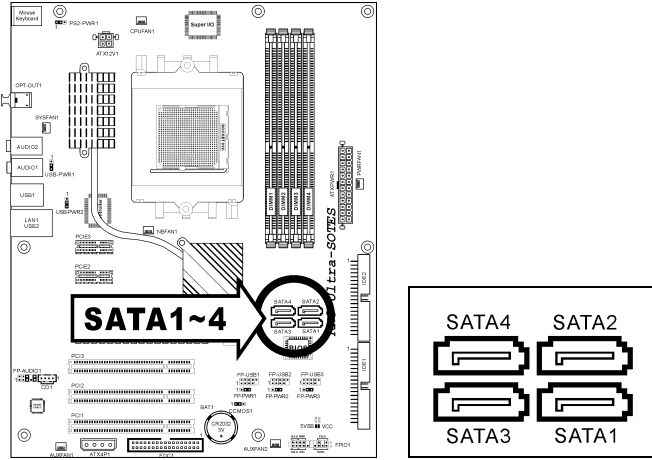
✘ **Make sure to configure the “Master” and “Slave” relation before connecting two drives by one single ribbon cable. The red line on the ribbon cable must be aligned with pin-1 on both the IDE port and the hard-drive connector.**



## 2.6.2 Serial ATA Connectors

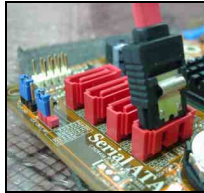
Each SATA connector serves as one single channel to connect one SATA device by a thin SATA cable.

The RAID 0/1/0+1 configuration is also possible through the combination of disk arrays through these SATA connectors:



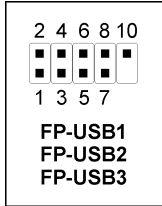
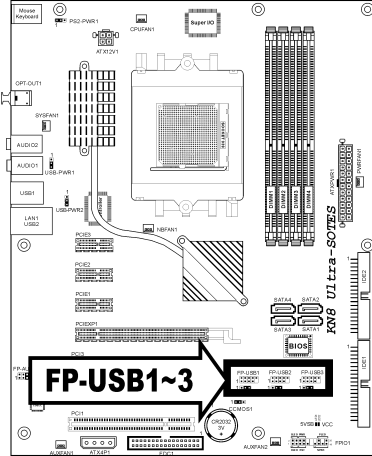
### To connect SATA device:

1. Attach either end of the signal cable to the SATA connector on motherboard. Attach the other end to SATA device.
2. Attach the SATA power cable to the SATA device and connect the other end from the power supply.



### 2.6.3 Additional USB 2.0 Port Headers

Besides the 4x USB 2.0 ports located at rear I/O part, this motherboard also features 3x more USB 2.0 headers onboard. Each header supports 2x additional USB 2.0 ports by connecting bracket or cable to the rear I/O panel or the front-mounted USB ports of your chassis.

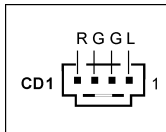
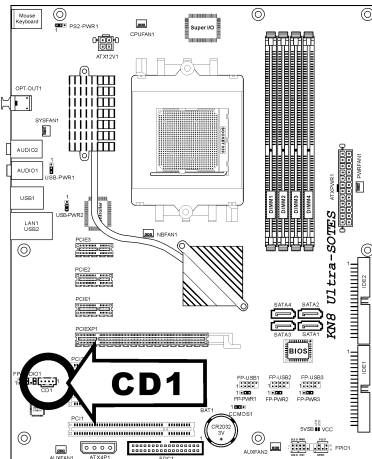


Pin	Pin Assignment	Pin	Pin Assignment
1	VCC	2	VCC
3	Data0 -	4	Data1 -
5	Data0 +	6	Data1 +
7	Ground	8	Ground
		10	NC

※ Make sure the connecting cable bears the same pin assignment.

### 2.6.4 Internal Audio Connectors

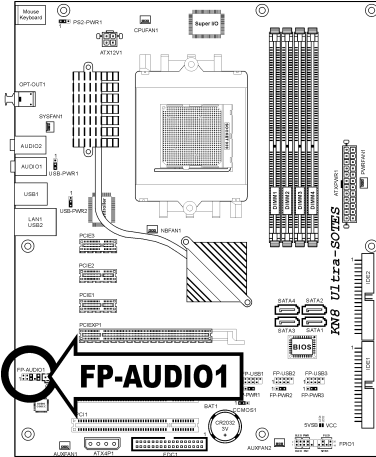
This connector connects to the audio output of internal CD-ROM drive or add-on card.





## 2.6.5 Front Panel Audio Connection Header

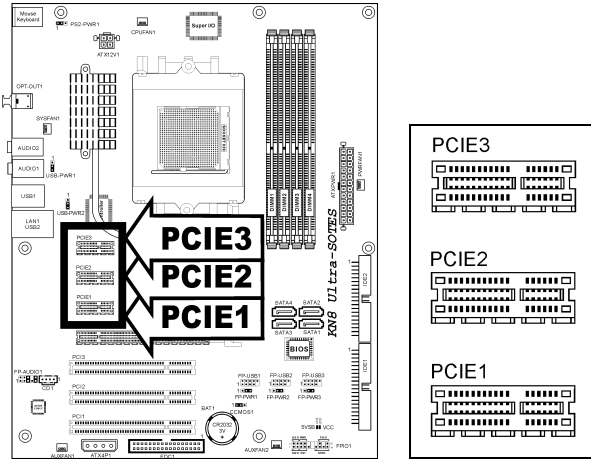
This header provides the connection to audio connector at front panel.



	Pin	Pin Assignment	Pin	Pin Assignment
<p><b>FP-AUDIO1</b></p>	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

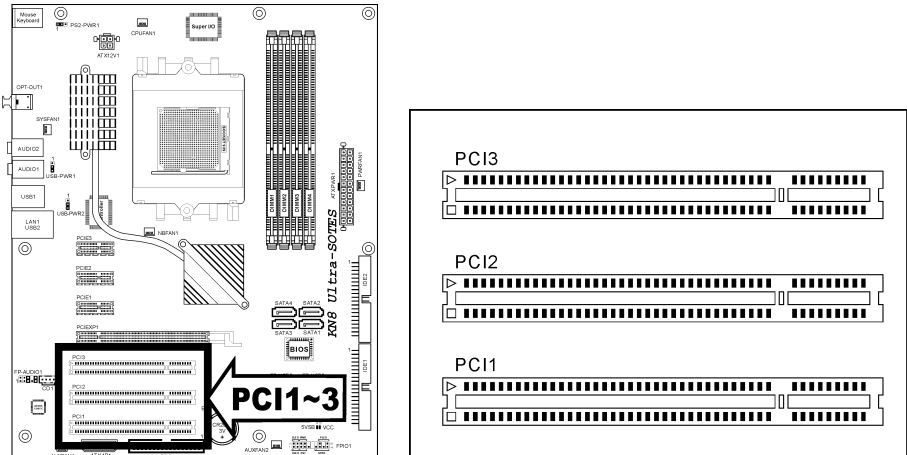
## 2.6.6 PCI Express X1 Add-on Slots

These slots provide the connection of add-on cards that comply with PCI Express specifications.



## 2.6.7 PCI Add-on Slots

These slots provide the connection of add-on cards that comply with PCI specifications.

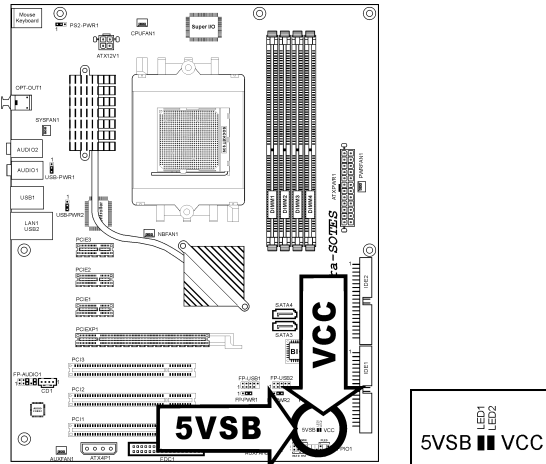


## 2.7 Onboard Status Display

### 2.7.1 Power Source Indicators

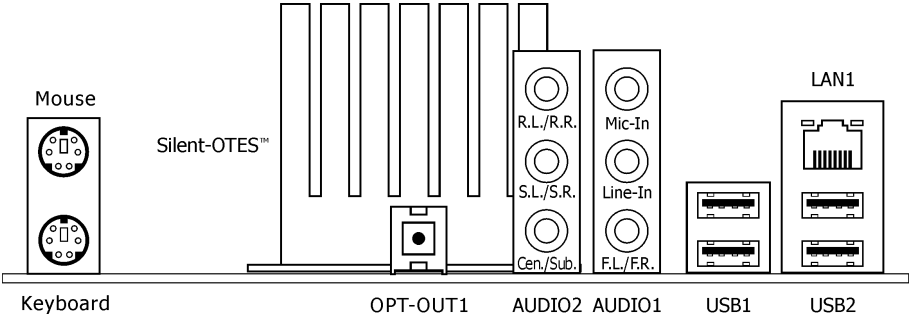
These indicators work as a reminding device to display the power status of this motherboard with power source connected.

- **5VSB:** This LED lights up when the power supply is connected with power source.
- **VCC:** This LED lights up when the system power is on.

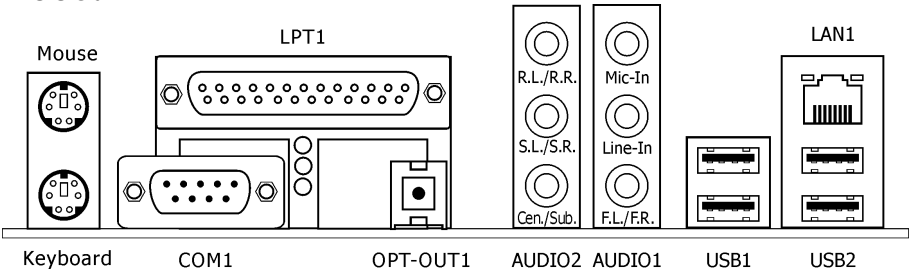


## 2.8 Connecting I/O Devices

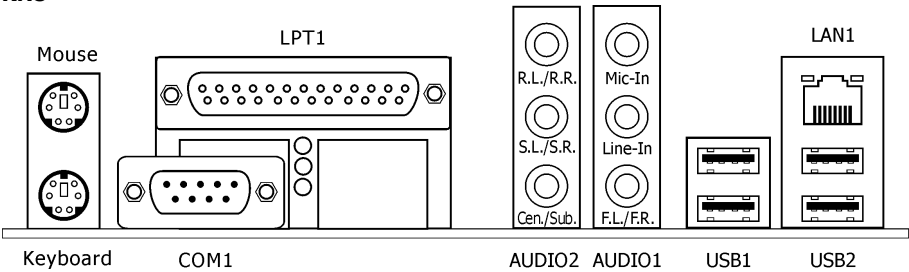
### KN8 Ultra-SOTES



### KN8 Ultra



### KN8



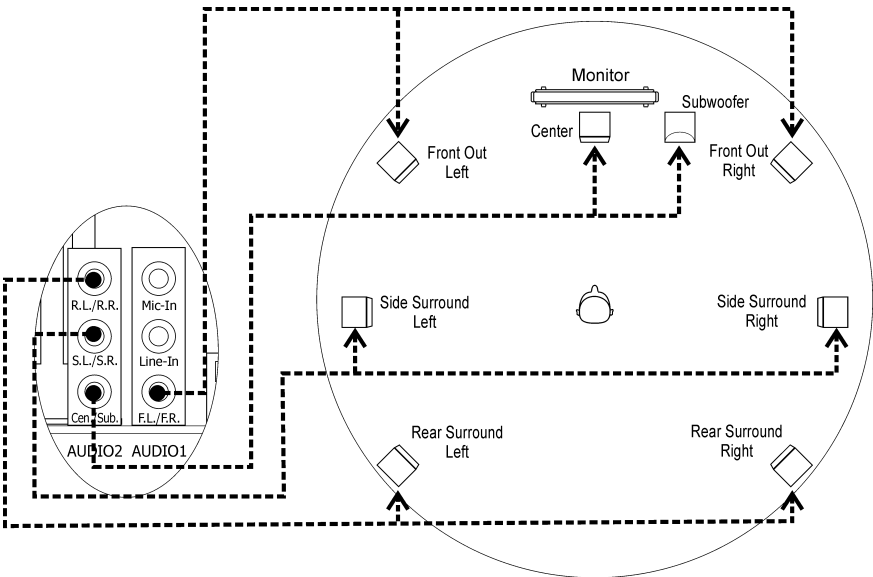
- **Mouse:** Connects to PS/2 mouse.
- **Keyboard:** Connects to PS/2 keyboard.
- **Silent OTES™:** The Silent OTES (Silent Outside Thermal Exhaust System) is a device specifically designed to silently cool the motherboard's North Bridge chipset. (Keep the area for outgoing heat wave open.) *(For model "KN8 Ultra-SOTES" only)*

- **OPT-OUT1:** This connector provides an S/PDIF-Out connection through optical fiber to digital multimedia devices. (For model "KN8 Ultra-SOTES" and "KN8 Ultra" only)
- **LPT1:** Connects to printer or other devices that support this communication protocol. (For model "KN8 Ultra" and "KN8" only)
- **COM1:** Connects to external modem, mouse or other devices that support this communication protocol. (For model "KN8 Ultra" and "KN8" only)
- **AUDIO2:**

**R.L./R.R.:** Connects to the "Rear Surround Left" and "Rear Surround Right" channel in the 7.1-channel audio system.

**S.L./S.R.:** Connects to the "Side Surround Left" and "Side Surround Right" channel in the 7.1-channel audio system.

**Gen./Sub.:** Connects to the "Center" and Subwoofer" channel in the 7.1-channel audio system.



- **AUDIO1:**
  - Mic-In:** Connects to the plug from external microphone.
  - Line-In:** Connects to the line out from external audio sources.
  - F.L./F.R.:** Connects to the "Front Out Left" and "Front Out Right" channel in the 7.1-channel or regular 2-channel audio system.
- **LAN1:** Connects to Local Area Network.
- **USB1/USB2:** Connects to USB devices such as scanner, digital speakers, monitor, mouse, keyboard, hub, digital camera, joystick etc.



# 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	
<ul style="list-style-type: none"> <li>▶ SoftMenu Setup</li> <li>▶ Standard CMOS Features</li> <li>▶ Advanced BIOS Features</li> <li>▶ Advanced Chipset Features</li> <li>▶ Integrated Peripherals</li> <li>▶ Power Management Setup</li> <li>▶ PnP/PCI Configurations</li> </ul>	<ul style="list-style-type: none"> <li>▶ PC Health Status</li> <li>Load Fail-Safe Defaults</li> <li>Load Optimized Defaults</li> <li>Set Password</li> <li>Save &amp; Exit Setup</li> <li>Exit Without Saving</li> </ul>
Esc : Quit F10 : Save & Exit Setup	↑ ↓ → ← : Select Item (NF-CK804-6K61FA1DC-00)
Change CPU's Clock & Voltage	

※ In order to increase system stability and performance, our engineering staff is 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 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 SoftMenu Setup

The SoftMenu utility is ABIT's exclusive and ultimate solution in programming the CPU operating speed. All the parameters regarding CPU FSB speed, multiplier factor, the AGP & PCI clock, and even the CPU core voltage are all available at your fingertips.

Phoenix - AwardBIOS CMOS Setup Utility		Item Help
SoftMenu Setup		
Brand Name : AMD Athlon(tm) 64 Processor 3400+		
Frequency : 2200MHz		
CPU Operating Speed Default		
X - CPU FSB Clock(MHz)	200	
X - Multiplier Factor	AUTO	
X - PCIE Clock	100Mhz	
Voltages Control Default		
X - CPU Core Voltage	1.500 V	
X - DDR RAM Voltage	2.60 V	
X - DDR Ref Voltage	Default	
X - nForce4 Voltage	1.50 V	
X - Hypertransport Voltage	Default	
↑ ↓ : Move Enter : Select +/- /PU/PD : Value F10 : Save ESC : Exit F1 : General Help F5 : Previous Values F6 : Fail-Safe Defaults F7 : Optimized Defaults		

**Brand Name:**

This item displays the CPU model name.

**Frequency:**

This item displays the CPU internal clock speed.

**CPU Operating Speed:**

This item displays the CPU operating speed according to the type and speed of your CPU. You can also select the [User Define] option to enter the manual option.

**User Define:**

- ※ **The wrong settings of the multiplier and external clock in certain circumstances may cause CPU damage. Setting the working frequency higher than the PCI chipset or processor specs, may cause abnormal memory module functioning, system hangs, hard disk drive data lose, abnormal functioning of the VGA card, or abnormal functioning with other add-on cards. Using non-specification settings for your CPU is not the intention of this explanation. These should be used for engineering testing, not for normal applications.**

※ **There will be no guaranty for the settings beyond specification, any damage of any component on this motherboard or peripherals result therein is not our responsibility.**

- **CPU FSB Clock(MHz):**

This item selects the external clock frequency. Due to the specification limit of the CPU you installed, the speed you set over its standard bus speed is supported, but not guaranteed.

- **Multiplier Factor:**

This item displays the multiplier factor for the CPU you installed.

- **PCIe Clock:**

This item selects the PCI Express frequency.

---

**Voltage Control:**

This option allows you to switch between the default and user-defined voltages. Leave this setting to default unless the current voltage setting cannot be detected or is not correct. The option "**User Define**" enables you to select the following voltages manually.

- **CPU Core Voltage:**

This item selects the CPU core voltage.

- **DDR RAM Voltage:**

This item selects the voltage for DRAM slot.

- **DDR Ref Voltage:**

This item selects the reference voltage needed for DRAM slot to increase its conformity.

- **nForce4 Voltage:**

This item selects the NB voltage.

- **HyperTransport Voltage:**

This item selects the voltage for LDT Bus.

※ **A wrong voltage setting may cause the system unstable or even damage the CPU. Please leave it to default settings unless you are fully aware of its consequences.**

## 3.2 Standard CMOS Features

Phoenix - Award WorkstationBIOS CMOS Setup Utility		
Standard CMOS Features		
		Item Help
Date (mm:dd:yy)	Thu. May 11 2006	
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	
▶ IDE Channel 5 Master	None	
▶ IDE Channel 6 Master	None	
Drive A	1.44M, 3.5 in.	
Drive B	None	
Floppy 3 Mode Support	Disabled	
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 Master, IDE Channel 4 Master, IDE Channel 5 Master, IDE Channel 6 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 Master, IDE Channel 4 Master, IDE Channel 5 Master, IDE Channel 6 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 number of cylinders.

---

**Head:**

This item configures the number 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 number 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.

---

**Floppy 3 Mode Support:**

This item allows you to use "3 Mode Floppy Drive" in Japanese computer system by selecting drive A, B, or both. Leave this item to its default [Disabled] setting if you are not using this Japanese standard floppy drive.

---

**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.

### 3.3 Advanced BIOS Features

Phoenix - Award WorkstationBIOS CMOS Setup Utility Advanced BIOS Features		
Quick Power on Self Test	Enabled	<u>Item Help</u>
▶ Hard Disk Boot Priority	Press Enter	
First Boot Device	Floppy	
Second Boot Device	Hard Disk	
Third Boot Device	CDROM	
Boot Other Device	Enabled	
Boot Up Floppy Seek	Disabled	
Boot Up NumLock Status	On	
Security Option	Setup	
MPS Version Ctrl For OS	1.4	
OS Select For DRAM > 64MB	None-OS2	
Delay For HDD (Secs)	0	
Full Screen Logo Show	Enabled	
↑ ↓ :Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults		

#### 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.

#### 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.

#### 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.

#### Boot Up Floppy Seek:

When the computer boots up, the BIOS detects if the system has a FDD or not. When this item is set to *Enabled*, if the BIOS detects no floppy drive, it will display a floppy disk drive error message. If this item is disabled, the BIOS will skip this test. The default setting is *Disabled*.

#### 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 it 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.

To disable security, select *Set Password* at main menu and then you will be asked to enter the password. Do not type anything and just press the *<Enter>* key and it will disable security. Once security is disabled, the system will boot and you can enter the *BIOS setup menu* freely.

※ **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.**

---

### **MPS Version Ctrl For OS:**

This item specifies which version of MPS (Multi-Processor Specification) this motherboard will use. Leave this item to its default setting.

---

### **OS Select For DRAM > 64MB:**

This item allows you to access the memory that is over 64MB in OS/2. Leave this item to its default [Non-OS2] setting for operating system other than OS/2.

---

### **Delay For HDD (Secs):**

This item allows the BIOS to support some old or special IDE devices by prolonging this delay time. A larger value will give more delay time to the device for which to initialize and to prepare for activation.

---

### **Full Screen LOGO Show:**

This item determines to show the full screen logo when booting.

---



### 3.4 Advanced Chipset Features

Phoenix - Award WorkstationBIOS CMOS Setup Utility Advanced Chipset Features		
HT Frequency	AUTO	Item Help
▶ DRAM Configuration	Press Enter	
SSE/SSE2 Instructions	Enable	
System BIOS Cachable	Disable	
↑ ↓ :Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults		

#### HT Frequency:

This item selects the LDT Bus Frequency.

#### ↳ DRAM Configuration:

Click <Enter> key to enter its submenu:

Phoenix - Award WorkstationBIOS CMOS Setup Utility DRAM Configuration		
DRAM Timing Selectable	Auto	Item Help
X - DRAM Clock	Auto	
X - CAS latency Time	Auto	
X - Row Cycle Time	Auto	
X - Row Refresh Cycle Time	Auto	
X - Min RAS# Active time	Auto	
X - RAS# to CAS# delay	Auto	
X - RAS# Precharge Time	Auto	
X - RAS# to RAS# delay	Auto	
X - Write Recovery Time	Auto	
X - Write to Read Delay	Auto	
X - Read to Write Delay	Auto	
X - DRAM Command rate	Auto	
X - Bank Interleaving	Enabled	
X - Burst Length	4 beats	
MTRR mapping mode	Continuous	
32 bit Dram Memory Hole	Auto	
↑ ↓ :Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults		

---

### **DRAM Timing Selectable:**

This item selects the DRAM timing mode. When set to "**By SPD**", the BIOS will read the DRAM module SPD data and automatically set to the values stored in it. Leave this item to its default "**Auto**" setting.

#### **- DRAM Clock:**

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.

When set to [By SPD], the BIOS will read the DRAM module SPD data and automatically set the DRAM clock by the value stored in it.

#### **- CAS Latency Time:**

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

#### **- Row Cycle Time:**

This item specifies the RAS# active to RAS# active time or auto refresh time of the same bank.

#### **- Row Refresh Cycle Time:**

This item specifies the auto refresh active to RAS# active time or RAS# auto refresh time.

#### **- Min. RAS# Active Time:**

This item specifies the minimum RAS# active time.

#### **- RAS# to CAS# Delay:**

This item specifies the RAS# active to CAS# read write delay time to the same bank.

#### **- RAS# Precharge Time:**

This item specifies the RAS# precharge time.

#### **- RAS# to RAS# Delay:**

This item specifies the RAS# active to RAS# active delay time of different bank.

#### **- Write Recovery Time:**

This item specifies the time measured from the last write datum is safely registered by the DRAM.

#### **- Write to Read Delay:**

This item specifies the time measured from the rising edge following the last non-masked data strobe to the rising edge of the next read command.

#### **- Read to Write Delay:**

This item specifies the read to write delay.

#### **- DRAM Command Rate:**

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

- **Bank Interleaving:**

Depending on your SDRAM module structure, the 4-Way setting can offer the best performance. If you choose the wrong setting, the computer system will not run in a stable manner. For detailed information on your SDRAM module, please ask your SDRAM module manufacturer.

- **Burst Length**

DDR SDRAM modules provide a Burst mode that means an auto precharge function for programmable READ or WRITE burst lengths of 2, 4 or 8 locations.

This means that if we set burst length to 8, the address bus will access 8 bytes each cycle to precharge, etc.

---

**MTRR mapping mode**

The item selects the MTRR mapping mode. The MTRR (Memory-Type and Range Registers) controls the access and cacheability of memory regions in the processor.

---

**32 bit Dram Memory Hole:**

This item selects the method to remap the 32 bit Dram memory hole. Leave this item to its default "Auto" Setting.

 **Back to Advanced Chipset Features Setup Menu:**

---

**SSE/SSE2 Instructions:**

This item allows you to Enable or Disable the SSE/SSE2 (Streaming SIMD Extensions) instruction set. The default setting is Enabled.

---

**System BIOS Cacheable:**

Two options are available: Disabled or Enabled. When you select *Enabled*, you get faster system BIOS executing speed via the L2 cache.

### 3.5 Integrated Peripherals

Phoenix - Award WorkstationBIOS CMOS Setup Utility		
Integrated Peripherals		
		Item Help
▶ IDE/RAID Function	Press Enter	
Init Display First	PCI Slot	
OnChip USB	V1.1+V2.0	
- USB Keyboard Support	Disable	
- USB Mouse Support	Disable	
OnChip Audio Controller	Auto	
OnChip LAN Controller	Auto	
- Onboard LAN Boot ROM	Disabled	
Onboard FDC Controller	Enabled	
Onboard Serial Port 1	3F8/IRQ4	
Onboard Parallel Port	378/IRQ7	
Parallel Port Mode	SPP	
X EPP Mode Select	EPP1.7	
X ECP Mode Use DMA	3	
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		

#### ↪ IDE/RAID Function

Click <Enter> key to enter its submenu:

Phoenix - Award WorkstationBIOS CMOS Setup Utility		
IDE/RAID Fuction Setup		
		Item Help
▶ IDE Function Setup	Press Enter	
▶ RAID Config	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		

## ☞ IDE Function Setup:

Click <Enter> key to enter its submenu:

Phoenix - Award WorkstationBIOS CMOS Setup Utility		
IDE Fuction Setup		
		Item Help
OnChip IDE Channel 1	Enabled	
OnChip IDE Channel 2	Enabled	
IDE DMA transfer access	Enabled	
Serial-ATA 1/2	Enabled	
Serial-ATA 3/4	Enabled	
IDE Prefetch 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

---

### OnChip IDE Channel 1/ OnChip IDE Channel 2:

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 DMA transfer access:

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

---

### Serial-ATA 1/2, Serial ATA 3/4:

This item enables or disables the on-chip SATA controller.

---

### IDE Prefetch Mode:

Two options are available: Disabled or Enabled. The default setting is *Enabled*. The onboard IDE drive interfaces support 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.

## RAID Config:

Click <Enter> key to enter its submenu:

Phoenix - Award WorkstationBIOS CMOS Setup Utility		
RAID Config		
RAID Enable	Diabaled	Item Help
X - IDE 1 Master RAID	Disabled	
X - IDE 1 Slave RAID	Disabled	
X - IDE 2 Master RAID	Disabled	
X - IDE 2 Slave RAID	Disabled	
X - Serial-ATA 1 RAID	Disabled	
X - Serial-ATA 2 RAID	Disabled	
X - Serial-ATA 3 RAID	Disabled	
X - Serial-ATA 4 RAID	Disabled	

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

### RAID Enable:

This item allows you to enable or disable the IDE RAID function.

#### - IDE 1/2 Master/Slave RAID, Serial ATA 1/2/3/4 RAID:

Select the disks that you want to use as RAID disks.

## Back to Integrated Peripherals Setup Menu:

### Init Display First:

This item selects which display slot to be initialized first when the system boots.

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

**[PCIEx]:** When the system boots, it will first initialize PCIE.

### OnChip USB:

Three options are available: Disabled → V1.1+V2.0 → V1.1. The default setting is *V1.1+V2.0*. If you choose to disable this item, the "USB Keyboard Support" and "USB Mouse Support" items will not be able to select in *Integrated Peripherals* menu.

#### - USB Keyboard Support:

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

**- USB Mouse Support:**

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

---

**OnChip Audio Controller:**

This option enables or disables the audio controller.

---

**OnChip LAN Controller:**

This option enables or disables the LAN controller.

---

**- Onboard LAN Boot ROM:**

This item allows you to use the boot ROM (instead of a disk drive) to boot-up the system and access the local area network directly.

---

**Onboard FDC Controller:**

Two options are available: Enabled and Disabled. The default setting is **Enabled**. You can enable or disable the onboard FDC controller.

---

**Onboard Serial Port 1: (For model "KN8 Ultra" and "KN8" only)**

This is used to specify the I/O address and IRQ of Serial Port 1. Six options are available: Disabled → 3F8/IRQ4 → 2F8/IRQ3 → 3E8/IRQ4 → 2E8/IRQ3 → AUTO. The default setting is **3F8/IRQ4**.

---

**Onboard Parallel Port: (For model "KN8 Ultra" and "KN8" only)**

Sets the I/O address and IRQ of the onboard parallel port. Four options are available: Disabled → 378/IRQ7 → 278/IRQ5 → 3BC/IRQ7. Default setting is **378/IRQ7**.

---

**Parallel Port Mode: (For model "KN8 Ultra" and "KN8" only)**

Four options are available: SPP → EPP → ECP → ECP+EPP. The default setting is **SPP** mode.

---

**- EPP Mode Select:**

Two options are available: EPP1.7 → EPP1.9. The default setting is **EPP 1.7**. When the mode selected for the parallel port mode is EPP, the two EPP version options are available.

---

**- ECP Mode Use DMA:**

Two options are available: 1 → 3. The default setting is **3**. When the mode selected for the parallel port mode is ECP, the DMA channel selected can be Channel 1 or Channel 3.

---

**IDE HDD Block Mode:**

This item enables or disables the IDE HDD Block Mode.

---

## 3.6 Power Management Setup

Phoenix - Award WorkstationBIOS CMOS Setup Utility		
Power Management Setup		
		Item Help
ACPI Suspend Type	S3(Suspend-to-RAM)	
- USB Resume from S3	Disabled	
Power Button Function	Instant-Off	
Wake-Up by PME# of PCI	Disabled	
Wake-Up by Ring	Disabled	
Wake-Up by OnChip LAN	Enabled	
Wake-Up by Alarm	Disabled	
X - Date(of Month) Alarm	0	
X - Time (hh:mm:ss) Alarm	0 : 0 : 0	
POWER ON Function	BUTTON ONLY	
X - KB Power ON Password	Enter	
X - Hot Key Power ON	Ctrl-F1	
Restore on AC Power Loss	Power Off	
↑ ↓ :Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults		

### ACPI Suspend Type:

This item selects the type of Suspend mode.

**[S1(PowerOn-Suspend)]:** Enables the Power On Suspend function.

**[S3(Suspend-To-RAM)]:** Enables the Suspend to RAM function.

#### - USB Resume from S3:

Two options are available: Disabled or Enabled. The default setting is *Disabled*. When set to *Enabled*, any event related to onchip USB will power on the system. This item can be configured only if the item "ACPI Suspend Type" is set to [S3(STR)].

### Power Button Function:

Two options are available: Delay 4 Sec or Instant-Off. The default setting is *Instant-Off*. It is activated when the user presses the power button for more than four seconds while the system is in the working state, then the system will transition to the soft-off (Power off by software). This is called the power button over-ride.

### Wakeup by PME# of PCI:

Two options are available: Disabled or Enabled. The default setting is *Enabled*. When set to *Enabled*, any event related to PCI cards (PME) will power on the system.

### Wake-Up by Ring:

Two options are available: Disabled or Enabled. The default setting is *Disabled*. When set to *Enabled*, any event affecting from Modem Ring will awaken a system that has powered down.



---

**Wake-Up by OnChip LAN:**

When set to [Enabled], you can remotely wake up a PC in Soft-Off condition via a LAN card that support the wake up function.

---

**Wake-Up by Alarm:**

Two options are available: Disabled or Enabled. The default setting is *Disabled*. When set to *Enabled*, you can set the date and time at which the RTC (real-time clock) alarm awakens the system from Suspend mode.

**- 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.

---

**Power On Function:**

This item selects the way you want your system to power on.

**[Password]:** Use a password to power on the system, select this option then press <Enter>. Enter your password. You can enter up to 5 characters. Type in exactly the same password to confirm, and then press <Enter>.

**[Hot KEY]:** Use any of the function keys between <F1> to <F12> to power on the system.

**[Mouse Left]:** Double click the mouse left button to power on the system.

**[Mouse Right]:** Double click the mouse right button to power on the system.

**[Any KEY]:** Use any keyboard key to power on the system.

**[BUTTON ONLY]:** Use only the power button to power on the system.

**[Keyboard 98]:** Use the power-on button on the "Keyboard 98" compatible keyboard to power on the system.

**- KB Power On Password:**

This item sets the password required in order to power on your computer. Once the password has been set, you can only power on the system by inputting the password.

**- Hot Key Power On:**

Fifteen options are available: Ctrl+F1 ~ Ctrl+F12, Power, Wake and Any Key. The default setting is *Ctrl+F1*. You can choose the hot key you want to turn on computer power.

---

**Restore on AC Power Loss:**

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.

### 3.7 PnP/PCI Configurations

Phoenix - Award Workstation BIOS CMOS Setup Utility		
PnP/PCI Configurations		
Resources Controlled By	Auto (ESCD)	Item Help
x IRQ Resources	Press Enter	
PCI/VGA Pallette Snoop	Disbaled	
PIRQ_0 Use IRQ No.	Auto	
PIRQ_1 Use IRQ No.	Auto	
PIRQ_2 Use IRQ No.	Auto	
PIRQ_3 Use IRQ No.	Auto	
** PCI Express relative items **		
Maximum Payload Size	4096	
↑ ↓ : 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:

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

Phoenix - Award WorkstationBIOS CMOS Setup Utility	
PnP/PCI Configurations	
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

## ↳ **Back to PnP/PCI Configurations Setup Menu:**

---

### **PCI/VGA Palette Snoop:**

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

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

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

---

### **PIRQ\_0 Use IRQ No. ~ PIRQ 3 Use IRQ No.:**

This item specifies the IRQ number manually or automatically for the devices installed on PCI slots.

---

### **Maximum Payload Size:**

This item sets the maximum TLP payload size for the PCI Express devices.

### 3.8 PC Health Status

Phoenix - AwardBIOS CMOS Setup Utility		
PC Health Status		
		Item Help
FAN Fail Alarm Selectable	Disabled	
Shutdown when FAN Fail	Disabled	
CPU FanEQ Speed Control	Disabled	
- CPU FAN Active Temperature	70	
Shutdown Temperature	Disabled	
CPU Warning Temperature	Disabled	
CPU Temperature	48°C/118°F	
System Temperature	42°C/107°F	
CPU FAN Speed	3125 RPM	
NB FAN Speed	4963 RPM	
SYS FAN Speed	0 RPM	
CPU Core Voltage	1.52 V	
DDR Voltage	2.67 V	
ATX +3.3V	3.31 V	
ATX +5V	5.08 V	
ATX +12V	11.97 V	
CK804 CORE Voltage	1.56 V	
Hyper Transport Voltage	1.23 V	
+3V Dual	2.27 V	
↑ ↓ : Move Enter: Select +/- /PU/PD: Value F10: Save ESC: Exit F1: General Help F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults		

#### FAN Fail Alarm Selectable:

This item selects the fan that will be monitored for malfunction.

#### Shutdown When Fan Fail:

The system will be shut down if the selected fan is not running.

#### CPU FanEQ Speed Control:

This item allows you to control the CPU fan speed down to a specific percentage.

When set to a specific percentage, the CPU fan speed will run at the percentage you set in this item if the temperature limit set in the item "Active Temperature" is not exceeded.

The CPU fan speed will run at 100% regardless of what the percentage you set in this item if the temperature limit set in the item "Active Temperature" is exceeded.

#### - CPU FAN Active Temperature:

This item sets the temperature limit that would activate the function of "CPU FanEQ Speed Control" option.

#### Shutdown Temperature:

You can set the processor shutdown temperature here. If the processor temperature exceeds the settings value, system will force to shutdown to protect the processor not overheat.

---

**CPU Warning Temperature:**

This item lets you select the temperature at which you want the system to send out a warning message to the PC speakers of when the temperature goes beyond either limit. You can select the temperatures you want.

---

**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.

## 3.9 Load Fail-Safe Defaults

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

## 3.10 Load Optimized Defaults

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

## 3.11 Set Password

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

## 3.12 Save & Exit Setup

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

## 3.13 Exit Without Saving

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







## 4. Driver & Utility CD

The "Driver & Utility CD" that came packed with this motherboard contains drivers, utilities and software applications required for its basic and advanced features.

Place the "Driver & Utility CD" into the CD-ROM drive in your system. The following installation auto-run screen appears. If not, browse the root directory of the CD-ROM via the File Manager, and double click the "AUTORUN" file.

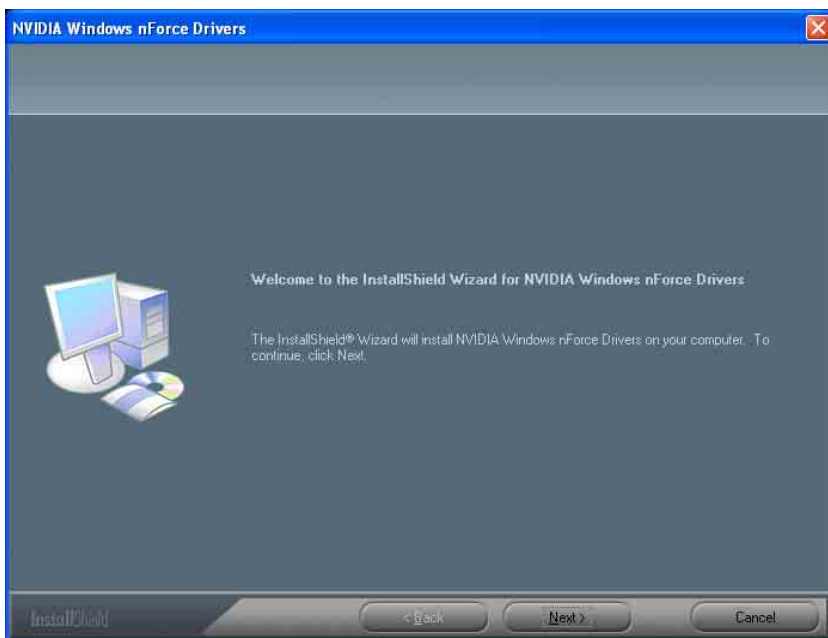


- **[Drivers]:** Click to enter the driver installation menu.
- **[Manual]:** Click to enter the user's manual menu.
- **[Utility]:** Click to enter the utilities installation menu.
- **[ABIT Utility]:** Click on this tab to enter the menu for installing utilities exclusively developed by ABIT.
- [  **Browse CD**]: Click to browse the contents of this "Driver & Utility CD".
- [  **Close**]: Click to exit this installation menu.

## 4.1 nVidia nForce Chipset Driver

To install this driver:

1. Click on the [Drivers] tab in the installation menu screen.
2. Click the [nVidia nForce Chipset Driver] item under the [Drivers] tab. The following screen appears:

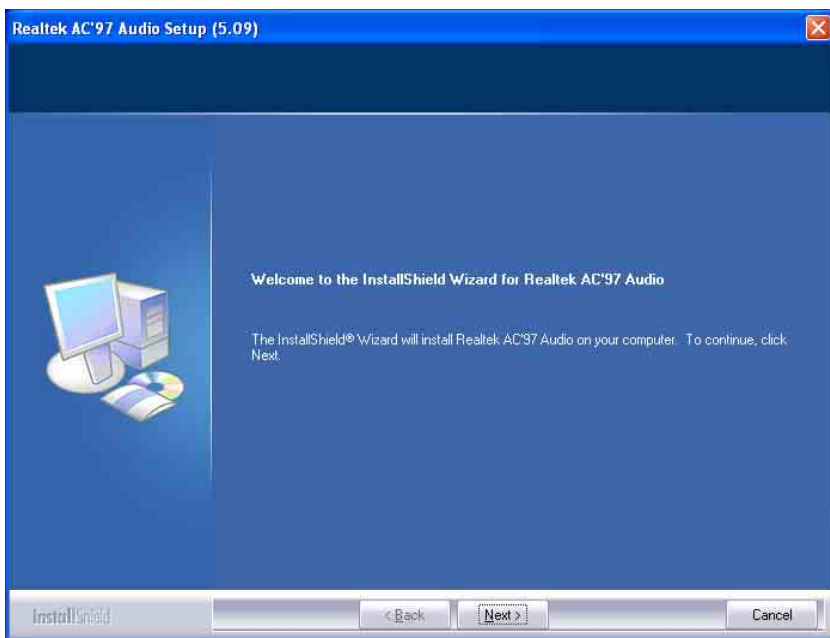


3. Follow the prompts on the screen to complete installation.
  4. Restart the system for the driver to take effect.
- ※ **Please install this nVidia nForce Chipset Driver first after having installed the Windows operating system.**

## 4.2 Realtek Audio Driver

To install this driver:

1. Click on the [Drivers] tab in the installation menu screen.
2. Click the [Realtek Audio Driver] item under the [Drivers] tab. The following screen appears:

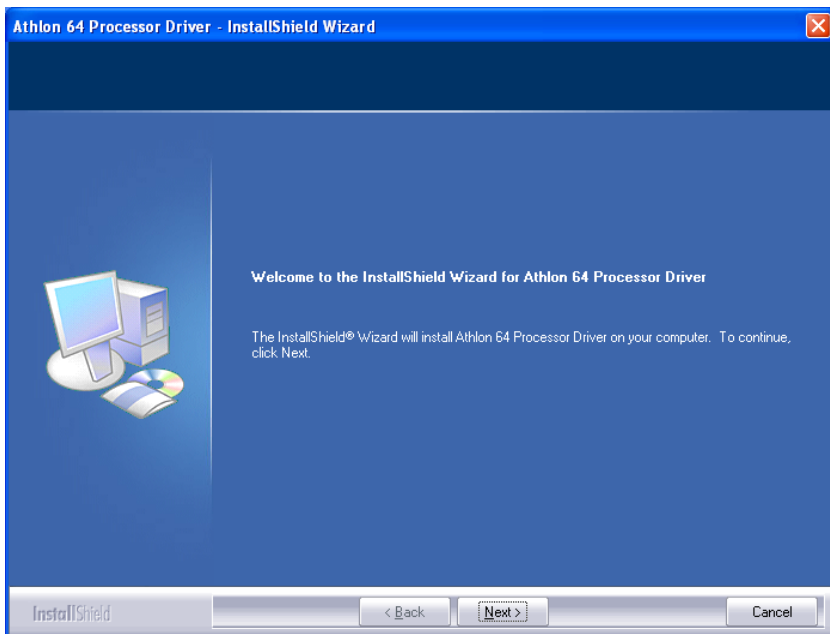


3. Follow the prompts on the screen to complete installation.
4. Restart the system for the driver to take effect.

## 4.3 Cool'n'Quiet Driver

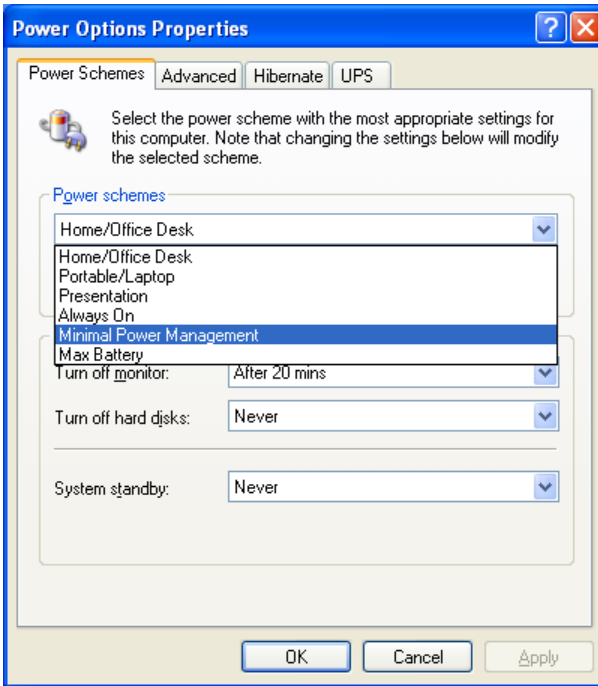
To install this driver:

1. Click on the [Drivers] tab in the installation menu screen.
2. Click the [Cool'n'Quiet Driver] item under the [Drivers] tab. The following screen appears:



3. Follow the prompts on the screen to complete installation.
4. Restart the system for the driver to take effect.

5. After the system restarted, open the "Power Options" from the control panel and choose the power scheme "Minimal Power Management" to enable Cool 'n' Quiet.



- ※ For Windows 2000 or ME system, an AMD Cool 'n' Quiet tab will appear under "Power Options" when the Cool 'n' Quiet software for Windows 2000 and ME is installed. This must be set to "Automatic Mode" for Cool 'n' Quiet to be enabled.

## 4.4 USB 2.0 Driver

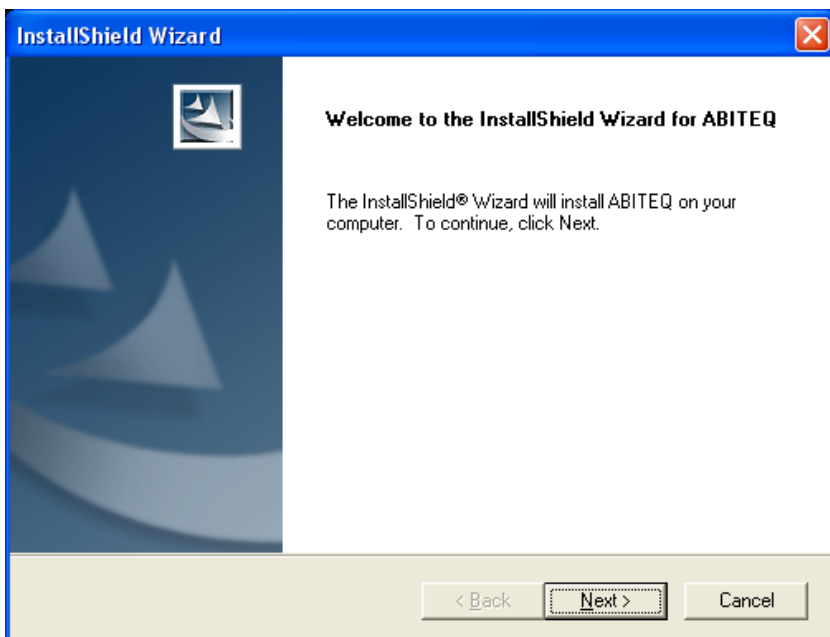
- ※ There is no need to install this driver for Windows 2000 with Service Pack 4, Windows XP with Service Pack 1, or their later version.

## 4.5 ABIT EQ (The Hardware Doctor Utility)

ABIT EQ is a self-diagnostic system for PC based on motherboards designed and manufactured by ABIT Computer Corporation. It will protect PC Hardware by monitoring critical items of Power Supply Voltage, CPU & System Fans Speed, and CPU & System Temperature.

To install this utility:

1. Click on the [ABIT Utility] tab in the installation menu screen.
2. Click the [ABITEQ] item under the [ABIT Utility] tab. The following screen appears:



3. Follow the prompts on the screen to complete installation.
4. Restart the system for the driver to take effect.

- Execute the ABIT EQ by entering the Windows Menu [Start] → [All Programs] → [ABIT] → [ABIT EQ].



- ABIT EQ shows you the status of Voltage, Fan Speed, and Temperature readings as well.

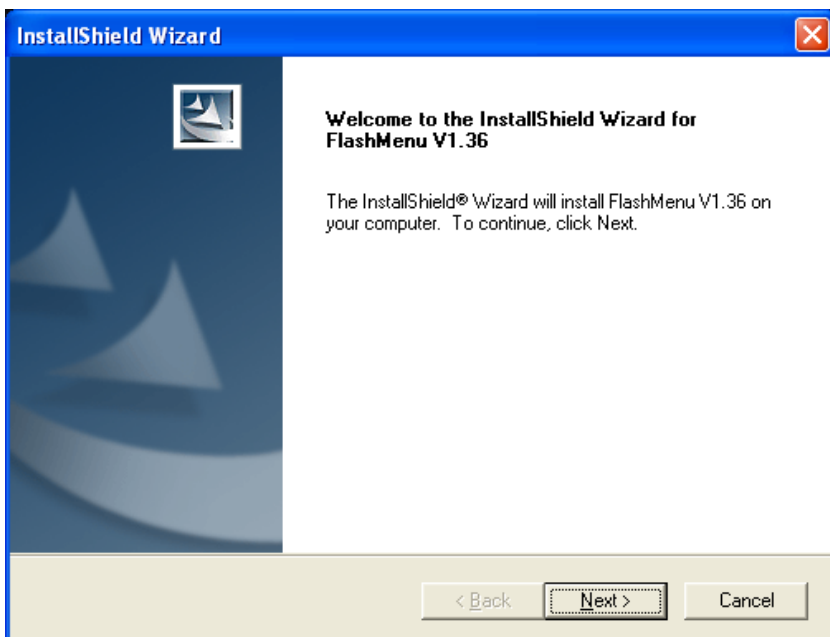


## 4.6 FlashMenu (BIOS Update Utility)

ABIT FlashMenu is the most stable Windows-based BIOS flash available. No more worries from crashing. With one click of BIOS updating, ABIT users can flash their BIOS more easily and in less time.

To install this utility:

1. Click on the [ABIT Utility] tab in the installation menu screen.
2. Click the [FlashMenu] item under the [ABIT Utility] tab. The following screen appears:



3. Follow the prompts on the screen to complete installation.
4. Restart the system for the driver to take effect.



- Execute the FlashMenu by entering the Windows Menu [Start] → [All Programs] → [ABIT] → [FlashMenu].



- This FlashMenu screen appears. You can easily update the BIOS from clicking [Update From File], [One Click LiveUpdate], or [LiveUpdate Step by Step] button.

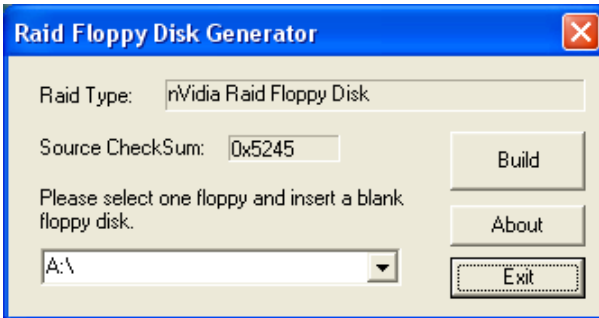


## 4.7 NVRAID Floppy Disk

If you lost or damaged the SATA Driver Disk that came with the package, use the NVRAID Floppy Disk to create another one.

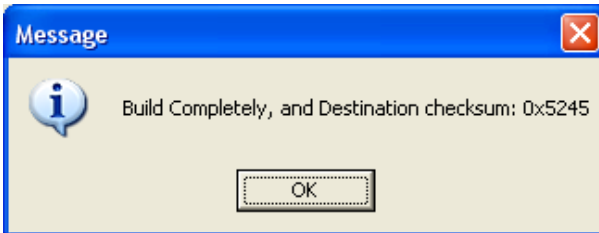
To install this utility:

1. Click on the [ABIT Utility] tab in the installation menu screen.
2. Click the [NVRAID Floppy Disk] item under the [ABIT Utility] tab. The following screen appears:



Insert one blank floppy disk to the selected floppy drive and click [Build].

3. Click [OK] to finish building the SATA Driver Disk.



※ **If you are using a windows 2000 operating system, please update your system to Service Pack 4 before starting to setup the NVIDIA RAID.**

# 5. Appendix

## 5.1 Troubleshooting (How to Get Technical Support?)

### 5.1.1 Q & A

**Q: Do I need to clear the CMOS before I use a new motherboard to assemble my new computer system?**

A: Yes, we highly recommend that you clear the CMOS before installing a new motherboard. Please move the CMOS jumper from its default 1-2 position to 2-3 for a few seconds, and then back. When you boot up your system for the first time, follow the instructions in the user's manual to load the optimized defaults.

**Q: If my system hangs when I update the BIOS or set the wrong CPU parameters, what should I do?**

A: Whenever you update the BIOS or if the system hangs due to wrong CPU parameters setting, always clear CMOS jumper before booting up again.

**Q: Why does the system fail to boot up again right after a mechanical power-off?**

A: Please keep a 30-second interval between each mechanical power On/Off.

**Q: Why does the system fail to boot up and nothing displays on the screen after I did some over-clocking or non-standard settings inside the BIOS?**

A: It should not cause hardware or permanent damage to motherboard when BIOS settings were changed from default to over-clocking or non-standard status.

We suggest the following three troubleshooting methods to discharge CMOS data, recover the hardware default status, and then making the motherboard work again. There is no need to bother returning the motherboard to where you bought it from or go through an RMA process.

**Step 1.** Switch off the power supply unit and then switch it on again after one minute. If there is no power-switch on the power supply unit, disconnect its power cord for one minute and then reconnect.

Press and hold the <Insert> key on the keyboard, and press the power-on button to boot up system. If it works, release the <Insert> key and hit <Del> key to enter the BIOS setup page to apply the correct settings.

If the situation remains the same, repeat the procedures in Step 1 for three times, or try Step 2.

**Step 2.** Switch off the power supply unit or disconnect the power cord. Open the chassis cover. Locate the CCMOS jumper near the button battery. Change the jumper position from default 1-2 to 2-3 for one minute to discharge the CMOS data, and then put it back to default 1-2 position.

Close the chassis and switch on the power supply unit or plug in the power cord. Press the power-on button to boot up system. If it works, hit <Del> key to enter the BIOS setup page to do the correct settings.

If the situation remains the same, try Step 3.

**Step 3.**The same procedure as Step 2, but while discharging the CMOS data, pull out the ATX power connectors from motherboard and remove the button battery during CMOS discharge.

**Q: How to get a quick response for my request on technical support?**

A: Please carry out a simple troubleshooting before sending "**Technical Support Form**":

**System boot-up fails after the system had been assembled:**

Check the motherboard's supporting specifications first to see if all the key components attached in your system can meet.

To do so, you may:

- ↺ Remove all the unnecessary add-on devices (except the CPU, VGA card, DRAM, and Power Supply), and then reboot.
- ↺ If the trouble still exists, try another VGA card of different brand/model to see if the system will start.
- ↺ If the trouble still exists, try another memory module of different brand/model.
- ↺ If the trouble still exists, try another CPU and Power Supply.

If the system runs successfully, shut it down and start re-installing the interface cards and devices that were previously installed in the system. Re-install and start the system one at a time until the system won't start.

**Malfunction in the OS:**

If the system hangs after resuming from S3 or some testing program, if the CPU cannot be recognized properly, if the display resolution mixed, or if a certain program cannot be executed, etc, you may:

- ↺ Upgrade the motherboard's latest BIOS version.
- ↺ Upgrade the add-on device's latest driver version.
- ↺ Check if there is any conflict in the "Control Panel/System Properties".

**Q: How to fill in the "Technical Support Form"?**

A: To fill in this "**Technical Support Form**", please refer to the following instructions:

- **Region:** Type in your country name.
- **E-mail:** Type in your contact E-mail information.
- **First name:** Type in your first name.
- **Last name:** Type in your last name.
- **Subject:** Type in the model name and the problem of your motherboard.  
Example 1: AA8XE and SCSI 29160 malfunction  
Example 2: AA8XE boot fails, POST code AF  
Example 3: AA8XE (system hang when S3 resume)
- **Motherboard:** Type in the model name and revision number of your motherboard.  
Example: AA8XE REV: 1.00
- **BIOS Version:** Type in the BIOS version of your motherboard. (You can find it on the screen during the POST sequence.)

- **CPU:** Type in the brand name and the speed (MHz) of your CPU. (Illustrate the over-clocking status if you had done so.)  
Example: Intel 650 3.4GHz (OC FSB=220MHz)
- **Memory brand:** Type in the brand and model name of your memory module.  
Example: Memory brand: Kingston (KVR533D2N4/1G)
- **Memory size:** Type in the size of your memory module.  
Example: 512M\* 4PCS
- **Memory configuration:** Type in the memory configuration in BIOS setting.  
Example: Memory Timing: 2.5-3-3-7 @533MHz
- **Graphics information:** Note Graphics card's brand, model and driver version
- **Graphics card:** Type in the brand and model name of your graphics card.  
Example: ATI RADEON X850 XT PE
- **Graphics driver version:** Type in the driver version of your graphics card  
Example: Catalyst 5.12V
- **Power supply maker:** Type in the brand and model name of your power supply unit.
- **Power supply wattage:** Type in the power wattage of your power supply unit.
- **Storage devices:** Type in the brand and specifications of your HDD drive and quantity. Specify if it was inserted on IDE (Master or Slave) or SATA ports, including the RAID allocation status.  
Example 1: WD Caviar WD600 60GB (on IDE2 master), Maxtor DiamondMax 10 SATA 300GB (on SATA 3)  
Example 2: Maxtor DiamondMax 10 SATA 300GB \*2 (on SATA 3, SATA 4 RAID 1)
- **Optical devices:** Type in the brand and specifications of your optical drives and quantity. Specify if it was inserted on IDE (Master or Slave) or SATA ports.
- **Other devices:** Indicate which add-on cards or USB devices that you *absolutely sure* are related to the problem. If you cannot identify the problem's origin, indicate all the add-on cards or USB devices inserted on your system.  
Example: AHA 29160 (on PCI 2), Sandisk Cruzer mini 256MB USB Flash-disk.
- **Operating system:** Indicate which OS and language version  
Example: Microsoft Windows XP SP2, English version  
Example: Microsoft Media Center Edition 2005, Korean version
- **Problem description:** Describe the problem of your system configuration. Indicate the steps to duplicate problem if possible.

See the next page for a blank Technical Support Form, or visit our website to fill in the form on line (<http://www.abit.com.tw/page/en/contact/technical.php>).

**Q. Is the motherboard dead? Do I need to return it to where I bought from or go through an RMA process?**

A: After you had gone through the troubleshooting procedures, yet the problem still exists, or you find an evident damage on the motherboard. Please contact our RMA center.  
([http://www2.abit.com.tw/page/en/contact/index.php?pFUN\\_KEY=18000&pTITLE\\_IMG](http://www2.abit.com.tw/page/en/contact/index.php?pFUN_KEY=18000&pTITLE_IMG))

## 5.1.2 Technical Support Form

Country:	
First name:	
Last Name:	
Subject:	
Motherboard:	
BIOS Version:	
CPU:	
Memory brand:	
Memory size:	
Memory configuration:	
Graphics card:	
Graphics driver version:	
Power supply maker:	
Power supply wattage:	
Storage devices:	
Optical devices:	
Other devices:	
Operating system:	
Problem description:	



## 5.1.3 UNIVERSAL ABIT Contact Information

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### Taiwan Head Office

#### **UNIVERSAL ABIT Co., Ltd.**

No. 323, Yang Guang St., Neihu, Taipei, 114, Taiwan

Tel: 886-2-8751-8888

Fax: 886-2-8751-3382

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### North America, South America

#### **ABIT Computer (U.S.A.) Corporation**

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Tel: 1-510-623-0500

Fax: 1-510-623-1092

Website: <http://www.abit-usa.com>

RMA Center: <http://rma.abit-usa.com>

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### U.K., Ireland

#### **ABIT Computer (U.K.) Corporation Ltd.**

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### Austria, Czech, Romania, Bulgaria, Slovakia, Croatia, Bosnia, Serbia, Macedonia

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### Germany and Benelux (Belgium, Netherlands, Luxembourg), France, Italy, Spain, Portugal, Greece, Denmark, Norway, Sweden, Finland, Switzerland

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