



NF8 Series

(NF8/NF8-V)

Socket 754 System Board

User's Manual

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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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Chapter 1. Introduction

1-1. Features & Specifications

1. CPU

- Supports AMD Socket 754 Athlon 64/Sempron Processor with 1.6GHz system bus using Hyper Transport™ Technology
- Supports AMD K8 CPU Cool 'n' Quiet Technology

2. Chipset

- NVIDIA NF3 250Gb single chip
- Integrated NVIDIA Gigabit Ethernet and NVIDIA Firewall
- Supports NV RAID

3. Memory

- Two 184-pin DIMM sockets
- Supports DDR400 non-ECC un-buffered memory
- Supports maximum memory capacity up to 2GB

4. ABIT Engineered

- ABIT SoftMenu™ Technology
- ABIT CPU ThermalGuard™ Technology

5. SATA NV RAID

- Serial ATA 1.5Gbps data transfer rate
- Supports SATA RAID 0/1

6. GbE LAN

- NVIDIA Gigabit Ethernet Controller

7. IEEE 1394 (NF8)

- Supports 2 Ports IEEE 1394 at 100/200/400 Mb/s transfer rate

8. Audio

- Onboard 6-channel Audio CODEC
- Supports auto jack sensing

9. Internal I/O Connectors

- 1x AGP 8X/4X slot
- 5x PCI slots
- 1x Floppy port supports up to 2.88MB
- 2x Ultra DMA 133/100/66/33 IDE connectors
- 2x SATA 150 connectors

- 2x USB 2.0 headers
- 1x IEEE 1394 header (**NF8**)
- 1x CD-IN header

10. Back Panel I/O

- 1x PS/2 keyboard, 1x PS/2 mouse
- 1x Parallel Port, 1x Serial Port
- 1x AUDIO1 connector (Rear-Left / Rear-Right, Center/Subwoofer)
- 1x AUDIO2 connector (Mic-In, Line-In, Front-Left/Front-Right)
- 4x USB 2.0, 1x RJ-45 LAN Connector
- 1x IEEE 1394 Connector (**NF8**)

11. Miscellaneous

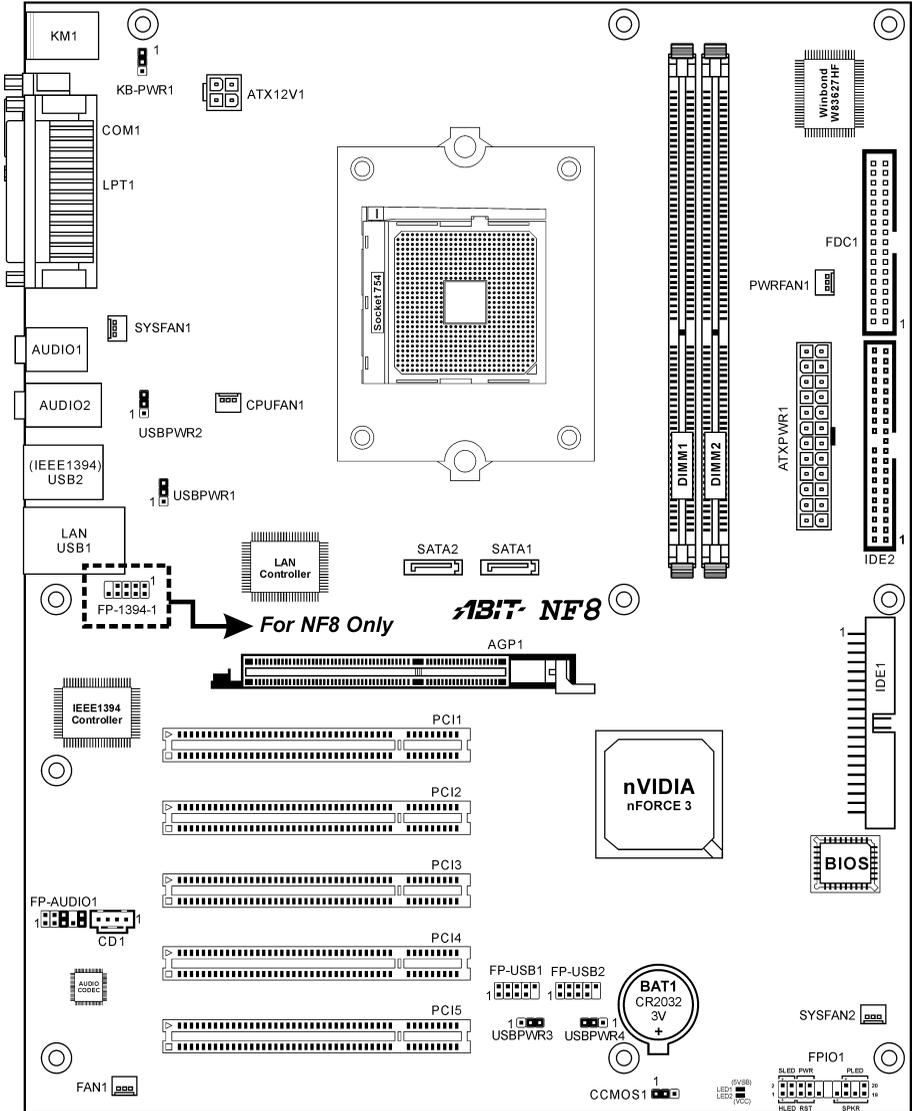
- ATX form factor: 305 x 245 mm

12. Order Information

Model	Features
NF8	GbE LAN, IEEE1394
NF8-V	GbE LAN

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

1-2. Layout Diagram (NF8, NF8-V)





Chapter 2. Hardware Setup

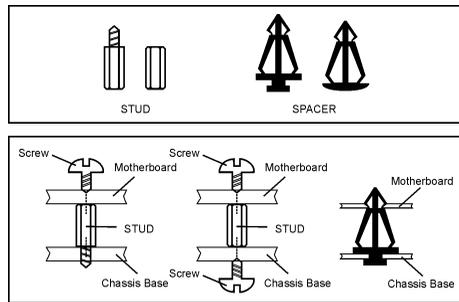
Before the Installation: Turn off the power supply switch (fully turn off the +5V standby power), or disconnect the power cord before installing or unplugging any connectors or add-on cards. Failing to do so may cause the motherboard components or add-on cards to malfunction or damaged.

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.

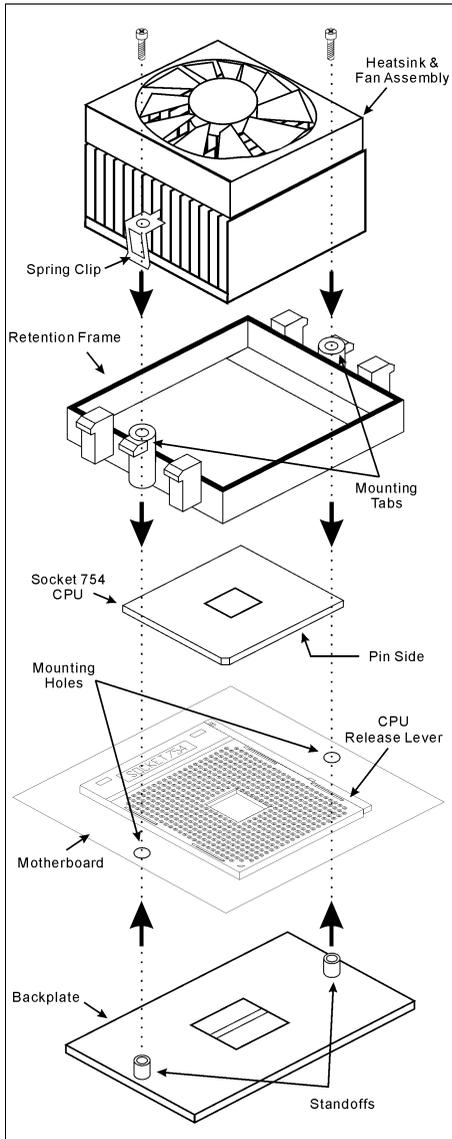
2-2. Install CPU and Heatsink

This motherboard provides a ZIF (Zero Insertion Force) Socket 754 to install AMD Socket 754 CPU. The CPU you bought should contain with a kit of heatsink, cooling fan, retention frame and backplate. If that's not the case, buy one specially designed for Socket 754.

Please refer to the figure shown here to install CPU and heatsink. (For reference only. Your Heatsink & Fan Assembly may not be exactly the same as this one.)

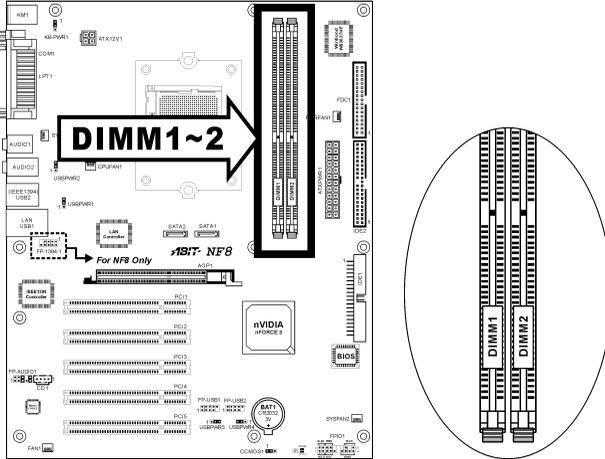
1. Locate the Socket 754 on this motherboard. Pull the CPU release lever sideways to unlatch and then raise it all the way up.
2. Drop the processor with its pin side down into the CPU socket. Do not use extra force to insert CPU; it only fits in one direction. Close the CPU release lever.
3. Align the Backplate Standoffs with the mounting holes on motherboard. Position the backplate onto motherboard.
4. Place the Retention Frame onto the motherboard and align it with the Backplate Standoffs.
5. Place heatsink on top of CPU, and make sure the heatsink fits properly on the retention frame.
6. Hook both sides of the Spring Clip onto the Mounting Tabs of Retention Frame. Tighten screws until the Spring Clip is fully installed.
7. Attach the fan connector of Heatsink & Fan Assembly with the CPU-FAN connector on the motherboard.

ATTENTION: Do not forget to set the correct bus frequency and multiple for your processor.



2-3. Install System Memory

This system board provides two 184-pin DDR DIMM slots for DDR 400 memory modules with memory expansion size up to 2GB.

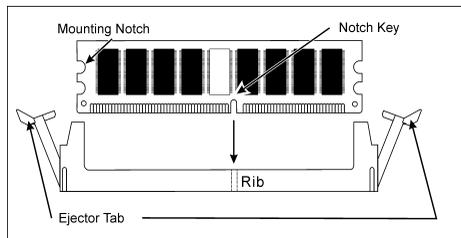


Bank	Memory Module	Total Memory
Bank 0, 1 (DIMM1)	256MB, 512MB, 1GB	256MB ~ 1GB
Bank 2, 3 (DIMM2)	256MB, 512MB, 1GB	256MB ~ 1GB
Total System Memory		256MB ~ 2GB

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

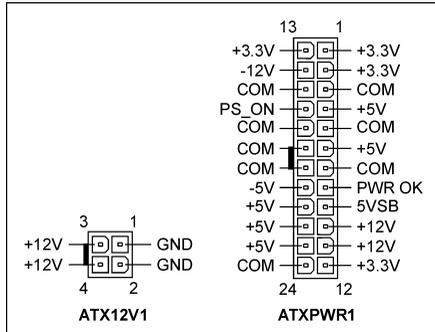
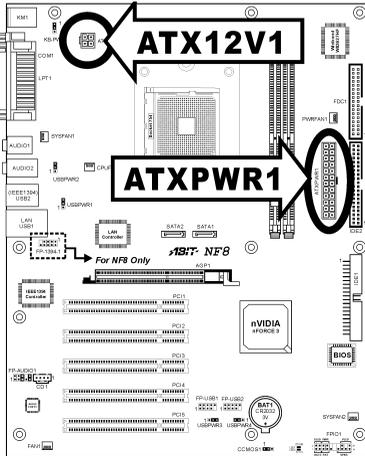
Here we will show you all of the connectors, headers and switches, and how to connect them. Please read the entire section for necessary information before attempting to finish all the hardware installation inside the computer chassis. A complete enlarged layout diagram is shown in Chapter 1 for all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

(1). ATX Power Input Connectors

This motherboard provides two power connectors to connect ATX12V power supplier.

NOTE: This 24-pin power connector “ATXPWR1” is compliant to the former 20-pin type. Pay attention to the orientation when doing so (Pin-11, 12, 23, and 24 should be left un-connected).

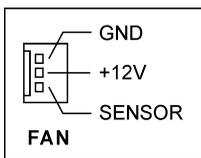
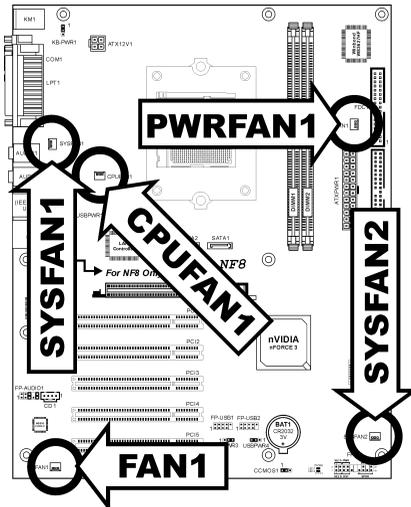


(2). FAN Power Connectors

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

- **CPUFAN1:** CPU Fan Power Connector
- **SYSFAN1, SYSFAN2:** System Fan Power Connector
- **PWRFAN1, FAN1:** Auxiliary Fan Power Connector

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

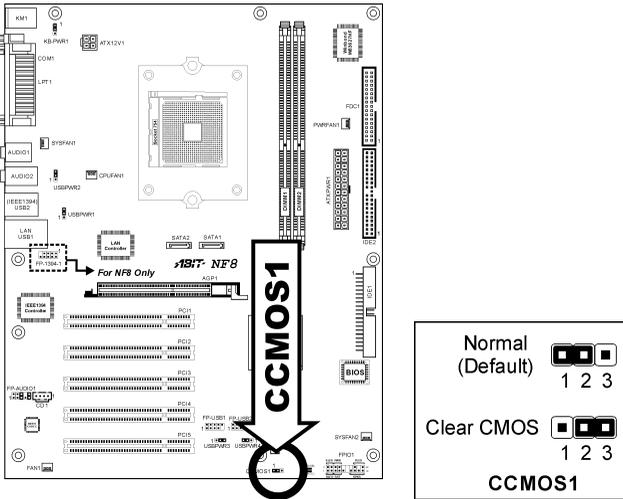


(3). CMOS Memory Clearing Header

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.

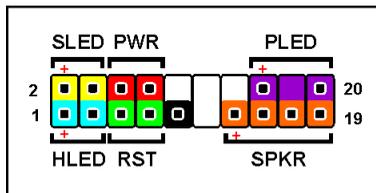
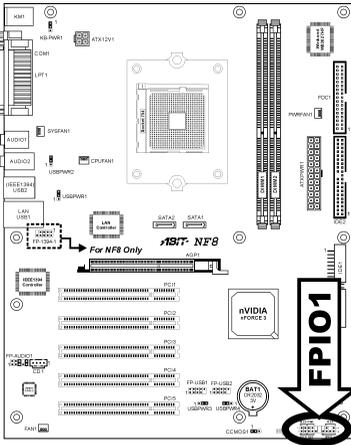
WARNING: Turn the power off first (including the +5V standby power) before clearing the CMOS memory. Failing to do so may cause your system to work abnormally or malfunction.



(4). Front Panel Switches & Indicators Headers

This header is used for connecting switches and LED indicators on the chassis front panel.

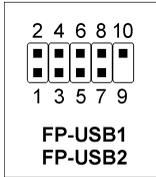
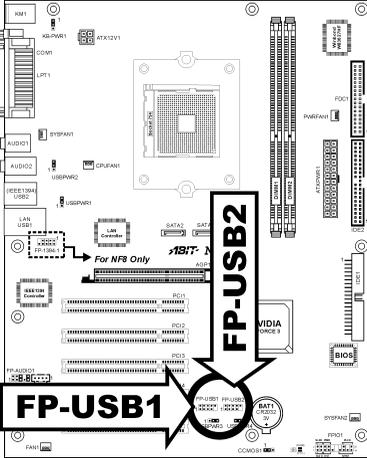
Watch the power LED pin position and orientation. The mark “+” align to the pin in the figure below stands for positive polarity for the LED connection. Please pay attention to connect these headers. A wrong orientation will only cause the LED not lighting, but a wrong connection of the switches could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

(5). Additional USB Port Headers

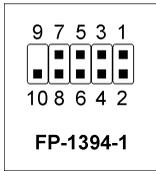
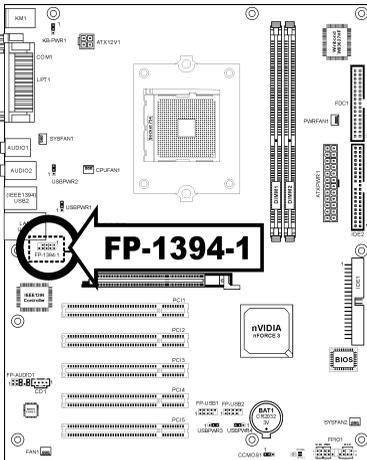
These headers each provide 2 additional USB 2.0 ports connection through an USB cable designed for USB 2.0 specifications.



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). Additional IEEE1394 Port Headers (NF8)

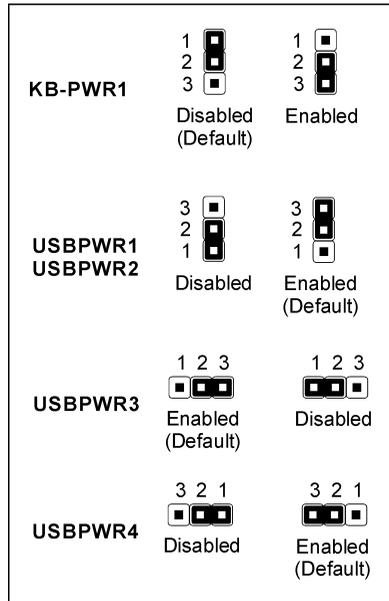
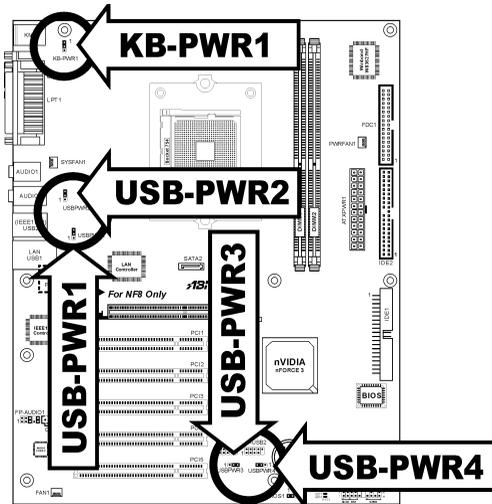
This header provides one additional IEEE1394 port connection through an extension cable and bracket.



Pin	Pin Assignment	Pin	Pin Assignment
1	TPA0 +	2	TPA0 -
3	GND	4	GND
5	TPB0 +	6	TPB0 -
7	+12V	8	+12V
9	NC	10	GND

(7). **Wake-up Header**

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

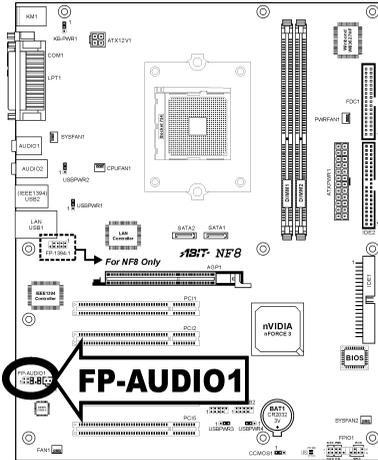


- KB-PWR1:**
 Pin 1-2 shorted (default): Disable wake-up function support at Keyboard/Mouse port.
 Pin 2-3 shorted: Enable wake-up function support at Keyboard/Mouse port.
- USBPWR1:**
 Pin 1-2 shorted: Disable wake-up function support at USB1 port.
 Pin 2-3 shorted (default): Enable wake-up function support at USB1 port.
- USBPWR2:**
 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.
- USBPWR3:**
 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.
- USBPWR4:**
 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.

(8). Front Panel Audio Connection Header

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

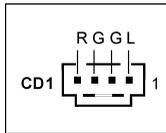
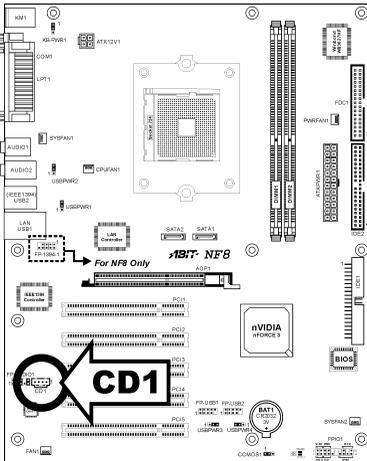
- To use the audio connector at front panel, remove all the jumpers on this header, and then connect to front panel by the extension cable provided with the chassis.
- To use the audio connector at rear panel, disconnect the extension cable, attach the jumpers back at pin 5-6, and pin 9-10 (default setting).



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

(9). Internal Audio Connectors

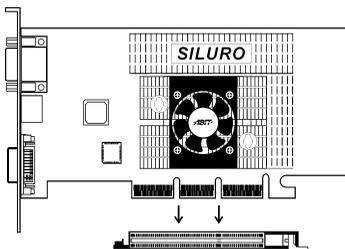
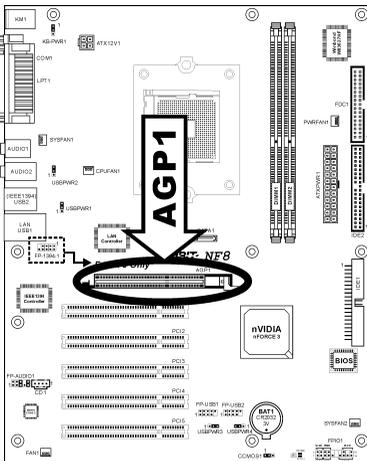
This connector connects to the audio output of internal CD-ROM drive or add-on card.



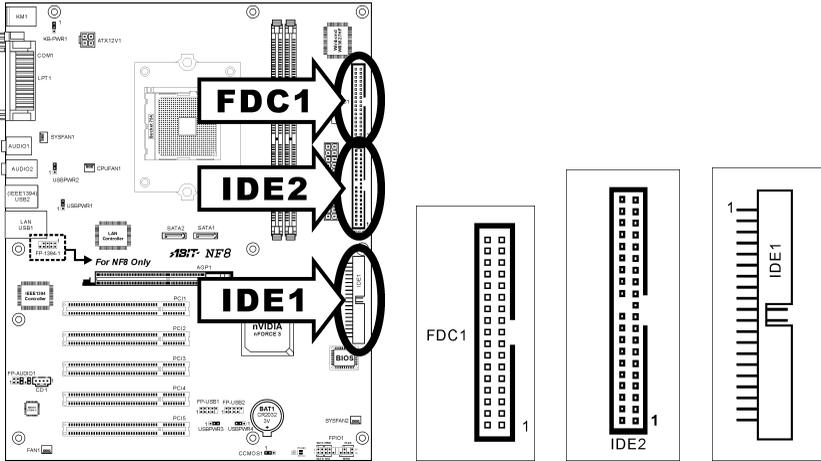
(10). Accelerated Graphics Port Slot

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.



(11). Floppy and IDE Disk Drive Connectors

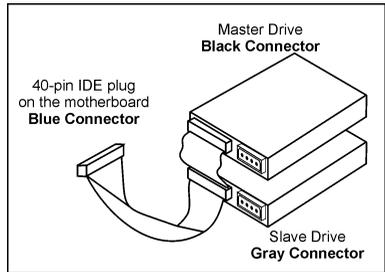


The FDC1 connector connects up to two floppy drives with a 34-wire, 2-connector floppy cable. Connect the single end at the longer length of ribbon cable to the FDC1 on the board, the two connectors on the other end to the floppy disk drives connector. Generally you need only one floppy disk drive in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

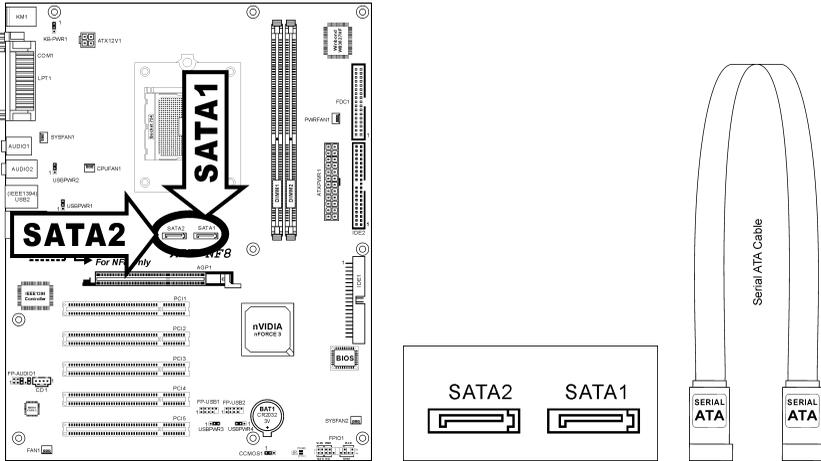
Connect the single end (blue connector) at the longer length of ribbon cable to the IDE port of this board, the other two ends (gray and black connector) at the shorter length of the ribbon cable to the connectors of your hard drives.



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.

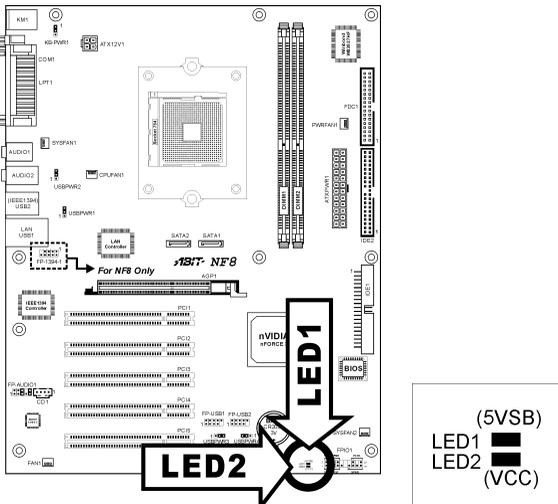
(12). Serial ATA Connectors

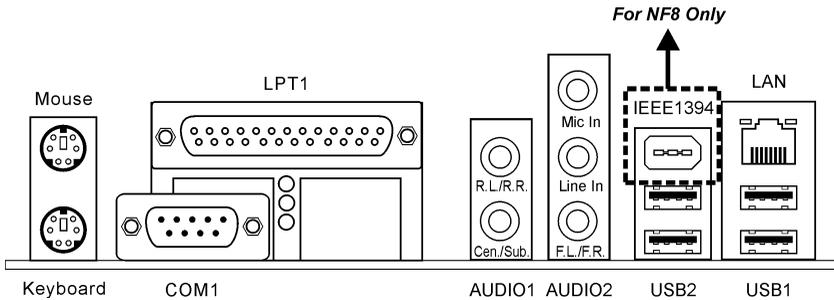
These connectors are provided to attach one Serial ATA device at each channel via Serial ATA cable.



(13). Status Indicators

- **LED1 (5VSB):** This LED lights up when the power supply is connected with power source.
- **LED2 (VCC):** This LED lights up when the system power is on.



(14). 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.
- **AUDIO1:**
R.L./R.R. (Rear Left / Rear Right): Connects to the rear left and rear right channel in the 5.1 channel audio system.
Cen./Sub. (Center / Subwoofer): Connects to the center and subwoofer channel in the 5.1 channel audio system.
- **AUDIO2:**
Mic In: Connects to the plug from external microphone.
Line In: Connects to the line out from external audio sources.
F.L./F.R. (Front Left / Front Right): Connects to the front left and front right channel in the 5.1-channel or regular 2-channel audio system.
- **IEEE1394:** Connects to devices of IEEE1394 protocol. (*NF8*)
- **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.

Chapter 3. BIOS Setup

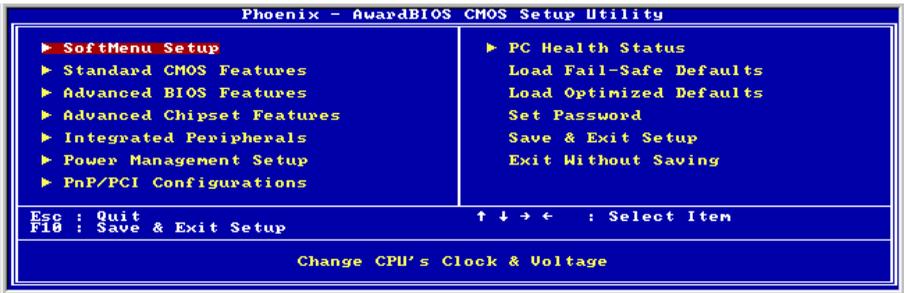
This motherboard provides a programmable EEPROM that you can update the BIOS utility. The BIOS (Basic Input/Output System) is a program that deals with the basic level of communication between processor and peripherals. Use the BIOS Setup program only when installing motherboard, reconfiguring system, 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> + 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 key, the main menu screen appears.



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, 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.

↑ ↓ ← →:

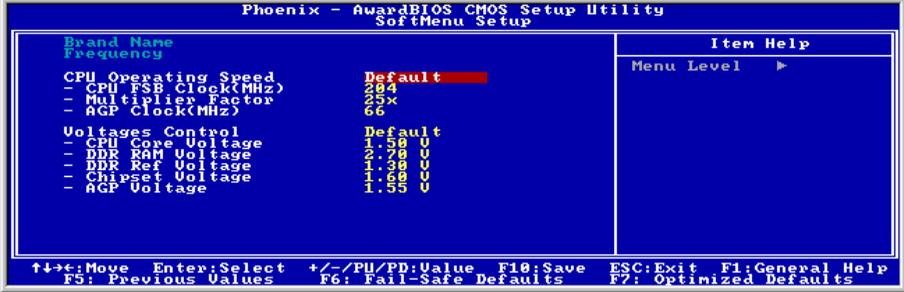
Press these buttons to choose, in the main menu, the option you want to confirm or to modify.

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.



CPU Name Is:

This item displays the CPU model name.

CPU Internal 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:

WARNING: 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.

AGP Clock(MHz):

This item allows you to set the AGP clock speed from 66MHz to 100MHz. Due to the AGP specification limit, the speed you set over its standard clock speed is supported, but not guaranteed.

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.

* **Chipset Voltage:**

This item selects the Chipset voltage.

* **AGP Voltage:**

This item selects the voltage for AGP slot.

ATTENTION: 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

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



Date (mm:dd:yy):

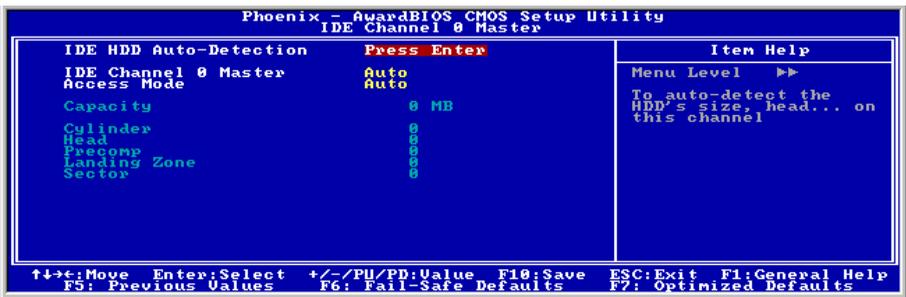
This item sets the date you specify (usually the current date) in the format of [Month], [Date], and [Year].

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

Click <Enter> key to enter its submenu:



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 0 Master/Slave, IDE Channel 1 Master/Slave, IDE Channel 2 Master, IDE Channel 3 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.

Video:

This item selects the type of video adapter used for the primary system monitor.

[EGA/VGA]: (Enhanced Graphics Adapter/Video Graphics Array) For EGA, VGA, SVGA and PGA monitor adapters.

[CGA 40]: (Color Graphics Adapter) Power up in 40-column mode.

[CGA 80]: (Color Graphics Adapter) Power up in 80-column mode.

[Mono]: (Monochrome adapter) Includes high-resolution monochrome adapters.

Halt On:

This 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.

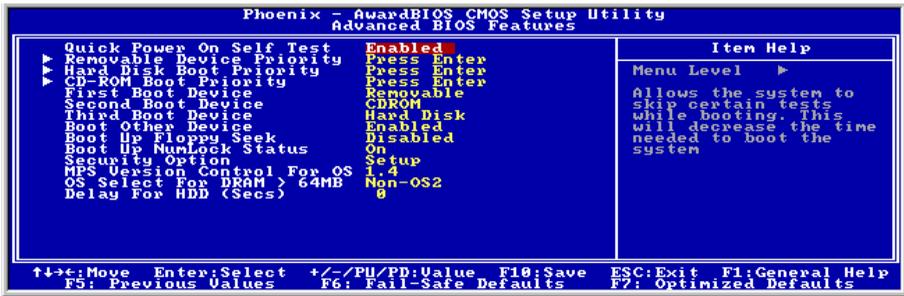
Extended Memory:

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



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.

Removable Device Priority:

This item allows you to select the booting priority of removable devices.

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.

CD-ROM Boot Priority:

This item allows you to select the booting priority of CD-ROM devices.

NOTE: This item appears only if you install CD-ROM devices to your computer.

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 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.

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.

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.

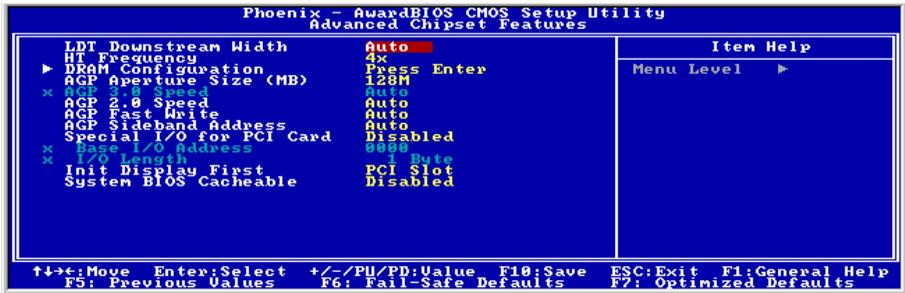
OS Select For DRAM > 64MB:

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 IDE (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.

3-4. Advanced Chipset Features



LDT Downstream Width:

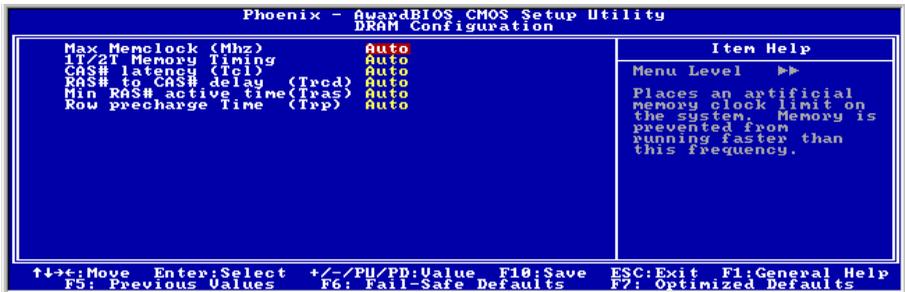
This item selects the LDT Bus Width.

HT Frequency:

This item selects the LDT Bus Frequency.

↳ DRAM Configuration:

Click <Enter> key to enter its submenu:



Max Memclock (Mhz):

This item selects the maximum memory clock limit.

1T/2T Memory Timing:

Leave this item to its default [Auto] setting.

CAS# latency (Tcl):

Leave this item to its default [Auto] setting.

RAS# to CAS# delay (Tred):

Leave this item to its default [Auto] setting.

Min RAS# active time (Tras):

Leave this item to its default [Auto] setting.

Row precharge Time (Trp):

Leave this item to its default [Auto] setting.

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

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 3.0 Mode) 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. Leave this item to its default [Auto] setting.

AGP Fast Write:

Leave this item to its default [Auto] setting.

AGP Sideband Address:

Leave this item to its default [Auto] setting.

Special I/O for PCI Card:

This item allows you to assign specific I/O address for add-on PCI card.

* **Base I/O Address:**

This item assigns the specific I/O address for the PCI card.

* **I/O Length:**

This item configures the I/O length for the PCI card.

Init Display First:

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

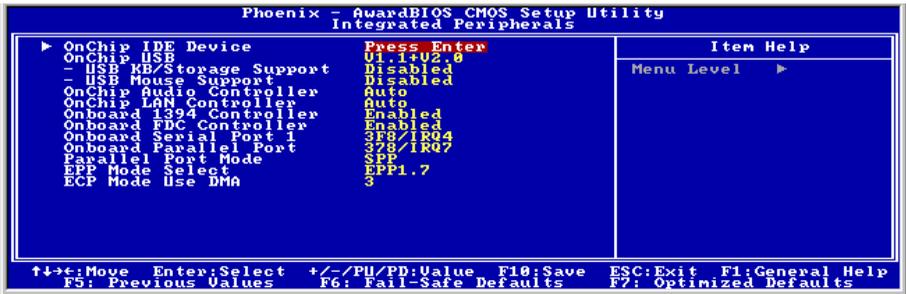
[PCI Slot]: When the system boots, it will first initialize PCI.

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

System BIOS Cacheable:

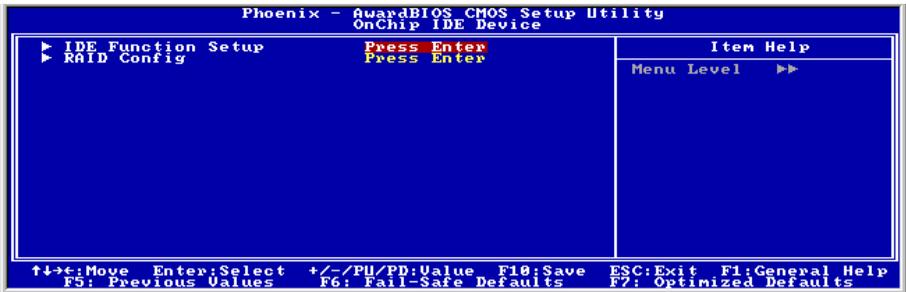
Two options are available: Disabled or Enabled. When you select *Enabled*, you get faster system BIOS executing speed via the L2 cache.

3-5. Integrated Peripherals



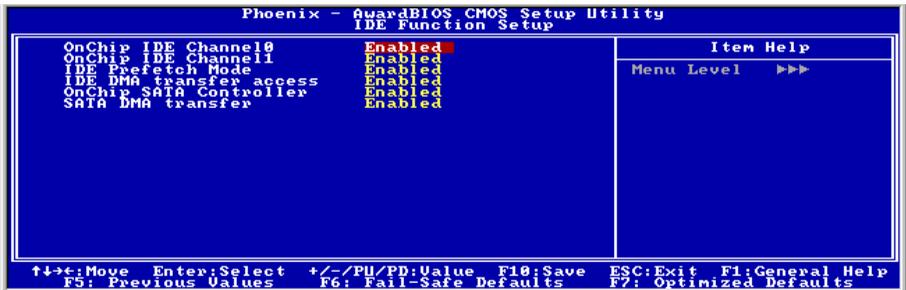
↳ OnChip IDE Device:

Click <Enter> key to enter its submenu:



↳ IDE Function Setup:

Click <Enter> key to enter its submenu:



OnChip IDE Channel0 / OnChip IDE Channel1:

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 DMA transfer access:

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

OnChip SATA Controller:

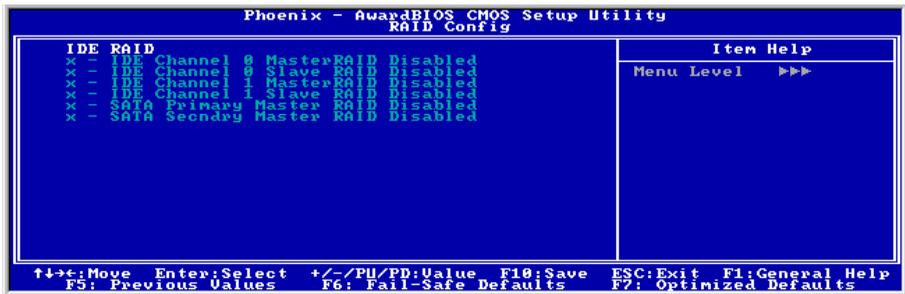
This item enables or disables the on-chip SATA controller.

SATA DMA transfer:

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

↳ RAID Config:

Click <Enter> key to enter its submenu:

**IDE RAID:**

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

* IDE Channel 0/1 Master/Slave RAID, SATA Primary/Secondary Master RAID:

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

↳ Back to Integrated Peripherals Setup Menu:

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/Storage 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 1394 Controller:

This option enables or disables the IEEE 1394 controller.

Onboard FDC Controller:

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

Onboard Serial Port 1:

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:

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:**

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

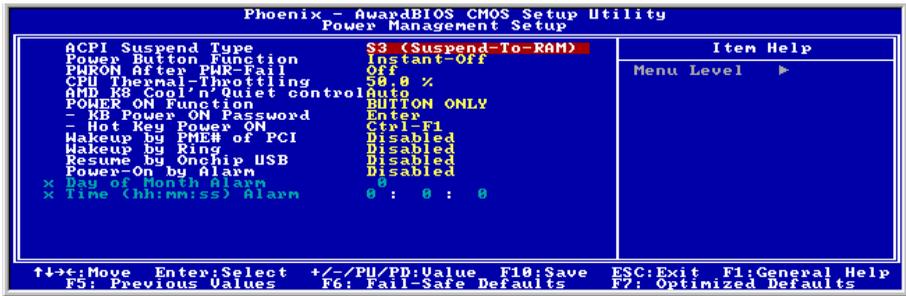
*** EPP Mode Select:**

Two options are available: EPP1.7 → EPP1.9. The default setting is *EPP 1.9*. 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.

3-6. Power Management Setup



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.

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.

PWRON After PWR-Fail:

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

[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.

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

[Former-Sts]: 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.

CPU Thermal-Throttling:

This item controls the CPU speed by cutting down its regular power to a percentage during the STR (Suspend To RAM) state.

AMD K8 Cool 'n' Quiet Technology:

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

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 keys 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.

NOTE: To enable this “Power On” function, the wake-up header of [KBPWR1] and [USBPWR1], must be set to [Enabled] position. Please refer to the configuration of “Wake-up Header” [KBPWR1] and [USBPWR1] in section 2-4, chapter 2.

The mouse wake up function can only be used with the PS/2 mouse, not with the COM port or USB type. Some PS/2 mice cannot wake up the system because of compatible problems. If the specs of your keyboard are too old, it may fail to power on.

※ **KB Power On Password:**

When you press the <Enter> key, then you can enter the password you want. When set be done, you need to saving and leave the BIOS setting menu to reboot your computer system. **Next time when you shutdown your computer, you can’t use the power button to turn on the computer power anymore.** You need to press the password to turn on your computer power.

※ **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 that you want it to turn on your computer power.

Wakeup by PME# of PCI:

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

Wakeup 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.

Resume by OnChip USB:

Two options are available: Disabled or Enabled. The default setting is *Disabled*. When set to *Enabled*, any event affecting from onchip USB will awaken a system that has powered down. This item can be configured only if the item “ACPI Suspend Type” is set to [S3(STR)].

Power-On 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.

* **Day 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.

3-7. PnP/PCI Configurations



Resources Controlled By:

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

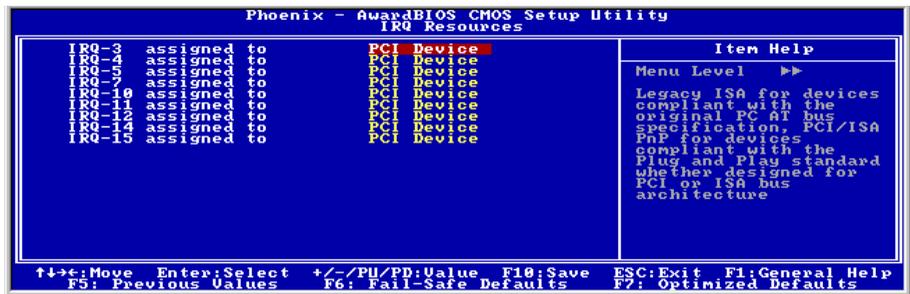
[Auto]: The system will automatically detect the settings.

[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].



↳ 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.

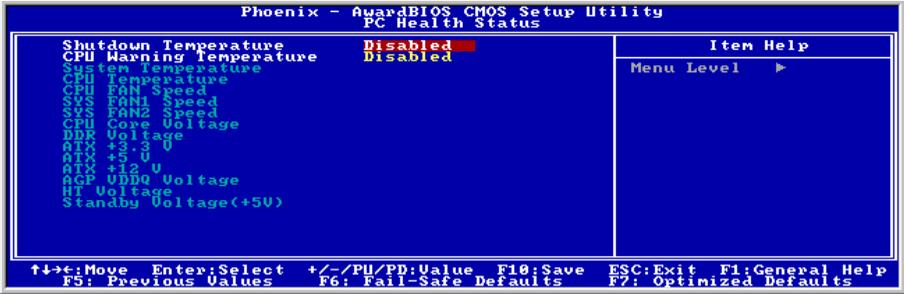
[Enabled]: MPEG ISA/VESA VGA cards work with PCI/VGA.

PIRQ_0 Use IRQ No. ~ PIRQ 7 Use IRQ No.:

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

3-8. PC Health Status

You can set the warning temperature for your computer system, and you can check the fan speeds and power supply voltages of your computer system. The features are useful for monitoring all the important parameters within your computer system. We call it the *PC Health Status*.



Shutdown Temperature:

Five options are available: Disabled → 60°C/140°F → 65°C/149°F → 70°C/158°F → 75°C/167°F. The default setting is *Disabled*. 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. The ranges are from 50°C to 120°C.

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.

NOTE: The hardware monitoring features for temperatures, fans and voltages will occupy the I/O address from 294H to 297H. If you have a network adapter, sound card or other add-on cards that might use those I/O addresses, please adjust your add-on card I/O address to avoid using these addresses.

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.



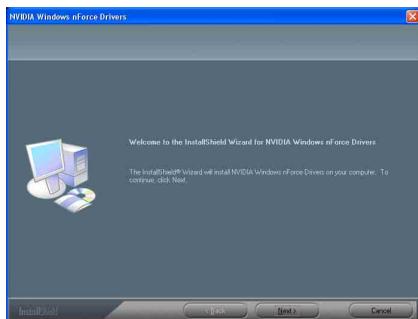
Appendix A. Install NVIDIA nForce Chipset Driver

NOTE: Please install this NVIDIA nForce Chipset driver first after having installed the Windows operating system.

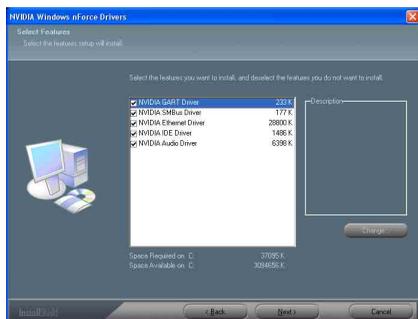
The installation procedures and screen shots in this section are based on the Windows XP operating system. For other operating systems, please follow the on-screen instructions.

Insert the Driver & Utility CD into the CD-ROM drive. It should execute the installation program automatically. If not, double-click the executable file at the main directory of this CD to enter the installation menu.

After entering the installation menu, move your cursor to [Drivers] tab. Click [nVidia nForce Chipset Driver]. The following screen appears.



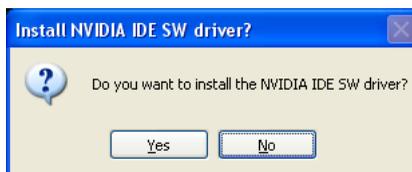
1. Click [Next].



2. Click [Next].



3. Click [Next].



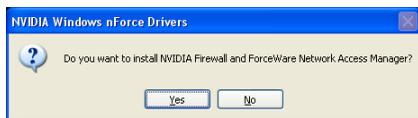
4. Click [Yes].



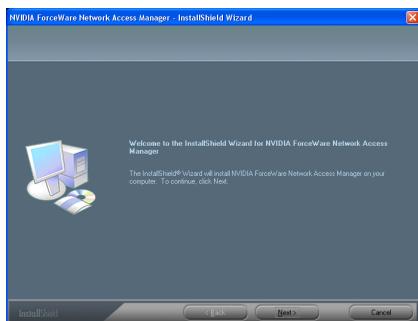
5. Click [Continue Anyway].



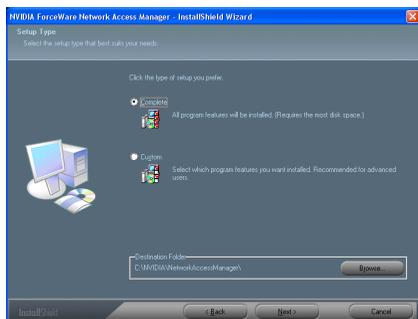
6. Click [Continue Anyway].



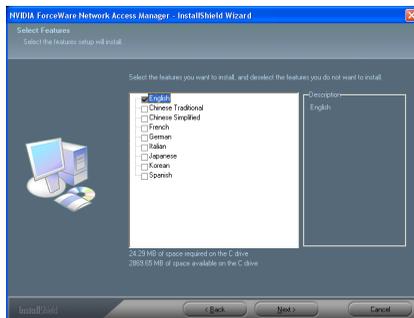
7. Click [Yes].



8. Click [Next].



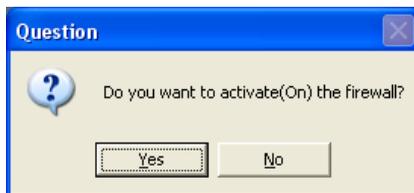
9. Click [Next].



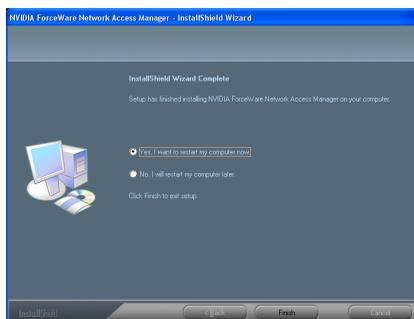
10. Click [Next].



11. Click [Next].



12. Click [Yes].



13. Choose [Yes, I want to restart my computer now.], and click [Finish] to complete setup.

Appendix B. 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.

The installation procedures and screen shots in this section are based on the Windows XP operating system. For other operating systems, please follow the on-screen instructions.

Insert the Driver & Utility CD into the CD-ROM drive. It should execute the installation program automatically. If not, double-click the executable file at the main directory of this CD to enter the installation menu.

After entering the installation menu, move your cursor to [ABIT Utility] tab. Click [ABIT EQ]. The following screen appears.



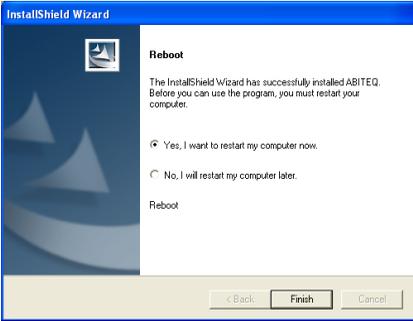
1. Click [Next].



2. Click [Next].



3. Click [Next].



4. Choose [Yes, I want to restart my computer now.] and click [Finish] to complete setup.



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



6. This screen appears. ABIT EQ shows you the status of Voltage, Fan Speed, and Temperature readings as well.

Appendix C. 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.

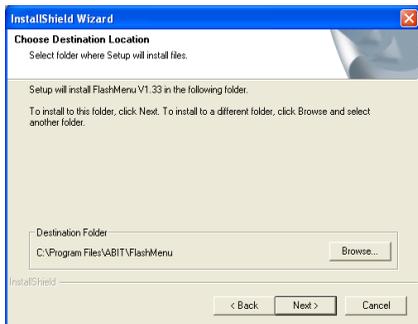
The installation procedures and screen shots in this section are based on the Windows XP operating system. For other operating systems, please follow the on-screen instructions.

Insert the Driver & Utility CD into the CD-ROM drive. It should execute the installation program automatically. If not, double-click the executable file at the main directory of this CD to enter the installation menu.

After entering the installation menu, move your cursor to [ABIT Utility] tab. Click [FlashMenu]. The following screen appears.



1. Click [Next].



2. Click [Next].



3. Click [Next].



4. Click [Finish] to complete setup.



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



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

Appendix D. Troubleshooting (Need Assistance?)

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 overclocking or non-standard settings inside the BIOS? Is the motherboard dead? Do I need to return it to where I bought from or go through an RMA process?

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 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 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 can I get a quick response to my request for technical support?

A: Be sure to follow the guidelines as stated in the “Technical Support Form” section of this manual.

If you have a problem during operation, in order to help our technical support personnel quickly determine the problem with your motherboard and give you the answers you need, eliminate any peripheral that is not related to the problem, and indicate it on the form. Fax this form to your dealer or to the company where you bought the hardware in order to receive prompt technical support. (You can refer to the examples given below)

Example 1:

With a system including: motherboard (with CPU, DRAM...) HDD, CD-ROM, FDD, VGA CARD, MPEG CARD, SCSI CARD, SOUND CARD, etc. If you cannot boot up after the system is assembled, check the key components of the system using the procedure described below. First remove all interface cards except the VGA card and try to reboot.

If you still cannot boot up: Try installing another brand/model VGA card and see if the system will start. If it still does not start, note the VGA card model, motherboard model, Bios identification number, and CPU on the technical support form (refer to main instructions), and describe the problem in the space provided.

If you can boot up: Insert the interface cards you have removed back into the system one by one, and try to start the system each time you insert a card until the system will not start. Keep the VGA card and the interface card that caused the problem inserted on the motherboard, remove any other cards or peripheral, and start again. If you still cannot start, note the information related to both cards in the add-on Card space provided, and don't forget to indicate the motherboard model, version, BIOS identification number, CPU (refer to main instructions), and give a description of the problem.

Example 2:

With a system including the motherboard (with CPU, DRAM...) HDD, CD-ROM, FDD, VGA CARD, LAN CARD, MPEG CARD, SCSI CARD, SOUND CARD, after assembly and after having installed the sound card driver, when you restart the system, it resets automatically when it runs the sound card Driver,. This problem may be due to the sound card driver. During the Starting DOS... procedure, press SHIFT (BY-PASS) key, to skip CONFIG.SYS and AUTOEXEC.BAT; edit CONFIG.SYS with a text editor, and in line that loads the sound card driver, add a remark REM, in order to disable the sound card driver. See the example below.

```
CONFIG.SYS:
DEVICE=C:\DOS\HIMEM.SYS
DEVICE=C:\DOS\EMM386.EXE HIGHSCAN
DOS=HIGH, UMB
FILES=40
BUFFERS=36
REM DEVICEHIGH=C:\PLUGPLAY\DWCFGMG.SYS
LASTDRIVE=Z
```

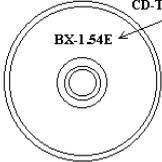
Restart the system. If the system starts and does not reset, you can be sure that the problem is due to the sound card driver. Write down the sound card model, motherboard model, BIOS identification number on the technical support file (refer to main instructions), and describe the problem in the space provided.

We will show you how to fill the “Technical Support Form”.

Main instructions:

To fill in this “**Technical Support Form**”, refer to the step-by-step instructions given below:

- 1* **MODEL:** Note the model number given in your user’s manual.
Example: NF8, NF8-V
- 2* **Motherboard model number (REV):** Note the motherboard model number labeled on the motherboard as “REV:*.**”.
Example: REV: 1.00
- 3* **BIOS ID and Part Number:** See the on screen message.
4. **DRIVER REV:** Note the driver version number indicated on the DEVICE DRIVER disk (if any) as “Release *.*”. For example:




- 5* **OS/APPLICATION:** Indicate the operating system and applications you are running on the system.
Example: MS-DOS® 6.22, Windows® 98 SE, Windows® 2000, etc....
- 6* **CPU:** Indicate the brand and the speed (MHz) of your CPU.
Example:(A) In the “Brand” space, write “Intel”; in the “Specifications” space, write “Pentium® 4 1.9GHz”.
7. **HDD:** Indicate the brand and specifications of your HDD(s); specify if the HDD is using IDE1 or IDE2. If you know the disk capacity, indicate it and check (“✓”) “”; in case you give no indication, we will consider that your HDD is “IDE1” Master.
Example: In the “HDD” space, check the box; in the Brand space, write “Seagate”; in the Specifications space, write “ST31621A (1.6GB)”.
8. **CD-ROM Drive:** Indicate the brand and specifications of your CD-ROM drive. Specify if it uses IDE1 or IDE2 , and check (“✓”) “”; in case you give no indication, we will consider that your CD-ROM is “IDE2” Master.
Example: In the “CD-ROM drive” space, check the box, in the Brand space, write “Mitsumi”, in the Specifications space, write “FX-400D”.
9. **System Memory (DDR SDRAM):** Indicate the brand and specifications (DDR DIMM) of your system memory. Such as Density, Description, Module Components, Module Part Number, CAS Latency, and Speed (MHz).
For example: In the Brand space, write “**Micron**”; in the Specifications space, write: **Density:** 128MB, **Description:** SS 16 Megx72 2.5V ECC Gold, **Module Components:** (9) 16 Megx 8, **Module Part Number:** MT9VDDT1672AG, **CAS Latency:** 2, **Speed (MHz):** 200 MHz.
Please give us the detailed information of your DDR SDRAM module; it will help us to simulate the problems you met.
10. **ADD-ON CARD:** Indicate which add-on cards you are *absolutely sure* are related to the problem. If you cannot identify the problem’s origin, indicate all the add-on cards inserted into your system.

NOTE: Items between the “*” are absolutely necessary.

Appendix E. 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. Therefore it is quite possible that if you send an email to us that you may not receive a response.

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 constraint 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 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 fix bugs or incompatibilities. **Also please make sure you have the latest drivers from your peripheral cards 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.** They 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 problems 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 don't have the resources to serve every end-user. However, we will try to 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 understood in the first place. Be sure to use very, simple, concise language that clearly states the problem, avoid rambling or flowery language and always list your system components. Here is the contact information for our branch offices:

North America and South America **ABIT Computer (U.S.A.) Corporation**
45531 Northport Loop West, 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 46808 Lakeview Blvd. Fremont, CA 94538, U.S.A.

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 **ABIT Computer Corporation**
*(Serving all other territories
not listed above.
Taiwan is 8+ GMT time,
and may have different holiday
calendar from yours.)*
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>