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NV7m Motherboard User's Manual

Index

Chapter 1. Introduction of NV7m Features

1-1. Features of NV7m Motherboard

This motherboard is designed for AMD Socket A Athlon™ XP, Athlon™ and Duron™ processors. It supports the AMD Socket-A structure, with up to 1 GB **(Unbuffered & Non-ECC)** of memory, super I/O. and Green PC functions. The ABIT NV7m is an excellent computer motherboard based on the innovative nForce 420D chipset, which supports powerful Geforce 2 3D graphics, AC3 audio and LAN for an all in one Micro ATX form factor solution with high performance value.

The NVIDIA nForce 420D chipset used in this motherboard supports two DDR DIMMs up to 1 GB maximun. The memory controller can support Non-ECC DDR (up to DDR PC 2100 it running on 133 MHz) memory and support twin bank memory architecture for up to 4.2GB/s bandwidth. The AGP interface can support external AGP slot with AGP 1X/2X/4X capability and Fast Write Transactions.

The NV7m has a built in Ultra DMA 100 function. This means that it provides speedier HDD throughput boosting overall system performance. Ultra DMA 100 is the new standard for IDE devices. It enhances existing Ultra DMA 33 technology by increasing both performance and data integrity. This new high-speed interface almost doubles the Ultra DMA 66 burst data transfer rate to 100 Mbytes/sec. The result is maximum disc performance using the current PCI local bus environment. Another benefit is you can connect four IDE devices in your system through either Ultra DMA 66 or Ultra DMA 100. You will have more flexibility to expand your computer system.

This motherboard also supports three PCI slots and one AGP slot. This motherboard has built-in hardware monitoring functions that monitors and protects your computer, insuring a safe computing environment. It equips the Realtek ALC201A 2-channel audio and 8201L 10/100 Mbps LAN controller.

The NV7m optional SPDIF out module turns your computer into a high-end entertainment system with optical and coaxial connectivity to powerful speaker system (CA-21).

1-2. Specifications

1. Processor

- Supports AMD Athlon™ XP 1500+ ~ 2000+ or future Socket A processors based on 200 MHz/266 MHz (100 MHz/133 MHz Double Data Rate)
- Supports AMD Athlon™ 700 MHz ~ 1.4 GHz or future Socket A processors based on 200 MHz/266 MHz (100 MHz/133 MHz Double Data Rate)
- Supports AMD Duron™ 600 MHz ~ 1.2 GHz or future Socket A processors based on 200 MHz (100 MHz Double Data Rate)
- Supports 200 MHz Alpha EV6 bus for the AMD Athlon™ XP, Athlon™ and Duron™ processors

2. Chipset (nVIDIA Crush 12 & MCP-D)

- Integrates 128-bit memory controller (Dual independent 64-bit memory controllers)
- 4.2 GB/Sec total maximum memory bandwidth
- Supports Advanced Configuration and Power Management Interface (ACPI)
- Supports AGP 2X/4X only 1.5V

3. Memory (System Memory)

- Two 184-pin DIMM slots support PC 1600 and PC 2100 DDR SDRAM modules
- Supports up to 1 GB maximun memory capacity. (64, 128, 256, 512MB DDR SDRAM)
- Supports unbuffered Non-ECC type DDR DIMM

4. Graphics

- Chipset integrated nVIDIA 256-bit 3D/2D graphics accelerator
- Second generation transform and lighting engine

5. Audio

- nVIDIA MCP-1 built-in Audio processing unit w/ 256 total voices
- Support AC3 encode purpose
- Professional digital audio interface supporting SPDIF out (Optional)
- AC' 97 Audio CODEC onboard
- Audio driver included

6. LAN (Manufacturer Option)

- Onboard Realtek 8201L physical layer interface
- 10/100 Mb Operation
- User friendly driver included

7. System BIOS

- Award Plug and Play BIOS supports APM and DMI
- Write-Protect Anti-Virus function by AWARD BIOS

8. Multi I/O Functions

- One floppy port connector (up to 2.88MB)
- Two channels of bus master IDE ports supporting up to four ultra DMA 33/66/100 devices
- One PS/2 keyboard and PS/2 mouse connector
- One parallel port connector (Standard/EPP/ECP)
- One serial ports connectors
- One VGA port connectors
- Two USB connectors
- One 10/100 Mb port
- One audio connector (Line-in, Line-out, Mic-in, and MIDI/Game port)

9. Miscellaneous

- Micro ATX form factor
- One AGP slot, three PCI slots
- One built-in IrDA TX/RX header
- One built-in SM-Bus header
- One USB header for two extra USB channels
- One CD audio input connector
- One AUX audio input connector
- One SPDIF header for digital signal connection (Optional)
- TV/DVI output interface card (Optional)
- Hardware monitoring：Included fan speed, voltages, processor and system environment temperature
- Board size: 245 * 245mm

✹ **Your ATX power supply 5V standby power must be able to provide at least a 720mA current capacity.**

✹ **This motherboard supports the standard bus speeds of 66 MHz/100 MHz/133 MHz that are used by specific PCI, processor and chipset specifications. Exceeding these standard bus speeds is not guaranteed due to the specific component specifications.**

✹ **Specifications and information contained in this manual are subject to change without notice.**

Note
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1-3.　Item Checklist

Check that your package is complete. If you discover any damaged or missing items, please contact your retailer or dealer.

☑ One ABIT NV7m Motherboard

☑ One 80-wire/40-pin ribbon cable for master and slave Ultra DMA 100, Ultra DMA 66 or Ultra DMA 33 IDE devices

☑ One ribbon cable for 3.5" floppy disk devices

☑ One compact disc for support drivers and utilities

☑ One USB cable

☑ One I/O shield (CA-21, optional)

☑ One user's manual for the motherboard

1-4. Layout Diagram for NV7m
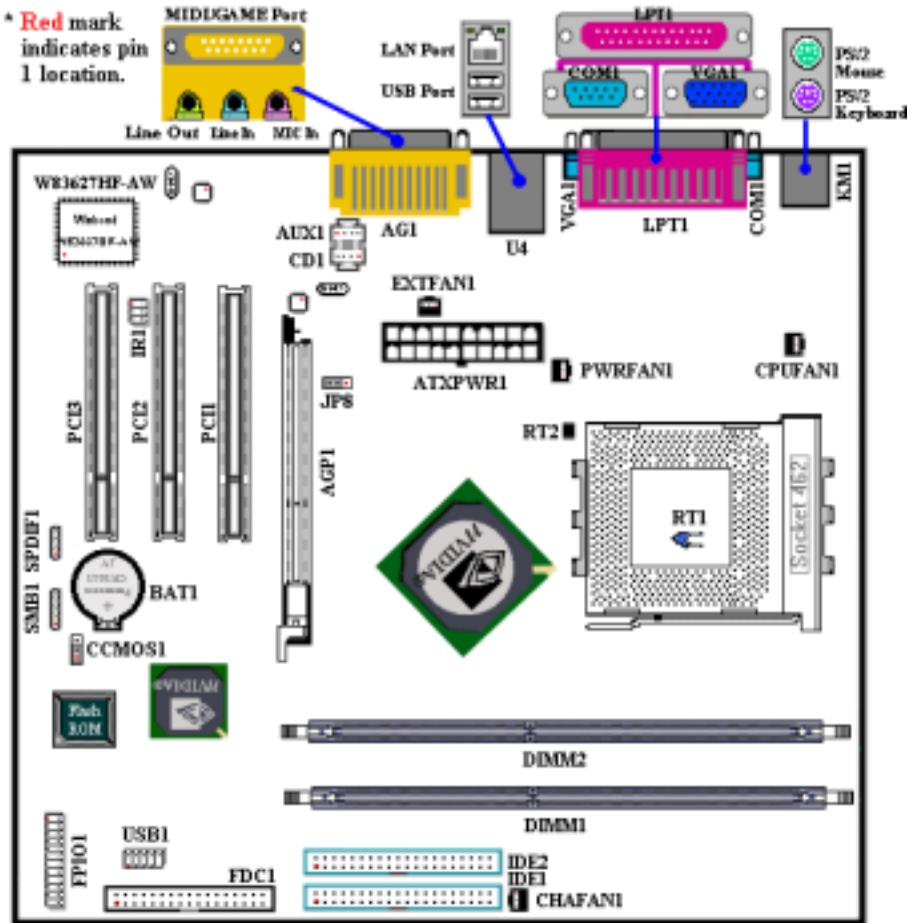
Figure 1-1. NV7m motherboard component location

Chapter 2. Installing the Motherboard

This NV7m motherboard not only provides all standard equipment for classic personal computers, but also provides great flexibility for meeting future upgrade demands. This chapter will introduce step by step all of the standard equipment and will also present, as completely as possible, future upgrade capabilities. This motherboard is able to supports all AMD Socket A Athlon™ XP, Athlon™ and Duron™ processors now on the market. (For details, see specifications in Chapter 1.)

This chapter is organized according the following features:

2-1 Installation of the AMD Athlon™ XP, Athlon™ and Duron™ CPU

2-2 Install The Motherboard

2-3 Install System Memory

2-4 Connectors, Headers and Switches

☠☠☠☠ **Before Proceeding with the Installation** ☠☠☠☠

Before you install or unplug any connectors or add-on cards, please remember to turn the ATX power supply switch off (fully turn the +5V standby power off), or take the power cord off. Otherwise, you may cause the motherboard components or add-on cards to malfunction or be damaged.

User Friendly Instructions

Please read our instructions carefully and follow them step-by-step. Our objective is to enable the novice computer user to perform the installation by himself. We have attempted to write this document in a very clear, concise and descriptive manner to help overcome any obstacles you may face during installation.

Diagram and Photos

This chapter contains many color drawings, diagrams and photos, we strongly recommend you read this chapter use the PDF file that is stored on the CD-Title. Color improves the clarity and quality of the diagrams. For the downloadable edition, as files larger than 3 MB are difficult to download, we will cut the graphics and photo resolution to reduce the manual file size. In such this case, if your manual is downloaded from our WEB site and not from a CD-ROM, enlarging graphics or photos will distort the image.

2-1. Installation of the AMD Athlon™ XP, Athlon™ and Duron™ CPU

Note

- Installing a heatsink and cooling fan is necessary for heat to dissipate from your processor. Failing to install these items may result in overheating and processor damage.

- The AMD Socket A processor will produce a lot of heat while operating, so you need to use a large heat sink that is especially designed for the AMD socket A processor. Otherwise, it may result in overheating and processor damage.

- If your processor fan and its power cable are not installed properly, never plug the ATX power cable into the motherboard. This can prevent possible processor damage.

- Please refer to your processor installation manual or other documentation with your processor for detailed installation instructions.

The AMD Socket A Athlon™ XP, Athlon™ and Duron™ processor installation is easy, like Socket 7 Pentium® processors before. Because it uses the "**Socket A**" ZIF (**Z**ero **I**nsertion **F**orce) socket, you can easily fix the processor firmly into position. Figure 2-1 shows you what the socket A looks like, and how to open the lever. The socket A has more pins than the socket 7. Therefore, a Pentium level processor cannot be inserted into a socket A.
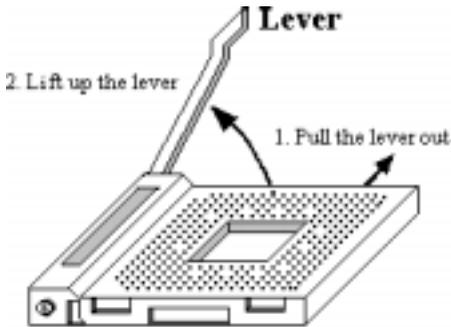
Figure 2-1. Socket A and open its lever
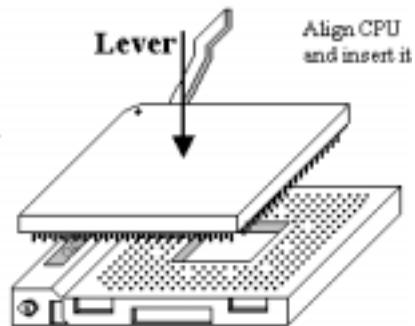
Figure 2-2. Install the CPU into socket A

When you raise the lever, you have to loosen the socket lock. Please raise the lever to the end, and prepare to insert the processor. Next, you need to align the processor pin 1 to the socket pin 1. If you put it in the wrong direction, you will not be able to insert the processor easily, and processor pins will not fully go into the socket. If this is the case, please change the direction, until it easily and fully inserts into the socket A. See Figure 2-2 at the same time check the processor temperature detection thermistor height (if your motherboard has this component), then you can slowly insert the processor into the Scoket A. Finally, you need to check that the processor edge and the Socket A edge is parallel. It should be parallel and not tilted.

When you finish the above, push the lever down to its original position, you should feel the lever lock the socket A. You have then finished the processor installation.

Heatsink Installation Hints

Because the processor will produce a lot of heat while operating, we suggest you use a heatsink approved by AMD to be safe and to keep the processor temperature within normal operation temperatures. The heatsink will be large and heavy, so the fixing plate has a strong tension. When you install the heatsink on to the processor and its socket, you have to very carefully fix the fixing plate to the processor socket hook on both sides. If you do not pay attention to this, you may make the fixing plate scratch the PCB surface and cause circuit damage, break socket hooks or damage the die on the top of processor.

Please follow the sequence metioned below, **Do Not** inverse the sequence. Otherwise, you may have a situation like the photo on the left. Because of the design of the CPU socket, the left side hooks are not as strong as the right side hooks. If you follow our suggestions you will prevent your processor and socket from damage.

Note

Considering the chassis structure problem, please always take off the motherboard from chassis, before adding or removing a heatsink kit.

The proper procedure to install the heatsink kit:

First, install the processor into the processor socket.

Insert the heatsink left side fix plate into the processor socket left side fix hooks. Make sure the fit is very tight. Check the photo on the left.

Insert a flat screwdriver into the middle slot of the right side fix plate and push down. Then you can push the fix plate over the socket hooks on the right side. Check the photo on the left.

Check the photo on the left. You have finished the heatsink installation.

Now hold the whole heatsink and slightly shake it, make sure the buttom right side of the heaksink does not contact the right side of the Socket (see bottom picture). Otherwise, the processor die does not have proper contact with the heatsink. This situation may cause processor damage.

Remember to install the heatsink fan power cable to the CPU fan header on the motherboard.
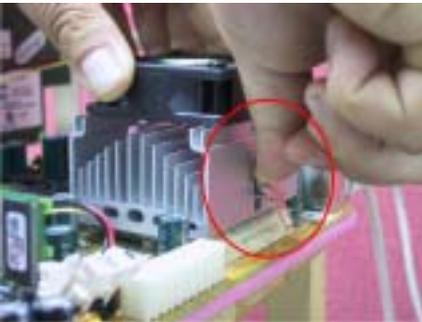
Now you can reinstall the motherboard back into the chassis.

When all above procedures done, you can connect the ATX power cable to the motherboard.

If you have different types of heatsink kit, please refer to the manual that came with the heatsink kit. The left photo shows another type of heatsink fix plate design. The install sequences are still the same, from right side to left side. Just remember that.

We strongly recommand you to buy a heatsink with three holes in the fix plate. This will provide the best stabability and won't cause the Socket fix hooks to be broken or damaged.

The left photo shows the bottom right side of the heaksink in contact with the right side of the Socket. In this situation, the processor die does not properly contact the heatsink. If you start the computer at this monent, it will immediately cause the processor damage. Always check this place when you finish the heatsink installation.

2-2.   Installing the Motherboard to the Chassis

After you install the processor to the motherboard, you can start to fix the motherboard into the chassis. Most computer chassis will have a base on which there will be many mounting holes that allows the motherboard to be securely attached and at the same time, prevents short circuits. There are two ways to attach the motherboard to the base of chassis:

● With studs
● With spacers

Please refer to figure 2-3, which shows the studs and spacers. There may be several types, but all look like the figures below:

Figure 2-3. The outline of stud and spacer

In principle, the best way to attach the motherboard is with studs. Only if you are unable to do this should you attach the board with spacers. Take a careful look at the motherboard and you will see many mounting holes on it. Line these holes up with the mounting holes on the base. If the holes line up and there are screw holes this means you can attach the motherboard with studs. If the holes line up and there are only slots, this means you can only attach the motherboard 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 motherboard into position aligned with the slots. After the motherboard has been positioned, check to make sure everything is OK before putting the casing back on.

Figure 2-4. The way we fixed the motherboard

Figure 2-4 shows you the way to affix the motherboard using studs or spacers.

Note

| If the motherboard has mounting holes, but they don't line up with the holes on the base and there are no slots to attach the spacers, don't worry, you can still attach the spacers to the mounting holes. Just cut the bottom portion of spacers (the spacer they may be a little hard to cut, so be careful with your hands). In this way you can still attach the motherboard to the base without worrying about short circuits. Sometimes you may need to use the plastic springs to isolate the screw from the motherboard PCB surface, because the circuit wire may be near by the hole. Be careful, don't let the screw contact any the printed circuit wire or parts on the PCB that are near the fixing hole, otherwise it may damage the board or cause board malfunctioning. |

2-3.   Installing System Memory

This motherboard provides two 184-pin DDR DIMM sites for memory expansion. The DDR DIMM sockets support 8 M x 64 (64 MB), 16M x 64 (128 MB), 32 M x 64 (256 MB) and 64 M x 64 (512 MB) or double density DDR DIMM modules. Minimum memory is 64 MB and the maximum memory is 1 GB DDR SDRAM. There are two memory module sockets on the system board (for a total of four banks). In order to create a memory array, following rules must be followed.

● The memory array is 64 or 72 bits wide. (Depending on with or without parity)
● For those modules, we suggest that you be populate DIMM1 to DIMM2 in order.
● Supports single and double density DDR DIMMs.

Table 2-1. Valid Memory Configurations

Bank	Memory Module	Total Memory
Bank 0, 1 (DDR DIMM1)	64 MB, 128 MB, 256 MB, 512 MB	64 MB ~ 512 MB
Bank 2, 3 (DDR DIMM2)	64 MB, 128 MB, 256 MB, 512 MB	64 MB ~ 512 MB
Total System Memory for Unbuffered and Non-ECC DDR SDRAM DIMM (PC1600/PC2100)		64 MB ~ 1 GB
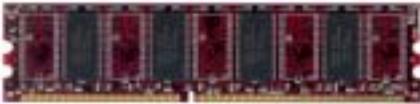
Figure 2-5. PC1600/PC2100 DDR Module and Component Mark
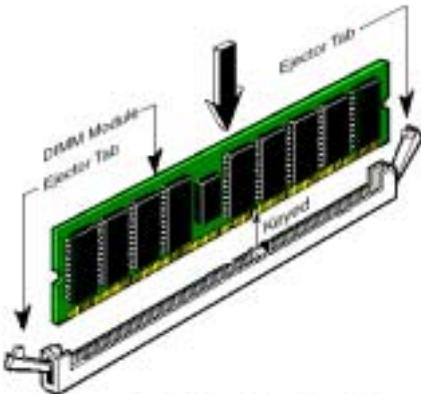
Figure 2-6. DDR DIMM module installation

Generally, installing DDR SDRAM modules to your motherboard is an easy thing to do. You can refer to Figure 2-5 to see what a 184-pin PC 1600 and PC 2100 DDR SDRAM module looks like.

Unlike installing SIMMs, DIMMs may be "**snapped**" directly into the socket. **Note:** Certain DDR DIMM sockets have minor physical differences. If your module doesn't seem to fit, please do not force it into the socket as you may damaged your memory module or DDR DIMM socket.

The following procedure will show you how to install a DDR DIMM module into a DDR DIMM socket.

Step 1. Before you install the memory module, please place the computer power switch in the *off* position and disconnect the AC power cord from your computer.

Step 2. Remove the computer's chassis cover.

Step 3. Before touching any electronic components, make sure you first touch an unpainted, grounded metal object to discharge any static electricity stored on your clothing or body.

Step 4. Locate your computer's 184-pin memory expansion DDR DIMM socket.

Step 5. Insert the DDR DIMM module into the expansion socket as shown in the illustration. Note how the module is keyed to the socket. You can refer to Figure 2-6 for the details. ***This insures the***

DDR DIMM module will be plugged into the socket in one way only. Firmly press the DDR DIMM module into DDR DIMM socket, making certain the module is completely seated in the DDR DIMM socket.

Step 6. Once the DDR DIMM module has been installed, the installation is complete and the computer's cover can be replaced. Or you can continue to install other devices and add-on cards that are mentioned in the following section.

Note

When you install a DDR DIMM module fully into the DDR DIMM socket, the eject tab should be locked into the DDR DIMM module very firmly and fit into its indention on the both sides.

It is difficult to differentiate between the PC 1600 and PC 2100 DDR SDRAM modules from the exterior. The only way you can identify them is to look at the sticker on the DDR SDRAM module. The sticker will tell you which kind of structure module the DDR SDRAM is.

2-4. Connectors, Headers and Switches

Inside the case of any computer several cables and plugs have to be connected. These cables and plugs are usually connected one-by-one to connectors located on the motherboard. You need to carefully pay attention to any connection orientation the cables may have and, if any, notice the position of the first pin of the connector. In the explanations that follow, we will describe the significance of the first pin.

We will show you all of the connectors, headers and switches here, and tell you how to connect them. Please pay attention and read the entire section for necessary information before attempting to finish all of the hardware installation inside the computer chassis.

Figure 2-7 shows you all of the connectors and headers that we'll discuss in the next section, you can use this diagram to visually locate each connector and header we describe.

All connectors, headers and switches mentioned here, will depend on your system configuration. Some features you may (or may not) have and need to connect or configure depending on the peripheral. If your system doesn't have such add-on cards or switches you can ignore some special feature connectors.
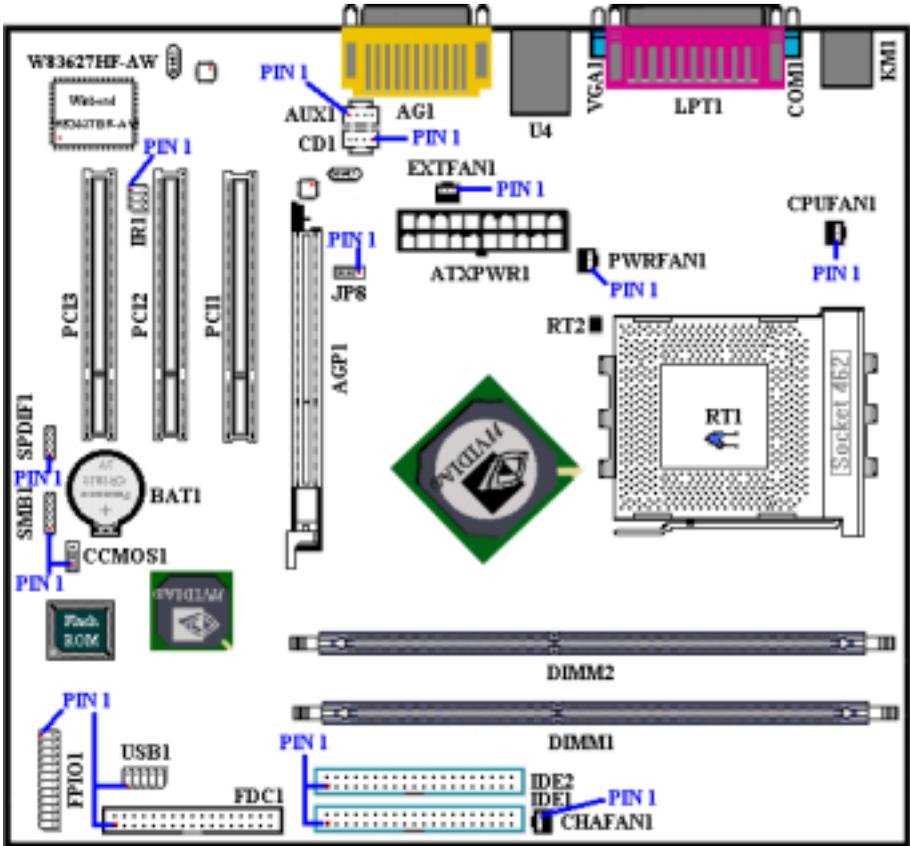
Figure 2-7. All Connectors and Headers for the NV7m

First, let's see the headers that NV7m uses, and what their functions are. We will show you all the connectors and headers.

(1). ATXPWR1: ATX Power Input Connector

Attach the connector from the power supply to the ATXPWR1 connector here. Remember you have to push the connector from the ATX power supply firmly to the end with the ATXPWR1 connector, insuring that you have a good connection.

Note: Watch the pin position and the orientation.

+12VDC		+5VDC
+5VSB		+5VDC
PWR_OK		-5VDC
COM		COM
+5VDC		COM
COM		COM
+5VDC		PS_ON#
COM		COM
+3.3VDC		-12VDC
+3.3VDC		+3.3VDC
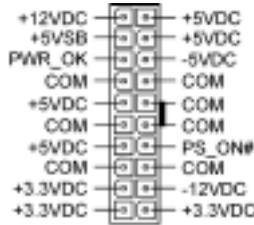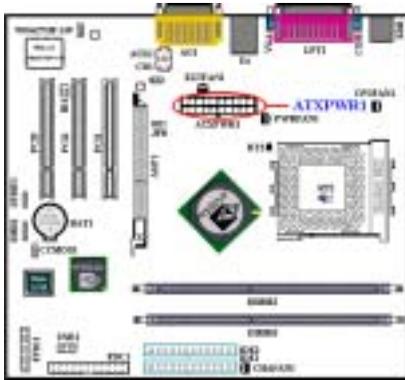
ATXPWR1

Caution

If the power supply connectors are not properly attached to the ATX power supply, the power supply or add-on cards may be damaged.

One end of AC power core connects to ATX power supply, and the other end (AC plug) will plug into the wall outlet. Be aware that when facing the wall outlet, the round hole is in the middle. The right side slot is called ground wire slot. It has a longer slot length than the left side slot. The left side slot is called the live wire slot. You can use an electroscope to detect its polarity or you can use a voltage meter to measure the voltage of both slot sides. If you insert an electroscope into the live wire slot, the electroscope will light up. Using a voltage meter, you will find that the live wire slot will register a higher voltage.

If you reverse the polarity of AC plug, it may affect the life of computer equipment, or cause an electric shock when you touch the computer chassis. We suggest that you plug the computer AC plug to a three-hole wall outlet for better safety and to avoid electric shock.

(2). CPUFAN1, CHAFAN1, PWRFAN1 and EXTFAN1 headers
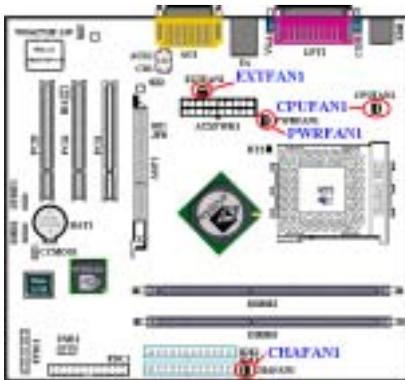
Attach the connector from the processor fan to the header named CPUFAN1 and connector from the front chassis fan to the header CHAFAN1. Attach the connector from the power fan to PWRFAN1 header and connector from the back chassis fan to the header EXTFAN1. You must attach the processor fan to the processor, or your processor will work abnormally or may be damaged by overheating. To prevent the computer chassis internal temperature from getting too high, also connect the chassis fan.

Note: *Watch the pin position and the orientation*

(3). IR1: IR Header (Infrared)
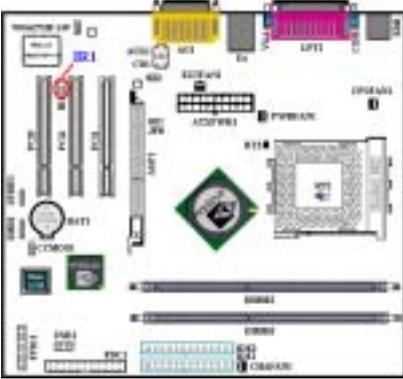
There is a specific orientation for pins 1 through 6, attach the connector from the IR KIT or IR device to the IR1 header. This motherboard supports standard IR transfer rates.
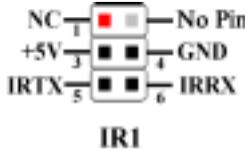
Note: Watch the pin position and the orientation

(4). SMB1: System Management Bus (SM-Bus) Connectors
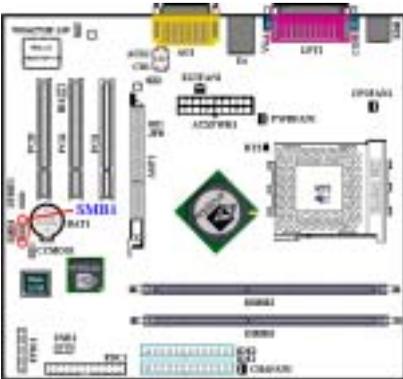
This connector is reserved for the system management bus (SM-Bus). The SM-Bus is a specific implementation of an I^2C bus. I^2C is a multi-master bus, this means that multiple chips can be connected to the same bus and each one can act as a master by initiating a data transfer. If more than one master simultaneously tries to control the bus, an arbitration procedure decides which master gets priority. You can connect the devices which utilizes the SM-Bus.
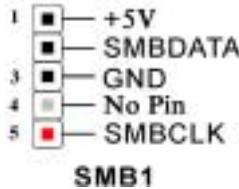
Note: Watch the pin position and the orientation

(5). RT1 & RT2: Processor & System Temperature Thermistor
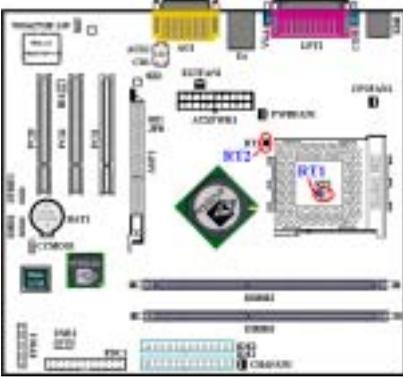
The RT1 is used to detect the processor temperature. The RT2 is used to detect the system environment temperature. You can see the readings in the BIOS or in the hardware monitoring application main screen.

(6). USB1 Headers: Additional USB Plugs Header
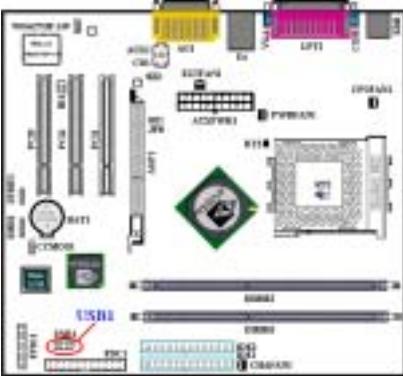
This header is for connecting the additional USB port plugs. This connector can provides two additional USB plugs. Which means, total you can get two additional USB plugs. You can use the special USB port expansion cable to connect it (the cable come with the metal plate can fixed on the back panel of computer chassis).

USB1
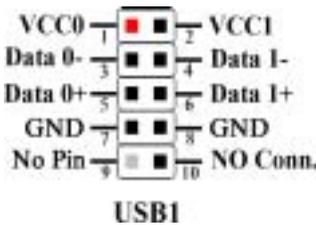
(7). CCMOS1 Header: CMOS Discharge Jumper
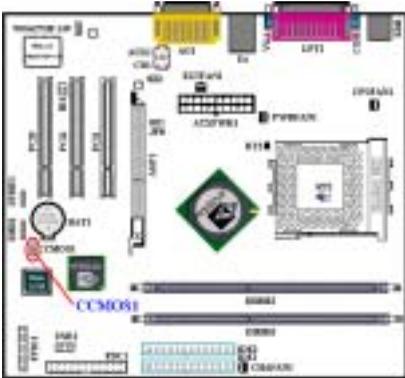
Jumper CCMOS1 used to discharge CMOS memory. When you install the motherboard, make sure this jumper is set for normal operation (pin 1 and 2 shorted). See figure below.

```
3 ■        3 ■
2 ■        2 ■
1 ■        1 ■

Normal     Discharge
Operation  CMOS
(Default)
```
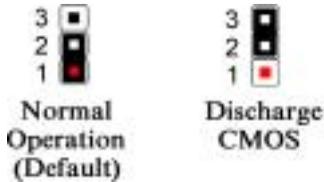
Note

Before you clear the CMOS, you have to first turn the power off (including the +5V standby power). Otherwise, your system may work abnormally.

After updating your BIOS and before boot up, please clear the CMOS first. Then put the jumper to its default position. After that, you can reboot your system and ensure that your system is working fine.

(8). FPIO1 Headers: The Headers for Chassis's Front Panel Indicators and Switches
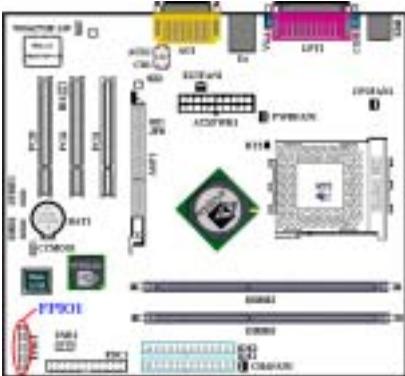
FPIO1 are for switches and indicators for the chassis's front panel, there are several functions that come from this header. You have to watch the pin position and the orientation, or you may cause LED do not light up. Figure below shows you the FPIO1 functions of the pins.

```
SP-LED  POW-ON              POW-LED
2 ■ ■  ■ ■  □ □  □ □  ■ ■  □ □   24
1 ■ ■  ■ ■  □ □  □ □  ■ ■  □ □   23
HDD-LED RESET              SPEAKER
         FPIO1
```
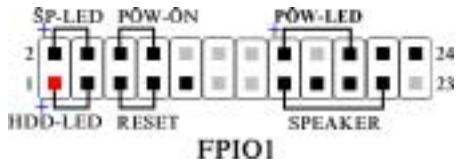
FPIO1 (Pin 1 & 3): HDD LED Header

Attach the cable from the case's front panel HDD LED to this header. If you install it in the wrong direction, the LED light will not illuminate correctly.

Note: Watch the HDD LED pin position and the orientation.

FPIO1 (Pin 5 & 7): Hardware Reset Switch Header

Attach the cable from the case's front panel Reset switch to this header. Press and hold the reset button for at least one second to reset the system.

FPIO1 (Pin 15-17-19-21): Speaker Header

Attach the cable from the system speaker to this header.

FPIO1 (Pin 2 & 4): Suspend LED Header

Insert the two-threaded suspend LED cable into this header. If you install it in the wrong direction, the LED light will not illuminate correctly.

Note: Watch the Suspend LED pin position and the orientation.

FPIO1 (Pin 6 & 8): Power On Switch Header

Attach the cable from the case's front panel power on switch to this header.

FPIO1 (Pin 16-18-20): Power On LED Headers

There is a specific orientation for pins 1 through 3. Insert the three-threaded power on LED cable to this header. Check to make sure the correct pins go to the correct connectors on the motherboard. If you install them in the wrong direction, the power LED light will not illuminate correctly.

Note: Watch the power LED pin position and orientation.

For the PN1 and PN2 pin's count-name list, please refer to table 2-2.

Table 2-2. FPIO1 pin count name list

PIN Name		Significance of signal	PIN Name		Significance of signal
	PIN 1	HDD LED (+)		PIN 2	SP-LED (+)
	PIN 3	HDD LED (-)		PIN 4	SP-LED (-)
	PIN 5	Reset SW (-)		PIN 6	PWR-ON (+)
	PIN 7	Reset SW (+)		PIN 8	PWR-ON (-)
	PIN 9	No Connection		PIN 10	No Pin
FPIO1	PIN 11	No Pin	FPIO1	PIN 12	No Pin
	PIN 13	No Pin		PIN 14	No Pin
	PIN 15	Speaker (+5V)		PIN 16	PWR LED (+)
	PIN 17	Speaker (GND)		PIN 18	No Pin
	PIN 19	Speaker (GND)		PIN 20	PWR LED (-)
	PIN 21	Speaker (Driver)		PIN 22	No Connection
	PIN 23	No Pin		PIN 24	No Connection

(9). SPDIF1 Header: Sony/Philips Digital InterFace Output Header (Optional)
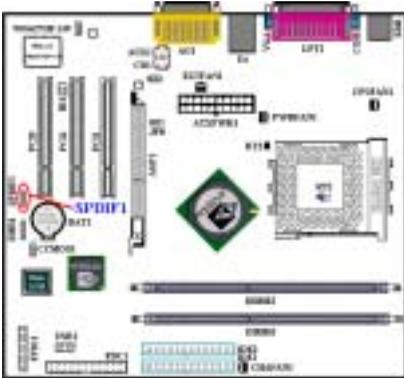
This header is for SPDIF output signal use. This option can let you output the digital SPDIF signal to the external decode equipment. This function is optional.

4 ■	GND
3 ■	+5V
2 ▢	No Pin
1 ■	SPDIF

SPDIF1

(10). JP8 Header: Processor FSB Frequency Setting Header
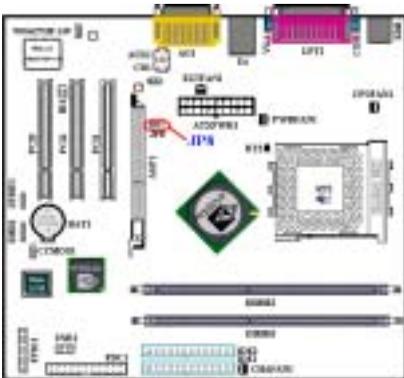
Jumper JP8 used to select processor FSB frequency. The default setting is 100 MHz (pin 2 and 3 shorted). Please accord your processor FSB speed to set correct FSB frequency.

133 MHz   100 MHz

3 2 1   3 2 1

JP8
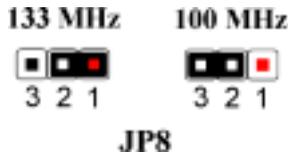
(11). <u>CD1 and AUX1 Headers: CD Audio and Auxiliary audio signal input headers</u>
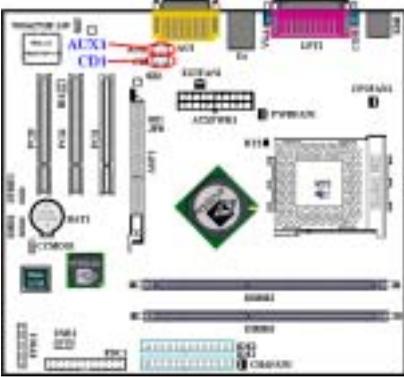
These connectors connect to the audio output of internal CD-ROM drive or add-on card.
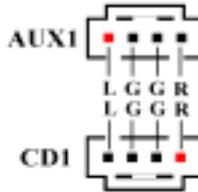
(12). <u>FDC1 Connector</u>
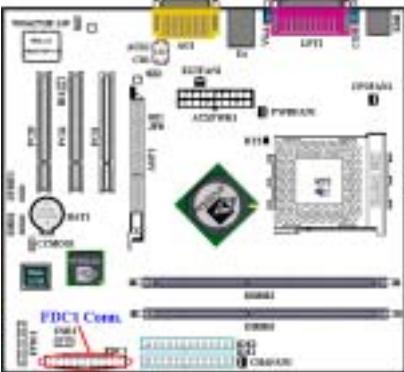
This 34-pin connector is called the "*floppy disk drive connector*". You can connect a 360K, 5.25", 1.2M, 5.25", 720K, 3.5'', 1.44M, 3.5" or 2.88M, 3.5" floppy disk drive.

A floppy disk drive ribbon cable has 34 wires and two connectors to provide the connection of two floppy disk drives. After connecting the single end to the FDD1, connect the two connectors on the other end to the floppy disk drives. In general, people only install one floppy disk drive on their computer system.

Note

A red mark on a wire typically designates the location of pin 1. You need to align the wire pin 1 to the FDC1 connector pin 1, then insert the wire connector into the FDC1 connector.

(13). IDE1and IDE2 Connectors
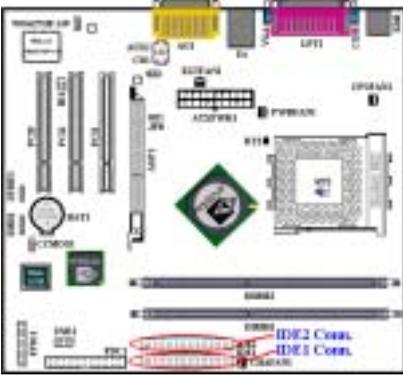
This motherboard provides two IDE ports (IDE1 & IDE2) to connect up to four IDE devices in Ultra DMA 100 mode by Ultra DMA 66 ribbon cables. Each cable has 40-pin 80-conductor and three connectors, providing two hard drive connections with the motherboard. Connect the single end (blue connector) at the longer length of ribbon cable to the IDE port on motherboard, and the other two ends (gray and black connector) at the shorter length of the ribbon cable to the connectors on hard drives.

If you want to connect two hard drives together through one IDE channel, you must configure the second drive to Slave mode after the first Master drive. Please refer to the HDD documentation for jumper settings. The first drive connected to IDE1 is usually referred to as "**Primary Master**", and the second drive as "**Primary Slave**". The first drive connected to IDE2 is referred to as "**Secondary Master**" and the second drive as "**Secondary Slave**".

Keep away from connecting one legacy slow speed device, like CD-ROM, together with another hard disk drive on the same IDE channel; this will decrease your integral system performance.
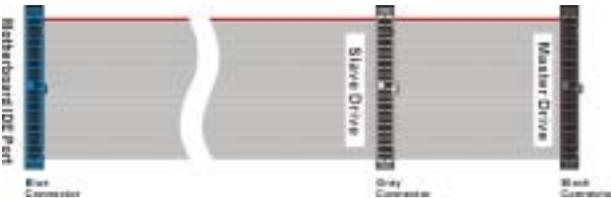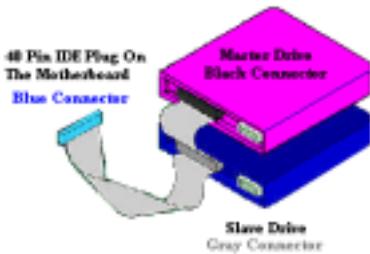
Figure 2-8. Ultra DMA 66 Ribbon Cable Outline

Note

- The Master or Slave status of the hard disk drive is set on the hard disk itself. Please refer to the hard disk drive user's manual.

- To connect Ultra DMA 100 devices on IDE1and IDE2, an Ultra DMA 66 cable is required.

- A red mark on a wire typically designates the location of pin 1. You need to align the wire pin 1 to the IDE connector pin 1, before inserting the wire connector into the IDE connector.
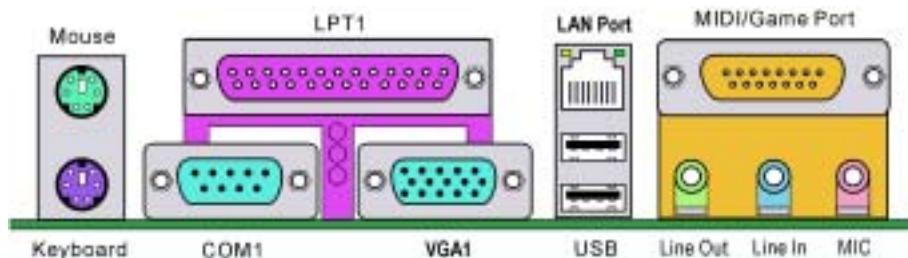
Figure 2-9. NV7m back panel connectors

Figure 2-9 shows the NV7m back panel connectors, these connectors are for connection to outside devices to the motherboard. We will describe which devices will attach to these connectors below.

(14). PS/2 Keyboard Connector

Attach a PS/2 keyboard connector to this 6-pin Din-connector. If you use an AT keyboard, you can go to a computer store to purchase an AT to ATX converter adapter, then you can connect your AT keyboard to this connector. We suggest you use a PS/2 keyboard for best compatibility.

(15). PS/2 Mouse Connector

Attach a PS/2 mouse to this 6-pin Din-connector.

(16). Serial Port COM1 Connector

This motherboard provides one COM port, you can connect an external modem, mouse or other devices that support this communication protocol to these connectors.

You can decide which external devices you want to connect to COM1. The COM port can only have one device connected at a time.

(17). VGA Port VGA1 Connector

This motherboard had built-in the nVIDIA 256-bit 3D/2D graphic accelerator, so you don't need to buy another AGP grapgic accelerator. This DIN 15 pin Female connector is for a VGA output signal to the monitor or LCD display. You can connect the plug from the monitor to this connector. If you don't move your system often, we suggest you fasten the two screws from the plug with this connector. It will assure the quality of your display.

(18). <u>Parallel Port Connector</u>

This parallel port is also called an "**LPT**" port, because it usually connects to the printer. You can connect other devices that support this communication protocol, like an EPP/ECP scanner, etc.

(19). <u>USB Port Connectors</u>

This motherboard provides two USB ports. Attach the USB connector from the individual device to these connectors.

You can attach USB devices such as a, scanner, digital speakers, monitor, mouse, keyboard, hub, digital camera, joystick etc. to one of each USB connector. You must make sure your operating system supports this feature and you may need to install an additional driver for individual devices. In Please refer to your device user's manual for detailed information.

(20). <u>10/100 Mb LAN Port Connector</u>

This motherboard provides built-in 10/100 Mb LAN port, this jack is for connecting the RJ-45 cable from the local area network hub to your computer. We suggest you use the category 5 UPT (**U**nshielded **T**wisted **P**air) or STP (**S**hielded **T**wisted **P**air) cable to make this connection. The connection length from the hub to the computer is best to be kept under 100 meter.

The green LED shows the connection situation. If the network active well, this LED will light on. The yellow LED shows if the data is active or not. If the computer is translating or receiving data from the network, this LED will flicker.

(21). <u>Line Out, Line In and Mic In Connector</u>

Line Out connector: You can connect an external stereo speaker signal input plug to this connector, or you can connect the plug from here to the stereo audio equipment AUX signal input socket. Remember, the motherboard does not have a built in amplifier to drive the speaker, so you must use a speaker that has a built in amplifier, or you may not hear any sound or only a small volume of sound from the speaker.

Line In Connector: You can connect the TV adapter audio output signal, or external audio sources, like a CD walkman, video camcorder, VHS recorder audio output signal plug to this connector. Your audio software can control the input level for the line-in signal.

Mic In Connector: You can connect the plug from the microphone to this connector. Do not connect other audio (or signal) sources to this connector.

(22). <u>MIDI/GAME Port Connector</u>

You can connect your joystick, game pad, or other simulation hardware device DIN 15-pin plugs to this connector. Please refer to the further connection notes of the device's user's manual for further detailed information.

Note

This chapter contains many color drawing diagram and photos, we strongly recommend you to read this chapter use the PDF file we gave you that store in the CD-Title. It will provide you the better look and clearly color identify.

Chapter 3. Introducing the BIOS

The BIOS is a program located on a Flash Memory chip on the motherboard. This program will not be lost when you turn the computer off. This program is also referred to as the boot program. It is the only channel the hardware circuit has to communicate with the operating system. Its main function is to manage the setup of the motherboard and interface card parameters, including simple parameters such as time, date, hard disk drive, as well as more complex parameters such as hardware synchronization, device operating mode. The computer will operate normally, or will operate at its best, only if all of these parameters are correctly configured through the BIOS.

> ☀ **Don't change the parameters inside the BIOS unless you fully understand the meanings and consequences**

> The parameters inside the BIOS are used to setup the hardware synchronization or the device-operating mode. If the parameters are not correct, they will produce errors, the computer will crash, and sometimes you will even not be able to boot the computer after it has crashed. We recommend that you do not change the parameters inside the BIOS unless you are very familiar with them. If you are not able to boot your computer anymore, please refer to the section "**CCMOS1 Header**" in Chapter 2 to see how to discharge the CMOS date.

When you start the computer, the BIOS program controls it. The BIOS first operates an auto-diagnostic test called POST (**P**ower **O**n **S**elf **T**est) for all of the necessary hardware. It then configures the parameters of the hardware synchronization, and detects all of the hardware. Only when these tasks are completed does it give up control of the computer to the program to the next level, which is the operating system (OS). Since the BIOS is the only channel for hardware and software to communicate, it is the key factor for system stability, and in insuring that your system performs at its best. After the BIOS has achieved the auto-diagnostic and auto-detection operations, it will display the following message:

<div align="center">

PRESS DEL TO ENTER SETUP

</div>

The message will be displayed for three to five seconds, if you press the **Del** key, you will access the BIOS Setup menu. At that moment, the BIOS will display the following message:

<div align="center">

Figure 3-1. CMOS Setup Utility Screen Shot

</div>

In the BIOS Setup main menu of Figure 3-1, 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:

- Press **Esc** to quit the BIOS Setup.
- Press ↑ ↓ ←→ (up, down, left, right) to choose, in the main menu, the option you want to confirm or to modify.
- Press **F10** when you have completed the setup of BIOS parameters to save these parameters and to exit the BIOS Setup menu.
- Press **Page Up/Page Down** or **+/-** keys when you want to modify the BIOS parameters for the active option.

Note

Parts of the screenshot may not same as you see on your screen, because the BIOS version may change periodically. However, most of the functions covered in this manual will work. We suggest that you go to our WEB site often to see if there are new manual releases. Then you can check the newly updated BIOS items.

Computer Knowledge: CMOS Data

Maybe you have heard somebody saying that his or her CMOS DATA was lost. What is the CMOS? Is it important? The CMOS is the memory used to store the BIOS parameters that you have configured. This memory is passive. You can read its data, and you can also store data in it. But this memory has to be powered by a battery, in order to avoid any loss of its data when the computer is turned off. Since you may have to change the CMOS battery when it is out of power and if doing so, you will loose all CMOS data, therefore, we recommend that you write down all the parameters of your hardware, or to put a label with these parameters on your hard disk.

3-1. Standard CMOS Features Setup Menu

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

Figure 3-2A. Standard CMOS Features Screen Shot

<u>**Date (mm:dd:yy):**</u>

You can set the date in this item: month (mm), date (dd) and year (yy).

<u>**Time (hh:mm:ss):**</u>

You can set the time in this item: hour (hh), minute (mm) and second (ss).

IDE Primary Master / Slave and IDE Secondary Master / Slave:

These items have a sub-menu to let you choose further options. You can refer to figure 3-3B to check what options are available.
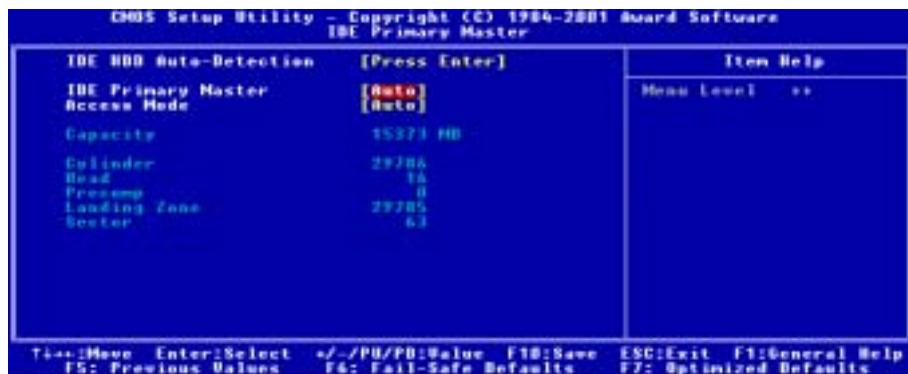
Figure 3-2B. IDE Primary Master Screen Shot

IDE HDD Auto-Detection:

Press the *Enter* key for the BIOS to auto detect all detailed parameters of the hard disk drivers (HDD). If auto detection is successful, the correct values will be shown in the remaining items of this menu.

Note

❶ A new IDE HDD must be first formatted, otherwise it can't do the read/write. The basic step in using a HDD is to run FDISK, and then FORMAT the drive. Most current HDDs have already been subjected to low-level format at the factory, so you can probably skip this operation. Remember though, the primary IDE HDD must have its partition set to active within the FDISK procedure.

❷ If you are using an old HDD that is already formatted, auto detection can't detect the correct parameters. You may need to do a low-level format or set the parameters manually, and then check if the HDD is working.

IDE Primary Master:

Three settings are available: None ➔ Auto ➔ Manual, The default setting is *Auto*. If you choose Auto, the BIOS will automatically check what kind hard disk you are using. If you want to set the HDD parameters yourself, make sure you fully understand the meaning of the parameters, and be sure to refer to the manual provided by the HDD manufacture to get the settings right.

Access Mode:

Since old operating systems were only able to support HDDs with capacities no bigger than 528MB, any hard disk with more than 528MB was unusable. AWARD BIOS features a solution to this problem: you can, according to your operating system, choose four operating modes: CHS ➔ LBA ➔ Large ➔Auto.

The HDD auto detection option in the sub-menu will automatically detect the parameters of your hard disk and the mode supported.

➤ *CHS (Normal mode):*

Standard normal mode supports hard disks of up to 528MB or less. This mode directly uses positions indicated by Cylinders (CYLS), Heads, and Sectors to access data.

➤ *LBA (Logical Block Addressing) mode:*

The earlier LBA mode can support HDD capacities of up to 8.4GB, and this mode uses a different method to calculate the position of disk data to be accessed. It translates Cylinders (CYLS), Heads and Sectors into a logical address where data is located. The Cylinders, Heads, and Sectors displayed in this menu do not reflect the actual structure of the hard disk, they are just reference values used to calculate actual positions. Currently, all high capacity hard disks support this mode, that's why we recommend you use this mode. Currently, the BIOS can support the INT 13h extension function, enabling the LBA mode to support hard disk drive capacities exceeding 8.4GB.

➤ *Large Mode:*

When the number of cylinders (CYLs) of the hard disk exceeds 1024 and DOS is not able to support it, or if your operating system does not support LBA mode, you should select this mode.

➤ *Auto:*
Just let the BIOS detect your HDD access mode and make the decisions.

☛ *Capacity:*

This item auto displays your HDD size. Note that this size is usually slightly greater than the size given by a disk checking program of a formatted disk.

Note
All the items below are available when you set the item *Primary IDE Master* to *Manual*.

☛ *Cylinder:*

When disks are placed directly above one another along the shaft, the circular vertical "**slice**" consisting of all the tracks located in a particular position is called a cylinder. You can set the number of cylinders for a HDD. The minimum number you can enter is 0, the maximum number you can enter is 65536.

☛ *Head:*

This is the tiny electromagnetic coil and metal pole used to create and read back the magnetic patterns on the disk (also called the read/write head). You can configure the number of read/write heads. The minimum number you can enter is 0, the maximum number you can enter is 255.

☛ *Precomp:*

The minimum number you can enter is 0, the maximum number you can enter is 65536.

Warning
Setting a value of 65536 means no hard disk exists.

☛ *Landing Zone:*

This is a non-data area on the disk's inner cylinder where the heads can rest when the power is turned off. The minimum number you can enter is 0, the maximum number you can enter is 65536.

☛ *Sector:*

The minimum segment of track length that can be assigned to stored data. Sectors usually are grouped into blocks or logical blocks that function as the smallest units of data permit. You can configure this item to sectors per track. The minimum number you can enter is 0, the maximum number you can enter is 255.

Driver A & Driver B:

If you have installed the floppy disk drive here, then you can select the type of floppy drive it can support. Six options are available: None ➔ 360K, 5.25 in. ➔ 1.2M, 5.25in. ➔ 720K, 3.5 in. ➔ 1.44M, 3.5 in. ➔ 2.88M, 3.5 in.

Floppy 3 Mode Support:

Four options are available: Disabled ➔ Driver A ➔ Driver B ➔ Both. The default setting is *Disabled*. 3 Mode floppy disk drives (FDD) are 3 1/2" drives used in Japanese computer systems. If you need to access data stored in this kind of floppy, you must select this mode, and of course you must have a 3 Mode floppy drive.

Video:

You can select the VGA modes for your video adapter, four options are available: EGA/VGA ➔ CGA 40 ➔ CGA 80 ➔ MONO. The default setting is EGA/VGA.

Halt On:

You can select which type of error will cause the system to halt. Five options are available: All Errors ➔ No Errors ➔ All, But Keyboard ➔ All, But Diskette ➔ All, But Disk/Key.

You can see your system memory list in the lower right box, it shows the *Base Memory*, *Extended Memory* and *total Memory size* configurations in your system. It is detected by the system during boot-up procedure.

3-2. Advanced BIOS Features Setup Menu

In each item, you can press <**Enter**> at any time to display all the options for this item.

Attention
Advanced BIOS Features Setup Menu has already been set for maximum operation. If you do not really understand each of the options in this menu, we recommend you use the default values.
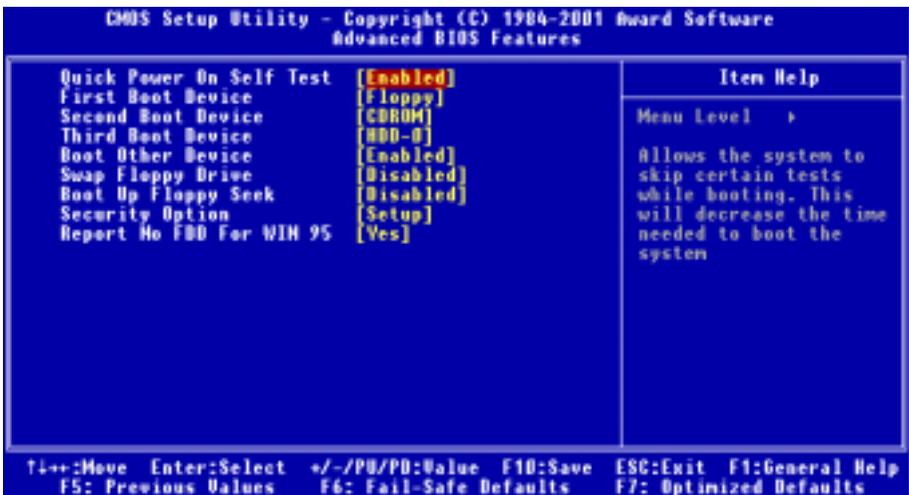
Figure 3-3. Advanced BIOS Features Screen Shot

Quick Power On Self Test:

Two options are available: Disabled or Enabled. The default setting is *Enabled*. After the computer has been powered on, the BIOS of the motherboard will run a series of tests in order to check the system and its peripherals. If the Quick Power on Self-Test feature is enable, the BIOS will simplify the test procedures in order to speed up the boot process.

First Boot Device:

When the computer boots up, the BIOS attempts to load the operating system from the devices in the sequence selected in these items: floppy disk drive A, LS120, ZIP100 devices, hard drive C, SCSI hard disk drive or CD-ROM. There are ten options for the boot sequence that you can choose (The default setting is *Floppy*.):

Floppy ➔ LS120 ➔ HDD-0 ➔ SCSI ➔ CDROM ➔ HDD-1 ➔ HDD-2 ➔ HDD-3 ➔ ZIP100 ➔ LAN ➔ Disabled ➔ Back to Floppy.

Second Boot Device:

Description is the same as the *First Boot Device,* the default setting is *CDROM*.

Third Boot Device:

Description is same as the *First Boot Device,* the default setting is *HDD-0.*

Boot Other Device:

Two options are available: Disabled or Enabled. The default setting is *Enabled*. This setting allows the BIOS to try to boot devices other than the three which are listed in the above First, Second and Third Boot Devices. If you set to Disabled, the BIOS will boot from only the three kinds of boot devices that are set above.

Swap Floppy Drive:

This item can be set as Disabled or Enabled. The default setting is *Disabled.* When this feature is enabled, you don't need to open the computer case to swap the position of floppy disk drive connectors. Drive A can be set as drive B and drive B can be set as drive A.

Boot Up Floppy Seek:

Two options are available: Disabled or Enabled. The default setting is *Disabled.* 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.

Security Option:

This option can be set to Setup or System. The default setting is *Setup*. After you have created a password through PASSWORD SETTING, this option will deny access to your system (System) or modification of computer setup (BIOS Setup) by unauthorized users.

➤**SETUP:**   When you choose Setup, a password is required only when accessing the BIOS Setup. If the correct password is not given, you can't enter the BIOS setup menu.

➤ **SYSTEM:** When you choose System, a password is required each time the computer boots up. If the correct password is not given, the system will not start.

To disable security, select *Set Supervisor Password* at main menu and then you will be asked to enter 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.

Notice

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.

Report No FDD For WIN 95:

When using Windows® 95 without a floppy drive set this item to *Yes*. Otherwise, set it to *No*. The default setting is *Yes*.

3-3. Advanced Chipset Features Setup Menu

The Chipset Features Setup Menu is used to modify the contents of the buffers in the chipset on the motherboard. Since the parameters of the buffers are closely related to hardware, if the setup is not correct or is false, the motherboard will become unstable or you will not be able to boot up. If you don't know the hardware very well, use default values (i.e. use the LOAD SETUP DEFAULTS option).
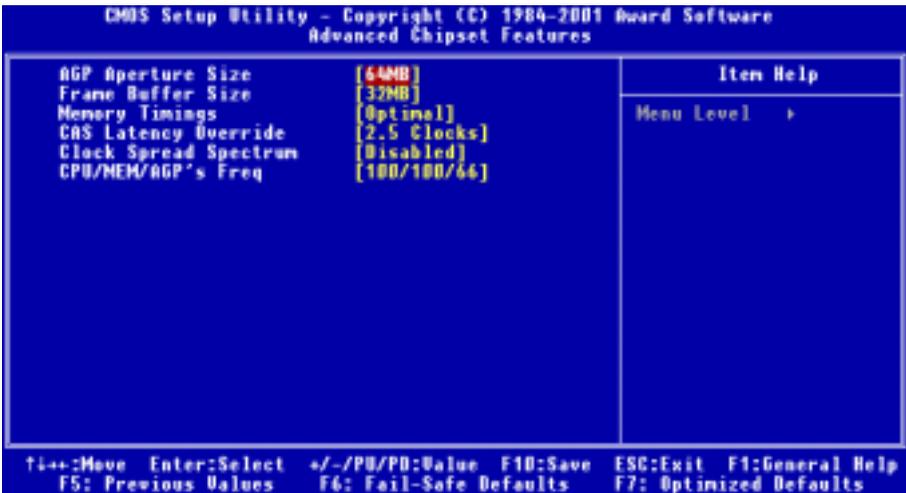
Figure 3-4. Advanced Chipset Features Screen Shot

You can use the arrow keys to move between the items. Use **PgUP**, **PgDn**, **+** or **-** key to change the values. When you have finished setting up the chipset, press **ESC** to go back to the main menu.

Note

The parameters in this screen are for system designers, service personnel, and technically competent users only. Do not reset these values unless you understand the consequences of your changes.

AGP Aperture Size:

Five options are available: 32MB ➔ 64MB ➔ 128MB ➔ 256MB ➔ 512MB ➔Back to 32MB. The default setting is *64MB*. 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. Host cycles that hit the aperture range are forwarded to the AGP without any translation. See http://www.agpforum.org for AGP information.

Frame Buffer Size:

Four options are available: 8MB ➔ 16MB ➔ 32MB ➔ Disabled ➔Back to 8MB. The default setting is *32MB*. This item can let you select the frame buffer memory size for onboard VGA accelerator.

Memory Timings:

Two options are available: Aggressive ➔ Optimal. The default setting is *Optimal*. Choose *Aggressive* for better memory performance, choose Optimal for better memory compability.

CAS Latency Override:

Three options are available: 2 Clocks ➔ 2.5 Clocks ➔ Auto. The default setting is *2.5T*. You can select SDRAM CAS (**C**olumn **A**ddress **S**trobe) latency time according your SDRAM specification.

Clock Spread Spectrum:

Four options are available: 0.50% ➔ 1.00% ➔ 2.00% ➔ Disabled, the default setting is *Disabled*. For EMC (**E**lectro-**M**agnetic **C**ompatibility Test) testing you may need to adjust these options for optimal results, we do not recommend you change the default, except for special reasons. Some values you select may cause system instability under some situations, please be careful.

CPU/MEM/AGP's Freq:

Four options are available: 100/100/66 ➔ 100/133/66 ➔ 133/100/66 ➔ 133/133/66. The default setting is *100/100/66*. This item lets you set the processor **F**ront **S**ide **B**us, DDR SDRAM and AGP clock. It correlates with the processor FSB clock you set. Many of options are available, you can choose the frequency ratio you want. The default setting is *100/100/66*. In this case, the processor clock will be the 100 MHz. Memory clock will be the 100 MHz. The AGP clock will be the 66 MHz.

3-4.   Integrated Peripherals

In this menu, you can change the onboard I/O device, I/O port address and other hardware settings.
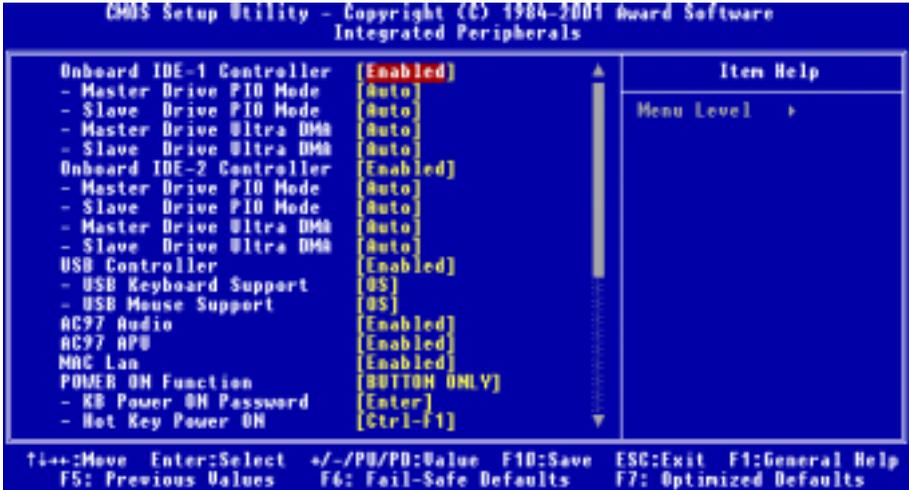
Figure 3-5A. Integrated Peripherals Upper Screen Shot
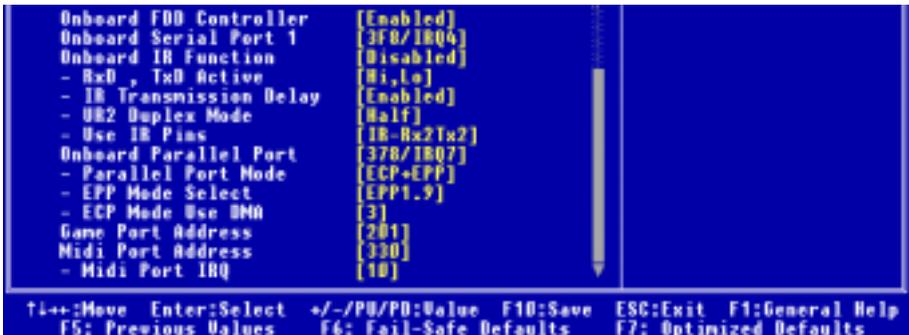
Figure 3-5B. Integrated Peripherals Lower Screen Shot

This item can let you sets several items concerning the SIS OnChip IDE device parameters.

Onboard IDE-1 Controller:

The onboard IDE 1 controller can be set as Enabled or Disabled. The default setting is *Enabled*. Of course you can disable this item as well. The enable items will show as white color and disabled items will show blue green color.

☛ *Master Drive PIO Mode:*

➤ Auto: The BIOS can auto-detect the transfer mode of the IDE devices in order to set its data

transfer rate (Default). You can select the PIO mode from 0 to 4 of the IDE devices in order to set its data transfer rate.

This field does not available to enter when the "**Onboard IDE-1 Controller**" field is *Disabled*.

☞ *Slave Drive PIO Mode:*

➤ Auto: The BIOS can auto-detect the transfer mode of the IDE devices in order to set its data transfer rate (Default). You can select the PIO mode from 0 to 4 of the IDE devices in order to set its data transfer rate.

This field does not available to enter when the "**Onboard IDE-1 Controller**" field is *Disabled*.

☞ *Master Drive Ultra DMA:*

Ultra DMA is a DMA data transfer protocol that utilizes ATA commands and the ATA bus to allow DMA commands to transfer data at a maximum burst rate of 100 MB/sec.

➤ Disable: If you encounter the problem of using Ultra DMA devices, you can try to set this item to *Disabled*.

➤ Auto: When you select Auto, the system automatically determines the optimal data transfer rate for each IDE device. (Default)

This field does not available to enter when the "**Onboard IDE-1 Controller**" field is *Disabled*.

☞ *Slave Drive Ultra DMA:*

➤ Disable: If you encounter the problem of using Ultra DMA devices, you can try to set this item to *Disabled*.

➤ Auto: When you select Auto, the system automatically determines the optimal data transfer rate for each IDE device. (Default)

This field does not available to enter when the "**Onboard IDE-1 Controller**" field is *Disabled*.

Onboard IDE-2 Controller:

The onboard IDE 2 controller can be set as Enabled or Disabled. Description is the same as the item "**Onboard IDE-1 Controller**". You can refer the above description.

PIO MODE 0~4 reflects the IDE device data transfer rate. The higher the MODE value is, the better the IDE device data transfer rate. However, it does not mean that the highest MODE value can be selected. You first have to be sure that your IDE device supports this MODE. Otherwise, the hard disk will not be able to operate normally.

USB Controller:

Two options are available: Disabled ➔ Enabled. The default setting is *Enabled*. This should be enabled if your system has a USB device installed on the system board and you wish to use it. If you add a higher performance controller, you will need to disable this feature. If you choose disable this item, the "**USB Keyboard Support"** and "**USB Mouse Support**" items will disappear in *Integrated Peripherals* menu.

☞ *USB Keyboard Support:*

Two options are available: OS ➔ BIOS. The default setting is *OS*. If your operating system supports a USB keyboard, please set it to *OS*. Only in some situations, such as in a pure DOS environment that does not support a USB keyboard, should you set it to BIOS.

☞ *USB Mouse Support:*

Two options are available: OS ➔ BIOS. The default setting is *OS*. If your operating system supports a USB keyboard, please set it to *OS*. Only in some situations, such as in a pure DOS environment that does not support a USB keyboard, should you set it to BIOS.

AC97 Audio:

Two options are available: Disabled ➔ Enabled. The default setting is *Enabled*.

AC97 APU:

Two options are available: Disabled ➔ Enabled. The default setting is *Enabled*.

MAC Lan:

Two options are available: Disabled ➔ Enabled. The default setting is *Enabled*.

Power ON Function:

Six options are available: Password ➔ Hot KEY ➔ Mouse Left ➔ Mouse Right ➔ Any KEY ➔ BUTTON ONLY ➔ Keyboard 98. The default setting is *Enabled*.

☞ *KB Power ON Password:*

This item let you set the password for keypad wakeup. After you set the password, any event affecting keypad will awaken a system that has powered down.

☞ *Hot Key Power ON:*

Twelve options are available: Ctrl-F1 ➔ Ctrl-F2 ➔ Ctrl-F3 ➔ Ctrl-F4 ➔ Ctrl-F5 ➔ Ctrl-F6 ➔ Ctrl-F7 ➔ Ctrl-F8 ➔ Ctrl-F9 ➔ Ctrl-F10 ➔ Ctrl-F11 ➔ Ctrl-F12. The default setting is *Ctrl-F1*.

Onboard FDD Controller:

Two options are available: Disabled or Enabled. The default setting is *Enabled*. This is used to enable or disable the Onboard FDD Controller. If you add a higher performance controller, you will need to *Disable* this feature.

Onboard Serial Port 1:

This item allows you to determine which I/O address the onboard serial port 1 controller will access. Six options are available: Disabled ➔ 3F8/IRQ4 ➔ 2F8/IRQ3 ➔ 3E8/IRQ4 ➔ 2E8/IRQ3 ➔ Auto ➔ Back to Disabled. The default setting is *3F8/IRQ4*.

Onboard IR Function:

Three options are available: IrDA ➔ ASKIR (Amplitude Shift Keyed IR) ➔ Disabled. The default setting is *Disabled*.

☞ *RxD , TxD Active:*

Four options are available: Hi, Hi ➔ Hi, Lo ➔ Lo, Hi ➔ Lo, Lo. The default setting is *Hi, Lo*. Set IR transmission/reception polarity as High or Low.

☞ *IR Transmission Delay:*

Two options are available: Disabled or Enabled. The default setting is *Enabled*. Set IR transmission delays 4 character-time (40 bit-time) when SIR is changed from RX mode to TX mode.

☞ *UR2 Duplex Mode:*

Two options are available: Full or Half. The default setting is *Half*.

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

☞ *Use IR Pins:*

Two options are available: RxD2, TxD2 or IR-Rx2Tx2. The default setting is *IR-Rx2Tx2*. If you choose *RxD2, TxD2*, your motherboard must support a COM port IR KIT connection. Otherwise, you can only choose the *IR-Rx2Tx2* to use the IR header on your motherboard to connect your IR KIT. Please use the default setting.

Note

| The setting for item "**RxD, TxD Active**", also called "**TX, RX inverting**", allows you to determine the activity of RxD and TxD. We set it to "**Hi, Lo**". If your motherboard BIOS uses "**No**" and "**Yes**" to represent this item, you should set it to the same setting as the NV7m. This means that you should set it to "**No, Yes**" in order to match the transfer and receiving speed. If you fail to do so, you will not get an IR connection between the NV7m and the other computer. |

Onboard Parallel Port:

Four options are available: Disabled ➔ 378/IRQ7 ➔ 278/IRQ5 ➔ 3BC/IRQ7. The default setting is *378/IRQ7*. Select a logical LPT port name and matching address for the physical parallel (printer) port.

☞ *Parallel Port Mode:*

Five options are available: SPP ➔ EPP ➔ ECP ➔ ECP+EPP ➔ Normal. Default is *ECP+EPP* mode. Select an operating mode for the onboard parallel (printer) port. SPP (Standard Parallel Port), EPP (Extended Parallel Port), ECP (Extended Capabilities Port), Normal or ECP plus EPP.

Select SPP unless you are certain your hardware and software supports both EPP or ECP mode. According to your selection, the following items will appear.

☞ *EPP Mode Select:*

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

☞ *ECP Mode Use DMA:*

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

Game Port Address:

Three options are available: Disabled ➔ 201 ➔ 209. Default setting is *201*. You can choose the game port I/O base address in this item to meet the need for game requirement.

Midi Port Address

Four options are available: Disabled ➔ 330 ➔ 300 ➔ 290. Default setting is *330*. You can choose the

MPU-401 I/O address in this item to meet the need for MIDI device requirement.

☛ *Midi Port IRQ:*

Two options are available: 5 ➔ 10. The default setting is *10*. You can choose the MIDI port IRQ in this item to meet the need for game requirement.

3-5. Power Management Setup Menu

The difference between Green PCs and traditional computers is that Green PCs have a power management feature. With this feature, when the computer is powered on but inactive, the power consumption is reduced in order to save energy. When the computer operates normally, it is in Normal mode. In this mode, the Power Management Program will control the access to video, parallel ports, serial ports and drives, and the operating status of the keyboard, mouse and other device. These are referred to as Power Management Events. In cases where none of these events occur, the system enters the power saving mode. When one of the controlled events occurs, the system immediately returns to normal mode and operates at its maximum speed. Power saving modes can be divided into three modes according to their power consumption: Doze Mode, Standby Mode, and Suspend Mode. The four modes proceed in the following sequence:

Normal Mode ===> Doze Mode ===> Standby Mode ===> Suspend Mode

The system consumption is reduced according the following sequence:

Normal   >   Doze >   Standby   >   Suspend

1. In the Main Menu, select "**Power Management Setup**" and press "**Enter**". The following screen is displayed:
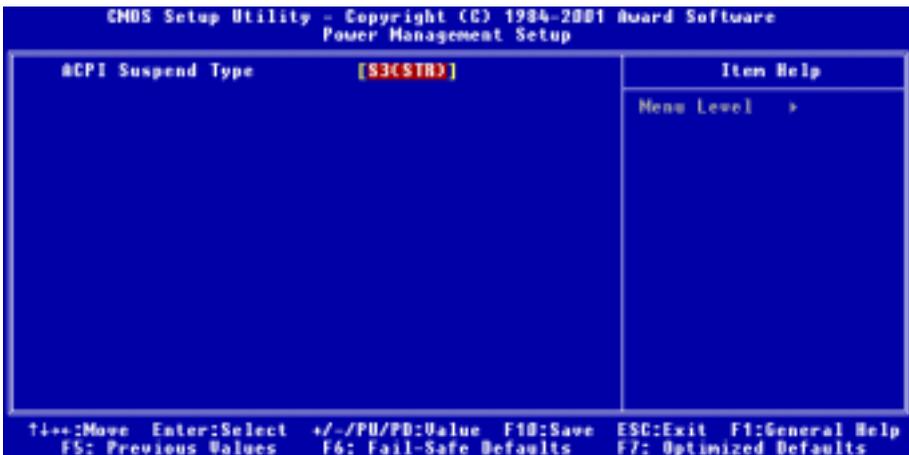
Figure 3-6. Power Management Setup Screen Shot

2. You can use the arrow keys to move between the items. Use **PgUP**, **PgDn**, **+** or **-** key to change the values. When you have finished setting up the chipset, press **ESC** to go back to the main menu.

3. After you have configured the Power Management feature, press **Esc** to go back to the Main Menu.

We are now going to briefly explain the options in this menu:

ACPI Function (Advanced Configuration and Power Interface):

ACPI gives the operating system direct control over the power management and Plug and Play functions of a computer. The ACPI functions are always "**Enabled**". If you want ACPI functions to work normally, you should notice two things. One is your operating system must support ACPI, as of now only Microsoft® Windows® 98 SE and Windows® 2000 supports these functions. The second thing is that all devices and add-on cards in your system must fully support ACPI, both hardware and software (drivers). If you want to know if your devices or add-on cards support ACPI or not, please contact the device or add-on card manufacture for more information. If you want to know more about ACPI specifications, please go to the address below for more detailed information:

http://www.teleport.com/~acpi/acpihtml/home.htm

Note: If you enable the ACPI function in the BIOS setup, the SMI function will not work.

ACPI requires an ACPI-aware operating system. ACPI features include:

- Plug and Play (including bus and device enumeration) and APM functionality normally contained in the BIOS.
- Power management control of individual devices, add-in cards (some add-in cards may require an ACPI-aware driver), video displays, and hard disk drives.
- A Soft-off feature that enables the operating system to power off the computer.
- Support for multiple wake-up events (see Table 3-5-1).
- Support for a front panel power and sleep mode switch. Table 3-5-2 describes the system states based on how long the power switch is pressed, depending on how ACPI is configured with an ACPI-aware operating system.

Note
If you enable the ACPI function in the BIOS setup, the SMI switch function will not work.

System States and Power States

Under ACPI, the operating system directs all system and device power state transitions. The operating system puts devices in and out of low-power states based on user preferences and knowledge of how devices are being used by applications. Devices that are not being used can be turned off. The operating system uses information from applications and user settings to put the system as a whole into a low-power state.

The table below describes which devices or specific events can wake the computer from specific states.

Table 3-5-1: Wake Up Device and Events

These device/events can wake up the computer……	……from this state
Power switch	Sleeping mode or power off mode
RTC alarm	Sleeping mode
LAN	Sleeping mode
Modem	Sleeping mode
IR command	Sleeping mode
USB	Sleeping mode
PS/2 keyboard	Sleeping mode
PS/2 mouse	Sleeping mode

Table 3-5-2: Effect of Pressing the Power Switch

If the system is in this state……	……and the power switch is pressed for	……the system enters this state
Off	Less than four seconds	Power on
On	More than four seconds	Soft off/Suspend
On	Less than four seconds	Fail safe power off
Sleep	Less than four seconds	Wake up

ACPI Suspend Type:

Three options are available: S1 (POS) ➔ S3 (STR) ➔ S1&S3. The default setting is *S3 (STR)*. POS is "**P**ower**O**n-**S**uspend", and STR is "**S**uspend-**T**o-**R**AM". Generally, ACPI has six states: System S0 state, S1 state, S2 state, S3 state, S4 state, S5 state. S1 and S3 states are described below:

The S1 (POS) State (POS means Power On Suspend):

While the system is in the S1 sleeping state, its behavior is as described below:

● The processor is not executing instructions. The processor's complex context is maintained.

● Dynamic RAM context is maintained.

● Power Resources are in a state compatible with the system S1 state. All Power Resources that supply a System Level reference of S0 are in the OFF state.

● Devices states are compatible with the current Power Resource states. Only devices which solely reference Power Resources which are in the ON state for a given device can be in that device state. In all other cases, the device is in the D3 (off) state.

● Devices that are enabled to wake the system and that can do so from their current device state can initiate a hardware event which transitions the system state to S0. This transition causes the processor to continue execution where it left off.

To transition into the S1 state, the operating software does not have to flush the processor's cache.

The S3 (STR) State (STR means Suspend to RAM):

The S3 state is logically lower then the S2 state and is assumed to conserve more power. The behavior of this state is defined as follows:

● Processor is not executing instructions. The processor complex context is not maintained.

- Dynamic RAM context is maintained.

- Power Resources are in a state compatible with the system S3 state. All Power Resources that supply a System Level reference of S0, S1, or S2 are in the OFF state.

- Devices states are compatible with the current Power Resource states. Only devices which solely reference Power Resources which are in the ON state for a given device state can be in that device state. In all other cases, the device is in the D3 (off) state.

- Devices that are enabled to wake the system and that can do so from their current device state can initiate a hardware event which transitions the system state to S0. This transition causes the processor to begin execution at its boot location. The BIOS performs initialization of core functions as required to exit an S3 state and passes control to the firmware resume vector. Please see the ACPI Specification Rev. 1.0 book section 9.3.2 for more details on BIOS initialization.

From the software point of view, this state is functionally the same as the S2 state. The operational difference can be that some Power Resources that could be left ON in the S2 state might not be available to the S3 state. As such, additional devices can be required to be in logically lower D0, D1, D2, or D3 state for S3 than S2. Similarly, some device wake events can function in S2 but not S3.

Because the processor context can be lost while in the S3 state, the transition to the S3 state requires that the operating software flush all dirty cache to DRAM.

✦ *Above information for system S1 were refer to ACPI Specification Rev. 1.0.*

3-6.   PnP/PCI Configurations Setup Menu

In this menu, you can change the INT# and IRQ# of the PCI bus and other hardware settings.
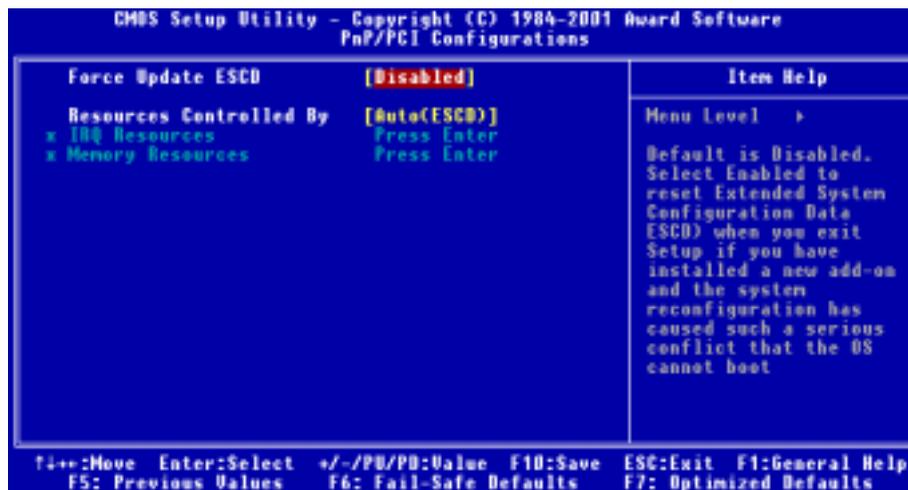
Figure 3-7A. PnP/PCI Configurations Screen Shot

Force Update ESCD:

Two options are available: Disabled or Enabled. The default setting is *Disabled*. Normally, you should leave this field Disabled. Select Enabled to reset Extended System Configuration Data (ESCD) when you exit Setup if you have installed a new add-on and the system reconfiguration has caused a serious conflict that prevents the operating system from booting.

Computer Knowledge: ESCD (Extended System Configuration Data)

The ESCD contains the IRQ, DMA, I/O port, memory information of the system. This is a specification and a feature specific to the Plug & Play BIOS.

Resources Controlled By:

When resources are controlled manually, assign each system interrupt as one of the following types, depending on the type of device using the interrupt:

Legacy devices compliant with the original PC AT bus specification require a specific interrupt (such as IRQ4 for serial port 1). PCI PnP devices comply with the Plug and Play standard, whether designed for the PCI or legacy bus architecture.

Two options are available: Auto (ESCD) or Manual. The default setting is *Auto (ESCD)*. The Award Plug and Play BIOS has the capability to automatically configure all boot and Plug and Play compatible devices. If you select Auto (ESCD), all of the interrupt request (IRQ) fields become unselectable, as the BIOS automatically assigns them.

☞ *IRQ Resources:*

If you have trouble in assigning the interrupt resources automatically, you can select *Manual* to set which IRQis assigned to which *PCI Device* or *Reserved* it. See the screen shot below.
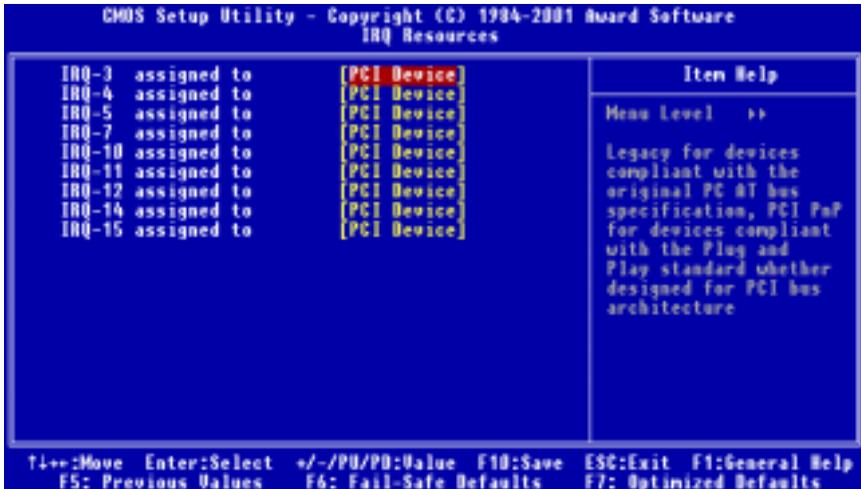
Figure 3-7B. IRQ Resources Screen Shot

☛ *Memory Resources:*

```
      CMOS Setup Utility - Copyright (C) 1984-2001 Award Software
                              Memory Resources
  ┌─────────────────────────────────────────────┬────────────────────────┐
  │  Reserved Memory Base       [N/A]            │       Item Help        │
  │ x Reserved Memory Length     8K              ├────────────────────────┤
  │                                              │  Menu Level    ▶▶       │
  │                                              │                        │
  │                                              │                        │
  │                                              │                        │
  │                                              │                        │
  │                                              │                        │
  │                                              │                        │
  │                                              │                        │
  │                                              │                        │
  │                                              │                        │
  │                                              │                        │
  └──────────────────────────────────────────────────────────────────────┘
   ↑↓←→:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help
        F5: Previous Values      F6: Fail-Safe Defaults   F7: Optimized Defaults
```
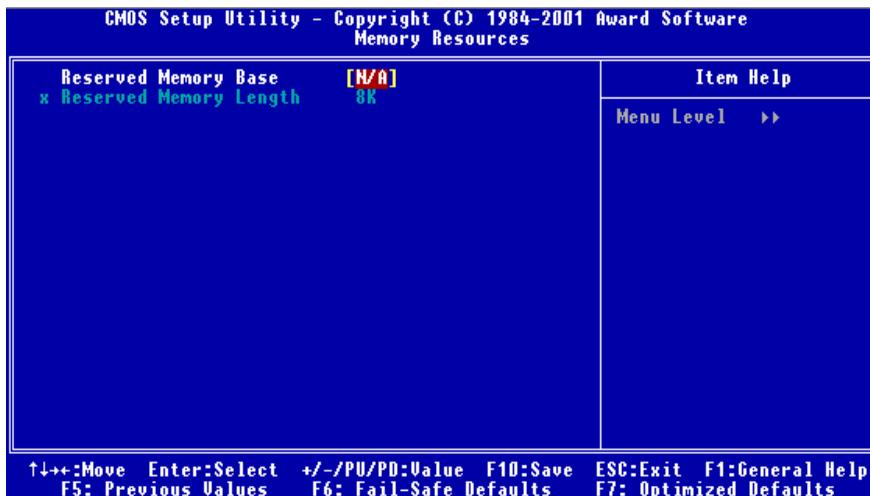
Figure 3-7C. Memory Resources Screen Shot

Reserved Memory Base:

Seven options are available: N/A ➔ C800 ➔ CC00 ➔ D000 ➔ D400 ➔ D800 ➔ DC00. The default setting is *N/A*.

☛ *Reserved Memory Length:*

Seven options are available: 8K ➔ 16K ➔ 32K ➔ 64K. The default setting is *8K*. This item can let you select a base address and length for the memory area used by any peripheral that requires high memory.

Note

● PCI slot 1 shares IRQ signals with the AGP slot.

● If you want to install two PCI cards into those PCI slots that share IRQ with one another at the same time, you must make sure that your OS and PCI devices' driver supports the IRQ sharing function.

3-7. PC Health Status

You can set the warning and shutdown temperatures 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*.

```
        CMOS Setup Utility - Copyright (C) 1984-2001 Award Software
                             PC Health Status

     CPU Warning Temperature    [70°C/158°F]              Item Help
     System Temperature          45°C/140°F
     CPU Temperature             60°C/140°F        Menu Level    ▶
     CPUFAN Speed               4500 RPM
     CHAFAN Speed               4500 RPM
     PWRFAN Speed               4600 RPM
     CPU Core Voltage            1.50 V
     VCC (+2.5V)                 2.53 V
     I/O Voltage (+3.3V)         3.32 V
     + 5 V                       5.10 V
     +12 V                      12.10 V
     -12 V                     -12.13 V
     - 5 V                      -5.13 V
     Battery Voltage (+3V)       3.33 V
     Standby Voltage (+5V)       5.10 V



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

Figure 3-8. PC Health Status Screen Shot

CPU Warning Temperature:

Eight options are available: Disabled ➔ 50℃/122℉ ➔ 53℃/127℉ ➔ 56℃/133℉ ➔ 60℃/140℉ ➔ 63℃/145℉ ➔ 66℃/151℉ ➔ 70℃/158℉. The default setting is *70℃/158℉*. You can set the processor warning temperature here. If the processor temperature exceeds the settings value, the system will give you an alarm message or sound to remind you that the processor is overheating.

All Voltages, Fans Speed and Thermal Monitoring:

These items list the current states of the processor and environment (using RT1 and RT2 to detect them.) temperatures as well as fan speeds (processor fan and chassis fan). It cann't be changed by the user.

The following items list all the voltage states of the system power. It is also unchangeable.

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 the use of those addresses.

3-8.   Load Fail-Safe Defaults

When you press **<Enter>** on this item you get a confirmation dialog box with a message similar to:

Load Fail-Safe Defaults (Y/N)? N

Pressing "**Y**" loads the BIOS default values for the most stable, minimal-performance system operations.

3-9.   Load Optimized Defaults

When you press **<Enter>** on this item you get a confirmation dialog box with a message similar to:

Load Optimized Defaults (Y/N)? N

Pressing "**Y**" loads the default values that are factory settings for optimal performance system operations.

3-10. Set Supervisor Password

Can let you enter and change the options of the setup menus.

3-11. Set User Password

Set Password: Can enter but do not have the right to change the options of the setup menus. When you select this function, the following message will appear at the center of the screen to assist you in creating a password.

ENTER PASSWORD:

Type the password, up to eight characters in length, and press **<Enter>**. The password typed now will clear any previously entered password from CMOS memory. You will be asked to confirm the password. Type the password again and press **<Enter>**. You may also press **<Esc>** to abort the selection and not enter a password.

To disable a password, just press **<Enter>** when you are prompted to enter the password. A message will confirm the password will be disabled. Once the password is disabled, the system will boot and you can enter Setup freely.

PASSWORD DISABLED.

When a password has been enabled, you will be prompted to enter it every time you try to enter Setup. This prevents an unauthorized person from changing any part of your system configuration. Additionally, when a password is enabled, you can also require the BIOS to request a password every time your system is rebooted. This would prevent unauthorized use of your computer. You determine when the password is required within the BIOS Features Setup Menu and its Security option. If the Security option is set to *System*, the password will be required both at boot and at entry to Setup. If you set to *Setup*, prompting only occurs when trying to enter Setup.

3-12. Save & Exit Setup

Pressing **<Enter>** on this item asks for confirmation:

<div align="center">

Save to CMOS and EXIT (Y/N)? Y

</div>

Pressing "**Y**" stores the selections made in the menus in CMOS - a special section of memory that stays on after you turn your system off. The next time you boot your computer, the BIOS configures your system according to the Setup selections stored in CMOS. After saving the values the system is restarted again.

3-13. Exit Without Saving

Pressing **<Enter>** on this item asks for confirmation:

<div align="center">

Quit without saving (Y/N)? Y

</div>

This allows you to exit Setup without storing in CMOS any change. The previous selections remain in effect. This exits the Setup utility and restarts your computer.

Appendix A.   NVIDIA nForce Chipset Drivers Installation for Windows® 2000

After you've installed Windows® 2000, you will need to install the NVIDIA nForce chipset drivers. Step by step instructions on how to do this are found in the following section.

Note

After installingWindows® 2000, the quality of your display will be poor because it will be set to 640*480 and 16 colors. For the best screen capture quality, install the VGA drivers and set the desktop to 800*600 using True Color.

Note

Under Windows® 2000 operating system you have to install the service pack 2 (SP2) or latest service pack to get the best system performance. You can download SP2 at Microsoft® WEB site.

Note

Details of the Windows® 2000 operating system will not be mentioned in this manual. If you have any problems with Windows® 2000 installation, operations, or settings, please refer to your Windows® 2000 user's manual or other databases provided by Microsoft® Corporation.

Insert the nForce series CD into your CD-ROM drive, it should execute the program automatically. If not, you can go to the CD location and execute the execution file at the main directory of the CD. After it has been executed you will see the screen below.

Step 1: Move the cursor to "**NVIDIA nForce Chipset Driver**" and click on it. You will go to the next screen.

Step 2: The nForce driver setup InstallShield® wizard shows up, and it will go to the next screen for a while.

Step 3: You will now see the welcome screen and its dialogue box. Click "**Next>**" to go on.

Step 4: Program will start to install all drivers the system needs. The installer will show the install progress percentage.

Note

The version you see will be change, because we may change the drivers or change the CD version. If happened, the version may different with this picture, but the install process won't be change at all.

Step 5: the "**Digital Signature Not Found**" screen show up, click "**Yes**" to go on.

Step 6: When the installation is complete, the installer will ask you to restart your computer. We suggest that you choose "**Yes, I want to restart my computer now.**" then click the "**Finish**" button to restart your computer to finish the driver updates.

Step 7: When OS restart, the "**Digital Signature Not Found**" screen show up, click "**Yes**" to go on.

Step 8: System found new hardware (NVIDIA[®]

nForce™ Audio), click "**Finish**" to go on.   restart your computer.
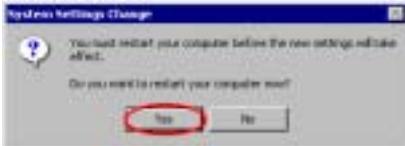
Step 9: System will ask you to restart your computer. We suggest that you choose "**Yes**" to

Step 10: When OS restart, you can then check the "**Device Manager**" to see that the devices are properly installed.

MEMO
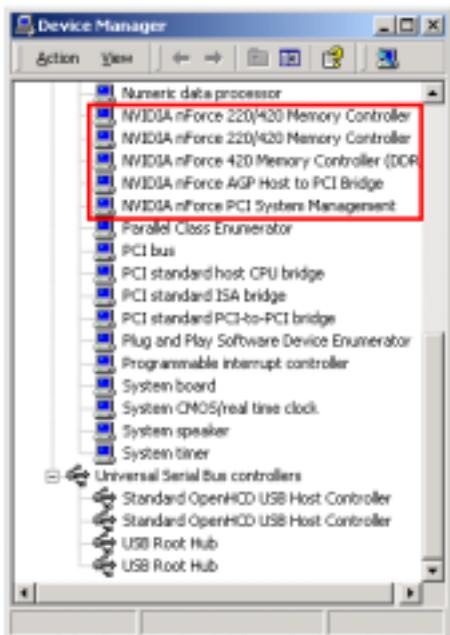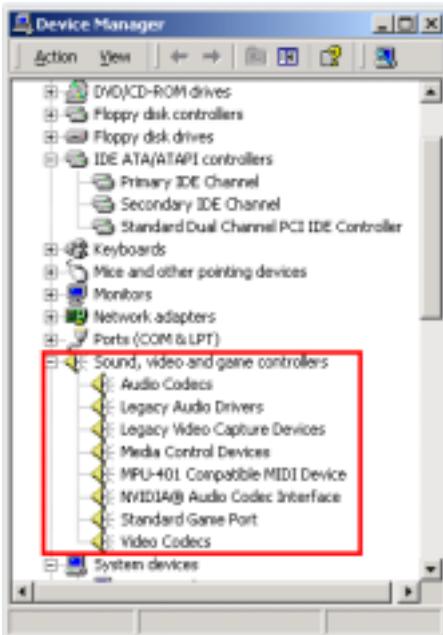
Appendix B. NVIDIA VGA Drivers Installation for Windows® 2000

After you've installed Windows® 2000 and NVIDIA nForce chipset drivers, you will need to install the NVIDIA VGA drivers. Step by step instructions on how to do this are found in the following section.

The following description will tell you how to install the Winbond hardware monitor system and use it. Insert the nForce series CD into your CD-ROM drive. It should execute the program automatically. If not, you can go to the CD location and execute the execution file from the main directory of this CD. After it is executed, you will see the screen below.

Step 1: Click "**NVIDIA VGA Driver**" button.

Step 2: The nForce driver setup InstallShield® wizard shows up, and it will go to the next screen for a while.

Step 3: The welcome screen and its dialogue box will appear. Click the "**Next>**" button to go on.
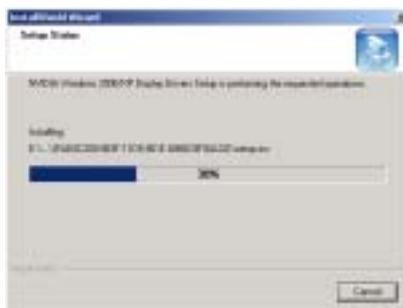
Step 4: Program will start to install drivers the system needs. The installer will show the install progress percentage.

Step 5: When the installation is complete, the installer will ask you to restart your computer. We suggest that you choose "**Yes, I want to restart my computer now.**" then click the "**Finish**" button to restart your computer to finish the driver update.


Step 6: When OS restart, you can then check the "**Device Manager**" to see that the VGA device are properly installed.

Appendix C. Installing The Winbond Hardware Monitor System

The Winbond hardware monitor system is a self-diagnostic system for PCs. It will protect PC hardware by monitoring several critical items including power supply voltage, processor and system fan speeds, and processor and system temperatures. These items are important for the operation of the system; errors may result in permanent damage to the PC. Once any item is out of its normal range, a warning message will pop up and remind the user to take proper measures.

The following description will tell you how to install the Winbond hardware monitor system and use it. Insert the nForce series CD into your CD-ROM drive. It should execute the program automatically. If not, you can go to the CD location and execute the execution file from the main directory of this CD. After it is executed, you will see the screen below.


Step 1: Click "**Utility**" button.

Step 2: Click "**Windbond Hardware Doctor**" button to start install the hardware monitor system utility.

Step 3: Then hardware doctor setup program is preparing the InstallShield® wizard to guide you to the rest of the setup process.

Step 4: The welcome screen and its dialogue box will appear. Click the "**Next>**" button to go on.
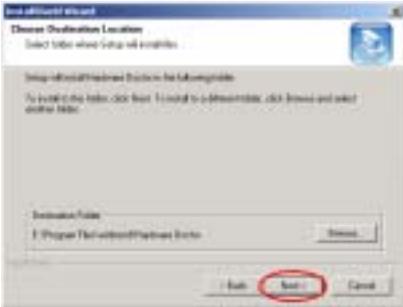
Step 5: Now you can choose the destination location where you want to install the drivers. We suggest that you use the default folder as the destination location. After checking the folder click "**Next>**" button.
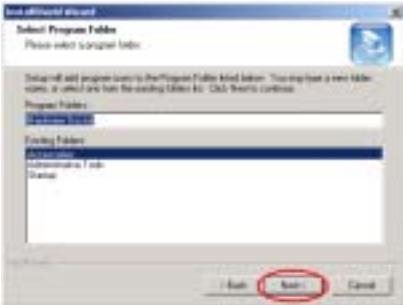
Step 6: You can choose the name of the program folder. We suggest you use the default program folder name. After checking the program folder name then click "**Next>**" button.

Step 7: Program will start to install drivers the system needs. The installer will show the install progress percentage.

Step 8: When the installation is complete, the installer will ask you to restart your computer. We suggest that you choose "**Yes, I want to restart my computer now.**" then click the "**Finish**" button to restart your computer to finish the driver update.
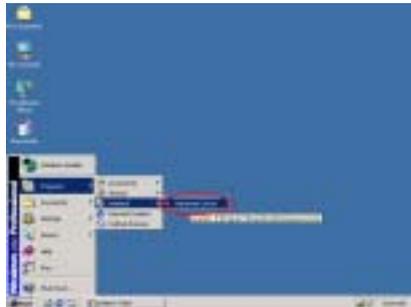
Step 9: You can select the program from Start toolbar, and then choose "**Programs**". You will see the item called "**winbond**" ➔ "**Hardware Doctor**". Click it, and you will be able to see the screen below.

Step 10: This screen shows the hardware monitor system screen. It shows information about system temperature, voltages and fan speed. Some items can let you set the warning range; you can optimize values by setting them in accordance your system.
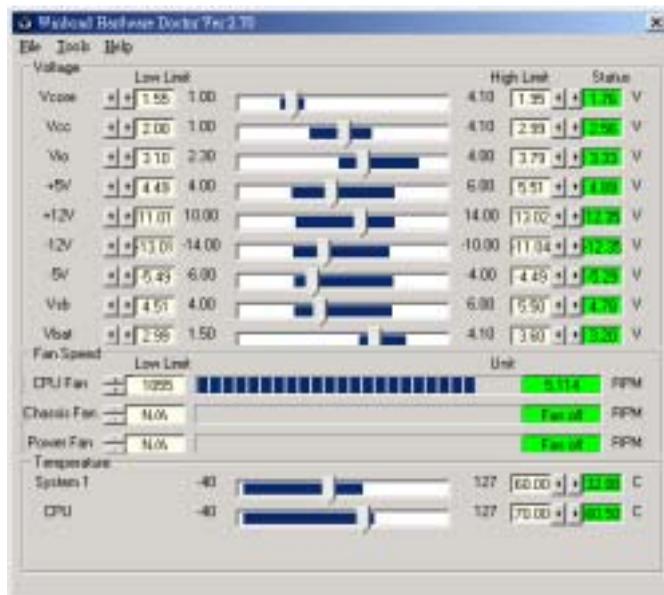
Appendix D.   BIOS Update Guide

We will use the SE6 motherboard as an example. All other models follow the same process. First, know your motherboard's model name and version number. You can find it on one slot or at the back of the motherboard. Each motherboard always has the label at the same place as shown in the photo below.

You will find the model name and version on the white sticker.

2. Know the current BIOS ID.
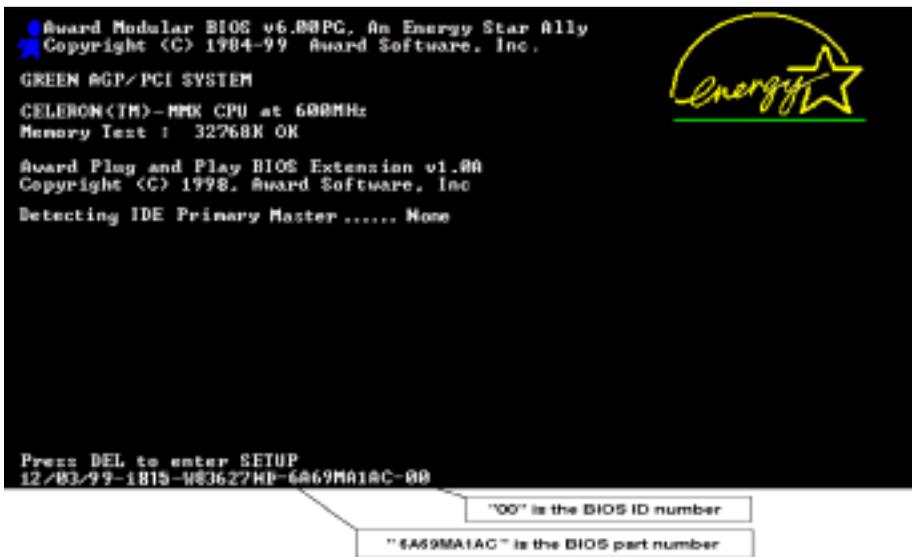
For example, in this case, the current BIOS ID is "**00**". If you already have the latest BIOS, no any update action is necessary. If your BIOS is not the latest BIOS, go on to the next step.

3. Download the correct BIOS file from our Web site.

[SE6]

Filename: NOTE:
SE6SW.EXE
Date: 07/06/2000   1. Fixes SCSI HDD detection problem
ID: SW   when booting from SCSI CD-ROM
                         and executing FDISK.
                      2. Supports 512MB memory modules.
                      3. Sets the In-Order Queue Depth
                         default to 4, increasing the integrated
                         video performance.

Go to our Web site and choose the correct BIOS file and download it.

4. Double click the download file, it will self-extract to .bin file.

```
LHA's SFX 2.13S (c) Yoshi, 1991

SE6_SW.BIN ...............................
```

5. Make a bootable floppy disk and copy the necessary files onto it.

You may make a floppy disk bootable either in Explorer or in the DOS prompt mode.

```
[c:\]format a: /s
```

After formatting and transferring the system to the floppy disk, copy two files into it. One is the BIOS flash utility "**awdflash.exe**" and the other is the decompressed BIOS binary file.

6. Boot off floppy disk.
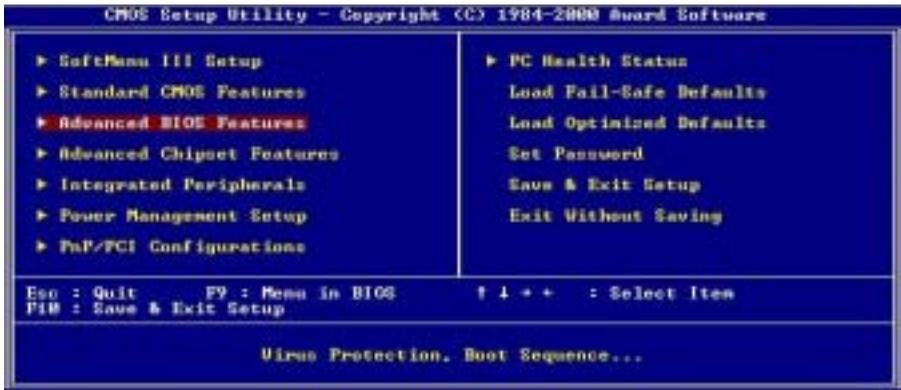
Please set the first boot sequence as "**floppy**" in BIOS and boot off the floppy disk.
7. Flash the BIOS in pure DOS mode.

```
A:\>awdflash se6_sw.bin /cc /cd /cp /py /sn /cks /r_
```

After successfully booting off of the floppy, execute the flash utility according to these instructions.

Note

We strongly recommend you use the above parameters following "**awdflash**" to flash your BIOS. **DO NOT** just type "**awdflash se6_sw.bin**" without the above parameters following the .bin file.

Note

The Award flash utility can't be completed under a Windows® 95/98 or Windows® NT, Windows® 2000, Windows® XP, Windows® ME environment, you must be in a pure DOS environment.

You should check which BIOS file is to be used with your motherboard, don't flash with the wrong BIOS file. Otherwise, you may cause system malfunctions.

Note

Please do not use the Award flash memory writer version that earlier than Version 7.52C to flash your NV7m motherboard BIOS. Otherwise, it may cause flash fail or un-anticipate problems.

Note

During the updating, the progress will be measured by white blocks. The last four *blue* blocks of the flash update process represent the "**BIOS boot block**". The BIOS boot block is used to prevent the BIOS from becoming corrupt during programming. It should not be programmed every time. If this "**BIOS boot block**" remains intact when the BIOS becomes corrupt during programming, then you can boot from a bootable floppy next time you boot your computer. This allows you to flash your BIOS again without the need for technical support from the dealer.

Appendix E.   Troubleshooting (Need Assistance?)

Motherboard Troubleshooting:

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 systems hang when I update the BIOS or set the wrong processor parameters, what should I do?

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

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, before filling in the technical support form, 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 benefit from our technical support. (You can refer to the examples given below)

📄

Example 1: With a system including: motherboard (with processor, DDR DRAM, etc.) HDD, CD-ROM, FDD, graphic adapter, MPEG-2 card, SCSI adapter, audio card, etc. After the system is assembled, if you cannot boot up, 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, processor on the technical support form (refer to main instructions), and describe the problem in the problem description 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, processor (refer to main instructions), and give a description of the problem.

📄

Example 2: With a system including: motherboard (with processor, DDR DRAM, etc.) HDD, CD-ROM, FDD, graphic adapter, MPEG-2 card, SCSI adapter, audio card, etc. After assembly and after having installed the audio card driver, when you restart the system, when it runs the audio card driver, it resets automatically. This problem may be due to the audio 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 function the line that loads the audio card driver, add a remark REM, in order to disable the audio 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**" right now.

ᕲ **Instructions** ᕲ

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

1*. **Model Name:** Note the model number given in your user's manual.

For example: NV7m, SD7-533, KR7A-133, KR7A-133R, etc.

2*. **Motherboard PCB Version:** Note the motherboard PCB version labeled on the motherboard slot or back side as "**Rev:*.****".

For example: REV: 1.01

3*. **BIOS ID & Part Number:** See *Appendix D* for detialed information.

4. **DriverVersion:** Note the driver version number indicated on the device driver disk or CD-ROM (if have) as "**Release *.****" (or Rev. *.**, Version *.**). For example:

CD-Title Rev. No.

BX-1.54E

IDE Device Driver
Drivers Diskette Release 1.03M

Floppy Disk Driver Rev. No.
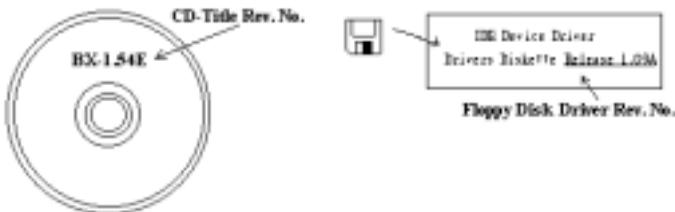
5[*].   **OS/Applications:** Indicate the operating system and the applications you are running on the system.

For example: Windows® 98 SE, Windows® 2000, Windows® XP, etc.

6[*].   **Processor Type:** Indicate the brand and the speed (MHz) of your CPU.

Example: (A) In the "**Brand**" space, write "**AMD**", in the "**Specifications**" space, write " **Athlon™ 1 GHz**"。

7.   **Hard Disk Drive:** 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.

For example: In the "**Hard Disk Drive**" space, check the box, in the "**Brand**" space, write "**SEAGATE**", in the "**Specifications**" space, write "**Darracuda ATA2 ST330631A (30 GB)**".

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.

For example: In the "**CD-ROM Drive**" space, check the box, in the "**Brand**" space, write "**Pioneer**", in the "**Specifications**" space, write "**DVD-16**".

9.   **System Memory (DDR SDRAM):** Indicate the brand and specifications (DDR DIMM) of your system memory. Examples: Density, Description, Module Components, Module Part Number, CAS Latency, 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 DIMM module, as 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 can't identify the problem's origin, indicate all the add-on cards inserted into your system. Remember to identify which card insert on which slot.

For example: Creative SB Value sound card insert on PCI slot 3.

11.   **Problem Description:** Please tell us problem you met. The more detailed, the better as our engineers can help to find the solution more quickly. If the problem is random occurance, it may be hard to simulate the problem and may take more time to find a solution.

Note

Items between the "*****" are absolutely necessary.

Technical Support Form

🏭 **Company Name:**   ☎ **Phone Number:**

👤 **Contact Person:**   📠 **Fax Number:**

📫 **E-mail Address:**

Model Name	*	BIOS ID & Part Number	*
Motherboard PCB Version		Driver Version	
OS/Applications	*		

Hardware Name		Brand	Specifications
Processor Type		*	
Hard Disk Drive	☐IDE1 ☐IDE2		
CD-ROM Drive	☐IDE1 ☐IDE2		
System Memory (DDRDRAM)			
Add-On Card			

Problem Description:

_____

_____

_____

_____

_____

_____

_____

_____

_____

Appendix F.   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 the Program Download Area of our 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

   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.

5. **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:

In North America and South America please contact:
ABIT Computer (USA) Corporation

46808 Lakeview Blvd.
Fremont, California 94538, U.S.A.
sales@abit-usa.com
technical@abit-usa.com
Tel: 1-510-623-0500
Fax: 1-510-623-1092

In the UK and Ireland:
ABIT Computer Corporation Ltd.

Unit 3, 24-26 Boulton Road
Stevenage, Herts
SG1 4QX, UK
abituksales@compuserve.com
abituktech@compuserve.com
Tel: 44-1438-228888
Fax: 44-1438-226333

In Germany and Benelux (Belgium, Netherlands, Luxembourg) countries:
AMOR Computer B.V. (ABIT's European Office)

Van Coehoornstraat 7,
5916 PH Venlo, The Netherlands
sales@abit.nl
technical@abit.nl
Tel: 31-77-3204428
Fax: 31-77-3204420

All other territories not covered above please contact:

Taiwan Head Office

When contacting our headquarters please note we are located in Taiwan and we are 8+ GMT time. In addition, we have holidays that may be different from those in your country.

ABIT Computer Corporation

3F-7, No. 79, Sec. 1, Hsin Tai Wu Rd.
Hsi Chi, Taipei Hsien, Taiwan
sales@abit.com.tw
market@abit.com.tw
technical@abit.com.tw
Tel: 886-2-2698-1888
Fax: 886-2-2698-1811

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.

6. **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.

7. Listed below are some chipset vendors' WEB site addresses for your reference:

    ALi's WEB site: http://www.ali.com.tw/
    AMD's WEB site: http://www.amd.com/
    Highpoint Technology Inc.'s WEB site: http://www.highpoint-tech.com/
    Intel's WEB site: http://www.intel.com/
    SiS' WEB site: http://www.sis.com.tw/
    VIA's WEB site: http://www.via.com.tw/

Thank you, ABIT Computer Corporation

http://www.abit.com.tw