SY-KT600 DRAGON Plus

Motherboard

****

AMD Athlon & Duron Processors Supported

VIA KT600 AGP/PCI Motherboard

100/133/166/200 MHz Front Side Bus supported

ATX Form Factor

****

User's Manual

SOYO™   SY-KT600 DRAGON Plus

FC Tested To Comply
With FCC Standards
FOR HOME OR OFFICE USE

Edition: August 2003
Version 1.1
KT600 DRAGON Plus SERIES

100% POST CONSUMER RECYCLED PAPER

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Chapter 1

MOTHERBOARD DESCRIPTION

1-1 INTRODUCTION

The **SY-KT600 DRAGON Plus** AGP/PCI motherboard is a high performance Socket A, ATX form-factor system board. The **SY-KT600 DRAGON Plus** uses VIA Chipset technology and supports AMD Socket class processors. This motherboard is fully compatible with industry standards and adds many technical enhancements.

1-2 UNPACKING THE MOTHERBOARD

When unpacking the motherboard, check for the following items:

◆ The SY-KT600 DRAGON Plus AGP/PCI motherboard

◆ The user manual

◆ The Installation CD-ROM

◆ SOYO Bonus Pack CD-ROM

◆ One IDE Device ATA 66/100/133 Flat Cable
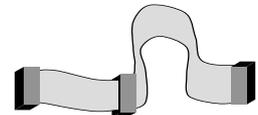
◆ One Floppy Disk Drive Flat Cable
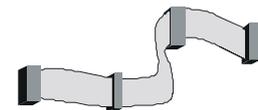
◆ One Heat Sink Compound

◆ One 1394 Bracket
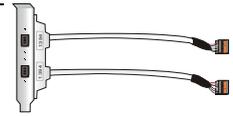
◆ One Back Panel
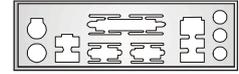
> **STOP**
>
> ***Warning:*** Do not unpack the motherboard from its anti-static packaging until you are ready to install it.

Like most electronic equipment, your motherboard may be damaged by electrostatic discharge. To avoid permanent damage to components ground yourself while working by using a grounding strap. Otherwise, ground yourself frequently by touching the unpainted portion of the computer chassis to drain the static charges.

Handle the motherboard carefully, holding it by the edges.

You are now ready to start the installation.

1-3 KEY FEATURES

CPU	Supports AMD 462 pins Socket A processors: ➢ Athlon XP (Palomino/Thoroughbred/Barton) (200/266/333/400 MHz FSB) ➢ Duron/Morgan
Chipset	AMD® KT600/ 8237 Chipset
Memory	➢ Supports PC2100, PC2700 and PC3200 DDR (non-registered and ECC) memory modules.
AGP	1x AGP master 4x/8x slot (1.5v only)
PCI	5x 32-bit bus master PCI slots
I/O	ITE IT8705F Super I/O controller supporting: ➢ Floppy disk controller ➢ Parallel port (SPP, EPP and ECP compliant) ➢ 2x 16550A compatible RS232 serial ports ➢ IrDA compatible infrared port ➢ PS/2 Keyboard and mouse ➢ 1x game port pin header ➢ Hardware monitor for monitoring temperatures, voltages and fan speeds in the system.
Storage	➢ 8237 Integrated Parallel ATA controller supporting up to 4x UDMA 33/66/100/133 Parallel ATA devices. ➢ 8237 Integrated Serial ATA controller supporting up to 2x UDMA 150 hard disks in normal or RAID 0,1 mode

USB 2.0	8x USB 2.0 compliant ports (4x on rear IO panel, 4x pin headers.)
IEEE 1394	Onboard VIA VT6307 IEEE1394 Firewire controller with 2x pin header
Sound	VT1616 6 channel Audio Codec
Network	10/100 MBps 100Base-T Ethernet controller, supporting Wake-On-Lan (WOL)
BIOS	➤ Power Failure resume function to allow the system to turn on or off after a power failure, which is indispensable for server systems. ➤ Wake On Ring and Power On by Alarm to allow your system to wake up from suspend or power on through the modem or RTC alarm. ➤ Multiple boot, allowing your system to boot from for example CD-ROM

1-4　HANDLING THE MOTHERBOARD

To avoid damage to your motherboard, please follow these simple rules while unpacking:

➢ Before handling the motherboard, ground yourself by grasping an unpainted portion of the system's metal chassis.

➢ Remove the motherboard from its anti-static packaging. Hold the motherboard by the edges and avoid touching its components.

➢ Check the motherboard for damage. If any chip appears loose, press carefully to set it firmly in its socket.

> *Warning:* Do not apply power if the motherboard appears damaged. If there is damage to the board, contact your dealer immediately.

1-5　ELECTROSTATIC DISCHARGE PRECAUTIONS

Be sure to ground yourself before handling the motherboard or other system components. Electrostatic discharge can easily damage the components. Note that you must take special precautions when handling the motherboard in dry or air-conditioned environment.

To protect your equipment from electrostatic discharge, take the following precautions:

➢ Do not remove the anti-static packaging until you are ready to install.

➢ Ground yourself before removing any system component from its protective anti-static packaging. (To ground yourself, grasp the expansion slot covers or other unpainted portions of the computer chassis).

➢ Frequently ground yourself while working or use a grounding strap.

➢ Handle the motherboard by its edges and avoid touching its components.

1-6 SY-KT600 DRAGON Plus MOTHERBOARD LAYOUT
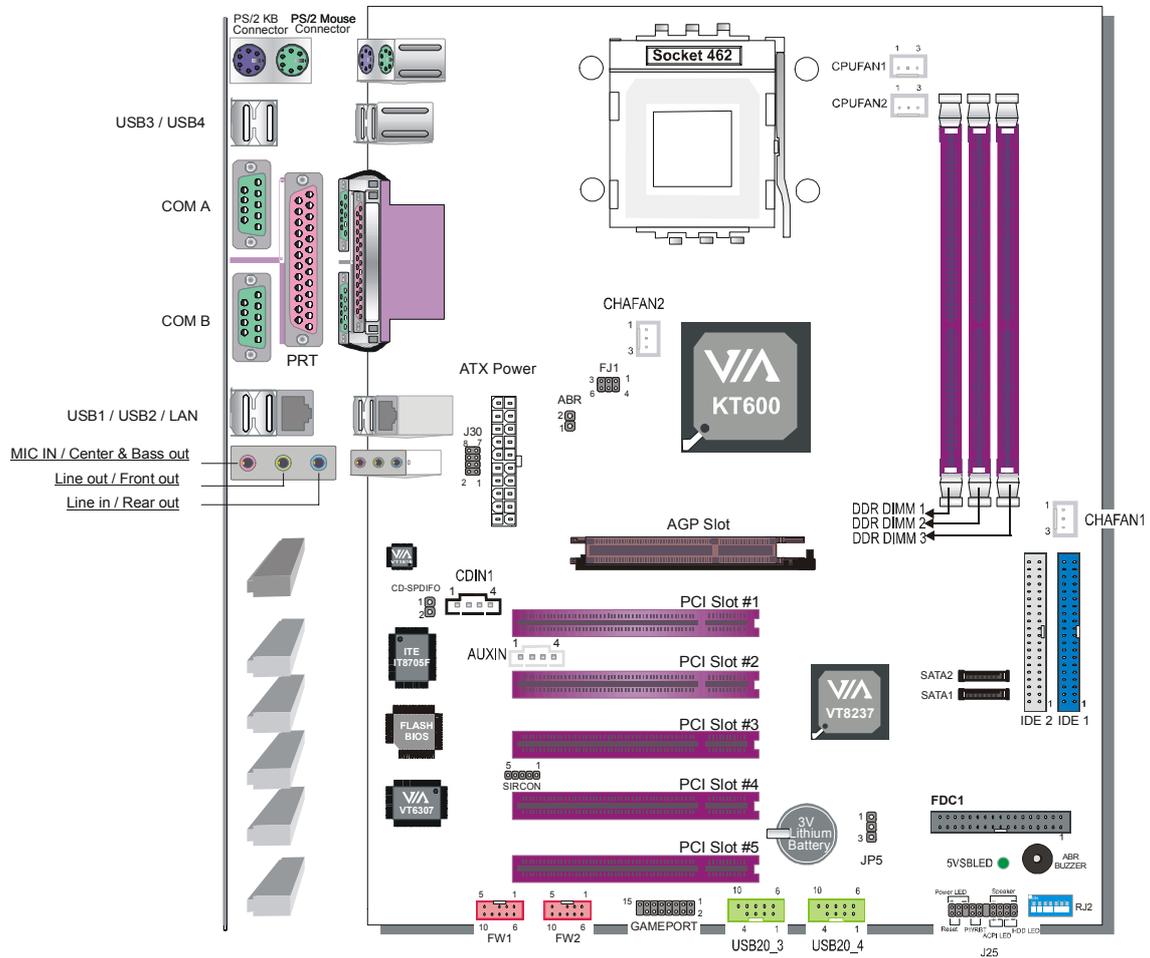
Back Panel   **SY-KT600 DRAGON Plus Platform**

1-7 SY-KT600 DRAGON Plus MOTHERBOARD COMPONENTS

A	**Microphone and LAN Status LED Connector (J30)** This connector allows you to extend your microphone connector and LAN Status LED to your front panel. Check the **5. MIC & LED Connector (J30)** paragraph on page 37 for a lay-out of this header.
B	**ATX Power Supply connector** This connector is to connect the ATX connector of your ATX 12V compliant power supply to the motherboard. For more details on this connector, please check the **F. ATX Power Supply** paragraph on page 38.
C	**ABR (Anti Burn Regulator) Jumper** SOYO's ABR (Anti Burn Regulator) is specially designed hardware circuits that works hand in hand with the CPU's internal sensor in monitoring the temperature of the CPU and prevent it from overheating. This jumper enables or disables this function. For more information, please check the **ABR (Anti Burn Regulator)** paragraph on page 20.
D	**Chassis Cooling Fan (CHAFAN2)** This connector is to connect your chassis fan to your motherboard. This motherboard supports up to 2 chassis fans. It allows you to monitor the speed of CHAFAN1 in CMOS setup or by using the SOYO Hardware Monitor software. Please check the **(2)Chassis Cooling Fan (CHAFAN1,CHAFAN2)** paragraph on page 34 for more details.
E	**Socket 462 (Socket A) connector** This is the Zif (Zero Insertion Force) socket for your AMD Athlon®, Athlon XP®, Duron® or Morgan® CPU. For more information on how to install your CPU, check the CPU Mount Procedure paragraph on page 16.

F	**VIA Apollo KT600 North Bridge** The advanced FastStream64 DDR400 Memory Controller on the VIA Apollo KT600 interweaves with the 400MHz Front Side Bus to provide a perfectly balanced subsystem, greatly reducing data latency and enabling searing performance from the latest AMD Athlon™ XP processors. In addition, the KT600 supports the very latest I/O technologies including AGP8X, deriving maximum performance from the most powerful graphics processors.
G	**AGP Slot** This is the AGP expansion slot for your video card. Note that it can only work with 1.5v AGP cards. For more information, check the **Step 3 Installation of Expansion Cards** paragraph on page 29.
H	**CPU Cooling Fan (CPUFAN1, 2) connectors** With these connectors you can attach the CPU fan or fans to your motherboard. They supply power and (in the case of CPUFAN1) allow you to monitor the speed of the FAN via the SOYO Hardware Monitor software or via CMOS setup. For more details on the lay-out of these connectors, check the **(1) CPU Cooling FAN (CPUFAN1, CPUFAN2)** paragraph on page 33.
I	**DDR DIMM Banks** These 4, 184 pin memory slots are to install your system memory in. They support up to 3GB of memory. For more details check the **Step 2 Install Memory Module** paragraph on page 22.
J	**FJ1 FSB Setting Jumper** This dipswitch is to set the multiplier of an unlocked CPU. Please check the **FJ1** paragraph on page 16 for more details.
K	**Chassis Cooling Fan (CHAFAN1)** This connector is to connect your chassis fan to your motherboard. This motherboard supports up to 2 chassis fans. It allows you to monitor the speed of CHAFAN1 in CMOS setup or by using the SOYO Hardware Monitor software. Please check the **(2)Chassis Cooling Fan (CHAFAN1,CHAFAN2)** paragraph on page 34 for more details.

L	**Bus Mastering EIDE/ATAPI Ports** These connectors is to attach your IDE devices to. These connectors can support up to 4 IDE devices, 1 master and 1 slave per connector. Please check the **A. IDE Device Installation (HDD, CD-ROM)** paragraph on page 24 for more details.
M	**Serial ATA Harddisk connectors (SATA1, SATA2)** These connectors are to attach your UDMA150 SATA harddisks to. For more details, please check the **A. IDE Device Installation (HDD, CD-ROM)** paragraph on page 24.
N	**VIA VT8237 South Bridge** Featuring the first ever integrated combined Serial ATA/RAID controller, the VT8237 is the most advanced South Bridge available on the market today. With its integrated dual channel native Serial ATA/RAID controller supplying 150MB/s of bandwidth per port and support for RAID 0, RAID 1, and RAID 0+1, the VT8237 delivers the highest disk data transfer rates for maximum system performance and provides the most advanced fault tolerant solution for optimum data integrity. The VT8237 also features support for up to four Parallel ATA-133 devices, extending flexibility to the system integrator by allowing for mainstream or value configurations leveraging the existing technology standard. Additional features on the VIA VT8237 South Bridge include support for up to eight USB 2.0 ports, and integrated PCI support.
O	**Floppy disk connector** This motherboard supports one floppydrive. For more details, please check the **B. Floppy Drive Installation** paragraph on page 25.
P	**Onboard buzzer** This buzzer gives off system beeps.
Q	**5V Stand-By Indicator LED** The power supply will always supply a 5V standby voltage to your motherboard so that it can power on via for example Wake On Lan technology. This LED shows that your power supply is supplying this standby voltage to your motherboard.
R	**RJ2 Dipswitch** This dipswitch is to set the multiplier of an unlocked CPU. Please check the **RJ2 Dipswitch** paragraph on page 21 for more details.

S	**J25 Front panel connections header** This header contains the connections to the front panel on the case. For more details, please check the **C. Front Panel Connections** paragraph on page 26.
T	**CMOS Clear Jumper (JP5)** This jumper allows you to clear your CMOS RAM contents in order to reset your system configuration. For more details on this check the **G. CMOS Clear (JP5)** paragraph on page 40.
U	**3V Lithium Battery** This battery supplies power to the CMOS RAM. As long as the battery supplies enough power, the contents of your CMOS RAM will be valid. CMOS RAM contents are configured by CMOS setup, and can be cleared by JP5. For more details on this check the **G. CMOS Clear (JP5)** paragraph on page 40.
V	**USB 2.0 connectors** These connectors support 2 USB 2.0 ports per connector. For details on the lay-out, please check the **5. Universal Serial Bus (USB1/USB2, USB20_3/USB20_4)** paragraph on page30.
W	**GAME1 Gameport connector** This connector allows you to connect a gameport to your system. For more details on pin layout for the gameport, please check the **6. Onboard Game port/audio (Audio Speakers connections)**
X	**Serial Infrared (IrDA) device header** This header allows you to connect an IrDA receiver to the motherboard. You can find the lay-out in the **Standard Infrared (SIRCON)** paragraph on page 32.
Y	**VIA VT6307 IEEE 1394 Firewire controller** The VIA Fire II VT6307 provides direct connectivity between the PCI and 1394 serial buses. With three ports, the VIA Fire II VT6307 is designed to provide scalability and manageability in IEEE 1394 network solutions for home networking and multiple PC access to a single internet connection. Each individual port detects connected device types and automatically configures data speeds to either 100, 200 or 400 Mbps, speeds well suited to multi-streaming I/O requirements. A programmable PCI power management mode (specification 1.1) shuts down power to unconnected ports while the sleep function maximizes power efficiency of connected ports.

Chapter 2

HARDWARE INSTALLATION

Congratulations on owning a-**SY-KT600 DRAGON Plus**. You are about to install and connect your new motherboard.

> *Note:* Do not unpack the motherboard from its protective anti-static packaging until you have made the following preparations.

2-1 PREPARATIONS

Gather and prepare all the following hardware equipment to complete the installation successfully:

1. Socket A processor with built-in CPU cooling fan (boxed type)

2. DDR RAM module (s)

3. Computer case and chassis with adequate power supply unit

4. Monitor

5. PS/2 Keyboard

6. Pointing Device (PS/2 mouse)

7. Speaker(s) (optional)

8. Disk Drives: HDD, CD-ROM, Floppy drive…

9. External Peripherals: Printer, Plotter, and Modem (optional)

10. Internal Peripherals: Modem and LAN cards (optional)

2-2 INSTALLATION GUIDE

We will now begin the installation process. Please follow the step-by-step procedure designed to lead you to a complete and correct installation.

Step 1- Install the Central Processing Unit (CPU)

Step 2- Install memory modules

Step 3- Install expansion cards

Step 4- Connect cables, case wires, and power supply

Step 5- Power on and enter BIOS setup

Step 6- Install supporting software tools. See Chapter 4 for more info.

> **STOP**
>
> *Warning:* Turn off the power to the motherboard, system chassis, and peripheral devices before performing any work on the motherboard or system.

BEGIN THE INSTALLATION

Step 1 Install the CPU

CPU Mount Procedure: To mount the AMD® K7 Athlon XP or Duron™ processor that you have purchased separately, follow these instructions.

1. Lift the socket handle up to a vertical position.

2.　Align the blunt edge of the CPU with the matching pinhole distinctive edge on the socket.
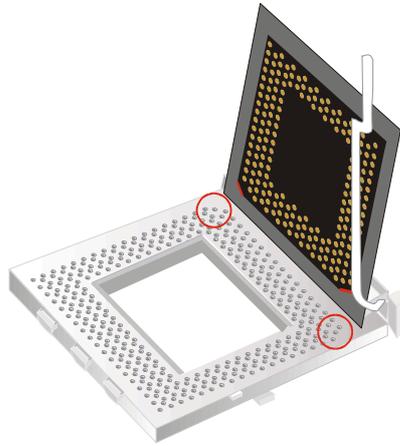
3.　Seat the processor in the socket completely and without forcing.
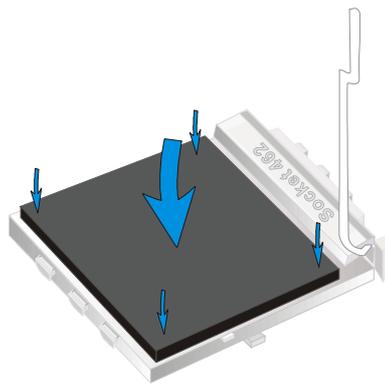
4.　Then close the socket handle to secure the CPU in place.
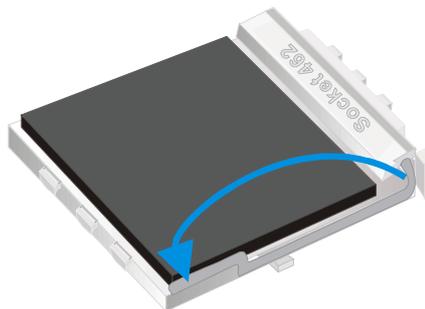
	Remember to connect the CPU Cooling Fan to the appropriate power connector on the motherboard. The fan is a key component that will ensure system stability. It prevents overheating, therefore prolonging the life of your CPU.

5.   Set the jumpers on the FJ1 jumper block to the correct FSB for your CPU.

FJ1	100 MHz	133 MHz	166 MHz	200 MHz
Clock Select	6 ▢ ▢ 3 5 ▢ ▢ 2 4 ▢ ▢ 1	6 ▢ ▢ 3 5 ▢ ▢ 2 4 ▢ ▢ 1	6 ▢ ▢ 3 5 ▢ ▢ 2 4 ▢ ▢ 1	6 ▢ ▢ 3 5 ▢ ▢ 2 4 ▢ ▢ 1
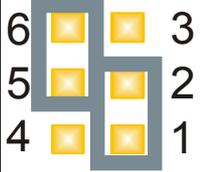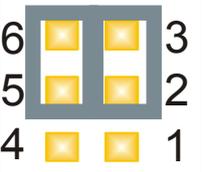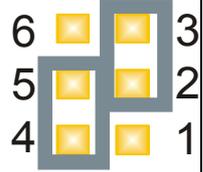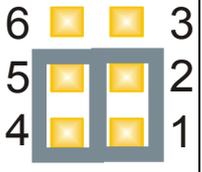
CPU Fan Installation

Your Socket A processor kit comes with a cooling fan. Mount the fan on the processor according to the instructions provided by the manufacturer. The fan is a key component that will ensure system stability. The fan prevents overheating, therefore prolonging the life of your CPU.

Note: Remember to connect the fan to the appropriate power source.

CPU Fan Mount Procedure: To prevent scratch or damage on the motherboard, please follow the instructions on how to mount the CPU fan properly.

1. Apply thermal paste to the die of the CPU.
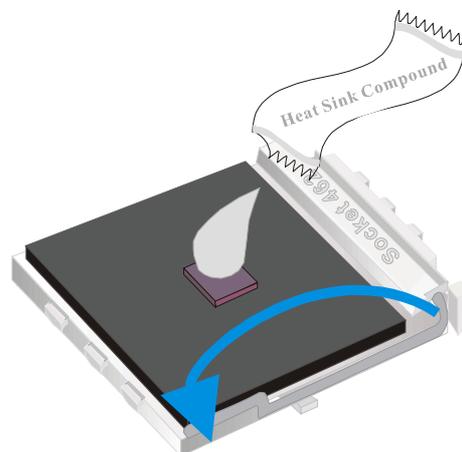
2. Make sure that the retaining clip is in this position before trying to install the heatsink. Notice that the clip is *not* symmetrical. The long end always attaches to the top of the socket (the end that reads "Socket 462"), while the short end engages the bottom of the socket. No matter which heatsink is used, the clip is always installed in the same manner.
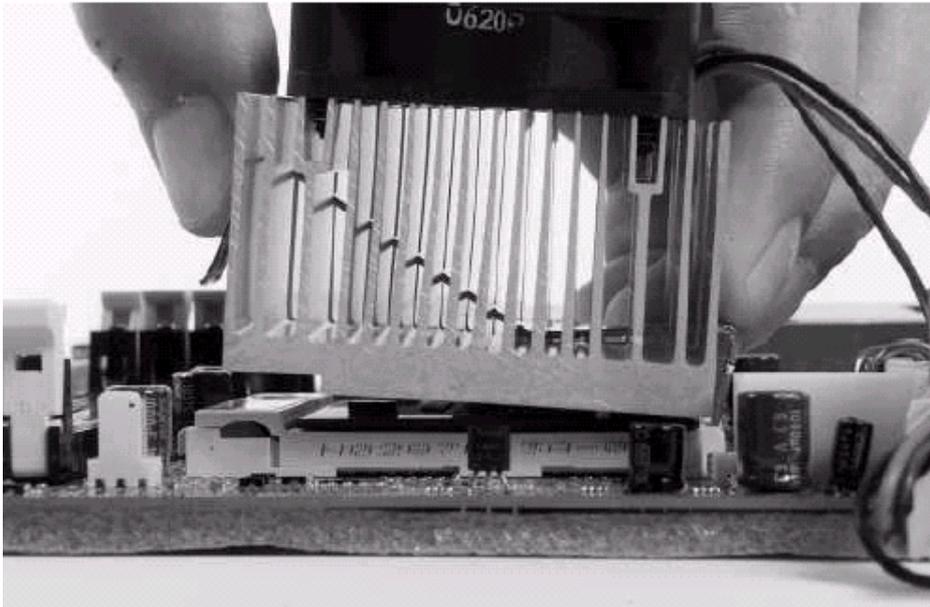
3. To install this clip, push firmly only on the end of the clip. To install the clip, typically requires 12 to 24 pounds of force.

Push downward.

Use caution!

4. The fans power connector should be connected to CPUFAN1.
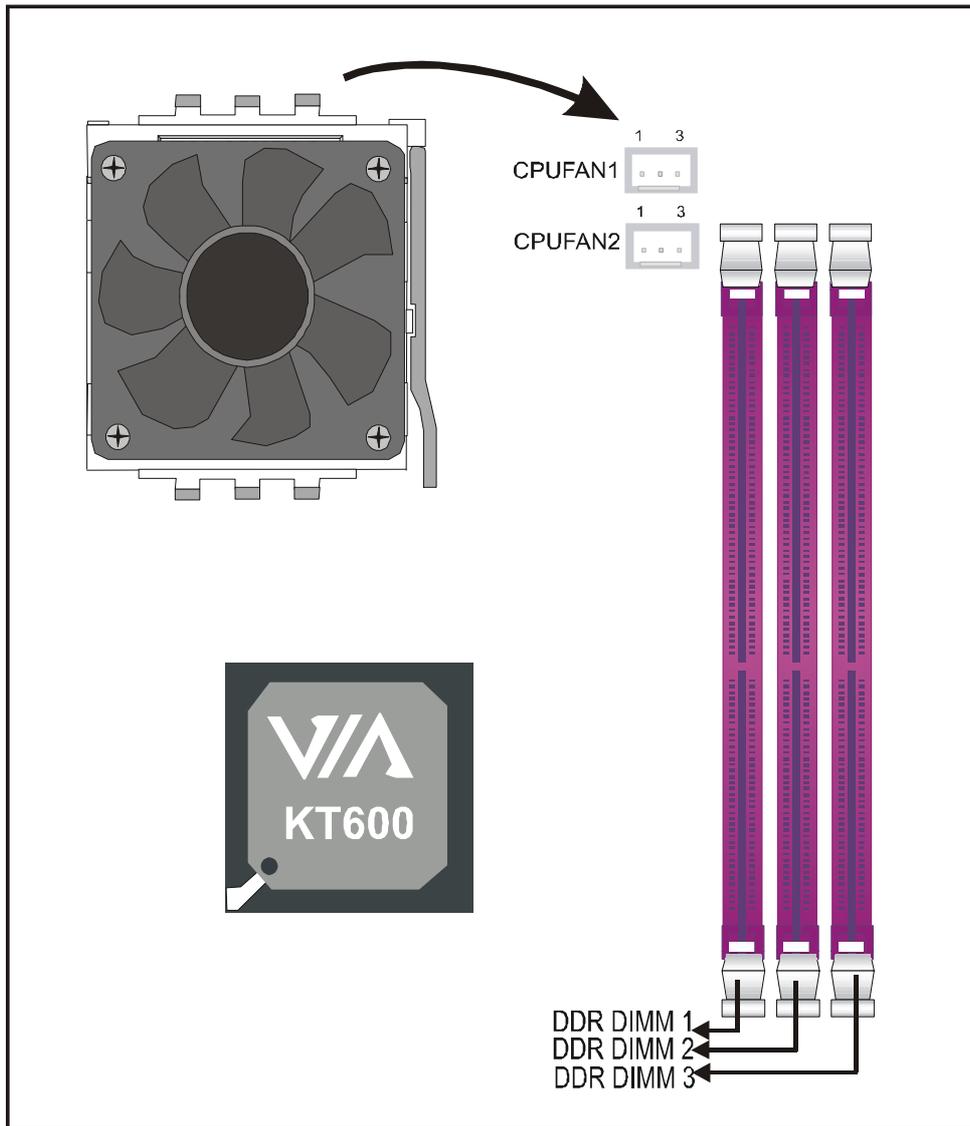
Note: If the fan is defective or Power connector is not connected to CPUFAN1, the system will enable Fan Off Control function. See below for more information on FOC function.

When the CPU temperature exceeds the temperature set in the CPU Temp. Protection in the BIOS setup, SOYO's Anti burn Regulator (ABR) will automatically shutdown the system and beep until the power button is pressed for one time. For more info about ABR, check page 25.

FOC (Fan-Off Control)

The newly designed SOYO "FOC" is based on the concept of total protection for CPU, which is very different from currently seen on the market. The H/W control function is used to see a passive security system of monitoring and warning. S/W Simultaneous Signal Follow-ups techniques and Auto Power Off System are included to prevent all possible damage caused by the malfunctioning of the CPU fan. With the help of "O/S On Time Monitoring And Warning" function, provided by the H/W monitoring system, the double-protection purpose is achieved.

 "FOC" includes the following functions:

(1) Simultaneous Signal Follow Ups**:** Before the system enters the O/S, H/W will detect the signals of the CPU fan pins, get their revolution information and send it to the BIOS.

(2) Auto Power Off System: If the BIOS receives the information of CPU fan revolution, it continues to function normally. If no signal is received, it will inform the system and disconnects the power supply immediately to protect the CPU from overheating.

*Note***:** The following must be observed to secure the normal functioning of "Fan-Off Control":

1. FOC only works on CPUFAN 1.

2. CPU fan with sensor pins must be used.

3. CPU fans approved by AMD are strongly recommended.

The "HOT KEY" function is provided for the CPU fans without sensor pins, to avoid the power off. Users may press the "Insert" key to jump over the "Power Off" mode; go to the BIOS and disable "FOC". Now system can be booted normally.

We provide the following user-friendly protection features:

1. Fan-Off Control: The motherboard detects the status of the CPU fan and protects the CPU by automatically disconnecting the power supply. The default value of this function is Enable. After booting

up, the user may disable it.

2. Heat Dissipation Paste: Heat Dissipation Paste is included for all Socket-A motherboards, to enhance the heat dissipation capability.

Furthermore, we strongly recommend our users to enable the function of H/W monitoring in the BIOS. This function, together with the FOC, provides the total protection to the CPU and allows it to maximize its performance.

ABR (Anti Burn Regulator)

SOYO's ABR (Anti Burn Regulator) is specially designed hardware circuits that works hand in hand with the CPU's internal sensor in monitoring the temperature of the CPU and prevent it from overheating.

Once the heat accumulated in the CPU is over the set limit. ABR will automatically shut down the system power and warns you with a beeping sound. To de-activate the beeping sound, **un-plug the AC power cord.** We recommend you to check the cause of the overheating and let the processor cool down before powering on the system.

> *Note:* **ABR supports AMD XP and Morgan CPU. Duron and Thunderbird CPU are not supported**

Some early versions of the 2400+ and 2600+ XP CPUs when used in this motherboard will automatically activate the ABR function, thus making a beeping sound and shut down your system. If this compatibility issue arises, you need to disable the ABR function via the ABR hardware jumper.

Setting	Enabled	Disabled
ABR Jumper	 1 2	 1 2

RJ2 Dipswitch

This dipswitch sets the ratio of your CPU. Note that this switch will only work if you have an unlocked CPU.

SW : OFF=1
         ON=0

RATIO UNDER 12.5

FID Codes **for SW 1 ~ 7**			
Four-Bit FID	Clock Multiplier	Four-Bit FID	Clock Multiplier
0000000	11.0	0000010	7.0
0010000	11.5	0010010	7.5
0001000	12.0	0001010	8.0
0011000	12.5	0011010	8.5
0000100	5.0	0000110	9.0
0010100	5.5	0010110	9.5
0001100	6.0	0001110	10.0
0011100	6.5	0011110	10.5

RATIO OVER 12.5

FID Codes **for SW 1 ~ 7**			
Four-Bit FID	Clock Multiplier	Four-Bit FID	Clock Multiplier
1000101	13.0		
1010101	13.5		
1001101	14.0		
1000011	15.0		
1001011	16.0		
1000111	17.0		

Step 2 Install Memory Module

DDR DIMM 1
DDR DIMM 2
DDR DIMM 3
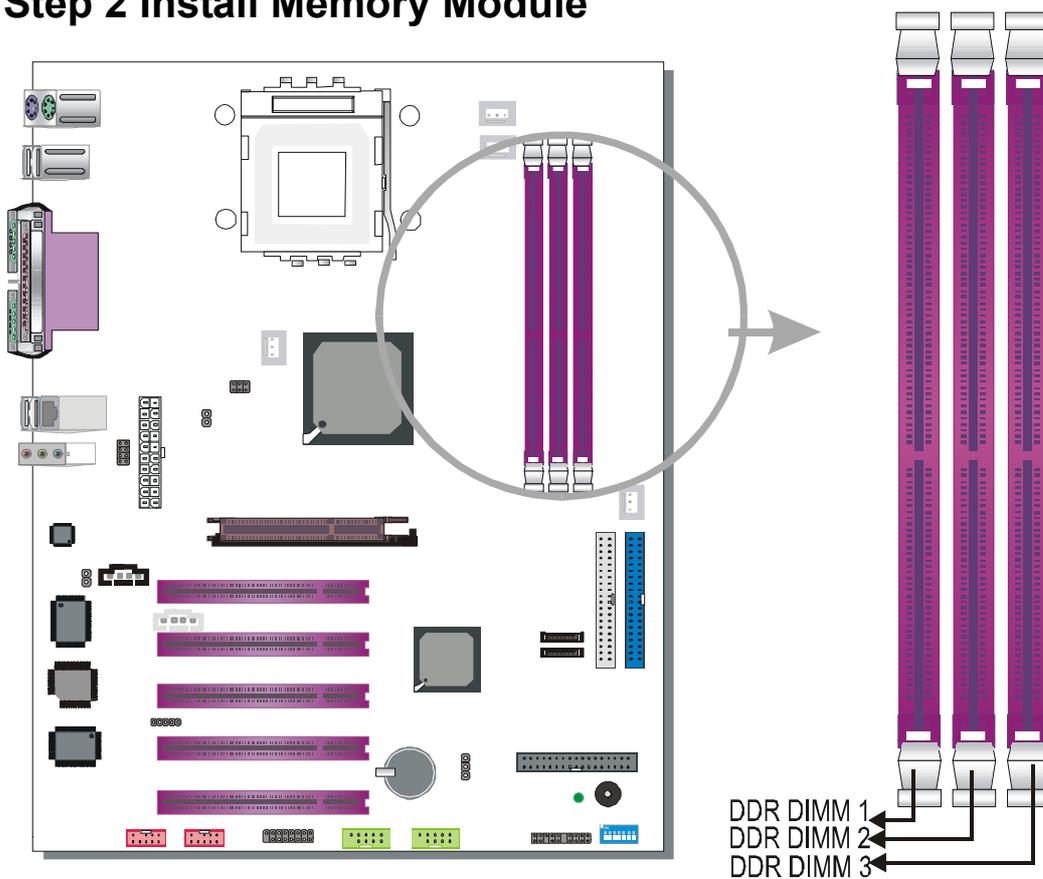
Your board comes with three DIMM sockets, providing support for up to 3GB of main memory using unbuffered (non-registered) and non-ECC DIMM modules from 128MB to 1GB. On this motherboard, DRAM speed can be set independent from the CPU front side bus speed. Depending on the DRAM clock speed setting in the BIOS setup, appropriate memory modules must be used. For 100MHz DRAM speed, use PC1600 memory; for 133MHz DRAM speed, use PC2100 memory; for 166MHz DRAM speed, use PC2700 memory, for 200MHz DRAM speed use PC3200 memory.

Memory Configuration Table

Number of Memory Modules	DIMM 1	DIMM 2	DIMM 3
RAM Type	DDR RAM PC2100/PC2700/PC3200 (non-register & ECC)		
Memory Module Size (MB)	64 / 128 / 256 / 512 / 1024 MB		

Step 3 Install Expansion Card

The motherboard has 1 AGP slot and 5 PCI slots.

1. Read the related expansion card's instruction document before inserting the expansion card into the computer.

2. Press the expansion card firmly into expansion slot in motherboard.

3. Be sure the metal contacts on the card are indeed seated in the slot.

4. Replace the screw to secure the slot bracket of the expansion card.

5. Install driver for the operating system you use.

Note: AGP cards working on 3.3V are not supported. Only AGP cards working on 1.5V can be used in this M/B. For AGP card voltage specification, please check the AGP card manual or contact your AGP card's manufacturer.

Step 4 Connect cables, case wires, and power supply
A. IDE Device Installation (HDD, CD-ROM)

IDE 2
Secondary
IDE

IDE 1
Primary
IDE

Pin1
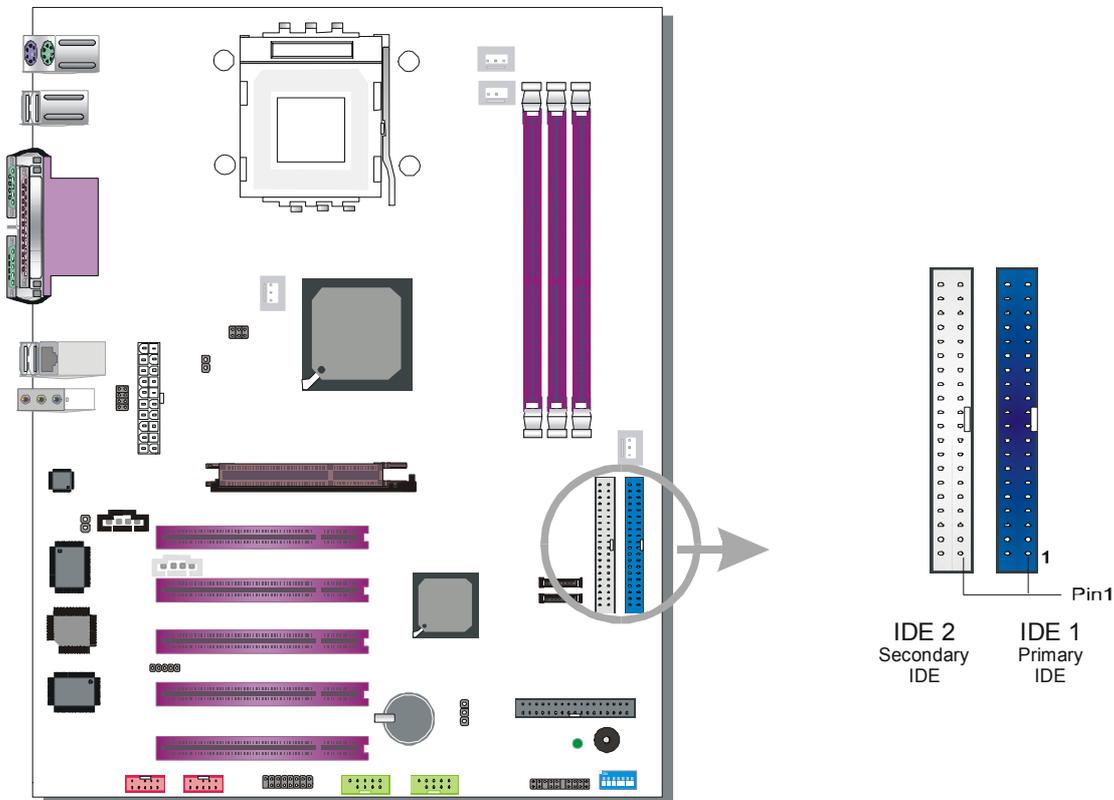
This motherboard offers two primary and two secondary IDE device connectors (IDE1, IDE2), can support up to four high-speed Ultra DMA 33/66/100/133 HDD or CD-ROM. SATA1/2 can support up to 4 ATA 150 SATA hard disks..IDE1,2/ SATA1,2 are controlled by the 8237 South bridge chip.

There are 2 parallel ATA HDD connectors (IDE1, IDE2) and 2 serial ATA connectors on the motherboard. SATA1, SATA2, SATA 3 and SATA4 are provided for SATA RAID or standard SATA function. This Motherboard can support up to 6 HDDs.

B. Floppy Drive Installation

FDC1
Floppy Driver
Connector

Pin1
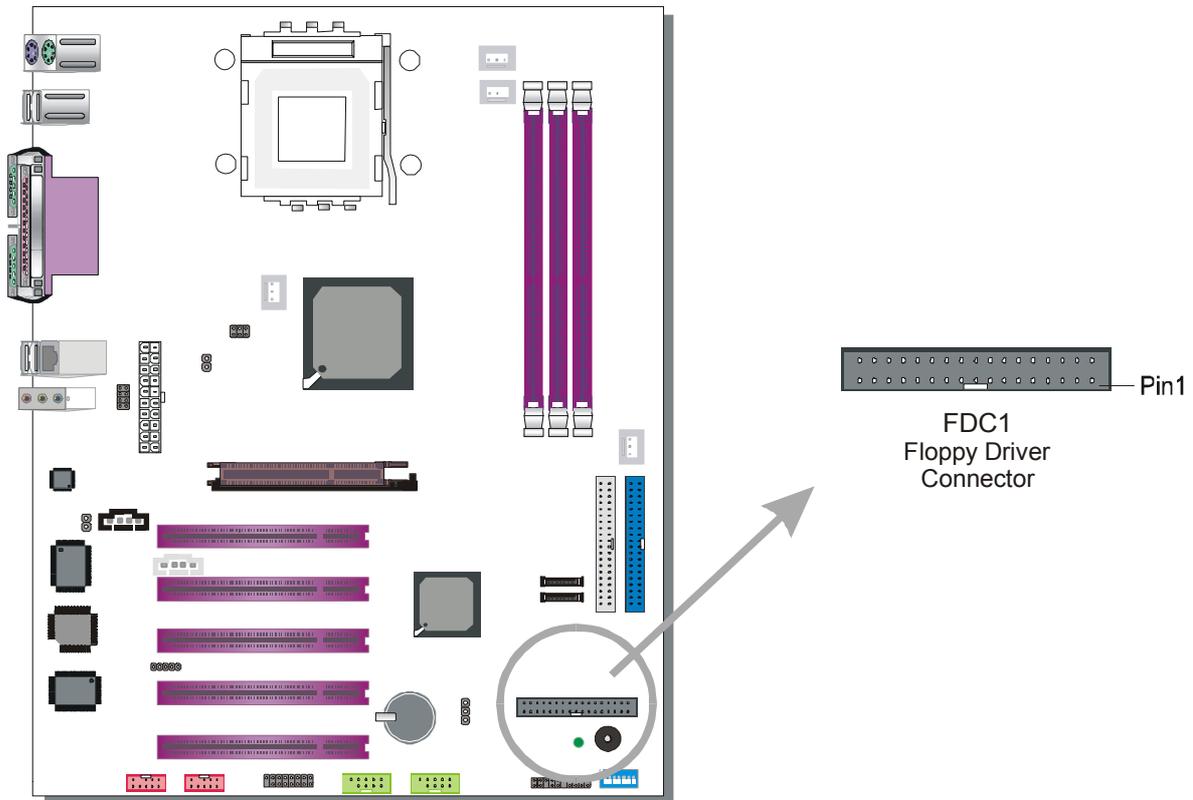
The system supports 5 possible floppy drive types: 720 KB, 1.2 MB, 1.44
MB, 2.88 MB.

Connect one side of the 34-pin flat cable to the floppy drive and plug the
other end to the floppy drive connector on the motherboard.

This motherboard can support only 1 floppy drive.

C. Front Panel Connections
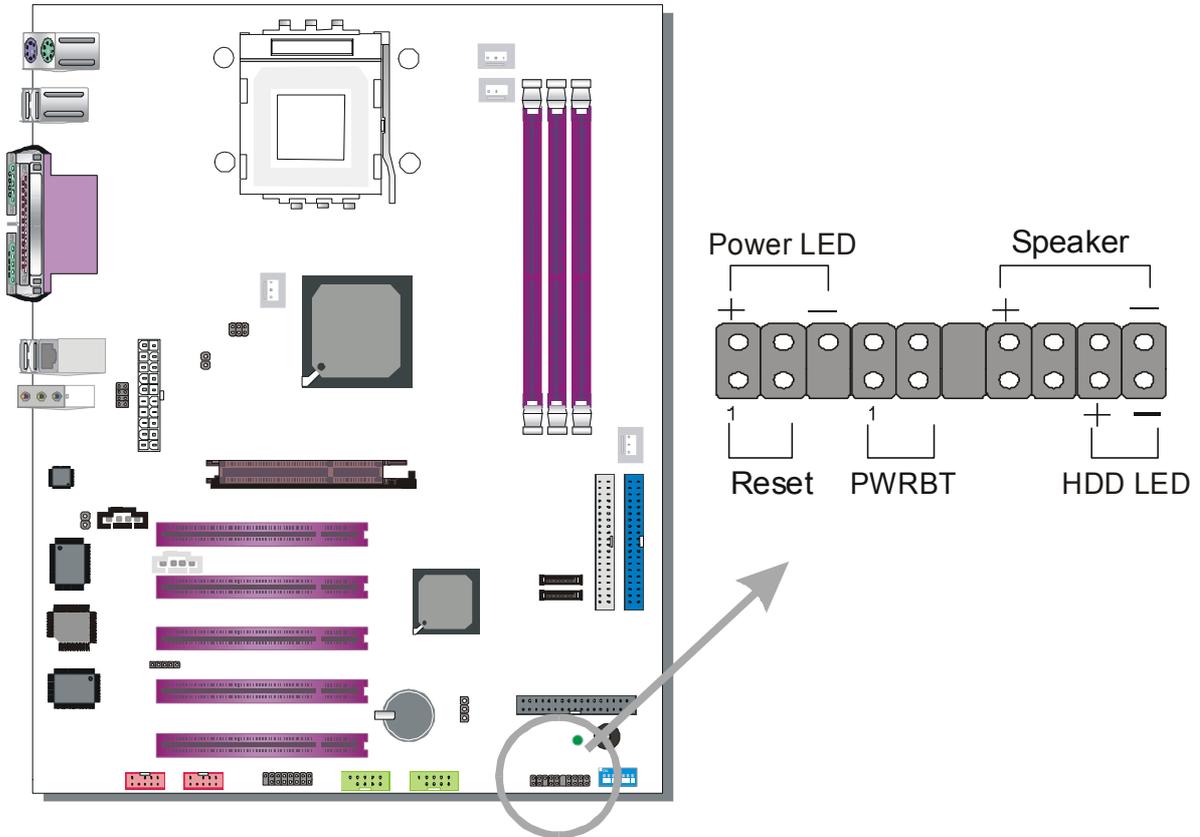
Plug the computer case's front panel devices to the corresponding headers on the motherboard.

1. Power LED

Please install according to the following pin assignment: pin 1,3 are for Power LED.
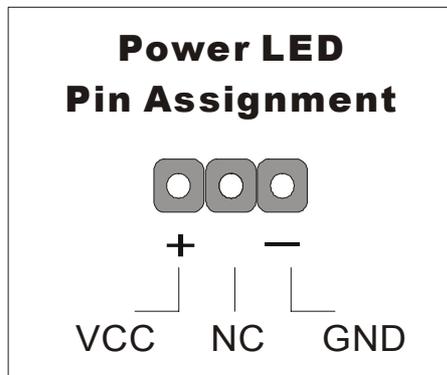
2. Reset

Plug the Reset push-button cable into the 2-pin Reset header on the motherboard. Pushing the Reset button on the front panel will cause the system to restart the boot-up sequence.

```
┌─────────────────────────────┐
│  Reset Pin Assignment       │
│         ┌───┬───┐           │
│         │ O │ O │           │
│         └───┴───┘           │
│           1                 │
│          │      │          │
│  Power Good     GND         │
└─────────────────────────────┘
```
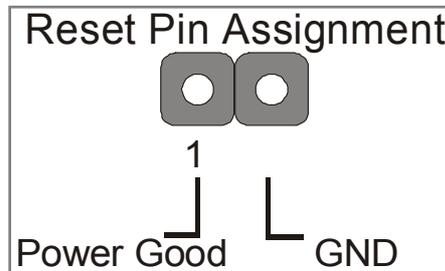
3. Speaker

Attach the 4-pin PC speaker cable from the case to the Speaker header on the motherboard.

```
┌──────────────────────────────────┐
│   Speaker Pin Assignment         │
│      ┌───┬───┬───┬───┐           │
│      │ O │ O │ O │ O │           │
│      └───┴───┴───┴───┘           │
│       +           −              │
│      │    │   │    │            │
│     VCC   NC  NC   Speaker out   │
└──────────────────────────────────┘
```
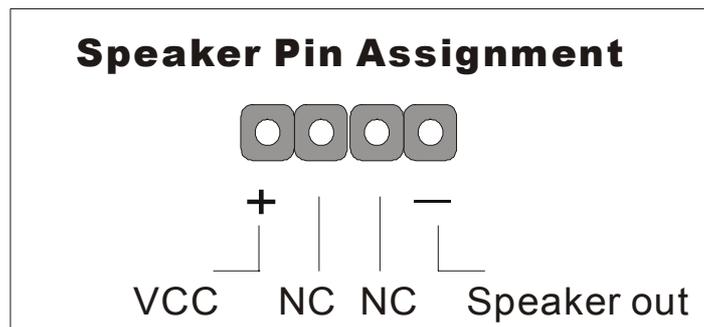
4. IDE LED

Attach the 2-pin IDE device LED cable to the corresponding IDE LED header on the motherboard. This will cause the LED to light up when an IDE device (HDD, CD-ROM) on IDE 1,2 or SATA 1,2 device is active.

```
┌─────────────────────────────┐
│  HDD LED Pin Assignment     │
│         ┌───┬───┐           │
│         │ O │ O │           │
│         └───┴───┘           │
│          +    −             │
│         │      │            │
│  LED Anode  LED Cathode     │
└─────────────────────────────┘
```
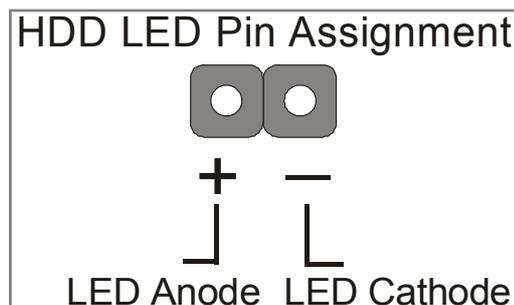
5. ATX Power On/Off Switch

Attach the 2-pin momentary type switch to the PWRBT header for turning
ON or OFF your ATX power supply.

PWRBT Pin Assignment

1

Power On/Off   GND
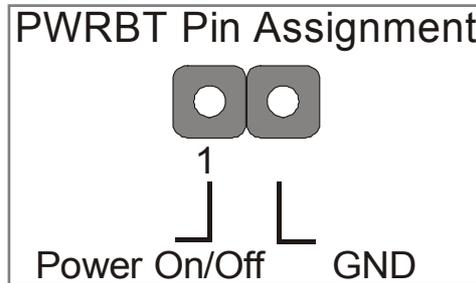
D. Back Panel Connections

All external devices such as the PS/2 keyboard, PS/2 mouse, printer, modem,
USB can be plugged directly onto the motherboard back panel.

Only after you have fixed and locked the motherboard to the computer case
can you start connecting the external peripheral devices.

When connecting an external device, use the following figure to locate and
identify which back panel connector to plug the device to.

PS/2 KB **PS/2 Mouse**
Connector Connector

USB3 / USB4

COM A

COM B

PRT

USB1 / USB2 / LAN

MIC IN / Center & Bass out
Line out / Front out
Line in / Rear out
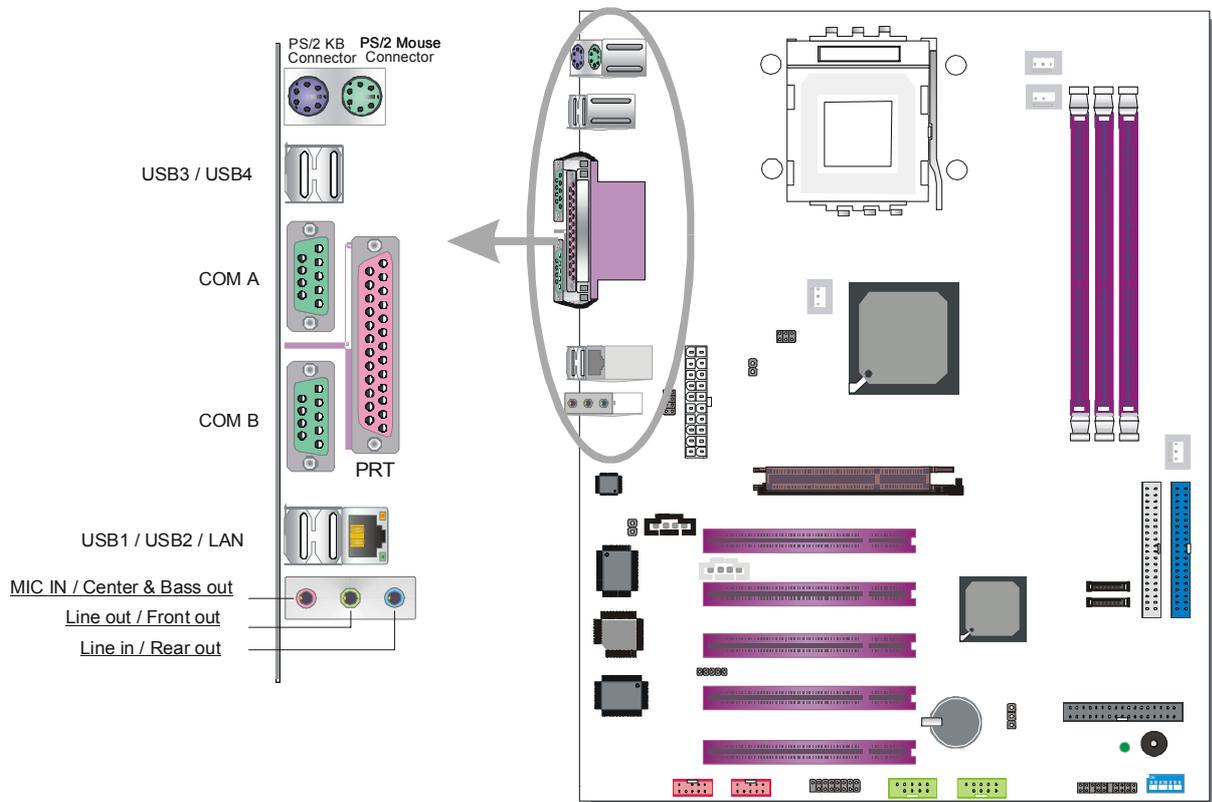
1. Onboard Serial Ports COM1/COM2

External peripherals that use serial transmission scheme include:

- serial mouse

- modem

Plug the serial device cables directly into the COM1/COM2 9-pin male connectors located at the rear panel of the motherboard.

2. Parallel Port PRT

This parallel port is used to connect the printer or other parallel devices. Plug the parallel device cable into the 25-pin female connector located at the rear panel of the motherboard.

3. PS/2 Keyboard

Plug the keyboard jack directly into the 6-pin female PS/2 keyboard connector located at the rear panel of the motherboard.
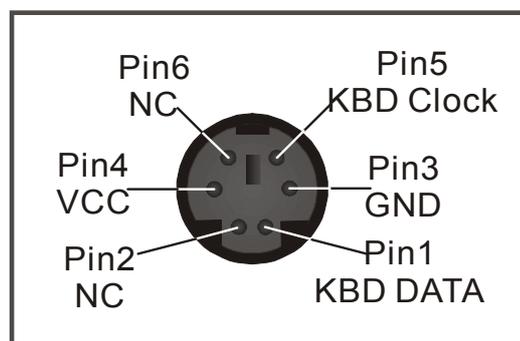
4. PS/2 Mouse

Similarly, plug the mouse jack directly into the 6-pin female PS/2 mouse connector.
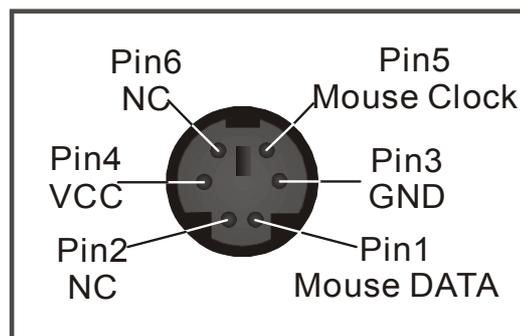
5. Universal Serial Bus (USB1/USB2, USB20_3/USB20_4)

This motherboard provides eight USB ports for your additional devices. Plug the USB device jack into the available USB connector USB1 or USB2.

- Standard device drivers come with the Win98 for commonly used USB devices.
- With Win95, use the flow UHCI specifications. To use USB devices under Win95, usually you have to install the device that driver comes with the USB device you have purchased.

USB20_3 and USB20_4 are available. To make use of these USB ports, purchase a USB cable from your dealer. The lay-out of USB20_3, USB20_4 are as follows:

GND	10		
GND	9	4	GND
(+)Data	8	3	(+)Data
(-)Data	7	2	(-)Data
Power	6	1	Power
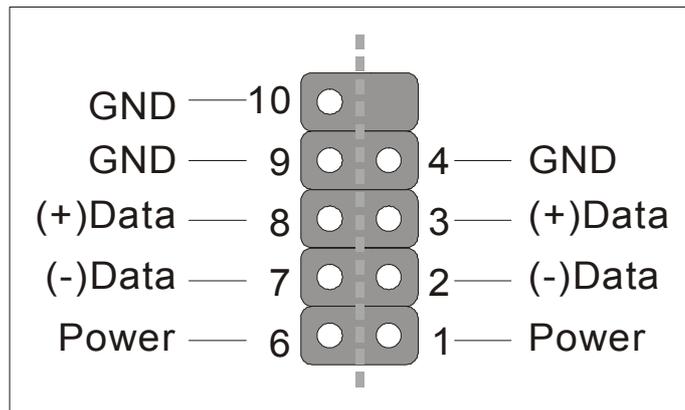
USB1, USB2, USB20_3 and USB20_4 supports USB 2.0 devices.

6.   Onboard Game port/audio (Audio Speakers connections)

When using 2-channel speaker, connect the speaker cable to Line-out.

If you're using 4 channel speaker, connect the front L/R speakers to Line-out and rear L/R speakers to Line-in. Make sure that the audio software is set for 4 channel speaker system. If your are using 6 channel speaker connect the front L/R speaker to lint out Rear L/R speaker to line in and center/Bass speaker to Mic-in, make sure to set the audio software for 6 channel speaker system.

Line-in

Line-out

Mic-in
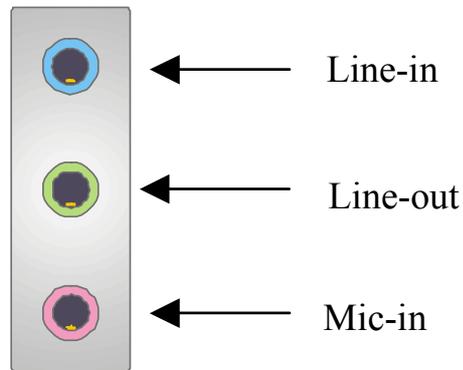
The Gameport has the following lay-out :

```
          GAME1
       Pin Assignment

                    15 — VCC
MIDI_in — 14   13 — JOYA4
JOYB4 — 12     11 — JOYA2
JOYB2 — 10     9 — GND
MIDI out — 8   7 — GND
JOYB1 — 6      5 — JOYA1
JOYB3 — 4      3 — JOYA3
VCC — 2        1 — VCC
```

E. Other Connections

1. Standard Infrared (SIRCON)

Plug the 5-pin infrared device cable to the SIRCON header.
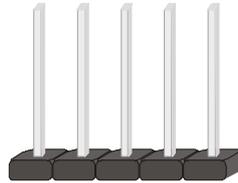
This will enable the infrared transfer function. This motherboard meets both the ASKIR and HPSIR specifications.

Please install according to the following pin assignment:
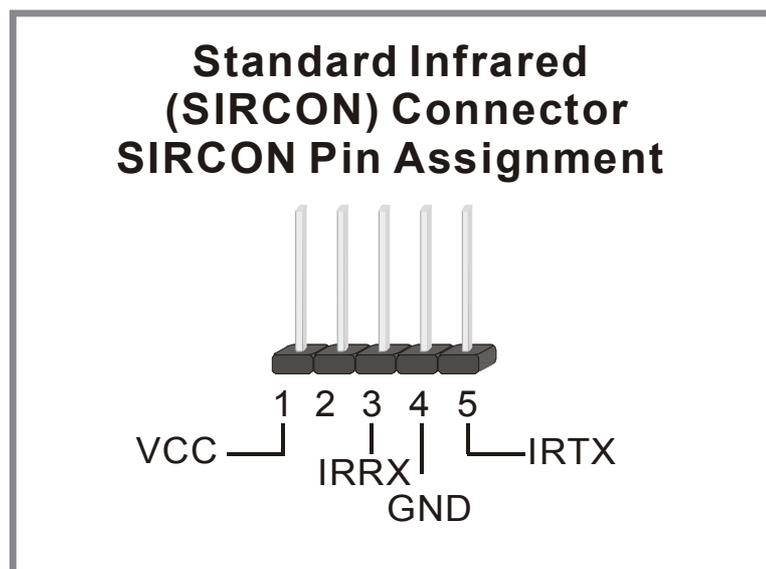
2.   Cooling Fan Installation
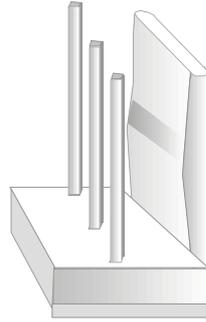
(1) CPU Cooling FAN (CPUFAN1, CPUFAN2)

After you have seated the CPU properly on the processor, attach the 3-pin fan cable to the CPUFAN1 connector on the motherboard.

To avoid any damage to the system, install according to the following pin assignment:
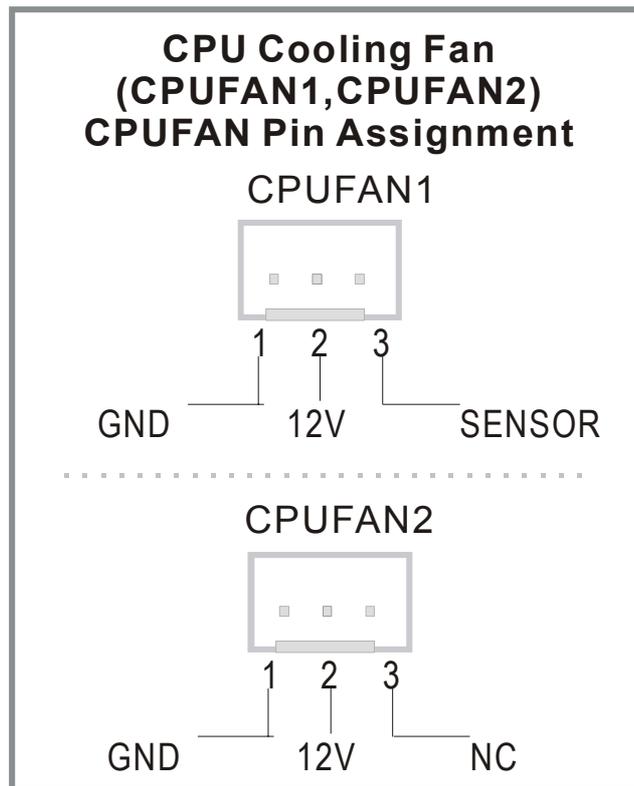
(2) Chassis Cooling Fan (CHAFAN1,CHAFAN2)

Some chassis also feature a cooling fan. This motherboard features a CHAFAN connector to provide 12V power to the chassis fan. Connect the cable from the chassis fan to the CHAFAN 3-pin connector. Install according to the following pin assignment:

Classis Cooling Fan
(CHAFAN1, CHAFAN2, CHAFAN3)
CHAFAN Pin Assignment

CHAFAN1

1 — GND
2 — 12V
3 — SENSOR

CHAFAN2

1 — GND
2 — 12V
3 — NC
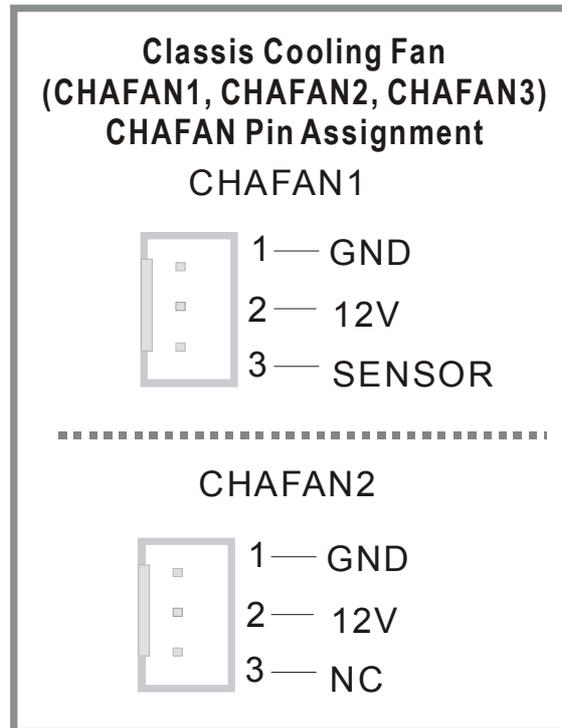
Note: CPUFAN must be installed on this motherboard, while CHAFAN is optional.

3. CD Line-in (CDIN1,AUXIN1)

This motherboard provides two CD-Line in connectors. Please connect the 4-pin audio cable from your CD-ROM drive to either CDIN1 or AUXIN1. (It fits in only one, depending on the cable that came with your CD-ROM drive)

Please install according to the following pin assignment:
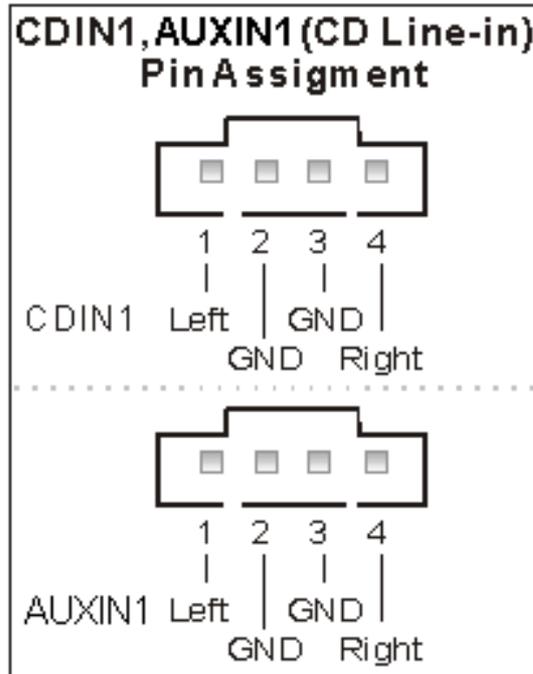
4. SMCARDCN

The smartcard connector has the following pin layout :
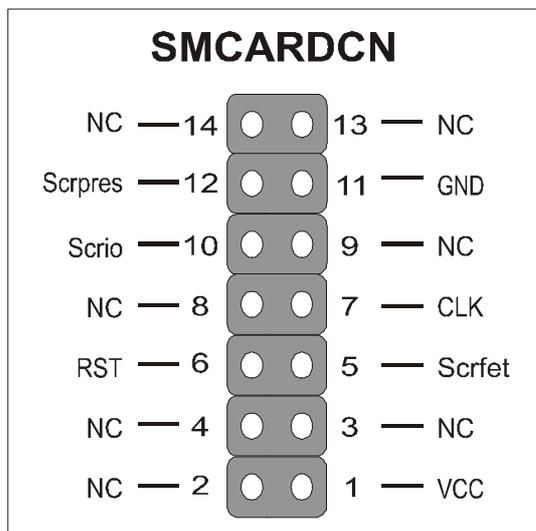
5. MIC & LED Connector (J30)

You can connect the Line-out /MIC in/LAN LED to the front panel of your PC case (If this option is available in your PC case). This connector has the following pin assignment:

MIC & LED Connector (J30)

VCC
GND
GND
GND

2 4 6 8

1 3 5 7

Line_Out_L
Line_Out_R
MIC2
LAN_Active_LED

6. CD-SPDIFO

CD-SPDIFO

1 2

SPDIF Out — GND
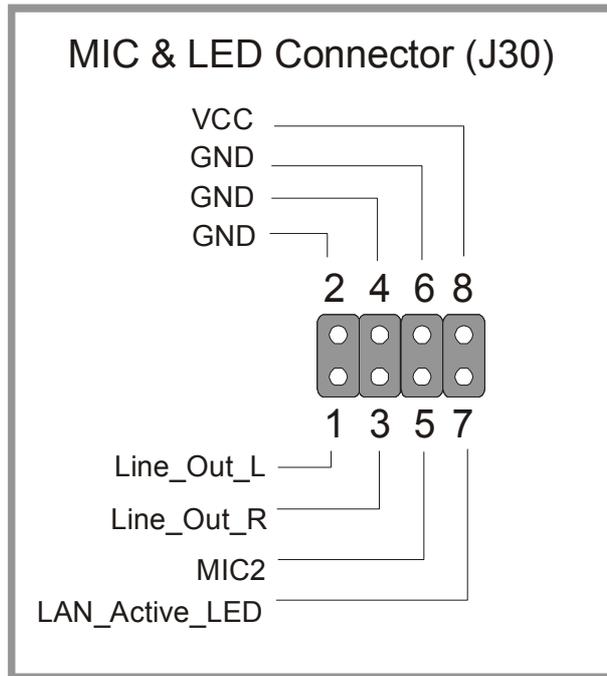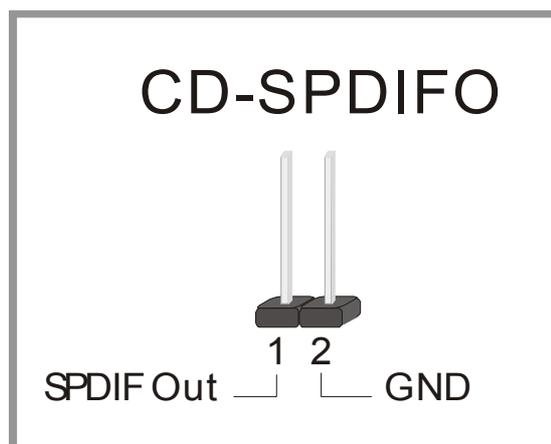
7. IEEE 1394 (Firewire) Connector (FW1/FW2)

This motherboard provides 3 IEEE 1394 ports for your Firewire devices. Standard drivers are supplied with the operating system for commonly used Firewire devices.

FW1 and FW2 are available. You can connect them to a 1394 bracket or Σ BOX to use them. The layout out of the FW1 and FW2 Firewire connector is as follows:

FW1 Pin Assignment

CGND — 10	5 — PWR0
PWR0 — 9	
B0MC — 8	3 — B0PC
CGND — 7	2 — GND
A0MC — 6	1 — A0PC

FW2 Pin Assignment

CGND — 10	5 — PWR1
PWR1 — 9	
B1MC — 8	3 — B1PC
CGND — 7	2 — GND
A1MC — 6	1 — A1PC
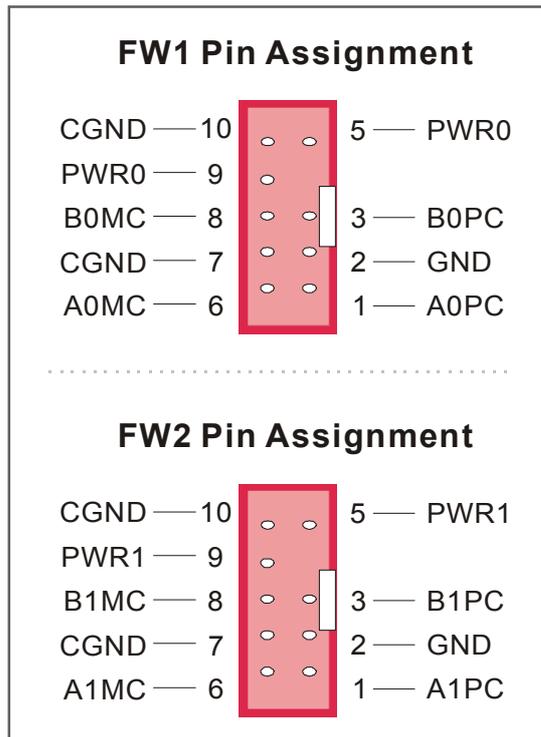
F. ATX Power Supply

Plug the connector from the power directly into the 20-pin male ATX PW connector on the motherboard, as shown in the following figure.

ATX Power

5VSBLED
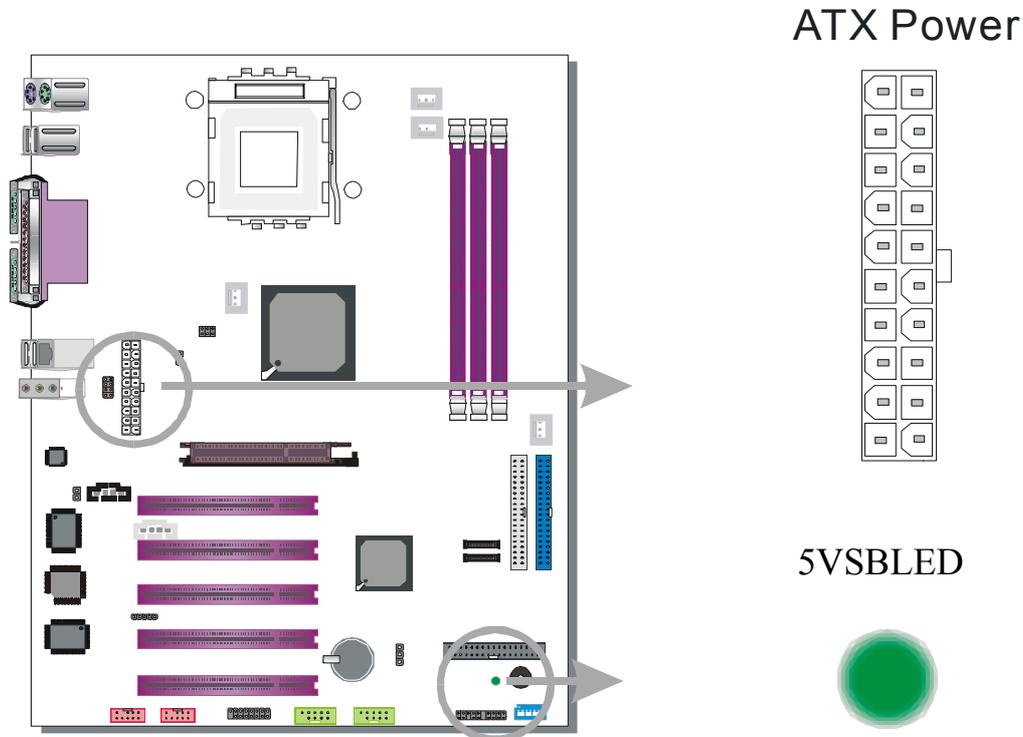
> ***Warning:*** Follow these precautions to preserve your motherboard from any remnant currents when connecting to ATX power supply:
>
> **Turn off the power supply and unplug the power cord of the ATX power supply before connecting to ATX PW connector. If the power supply is powered and connected to the mainboard the 5VSBLED will light up.**

The KT600 DRAGON Plus requires a power supply that is approved by AMD, of at least 350W. Go to http://www.amd.com for more info on approved power supply. Make sure the ATX power supply can take at least 720 mA * load on the 5V Standby lead (5VSB) to meet the standard ATX specification.

* Note: If you use the Wake-On-LAN (WOL`) function, make sure the ATX power supply can support at least 720 mA on the 5V Standby lead (5VSB). Please install the ATX power according to the following pin assignment:

ATX Power

12V		5V
5VSB		5V
PW-OK		-5V
GND		GND
5V		GND
GND		GND
5V		PS-ON
GND		GND
3.3V		-12V
3.3V		3.3V

➢ **Pay special care to the directionality.**

G. CMOS Clear (JP5)

In some cases the CMOS memory may contain wrong data, follow the steps below to clear the CMOS memory.

1.   Put the jumper back to 1-2 to allow writing of new data into the CMOS memory.

2.   Clear the CMOS memory by momentarily shorting pin 2-3 on jumper JP5. This jumper can be easily identified by its white cap.

CMOS Clearing	Retain CMOS Data		Clear CMOS Data	
JP5 Setting	Short pin 2-3 for at least 5 seconds to clear the CMOS	3 2 1	Short pin 1-2 to retain new settings	3 2 1
Note: You must unplug the ATX power cable from the ATX power connector when performing the CMOS Clear operation.				
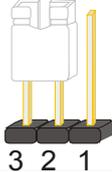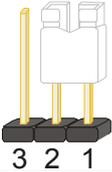
Step 5 Power On

You have now completed the hardware installation of your KT600 DRAGON Plus successfully.

1. Turn the power on.

2. It takes awhile to boot-up to the system. You will hear 3 beeps before seeing a display on the screen.

3. To enter the BIOS Setup Utility, press the <DEL> key while the system is performing the diagnostic checks

> *Note:* If you have failed to enter the BIOS, wait until the boot up sequence is completed. Then push the RESET button and press <DEL> key again at the beginning of boot-up, during diagnostic checks.

Repeat this operation until you get the following screen.

4. The BIOS Setup screen appears:

Phoenix – Award BIOS CMOS Setup Utility	
▶ Standard CMOS Features	Load Fail - Safe Defaults
▶ Advanced BIOS Features	Load Optimized Defaults
▶ Advanced Chipset Features	Set Supervisor Password
▶ Integrated Peripherals	Set User Password
▶ Power Management Setup	Save & Exit Setup
▶ PnP/PCI Configurations	Exit Without Saving
▶ PC Health Status	
Esc : Quit F10 : Save & Exit Setup	↑↓→← : Select Item
Change CPU's Clock & Voltage	

2-3 QUICK BIOS SETUP

After the hardware installation is completed, turn the power switch on, then press the **<DEL>** key during the system diagnostic checks to enter the Award BIOS Setup program. The CMOS SETUP UTILITY will be shown on the screen. Follow these steps to configure the CPU settings.

Step 1.   Select [STANDARD CMOS SETUP]

Set [Date/Time] and [Floppy drive type], then set [Hard Disk Type] to "Auto".

Step 2.   Select [LOAD OPTIMIZED DEFAULTS]

Select the "LOAD OPTIMIZED DEFAULTS" menu and type "Y" at the prompt to load the BIOS optimal setup.

Step 3.   Select [SAVE & EXIT SETUP]

Press **<Enter>** to save the new configuration to the CMOS memory, and continue the boot sequence.

You are now ready to configure your system with the BIOS setup program. Go to *Chapter 3: BIOS SETUP*

Chapter 3

BIOS SETUP UTILITY

This motherboard's BIOS setup program uses the ROM PCI BIOS program from Award Software Inc.

To enter the Award BIOS program's Main Menu:

1. Turn on or reboot the system.
2. After the diagnostic checks, press the [Del] key to enter the Award BIOS Setup Utility.

Phoenix – Award BIOS CMOS Setup Utility	
▶ Standard CMOS Features	Load Fail - Safe Defaults
▶ Advanced BIOS Features	Load Optimized Defaults
▶ Advanced Chipset Features	Set Supervisor Password
▶ Integrated Peripherals	Set User Password
▶ Power Management Setup	Save & Exit Setup
▶ PnP/PCI Configurations	Exit Without Saving
▶ PC Health Status	
Esc : Quit F10 : Save & Exit Setup	↑↓→ : Select Item
Change CPU's Clock & Voltage	

Selecting items

● Use the arrow keys to move between items and select fields.

● From the Main Menu press arrow keys to enter the selected submenu.

Modifying selected items

• Use the [Up]/[Down] keys to modify values within the selected fields. Some fields let you enter values directly.

Hot Keys: Function keys give you access to a group of commands throughout the BIOS utility.

Function	Command	Description
F1	General Help	Gives the list of options available for each item.
F5	Previous Values	Restore the old values. These are the values that the user started the current session with.
F6	Load Fail-Safe Defaults	Loads all items with the most conservative values.
F7	Load Optimized Defaults	Loads all options with the optimize values.
F10	Save	Saves your changes and reboots the system.
[Esc]	Exit	Returns at anytime and from any location to the Main Menu.
[Enter]	Select	Will display a overlapping window with all options for the current item.
[+/–/PU/PD]	Value	Using the +, –, Page Up and Page Down keys the user can toggle the value of the current item.

SAVE AND EXIT SETUP

Select the [SAVE & EXIT SETUP] option from the Main Menu to save data to CMOS and exit the setup utility. This option saves all your changes and causes the system to reboot.
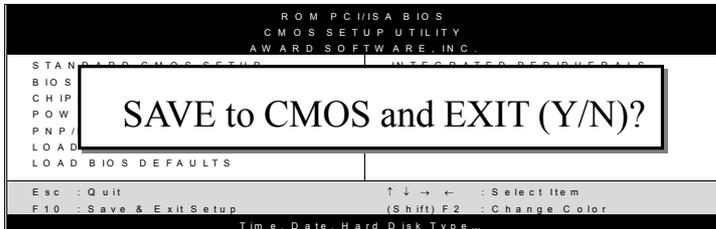
Type [Y] to save the changes and exit or [N] to return to the Main Menu and keep current values.

EXIT WITHOUT SAVING

Selecting the [EXIT WITHOUT SAVING] option allows you to abandon all data and exit setup, therefore ignoring all your changes.
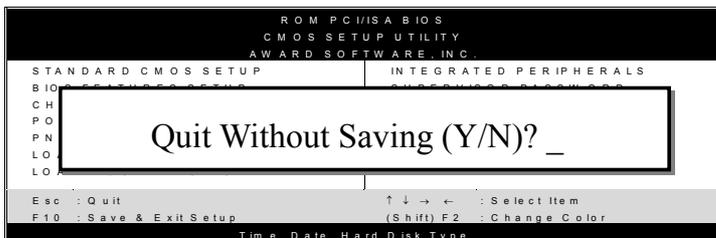
Type [Y] to abandon changes and exit or [N] to return to the Main Menu and keep current values.

3-1 STANDARD CMOS SETUP

Select the [STANDARD CMOS SETUP] option from the Main Menu and press [Enter] key.

Phoenix – Award BIOS CMOS Setup Utility		
Standard CMOS Features		
Date (mm:dd:yy)	Mon, Jan 1 2003	Item Help
Time (hh:mm:ss)	1 : 1 : 8	
		Menu Level ▶
▶ IDE Primary Master	None	Change the day, month, year and century.
▶ IDE Primary Slave	Maxtor 5T020H2	
▶ IDE Secondary Master	None	
▶ IDE Secondary Slave	None	
Drive A	1.44M, 3.5 in.	
Floppy 3 Mode Support	Disabled	
Video	EGA/VGA	
Halt On	All Errors	
Base Memory	640K	
Extended Memory	130048K	
Total Memory	131072K	
↑↓→ Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help		
F5:Previous Values F6:Fail-Safe Defaults F7: Optimized Defaults		

This screen allows you to modify the basic CMOS settings.

After you have completed the changes, press [Esc] key to return to the Main Menu.

This Main Menu function automatically detects the hard disk type and configures the [Standard CMOS Features] accordingly.

```
                Phoenix – Award BIOS CMOS Setup Utility
                           IDE Primary Master

   IDE HDD Auto-Detection    Press Enter
                                                        Item Help

   IDE Primary Master        Auto
                                                     Menu Level   ▶
   Access Mode               Auto
                                                   To auto-detect the HDD's
                                                   size, head… on this channel

   Capacity                  20492 MB


   Cylinder                  39704
   Head                         16
   Precomp                       0
   Landing Zone              39703
   Sector                       63


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

Note: This function is only valid for IDE type of hard disk drives.

Date & Time

	Display	**Setting**	**Please Note**
Date	mm/dd/yyyy	Type the current date	You can also the PUp/PDn keys to toggle
Time	hh:mm:ss	Type the current time	24-hour clock format 3:15 PM is displayed as 15:15:00

Hard Disks Type & Mode

Choose the type and mode for the hard disks that you have already installed.

	Setting	Description	Note
IDE HDD Auto-Detection	Press Enter	To auto-detect the HDD's size, head… on this channel.	
IDE Primary Slave (User Type)	Auto	BIOS detects hard disk type automatically.	Default
	Manual	User defines the type of hard disk.	
	None		
Access Mode	Auto	BIOS detects hard disk mode automatically.	Default
	CHS	Normal IDE hard disk	<528MB
	LBA	Enhanced IDE hard disk	>528MB
	Large	Large IDE hard disk (for certain hard disk)	

Note: If you have any questions on your hard disk type or mode, ask your hard disk provider or previous user for details.

Floppy Drives

	Setting	Description	Note
Drives A	360KB, 5.25 in.		
	1.2MB, 5.25 in.		
	720KB, 3.5 in.		
	1.44MB, 3.5 in.		Default
	2.88MB, 3.5 in.		
	None	Not installed	
Floppy 3-Mode Support	Disabled		Default
	Drive A	Supports 3-mode floppy diskette: 740KB/1.2MB/ 1.44MB on selected disk drive.	Special disk drive commonly used in Japan

Others Optional

	Setting	Description	Note
Video	EGA/VGA	Select the video mode.	Default
	CGA 40		
	CGA 80		
	MONO (Monochrome)		
Halt On	ALL Errors	When the BIOS detects system errors, this function will stop the system. Select which type of error will cause the system halt.	Default
	No Errors		
	All, But Keyboard		
	All, But Diskette		
	All, But Disk/Key		

3-2 ADVANCED BIOS FEATURES

Select the [Advanced BIOS Features] option from the Main Menu and press [Enter] key.

Phoenix – Award BIOS CMOS Setup Utility Advanced BIOS Features		
Virus Warning	Disabled	**Item Help**
CPU Internal Cache	Enabled	
External Cache	Enabled	Menu Level ▶
CPU L2 Cache ECC Checking	Enabled	Allows you to choose the
Quick Power On Self Test	Enabled	VIRUS warning feature for
SATA 1, 2 & SCSI Boot Order	SATA 1, 2, SCSI	IDE Hard Disk boot sector
First Boot Device	Floppy	protection. If this function is
Second Boot Device	HDD-0	enabled and someone
Third Boot Device	LS120	attempt to write data into this
Boot Other Device	Enabled	area, BIOS will show a
Boot Up Floppy Seek	Enabled	warning message on screen
Boot Up NumLock Status	On	and alarm beep.
Gate A20 Option	Fast	
Typematic Rate Setting	Disabled	
x Typematic Rate (Chars/Sec)	6	
x Typematic Delay (Msec)	250	
Security Option	Setup	
APIC Mode	Enabled	
MPS Version Control For OS	1.1	
OS Select For DRAM > 64MB	Non-OS2	
HDD S.M.A.R.T. Capability	Disabled	
Video BIOS Shadow	Enabled	
Full Screen LOGO Show	Enabled	
EPA LOGO SELECT	LOGO-0	
Small Logo (EPA) Show	Enabled	
↑↓→ Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help		
F5:Previous Values F6:Fail-Safe Defaults F7: Optimized Defaults		

After you have completed the changes, press [Esc] key and follow the instructions on your screen to save your settings or exit without saving.

Virus Warning

	Setting	Description	Note
Virus Warning	Disabled	If set to enabled, the Paragon Anti-Virus. Function will scan your boot drive for boot viruses. If a boot virus is detected, the BIOS will display a warning message.	Default
	Enabled		

Cache Memory Options

	Setting	Description	Note
CPU Internal Cache	Disabled		
	Enabled	Enables the CPU's internal cache.	Default
External Cache	Disabled		
	Enabled	Enables the external memory.	Default
CPU L2 Cache ECC Checking	Disabled	Disabled/Enabled L2 cache error checking.	
	Enabled		Default

Quick Power On Self Test

	Setting	Description	Note
Quick Power On Self Test	Disabled		
	Enabled	Provides a fast POST at boot-up.	Default

System Boot Control Settings

	Setting	Description	Note
SATA 1, 2 & SCSI Boot Order	RAID/ATA, SCSI	Select Your RAID/ATA & SCSI Boot Device Priority.	Default
	SCSI, RAID/ATA		

System Boot Control Settings (Continue)

	Setting	Description	Note
First /Second/Third Boot Device	Floppy	Select Your Boot Device Priority	
	LS120		
	HDD-0		
	SCSI		
	CDROM		
	HDD-1		
	HDD-2		
	HDD-3		
	ZIP100		
	USB-FDD		
	USB-ZIP		
	USB-CDROM		
	USB-HDD		
	LAN		
	Disabled		
Boot Other Device	Disabled	Select Your Boot Device Priority	
	Enabled		Default

Boot Up Floppy Seek

	Setting	Description	Note
Boot Up Floppy Seek	Disabled	Seeks disk drives during boot up. Disabling speeds boot up.	
	Enabled		Default

Boot Up NumLock Status

	Setting	Description	Note
Boot Up NumLock Status	On	Puts numeric keypad in NumLock mode at boot-up.	Default
	Off	Puts numeric keypad in arrow key mode at boot-up.	

Gate A20 Options

	Setting	Description	Note
Gate A20 Options	Normal	Lets chipset control GateA20.	
	Fast	A pin in the keyboard controller controls GateA20.	Default

Typematic Settings

	Setting	Description	Note
Typematic Rate Setting	Disabled	Keystrokes repeat at a rate determined by the keyboard.	Default
	Enabled	When enabled, the typematic rate and typematic delay can be selected.	
The following [Typematic Rate] and [Typematic Delay] fields are active only if [Typematic Rate Setting] is set to [Enabled]			
Typematic Rate	6 (Char/sec)	Choose the rate at which a character is repeated when holding down a key.	Default
	8 (Char/sec)		
	10 (Char/sec)		
	12 (Char/sec)		
	15 (Char/sec)		
	20 (Char/sec)		
	24 (Char/sec)		
	30 (Char/sec)		
Typematic Delay	250 (msec)	Choose how long after you press a key down the character begins repeating.	Default
	500 (msec)		
	750 (msec)		
	1000 (msec)		

Security Option

Use this feature to prevent unauthorized system boot-up or use of BIOS Setup. The following table describes the security settings.

	Setting	Description	Note
Security Option	System	Each time the system is booted, the password prompt appears.	
	Setup	If a password is set, the password prompt only appears when you attempt to enter the BIOS Setup program.	Default

Other Control Options

	Setting	Description	Note
APIC Mode	Disabled	Disabled/Enabled advanced programmable interrupt controller (APIC) mode.	
	Enabled		Default
MPS Version Control For OS	1.1	Allows you to choose the multi processor specification (MPS) version.	Default
	1.4		
OS Select for DRAM>64MB	OS2	When using an OS2 operating system.	
	Non-OS2	When using another, non-OS2 operating system.	Default
HDD S.M.A.R.T Capability	Disabled	Enable this field when your HDD supports the S.M.A.R.T. function. Consult your HDD provider for details.	Default
	Enabled		
Video BIOS Shadow	Disabled		
	Enabled	The BIOS is shadowed in a 16K segment if it is enabled and if it has BIOS present. These 16 segments can be shadowed from ROM to RAM. BIOS shadow copies BIOS code from slower ROM to faster RAM. BIOS can then execute from RAM.	Default
Full Screen LOGO Show	Enabled	Enable/Disable DRAGON Logo during Boot-up.	Default
	Disabled		
EPA LOGO SELECT	LOGO-0	Allows user to display SOYO logo or own logo. Logo-0 Shows SOYO logo. Logo-1 Shows user logo (Default Blank).	Default
	LOGO-1		
Small Logo(EPA) Show	Disabled	Set Enabled to Show Logo (EPA).	
	Enabled		Default

3-3 ADVANCED CHIPSET FEATURES

Select the [Advanced Chipset Features] option from the Main Menu and press [Enter] key.

Caution: Change these settings only if you are already familiar with the Chipset.

The [Advanced Chipset Features] option changes the values of the chipset registers. These registers control the system options in the computer.

Phoenix – Award BIOS CMOS Setup Utility		
Advanced Chipset Features		
▶ DRAM Clock/Driver Control	Press Enter	Item Help
▶ AGP & P2P Bridge Control	Press Enter	
▶ CPU & PCI Bus Control	Press Enter	Menu Level ▶
System BIOS Cacheable	Disabled	
Video RAM Cacheable	Disabled	
Auto Detect DIMM/PCI Clk	Disabled	
Spread Spectrum	Disabled	
Current FSB Frequency	166 MHz	
CPU Frequency Mode	Auto	
x Frequency 1MHz Stepping	166	
↑↓→Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help		
F5:Previous Values F6:Fail-Safe Defaults F7: Optimized Defaults		

After you have completed the changes, press [Esc] and follow the instructions on your screen to save your settings or exit without saving.

The following table describes each field in the Advanced Chipset Features Menu and how to configure each parameter.

CHIPSET FEATURES SETUP

	Setting	Description	Note
System BIOS Cacheable	Disabled		Default
	Enabled	The ROM area F0000H-FFFFFH is cacheable.	

CHIPSET FEATURES SETUP (Continue)

	Setting	Description	Note
Video RAM Cacheable	Disabled	When synchronous DRAM is installed, the number of clock cycles of CAS latency depends on the DRAM timing. Do not reset this field from the default value specified by the system designer	Default
	Enabled		
Auto Detect DIMM/PCI Clk	Disabled	When enabled, this item will auto detect if the DIMM and PCI socket have devices and will send clock signal to DIMM and PCI devices. When disabled, it will send the clock signal to all DIMM and PCI socket.	
	Enabled		Default
Spread Spectrum	Disabled	This item allows you to Disabled / Enabled the spread spectrum modulates.	Default
	Enabled		
Current FSB Frequency		Show the current speed of CPU Front Side Bus.	
CPU Frequency Mode	100 MHz	Chose 100MHz/133MHz/166MHz/ 200MHz, depending on the Front Side Bus of your CPU.	
	133 MHz		
	166 MHz		Default
	200 MHz		
Frequency 1MHz Stepping	100~ 255	Press "Page Up" / "Page Down" key to overclock the CPU Front Side Bus in 1MHz increment or Press "Enter" key, then type the desired CPU Front Side Bus.	

3-3.1 DRAM Clock / Driver Control

> **STOP**
>
> *Caution:* Change these settings only if you are already familiar with DRAM timing parameters.

The [DRAM Clock / Driver Control] option changes the values of the chipset registers. These registers control the timings of your memory.

Phoenix – Award BIOS CMOS Setup Utility		
DRAM Clock / Driver Control		
Current DRAM Frequency	133 MHz	Item Help
DRAM Clock	133 MHz	
DRAM Timing	Manual	Menu Level ▶
DRAM CAS Latency	2.5	
Bank Interleave	4 Bank	
Precharge to Active (Trp)	3T	
Active to Precharge (Tras)	7T	
Active to CMD (Trcd)	3T	
DRAM Burst Length	4	
DRAM Command Rate	2T Command	
Write Recovery Time	3T	
tWTR	2T	
DRAM Access Time	3T	
↑↓→:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help		
F5:Previous Values F6:Fail-Safe Defaults F7: Optimized Defaults		

After you have completed the changes, press [Esc] and follow the instructions on your screen to save your settings or exit without saving.

DRAM Clock / Driver Control

	Setting	Description	Note
Current DRAM Frequency		Show the current bus speed of DRAM.	
DRAM Clock	By SPD	This item allows you to control the DRAM speed.	
	133 MHz		Default
	166 MHz		
	200 MHz		
DRAM Timing	By SPD	If enable the DRAM will auto detect the DRAM timing.	
	Manual		Default
DRAM CAS Latency	1.5	When synchronous DRAM is installed, the number of clock cycles of CAS latency depends on the DRAM timing. Do not reset this field from the default value specified by the system designer.	
	2		
	2.5		Default
	3		
Bank Interleave	Disabled	Increase DRAM performance.	
	2 Bank		
	4 Bank		Default
Precharge to Active (Trp)	2T	Increase DRAM performance.	
	3T		Default
	4T		
	5T		
Active to Precharge (Tras)	6T	Increase DRAM performance.	
	7T		Default
	8T		
	9T		
Active to CMD (Trcd)	2T	Increase DRAM performance.	
	3T		Default
	4T		
	5T		

DRAM Clock / Driver Control (Continue)

	Setting	Description	Note
DRAM Burst Length	4	Increase DRAM performance.	Default
	8		
DRAM Command Rate	1T Command	Increase DRAM performance.	
	2T Command		Default
Write Recovery Time	2T	Increase DRAM performance.	
	3T		Default
tWTR	1T	Increase DRAM performance.	
	2T		Default
DRAM Access Time	2T	Increase DRAM performance	
	3T		Default

3-3.2 AGP & P2P Bridge Control

Caution: Change these settings only if you are already familiar with the Chipset.

The [AGP & P2P Bridge Control] option changes the values of the chipset registers. These registers control the system options in the computer.

Phoenix – Award BIOS CMOS Setup Utility		
AGP & P2P Bridge Control		
AGP Performance	Fast	Item Help
AGP Aperture Size	64M	
AGP Mode	4X	Menu Level ▶
AGP Driving Control	Auto	
x AGP Driving Value	DA	
AGP Fast Write	Disabled	
AGP Master 1 WS Write	Disabled	
AGP Master 1 WS Read	Disabled	
x AGP 3.0 Calibration cycle	Enabled	
↑↓→:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help		
F5:Previous Values F6:Fail-Safe Defaults F7: Optimized Defaults		

After you have completed the changes, press [Esc] and follow the instructions on your screen to save your settings or exit without saving.

AGP & P2P Bridge Control

	Setting	Description	Note
AGP Performance	Normal	Increase AGP performance.	
	Fast		Default
AGP Aperture Size	64M	Select the size of Accelerated Graphics Port (AGP) aperture. The aperture is a portion of the PCI memory address range dedicated for graphics memory address space. Host cycles that hit the aperture range are forwarded to the AGP without any translation.	Default
	32M		
	128M		
	256M		
AGP Mode	1X	This item allows you to enable / disable the AGP-4X Mode.	
	2X		
	4X		Default
AGP Driving Control	Auto	This item allows you to adjust the AGP driving force. Choose *Manual* to key in a AGP Driving Value in the next selection. This field is recommended to set in Auto for avoiding any error in your system.	Default
	Manual		
AGP Driving Value	Min=0000 ~ Max=00FF	This item allows you to adjust the AGP driving force.	
AGP Fast Write	Disabled	Enabled/Disabled AGP fast write capability.	Default
	Enabled		
AGP Master 1 WS Write	Disabled		Default
	Enabled	When *Enabled,* writes to the AGP(Accelerated Graphics Port) are executed with one wait states.	

AGP & P2P Bridge Control (Continue)

	Setting	Description	Note
AGP Master 1 WS Read	Disabled		Default
	Enabled	When *Enabled,* read to the AGP (Accelerated Graphics Port) are executed with one wait states.	
AGP 3.0 Calibration cycle	Disabled	This option allows you to disable the AGP 3.0 calibration cycle. This cycle ensures that the on-die termination impedance signal swing and slew rate of the AGP signals are calibrated on a periodic basis to ensure signal integrity. It is recommended to keep this setting enabled.	
	Enabled		Default

3-3.3 CPU & PCI Bus Control

Caution: Change these settings only if you are already familiar with the Chipset.

The [CPU & PCI Bus Control] option changes the values of the chipset registers. These registers control the system options in the computer.

Phoenix – Award BIOS CMOS Setup Utility		
CPU & PCI Bus Control		
PCI1 Master 0 WS Write	Enabled	Item Help
PCI2 Master 0 WS Write	Enabled	
PCI1 Post Write	Enabled	Menu Level ▶
PCI2 Post Write	Enabled	
VLink 8X Support	Enabled	

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

After you have completed the changes, press [Esc] and follow the instructions on your screen to save your settings or exit without saving.

CPU & PCI Bus Control

	Setting	Description	Note
PCI1/2 Master 0 WS Write	Disabled		
	Enabled	When *Enabled,* writes to the PCI bus are executed with zero wait states.	Default
PCI1/2 Post Write	Disabled	This item allows you to enabled/disabled the PCI post write.	
	Enabled		Default
VLink 8X Support	Disabled	Increase system performance.	
	Enabled		Default

3-4 INTEGRATED PERIPHERALS

Select the [Integrated Peripherals] option from the Main Menu and press [Enter] key.

STOP   *Caution:* Change these settings only if you are already familiar with the Chipset.

The [INTEGRATED PERIPHERALS] option changes the values of the chipset registers. These registers control the system options in the computer. The following screen shows setup default settings.

Phoenix – Award BIOS CMOS Setup Utility Integrated Peripherals		
▶ VIA OnChip IDE Device	Press Enter	Item Help
▶ VIA OnChip PCI Device	Press Enter	
▶ SuperIO Device	Press Enter	Menu Level ▶
Init Display First	AGP	
↑↓→ Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help		
F5:Previous Values F6:Fail-Safe Defaults F7: Optimized Defaults		
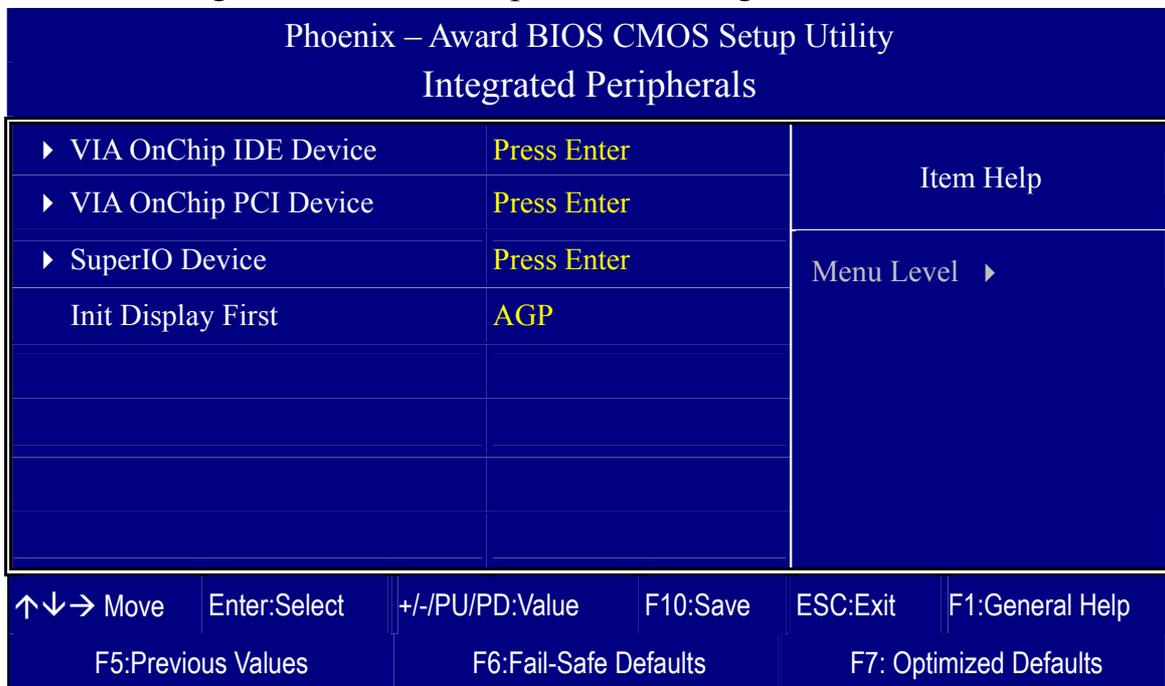
After you have completed the changes, press [Esc] and follow the instructions on your screen to save your settings or exit without saving.

INTEGRATED PERIPHERALS

	Setting	Description	Note
Init Display First	PCI Slot	Choose which card – AGP	
	AGP	Display card or PCI VGA card – to initialize first.	Default

3-4.1 VIA OnChip IDE Device

> **STOP** *Caution:* Change these settings only if you are already familiar with the Chipset.

The [VIA OnChip IDE Device] option changes the values of the chipset registers. These registers control the system options in the computer.

The following screen shows setup default settings.

Phoenix – Award BIOS CMOS Setup Utility VIA OnChip IDE Device		
Onboard SATA 1, 2	Enabled	Item Help
OnChip IDE Channel0	Enabled	
OnChip IDE Channel1	Enabled	Menu Level ▶
IDE Prefetch Mode	Enabled	
Primary Master PIO	Auto	
Primary Slave PIO	Auto	
Secondary Master PIO	Auto	
Secondary Slave PIO	Auto	
Primary Master UDMA	Auto	
Primary Slave UDMA	Auto	
Secondary Master UDMA	Auto	
Secondary Slave UDMA	Auto	
IDE HDD Block Mode	Enabled	
↑↓→:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help		
F5:Previous Values F6:Fail-Safe Defaults F7: Optimized Defaults		

After you have completed the changes, press [Esc] and follow the instructions on your screen to save your settings or exit without saving.

VIA OnChip IDE Device

	Setting	Description	Note
Onboard SATA 1, 2	Enabled	Enabled/Disabled Onboard SATA 1, 2	Default
	Disabled		
On-Chip IDE Channel 0 /IDE Channel 1 ➢ **Primary** ➢ **Secondary**	Disabled	Turn off the on-board IDE	
	Enabled	Use the on-board IDE	Default
IDE ➢ **Primary Master PIO** ➢ **Primary Slave PIO** ➢ **Secondary Master PIO** ➢ **Secondary Slave PIO**	mode 0-4	0 is the slowest speed 4 is the fastest speed	
	Auto	For better performance and stability, we suggest you use the Auto setting to set the HDD control timing.	Default
IDE ➢Primary Master UDMA ➢Primary Slave UDMA ➢Secondary Master UDMA ➢Secondary Slave UDMA	Disabled		
	Auto	Select Auto to enable Ultra DMA Mode support.	Default
IDE HDD Block Mode	Disabled	Invokes multi-sector transfer instead of one sector per transfer. Not all HDDs support this function.	
	Enabled		Default

VIA OnChip IDE Device

3-4.2 VIA OnChip PCI Device

STOP | *Caution:* Change these settings only if you are already familiar with the Chipset.

The [VIA OnChip PCI Device] option changes the values of the chipset registers. These registers control the system options in the computer.

The following screen shows setup default settings.

Phoenix – Award BIOS CMOS Setup Utility		
VIA OnChip PCI Device		
AC97 Audio	Enabled	Item Help
OnChip LAN	Enabled	
OnChip USB Controller	All Enabled	Menu Level ▶
USB 2.0 Support	Enabled	
USB Keyboard Support	Disabled	
Onboard 1394	Enabled	
↑↓→:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help		
F5:Previous Values F6:Fail-Safe Defaults F7: Optimized Defaults		

After you have completed the changes, press [Esc] and follow the instructions on your screen to save your settings or exit without saving.

VIA OnChip PCI Device

	Setting	Description	Note
AC97 Audio	Enabled	Enabled/Disabled AC97 Audio.	Default
	Disabled		
OnChip LAN	Enabled	Enabled/Disabled OnChip LAN.	Default
	Disabled		
OnChip USB Controller	All Disabled	This should be enabled if your system has a USB installed on the system board and you want to use it. Even when so equipped, if you add a higher performance controller, you will need to disable this feature.	
	All Enabled		Default
USB 2.0 Support	Disabled	Select Enabled if you have USB 2.0 peripherals.	
	Enabled		Default
USB Keyboard Support	Disabled	Select *Enabled* if your system contains a Universal Serial Bus (USB) controller and you have a USB keyboard.	Default
	Enabled		
Onboard 1394	Enabled	Enabled/Disabled Onboard 1394.	Default
	Disabled		

VIA OnChip PCI Device

3-4.3 SuperIO Device

> **STOP**
>
> *Caution:* Change these settings only if you are already familiar with the Chipset.

The [SuperIO Device] option changes the values of the chipset registers. These registers control the system options in the computer.

The following screen shows setup default settings.

| Phoenix – Award BIOS CMOS Setup Utility |||
SuperIO Device		
Onboard FDC Controller	Enabled	Item Help
Onboard Serial Port 1	3F8/IRQ4	
Onboard Serial Port 2	2F8/IRQ3	Menu Level ▶
UART Mode Select	Normal	
x UR2 Duplex Mode	Half	
Onboard Parallel Port	378/IRQ7	
Parallel Port Mode	SPP	
x ECP Mode Use DMA	3	
GAME Port Address	201	
Midi Port Address	330	
Midi Port IRQ	10	

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

After you have completed the changes, press [Esc] and follow the instructions on your screen to save your settings or exit without saving.

SuperIO Device

	Setting	Description	Note
Onboard FDC Controller	Disabled	Turn off the on-board floppy controller	
	Enabled	Use the on-board floppy controller	Default

SuperIO Device (Continue)

	Setting	Description	Note
Onboard Serial Port 1 / Serial Port 2	Disabled		
	3F8/IRQ4	Choose serial port 1 & 2's I/O address.	Default (port 1)
	2F8/IRQ3	Do not set port 1 & 2 to the same address except for Disabled or Auto.	Default (port 2)
	3E8/IRQ4		
	2E8/IRQ3		
	Auto		
UART Mode	IrDA	The second serial port offers these InfraRed interface modes.	
	ASKIR		
	Normal		Default
	SCR	SCR mean Smart Card Reader.	
If [UART Mode Select] is set to [IrDA]/[ASKIR]			
UR2 Duplex Mode	Half	Choose [Half] or [Duplex] to set UR2 in half duplex mode or full duplex mode respectively. Refer to your IR device specifications to select the suitable mode.	Default
	Full		
Onboard Parallel Port	Disabled	Choose the printer I/O address.	
	378/IRQ7		Default
	278/IRQ5		
	3BC/IRQ7		
Parallel Port Mode	SPP	The mode depends on your external device that connects to this port.	Default
	EPP		
	ECP		
	ECP+EPP		
If [Parallel Port Mode] is set to [ECP] or [ECP+EPP] mode			
ECP Mode use DMA	3	Choose DMA3	Default
	1	Choose DMA1	

SuperIO Device (Continue)

	Setting	Description	Note
GAME Port Address	Disabled	Set the I/O base address for the ON board game port under this item.	
	201		Default
	209		
Midi Port Address	Disabled	Set the I/O address for the on board Midi port here.	
	330		Default
	300		
If [Midi Port Address] is set to [330]/[300] mode			
Midi Port IRQ	5	Select the IRQ that the Midi port uses under this them.	
	10		Default

3-5 POWER MANAGEMENT SETUP

The [POWER MANAGEMENT SETUP] sets the system's power saving functions.

Phoenix – Award BIOS CMOS Setup Utility		
Power Management Setup		
ACPI Suspend Type	S1 (POS)	Item Help
Power Management Option	User Define	
HDD Power Down	Disable	Menu Level ▶
Suspend Mode	Disable	
Video Off Option	Suspend -> Off	
Video Off Method	V/H SYNC+Blank	
MODEM Use IRQ	3	
Soft-Off by PWRBTN	Instant-Off	
Run VGABIOS if S3 Resume	Auto	
AC Loss Auto Restart	Off	
▶ IRQ/Event Activity Detect	Press Enter	
↑↓→ Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help		
F5:Previous Values F6:Fail-Safe Defaults F7: Optimized Defaults		

Phoenix – Award BIOS CMOS Setup Utility		
IRQ/Event Activity Detect		
PS2KB Wakeup Select	Hot key	Item Help
PS2KB Wakeup from S1-S5	Disabled	
PS2MS Wakeup from S1-S5	Disabled	Menu Level ▶
VGA	OFF	
LPT & COM	LPT/COM	
HDD & FDD	ON	
PCI Master	OFF	
PowerOn by PCI Card	Disabled	
Wake Up On LAN/Ring	Disabled	
RTC Alarm Resume	Disabled	
x Date (of Month)	0	
x Resume Time (hh:mm:ss)	0 : 0 : 0	
▶ IRQs Activity Monitoring	Press Enter	
↑↓→ Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help		
F5:Previous Values F6:Fail-Safe Defaults F7: Optimized Defaults		

After you have completed the Power Management Setup, press [Esc] to return to the Main Menu.

Power Management Controls

	Setting	Description	Note
ACPI Suspend Type	S1(POS)	The system will enter the S1 states during suspend. (Low latency wake up)	Default
	S3(STR)		
	S1&S3		
Power Management Option	User Define	Lets you define the system power down times.	Default
	Min Saving		15 Min
	Max Saving		1 Min
HDD Power Down	Disabled	Lets you define the system power down times.	Default
	1Min, 2Min, 3Min, 4Min, 5Min, 6Min, 7Min, 8Min, 9Min, 10Min, 11Min, 12Min, 13Min, 14Min, 15Min		
Suspend Mode	Disabled	Lets you define the system power down times.	Default
	1Min, 2Min, 4Min, 6Min, 8Min, 10Min, 20Min, 30Min, 40Min, 1Hour		
Video Off Option	Suspend -->Off	When enabled, this feature allows the VGA adapter to operate in a power saving mode.	Default
	Always On		
Video Off Method	V/H Sync+Blank	Selects the method by which the monitor is blanked.	Default
	Blank screen		
	DPMS Support		
MODEM Use IRQ	3	Assigns an IRQ# to the modem device.	Default
	3-11, NA		

Power Management Controls (Continue)

	Setting	Description	Note
Soft-Off by PWR-BTTN	Instant-off		Default
	Delay 4 Sec.	Turns off the system power 4 seconds after pushing the power button.	
Run VGABIOS if S3 Resume	Auto	Some OS (win xp/2k) requires to load VGA BIOS after resume from S3.	Default
	Yes		
	No		
AC Loss Auto Restart	On	The system will switch on when power comes back after a power failure.	
	Off	The system will remain off when power comes back after a power failure.	Default
	Auto	The system will return to the state it was in before the power failure when power returns. (i.e: If the system was on, it will switch on again, if it was off, it will remain off)	
IRQ/Event Activity Detect	Press Enter	Select items that will wake up your system when in one of sleep modes. Press enter to go the select item page.	

IRQ/Event Activity Detect

	Setting	Description	Note
PS2KB Wakeup Select	Hot key	You can boot-up your system by PS/2 K/B VIA hotkey or password.	Default
	Password		
PS2KB Wakeup from S1-S5	Disabled	You can set the following hotkey :	
	Ctrl+F1~F12	1. Disable	
	Power	2. Choose CTRL+F1 up to F12	
	Wake	3. The power key in the K/B. (if available)	Default
	Any Key	4. The wake-up key in the K/B. (if available)	
		5. Any key in the K/B.	

IRQ/Event Activity Detect (Continue)

	Setting	Description	Note
PS2MS Wakeup from S1-S5	Enabled	You can boot-up your system by PS/2 mouse.	Default
	Disabled		
LPT & COM	LPT/COM NONE, LPT, COM	When *On of* LPT & COM, any activity from one of the listed system peripheral devices or IRQs wakes up the system.	Default
HDD & FDD	OFF	When *On of HDD* & FDD, any activity from one of the listed system peripheral devices wakes up the system.	
	ON		Default
PCI Master	OFF	When *On of PCI Master*, any activity from one of the listed system peripheral devices wakes up the system	Default
	ON		
PowerOn by PCI Card	Disabled	If enabled any PCI interrupt will wake up the system.	Default
	Enabled		
Wake Up On LAN/Ring	Disabled	An input signal on the serial Ring Indicator (RI) line (in other words, an incoming call on the modem/LAN) awakens the system from a soft off state.	Default
	Enabled		
RTC Alarm Resume	Disabled	The system ignores the alarm.	Default
	Enabled	Set alarm to power on the system by the date (1-31) or time (hh:mm:ss). If the date is set to [0], the system will self-power on by alarm everyday at the set time.	

3-5.1 IRQs Activity Monitoring

This option sets the IRQs Activity Monitoring.

Phoenix – Award BIOS CMOS Setup Utility		
IRQs Activity Monitoring		
Primary INTR	ON	Item Help
IRQ3 (COM 2)	Enabled	
IRQ4 (COM 1)	Enabled	Menu Level ▶
IRQ5 (LPT 2)	Enabled	
IRQ6 (Floppy Disk)	Enabled	
IRQ7 (LPT 1)	Enabled	
IRQ8 (RTC Alarm)	Disabled	
IRQ9 (IRQ2 Redir)	Disabled	
IRQ10 (Reserved)	Disabled	
IRQ11 (Reserved)	Disabled	
IRQ12 (PS/2 Mouse)	Enabled	
IRQ13 (Coprocessor)	Enabled	
IRQ14 (Hard Disk)	Enabled	
IRQ15 (Reserved)	Disabled	
↑↓→ Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help		
F5:Previous Values F6:Fail-Safe Defaults F7: Optimized Defaults		

After you have completed the changes, press [Esc] and follow the instructions on your screen to save your settings or exit without saving.

IRQs Activity Monitoring

	Setting	Description	Note
Primary INTR	ON	When set to *On*, any event occurring at will awaken a system which has been powered down.	Default
	OFF		
IRQs Activity Monitoring (Press Enter)	Enabled	IRQ3(COM2), IRQ4(COM1), IRQ5(LPT2), IRQ6(Floppy Disk), IRQ7(LPT1), IRQ12(PS/2 mouse), IRQ13(Coprocessor), IRQ14(HardDsik)	
	Disabled	IRQ8 (RTC Alarm), IRQ9(IRQ2 Redir), IRQ10(Reserved), IRQ11(Reserved), IRQ15 (Reserved)	

3-6 PNP/PCI CONFIGURATIONS

This option sets the motherboard's PCI Slots.

Phoenix – Award BIOS CMOS Setup Utility		
PNP/PCI Configurations		
PNP OS Installed	NO	Item Help
Reset Configuration Data	Disabled	
		Menu Level ▶
Resources Controlled By	Auto (ESCD)	
x IRQ Resources	Press Enter	Select Yes if you are using a Plug and Play capable operating system Select No if you need the BIOS to configure non-boot devices.
PCI/VGA Palette Snoop	Disabled	
Assign IRQ For VGA	Enabled	
Assign IRQ For USB	Enabled	
INT Pin 1 Assignment	Auto	
INT Pin 2 Assignment	Auto	
INT Pin 3 Assignment	Auto	
INT Pin 4 Assignment	Auto	
INT Pin 5 Assignment	Auto	
INT Pin 6 Assignment	Auto	
INT Pin 7 Assignment	Auto	
INT Pin 8 Assignment	Auto	
↑↓→ Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help		
F5:Previous Values F6:Fail-Safe Defaults F7: Optimized Defaults		

Note: Starred (*) items will disappear when the [Resources Controlled By] option is set to [Auto].

After you have completed the PCI Slot Configuration, press [Esc] and follow the instructions on your screen to save your settings or exit without saving.

PNP/PCI Configuration Controls

PNP/PCI Controls	Setting	Description	Note
PnP OS Installed	Yes	Set this field to [Yes] if you are running Windows 95, which is PnP compatible.	
	No	If the OS you are running does not support PnP configuration.	Default (If there is any doubt, set this field to [No])
Reset Configuration Data	Disabled	Retain PnP configuration data in BIOS.	Default
	Enabled	Reset PnP configuration data in BIOS.	
Resources Controlled By	Manual	BIOS does not manage PCI/ISA PnP card IRQ assignment.	
		Requires to assign IRQ-# to PCI or ISA PnP manually. IRQ-3,4,5,7,9,10,11,12,14,15 assigned to: _ DMA-0,1,3,5,6,7 assigned to: _	
	Auto (ESCD)	The Plug-and-Play BIOS auto manages PCI/ISA PnP card IRQ assignment automatically.	Recommended
If [Resources Controlled By] is set to [Manual]			
IRQ Resource (Press Enter)	PCI Device	Choose IRQ-# assigned to PCI/ISA PnP card.	IRQ-3,4,5,7,9,10, 11,12,14,15
	Reserved	Choose IRQ-# assigned to Legacy ISA card.	IRQ-3,4,5,7,9,10, 11,12,14,15
Under this item the user can assign an IRQ to a PCI slot. However, there under some conditions the IRQ will not be assigned as selected under this item: 1. IRQs 0, 1, 2, 6, 8, 13 can NOT be assigned, because they are fixed. 2. IRQs 5, 9, 10, 11 are available 3. IRQs 3,4,7,12,14 and 15 will only be assigned if they are free. See the table below on how to free them:			

PNP/PCI Configuration Setup (Continue)

PNP/PCI Setup	Setting	Description	Note
Interrupt Line	How to set the BIOS to release the IRQ to the PnP Interrupt pool:		
	PnP / PCI configuration	Integrated Peripherals	
IRQ 15	IRQ 15: **PCI / ISA PnP**	On-Chip Secondary PCI IDE: **disabled**	
IRQ 14	IRQ 14: **PCI / ISA PnP**	On-Chip Primary PCI IDE: **disabled**	
IRQ 12	IRQ 12: **PCI / ISA PnP**	*Interrupt 12 will be released by the PnP BIOS automatically if the PS/2 Mouse Port is not used.*	
IRQ 7	IRQ 7: **PCI / ISA PnP**	Onboard parallel port: **disabled**	
IRQ 4	IRQ 4: **PCI / ISA PnP**	Onboard Serial port 1: **disabled**	
IRQ 3	IRQ 3: **PCI / ISA PnP**	Onboard Serial port 2: **disabled**	
4. Your OS may reassign another interrupt to a PCI slot after BIOS passes control to the OS, especially if you use Windows 95, 98 or NT.			
Assign IRQ For VGA/USB	Disabled	BIOS will assign IRQ for VGA/USB port.	
	Enabled	BIOS won't assign IRQ for VGA/USB port.	Default
5. Your OS may reassign another interrupt to a PCI slot after BIOS passes control to the OS, especially if you use Windows 95, 98 or NT.			
INT Pin 1/2/3/4/5/6/7/8 Assignment	Auto	Set to Auto the BIOS will using IRQs Automatically.	Default

MULTI I/O ADDRESSES

Default settings for multi-I/O addresses are as follows:

Port	I/O Address	IRQ	Status
LPT1	378H	7	ECP/EPP
COM1	3F8H	4	
COM2	2F8H	3	

> *Warning:* If a default I/O address conflicts with other I/O cards such as sound card, you must change one of the I/O addresses to remedy to this address conflict. (I/O addresses can be adjusted from the BIOS Setup Utility)

3-7 PC HEALTH STATUS

This option sets the motherboard's PC Health Status.

Phoenix – Award BIOS CMOS Setup Utility		
PC Health Status		
FOC (Fan-Off Control)	Enabled	Item Help
ABR (Anti Burn Regulator)	Default(85°C)	
Vcore	1.68 V	Menu Level ▶
+3.3 V	2.86 V	
+ 5 V	4.16 V	If enabled, this function protect user's CPU from overheating in an event there's a problem with the CPUFAN. The user should also plug the CPUFAN power on the CPUFAN1 pin. If not, system will auto shutdown.
+ 12 V	11.96 V	
DDR Voltage	2.75V	
AGP Voltage	1.53V	
CPU Temp. External	39°C /102°F	
CHA Temperature	36°C / 96°F	
CPU Temp. On Die	47°C /116°F	
CPUFAN1 Speed	3125 RPM	
CHAFAN1 Speed	0 RPM	
↑↓→ Move　Enter:Select	+/-/PU/PD:Value　F10:Save	ESC:Exit　F1:General Help
F5:Previous Values	F6:Fail-Safe Defaults	F7: Optimized Defaults

After you have completed the changes, press [Esc] key and follow the instructions on your screen to save your settings or exit without saving.

CPU Device Monitoring

	Setting	Description	Note
FOC (Fan-Off Control)	Disabled	If enable, this function protect user's CPU from overheating in an event there's a problem with the CPU FAN. The user should also plug the CPU FAN power on the CPU FAN1 pin. If not, system will auto shutdown.	
	Enabled		Default

CPU Device Monitoring (Continue)

	Setting	Description	Note
ABR (Anti Burn Regulator)	120°C/248°F	Set the CPU temperature for the system to shutdown.	
	115°C/239°F		
	110°C/230°F		
	105°C/221°F		
	100°C/212°F		
	95°C/203°F		
	90°C/194°F		
	85°C/185°F		
	80°C/176°F		
	75°C/167°F		
	70°C/158°F		
	65°C/149°F		
	60°C/140°F		
	55°C/131°F		
	50°C/122°F		
	Default (85°C)		Default
	Disabled		
CPU Temp. External	°C/°F	Show the current status of CPU temperature.	
CHA Temperature	°C/°F	Show the current status of the System temperature.	
CPU Temp. On Die	°C/°F	Show the current status of CPU Die temperature.	
Current CPUFAN1/ CHAFAN1 Speed	RPM	Show the current status of CPU/CHA Fan.	

3-8 LOAD FAIL-SAFE DEFAULTS

Select the [Load Fail-Safe Defaults] option from the Main Menu to load a pre-defined safe bios settings. This option is recommended if you have instability issue.
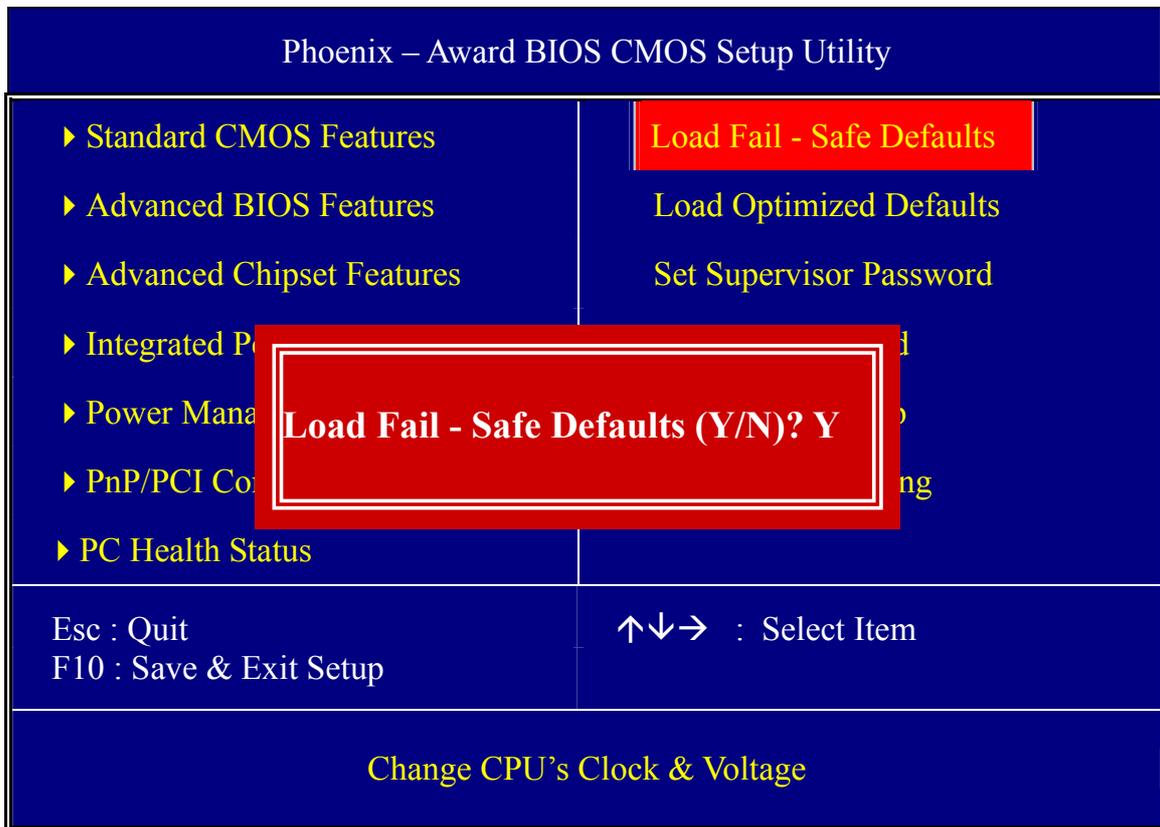
Phoenix – Award BIOS CMOS Setup Utility	
▶ Standard CMOS Features	Load Fail - Safe Defaults
▶ Advanced BIOS Features	Load Optimized Defaults
▶ Advanced Chipset Features	Set Supervisor Password
▶ Integrated P	**Load Fail - Safe Defaults (Y/N)? Y**
▶ Power Mana	
▶ PnP/PCI Co	ng
▶ PC Health Status	
Esc : Quit F10 : Save & Exit Setup	↑↓→ : Select Item
Change CPU's Clock & Voltage	

Type [Y] to use the Setup Defaults followed by [Enter] or otherwise [N] to return to the Main Menu and keep current values.

3-9 LOAD OPTIMIZED DEFAULTS

Select the [Load Optimized Defaults] option from the Main Menu to load a pre-defined optimized BIOS settings.
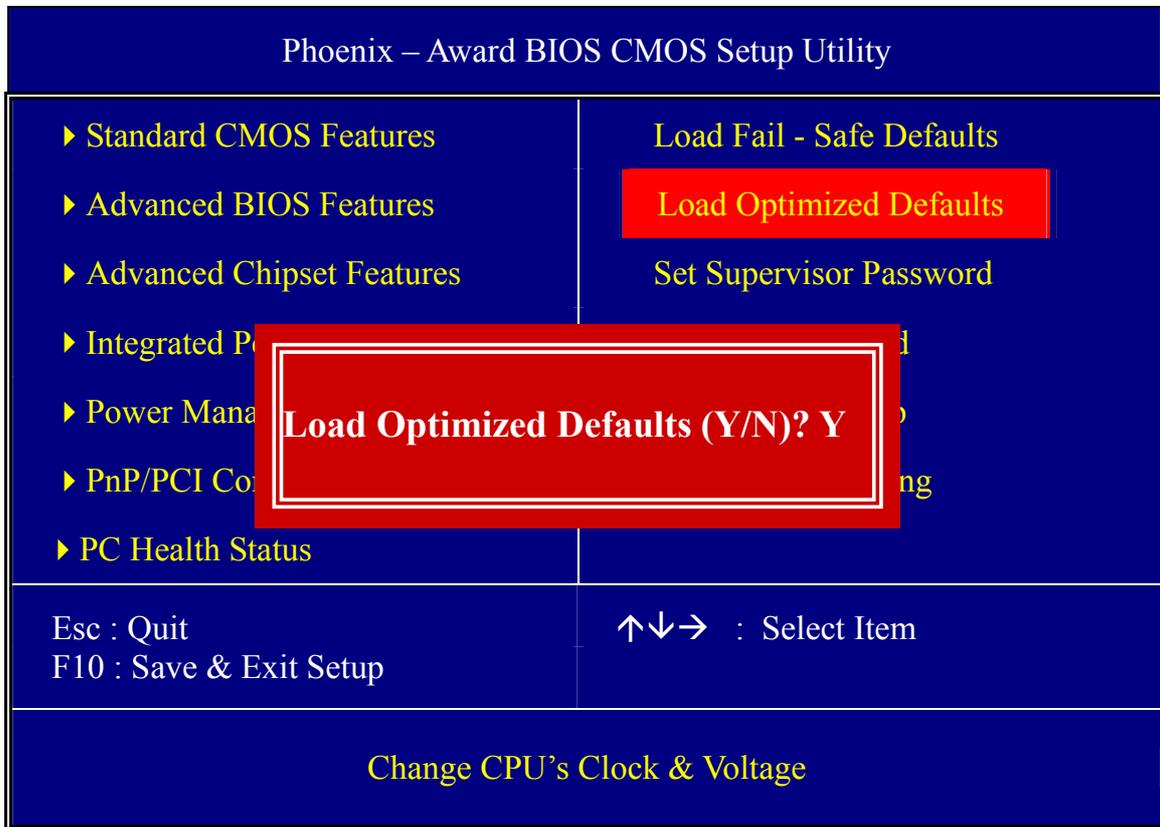
```
          Phoenix – Award BIOS CMOS Setup Utility

 ▶ Standard CMOS Features          Load Fail - Safe Defaults

 ▶ Advanced BIOS Features           Load Optimized Defaults

 ▶ Advanced Chipset Features        Set Supervisor Password

 ▶ Integrated P                              d

 ▶ Power Mana      Load Optimized Defaults (Y/N)? Y

 ▶ PnP/PCI Co                                ng

 ▶ PC Health Status

 Esc : Quit                        ↑↓→  :  Select Item
 F10 : Save & Exit Setup

                Change CPU's Clock & Voltage
```

Type [Y] to use the Setup Defaults followed by [Enter] or otherwise [N] to return to the Main Menu and keep current values.

STOP ***Warning:*** If you run into any problem after changing the BIOS configuration, please load the Fail-Safe Defaults for stable performance.

3-10 SET SUPERVISOR PASSWORD

Based on the setting you have made in the [Security Option] of the [BIOS FEATURES SETUP] section, the password prevents access to the system or the setup program by unauthorized users. Follow this procedure to set a new password or disable the password:

1. Choose [BIOS FEATURES SETUP] in the Main Menu and press [Enter]. Select the [Security Options] item and set the field to:
    a. [System]: The password is required every time the system is booted. This means only a person who knows the password can use this computer.
    b. [Setup]: The password is required only when you attempt to enter the BIOS Setup program.

2. Choose [SUPERVISOR PASSWORD] from the Main Menu and press [Enter]. The following prompt appear:

> Enter Password:

Warning: If you forget or lose the password, the only way to access the system is to set jumper JP5 to clear the CMOS RAM. All setup information is lost and you must run the BIOS setup program again.

Note: If you do not wish to use the password function, press [Enter] directly and the following message appears:

> Password Disabled!!

3.   Enter your new password and press [Enter]. The following message appears, prompting to confirm the new password:

> Confirm Password:

4.   Re-enter your password and then press [Enter] to exit to the Main Menu.

This diagram outlines the password selection procedure:

Type the Password and Press: <Enter>   ROM PCI/ISA BIO   **Press <Enter> without entering the password**

CMOS SETUP UTIL
AWARD SOFTWARE,

Enter Password:

BIOS FEATURES S   PASSWORD

Enter Password: *********   Password Disabled!!

Confirm Password: *********   SAVE & EXIT SETUP

EXIT WITHOUT SAVING

Esc : Quit
F10 : Save & E

After you confirm the password, press <Esc> to exit

Time, Date, Hard Disk Type…
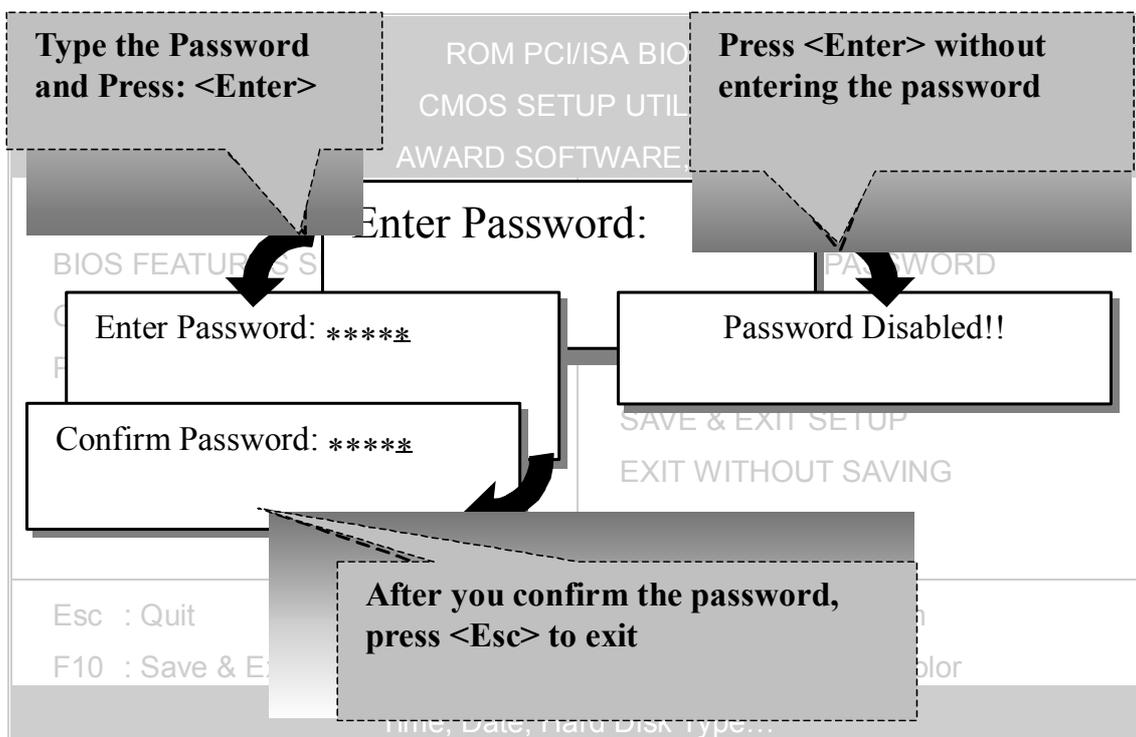
3-11 SET USER PASSWORD

When the user password option is on, you are not allowed to change any setting in the [CMOS SETUP UTILITY] except for changing the user's password.

The password setting procedure is similar to that for the [SUPERVISOR PASSWORD] (Refer to section 3-11).

Boot Menu

Boot Menu enables user to boot-up on different boot device without going into the BIOS setup.

*To enable boot Menu, press **"ESC"** after memory initialization, user will see a device menu, in which user can choose the device they wish to boot from.*

```
                    Boot Menu

        == Select a Boot First device ==
                    Floppy
                    Ls120
                    HDD-0
                    SCSI
                    CDROM
                    HDD-1
                    HDD-2
                    HDD-3
                    ZIP100
                    USB-FDD
                    USB-ZIP
                    USB-CDROM
                    USB-HDD
                    LAN

         ↑↓:Move ENTER:Accept F4 Exit
```
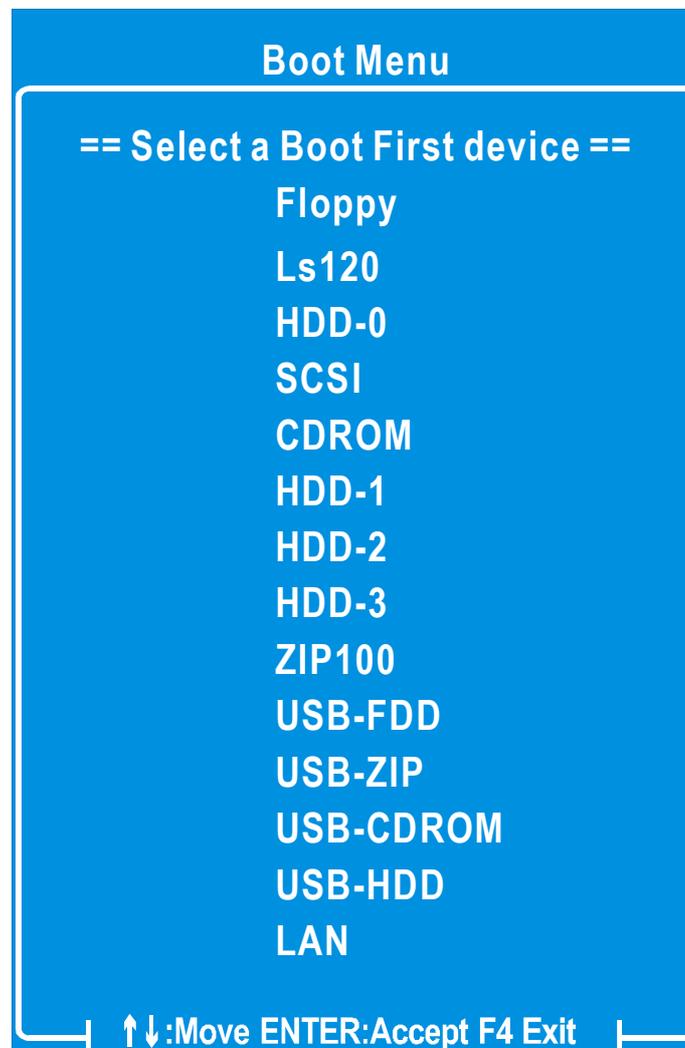
Chapter 4

DRIVERS INSTALLATION

The SOYO-CD will Auto Run only in Windows Base Operating System.

Your SY-KT600 DRAGON Plus motherboard comes with a CD-ROM labeled "SOYO CD." The SOYO CD contains

a. The user's manual for your new motherboard - in PDF format,

b. The drivers software available for installation, and

c. A database in HTML format with information on SOYO motherboards and other products.

Step 1. Insert the SOYO CD into the CD-ROM drive

If you are running Windows NT/2K/XP, the SOYO-CD will not detect your motherboard type. In that case the following dialog will pop up. Please choose your motherboard model number and press OK.

Now the SOYO-CD Start Up Menu will come up as shown on the following page

(SOYO CD Start Up Program Menu)

Under Windows 95/98/ME, the SOYO CD Start Up Program automatically detects the SOYO motherboard the system uses and displays the corresponding model name.


The user's manual files included on the SOYO CD are in PDF (Postscript Document) format. In order to read a PDF file, the appropriate Acrobat Reader software must be installed in your system.

Note: The Start Up program automatically detects if the Acrobat Reader utility is already present in your system, and otherwise prompts you on whether or not you want to install it. You must install the Acrobat Reader utility to be able to read the user's manual file. Follow the instructions on your screen during installation, then once the installation is completed, restart your system and re-run the SOYO CD.

Step 2. **Install Drivers and Utilities**

Click the ***Install Drivers*** button to display the list of drivers software that can be installed with your motherboard. The Start Up program displays the drivers available for the particular model of motherboard you own. We recommend that you only install those drivers.

driver:	revision:
---------------------- KT600 Dragon Plus ----------------------	-
VIA 4 in 1 Driver Package for Win 98SE/ME/2000/XP	v4.48
VIA USB2.0 Driver for Win 98SE/ME/2000	v2.54
VIA USB2.0 Driver for Win XP (click here for installation procedure)	-
VIA Onboard Audio Driver for Win 98SE/ME/2000/XP	v3.70a
VIA Onboard Lan Driver for Win 98SE/ME/2000/XP	v3.2
VIA Serial ATA driver for Win 98SE/ME/2000/XP	v1.0
VIA Onboard Audio Software for Win 98SE/ME/2000/XP	v1.0
KT600 Dragon Plus hardware monitor for Win 98SE/ME/2000/XP	v1.2

| Cancel | OK |

(Driver Installation Menu)

A short description of all available drivers follows:

➢   **VIA 4 in 1 Driver Package for Win 98SE/ME/NT/2000/XP**

VIA 4 In 1 driver includes four system drivers to improve the performance and maintain the stability of systems using VIA chipsets. These four drivers are :

VIA Registry (INF) Driver, VIA AGP VxD driver, VIA ATAPI Vendor Support Driver and VIA PCI IRQ Miniport Driver.

➢   **VIA USB2.0 Driver for Win 98SE/ME/2000**

This setup program will install the driver for VIA USB 2.0 Host Controller for Windows 98SE and Windows ME. For Windows XP, please check Chapter 6.

➢ **VIA Onboard Audio Driver for Win 98SE/ME/2000/XP**

You have to install the drivers before installing any application for the Onbo ard Audio.

➢ **VIA Onboard Lan Driver for Win 98SE/ME/2000/XP**

This setup program will install the Driver for VIA Onboard Lan.

➢ **VIA Serial ATA Driver for Win 98SE/ME/2000/XP**

This program is for install Driver to use Serial ATA function.

➢ **VIA Onboard Audio Software for Win 98SE/ME/2000/XP**

This driver support 2/4/6 speakers with 3D stereo enhancement.

➢ **KT600 DRAGON Plus Hardware monitor for Win 98SE/ME/ 2 000/XP**

Your motherboard comes with a hardware monitoring IC. By installing this utility, Temperature, Fan speed and Voltages can be monitored. It is also possible to set alarms when current system values exceed or fall below pre-set values.

Note: Once you have selected a driver, the system will automatically exit the SOYO CD to begin the driver installation program. When the installation is complete, most drivers require to restart your system before they can become active.

Step *3.* **Check the Latest Releases**
Click the 'Check the latest Releases' button to go the SOYO Website to automatically find the latest BIOS, manual and driver releases for your motherboard. This button will only work if your computer is connected to the internet through a network or modem connection. Make sure to get your modem connection up before clicking this button.

After Windows XP installation, your device manager should look like this:
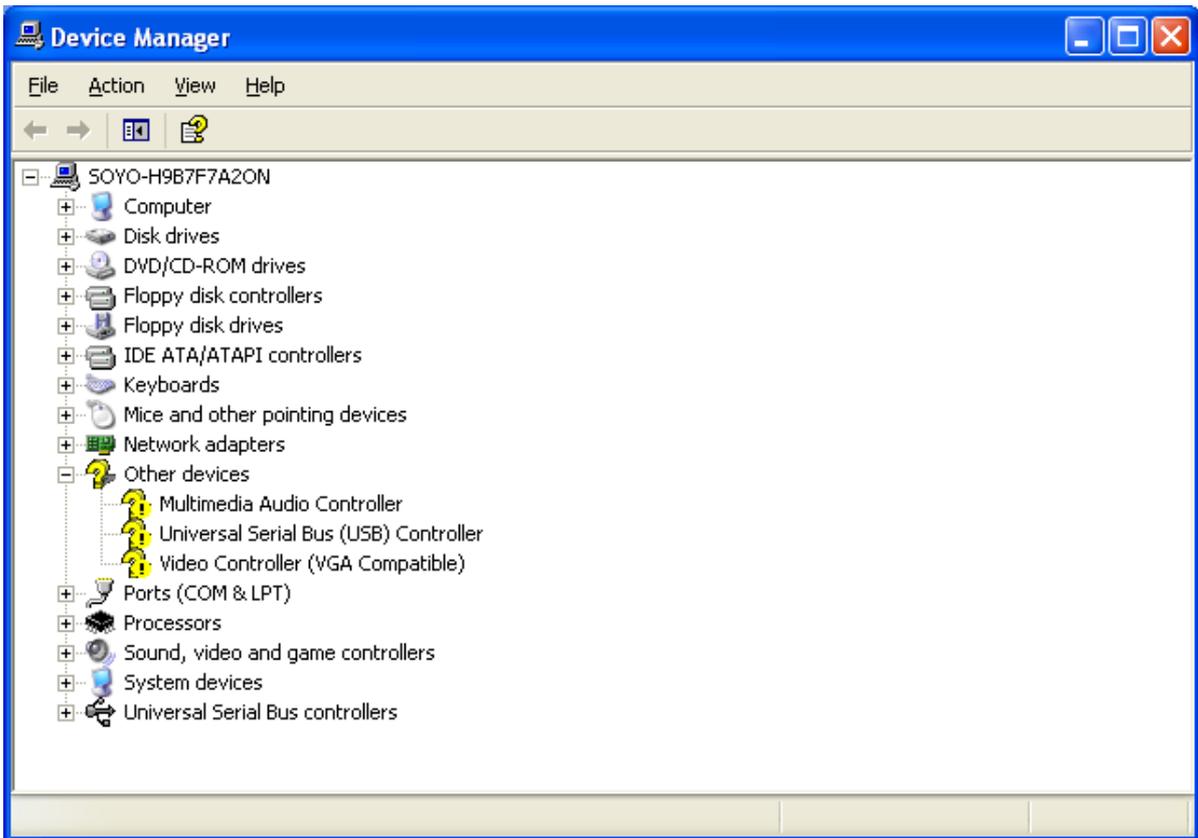
After driver installation, your Windows XP device manager should look like this:
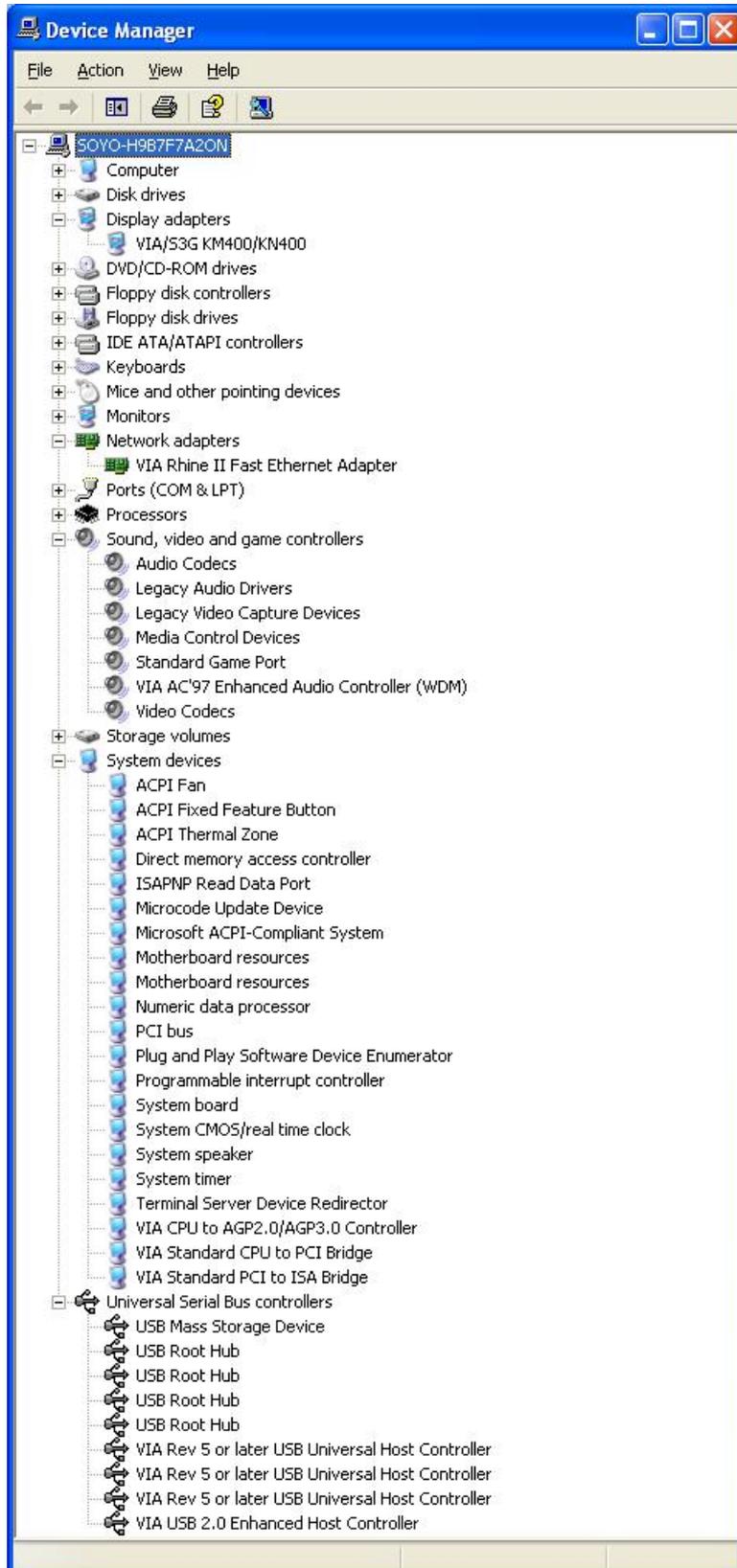
Drivers directory list in the CD driver

```
DragonCD20030602 (E:)
  Agp
  Audio
    Avance
    Cmedia
    CMI8738_6CH
    Via  ─────────── Audio driver
  doc
  driv-com
  drivers
    ALi
    Iaa
    intel-inf
    Ite
    SiS
    VIA4in1 ────── Via 4 in 1 driver
  Ide
  Lan
    Bcm5788
    Davicom
    Realteklan
    SiS
    SiS651
    Via ─────────── Onboard LAN
  Manual
  Mighty Bolt
  Raid
    hpt372
    hptutility
    SiliconImage Driver
    SiliconImage Utility
    vt8237 ─────────── RAID driver
  Soyo_box
  tools
  Usb2.0
    Intel
    SiS
    via ─────────── USB 2.0 driver for Win 98SE/ME
```

Chapter 5

AUDIO DRIVER INSTALLATION

Audio Driver Installation for Windows 98/98SE

After you have installed the audio driver, windows may prompt you to restart your computer.

When your computer has restarted it may look for the windows driver on your windows installation CD and ask you to insert your installation CD into your CD-drive. At this point your need to insert the windows installation CD into your CD-drive. You will then be prompted to select the correct directory on your windows CD.

Chapter 6

USB 2.0 DRIVER INSTALLATION

USB 2.0 Driver Installation for Windows XP

USB 2.0 drivers are available for download using Windows Update for Windows XP.

For additional information regarding USB 2.0 support in Windows XP, please visit http://www.microsoft.com/hwdev/bus/USB/default.asp
(Windows XP Service Pack1 Include USB2.0 Driver)

After installing service pack1, please do the following:

1) Go into the device manager.

2) Remove " **Universal Serial Bus (USB) Controller** "

3) Restart your system.

Next time Windows XP starts up a new USB 2.0 controller will be found.

Chapter 7

VIA 8237 SERIAL ATA DRIVER

INSTALLATION

You can use your VIA 8237 (SATA1, SATA2) as

1.   Normal IDE function.
2.   RAID function. (RAID 0, 1)

To use SATA1 and SATA2 as normal IDE, please do the following steps

1.   Go to the CMOS setup→Integrated Peripherals→VIA Onchip
      IDE device→"Onboard SATA1, 2" enable.
2.   Then set the SATA Mode to "IDE".
3.   Install the VIA Serial ATA driver, see driver installation
      instruction below.

**To use SATA1 and SATA2 as RAID controller, please do the following
steps**

1.   Go to CMOS setup→Integrated Peripherals→VIA Onchip IDE
      device→"Onboard SATA1, 2"to enable..
2.   Then set the SATA Mode to "RAID"
3.   Go to the CMOS setup→ADVANCED BIOS Features→and set
      the "First Boot Device" to "SATA1, 2, SCSI".
4.   Set the "SATA1, 2 & SCSI Boot Order" to SATA1, 2, SCSI"

Install VIA 8237 SATA during OS Installation

Install driver during Windows XP installation

1. Set the folder options to "show hidden files and folders", check Microsoft help for more info on how to set this option.

2. Go to "**d:\raid\vt8237\driver disk**" directory, (assuming that your CD-ROM is drive d) copy all the files to a floppy disk. Some files are hidden, so step #1 must be done.

3. Windows XP will start to inspect your hardware configuration.

4. Press "F6" when the message "Press F6 if you need to install a third party SCSI or RAID driver…." Appear. below

5. Press **S** key to specify additional devices when the **Windows XP Setup** window appears.

6. Insert the floppy disk of driver, then press **Enter** to continue

7. In the follow-on window of device type, please select "**VIA 8237 SATARaid controller for windows XP** " to continue.

8. Win XP will prompt you that a message that the driver is newer than the default driver, press S (use the driver on floppy) to continue.

9. The follow-on interface will list the devices to be installed, in which "**VIA 8237 SATARaid SATARaid controller for windows XP**" item should be included. (If users want to install other devices, press "S" at this time.) Press ENTER to continue Windows XP setup.

Install driver during Windows 2000 installation

1. Set the folder options to "show hidden files and folders", check Microsoft help for more info on how to set this option.

2. Go to "**d:\raid\vt8237\driver disk**", (assuming that your CD-ROM is drive d) copy all the files and directory to a floppy disk. Some files are hidden, so step #1 must be done.

3. Windows 2000 will start to inspect your hardware configuration

4. Press "F6" when the message "Press F6 if you need to install a third party SCSI or RAID driver…." Appear.

5. Press **S** key to specify additional devices when the **Windows 2000 Setup** window appears.

6. Insert the floppy disk of driver, then press **Enter** to continue

7. In the follow-on window of device type, please select "**VIA 8237 SATARaid controller for Windows NT and 2000**" to continue

8. Win 2K will prompt you that a message that the driver is newer than the default driver, press S (use the driver on floppy) to continue

9. The follow-on interface will list the devices to be installed, in which "**VIA 8237 SATARaid controller for Windows NT and 2000**" item should be included. (If users want to install other devices, press "S" at this time.) Press ENTER to continue Windows 2000 setup