

GA-VT890P

Intel® Core™ 2 Duo / Pentium® D / Pentium® 4 / Celeron® D
LGA775 Processor Motherboard

User's Manual

Rev. 1001

12ME-VT890P-1001R



* The WEEE marking on the product indicates this product must not be disposed of with user's other household waste and must be handed over to a designated collection point for the recycling of waste electrical and electronic equipment!!



* The WEEE marking applies only in European Union's member states.

Declaration of Conformity

(full address)

G.B.T. Technology Trading GmbH
We, Manufacturer/Importer

Aueschlag 7, Wied 41, D-74637 Heilbronn, Germany

declare that the product

Motherboard

GA-VT890P

is in conformity with
(reference to the specification under which conformity is declared)

in accordance with 89/339 EEC/EMC Directive

- | | | | |
|---|--|---|---|
| <input type="checkbox"/> EN 55011 | Limits and methods of measurement of radio disturbance characteristics of industrial, scientific and medical (ISM) high frequency equipment | <input checked="" type="checkbox"/> EN 61000-3-2 | Disturbances in supply systems caused by household appliances and similar electrical equipment "Voltage fluctuations" |
| <input type="checkbox"/> EN 55013 | Limits and methods of measurement of radio disturbance characteristics of equipment receivers and associated apparatus | <input checked="" type="checkbox"/> EN 55024 | Information Technology equipment immunity requirements - Limits and methods of measurement |
| <input type="checkbox"/> EN 55014-1 | Limits and methods of measurement of radio disturbance characteristics of household electrical appliances, portable tools and similar electrical apparatus | <input type="checkbox"/> EN 50082-1 | Generic immunity standard Part 1: Residential, commercial and light industry |
| <input type="checkbox"/> EN 55015 | Limits and methods of measurement of radio disturbance characteristics of electronic strips and transformers | <input type="checkbox"/> EN 50082-2 | Generic immunity standard Part 2: Industrial environment |
| <input type="checkbox"/> EN 55020 | Immunity from radio interference of immovable receivers and associated equipment | <input type="checkbox"/> EN 50091-2 | Immunity requirements for household appliances tools and similar apparatus power systems (UPS) |
| <input checked="" type="checkbox"/> EN 55022 | Limits and methods of measurement of radio disturbance characteristics of information technology equipment | | |
| <input type="checkbox"/> DIN VDE 0885 part 12 | Cabled distribution systems; Equipment for data processing systems from sound and television signals | | |
| <input checked="" type="checkbox"/> CE marking | |  | (EC conformity marking) |
| <input type="checkbox"/> EN 60065 | Safety requirements for mains operated household and similar general use electrical appliances | <input type="checkbox"/> EN 60950 | Safety for information technology equipment including electrical business equipment |
| <input type="checkbox"/> EN 60335 | Safety of household and similar electrical appliances | <input type="checkbox"/> EN 50091-1 | General and Safety requirements for uninterruptible power systems (UPS) |

The manufacturer also declares the conformity of above mentioned product with the actual required safety standards in accordance with EN 503 503 SEC

Manufacturer/Importer

Signature: Jimmy Huang

(Stamp)

Date: Jan. 5, 2007

Name: Timmy Huang

DECLARATION OF CONFORMITY

Per FCC Part 2 Section 2.1077(a)



Responsible Party Name: **G.B.T. INC. (U.S.A.)**

Address: **17358 Railroad Street**

City of **Industry, CA 91748**

Phone/Fax No: **(818) 854-9338/ (818) 854-9339**

hereby declares that the product

Product Name: Motherboard

Model Number: GA-VT890P

Conforms to the following specifications:

FCC Part 15, Subpart B, Section 15.107(a) and Section 15.109

(a) Class B Digital Device

Supplementary Information:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful and (2) this device must accept any interference received, including that may cause undesired operation.

Representative Person's Name: ERIC LU

Signature: Eric Lu

Date: Jan. 5, 2007

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Product Manual Classification

In order to assist in the use of this product, Gigabyte has categorized the user manual in the following:

- For quick installation, please refer to the "Hardware Installation Guide" included with the product.
- For detailed product information and specifications, please carefully read the "Product User Manual".
- For detailed information related to Gigabyte's unique features, please go to "Technology Guide" section on Gigabyte's website to read or download the information you need.

For more product details, please click onto Gigabyte's website at www.gigabyte.com.tw

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Item Checklist

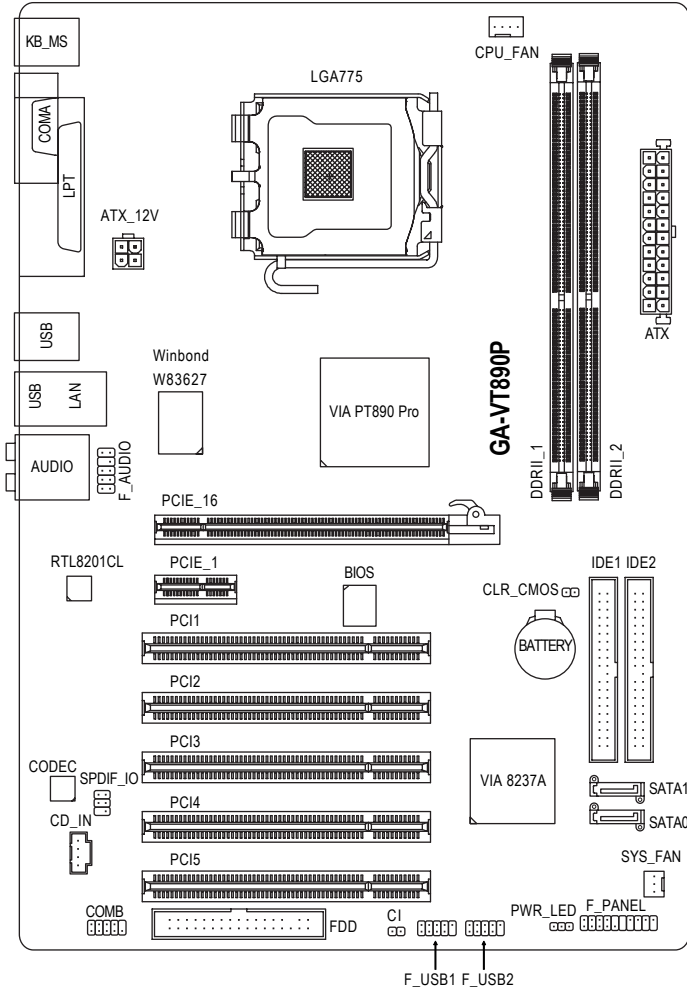
- IDE Cable x 1 & FDD Cable x 1
- SATA Cable x 1
- I/O Shield

* The items listed above are for reference only, and are subject to change without notice.

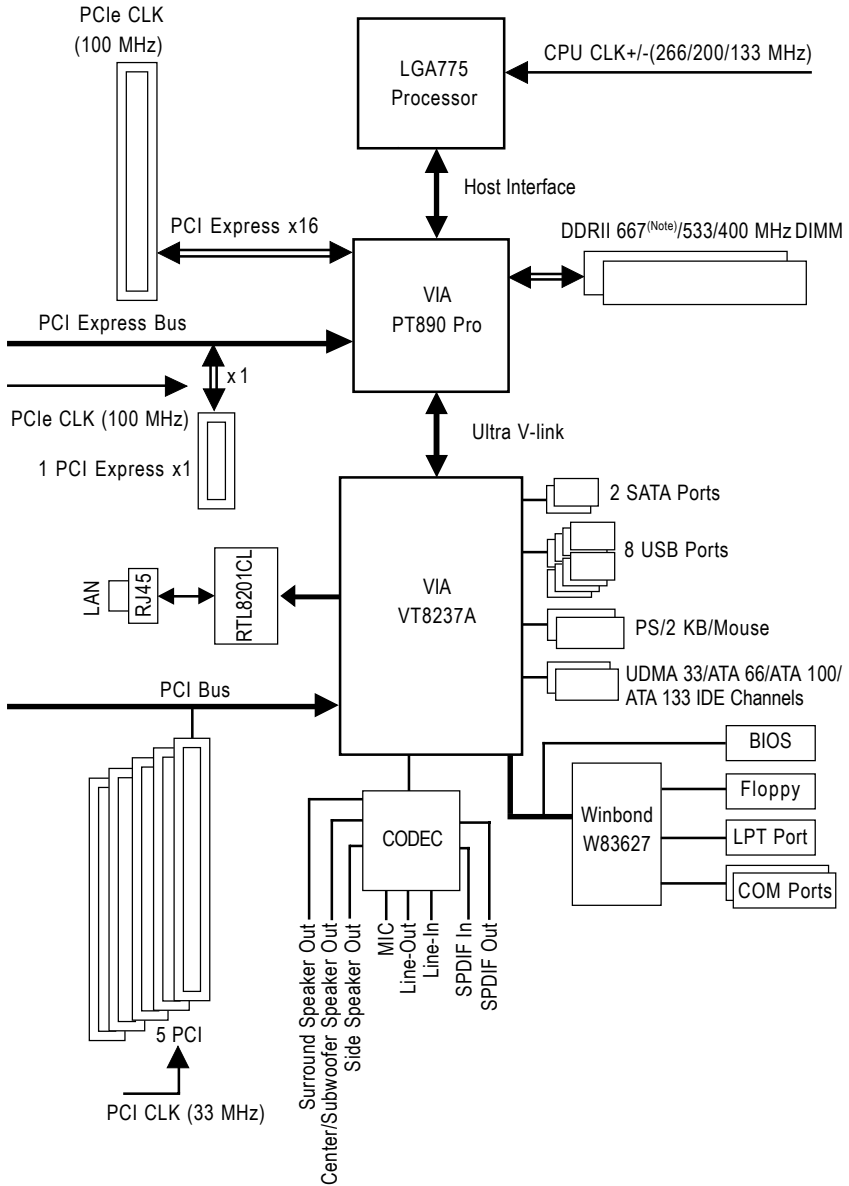
Optional Accessories

- ◆ 2 Ports USB 2.0 Cable (Part Number: 12CR1-1UB030-51/R)
- ◆ 4 Ports USB 2.0 Cable (Part Number: 12CR1-1UB030-21/R)
- ◆ COM Port Cable (Part Number: 12CF1-1CM001-31/12CF1-1CM001-12R)
- ◆ S/PDIF In and Out Cable (Part Number: 12CR1-1SPINO-11/R)

GA-VT890P Motherboard Layout



Block Diagram



(Note) To use a DDRII 667 memory module on the motherboard, you must install a 1066/800 MHz FSB processor.

Chapter 1 Hardware Installation

1-1 Considerations Prior to Installation

Preparing Your Computer

The motherboard contains numerous delicate electronic circuits and components which can become damaged as a result of electrostatic discharge (ESD). Thus, prior to installation, please follow the instructions below:

1. Please turn off the computer and unplug its power cord.
2. When handling the motherboard, avoid touching any metal leads or connectors.
3. It is best to wear an electrostatic discharge (ESD) cuff when handling electronic components (CPU, RAM).
4. Prior to installing the electronic components, please have these items on top of an antistatic pad or within a electrostatic shielding container.
5. Please verify that the power supply is switched off before unplugging the power supply connector from the motherboard.

Installation Notices

1. Prior to installation, please do not remove the stickers on the motherboard. These stickers are required for warranty validation.
2. Prior to the installation of the motherboard or any hardware, please first carefully read the information in the provided manual.
3. Before using the product, please verify that all cables and power connectors are connected.
4. To prevent damage to the motherboard, please do not allow screws to come in contact with the motherboard circuit or its components.
5. Please make sure there are no leftover screws or metal components placed on the motherboard or within the computer casing.
6. Please do not place the computer system on an uneven surface.
7. Turning on the computer power during the installation process can lead to damage to system components as well as physical harm to the user.
8. If you are uncertain about any installation steps or have a problem related to the use of the product, please consult a certified computer technician.

Instances of Non-Warranty

1. Damage due to natural disaster, accident or human cause.
2. Damage as a result of violating the conditions recommended in the user manual.
3. Damage due to improper installation.
4. Damage due to use of uncertified components.
5. Damage due to use exceeding the permitted parameters.
6. Product determined to be an unofficial Gigabyte product.

1-2 Feature Summary

CPU	<ul style="list-style-type: none"> ◆ Supports LGA775 Intel® Core™ 2 Duo / Pentium® D / Pentium® 4 / Celeron® D ◆ L2 cache varies with CPU
Front Side Bus	<ul style="list-style-type: none"> ◆ Supports 1066/800/533 MHz FSB
Chipset	<ul style="list-style-type: none"> ◆ Northbridge: VIA PT890 Pro Chipset ◆ Southbridge: VIA 8237A
LAN	<ul style="list-style-type: none"> ◆ Onboard RTL8201CL chip (10/100 Mbit)
Audio	<ul style="list-style-type: none"> ◆ Onboard VIA VT1708A chip ◆ Supports High Definition Audio ◆ Supports 2/4/6/8 channel audio ◆ Supports S/PDIF In/Out connection ◆ Supports CD In connection
Storage	<ul style="list-style-type: none"> ◆ VT8237A Southbridge <ul style="list-style-type: none"> - 1 FDD connector, allowing connection of 1 FDD device - 2 IDE connectors with UDMA 33/ATA 66/ATA 100/ATA 133 support, allowing connection of 4 IDE devices - 2 SATA connectors , allowing connection of 2 SATA devices - Supports data striping (RAID 0) and mirroring (RAID 1) for Serial ATA
O.S Support	<ul style="list-style-type: none"> ◆ Microsoft Windows 2000/XP
Memory	<ul style="list-style-type: none"> ◆ 2 DDRII DIMM memory slots (supports up to 4 GB memory) ^(Note 1) ◆ Supports DDRII 667/533/400 unbuffered DIMMs ^(Note 2) ◆ Supports 1.8V DDRII DIMMs
Expansion Slots	<ul style="list-style-type: none"> ◆ 1 PCI Express x16 slot ◆ 1 PCI Express x1 slot ◆ 5 PCI slots
Internal Connectors	<ul style="list-style-type: none"> ◆ 1 24-pin ATX power connector ◆ 1 4-pin ATX 12V power connector ◆ 1 floppy connector ◆ 2 IDE connectors ◆ 2 SATA connectors ◆ 1 CPU fan connector ◆ 1 system fan connector ◆ 1 front panel connector ◆ 1 front audio connector ◆ 1 CD In connector ◆ 1 S/PDIF In/Out connector ◆ 2 USB 2.0/1.1 connectors for additional 4 ports by cables ◆ 1 COMB connector ◆ 1 power LED connector ◆ 1 Chassis Intrusion connector

Rear Panel I/O	<ul style="list-style-type: none"> ◆ 1 PS/2 keyboard port ◆ 1 PS/2 mouse port ◆ 1 parallel port ◆ 1 serial port ◆ 4 USB 2.0/1.1 ports ◆ 1 RJ-45 port ◆ 6 audio jacks (Line In / Line Out / MIC In/Surround Speaker Out (Rear Speaker Out)/Center/Subwoofer Speaker Out/Side Speaker Out)
I/O Control	<ul style="list-style-type: none"> ◆ Winbond W83627 chip
Hardware Monitor	<ul style="list-style-type: none"> ◆ System voltage detection ◆ CPU/System temperature detection ◆ CPU/System fan speed detection ◆ CPU/System warning temperature ◆ CPU/System fan failure warning ◆ CPU smart fan control ^(Note 3)
BIOS	<ul style="list-style-type: none"> ◆ 1 4 Mbit flash ROM ◆ Use of licensed AWARD BIOS
Additional Features	<ul style="list-style-type: none"> ◆ Supports @BIOS ◆ Supports Download Center ◆ Supports Q-Flash ◆ Supports EasyTune ^(Note 4) ◆ Supports Xpress Install ◆ Supports Xpress Recovery2 ◆ Supports Xpress BIOS Rescue
Bundle Software	<ul style="list-style-type: none"> ◆ Norton Internet Security (OEM revision)
Form Factor	<ul style="list-style-type: none"> ◆ ATX form factor; 30.5cm x 20.7cm

(Note 1) Due to standard PC architecture, a certain amount of memory is reserved for system usage and therefore the actual memory size is less than the stated amount. For example, 4 GB of memory size will instead be shown as 3.xx GB memory during system startup.

(Note 2) To use a DDRII 667 memory module on the motherboard, you must install a 1066/800 MHz FSB processor.

(Note 3) This function is only supported on 4-pin CPU fans.

(Note 4) EasyTune functions may vary depending on different motherboards.

1-3 Installation of the CPU and CPU Cooler



CAUTION

Before installing the CPU, please comply with the following conditions:

1. Please make sure that the motherboard supports the CPU.
2. Please take note of the one indented corner of the CPU. If you install the CPU in the wrong direction, the CPU will not insert properly. If this occurs, please change the insert direction of the CPU.
3. Please add an even layer of heat paste between the CPU and CPU cooler.
4. Please make sure the CPU cooler is installed on the CPU prior to system use, otherwise overheating and permanent damage of the CPU may occur.
5. Please set the CPU host frequency in accordance with the CPU specifications. It is not recommended that the system bus frequency be set beyond hardware specifications since it does not meet the required standards for the peripherals. If you wish to set the frequency beyond the proper specifications, please do so according to your hardware specifications including the CPU, graphics card, memory, hard drive, etc.



NOTE

HT functionality requirement content :

Enabling the functionality of Hyper-Threading Technology for your computer system requires all of the following platform components:

- CPU: An Intel® Pentium CPU with HT Technology
- Chipset: A chipset that supports HT Technology
- BIOS: A BIOS that supports HT Technology and has it enabled
- OS: An operation system that has optimizations for HT Technology

1-3-1 Installation of the CPU

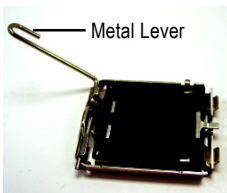


Fig. 1
Gently lift the metal lever located on the CPU socket to the upright position.

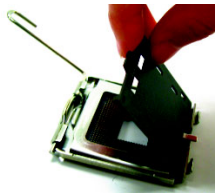


Fig. 2
Remove the plastic covering on the CPU socket.

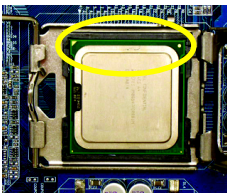


Fig. 3
Notice the small gold colored triangle located on the edge of the CPU socket. Align the indented corner of the



Fig. 4
Once the CPU is properly inserted, please replace the load plate and push the metal lever back into its original position.

CPU with the triangle and gently insert the CPU into position. (Grasping the CPU firmly between your thumb and forefinger, carefully place it into the socket in a straight and downwards motion. Avoid twisting or bending motions that might cause damage to the CPU during installation.)

1-3-2 Installation of the CPU Cooler



Fig. 1
Please apply an even layer of heat paste on the surface of the installed CPU.

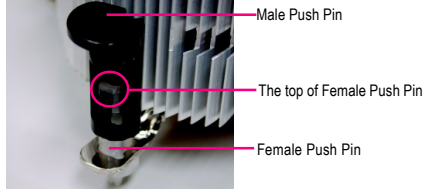


Fig. 2
(Turning the push pin along the direction of arrow is to remove the CPU cooler, on the contrary, is to install.) Please note the direction of arrow sign on the male push pin doesn't face inwards before installation. (This instruction is only for Intel boxed fan)

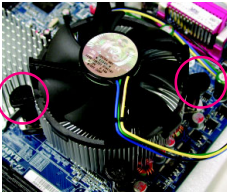


Fig. 3
Place the CPU cooler atop the CPU and make sure the push pins aim to the pin hole on the motherboard. Pressing down the push pins diagonally.

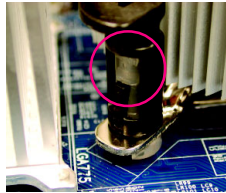


Fig. 4
Please make sure the Male and Female push pin are joined closely. (for detailed installation instructions, please refer to the CPU cooler installation section of the user manual)

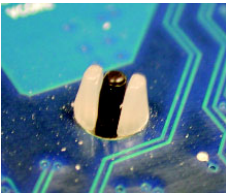


Fig. 5
Please check the back of motherboard after installing. If the push pin is inserted as the picture, the installation is complete.

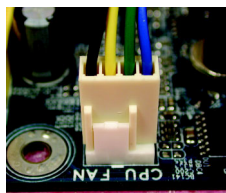


Fig. 6
Finally, please attach the power connector of the CPU cooler to the CPU fan header located on the motherboard.



The CPU cooler may adhere to the CPU as a result of hardening of the heat paste. To prevent such an occurrence, it is suggested that either thermal tape rather than heat paste be used for heat dissipation or using extreme care when removing the CPU cooler.

1-4 Installation of Memory



Before installing the memory modules, please comply with the following conditions:

1. Please make sure that the memory used is supported by the motherboard. It is recommended that memory of similar capacity, specifications and brand be used.
2. Before installing or removing memory modules, please make sure that the computer power is switched off to prevent hardware damage.
3. Memory modules have a foolproof insertion design. A memory module can be installed in only one direction. If you are unable to insert the module, please switch the direction.

The motherboard supports DDRII memory modules, whereby BIOS will automatically detect memory capacity and specifications. Memory modules are designed so that they can be inserted only in one direction. The memory capacity used can differ with each slot.

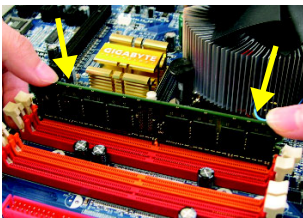
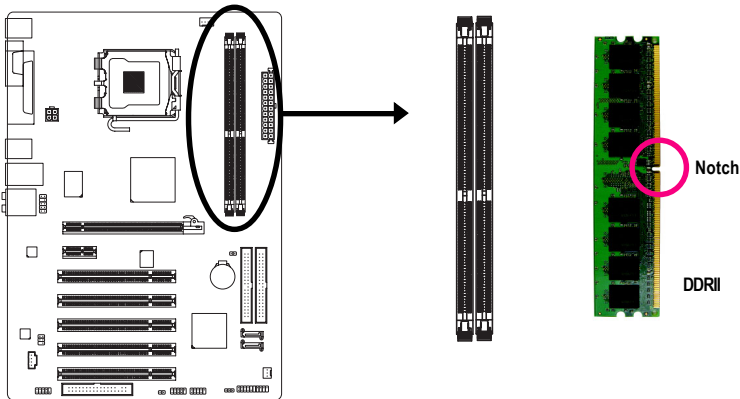


Fig.1

The DIMM socket has a notch, so the DIMM memory module can only fit in one direction. Insert the DIMM memory module vertically into the DIMM socket. Then push it down.

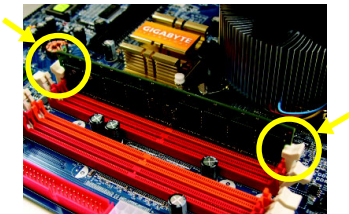


Fig.2

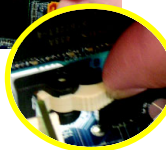
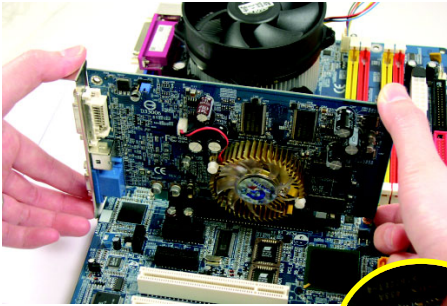
Close the plastic clip at both edges of the DIMM sockets to lock the DIMM module. Reverse the installation steps when you wish to remove the DIMM module.

1-5 Installation of Expansion Cards

You can install your expansion card by following the steps outlined below:

1. Read the related expansion card's instruction document before install the expansion card into the computer.
2. Remove your computer's chassis cover, screws and slot bracket from the computer.
3. Press the expansion card firmly into expansion slot in motherboard.
4. Be sure the metal contacts on the card are indeed seated in the slot.
5. Replace the screw to secure the slot bracket of the expansion card.
6. Replace your computer's chassis cover.
7. Power on the computer, if necessary, setup BIOS utility of expansion card from BIOS.
8. Install related driver from the operating system.

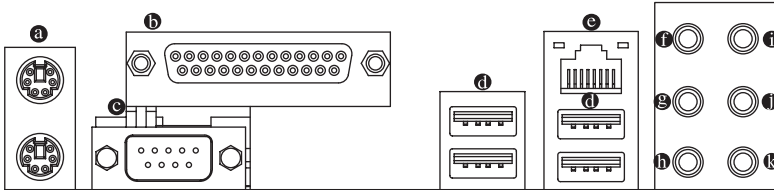
Installing a PCI Express x16 expansion card:



CAUTION

Please align the VGA card to the onboard PCI Express x16 slot and press firmly down on the slot. Make sure your VGA card is locked by the latch at the end of the PCI Express x16 slot. When you try uninstall the VGA card, please gently press the latch as the picture to the left shows to release the card.

1-6 I/O Back Panel Introduction



a PS/2 Keyboard and PS/2 Mouse Connector

To install a PS/2 port keyboard and mouse, plug the mouse to the upper port (green) and the keyboard to the lower port (purple).

b Parallel Port

The parallel port allows connection of a printer, scanner and other peripheral devices.

c Serial Port

Connects to serial-based mouse or data processing devices.

d USB Port

Before you connect your device(s) into USB connector(s), please make sure your device(s) such as USB keyboard, mouse, scanner, zip, speaker...etc. have a standard USB interface.

Also make sure your OS supports USB controller. If your OS does not support USB controller, please contact OS vendor for possible patch or driver upgrade. For more information please contact your OS or device(s) vendors.

e LAN Port

The provided Internet connection is Fast Ethernet, providing data transfer speeds of 10/100 Mbps.

f Center/Subwoofer Speaker Out

The default Center/Subwoofer Speaker Out jack. Center/Subwoofer speakers can be connected to Center/Subwoofer Speaker Out jack.

g Surround Speaker Out (Rear Speaker Out)

The default Surround Speaker Out (Rear Speaker Out) jack. Rear surround speakers can be connected to Surround Speaker Out (Rear Speaker Out) jack.

h Side Speaker Out

The default Side Speaker Out jack. Surround side speakers can be connected to Side Speaker Out jack.

i Line In

The default Line In jack. Devices like CD-ROM, walkman etc. can be connected to Line In jack.

Line Out (Front Speaker Out)

The default Line Out (Front Speaker Out) jack. Stereo speakers, earphone or front surround speakers can be connected to Line Out (Front Speaker Out) jack.

mic In

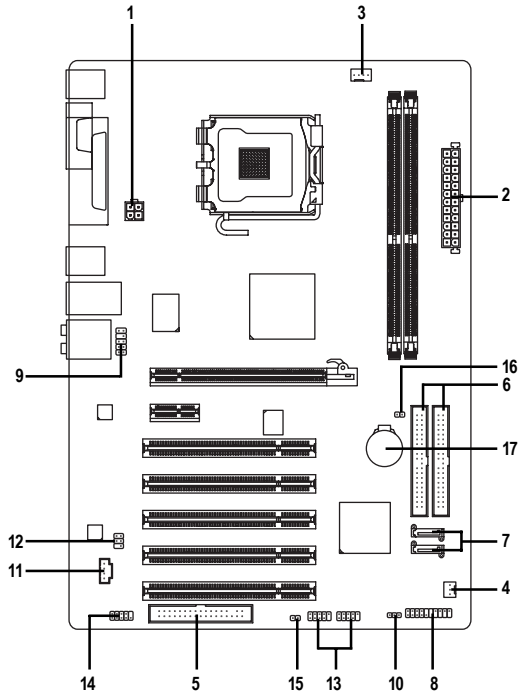
The default MIC In jack. Microphone must be connected to MIC In jack.



NOTE

In addition to the default speakers settings, the ①~③ audio jacks can be reconfigured to perform different functions via the audio software. Only microphones still MUST be connected to the default Mic In jack (④). Please refer to the 2-/4-/6-/8- channel audio setup steps for detailed software configuration information.

1-7 Connectors Introduction



1)	ATX_12V	10)	PWR_LED
2)	ATX (Power Connector)	11)	CD_IN
3)	CPU_FAN	12)	SPDIF_IO
4)	SYS_FAN	13)	F_USB1/F_USB2
5)	FDD	14)	COMB
6)	IDE1/IDE2	15)	CI
7)	SATA0/1	16)	CLR_CMOS
8)	F_PANEL	17)	BATTERY
9)	F_AUDIO		

1/2) ATX_12V/ATX (Power Connector)

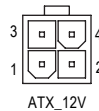
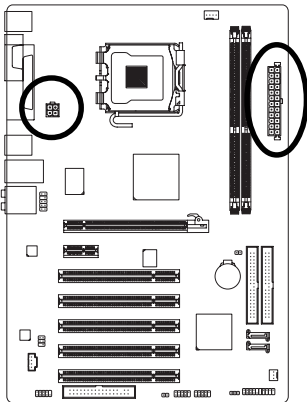
With the use of the power connector, the power supply can supply enough stable power to all the components on the motherboard. Before connecting the power connector, please make sure that all components and devices are properly installed. Align the power connector with its proper location on the motherboard and connect tightly.

The ATX_12V power connector mainly supplies power to the CPU. If the ATX_12V power connector is not connected, the system will not start.

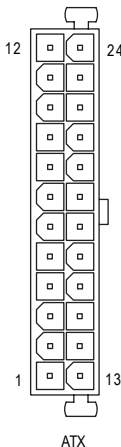
Caution!

Please use a power supply that is able to handle the system voltage requirements. It is recommended that a power supply that can withstand high power consumption be used (300W or greater). If a power supply is used that does not provide the required power, the result can lead to an unstable system or a system that is unable to start.

If you use a 24-pin ATX power supply, please remove the small cover on the power connector on the motherboard before plugging in the power cord; otherwise, please do not remove it.



Pin No.	Definition
1	GND
2	GND
3	+12V
4	+12V



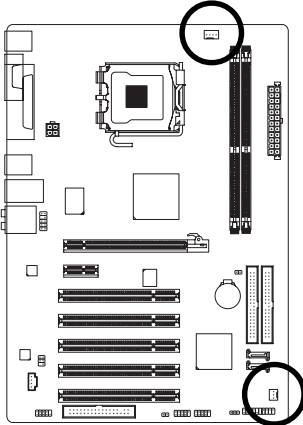
Pin No.	Definition	Pin No.	Definition
1	3.3V	13	3.3V
2	3.3V	14	-12V
3	GND	15	GND
4	+5V	16	PS_ON(soft On/Off)
5	GND	17	GND
6	+5V	18	GND
7	GND	19	GND
8	Power Good	20	-5V
9	5V SB(stand by +5V)	21	+5V
10	+12V	22	+5V
11	+12V(Only for 24-pin ATX)	23	+5V (Only for 24-pin ATX)
12	3.3V(Only for 24-pin ATX)	24	GND(Only for 24-pin ATX)

3/4) CPU_FAN / SYS_FAN (Cooler Fan Power Connector)

The cooler fan power connector supplies a +12V power voltage via a 3-pin (SYS_FAN)/4-pin (CPU_FAN) power connector and possesses a foolproof connection design.

Most coolers are designed with color-coded power connector wires. A red power connector wire indicates a positive connection and requires a +12V power voltage. The black connector wire is the ground wire (GND).

Remember to connect the CPU/system fan cable to the CPU_FAN/SYS_FAN connector to prevent CPU damage or system hanging caused by overheating.



CPU_FAN



SYS_FAN

CPU_FAN:

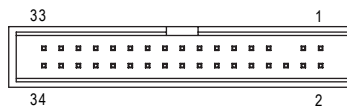
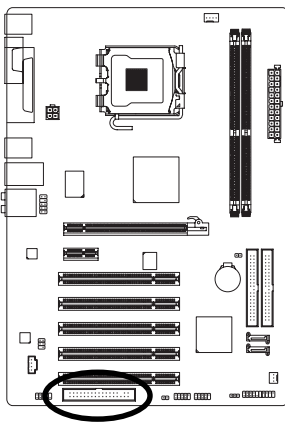
Pin No.	Definition
1	GND
2	+12V/Speed Control
3	Sense
4	Speed Control

SYS_FAN:

Pin No.	Definition
1	GND
2	+12V
3	Sense

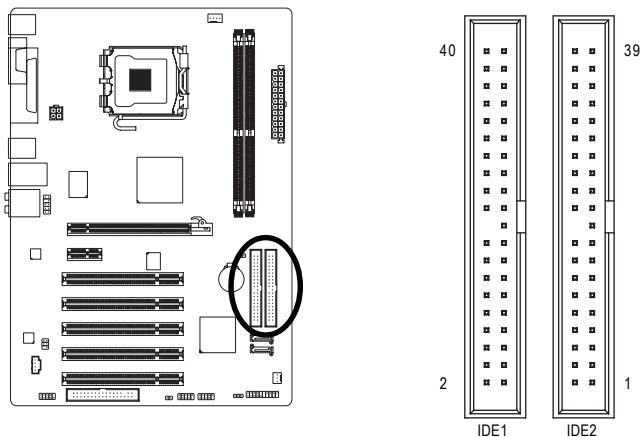
5) FDD (Floppy Connector)

The FDD connector is used to connect the FDD cable while the other end of the cable connects to the FDD drive. The types of FDD drives supported are: 360 KB, 720 KB, 1.2 MB, 1.44 MB and 2.88 MB. Before attaching the FDD cable, please take note of the foolproof groove in the FDD connector.



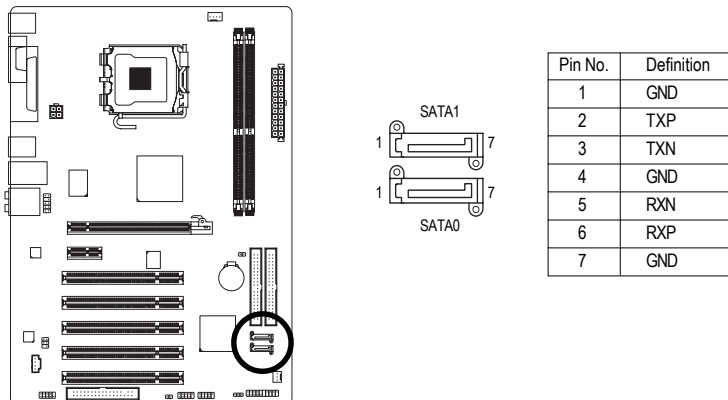
6) IDE1/IDE2 (IDE Connector)

An IDE device connects to the computer via an IDE connector. One IDE connector can connect to one IDE cable, and the single IDE cable can then connect to two IDE devices (hard drive or optical drive). If you wish to connect two IDE devices, please set the jumper on one IDE device as Master and the other as Slave (for information on settings, please refer to the instructions located on the IDE device). Before attaching the IDE cable, please take note of the foolproof groove in the IDE connector.



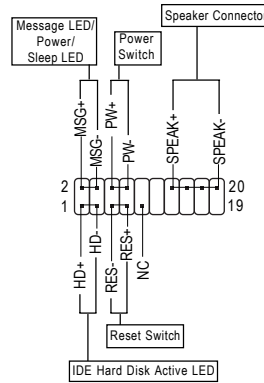
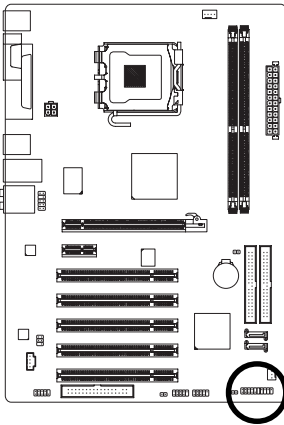
7) SATA0/1 (SATA Connector)

SATA can provide up to 150MB/s transfer rate. Please refer to the BIOS setting for the SATA and install the proper driver in order to work properly.



8) F_PANEL (Front Panel Jumper)

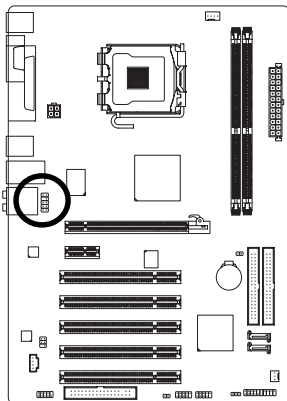
Please connect the power LED, PC speaker, reset switch and power switch etc. of your chassis front panel to the F_PANEL connector according to the pin assignment below.



HD (IDE Hard Disk Active LED) (Blue)	Pin 1: LED anode(+) Pin 2: LED cathode(-)
SPEAK (Speaker Connector) (Amber)	Pin 1: Power Pin 2- Pin 3: NC Pin 4: Data(-)
RES (Reset Switch) (Green)	Open: Normal Close: Reset Hardware System
PW (Power Switch) (Red)	Open: Normal Close: Power On/Off
MSG (Message LED/Power/Sleep LED) (Yellow)	Pin 1: LED anode(+) Pin 2: LED cathode(-)
NC (Purple)	NC

9) F_AUDIO (Front Audio Connector)

This connector supports either HD (High Definition) or AC97 front panel audio module. If you wish to use the front audio function, connect the front panel audio module to this connector. Check the pin assignments carefully while you connect the front panel audio module. Incorrect connection between the module and connector will make the audio device unable to work or even damage it. For optional front panel audio module, please contact your chassis manufacturer.



HD Audio:

Pin No.	Definition
1	MIC2_L
2	GND
3	MIC2_R
4	-ACZ_DET
5	LINE2_R
6	FSENSE1
7	FAUDIO_JD
8	No Pin
9	LINE2_L
10	FSENSE2

AC'97 Audio:

Pin No.	Definition
1	MIC
2	GND
3	MIC Power
4	NC
5	Line Out (R)
6	NC
7	NC
8	No Pin
9	Line Out (L)
10	NC

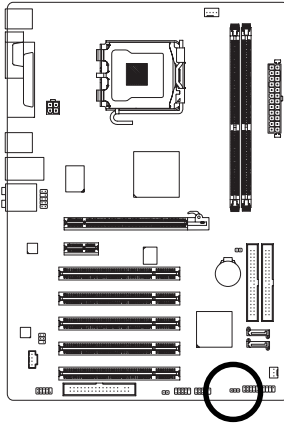


NOTE

By default, the audio driver is configured to support HD Audio. To connect an AC97 front panel audio module to this connector, please refer to the instructions on Page 70 about the software settings.

10) PWR_LED

The PWR_LED connector is connected with the system power indicator to indicate whether the system is on/off. It will blink when the system enters suspend mode (S1).

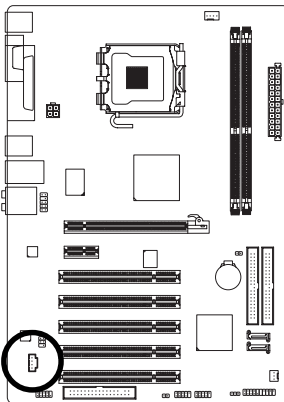


1 

Pin No.	Definition
1	MPD+
2	MPD-
3	MPD-

11) CD_IN (CD IN)

Connect CD-ROM or DVD-ROM audio out to the connector.

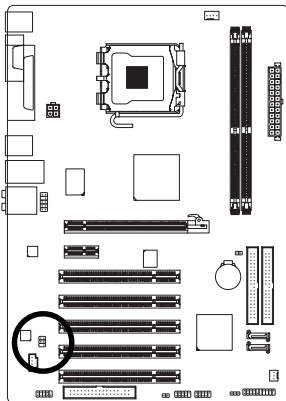


1 

Pin No.	Definition
1	CD-L
2	GND
3	GND
4	CD-R

12) SPDIF_IO (S/PDIF In/Out Connector)

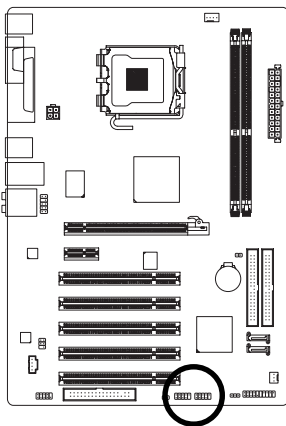
The S/PDIF output is capable of providing digital audio to external speakers or compressed AC3 data to an external Dolby Digital Decoder. Use this feature only when your stereo system has digital input function. Use S/PDIF IN feature only when your device has digital output function. Be careful with the polarity of the S/PDIF_IO connector. Check the pin assignment carefully while you connect the S/PDIF cable, incorrect connection between the cable and connector will make the device unable to work or even damage it. For optional S/PDIF cable, please contact your local dealer.



Pin No.	Definition
1	Power
2	No Pin
3	SPDIF
4	SPDIFI
5	GND
6	GND

13) F_USB1 / F_USB2 (Front USB Connector)

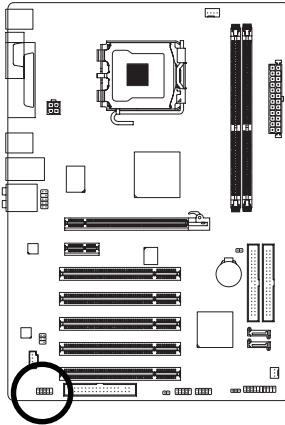
Be careful with the polarity of the front USB connector. Check the pin assignment carefully while you connect the front USB cable, incorrect connection between the cable and connector will make the device unable to work or even damage it. For optional front USB cable, please contact your local dealer.



Pin No.	Definition
1	Power(5V)
2	Power(5V)
3	USB DX-
4	USB Dy-
5	USB DX+
6	USB Dy+
7	GND
8	GND
9	No Pin
10	NC

14) COMB (COMB Connector)

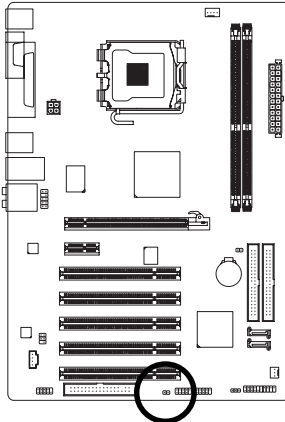
Be careful with the polarity of the COMB connector. Check the pin assignments while you connect the COMB cable. Please contact your nearest dealer for optional COMB cable.



Pin No.	Definition
1	NDCDB-
2	NSINB
3	NSOUTB
4	NDTRB-
5	GND
6	NDSRB-
7	NRTSB-
8	NCTSB-
9	NRIB-
10	No Pin

15) CI (Chassis Intrusion, Case Open)

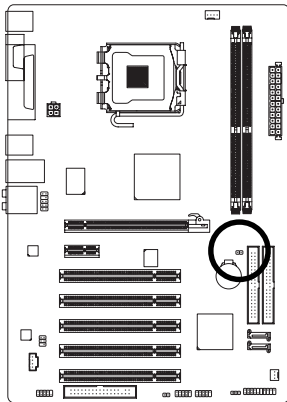
This 2-pin connector allows your system to detect if the chassis cover is removed. You can check the "Case Opened" status in BIOS Setup.




Pin No.	Definition
1	Signal
2	GND

16) CLR_CMOS (Clear CMOS)

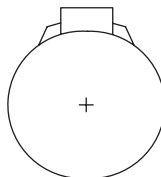
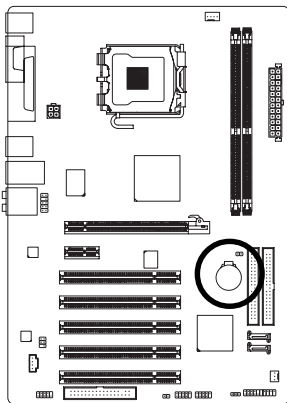
You may clear the CMOS data to its default values by this header. To clear CMOS, temporarily short the two pins. Default doesn't include the jumper to avoid improper use of this header.



 Open: Normal

 Short: Clear CMOS

17) BATTERY



- ❖ Danger of explosion if battery is incorrectly replaced.
- ❖ Replace only with the same or equivalent type recommended by the manufacturer.
- ❖ Dispose of used batteries according to the manufacturer's instructions.

If you want to erase CMOS...

1. Turn off the computer and unplug the power cord.
2. Gently take out the battery and put it aside for about one minute.
(Or you can use a metal object to connect the positive and negative pins in the battery holder to make them short for five seconds.)
3. Re-install the battery.
4. Plug the power cord in and turn on the computer.

Chapter 2 BIOS Setup

BIOS (Basic Input and Output System) includes a CMOS SETUP utility which allows user to configure required settings or to activate certain system features.

The CMOS SETUP saves the configuration in the CMOS SRAM of the motherboard.

When the power is turned off, the battery on the motherboard supplies the necessary power to the CMOS SRAM.

When the power is turned on, press the button during the BIOS POST (Power-On Self Test) will take you to the CMOS SETUP screen. You can enter the BIOS setup screen by pressing "Ctrl + F1".

If you wish to upgrade to a new BIOS, either GIGABYTE's Q-Flash or @BIOS utility can be used.

Q-Flash allows the user to quickly and easily update or backup BIOS without entering the operating system.

@BIOS is a Windows-based utility that does not require users to boot to DOS before upgrading BIOS but directly download and update BIOS from the Internet.

CONTROL KEYS

<↑><↓><←><→>	Move to select item
<Enter>	Select Item
<Esc>	Main Menu - Quit and not save changes into CMOS Status Page Setup Menu and Option Page Setup Menu - Exit current page and return to Main Menu
<Page Up>	Increase the numeric value or make changes
<Page Down>	Decrease the numeric value or make changes
<F1>	General help, only for Status Page Setup Menu and Option Page Setup Menu
<F2>	Item Help
<F5>	Restore the previous CMOS value from CMOS, only for Option Page Setup Menu
<F6>	Load the Fail-safe default CMOS value from BIOS default table
<F7>	Load the Optimized Defaults
<F8>	Q-Flash utility
<F9>	System Information
<F10>	Save all the CMOS changes, only for Main Menu

Main Menu

The on-line description of the highlighted setup function is displayed at the bottom of the screen.

Status Page Setup Menu / Option Page Setup Menu

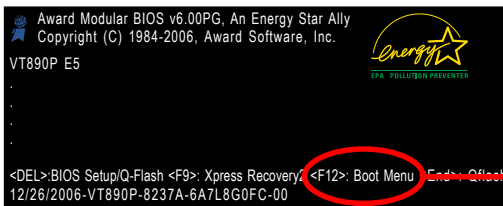
Press <F1> to pop up a small help window that describes the appropriate keys to use and the possible selections for the highlighted item. To exit the Help Window press <Esc>.



Because BIOS flashing is potentially risky, please do it with caution and avoid inadequate operation that may result in system malfunction.

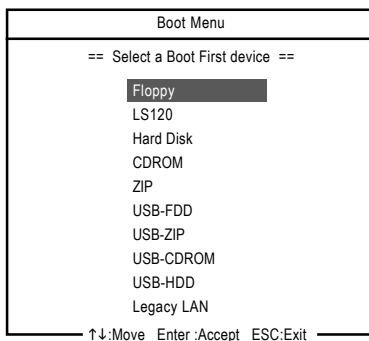
<F12> : Boot Menu

Select boot sequence for onboard (or add-on cards) device.



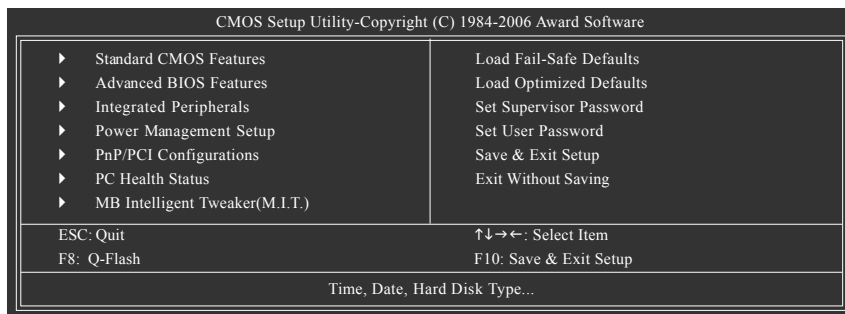
<F12> : Boot Menu

Use <↑> or <↓> to select a device, then press enter to accept. Press <ESC> to exit this menu.



The Main Menu (For example: BIOS Ver. : E5)

Once you enter Award BIOS CMOS Setup Utility, the Main Menu (as figure below) will appear on the screen. Use arrow keys to select among the items and press <Enter> to accept or enter the sub-menu.



1. If you don't find the settings you want, press "Ctrl+F1" to access advanced options.
2. Select the **Load Optimized Defaults** item in the BIOS Setup when somehow the system is not stable as usual. This action makes the system reset to the default settings for stability.
3. The BIOS Setup menus described in this chapter are for reference only and may differ from the exact settings for your motherboard.

■ Standard CMOS Features

This setup page includes all the items in standard compatible BIOS.

■ Advanced BIOS Features

This setup page includes all the items of Award special enhanced features.

■ Integrated Peripherals

This setup page includes all onboard peripherals.

■ Power Management Setup

This setup page includes all the items of Green function features.

■ PnP/PCI Configuration

This setup page includes all the configurations of PCI & PnP ISA resources.

■ PC Health Status

This setup page is the System auto detect Temperature, voltage, fan, speed.

■ MB Intelligent Tweaker(M.I.T.)

This setup page is control CPU clock and frequency ratio.

■ Load Fail-Safe Defaults

Fail-Safe Defaults indicates the value of the system parameters which the system would be in safe configuration.

■ Load Optimized Defaults

Optimized Defaults indicates the value of the system parameters which the system would be in best performance configuration.

■ Set Supervisor Password

Change, set, or disable password. It allows you to limit access to the system and Setup, or just to Setup.

■ Set User Password

Change, set, or disable password. It allows you to limit access to the system.

■ Save & Exit Setup

Save CMOS value settings to CMOS and exit setup.

■ Exit Without Saving

Abandon all CMOS value changes and exit setup.

2-1 Standard CMOS Features

CMOS Setup Utility-Copyright (C) 1984-2006 Award Software Standard CMOS Features		
Date (mm:dd:yy)	Thu, Oct 19 2006	Item Help
Time (hh:mm:ss)	14:31:24	Menu Level▶
▶ IDE Channel 0 Master	[None]	
▶ IDE Channel 0 Slave	[None]	
▶ IDE Channel 1 Master	[None]	
▶ IDE Channel 1 Slave	[None]	
▶ IDE Channel 2 Master	[None]	
▶ IDE Channel 3 Master	[None]	
Drive A	[1.44M, 3.5"]	
Floppy 3 Mode Support	[Disabled]	
Halt On	[All, But Keyboard]	
Base Memory	640K	
Extended Memory	447M	
↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults		

☞ Date

The date format is <week>, <month>, <day>, <year>.

- ▶▶ Week The week, from Sun to Sat, determined by the BIOS and is display-only.
- ▶▶ Month The month, Jan. Through Dec.
- ▶▶ Day The day, from 1 to 31 (or the maximum allowed in the month)
- ▶▶ Year The year, from 1999 through 2098

☞ Time

The times format in <hour> <minute> <second>. The time is calculated base on the 24-hour military-time clock. For example, 1 p.m. is 13:0:0.

☞ IDE Channel 0/1 Master/Slave

- ▶▶ IDE HDD Auto-Detection Press "Enter" to select this option for automatic device detection.
- ▶▶ IDE Channel 0 Master/Slave

IDE devices setup. You can use one of three methods:

- Auto Allows BIOS to automatically detect IDE/SATA devices during POST. (Default value)
- None Select this if no IDE/SATA devices are used and the system will skip the automatic detection step and allow for faster system start up.
- Manual User can manually input the correct settings.
- ▶▶ Access Mode Use this to set the access mode for the hard drive. The four options are: CHS/LBA/Large/Auto(default:Auto)
- ▶▶ Capacity Capacity of currently installed hard drive.

☞ IDE Channel 2/3 Master

- ▶▶ IDE HDD Auto-Detection Press "Enter" to select this option for automatic device detection.
- ▶▶ Extended IDE Drive You can use one of the two methods:
 - Auto Allows BIOS to automatically detect IDE/SATA devices during POST(default)
 - None Select this if no IDE/SATA devices are used and the system will skip the automatic detection step and allow for faster system start up.

- ▶▶ Access Mode Use this to set the access mode for the hard drive. The two options are:
Large/Auto(default:Auto)
- ▶▶ Capacity Capacity of currently installed hard drive.
Hard drive information should be labeled on the outside drive casing. Enter the appropriate option based on this information.
- ▶▶ Cylinder Number of cylinders
- ▶▶ Head Number of heads
- ▶▶ Precomp Write precomp
- ▶▶ Landing Zone Landing zone
- ▶▶ Sector Number of sectors

☞ Drive A

The category identifies the types of floppy disk drive A that has been installed in the computer.

- ▶▶ None No floppy drive installed
- ▶▶ 360K, 5.25" 5.25 inch PC-type standard drive; 360 KB capacity.
- ▶▶ 1.2M, 5.25" 5.25 inch AT-type high-density drive; 1.2 MB capacity
(3.5 inch when 3 Mode is Enabled).
- ▶▶ 720K, 3.5" 3.5 inch double-sided drive; 720 KB capacity
- ▶▶ 1.44M, 3.5" 3.5 inch double-sided drive; 1.44 MB capacity.
- ▶▶ 2.88M, 3.5" 3.5 inch double-sided drive; 2.88 MB capacity.

☞ Floppy 3 Mode Support (for Japan Area)

- ▶▶ Disabled Normal Floppy Drive. (Default value)
- ▶▶ Drive A Drive A is 3 mode Floppy Drive.

☞ Halt on

The category determines whether the computer will stop if an error is detected during power up.

- ▶▶ No Errors The system boot will not stop for any error that may be detected and you will be prompted.
- ▶▶ All Errors Whenever the BIOS detects a non-fatal error the system will be stopped.
- ▶▶ All, But Keyboard The system boot will not stop for a keyboard error; it will stop for all other errors. (Default value)
- ▶▶ All, But Diskette The system boot will not stop for a disk error; it will stop for all other errors.
- ▶▶ All, But Disk/Key The system boot will not stop for a keyboard or disk error; it will stop for all other errors.

☞ Memory

The category is display-only which is determined by POST (Power On Self Test) of the BIOS.

▶▶ Base Memory

The POST of the BIOS will determine the amount of base (or conventional) memory installed in the system.

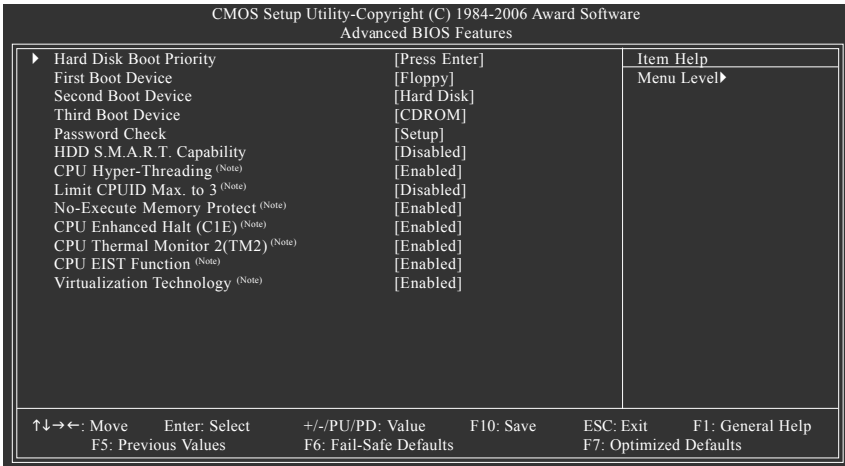
The value of the base memory is typically 512 K for systems with 512 K memory installed on the motherboard, or 640K for systems with 640 K or more memory installed on the motherboard.

▶▶ Extended Memory

The BIOS determines how much extended memory is present during the POST.

This is the amount of memory located above 1 MB in the CPU's memory address map.

2-2 Advanced BIOS Features



☞ Hard Disk Boot Priority

Select boot sequence for onboard(or add-on cards) SCSI, RAID, etc.

Use <↑> or <↓> to select a device, then press<+> to move it up, or <-> to move it down the list. Press <ESC> to exit this menu.

☞ First / Second / Third Boot Device

- ▶ Floppy Select your boot device priority by Floppy.
- ▶ LS120 Select your boot device priority by LS120.
- ▶ Hard Disk Select your boot device priority by Hard Disk.
- ▶ CDROM Select your boot device priority by CDROM.
- ▶ ZIP Select your boot device priority by ZIP.
- ▶ USB-FDD Select your boot device priority by USB-FDD.
- ▶ USB-ZIP Select your boot device priority by USB-ZIP.
- ▶ USB-CDROM Select your boot device priority by USB-CDROM.
- ▶ USB-HDD Select your boot device priority by USB-HDD.
- ▶ Legacy LAN Select your boot device priority by LAN.
- ▶ Disabled Disable this function.

☞ Password Check

- ▶ Setup The system will boot but will not access to Setup page if the correct password is not entered at the prompt. (Default value)
- ▶ System The system will not boot and will not access to Setup page if the correct password is not entered at the prompt.

(Note) This item will show up when you install a processor which supports this function.

☞ **HDD S.M.A.R.T. Capability**

This feature allows your hard disk to report read/write errors and to issue warnings when third-party hardware monitor utility is installed.

- ▶▶ Enabled Enable HDD S.M.A.R.T. capability.
- ▶▶ Disabled Disable HDD S.M.A.R.T. capability. (Default value)

☞ **CPU Hyper-Threading** ^(Note)

▶▶ Enabled Enable CPU Hyper Threading Feature. Please note that this feature is only working for operating system with multi processors mode supported. (Default value)

- ▶▶ Disabled Disable CPU Hyper Threading.

☞ **Limit CPUID Max. to 3** ^(Note)

- ▶▶ Enabled Limit CPUID Maximum value to 3 when use older OS like NT4.
- ▶▶ Disabled Disable CPUID Limit for windows XP. (Default value)

☞ **No-Execute Memory Protect** ^(Note)

- ▶▶ Enabled Enable No-Execute Memory Protect function. (Default value)
- ▶▶ Disabled Disable No-Execute Memory Protect function.

☞ **CPU Enhanced Halt (C1E)** ^(Note)

- ▶▶ Enabled Enable CPU Enhanced Halt (C1E) function. (Default value)
- ▶▶ Disabled Disable CPU Enhanced Halt (C1E) function.

☞ **CPU Thermal Monitor 2 (TM2)** ^(Note)

- ▶▶ Enabled Enable CPU Thermal Monitor 2 (TM2) function. (Default value)
- ▶▶ Disabled Disable CPU Thermal Monitor 2 (TM2) function.

☞ **CPU EIST Function** ^(Note)

- ▶▶ Enabled Enable CPU EIST function. (Default value)
- ▶▶ Disabled Disable EIST function.

☞ **Virtualization Technology** ^(Note)

- ▶▶ Enabled Enable Virtualization technology function. (Default value)
- ▶▶ Disabled Disable this function.

(Note) This item will show up when you install a processor which supports this function.

2-3 Integrated Peripherals

CMOS Setup Utility-Copyright (C) 1984-2006 Award Software Integrated Peripherals		
SATA Controller	[Enabled]	Item Help
SATA Controller Mode	[IDE]	Menu Level▶
IDE DMA transfer access	[Enabled]	
OnChip IDE Channel0	[Enabled]	
OnChip IDE Channel1	[Enabled]	
IDE Prefetch Mode	[Enabled]	
Azalia HDA Controller	[Auto]	
LAN Controller	[Enabled]	
USB 1.1 Controller	[Enabled]	
USB 2.0 Controller	[Enabled]	
USB Keyboard Support	[Disabled]	
USB Mouse Support	[Disabled]	
Onboard LAN Boot ROM	[Disabled]	
Legacy USB storage detect	[Enabled]	
Onboard Serial Port 1	[3F8/IRQ4]	
Onboard Serial Port 2	[2F8/IRQ3]	
Onboard Parallel Port	[378/IRQ7]	
Parallel Port Mode	[SPP]	
x EPP Mode Select	EPP1.7	
↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults		

☞ SATA Controller

- ▶▶ Enabled Enable the onboard SATA controller. (Default value)
- ▶▶ Disabled Disable the onboard SATA controller.

☞ SATA Controller Mode

- ▶▶ IDE Set the onboard SATA mode to IDE. (Default value)
- ▶▶ RAID Set the onboard SATA mode to RAID.

☞ IDE DMA transfer access

- ▶▶ Enabled Enable IDE DMA transfer access. (Default value)
- ▶▶ Disabled Disable this function.

☞ OnChip IDE Channel0

- ▶▶ Enabled Enable the onboard 1st channel IDE port. (Default value)
- ▶▶ Disabled Disable the onboard 1st channel IDE port.

☞ OnChip IDE Channel1

- ▶▶ Enabled Enable the onboard 2nd channel IDE port. (Default value)
- ▶▶ Disabled Disable the onboard 2nd channel IDE port.

☞ IDE Prefetch Mode

- ▶▶ Enabled Enable IDE data buffer to enhance HDD transfer speed. (Default value)
- ▶▶ Disabled Disable IDE data buffer for the system stability.

☞ Azalia HDA Controller

- ▶▶ Auto Auto detect the onboard Azalia audio function. (Default value)
- ▶▶ Disabled Disable this function.

☞ LAN Controller

- ▶▶ Enabled Enable the onboard LAN function. (Default value)
- ▶▶ Disabled Disable this function.

☞ **USB 1.1 Controller**

- ▶▶ Enabled Enable the USB 1.1 controller. (Default value)
- ▶▶ Disabled Disable this function.

☞ **USB 2.0 Controller**

- ▶▶ Enabled Enable the USB 2.0 controller. (Default value)
- ▶▶ Disabled Disable this function.

☞ **USB Keyboard Support**

- ▶▶ Enabled Enable the USB keyboard support.
- ▶▶ Disabled Disable this function. (Default value)

☞ **USB Mouse Support**

- ▶▶ Enabled Enable the USB mouse support.
- ▶▶ Disabled Disable this function. (Default value)

☞ **Onboard LAN Boot ROM**

This function decide whether to invoke the boot ROM of the onboard LAN chip.

- ▶▶ Enabled Enable this function.
- ▶▶ Disabled Disable this function. (Default value)

☞ **Legacy USB storage detect**

This option allows users to decide whether to detect USB storage devices, including USB flash drives and USB hard drives during POST.

- ▶▶ Enabled BIOS will scan all USB storage devices. (Default value)
- ▶▶ Disabled Disable this function.

☞ **Onboard Serial Port 1**

- ▶▶ Auto BIOS will automatically setup the port 1 address.
- ▶▶ 3F8/IRQ4 Enable onboard Serial port 1 and address is 3F8/IRQ4. (Default value)
- ▶▶ 2F8/IRQ3 Enable onboard Serial port 1 and address is 2F8/IRQ3.
- ▶▶ 3E8/IRQ4 Enable onboard Serial port 1 and address is 3E8/IRQ4.
- ▶▶ 2E8/IRQ3 Enable onboard Serial port 1 and address is 2E8/IRQ3.
- ▶▶ Disabled Disable onboard Serial port 1.

☞ **Onboard Serial Port 2**

- ▶▶ Auto BIOS will automatically setup the port 2 address.
- ▶▶ 3F8/IRQ4 Enable onboard Serial port 2 and address is 3F8/IRQ4.
- ▶▶ 2F8/IRQ3 Enable onboard Serial port 2 and address is 2F8/IRQ3. (Default value)
- ▶▶ 3E8/IRQ4 Enable onboard Serial port 2 and address is 3E8/IRQ4.
- ▶▶ 2E8/IRQ3 Enable onboard Serial port 2 and address is 2E8/IRQ3.
- ▶▶ Disabled Disable onboard Serial port 2.

☞ **Onboard Parallel Port**

- ▶▶ Disabled Disable onboard LPT port.
- ▶▶ 378/IRQ7 Enable onboard LPT port and address is 378/IRQ7. (Default value)
- ▶▶ 278/IRQ5 Enable onboard LPT port and address is 278/IRQ5.
- ▶▶ 3BC/IRQ7 Enable onboard LPT port and address is 3BC/IRQ7.

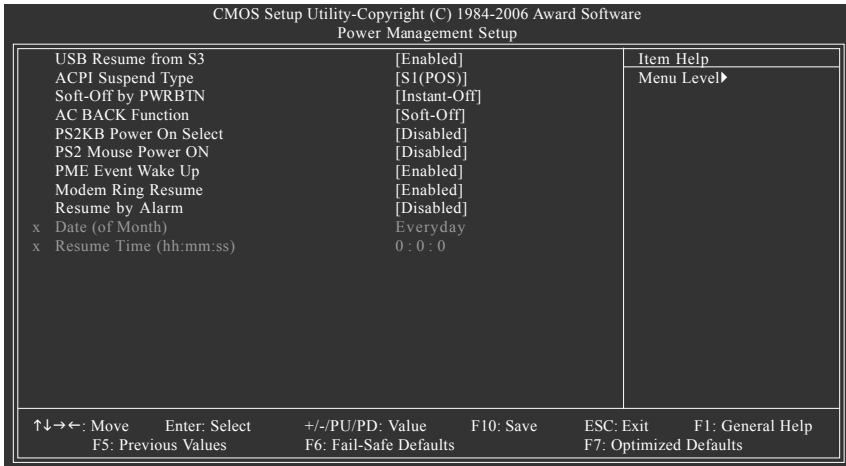
Parallel Port Mode

- ▶▶ SPP Using Parallel port as Standard Parallel Port. (Default value)
- ▶▶ EPP Using Parallel port as Enhanced Parallel Port.
- ▶▶ ECP Using Parallel port as Extended Capabilities Port.
- ▶▶ ECP+EPP Using Parallel port as ECP & EPP mode.

EPP Mode Select

- ▶▶ EPP1.7 Set EPP Mode to EPP 1.7. (Default value)
- ▶▶ EPP1.9 Set EPP Mode to EPP 1.9.

2-4 Power Management Setup



☞ USB Resume from S3

- ▶▶ Enabled Enable USB device resuming from S3. (Default value)
- ▶▶ Disabled Disable this function.

☞ ACPI Suspend Type

- ▶▶ S1(POS) Set ACPI suspend type to S1/POS(Power On Suspend). (Default value)
- ▶▶ S3(STR) Set ACPI suspend type to S3/STR(Suspend To RAM).

☞ Soft-Off by PWRBTN

- ▶▶ Instant-Off Press power button then power off instantly. (Default value)
- ▶▶ Delay 4 Sec Press power button 4 seconds to power off. Enter suspend if button is pressed less than 4 seconds.

☞ AC BACK Function

- ▶▶ Soft-Off When AC-power back to the system, the system will be in "Off" state. (Default value)
- ▶▶ Full-On When AC-power back to the system, the system always in "On" state.
- ▶▶ Memory When AC-power back to the system, the system will return to the Last state before AC-power off.

☞ PS2KB Power On Select

- ▶▶ Disabled Disable this function. (Default value)
- ▶▶ Password Enter from 1 to 8 characters to set the keyboard power on password.
- ▶▶ Keyboard 98 If your keyboard have "POWER Key" button, you can press the key to power on the system.
- ▶▶ Any Key Press any keys on your keyboard to power on the system.

☞ **PS2 Mouse Power ON**

- ▶▶ Disabled Disable this function. (Default value)
- ▶▶ Enabled Double click on PS/2 mouse left button to power on the system.

☞ **PME Event Wake Up**

This feature requires an ATX power supply that provides at least 1A on the 5VSB lead.

- ▶▶ Disabled Disable this function.
- ▶▶ Enabled Enable PME as wake up event. (Default value)

☞ **Modem Ring Resume**

An incoming call via modem can awake the system from any suspend state.

- ▶▶ Disabled Disable Modem Ring Resume function.
- ▶▶ Enabled Enable Modem Ring Resume function. (Default value)

☞ **Resume by Alarm**

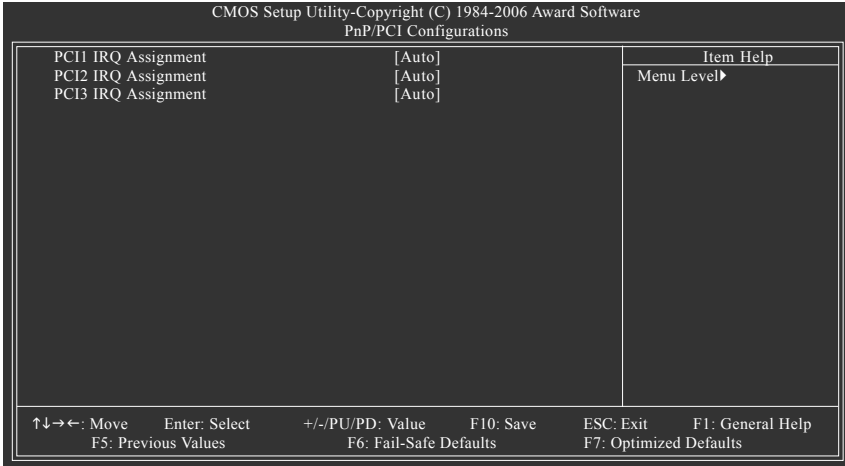
You can set "Resume by Alarm" item to **Enabled** and key in Date/Time to power on system.

- ▶▶ Disabled Disable this function. (Default value)
- ▶▶ Enabled Enable alarm function to POWER ON system.

If Resume by Alarm is Enabled.

- ▶▶ Date (of Month) : Everyday, 1~31
- ▶▶ Resume Time (hh: mm: ss) : (0~23) : (0~59) : (0~59)

2-5 PnP/PCI Configurations



☞ PCI1 IRQ Assignment

- ▶▶ Auto Auto assign IRQ to PCI 1. (Default value)
- ▶▶ 3,4,5,7,9,10,11,12,14,15 Set IRQ 3,4,5,7,9,10,11,12,14,15 to PCI 1.

☞ PCI2 IRQ Assignment

- ▶▶ Auto Auto assign IRQ to PCI 2. (Default value)
- ▶▶ 3,4,5,7,9,10,11,12,14,15 Set IRQ 3,4,5,7,9,10,11,12,14,15 to PCI 2.

☞ PCI3 IRQ Assignment

- ▶▶ Auto Auto assign IRQ to PCI 3. (Default value)
- ▶▶ 3,4,5,7,9,10,11,12,14,15 Set IRQ 3,4,5,7,9,10,11,12,14,15 to PCI 3.

2-6 PC Health Status

CMOS Setup Utility-Copyright (C) 1984-2006 Award Software		
PC Health Status		
Reset Case Open Status	[Disabled]	Item Help
Case Opened	Yes	Menu Level▶
Vcore	OK	
DDR2 1.8V	OK	
+3.3V	OK	
+12V	OK	
System Temperature	46°C/114°F	
CPU Temperature	47°C/116°F	
Current SYS FAN Speed	0 RPM	
Current CPU FAN Speed	2880 RPM	
System Warning Temp.	[Disabled]	
CPU Warning Temp.	[Disabled]	
SYS FAN Fail Warning	[Disabled]	
CPU FAN Fail Warning	[Disabled]	
CPU Smart FAN Control	[Enabled]	

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

Reset Case Open Status

- ▶ Disabled Don't reset case open status. (Default value)
- ▶ Enabled Clear case open status at next boot.

Case Opened

If the case is closed, **Case Opened** will show "No."

If the case is opened, **Case Opened** will show "Yes."

If you want to reset **Case Opened** value, enable **Reset Case Open Status** and save the change to CMOS, and then your computer will restart.

Current Voltage(V) Vcore / DDR2 1.8V / +3.3V / +12V

- ▶ Detect system's voltage status automatically.

System/CPU Temperature

- ▶ Detect system/CPU temperature automatically.

Current SYS/CPU FAN Speed (RPM)

- ▶ Detect system/CPU fan speed status automatically.

System/CPU Warning Temp.

- ▶ 60°C / 140°F Monitor system/CPU temperature at 60°C / 140°F.
- ▶ 70°C / 158°F Monitor system/CPU temperature at 70°C / 158°F.
- ▶ 80°C / 176°F Monitor system/CPU temperature at 80°C / 176°F.
- ▶ 90°C / 194°F Monitor system/CPU temperature at 90°C / 194°F.
- ▶ Disabled Disable this function. (Default value)

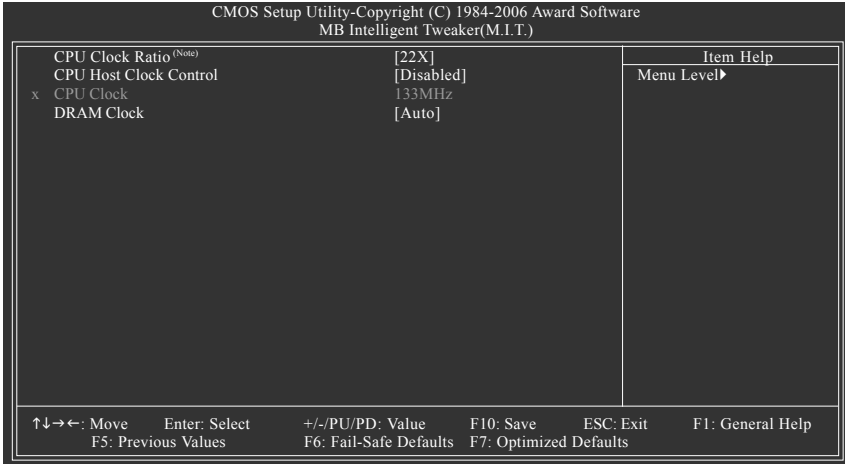
SYS/CPU FAN Fail Warning

- ▶ Disabled Disable the fan warning function. (Default value)
- ▶ Enabled Enable the fan warning function.

CPU Smart FAN Control

- ▶ Disabled Disable this function.
- ▶ Enabled When this function is enabled, CPU fan will run at different speed depending on CPU temperature. Users can adjust the fan speed with Easy Tune based on their requirements. (Default value)

2-7 MB Intelligent Tweaker(M.I.T.)



Incorrectly using these features may result in system instability or corruption.

Doing a overclock or overvoltage on CPU, chipsets and memory modules may result in damages or shortened life expectancy to these components.

Please be aware that the menu items are for power users only.

☞ CPU Clock Ratio ^(Note)

This setup option will automatically assign by CPU detection.

The option will display "Locked" and read only if the CPU ratio is not changeable.

☞ CPU Host Clock Control

Please note that if your system is overclocked and cannot restart, please wait 20secs. for automatic system restart or clear the CMOS setup data and perform a safe restart.

- ▶▶ Disabled Disable CPU Host Clock Control. (Default value)
- ▶▶ Enabled Enable CPU Host Clock Control.

☞ CPU Clock

▶▶ 133MHz ~ 600MHz Set CPU Host Frequency from 100 MHz to 600 MHz.

If you use a 533 MHz FSB processor, set "CPU Host Frequency" to 133 MHz.

If you use an 800 MHz FSB processor, set "CPU Host Frequency" to 200 MHz.

If you use a 1066 MHz FSB processor, set "CPU Host Frequency" to 266 MHz.

Incorrect using it may cause your system broken. For power End-User use only!

☞ DRAM Clock

▶▶ Please set DRAM Clock according to your requirement.

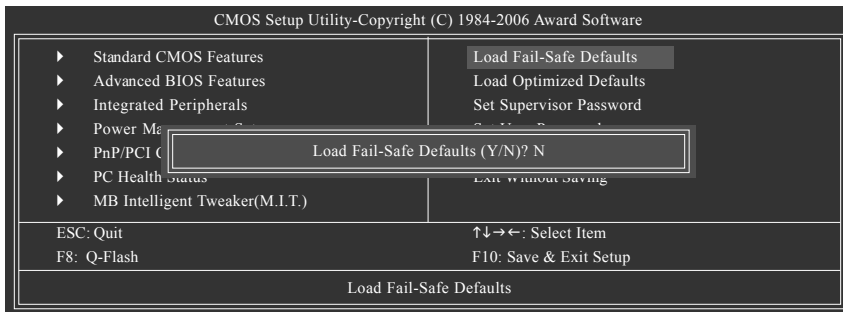
If you use a DDR2 400 DRAM module, please set **DRAM Clock** to **400**.

If you use a DDR2 533 DRAM module, please set **DRAM Clock** to **533**.

If you use a DDR2 667 DRAM module, please set **DRAM Clock** to **667**.

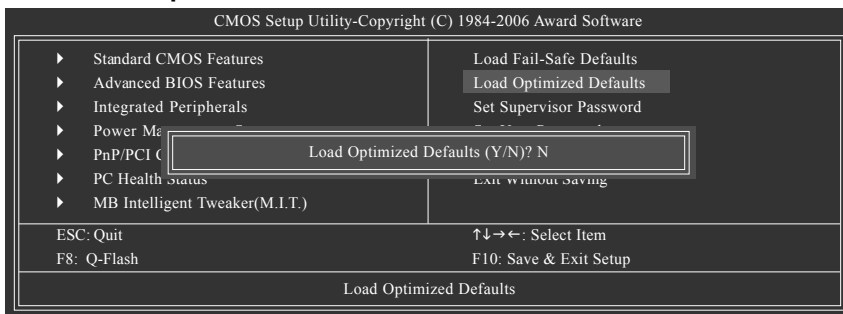
(Note) This item will show up when you install a processor which supports this function.

2-8 Load Fail-Safe Defaults



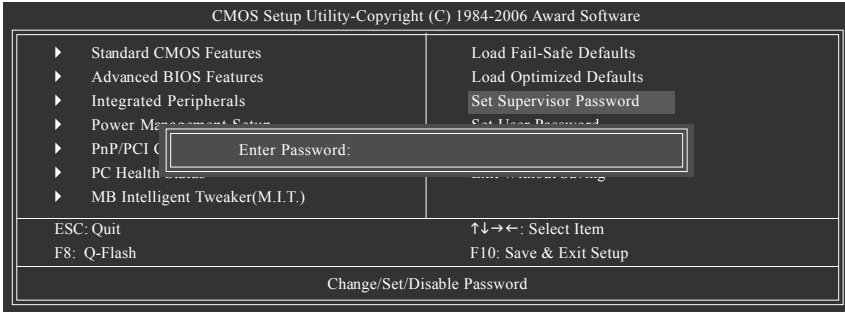
Fail-Safe defaults contain the most appropriate values of the system parameters that allow minimum system performance.

2-9 Load Optimized Defaults



Selecting this field loads the factory defaults for BIOS and Chipset Features which the system automatically detects.

2-10 Set Supervisor/User Password



When you select this function, the following message will appear at the center of the screen to assist you in creating a password.

Type the password, up to eight characters, and press <Enter>. You will be asked to confirm the password. Type the password again and press <Enter>. You may also press <Esc> to abort the selection and not enter a password.

To disable password, just press <Enter> when you are prompted to enter password. A message "PASSWORD DISABLED" will appear to confirm the password being disabled. Once the password is disabled, the system will boot and you can enter Setup freely.

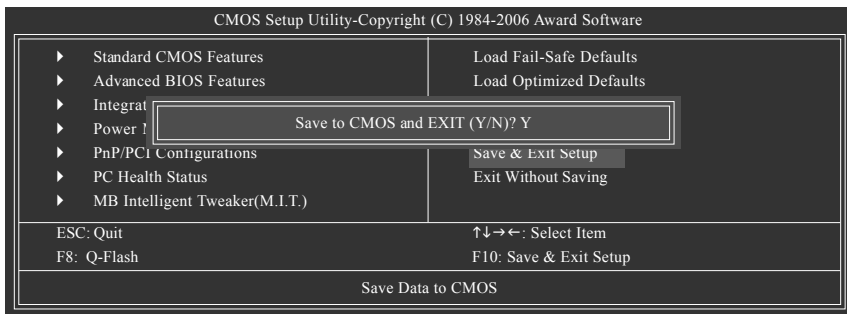
The BIOS Setup program allows you to specify two separate passwords:

SUPERVISOR PASSWORD and a USER PASSWORD. When disabled, anyone may access all BIOS Setup program function. When enabled, the Supervisor password is required for entering the BIOS Setup program and having full configuration fields, the User password is required to access only basic items.

If you select "System" at "Password Check" in Advance BIOS Features Menu, you will be prompted for the password every time the system is rebooted or any time you try to enter Setup Menu.

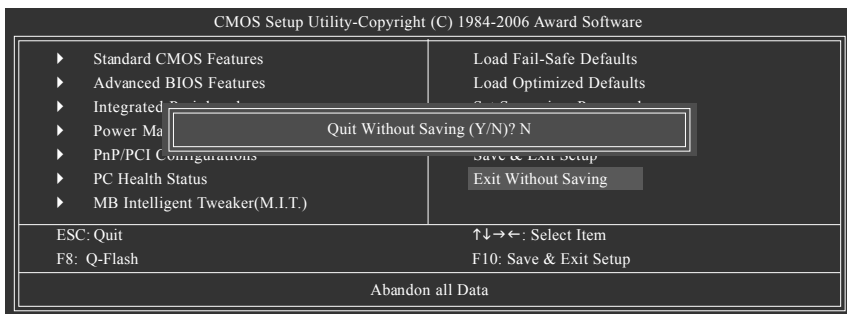
If you select "Setup" at "Password Check" in Advance BIOS Features Menu, you will be prompted only when you try to enter Setup.

2-11 Save & Exit Setup



Type "Y" will quit the Setup Utility and save the user setup value to RTC CMOS.
Type "N" will return to Setup Utility.

2-12 Exit Without Saving



Type "Y" will quit the Setup Utility without saving to RTC CMOS.
Type "N" will return to Setup Utility.

Chapter 3 Drivers Installation



Pictures below are shown in Windows XP.

Insert the driver CD-title that came with your motherboard into your CD-ROM drive, the driver CD-title will auto start and show the installation guide. If not, please double click the CD-ROM device icon in "My computer", and execute the Setup.exe.

3-1 Install Chipset Drivers

After insert the driver CD, "Xpress Install" will scan automatically the system and then list all the drivers that recommended to install. The "Xpress Install" uses the "Click and Go" technology to install the drivers automatically. Just select the drivers you want then click the "GO" button. The "Xpress Install" will execute the installation for you automatically.



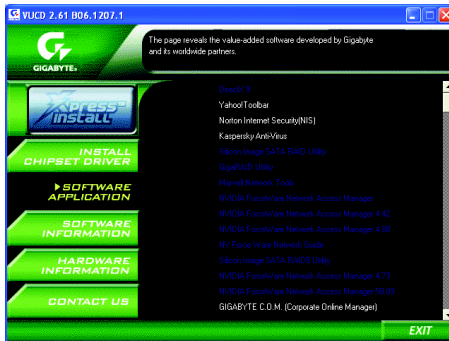
Some device drivers will restart your system automatically. After restarting your system the "Xpress Install" will continue to install other drivers. System will reboot automatically after install the drivers, afterward you can install others application.



For USB 2.0 driver support under Windows XP operating system, please use Windows Service Pack. After install Windows Service Pack, it will show a question mark "?" in "Universal Serial Bus controller" under "Device Manager". Please remove the question mark and restart the system (System will auto-detect the right USB 2.0 driver).

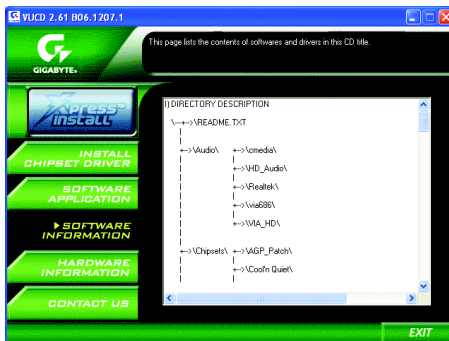
3-2 Software Application

This page displays all the tools that Gigabyte developed and some free software. You can click an item to install it.



3-3 Software Information

This page lists the contents of software and drivers in this CD-title.



3-4 Hardware Information

This page lists all device you have for this motherboard.



3-5 Contact Us

Please see the last page for details.



Chapter 4 Appendix

4-1 Unique Software Utilities

(Not all model support these Unique Software Utilities, please check your MB features.)

4-1-1 EasyTune 5 Introduction

EasyTune 5 presents the most convenient Windows based system performance enhancement and manageability utility. Featuring several powerful yet easy to use tools such as 1) Overclocking for enhancing system performance, 2) C.I.A. and M.I.B. for special enhancement for CPU and Memory, 3) Smart-Fan control for managing fan speed control of both CPU cooling fan and North-Bridge Chipset cooling fan, 4) PC health for monitoring system status.^(Note)

User Interface Overview



	Button / Display	Description
1.	Overclocking	Enters the Overclocking setting page
2.	C.I.A. and M.I.B.	Enters the C.I.A. and M.I.B. setting page
3.	Smart-Fan	Enters the Smart-Fan setting page
4.	PC Health	Enters the PC Health setting page
5.	GO	Confirmation and Execution button
6.	"Easy Mode" & "Advance Mode"	Toggles between Easy and Advance Mode
7.	Display screen	Display panel of CPU frequency
8.	Function display LEDs	Shows the current functions status
9.	GIGABYTE Logo	Log on to GIGABYTE website
10.	Help button	Display EasyTune™ 5 Help file
11.	Exit or Minimize button	Quit or Minimize EasyTune™ 5 software

(Note) EasyTune 5 functions may vary depending on different motherboards.

4-1-2 Xpress Recovery2 Introduction



Xpress Recovery2 is designed to provide quick backup and restoration of hard disk data. Supporting Microsoft operating systems including Windows XP/2000/NT/98/Me and DOS, and file systems including FAT16, FAT32, and NTFS, Xpress Recovery2 is able to back up data on hard disks on PATA and SATA IDE controllers. After Xpress Recovery2 is executed from CD-ROM for the first time, it will stay permanent in your hard disk. If you wish to run Xpress Recovery2 later, you can simply press F9 during system bootup to enter Xpress Recovery2 without the CD-ROM.

System requirements:

1. Intel x86 platforms
2. At least 64M bytes of system memory
3. VESA-supported VGA cards

How to use the Xpress Recovery2

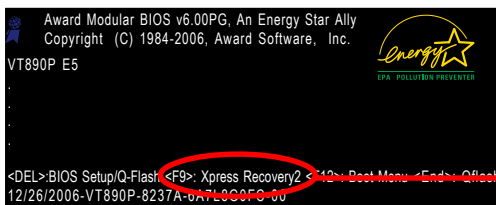
Initial access by booting from CD-ROM and subsequent access by pressing the F9 key:

Steps: After entering BIOS Setup, go to **Advanced BIOS Feature** and set to boot from CD-ROM. Save the settings and exit the BIOS Setup. Insert the provided driver CD into your CD-ROM drive. Upon system restart, the message which says "Boot from CD/DVD:" will appear in the bottom left corner of the screen. Press any key to enter Xpress Recovery2.

After the steps above are completed, subsequent access to Xpress Recovery2 can be made by simply pressing the <F9> key during system power-on.



Boot from CD/DVD:



<F9>: Xpress Recovery2



NOTE

1. If you have already entered Xpress Recovery2 by booting from the CD-ROM, you can enter Xpress Recovery2 by pressing the <F9> key in the future.
2. System storage capacity and the reading/writing speed of the hard disk will affect the data backup speed.
3. It is recommended that Xpress Recovery2 be immediately installed once you complete installations of OS and all required drivers as well as software.

The Main Screen of Xpress Recovery2



1. RESTORE:

Restore the backed-up data to your hard disk. (This button will not appear if there is no backup file.)

2. BACKUP:

Back up data from hard disk.

3. REMOVE:

Remove previously-created backup files to release disk space.

(This button will not appear if there is no backup file.)

4. REBOOT:

Exit the main screen and restart the system.

Limitations:

1. Not compatible to Xpress Recovery.
2. For the use of Xpress Recovery2, a primary partition must be reserved.
3. Xpress Recovery2 will store the backup file at the end of the hard disk, so free space available on the hard disk for the backup file must be allocated in advance. (A minimum 4GB is recommended but the actual space is dependent on the size of the data to be backed up)
4. Capable of backing up hard disks installed with Windows operating systems including DOS and Windows XP/2000/NT/9x/Me.
5. USB hard disks are currently not supported.
6. Does not support RAID/AHCI (class code 0104/0106) hard disks.
7. Capable of backing up and restoring only the first physical hard disk.

Hard disks detection sequence is as follows:

- a. PATA IDE primary channel
- b. PATA IDE secondary channel
- c. SATA IDE channel 1
- d. SATA IDE channel 2
- e. SATA IDE channel 3
- f. SATA IDE channel 4

Precautions:

1. When using hard disks with more than 128G under Windows 2000, be sure to execute the EnableBigLba.exe program from the driver CD before data backup.
2. It is normal that data backup takes longer time than data restoration.
3. Xpress Recovery2 is compliant with the GPL regulations.
4. On a few motherboards based on Nvidia chipsets, BIOS update is required for Xpress Recovery2 to correctly identify RAID and SATA IDE mode. Please contact your motherboard manufacturer.

4-1-3 Flash BIOS Method Introduction



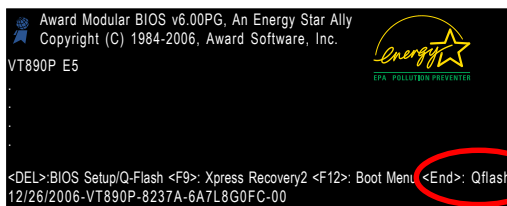
Method 1 : Q-Flash™

Q-Flash™ is a BIOS update tool that allows the user to update BIOS without entering operating systems like MS-DOS or Windows. Embedded in the BIOS, the Q-Flash™ tool frees you from the hassles of going through complicated BIOS flashing process.

Before Use:

Follow the steps below before using Q-Flash to update BIOS:

1. From GIGABYTE's website, download the latest compressed BIOS update file that matches your motherboard model.
2. Extract the downloaded BIOS files and save the new BIOS file (e.g. VT890P.F1) to your floppy disk or hard disk. Note: Q-Flash only supports hard disks or flash drives using FAT32/16/12 file system.
3. Restart the system. During BIOS POST, press the End key to enter Q-Flash. NOTE: Press the End key to enter Q-Flash if you wish to use hard drives in RAID/AHCI mode or hard drives attached to the independent IDE/SATA controller.



<End> : Qflash



Because BIOS flashing is potentially risky, please do it with caution and avoid inadequate operation that may result in system malfunction.

Updating the BIOS

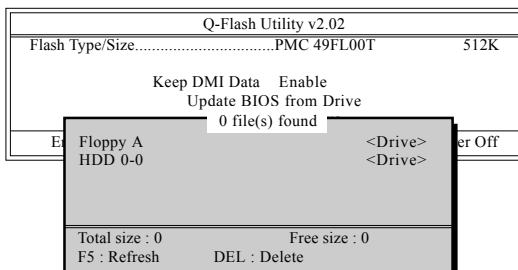
Step 1:

- a. In the Q-Flash menu, use the UP or DOWN ARROW key to select **Update BIOS from Drive** and press ENTER.



If you wish to back up the current BIOS file, use the **Save BIOS to Drive** function.

- b. Select the floppy drive or hard drive where the BIOS file is saved, such as "Floppy A" and press ENTER.



c. Select the BIOS file and press ENTER.



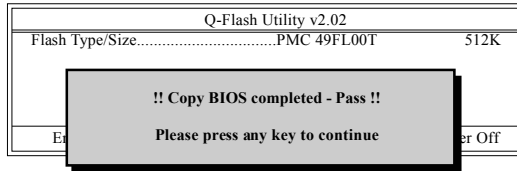
Make sure again the BIOS file matches your motherboard model.

Step 2: The process of system reading the BIOS file from the floppy disk is displayed on the screen. When the message "Are you sure to update BIOS?" appears, press ENTER. The BIOS update will begin and the current process will be displayed.



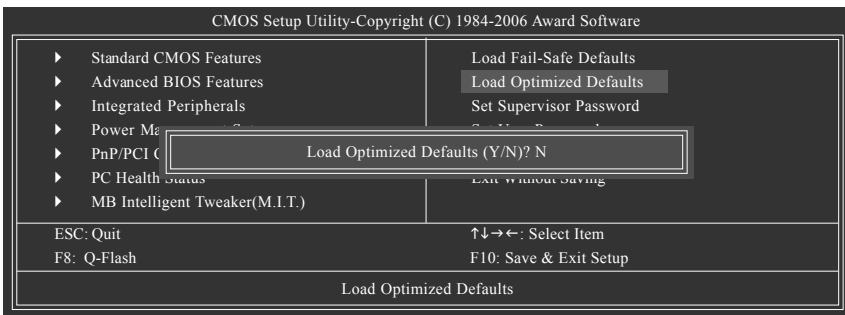
1. Do not turn off or restart the system when the system is reading/updating the BIOS.
2. Do not remove the floppy disk or hard drive/USB drive when the system is updating the BIOS.

Step 3: When the update process is complete, press any key to return to the Q-Flash main menu.



Step 4: Press ESC and then DELETE to exit Q-Flash and the system will restart. As the system reboots, you will see the new BIOS version during POST.

Step 5: As the system reboots, press DELETE to enter BIOS Setup. Select **Load Optimized Defaults** and press ENTER to load BIOS defaults. System will re-detect all peripheral devices after BIOS update, so we recommend that you reload BIOS defaults.



Press Y to load BIOS defaults

Step 6: Select **Save & Exit Setup** and then press **Y** to save settings to CMOS and exit BIOS Setup. When the system restarts, the whole update process is complete.



Method 2 : @BIOS™ Utility

If you do not have a DOS startup disk, we recommend that you use the new @BIOS utility. @BIOS allows users to update their BIOS under Windows. Just select the desired @BIOS server to download the latest version of BIOS.

Fig 1. Installing the @BIOS utility

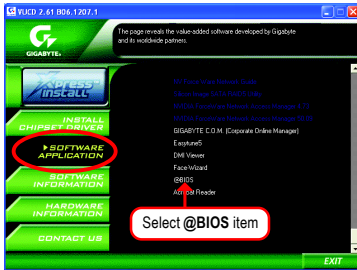


Fig 2. Installation Complete and Run @BIOS

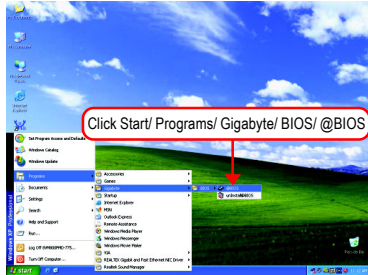


Fig 3. The @BIOS Utility

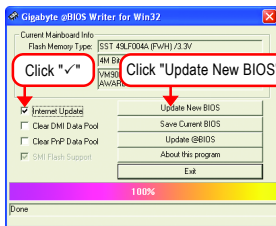
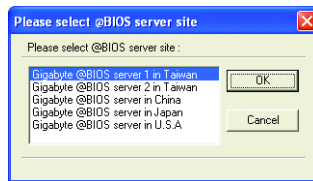


Fig 4. Select the desired @BIOS server



1. Methods and steps:

I. Update BIOS through Internet

- Click "Internet Update" icon
- Click "Update New BIOS" icon
- Select @BIOS™ sever
- Select the exact model name on your motherboard
- System will automatically download and update the BIOS.

II. Update BIOS NOT through Internet:

- Do not click "Internet Update" icon
- Click "Update New BIOS"
- Please select "All Files" in dialog box while opening the old file.
- Please search for BIOS unzip file, downloading from internet or any other methods (such as: VT890P.F1).
- Complete update process following the instruction.

III. Save BIOS

In the very beginning, there is "Save Current BIOS" icon shown in dialog box. It means to save the current BIOS version.

IV. Check out supported motherboard and Flash ROM:

In the very beginning, there is "About this program" icon shown in dialog box. It can help you check out which kind of motherboard and which brand of Flash ROM are supported.

2. Note:

- I. In method I, if it shows two or more motherboard's model names to be selected, please make sure your motherboard's model name again. Selecting wrong model name will cause the system unbooted.
- II. In method II, be sure that motherboard's model name in BIOS unzip file are the same as your motherboard's. Otherwise, your system won't boot.
- III. In method I, if the BIOS file you need cannot be found in @BIOS™ server, please go onto Gigabyte's web site for downloading and updating it according to method II.
- IV. Please note that any interruption during updating will cause system unbooted.
- V. Do not use @BIOS and C.O.M. (Corporate Online Management) at the same time.

4-1-4 Configuring SATA Hard Drive(s)

To configure SATA hard drive(s), follow the steps below:

- (1) Install SATA hard drive(s) in your system.
- (2) Configure SATA controller mode and boot sequence in BIOS Setup.
- (3) Configure RAID set in RAID BIOS. ^(Note)
- (4) Make a floppy disk containing the SATA controller driver. ^(Note)
- (5) Install the SATA controller driver during OS installation. ^(Note)

Before you begin

Please prepare:

- (a) Two SATA hard drives (to ensure optimal performance, it is recommended that you use two hard drives with identical model and capacity). If you do not want to create RAID with the SATA controller, you may prepare only one hard drive.
- (b) An empty formatted floppy disk. ^(Note)
- (c) Windows XP/2000 setup disk.
- (d) Driver CD for your motherboard.

(1) Install SATA hard drive(s) in your system

Attach one end of the SATA signal cable to the rear of the SATA hard drive and the other end to available SATA port(s) on the motherboard. Then connect the power connector from your power supply to the hard drive.

(2) Configuring SATA controller mode and boot sequence in BIOS Setup

You have to make sure whether the SATA controller is configured correctly in system BIOS Setup and set BIOS boot sequence for the SATA hard drive(s).

Step 1:

Turn on your computer and press Del to enter BIOS Setup during POST (Power-On Self Test).

Make sure that the **SATA Controller** under the **Integrated Peripherals** menu is enabled. To create RAID, set **SATA Controller Mode** (Figure 1) to **RAID** (IDE by default). Set **SATA Controller Mode** to **IDE** if you do not want to create RAID.

(Note) Required for setting up RAID array.

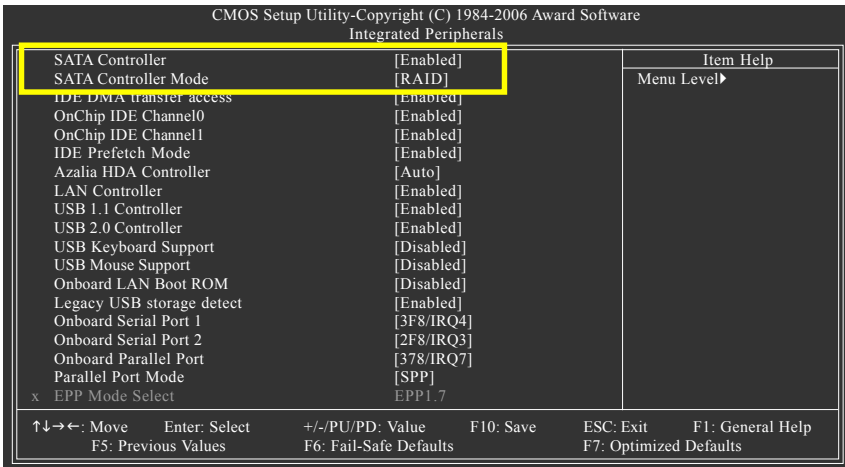


Figure 1



The BIOS Setup menus described in this section may not show the exact settings for your motherboard. The actual BIOS Setup menu options you will see shall depend on the motherboard you have and the BIOS version.

Step 2:

Set **First Boot Device** under the **Advanced BIOS Features** menu to **CDROM** to boot from Windows installation CD (Figure 2).

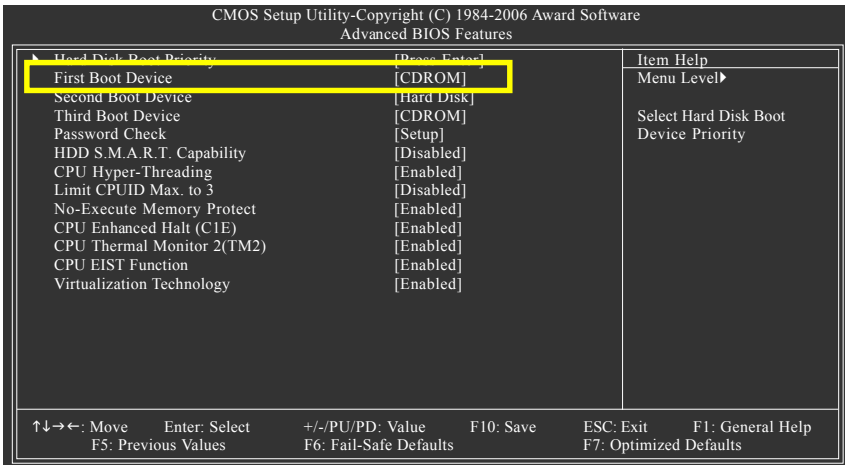


Figure 2

Step 3:

Save and exit BIOS Setup.

(3) Configuring RAID set in RAID BIOS

Enter the RAID BIOS setup utility to configure a RAID array. Skip this step and proceed to OS installation if you do not want to create RAID.

Step 1:

After the POST memory test begins and before the operating system boot begins, the following information will appear on screen (Figure 3). Press the TAB key to enter the **VT8237A SATA RAID BIOS** configuration utility.

```
VIA Technologies, Inc. VIA VT8237A SATA RAID CDROM BOOT BIOS V1.00
Copyright (C) VIA Technologies, Inc. All Right reserved.
237AR100.ROM-FOR RAID

Scan Devices, Please wait...
No Raid

                Ctrl0 Chn0 Master      ST3120026AS      --SATA mode
                Ctrl0 Chn1 Master      ST3120026AS      --SATA mode

Press <Tab> key into User Window!
```

Figure 3

Step 2:

In the RAID BIOS utility screen (Figure 4), you can use the UP or DOWN ARROW key to highlight through choices. Highlight an item that you want to execute and press ENTER.

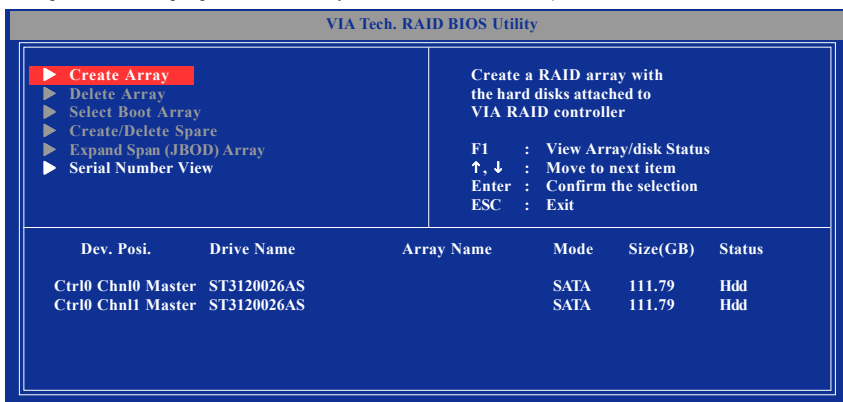


Figure 4

A. Create Array:

In Main Menu, select **Create Array** and press ENTER, a screen similar to Figure 5 below will appear.

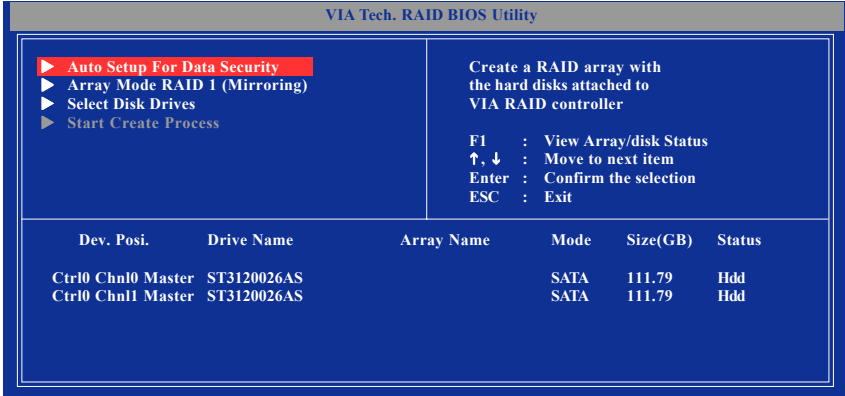


Figure 5

The first step to create a RAID array is to set the RAID mode. Select **Array Mode** and press ENTER. And the RAID mode selection menu will appear (Figure 6). The supported RAID modes include **RAID 0 for performance**, **RAID 1 for data protection**, and **RAID SPAN for capacity**. Use the UP or DOWN ARROW key to select a RAID mode, then press ENTER. The following procedure uses RAID 0 creation as an example.

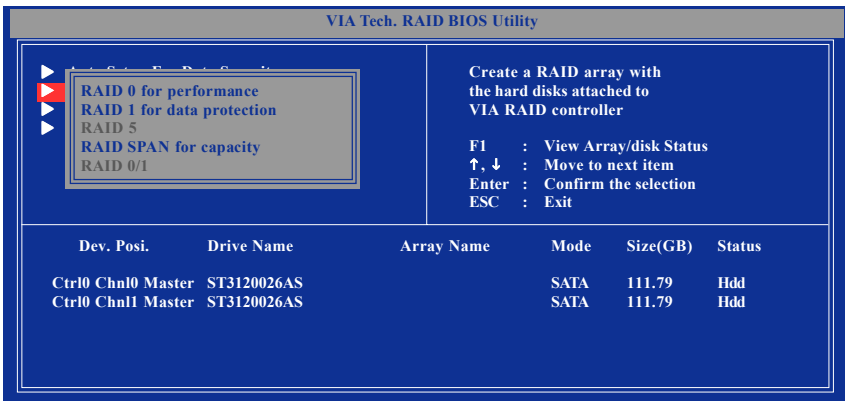


Figure 6

After selecting a RAID mode, you must decide whether you want the RAID array to be configured automatically or manually. **Auto Setup** allows BIOS to assign the hard drives and create arrays automatically. It is recommended all hard drives are new ones when you want to create an array. To manually configure the RAID array, the following items need to be set.

Select Disk Drives lets users select the array drives by their requirements. Select the **Select Disk Drives** item and press ENTER. On the target hard drive(s), press ENTER. The selected hard drives will be marked with an asterisk (Figure 7).

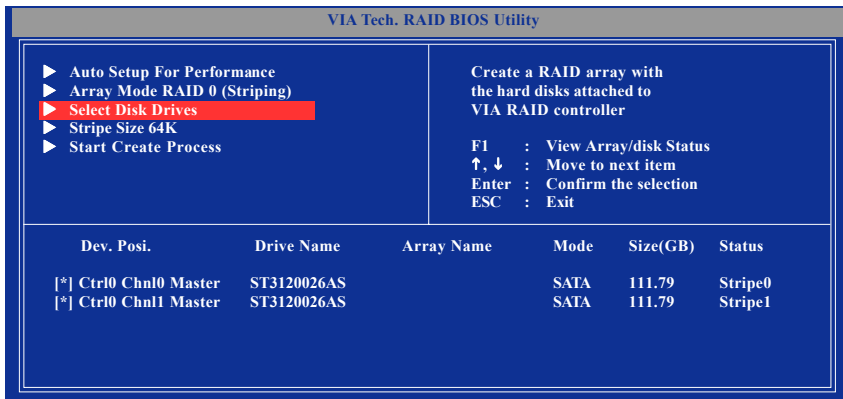


Figure 7

For a RAID 0 array, you have to specify the block size. Select **Stripe Size** and press ENTER. Select the block size from the popup menu. The block size can be set from 4KB to 64KB (Figure 8).

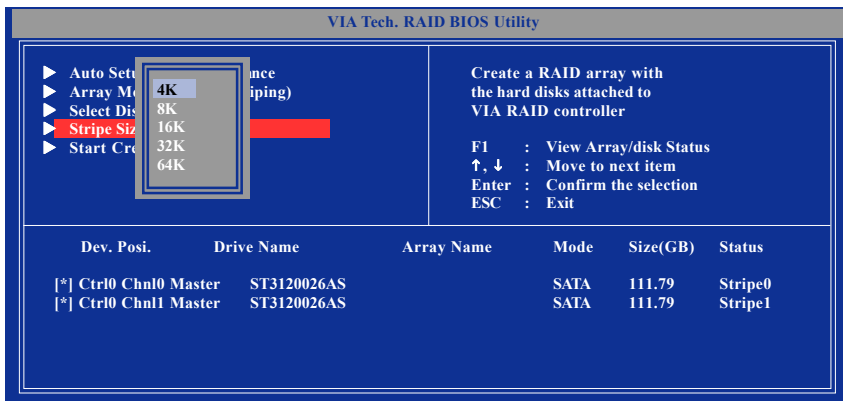


Figure 8

Next, select **Start Create Process** and press ENTER. The prompt "**The data on the selected disks will be destroyed. Continue? (Y/N)**" will appear. Press Y to confirm or N to abort.

Important All existing contents in the hard drive will be destroyed after the array creation.

B. View Array Status:

Press F1 to show the array status on the lower screen. If there are no disk arrays then nothing will be displayed on the screen (Figure 9).

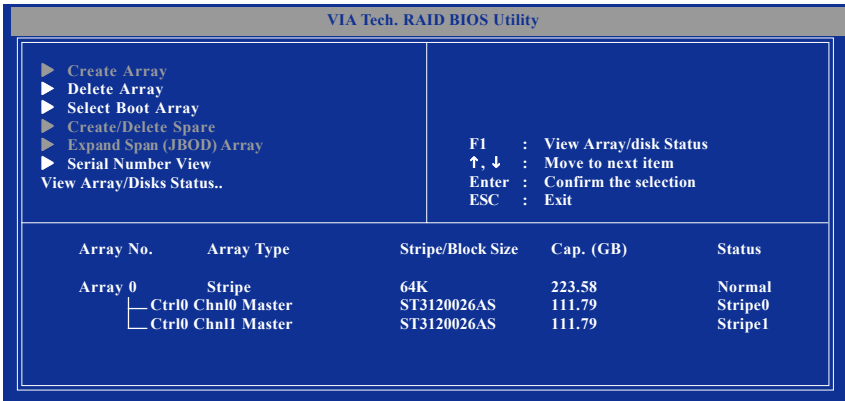


Figure 9

C. Select Boot Array:

You can select a disk array as boot device if you want to boot operating system from an array. Boot disk array cannot be selected if the operating system does not boot from the disk array. Highlight the **Select Boot Array** item in Main Menu and press ENTER. Then press ENTER on the target disk array. The bootable array will be marked with **b** (Figure 10). If you want to cancel the boot array setting, press ENTER on the bootable array and its boot setting will be canceled.

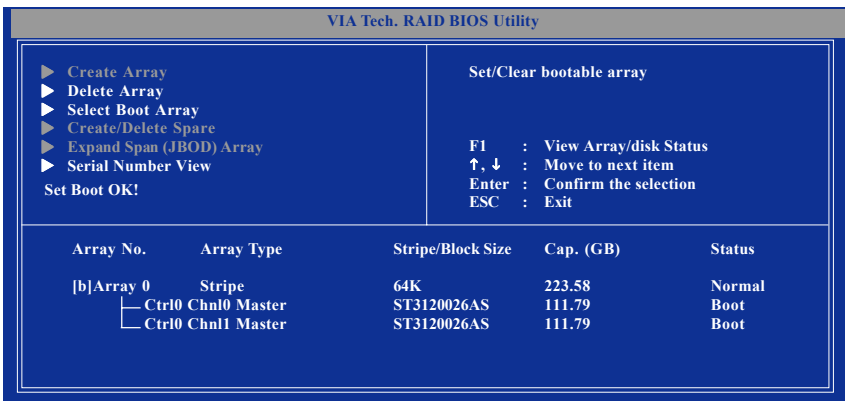


Figure 10

D. Serial Number View:

Highlight **Serial Number View** and press ENTER. Use the ARROW keys to select a drive, and the selected drive's serial number can be viewed at the bottom line (Figure 11). The serial number is assigned by the disk drive manufacturer .

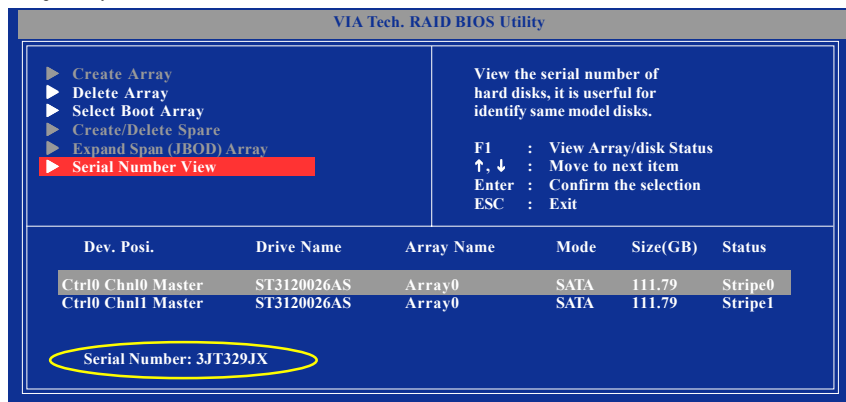


Figure 11

E. Delete Array:

If you want to delete an existing array, select **Delete Array** in Main Menu and press ENTER. Press ENTER on the array to be deleted. A warning message will show up, press Y to confirm or press N to cancel (Figure 12).

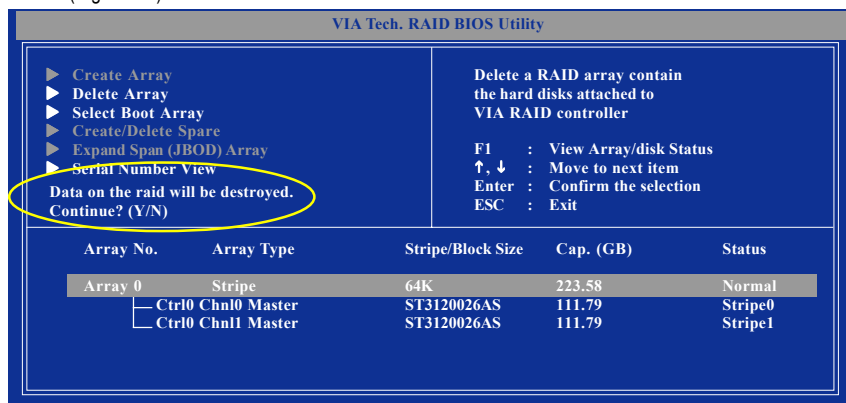


Figure 12

Deleting a disk array will destroy all the data on the disk array except for RAID 1 array(s). When a RAID 1 array is deleted, the data on the two hard drives will be reserved and the two hard drives will become two normal drives.

(4) Making a SATA Driver Disk

To install operating system onto the RAID array successfully, you need to install the SATA controller driver during OS installation. Without the driver, the hard disk may not be recognized during the Windows setup process. First of all, copy the driver for the SATA controller from the motherboard driver CD-ROM to a floppy disk. See the instructions below about how to copy the driver in MS-DOS mode (Note). Prepare a startup disk that has CD-ROM support and a blank formatted floppy disk.

Step 1: Insert the prepared startup disk and motherboard driver CD-ROM in your system. Boot from the startup disk. Once at the A:\> prompt, change to the CD-ROM drive (example: D:\>). At the D:\> prompt, type the following two commands. Press ENTER after each command (Figure 13):

```
cd bootdrv
menu
```

```
09/22/2006 08:38 AM <DIR> Ohm
09/22/2006 08:38 AM <DIR> Phon
09/22/2006 08:38 AM <DIR> Pmodu11
09/22/2006 08:38 AM 3,995 Pmodu1.ttc
09/22/2006 08:38 AM 434,176 Setcpu.exe
09/22/2006 08:38 AM 172,532 Util11.exe
09/22/2006 09:06 AM <DIR> X64
09/22/2006 09:06 AM <DIR> util11
09/22/2006 09:13 AM 5,636 hwc INTI
09/22/2006 09:13 AM boot
09/22/2006 10:15 AM 2,848 hwc acti1ny
09/22/2006 10:15 AM 5,492 che INTI
09/22/2006 10:15 AM 22,232 i11.exe
09/22/2006 08:13 AM <DIR> jump
09/22/2006 08:13 AM 38,857 ovrsetup.inf
09/22/2006 08:13 AM r11.exe
10/17/2002 02:25 AM 8,534 t1p.exe
02/04/2006 04:12 PM 75,381 sound1.ttc
02/27/2006 04:25 PM 61,408 vcc.d11
02/27/2006 04:25 PM 944,558 hwtes
02/27/2006 04:25 PM 8 hwtes free

D:\>cd bootdrv
D:\BootDrv>menu
```

Figure 13

```
1) VIA8237 SATA_0
2) VIA8237 SATA_1
3) VIA8237 SATA_2
4) VIA8237 SATA_3
5) SATA0
6) SATA1
7) SATA2
8) SATA3
9) SATA0 SATA_0 SATA_1 SATA_2 SATA_3
A) SATA0 SATA_0 SATA_1 SATA_2 SATA_3
B) SATA0 SATA_0 SATA_1 SATA_2 SATA_3
C) VIA 8237 Series ATA
D) SATA0 SATA_0 SATA_1 SATA_2 SATA_3
E) SATA0 SATA_0 SATA_1 SATA_2 SATA_3
F) SATA0 SATA_0 SATA_1 SATA_2 SATA_3
G) SATA0 SATA_0 SATA_1 SATA_2 SATA_3
H) SATA0 SATA_0 SATA_1 SATA_2 SATA_3
I) SATA0 SATA_0 SATA_1 SATA_2 SATA_3
J) SATA0 SATA_0 SATA_1 SATA_2 SATA_3
K) SATA0 SATA_0 SATA_1 SATA_2 SATA_3
L) SATA0 SATA_0 SATA_1 SATA_2 SATA_3
M) SATA0 SATA_0 SATA_1 SATA_2 SATA_3
N) SATA0 SATA_0 SATA_1 SATA_2 SATA_3
O) SATA0 SATA_0 SATA_1 SATA_2 SATA_3
P) SATA0 SATA_0 SATA_1 SATA_2 SATA_3
Q) SATA0 SATA_0 SATA_1 SATA_2 SATA_3
R) SATA0 SATA_0 SATA_1 SATA_2 SATA_3
S) SATA0 SATA_0 SATA_1 SATA_2 SATA_3
T) SATA0 SATA_0 SATA_1 SATA_2 SATA_3
U) SATA0 SATA_0 SATA_1 SATA_2 SATA_3
V) SATA0 SATA_0 SATA_1 SATA_2 SATA_3
W) SATA0 SATA_0 SATA_1 SATA_2 SATA_3
X) SATA0 SATA_0 SATA_1 SATA_2 SATA_3
Y) SATA0 SATA_0 SATA_1 SATA_2 SATA_3
Z) SATA0 SATA_0 SATA_1 SATA_2 SATA_3
[0] Exit
```

Figure 14

Step 2: When the controller menu (Figure 14) appears, remove the startup disk and insert the blank formatted disk. Select the controller driver by pressing the corresponding letter from the menu.

For example, from the menu in Figure 14, press C to select **VIA 8237 Series ATA** for Windows operating system. Your system will then automatically zip and transfer this driver file to the floppy disk. Press 0 to exit when finished.

(Note) For users without a startup disk:

Use an alternative system and insert the GIGABYTE motherboard driver CD-ROM. From the CD-ROM drive folder, double click the **MENU.exe** file in the **BootDrv** folder (Figure 15). A command prompt window will open similar to that in Figure 14.

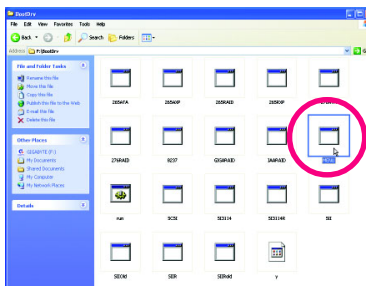


Figure 15

(5) Installing SATA controller driver during OS installation

Now that you have prepared the SATA driver disk and configured BIOS settings, you are ready to install Windows 2000/XP onto your SATA hard drive with the SATA driver. The following is an example of Windows XP installation.

Step 1: Restart your system to boot from the Windows 2000/XP Setup disk and press F6 as soon as you see the "Press F6 if you need to install a 3rd party SCSI or RAID driver" message (Figure 16). After pressing F6, there will be a few moments of some files being loaded before you see the next screen.

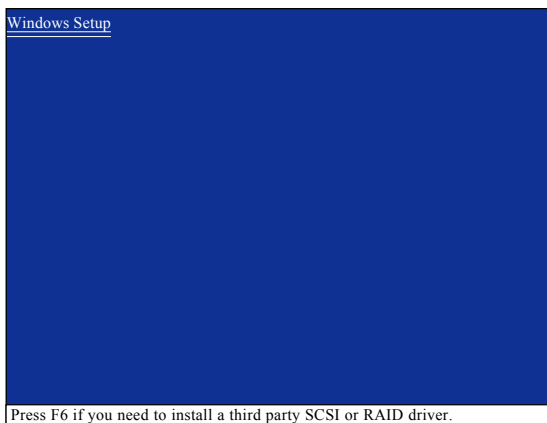


Figure 16

Step 2:

When a screen similar to that below appears, insert the floppy disk containing the SATA driver and press S (Figure 17).

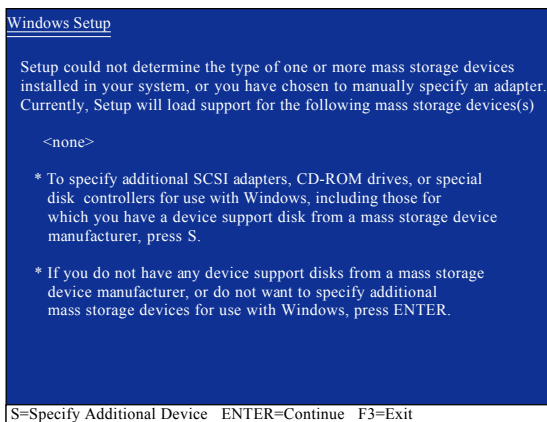


Figure 17

Step 3:

If Setup correctly recognizes the driver in the floppy disk, a controller menu similar to Figure 18 below will appear. If you want to install Windows XP, use the ARROW keys to select **VIA V-RAID Controller Series (Windows XP)** and press ENTER. Then it will begin to load the SATA driver from the floppy disk.

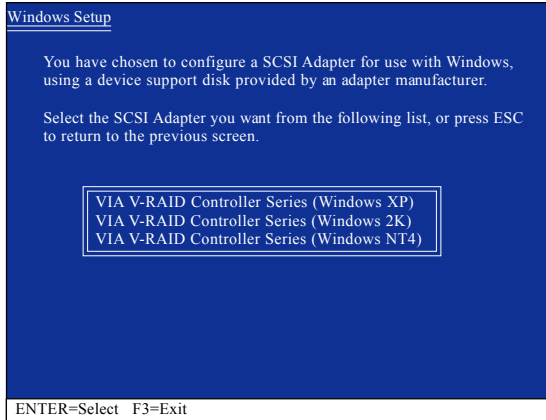


Figure 18



If a message appears saying one or some file(s) cannot be found, please check the floppy disk or copy the correct SATA driver again from the motherboard driver CD.

Step 4:

When the screen as shown below appears, press ENTER to continue the SATA driver installation from the floppy disk. The driver installation will be finished in about one minute.

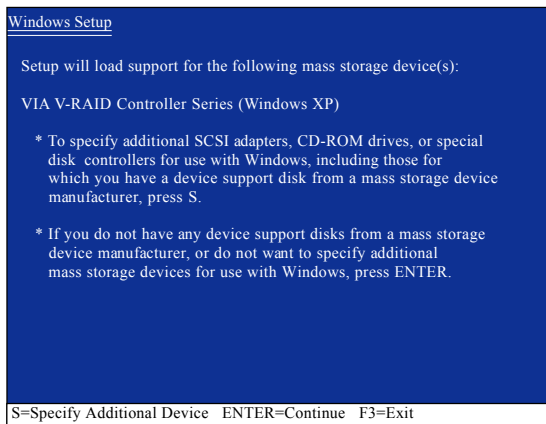


Figure 19

After the SATA controller driver installation is completed, you should see a screen as below. It indicates that you have installed the SATA controller driver successfully. You can proceed with the Windows 2000/XP installation.

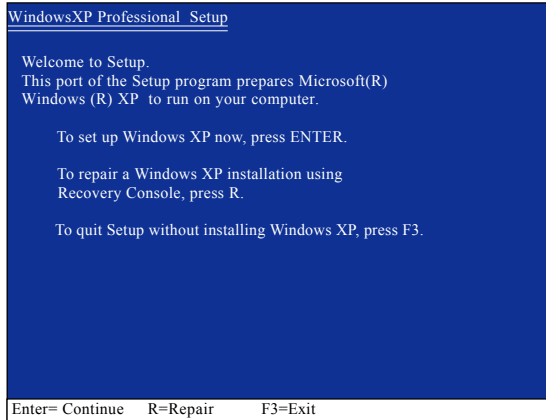


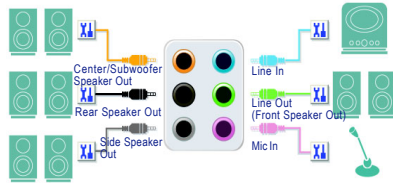
Figure 20

(Note: Each time you add a new hard drive to a RAID array, the RAID driver will have to be installed under Windows once for that hard drive. After that, the driver will not have to be installed.)



4-1-5 2- / 4- / 6- / 8- Channel Audio Function Introduction

The default speaker settings for the 6 audio jacks are as shown in the picture to the right. The jack retasking capability supported by HD Audio allows users to change the function for each audio jack by the audio software provided. For example, if a rear speaker is plugged into the center/subwoofer speaker out jack, you can change the center/subwoofer speaker out jack to function as a rear speaker out jack via the audio software. Please follow the steps to install the function. (Following pictures are in Windows XP)



Note that if you wish to connect a microphone, you MUST connect it to the default Mic In jack for the microphone to work correctly.

HD Audio

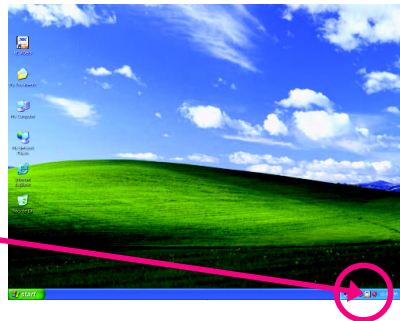
With multiple built-in high quality digital-to-analog converters (DACs) that support audio output at up to 192 kHz/24-bit quality and multi-streaming applications, HD Audio is able to handle multiple audio streams (in and out) simultaneously. Multi-channel audio experiences have become a reality so you can, for instance, listen to MP3 music, have an Internet chat, make a telephone call over the Internet, and etc. all at the same time.

Setting Up Stereo Speakers

We recommend that you use the speaker with amplifier to acquire the best sound effect if the stereo output is applied.

STEP 1 :

After installation of the audio driver, you should find a VIA HD Audio Deck icon in your system tray. Double-click the icon to open the Audio Control Panel.




STEP 2:

In the Audio Control Panel, click the **Speaker** tab. In the left list, click **2 Channel** button. The 2-channel audio setup is completed.



Setting Up 4-Channel Audio

STEP 1 :

After installation of the audio driver, you should find a VIA HD Audio Deck icon  in your system tray. Double-click the icon to open the Audio Control Panel.




STEP 2:

In the Audio Control Panel, click the **Speaker** tab. In the left list, click **4 Channel** button. The 4-channel audio setup is completed.



Setting Up 6-Channel Audio

STEP 1 :

After installation of the audio driver, you should find a VIA HD Audio Deck icon  in your system tray. Double-click the icon to open the Audio Control Panel.




STEP 2:

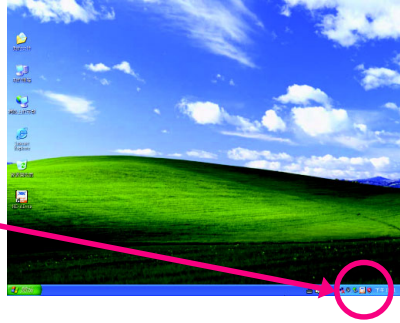
In the Audio Control Panel, click the **Speaker** tab. In the left list, click **6 Channel** button. The 6-channel audio setup is completed.



Setting Up 8-Channel Audio

STEP 1 :

After installation of the audio driver, you should find a VIA HD Audio Deck icon  in your system tray. Double-click the icon to open the Audio Control Panel.



STEP 2:

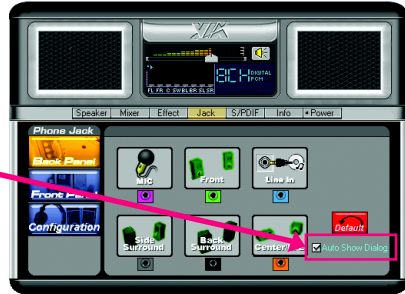
In the Audio Control Panel, click the **Speaker** tab. In the left list, click **8 Channel** button. The 8-channel audio setup is completed.



Auto-detecting:

In the Audio Control Panel, click the **Jack** tab. Click the **Auto Show Dialog** checkbox will enable the Retasking function.

Auto Show Dialog



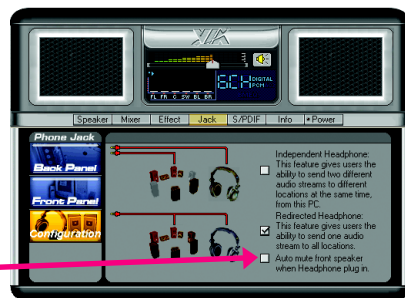
A Retasking dialog will show up when you plug the audio device into the jacks. Click the right output device checkbox that you connect in, then press **OK**.

**AC'97 Audio Configuration:**

To enable the front panel audio connector to support AC97 Audio mode, go to the Audio Control Panel and click the **Jack** tab.

Click the **Configuration** button and do not select the **Auto mute front speaker plug in** check box. This action completes the AC'97 Audio configuration.

Auto mute front speaker when Headphone plug in.



4-2 Troubleshooting

Below is a collection of general asked questions. To check general asked questions based on a specific motherboard model, please log on to GIGABYTE's website.

Question 1: I cannot see some options that were included in previous BIOS after updating BIOS. Why?

Answer: Some advanced options are hidden in new BIOS version. Please press Ctrl and F1 keys after entering BIOS menu and you will be able to see these options.

Questions 2: Why is the light of my keyboard/optical mouse still on after computer shuts down?

Answer: In some boards, a small amount of electricity is kept on standby after computer shuts down and that's why the light is still on.

Question 3: How do I clear CMOS?

Answer: If your board has a Clear CMOS jumper, please refer to the Clear CMOS steps in the manual. If your board doesn't have such jumper, you can take off the on-board battery to leak voltage to clear CMOS. Please refer to the steps below:

Steps:

1. Turn off power.
2. Disconnect the power cord from motherboard.
3. Take out the battery gently and put it aside for about 1 minute (Or you can use a metal object to connect the positive and negative pins in the battery holder to makethem short for 5 seconds).
4. Re-insert the battery to the battery holder.
5. Connect power cord to MB again and turn on power.
6. Press Del to enter BIOS and load Fail-Safe Defaults(or load Optimized Defaults).
7. Save changes and reboot the system.

Question 4: Why do I still get a weak sound after turning up the speaker to the maximum volume?

Answer: Please make sure the speaker you are using is equipped with an internal amplifier. If not, please change another speaker with power/amplifier and try again later.

Question 5: Sometimes I hear different continuous beeps from computer after system boots up. What do these beeps usually stand for?

Answer: The beep codes below may help you identify the possible computer problems. However, they are only for reference purposes. The situations might differ from case to case.

→ AWARD BIOS Beep Codes

- 1 short: System boots successfully
- 2 short: CMOS setting error
- 1 long 1 short: DRAM or M/B error
- 1 long 2 short: Monitor or display card error
- 1 long 3 short: Keyboard error
- 1 long 9 short: BIOS ROM error
- Continuous long beeps: DRAM error
- Continuous short beeps: Power error

Lined writing area consisting of 25 horizontal lines.



Contact Us

- **Taiwan (Headquarters)**

GIGA-BYTE TECHNOLOGY CO., LTD.

Address: No.6, Bau Chiang Road, Hsin-Tien,

Taipei 231, Taiwan

TEL: +886-2-8912-4888

FAX: +886-2-8912-4003

Tech. and Non-Tech. Support (Sales/Marketing) :

<http://ggts.gigabyte.com.tw>

WEB address (English): <http://www.gigabyte.com.tw>

WEB address (Chinese): <http://www.gigabyte.tw>

- **U.S.A.**

G.B.T. INC.

TEL: +1-626-854-9338

FAX: +1-626-854-9339

Tech. Support:

<http://rma.gigabyte-usa.com>

Web address: <http://www.gigabyte.us>

- **Mexico**

G.B.T Inc (USA)

Tel: +1-626-854-9338 x 215 (Soporte de habla hispano)

FAX: +1-626-854-9339

Correo: soporte@gigabyte-usa.com

Tech. Support:

<http://rma.gigabyte-usa.com>

Web address: <http://www.gigabyte-latam.com>

- **Japan**

NIPPON GIGA-BYTE CORPORATION

WEB address : <http://www.gigabyte.co.jp>

- **Singapore**

GIGA-BYTE SINGAPORE PTE. LTD.

WEB address : <http://www.gigabyte.com.sg>

- **China**

NINGBO G.B.T. TECH. TRADING CO., LTD.

WEB address : <http://www.gigabyte.cn>

- **Shanghai**

TEL: +86-21-63410999

FAX: +86-21-63410100

- **Beijing**

TEL: +86-10-62102838

FAX: +86-10-62102848

- **Wuhan**

TEL: +86-27-87851061

FAX: +86-27-87851330

- **GuangZhou**

TEL: +86-20-87540700

FAX: +86-20-87544306 ext. 333

- **Chengdu**

TEL: +86-28-85236930

FAX: +86-28-85256822 ext. 814

- **Xian**

TEL: +86-29-85531943

FAX: +86-29-85539821

- **Shenyang**

TEL: +86-24-83992901

FAX: +86-24-83992909

- **India**

GIGABYTE TECHNOLOGY (INDIA) LIMITED

WEB address : <http://www.gigabyte.in>

- **Australia**

GIGABYTE TECHNOLOGY PTY. LTD.

WEB address : <http://www.gigabyte.com.au>

- **Germany**

G.B.T. TECHNOLOGY TRADING GMBH

WEB address : <http://www.gigabyte.de>

- **U.K.**

G.B.T. TECH. CO., LTD.

WEB address : <http://www.giga-byte.co.uk>

- **The Netherlands**

GIGA-BYTE TECHNOLOGY B.V.

WEB address : <http://www.giga-byte.nl>

- **France**

GIGABYTE TECHNOLOGY FRANCE

WEB address : <http://www.gigabyte.fr>

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- **Spain**

GIGA-BYTE SPAIN

WEB address : <http://www.giga-byte.es>

- **Czech Republic**

Representative Office Of GIGA-BYTE Technology Co., Ltd.

in CZECH REPUBLIC

WEB address : <http://www.gigabyte.cz>

- **Turkey**

Representative Office Of GIGA-BYTE Technology Co., Ltd.

in TURKEY

WEB address : <http://www.gigabyte.com.tr>

- **Russia**

Moscow Representative Office Of GIGA-BYTE Technology Co., Ltd.

WEB address : <http://www.gigabyte.ru>

- **Latvia**

GIGA-BYTE Latvia

WEB address : <http://www.gigabyte.com.lv>

- **Poland**

Office of GIGA-BYTE TECHNOLOGY Co., Ltd. in POLAND

WEB address : <http://www.gigabyte.pl>

- **Ukraine**

WEB address : <http://www.gigabyte.kiev.ua>

- **Romania**

Representative Office Of GIGA-BYTE Technology Co., Ltd.

in Romania

WEB address : <http://www.gigabyte.com.ro>

- **Serbia & Montenegro**

Representative Office Of GIGA-BYTE Technology Co., Ltd.

in SERBIA & MONTENEGRO

WEB address : <http://www.gigabyte.co.yu>

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Then select your language to enter the system.