

GA-965P-DQ6

Intel® Core™ 2 Extreme / Core™ 2 Duo

Intel® Pentium® Processor Extreme Edition

Intel® Pentium® D / Pentium® 4 LGA775 Processor Motherboard

User's Manual

Rev. 1002

12ME-965PDQ6-1002R



* 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

We, Manufacturer/Importer
G.B.T. Technology Trading GmbH
Ausschläger Weg 41, 1F 20537 Hamburg, Germany

declare that the product
(description of the apparatus, system, installation to which it refers)

Motherboard

is in conformity with
the specific technical specification conformity is declared)
(reference to the specific technical specification conformity is declared)
in accordance with 89/338 EEC-EMC Directive

☐ EN 55011	Limits and methods of measurement of radio disturbance characteristics of industrial, scientific and medical (ISM) high frequency equipment	☒ EN 61000-3-2	Disturbances in supply systems caused by harmonics in supply systems caused by electronic equipment "Voltage fluctuations"
☐ EN 55013	Limits and methods of measurement of radio disturbance characteristics of broadcast receivers and associated equipment	☒ EN 55024	Information Technology Equipment Immunity Requirements of measurement
☐ EN 55014-1	Limits and methods of measurement of radio disturbance characteristics of household electrical appliances, portable tools and similar electrical apparatus	☐ EN 50082-1	Generic immunity standard Part 1: Residential, commercial and light industry
		☐ EN 50082-2	Generic immunity standard Part 2: Industrial environment
☐ EN 55015	Limits and methods of measurement of radio disturbance characteristics of fluorescent lamps and luminaires	☐ EN 55014-2	Immunity requirements for household appliances tools and similar apparatus
☐ EN 55020	Immunity from radio interference of broadcast receivers and associated equipment	☐ EN 50091-2	EMC requirements for unintermittible power systems (UPS)
☒ EN 55022	Limits and methods of measurement of radio disturbance characteristics of information technology equipment		
☐ DIN VDE 0885	Called distribution systems. Equipment for receiving and/or distribution from sound and television signals		
☐ part 10			
☐ part 12			
☒ CE marking			(EEC conformity marking)

The manufacturer also declares the conformity of above mentioned product with the actual required safety standards in accordance with LVD 7323 EEC

☐ EN 60956	Safety requirements for mains operated electronic and related apparatus for household and similar general use	☐ EN 60950	Safety for information technology equipment including electrical business equipment
☐ EN 60335	Safety of household and similar electrical appliances	☐ EN 50091-1	General and Safety requirements for uninterruptible power systems (UPS)

Manufacturer/Importer

(Stamp)

Date: Jun. 27, 2006

Signature: Jimmy Huang
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-965P-DQ6

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: Jun. 27, 2006

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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

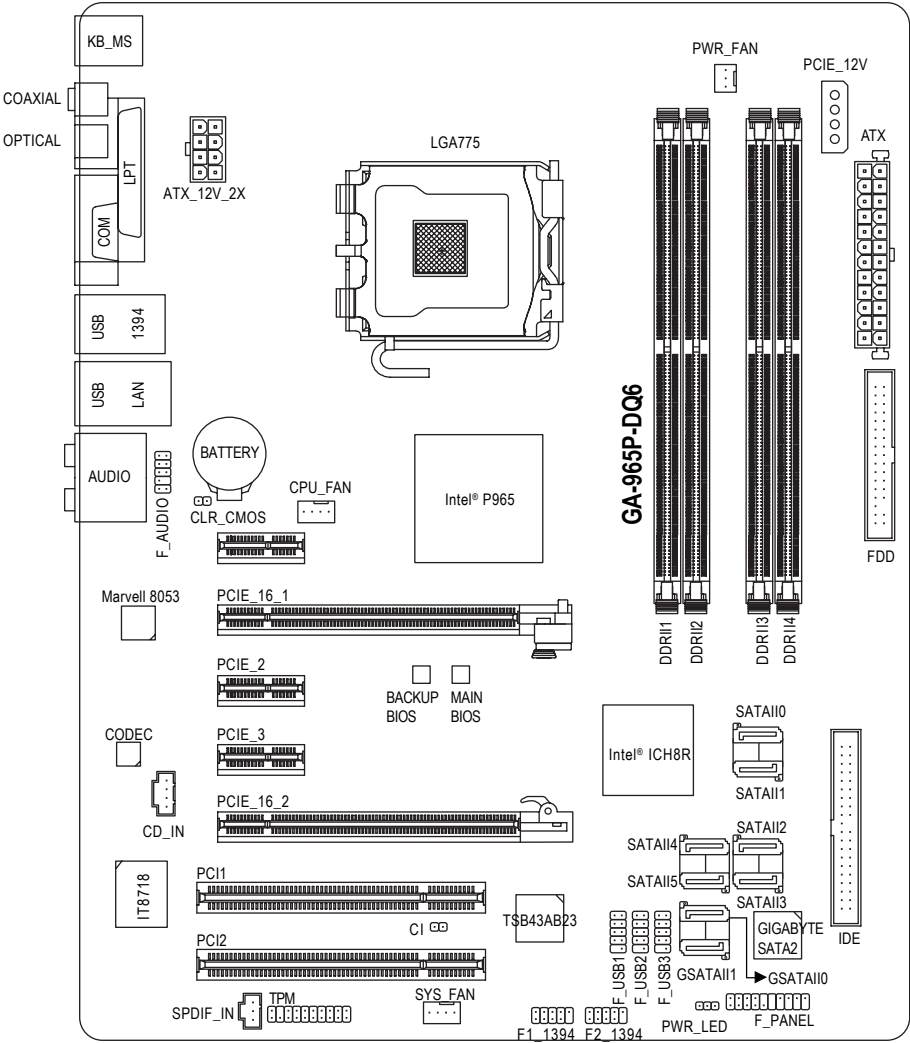
- ☒ IDE Cable x 1 & FDD Cable x 1
- ☒ SATA 3Gb/s Cable x 4
- ☒ I/O Shield
- ☒ e-SATA Cable x 2

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

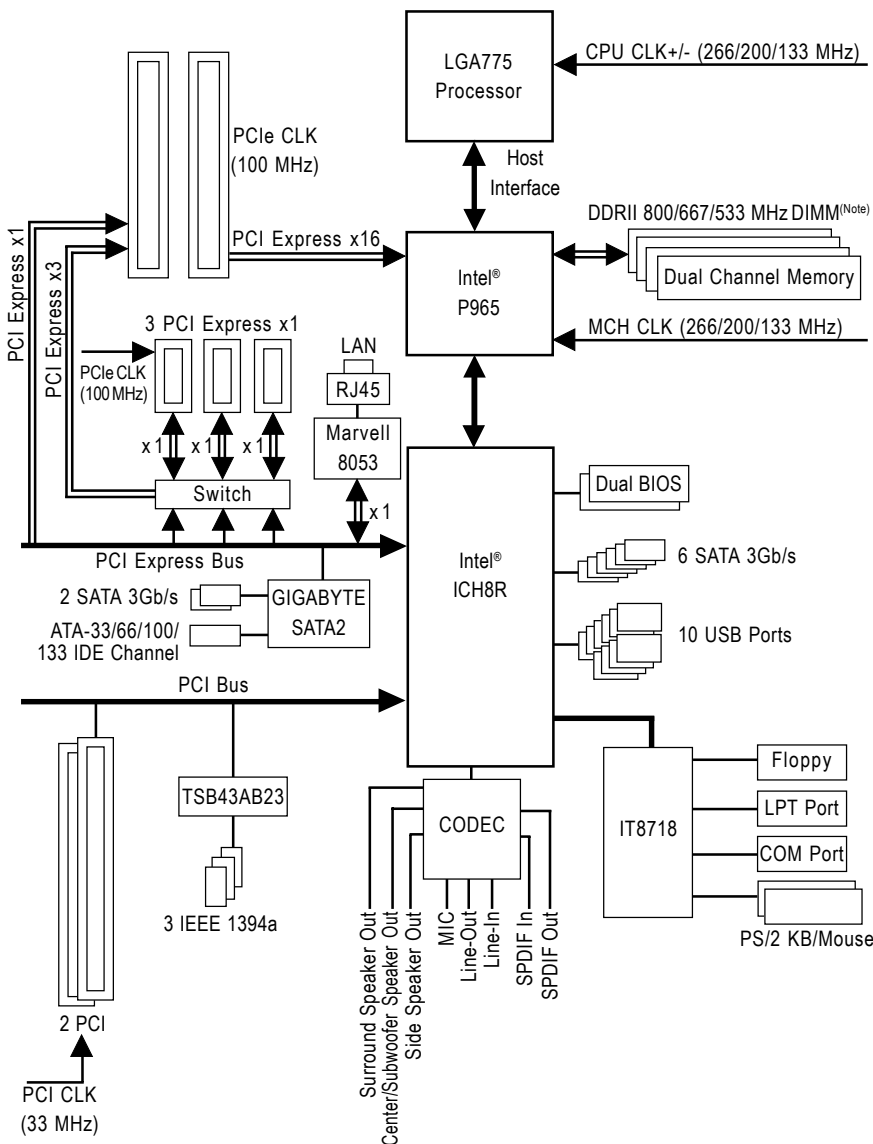
Optional Accessories

- ♦ 2 Ports USB2.0 Cable (Part Number: 12CR1-1UB030-51/R)
- ♦ 4 Ports USB2.0 Cable (Part Number: 12CR1-1UB030-21/R)
- ♦ 2 Ports IEEE1394 Cable (Part Number: 12CF1-1IE008-01R)
- ♦ 2 Ports SATA Power Cable (Part Number: 12CF1-2SERPW-01R)
- ♦ SPDIF-IN Cable (Part Number: 12CR1-1SPDIN-01R)

GA-965P-DQ6 Motherboard Layout



Block Diagram



(Note) To use a DDR II 800/667 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	- Supports LGA775 Intel® Core™ 2 Extreme / Core™ 2 Duo / Intel® Pentium® Processor Extreme Edition / Pentium® D / Pentium® 4 - L2 cache varies with CPU
Front Side Bus	Supports 1066/800/533MHz FSB
Chipset	- Northbridge: Intel® P965 Express Chipset - Southbridge: Intel® ICH8R
LAN	Onboard Marvell 8053 chip (10/100/1000 Mbit)
Audio	- Onboard Realtek ALC888 DD chip - Supports High Definition Audio - Supports 2 / 4 / 6 / 8 channel audio - Supports DTS (dts NEO : PC) function - Supports Dolby Digital Live - Supports S/PDIF In/Out connection - Supports CD In connection
IEEE 1394	- Onboard T.I. TSB43AB23 chip 3 IEEE1394a ports
Storage	- ICH8R Southbridge 1 FDD connector supported by I/O controller, allowing connection of 1 FDD device 6 SATA 3Gb/s connectors (SATAII0, SATAII1, SATAII2, SATAII3, SATAII4, SATAII5), allowing connection of 6 SATA 3Gb/s devices - Supports RAID 0, RAID 1, RAID 5, and RAID 10 for Serial ATA - GIGABYTE SATA2 Controller 1 IDE connector with UDMA 33/ATA 66/ATA 100/ATA 133 support, allowing connection of 2 IDE devices 2 SATA 3Gb/s connectors (GSATAII0, GSATAII1), allowing connection of 2 SATA 3Gb/s devices - Supports RAID 0, RAID 1 and JBOD for Serial ATA
O.S Support	Microsoft Windows 2000/XP
Memory	4 DDR II DIMM memory slots (supports up to 8 GB memory) - Supports dual channel DDR II 800/667/533 unbuffered DIMMs ^(Note 1) - Supports 1.8V DDR II DIMMs
Expansion Slots	1 PCI Express x16 slot (the PCIE_16_1 slot) 1 PCI Express x4 slot (the PCIE_16_2 slot) 3 PCI Express x1 slots (share the same PCIe bus with the PCIE_16_2 slot) ^(Note 2) 2 PCI slots

Internal Connectors	♦ 1 24-pin ATX power connector ♦ 1 8-pin ATX 12V power connector ♦ 1 4-pin PCIe 12V power connector ♦ 1 floppy connector ♦ 1 IDE connector ♦ 8 SATA 3Gb/s connectors ♦ 1 CPU fan connector ♦ 1 system fan connector ♦ 1 power fan connector ♦ 1 front panel connector ♦ 1 front audio connector ♦ 1 CD In connector ♦ 3 USB 2.0/1.1 connectors for additional 6 ports by cables ♦ 2 IEEE1394a connectors for additional 2 ports by cables ♦ 1 S/PDIF In connector ♦ 1 TPM connector ♦ 1 Chassis Intrusion connector ♦ 1 power LED connector
Rear Panel I/O	♦ 1 PS/2 keyboard port ♦ 1 PS/2 mouse port ♦ 1 parallel port ♦ 1 S/PDIF out port (coaxial) ♦ 1 S/PDIF out port (optical) ♦ 1 serial port (COM) ♦ 4 USB 2.0/1.1 ports ♦ 1 IEEE1394 port ♦ 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	♦ IT8718 chip
Hardware Monitor	♦ System voltage detection ♦ CPU / System temperature detection ♦ CPU / System / Power fan speed detection ♦ CPU warning temperature ♦ CPU / System / Power fan failure warning ♦ CPU smart fan control
BIOS	♦ 2 8 Mbit flash ROM ♦ Use of licensed AWARD BIOS ♦ Supports DualBIOS

Additional Features	◆ Supports @BIOS ◆ Supports Download Center ◆ Supports Q-Flash ◆ Supports EasyTune^(Note 3) ◆ Supports Xpress Install ◆ Supports Xpress Recovery2 ◆ Supports Xpress BIOS Rescue
Bundle Software	◆ Norton Internet Security (OEM revision)
Overclocking	◆ Over Voltage via BIOS (CPU/ DDR II/ PCI-E/ FSB/ (G)MCH) - CPU Over Voltage : Adjustable CPU voltage at 0.025V^(Note 4) - DIMM Over Voltage : Adjustable DIMM voltage at 0.025V (Adjustable range from +0.025V to +0.775V) - PCI-E Over Voltage : Adjustable PCI-E voltage at 0.05V (Adjustable range from +0.05V to +0.35V) - FSB Over Voltage : Adjustable FSB voltage at 0.05V (Adjustable range from +0.05V to +0.35V) - (G)MCH Over Voltage : Adjustable (G)MCH(Northbridge) voltage at 0.05V (Adjustable range from +0.05V to +0.75V) ◆ Over Clock via BIOS (CPU/ DDR II/ PCI-E) - PCI Express x16 Frequency : Allows 1 MHz increment from 90 MHz to 150 MHz - Adjustable FSB/ DDRII frequencies
Form Factor	◆ ATX form factor; 30.5cm x 24.4cm

(Note 1) To use a DDR II 800/667 memory module on the motherboard, you must install a 1066/800 MHz FSB processor.

(Note 2) The three PCI Express x1 slots will not be available when the PCIE_16_2 slot is in use.

(Note 3) EasyTune functions may vary depending on different motherboards.

(Note 4) The adjustable range is dependent on CPUs.

1-3 Installation of the CPU and CPU Cooler



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 sink 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 processor 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.



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 4 Processor with HT Technology
- Chipset: An Intel® 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

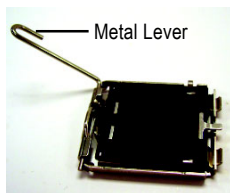


Fig. 1
Gently lift the metal lever located on the CPU socket to the upright position.

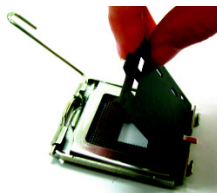


Fig. 2
Remove the plastic covering on the CPU socket.

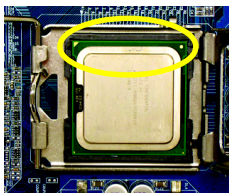


Fig. 3
Notice the small gold colored triangle located on the edge of the CPU socket. Align the indented corner of the



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 CPU cooler paste on the surface of the installed CPU.

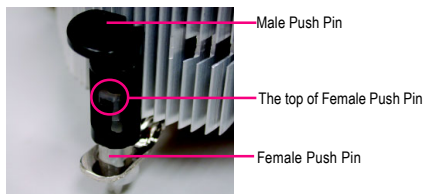


Fig. 2

(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)

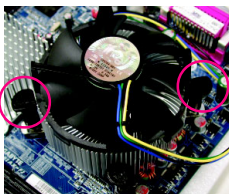


Fig. 3

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.

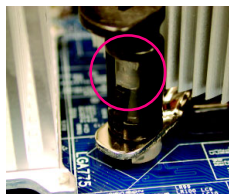


Fig. 4

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)

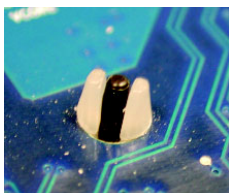


Fig. 5

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

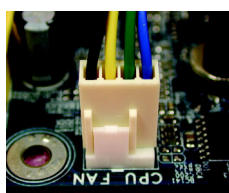


Fig. 6

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



NOTE

Use extreme care when removing the CPU cooler because the thermal grease/tape between the CPU cooler and CPU may adhere to the CPU. Inadequately removing the CPU cooler may damage the CPU.

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 DDR II 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.

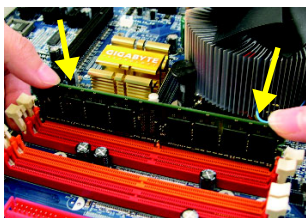
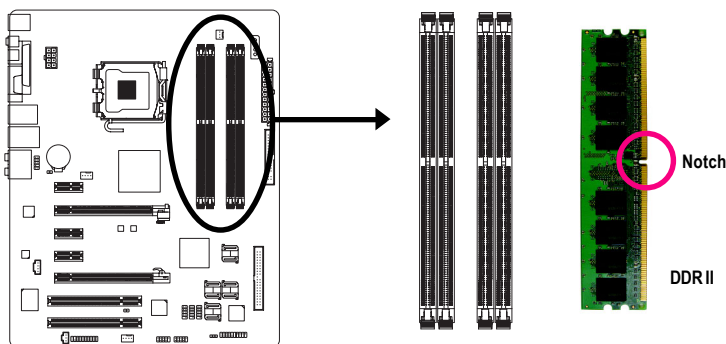


Fig.1

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.

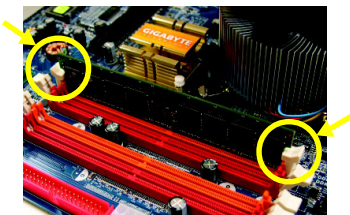


Fig.2

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.



Dual Channel Memory Configuration

The GA-965P-DQ6 supports the Dual Channel Technology. After operating the Dual Channel Technology, the bandwidth of memory bus will double.

The GA-965P-DQ6 includes 4 DIMM sockets, and each Channel has two DIMM sockets as following:

» Channel 0 : DDR II 1, DDR II 2

» Channel 1 : DDR II 3, DDR II 4

If you want to operate the Dual Channel Technology, please note the following explanations due to the limitation of Intel chipset specifications.

1. Dual Channel mode will not be enabled if only one DDRII memory module is installed.
2. To enable Dual Channel mode with two or four memory modules (it is recommended to use memory modules of identical brand, size, chips, and speed), you must install them into DIMM sockets of the same color.

The following is a Dual Channel Memory configuration table:

(DS: Double Side, SS: Single Side, "--": Empty)

	DDR II 1	DDR II 2	DDR II 3	DDR II 4
2 memory modules	DS/SS	--	DS/SS	--
	--	DS/SS	--	DS/SS
4 memory modules	DS/SS	DS/SS	DS/SS	DS/SS

(Note) When memory modules of different size and chips are installed, a message which indicates that memory is configured to Flex memory mode operation will appear during POST.

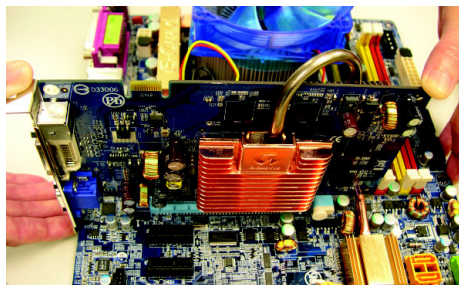
Intel® Flex Memory Technology offers easier upgrades by allowing different memory sizes to be populated and remain in dual-channel mode.

1-5 Installation of Expansion Cards

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

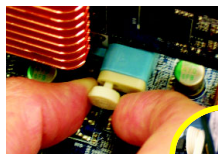
1. Read the related expansion card's instruction document before install the expansion card into the computer.
2. Remove your computer's chassis cover, screws and slot bracket from the computer.
3. Press the expansion card firmly into expansion slot in motherboard.
4. Be sure the metal contacts on the 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.

For example: Installing a PCI Express x16 VGA card:



To install the VGA card:

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 small white-drawable bar.

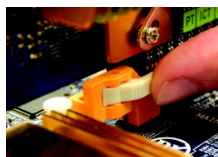


To remove the VGA card on the PCIE_16_1 slot:

Please carefully pull out the small white-drawable bar at the end of the PCIE_16 slot when you try to uninstall the VGA card.

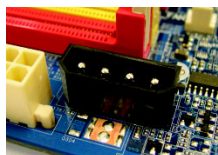


Or you can also press the latch on the opposite side of the drawable bar as the picture to the left shows.



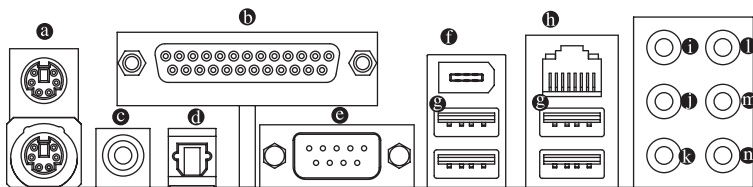
To remove the VGA card on the PCIE_16_2 slot:

When you try to uninstall the VGA card on the PCIE_16_2 slot, you can press the latch as the picture to the left shows to release the card.



The motherboard includes a PCIE_12V power connector, which provides extra power to the onboard PCI Express x16 slot. When installing two graphics cards, please connect the power cable from the power supply to this connector.

1-6 I/O Back Panel Introduction



❶ 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).

❷ Parallel Port

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

❸ COATIAL

The S/PDIF coaxial output port is capable of providing digital audio to external speakers or compressed AC3 data to an external Dolby Digital Decoder via a coaxial cable.

❹ OPTICAL

The S/PDIF optical output port is capable of providing digital audio to external speakers or compressed AC3 data to an external Dolby Digital Decoder via an optical cable.

❺ COM (Serial Port)

Connects to serial-based mouse or data processing devices.

❻ IEEE 1394 Port

Serial interface standard set by Institute of Electrical and Electronics Engineers, which has features like high speed, high bandwidth and hot plug.

❼ 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.

❽ LAN Port

The provided Internet connection is Gigabit Ethernet , providing data transfer speeds of 10/100/1000Mbps.

❾ Center/Subwoofer Speaker Out

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

❿ 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.

⓫ Side Speaker Out

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

① Line In

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

⑩ 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.

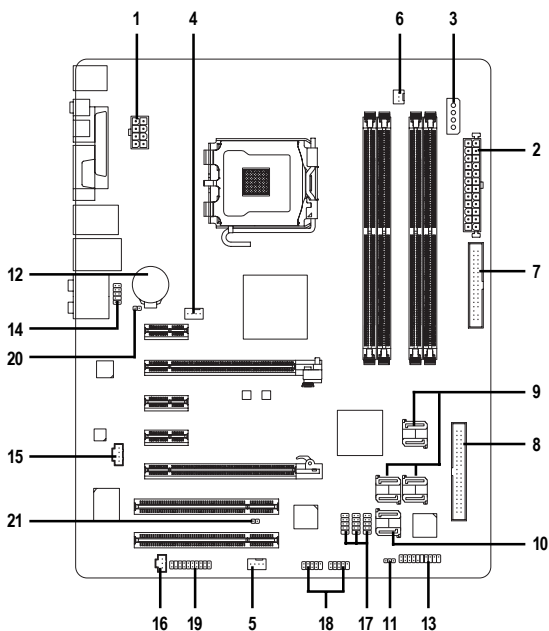
⑪ MIC In

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



In addition to the default speakers settings, the ⑩~⑪ 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 (⑪). Please refer to the 2-/4-/6-/8- channel audio setup steps for detailed software configuration information.

1-7 Connectors Introduction



1) ATX_12V_2X	12) BATTERY
2) ATX (Power Connector)	13) F_PANEL
3) PCIE_12V	14) F_AUDIO
4) CPU_FAN	15) CD_IN
5) SYS_FAN	16) SPDIF_IN
6) PWR_FAN	17) F_USB1 / F_USB2 / F_USB3
7) FDD	18) F1_1394 / F2_1394
8) IDE	19) TPM
9) SATAII0 / 1 / 2 / 3 / 4 / 5	20) CLR_CMOS
10) GSATAII0 / GSATAII1	21) CI
11) PWR_LED	

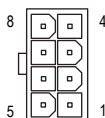
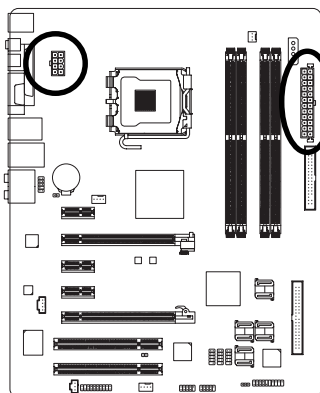
1/2) ATX_12V_2X / ATX (Power Connector)

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.

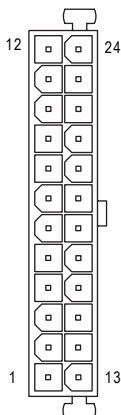
The ATX 12V (2x4) power connector mainly supplies power to the CPU. If the ATX 12V (2x4) power connector is not connected, the system will not start. If you wish to install a power supply that provides ATX 12V (2x2) power connector, please connect the ATX 12V power connector to the Pin 3, 4, 7, 8 of the onboard ATX_12V_2X power connector according to the pin definitions.

Important Use of a power supply providing an ATX 12V (2x4) power connector is recommended by processor manufacturer when using Intel Pentium D Extreme Edition processor.

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 (400W 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 power supply that provides a 24-pin ATX or 2x4 pin ATX 12V power connector, please remove the small cover on the power connector on the motherboard before plugging in the power cord ; otherwise, please do not remove it.



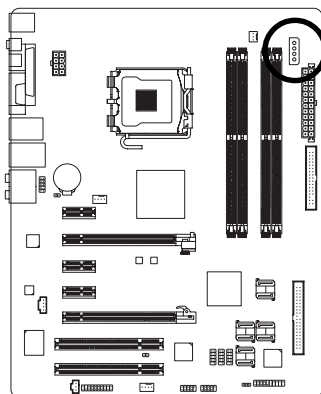
Pin No.	Definition
1	GND
2	GND
3	GND
4	GND
5	+12V
6	+12V
7	+12V
8	+12V



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) PCIE_12V (Power Connector)

This power connector provides extra power to the onboard PCI Express x16 slot. When installing two graphics cards, please connect the power cable from the power supply to this connector, or system instability may occur.



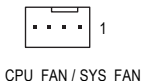
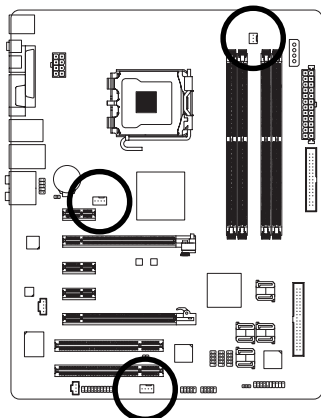
Pin No.	Definition
1	NC
2	GND
3	GND
4	+12V

4/5/6) CPU_FAN / SYS_FAN / PWR_FAN (Cooler Fan Power Connector)

The cooler fan power connector supplies a +12V power voltage via a 3-pin/4-pin(CPU_FAN/ SYS_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/power fan cable to the CPU_FAN/SYS_FAN/PWR_FAN connector to prevent CPU damage or system hanging caused by overheating.



CPU_FAN / SYS_FAN

CPU_FAN / SYS_FAN :

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



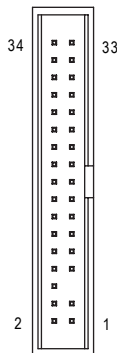
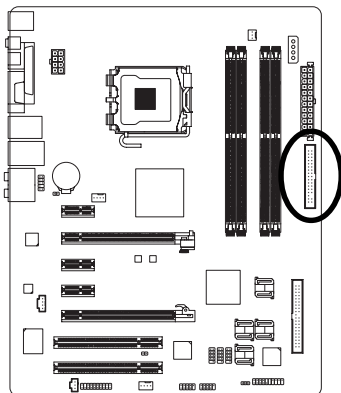
PWR_FAN

PWR_FAN :

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

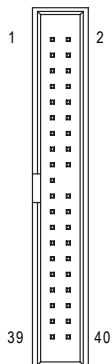
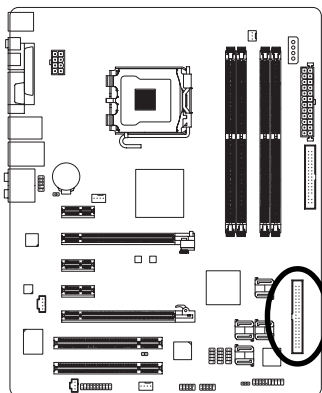
7) FDD (Floppy Connector)

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: 360KB, 720KB, 1.2MB, 1.44MB and 2.88MB. Before attaching the FDD cable, please take note of the foolproof groove in the FDD connector.



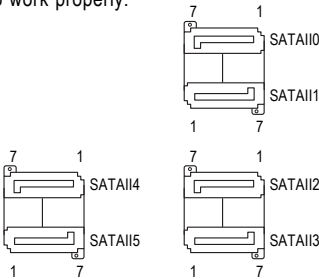
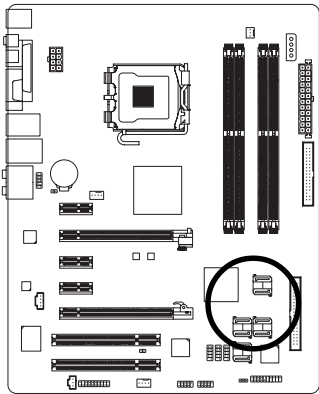
8) IDE (IDE Connector)

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.



9) SATAII0 / 1 / 2 / 3 / 4 / 5 (SATA 3Gb/s Connector, Controlled by ICH8R)

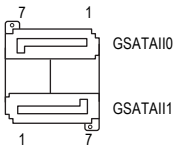
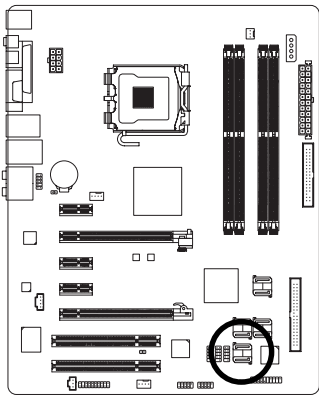
SATA 3Gb/s can provide up to 300MB/s transfer rate. Please refer to the BIOS setting for the SATA 3Gb/s and install the proper driver in order to work properly.



Pin No.	Definition
1	GND
2	TXP
3	TXN
4	GND
5	RXN
6	RXP
7	GND

10) GSATAII0 / GSATAII1 (SATA 3Gb/s Connector, Controlled by GIGABYTE SATA2)

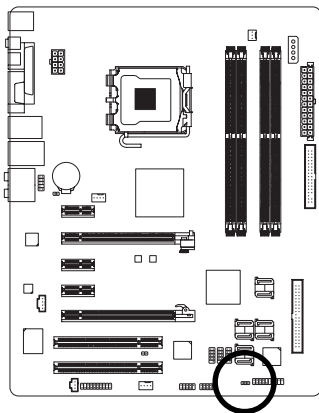
SATA 3Gb/s can provide up to 300MB/s transfer rate. Please refer to the BIOS setting for the SATA 3Gb/s and install the proper driver in order to work properly.



Pin No.	Definition
1	GND
2	TXP
3	TXN
4	GND
5	RXN
6	RXP
7	GND

11) PWR_LED

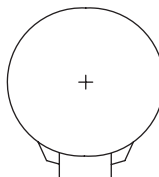
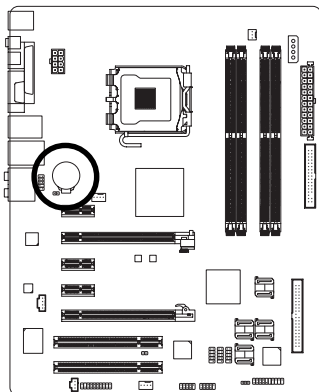
The PWR_LED connector is connected with the system power indicator to indicate whether the system is on/off. It will blink when the system enters suspend mode(S1).



1

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

12) BATTERY



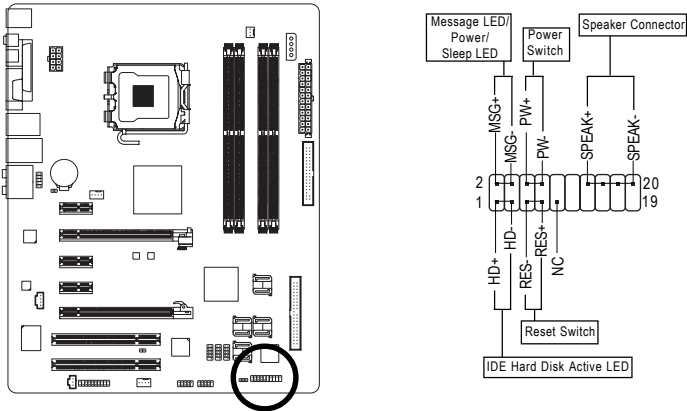
- ❖ Danger of explosion if battery is incorrectly replaced.
- ❖ Replace only with the same or equivalent type recommended by the manufacturer.
- ❖ Dispose of used batteries according to the manufacturer's instructions.

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.

13) F_PANEL (Front Panel Jumper)

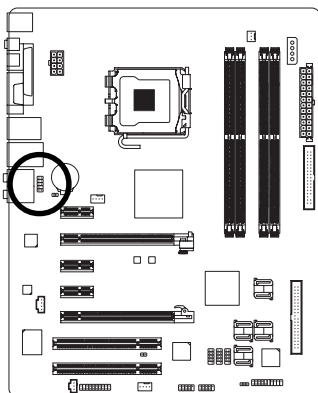
Please connect the power LED, PC speaker, reset switch and power switch etc. of your chassis front panel to the F_PANEL connector according to the pin assignment below.



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

14) 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

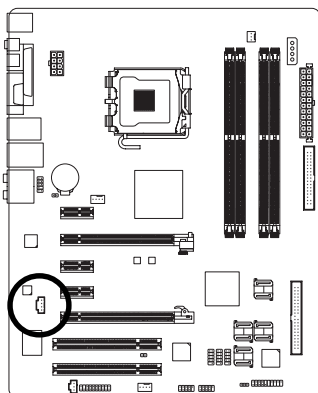


NOTE

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 96 about the software settings.

15) CD_IN (CD IN Connector)

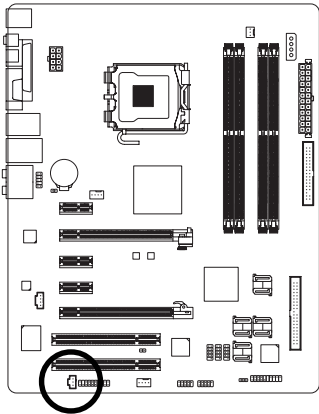
Connect CD-ROM or DVD-ROM audio out to the connector.



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

16) SPDIF_IN (S/PDIF In Connector)

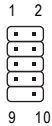
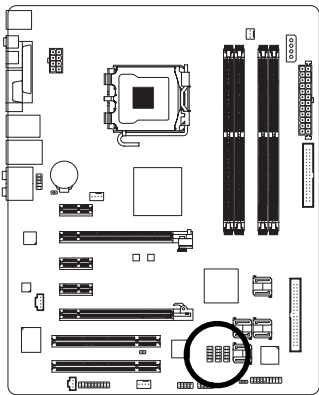
Use S/PDIF IN feature only when your device has digital output function. Be careful with the polarity of the SPDIF_IN connector. Check the pin assignment carefully while you connect the S/PDIF cable, incorrect connection between the cable and connector will make the device unable to work or even damage it. For optional S/PDIF cable, please contact your local dealer.



Pin No.	Definition
1	Power
2	SPDIFI
3	GND

17) F_USB1 / F_USB2 / F_USB3 (Front USB Connector)

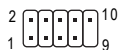
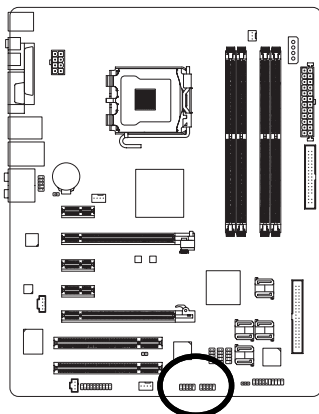
Be careful with the polarity of the front USB connector. Check the pin assignment carefully while you connect the front USB cable, incorrect connection between the cable and connector will make the device unable to work or even damage it. For optional front USB cable, please contact your local dealer.



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

18) F1_1394 / F2_1394 (Front IEEE 1394 Connector)

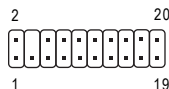
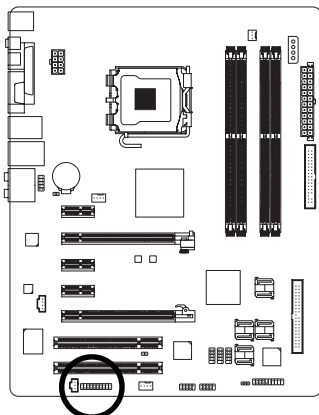
Serial interface standard set by Institute of Electrical and Electronics Engineers, which has features like high speed, highbandwidth and hot plug. Be careful with the polarity of the IEEE1394 connector. Check the pin assignment carefully while you connect the IEEE1394 cable, incorrect connection between the cable and connector will make the device unable to work or even damage it. For optional IEEE1394 cable, please contact your local dealer.



Pin No.	Definition
1	TPA+
2	TPA-
3	GND
4	GND
5	TPB+
6	TPB-
7	Power (12V)
8	Power (12V)
9	No Pin
10	GND

19) TPM Connector (Trusted Platform Module)

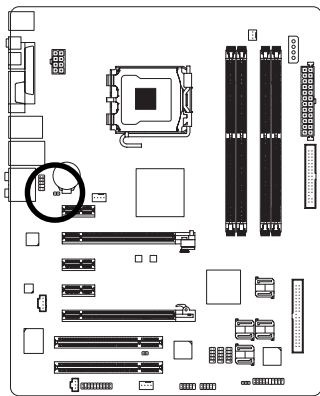
Please contact your nearest dealer for optional TPM cable.



Pin No.	Definition	Pin No.	Definition
1	LCLK	11	LAD0
2	GND	12	GND
3	LFRAME	13	RSVO
4	No Pin	14	RSV1
5	LRESET	15	SB3V
6	VCC5	16	SERIRQ
7	LAD3	17	GND
8	LAD2	18	CLKRUN
9	VCC3	19	LPCPD
10	LAD1	20	RSV2

20) CLR_CMOS (Clear CMOS)

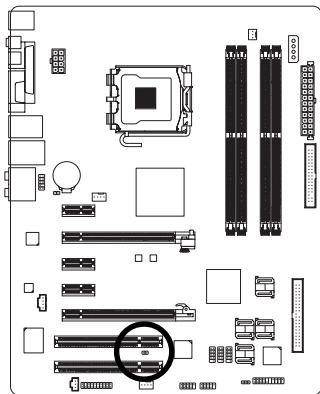
You may clear the CMOS data to its default values by this header. To clear CMOS, temporarily short the two pins. Default doesn't include the jumper to avoid improper use of this header.



-  Open: Normal
-  Short: Clear CMOS

21) 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.



-  1

Pin No.	Definition
1	Signal
2	GND

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, pressing 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>	Dual BIOS/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

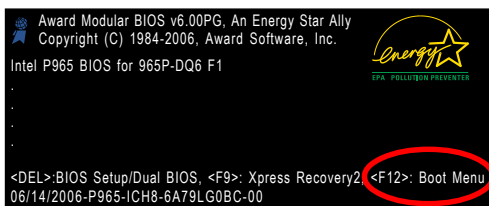
Press F1 to pop up a small help window that describes the appropriate keys to use and the possible selections for the highlighted item. To exit the Help Window press <Esc>.



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

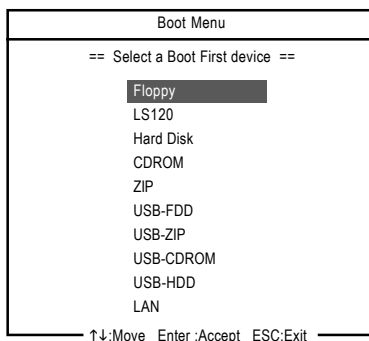
<F12> : Boot Menu

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



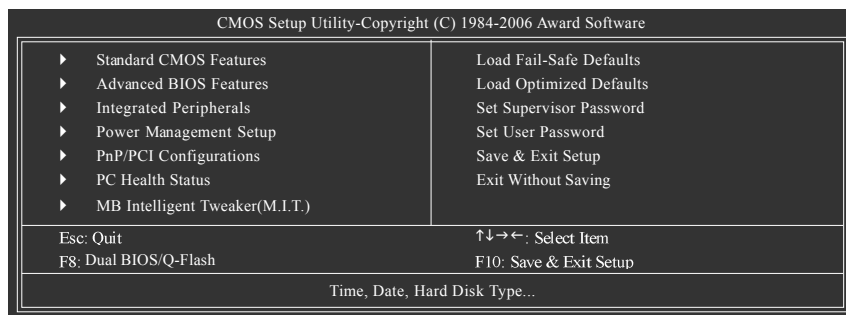
<F12> Boot Menu

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



The Main Menu (For example: BIOS Ver. : F1)

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.



NOTE

Please Load Optimized Defaults in the BIOS when somehow the system works not stable as usual. This action makes the system reset to the default for stability.

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)	Mon, Jun 5 2006	Item Help
Time (hh:mm:ss)	22:31:24	Menu Level▶
▶ IDE Channel 0 Master	[None]	Change the day, month, year
▶ IDE Channel 0 Slave	[None]	
▶ IDE Channel 1 Master	[None]	<Week>
▶ IDE Channel 1 Slave	[None]	Sun. to Sat.
▶ IDE Channel 2 Master	[None]	
▶ IDE Channel 3 Master	[None]	<Month>
▶ IDE Channel 4 Master	[None]	Jan. to Dec.
▶ IDE Channel 4 Slave	[None]	
▶ IDE Channel 5 Master	[None]	<Day>
▶ IDE Channel 5 Slave	[None]	1 to 31 (or maximum allowed in the month)
Drive A	[1.44M, 3.5"]	
Floppy 3 Mode Support	[Disabled]	<Year>
Halt On	[All, But Keyboard]	1999 to 2098
Base Memory	640K	
Extended Memory	511M	
Total Memory	511M	
↑↓→←: 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 13:00:00.

🔑 IDE Channel 0/1 Master, Slave

- ▶▶ IDE HDD Auto-Detection

Press "Enter" to select this option for automatic device detection.

- ▶▶ IDE Device Setup. You can use one of three 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.
- 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)

🔑 IDE Channel 2/3 Master / IDE Channel 4/5 Master, Slave

- ▶▶ IDE HDD Auto-Detection

Press "Enter" to select this option for automatic device detection.

- ▶▶ Extended IDE Drive. You can use one of 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.
- » 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; 360K byte capacity.
- » 1.2M, 5.25" 5.25 inch AT-type high-density drive; 1.2M byte capacity.
(3.5 inch when 3 Mode is Enabled).
- » 720K, 3.5" 3.5 inch double-sided drive; 720K byte capacity
- » 1.44M, 3.5" 3.5 inch double-sided drive; 1.44M byte capacity.
- » 2.88M, 3.5" 3.5 inch double-sided drive; 2.88M byte 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 512K for systems with 512K memory installed on the motherboard, or 640K for systems with 640K or more memory installed on the motherboard.

» Extended Memory

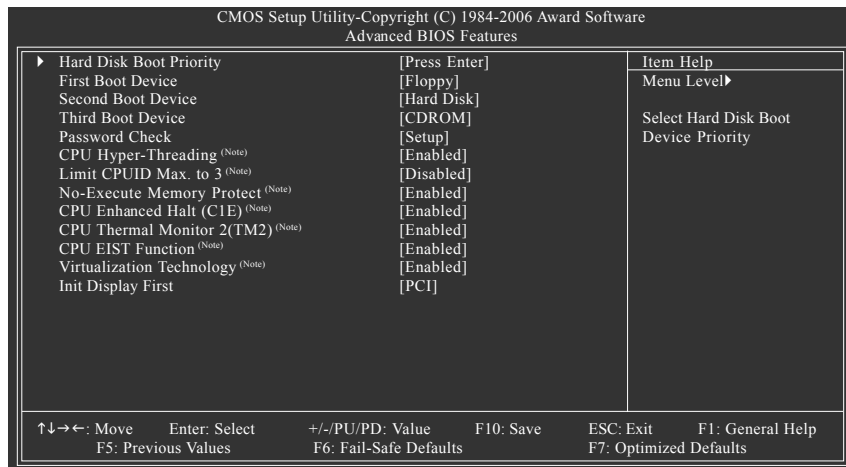
The BIOS determines how much extended memory is present during the POST.

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

» Total Memory

This item displays the memory size that used.

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.
- » 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 that supports this function.

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 CPU EIST function.

Virtualization Technology ^(Note)

- » Enabled Enable Virtualization Technology function. (Default value)
- » Disabled Disable Virtualization Technology function.

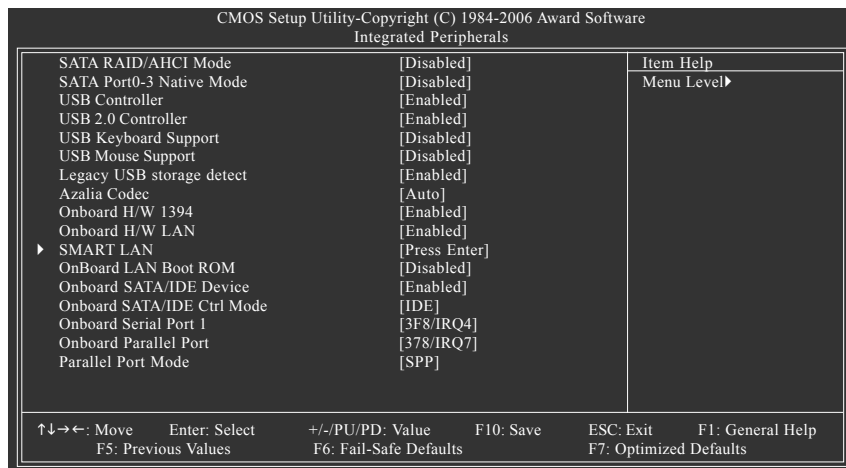
Init Display First

This feature allows you to select the first initiation of the monitor display from which card when you install a PCI card and a PCI Express VGA card on the motherboard.

- » PCI Set Init Display First to PCI VGA card. (Default value)
- » PEG Set Init Display First to PCI Express VGA card (the PCIE_16_1 slot).
- » PEG2 Set Init Display First to PCI Express VGA card (the PCIE_16_2 slot).

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

2-3 Integrated Peripherals



☞ SATA RAID / AHCI Mode

- » RAID Set the onboard SATA controller to RAID mode.
- » AHCI Set the onboard SATA controller to AHCI mode. Advanced Host Controller Interface (AHCI) is an interface specification that allows the storage driver to enable advanced Serial ATA features such as Native Command Queuing and hot plug. For more details about AHCI, please visit Intel's website.
- » Disabled Set the onboard SATA controller to IDE mode. (Default value)

☞ SATA Port0-3 Native Mode

- » Enabled Set SATA Port0~3 to operate at Native IDE mode.
- » Disabled Set SATA Port0~3 to operate at Legacy IDE mode. (Default value)

☞ USB Controller

- » Enabled Enable USB controller. (Default value)
- » Disabled Disable USB controller.

☞ USB 2.0 Controller

Disable this function if you are not using onboard USB 2.0 feature.

- » Enabled Enable USB 2.0 controller. (Default value)
- » Disabled Disable USB 2.0 controller.

☞ USB Keyboard Support

- » Enabled Enable USB keyboard support.
- » Disabled Disable USB keyboard support. (Default value)

☞ USB Mouse Support

- » Enabled Enable USB mouse support.
- » Disabled Disable USB mouse support. (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.

 Azalia Codec

- » Auto Auto detect Azalia audio function. (Default value)
- » Disabled Disable Azalia audio function.

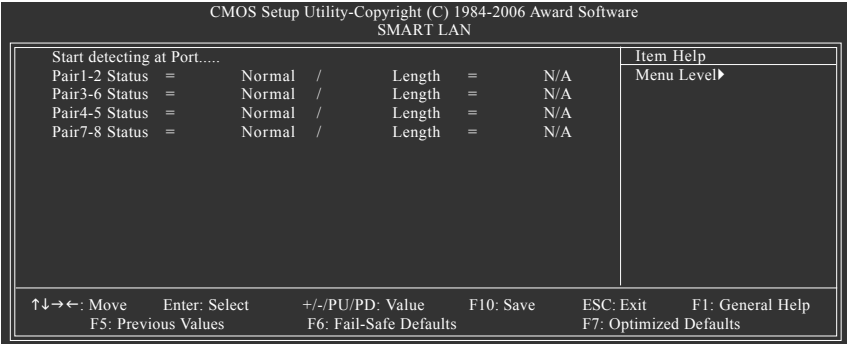
 Onboard H/W 1394

- » Enabled Enable onboard IEEE 1394 function. (Default value)
- » Disabled Disable this function.

 Onboard H/W LAN

- » Enabled Enable onboard H/W LAN function. (Default value)
- » Disabled Disable this function.

 SMART LAN



This motherboard incorporates cable diagnostic feature designed to detect the status of the attached LAN cable. This feature will detect cabling issue and report the approximate distance to the fault or short. Refer to the following information for diagnosing your LAN cable:

» **When LAN Cable Is Functioning Normally...**

1. If no cable problem is detected on the LAN cable connected to a Gigabit hub, the **Status** fields of Pair 1-2, Pair 3-6, Pair 4-5, and Pair 7-8 will show **Normal** and the **Length** fields will show **N/A**, as shown in the figure above.
2. If no cable problem is detected on the LAN cable connected to a 10/100 Mbps hub, the **Status** fields of Pair 1-2 and Pair 3-6 will show **Normal** and the **Length** fields will show **N/A**. However, because Pair 4-5 and Pair 7-8 are not used in a 10/100 Mbps environment, their **Status** fields will show **Short** or **Open**, and the length shown is the approximate length of the attached LAN cable.

» **When a Cable Problem Occurs...**

If a cable problem occurs on a specified pair of wires, the **Status** field will show **Short** or **Open** and the length shown will be the approximate distance to the fault or short.

For example, if it shows Pair1-2 Status = Short / Length = 1.6m, it means that a fault or short might occur at about 1.6m on Pair 1-2.

» When No LAN Cable Is Attached...

If no LAN cable is attached to the motherboard, the **Status** fields of all four pairs of wires will show **Open** and the **Length** fields show **0.0m**.

☞ 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)

☞ Onboard SATA/IDE Device

This function allows users to enable or disable the SATA/IDE ports controlled by the Gigabyte SATA2 controller.

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

☞ Onboard SATA/IDE Ctrl Mode

This function allows users to decide the operating mode of the SATA/IDE ports controlled by the Gigabyte SATA2 controller.

- » IDE Set the SATA channel to IDE mode. (Default value)
- » AHCI Set the SATA channel to AHCI mode. Advanced Host Controller Interface (AHCI) is an interface specification that allows the storage driver to enable advanced Serial ATA features such as Native Command Queuing and hot plug. For more details about AHCI, please visit Intel's website.
- » RAID/IDE Set the SATA channel to RAID mode and IDE channel to IDE mode.

☞ 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 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.

2-4 Power Management Setup

CMOS Setup Utility-Copyright (C) 1984-2006 Award Software
Power Management Setup

ACPI Suspend Type	[S1(POS)]	Item Help
Soft-Off by PWR-BTTN	[Instant-Off]	Menu Level▶
PME Event Wake Up	[Enabled]	
Power On by Ring	[Enabled]	
Resume by Alarm	[Disabled]	
x Date (of Month) Alarm	Everyday	
x Time (hh:mm:ss) Alarm	0 : 0 : 0	
Power On By Mouse	[Disabled]	
Power On By Keyboard	[Disabled]	
x KB Power ON Password	Enter	
AC Back Function	[Soft-Off]	

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

ACPI Suspend Type

- ▶▶ 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 PWR-BTTN

- ▶▶ 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.

PME Event Wake Up

- ▶▶ Disabled Disable this function.
- ▶▶ Enabled Enable PME Event Wake up. (Default value)

Power On by Ring

- ▶▶ Disabled Disable Power on by Ring function.
- ▶▶ Enabled Enable Power on by Ring 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) Alarm : Everyday, 1~31
- ▶▶ Time (hh: mm: ss) Alarm : (0~23) : (0~59) : (0~59)

Power On By Mouse

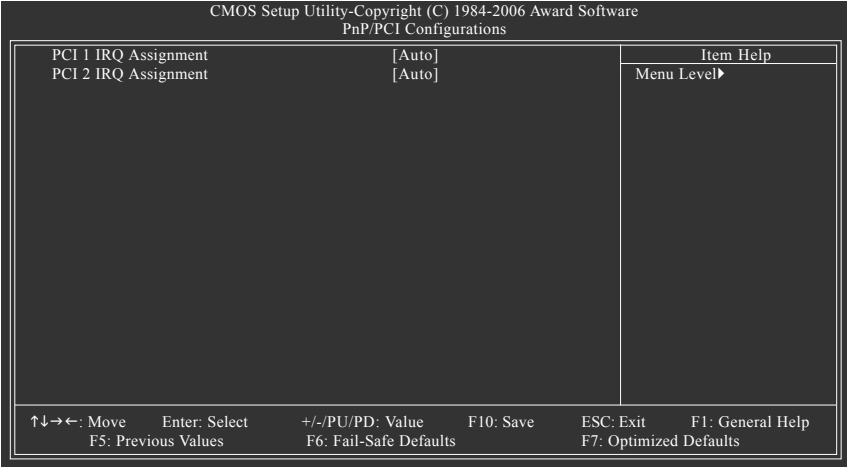
- ▶▶ Disabled Disable this function. (Default value)
- ▶▶ Double Click Double click on PS/2 mouse left button to power on the system.

-  **Power On By Keyboard**
 - » Password Enter from 1 to 5 characters to set the Keyboard Power On Password.
 - » Disabled Disabled this function. (Default value)
 - » Keyboard 98 If your keyboard have "POWER Key" button, you can press the key to power on the system.
-  **KB Power ON Password**

When "Power On by Keyboard" set at Password, you can set the password here.

 - » Enter Input password (from 1 to 5 characters) and press Enter to set the Keyboard Power On password.
-  **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.

2-5 PnP/PCI Configurations



-  **PCI 1 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.
-  **PCI 2 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.

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	No	Menu Level▶
Vcore	OK	
DDR18V	OK	
+3.3V	OK	
+12V	OK	
Current System Temperature	45°C	
Current CPU Temperature	49°C	
Current CPU FAN Speed	2657 RPM	
Current SYSTEM FAN Speed	0 RPM	
Current POWER FAN Speed	0 RPM	
CPU Warning Temperature	[Disabled]	
CPU FAN Fail Warning	[Disabled]	
SYSTEM FAN Fail Warning	[Disabled]	
POWER FAN Fail Warning	[Disabled]	
FAN Speed Control Method	[Auto]	
FAN Speed Control Mode	[Auto]	
↑↓→←: 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 has been opened, "Case Opened" will show "Yes". If you want to reset "Case Opened" value, set "Reset Case Open Status" to **Enabled** then save BIOS setup and restart your system.

Current Voltage(V) Vcore / DDR18V / +3.3V / +12V

- ▶ Detect system's voltage status automatically.

Current System/CPU Temperature

- ▶ Detect system/CPU temperature automatically.

Current CPU/SYSTEM/POWER FAN Speed (RPM)

- ▶ Detect CPU/system/power fan speed status automatically.

CPU Warning Temperature

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

CPU/SYSTEM/POWER FAN Fail Warning

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

 FAN Speed Control Method ^(Note)

- » Auto BIOS sets the optimal fan speed automatically. (Default value)
- » Intel(R) QST Control the fan speed with Intel® QST (Intel® Quiet System Technology).
- » Legacy CPU fan runs at different speed depending on CPU temperature.
- » Disable CPU fan runs at full speed.

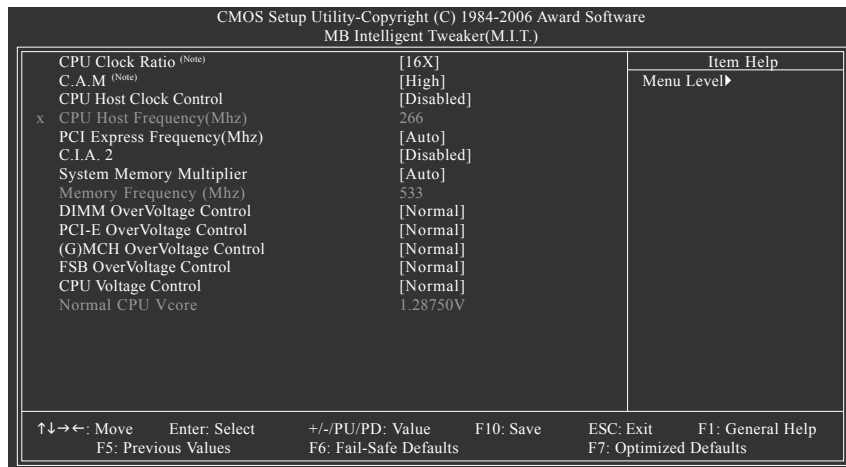
 FAN Speed Control Mode

- » Auto BIOS autodetects the type of CPU fan you installed and sets the optimal fan speed control mode for it. (Default value)
- » Voltage Set to Voltage when you use a CPU fan with a 3-pin fan power cable.
- » PWM Set to PWM when you use a CPU fan with a 4-pin fan power cable.

Note: In fact, the Voltage option can be used for CPU fans with 3-pin or 4-pin power cables. However, some 4-pin CPU fan power cables are not designed following Intel 4-Wire fans PWM control specifications. With such CPU fans, selecting PWM will not effectively reduce the fan speed.

(Note) Before setting this item to **Intel(R) QST**, make sure at least DDRII1 or DDRII2 socket in Channel 0 is populated. A small portion of system memory will be shared when Intel® QST is enabled.

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 M.I.T. 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.

C.A.M (Note)

» High Set clock ratio for frequency-locked CPU to High. (Default value)

» Low Set clock ratio for frequency-locked CPU to Low.

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 Host Frequency(Mhz)

» 100Mhz ~ 600Mhz Set CPU Host Clock from 100Mhz to 600Mhz.

The actual range depends on the CPU you install.

If you use a 533Mhz FSB processor, please set **CPU Host Frequency to 133Mhz.**

If you use an 800Mhz FSB processor, please set **CPU Host Frequency to 200Mhz.**

If you use a 1066Mhz FSB processor, please set **CPU Host Frequency to 266Mhz.**

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

🔑 PCI Express Frequency(Mhz)

- ▶▶ Auto Set PCI Express frequency automatically. (Default value)
- ▶▶ 90Mhz ~ 150Mhz Set PCI Express frequency from 90Mhz to 150Mhz.

🔑 C.I.A.2

C.I.A.2 (CPU Intelligent Accelerator 2) is designed to detect CPU loading during software program executing, and automatically adjust CPU computing power to maximize system performance.

- ▶▶ Disabled Disable this function. (Default value)
- ▶▶ Cruise Set C.I.A.2 to Cruise. Automatically increase CPU frequency(5%,7%) by CPU loading.
- ▶▶ Sports Set C.I.A.2 to Sports. Automatically increase CPU frequency(7%,9%) by CPU loading.
- ▶▶ Racing Set C.I.A.2 to Racing. Automatically increase CPU frequency(9%,11%) by CPU loading.
- ▶▶ Turbo Set C.I.A.2 to Turbo. Automatically increase CPU frequency(15,17%) by CPU loading.
- ▶▶ Full Thrust Set C.I.A.2 to Full Thrust. Automatically increase CPU frequency(17%, 19%) by CPU loading.

Warning: Stability is highly dependent on system components.

🔑 System Memory Multiplier

Wrong frequency may make system can't boot, clear CMOS to overcome wrong frequency issue.
for FSB(Front Side Bus) frequency=533Mhz,

- ▶▶ 3.00 Memory Frequency = Host clock X 3.00.
- ▶▶ 4.00 Memory Frequency = Host clock X 4.00.
- ▶▶ 2.00 Memory Frequency = Host clock X 2.00.
- ▶▶ 2.66 Memory Frequency = Host clock X 2.66.
- ▶▶ 3.33 Memory Frequency = Host clock X 3.33.
- ▶▶ 2.50 Memory Frequency = Host clock X 2.5.
- ▶▶ Auto Set Memory frequency by DRAM SPD data. (Default value)

for FSB(Front Side Bus) frequency=800MHz,

- ▶▶ 2.00 Memory Frequency = Host clock X 2.00.
- ▶▶ 2.66 Memory Frequency = Host clock X 2.66.
- ▶▶ 3.33 Memory Frequency = Host clock X 3.33.
- ▶▶ 4.00 Memory Frequency = Host clock X 4.00.
- ▶▶ 2.50 Memory Frequency = Host clock X 2.50.
- ▶▶ 3.00 Memory Frequency = Host clock X 3.00.
- ▶▶ Auto Set Memory frequency by DRAM SPD data. (Default value)

for FSB(Front Side Bus) frequency=1066MHz,

- ▶▶ 2.00 Memory Frequency = Host clock X 2.00.
- ▶▶ 2.50 Memory Frequency = Host clock X 2.50.
- ▶▶ 3.00 Memory Frequency = Host clock X 3.00.
- ▶▶ 2.66 Memory Frequency = Host clock X 2.66.
- ▶▶ 3.33 Memory Frequency = Host clock X 3.33.
- ▶▶ 4.0+ Memory Frequency = Host clock X 4.0+.
- ▶▶ Auto Set Memory frequency by DRAM SPD data. (Default value)

☞ **Memory Frequency (Mhz)**

‣ The values depend on **CPU Host Frequency(Mhz)** and **System Memory Multiplier** setting.

☞ **DIMM OverVoltage Control**

‣ Normal Supply DDRII voltage as DDRII required. (Default value)

‣ +0.025V ~ +0.775V Increase DDRII voltage from +0.025V to +0.775V.

☞ **PCI-E OverVoltage Control**

‣ Normal Supply PCI-E voltage as PCI-E required. (Default value)

‣ +0.05V ~ +0.35V Increase PCI-E voltage from +0.05V to +0.35V.

☞ **(G)MCH OverVoltage Control**

‣ Normal Supply (G)MCH voltage as (G)MCH required. (Default value)

‣ +0.05V ~ +0.75V Increase (G)MCH voltage from +0.05V to +0.75V.

☞ **FSB OverVoltage Control**

‣ Normal Supply FSB voltage as FSB required. (Default value)

‣ +0.05V ~ +0.35V Increase FSB voltage from +0.05V to +0.35V.

☞ **CPU Voltage Control**

‣ Supports adjustable CPU vcore. The adjustable range is dependent on CPUs.

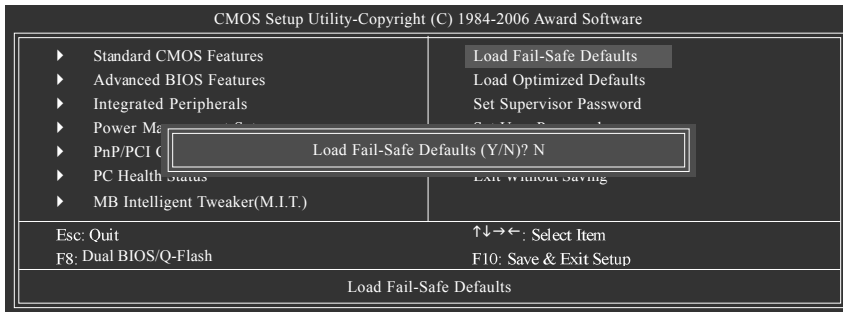
(Default value: Normal)

Please note that by overclocking your system through the increase of the CPU voltage, damage to the CPU or decrease in the CPU life expectancy may occur.

☞ **Normal CPU Vcore**

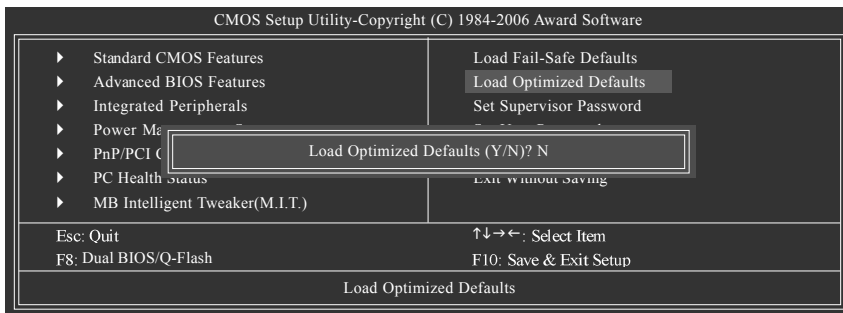
‣ Display your CPU's normal voltage.

2-8 Load Fail-Safe Defaults



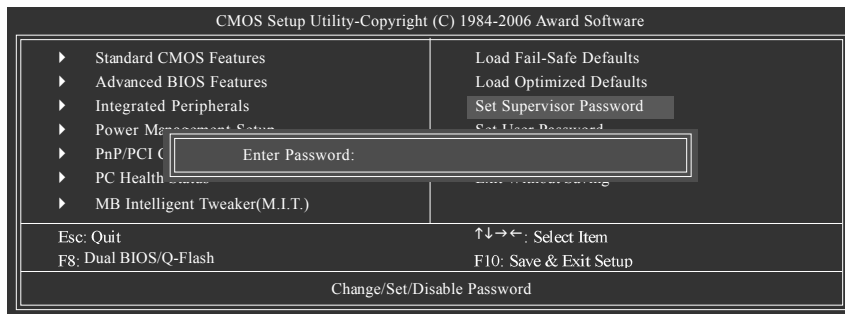
Fail-Safe defaults contain the most appropriate values of the system parameters that allow minimum system performance.

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.

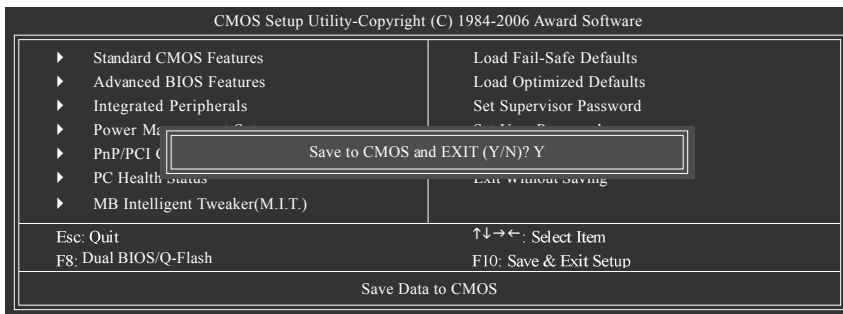
The BIOS Setup program allows you to specify two separate passwords:

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.

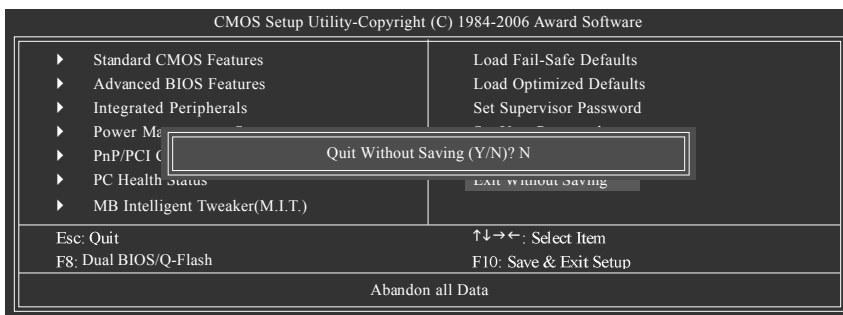
If you select "Setup" at "Password Check" in Advance BIOS Features Menu, you will be prompted only when you try to enter Setup.

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



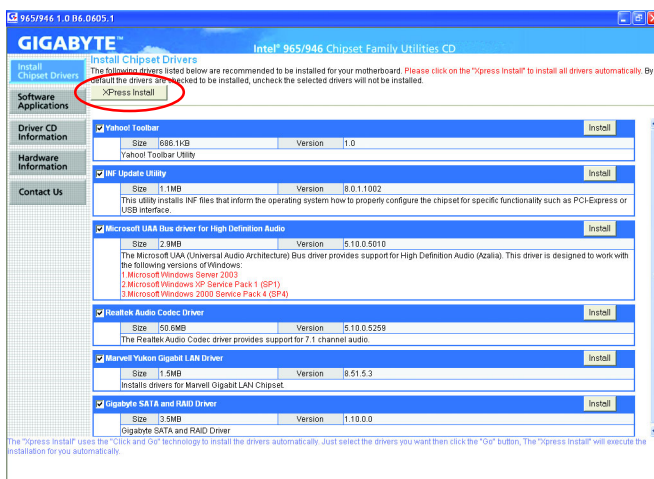
Pictures below are shown in Windows XP.

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 Run.exe.

3-1 Install Chipset Drivers

"Xpress Install " is now analyzing your computer...99%

After insert the driver CD, "Xpress Install" will scan automatically the system and then list all the drivers that recommended to install. Please pick the item that you want and press "install" followed the item; or you can press "Xpress Install" to install all items defaulted.



Some device drivers will restart your system automatically. After restarting your system the "Xpress Install" will continue to install other drivers.

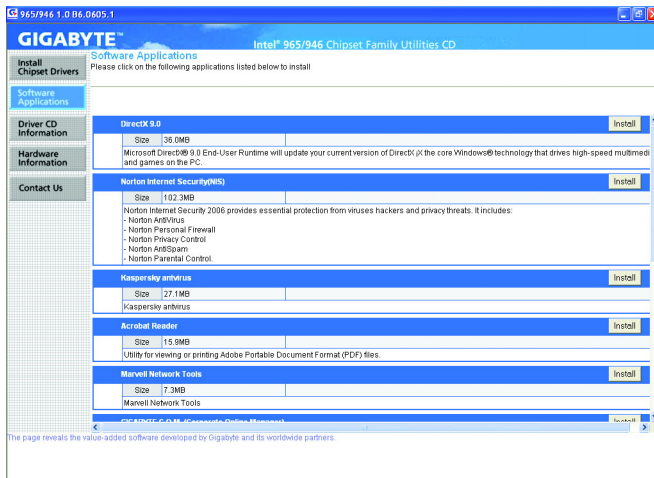
System will reboot automatically after install the drivers, afterward you can install others application.



For USB2.0 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 USB2.0 driver).

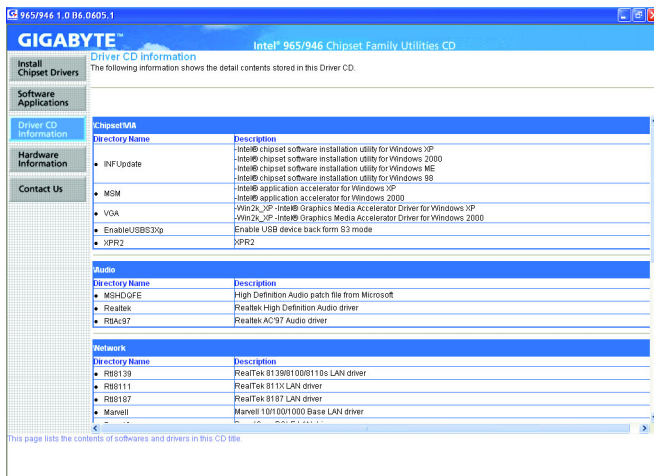
3-2 Software Applications

This page displays all the tools that Gigabyte developed and some free software, you can choose anyone you want and press "install" to install them.



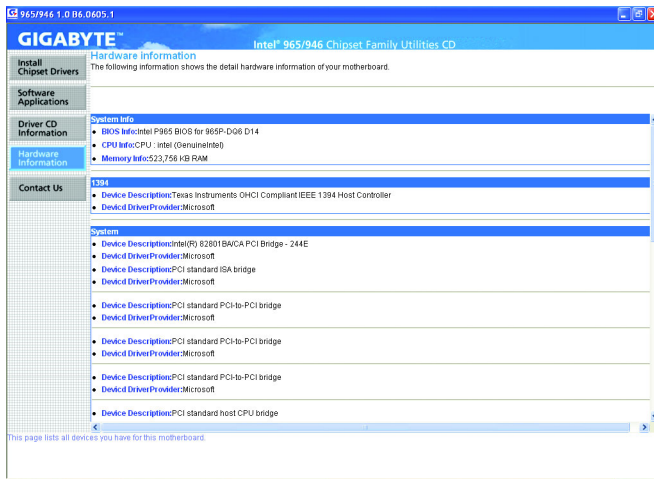
3-3 Driver CD Information

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./C.I.A.2 and M.I.B./M.I.B.2	Enters the C.I.A./2 and M.I.B./2 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

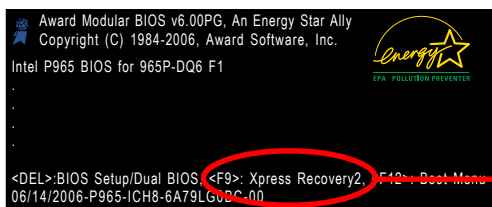
Initial access by booting from CD-ROM and subsequent access by pressing the F9 key:

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



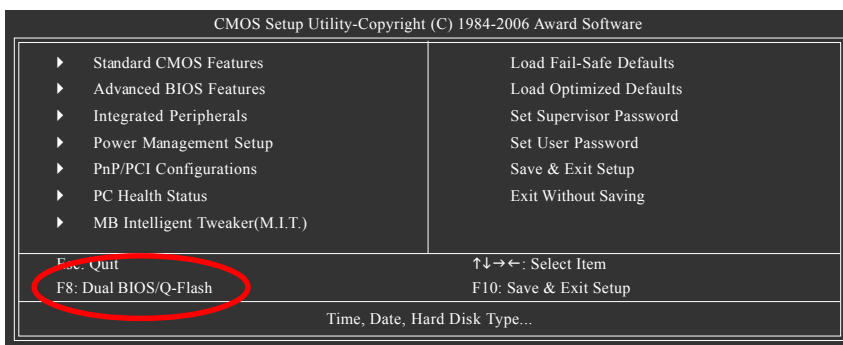
A. What is Dual BIOS Technology ?

Dual BIOS means that there are two system BIOS (ROM) on the motherboard, one is the Main BIOS and the other is Backup BIOS.

Under the normal circumstances, the system works on the Main BIOS. If the Main BIOS is corrupted or damaged, the Backup BIOS can take over while the system is powered on. This means that your PC will still be able to run stably as if nothing has happened in your BIOS.

B. How to use Dual BIOS and Q-Flash Utility?

a. After power on the computer, pressing immediately during POST (Power On Self Test) it will allow you to enter Award BIOS CMOS SETUP, then press <F8> to enter Flash utility.



b. Dual BIOS / Q-Flash Programming Utility

Dual BIOS Utility V1.33			
Boot From.....	Main Bios		
Main ROM Type/Size.....	SST 49LF004A	512K	
Backup ROM Type/Size.....	SST 49LF004A	512K	
Wide Range Protection	Disable		
Boot From	Main Bios		
Auto Recovery	Enable		
Halt On Error	Disable		
Keep DMI Data	Enable		
Copy Main ROM Data to Backup			
Load Default Settings			
Save Settings to CMOS			
Q-Flash Utility			
Update Main BIOS from Floppy			
Update Backup BIOS from Floppy			
Save Main BIOS to Floppy			
Save Backup BIOS to Floppy			
PgDn/PgUp: Modify	↑↓: Move	ESC: Reset	F10: Power Off

c. Dual BIOS Item explanation:

Wide Range Protection: Disable(Default), Enable

Status 1:

If any failure (ex. Update ESCD failure, checksum error or reset? occurs in the Main BIOS, just before the Operating System is loaded and after the power is on, and that the Wide Range Protection is set to "Enable", the PC will boot from Backup BIOS automatically.

Status 2:

If the ROM BIOS on peripherals cards(ex. SCSI Cards, LAN Cards,...) emits signals to request restart of the system after the user make any alteration on it, the boot up BIOS will not be changed to the Backup BIOS.

Boot From : Main BIOS(Default), Backup BIOS

Status 1:

The user can set to boot from Main BIOS or Backup BIOS.

Status 2:

If one of the Main BIOS or the Backup BIOS fails, this item "Boot From : Main BIOS(Default)" will become gray and will not be changed by user.

Auto Recovery : Enable(Default), Disable

When one of the Main BIOS or Backup BIOS occurs checksum failure, the working BIOS will automatically recover the BIOS of checksum failure.

(In the Power Management Setup of the BIOS Setting, if ACPI Suspend Type is set to Suspend to RAM, the Auto Recovery will be set to Enable automatically.)

(If you want to enter the BIOS setting, please press "Del" key when the boot screen appears.)

Halt On Error : Disable(Default), Enable

If the BIOS occurs a checksum error or the Main BIOS occurs a WIDE RANGE PROTECTION error and Halt On Error set to Enable, the PC will show messages on the boot screen, and the system will pause and wait for the user's instruction.

If Auto Recovery :Disable, it will show <or the other key to continue.>

If Auto Recovery :Enable, it will show <or the other key to Auto Recover.>

Keep DMI Data : Enable(Default), Disable

Enable: The DMI data won't be replaced by flashing new BIOS.(recommend)

Disable: The DMI data will be replaced by flashing new BIOS.

Copy Main ROM Data to Backup

(If you boot from Backup ROM, this item will change to Copy Backup ROM Data to Main)

Auto recovery message:

BIOS Recovery: Main to Backup

The means that the Main BIOS works normally and could automatically recover the Backup BIOS.

BIOS Recovery: Backup to Main

The means that the Backup BIOS works normally and could automatically recover the Main BIOS.

(This auto recovery utility is set by system automatically and can't be changed by user.)

Load Default Settings

Load dual BIOS default value.

Save Settings to CMOS

Save revised setting.



Method 1 : Q-Flash™ Utility

 Q-Flash™ is a BIOS flash utility embedded in Flash ROM. With this utility, users only have to stay in the BIOS menu when they want to update BIOS. Q-Flash?allows users to flash BIOS without any utility in DOS or Windows. Using Q-Flash™ indicating no more fooling around with any complicated instructions and operating system since it is in the BIOS menu.



Please note that because updating BIOS has potential risk, please do it with caution!! We are sorry that Gigabyte Technology Co., Ltd is not responsible for damages of system because of incorrect manipulation of updating BIOS to avoid any claims from end-users.

Before You Begin:

Before you start updating BIOS with the Q-Flash™ utility, please follow the steps below first.

1. Download the latest BIOS for your motherboard from Gigabyte's website.
2. Extract the BIOS file downloaded and save the BIOS file (the one with model name.Fxx. For example, 8KNXPU.Fba) to a floppy disk.
3. Reboot your PC and press **Del** to enter BIOS menu.

The BIOS upgrading guides below are separated into two parts.

If your motherboard has dual-BIOS, please refer to **Part One**.

If your motherboard has single-BIOS, please refer to **Part Two**.

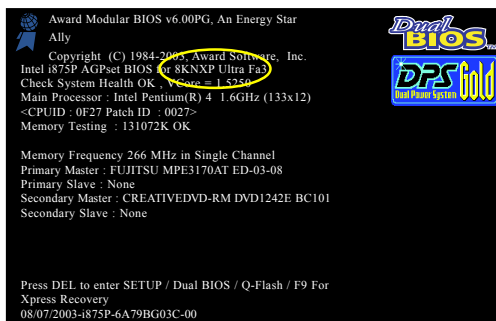
Part One:

Updating BIOS with Q-Flash™ Utility on Dual BIOS Motherboards.

Some of Gigabyte motherboards are equipped with dual BIOS. In the BIOS menu of the motherboards supporting Q-Flash and Dual BIOS, the Q-Flash utility and Dual BIOS utility are combined in the same screen. This section only deals with how to use Q-Flash utility.

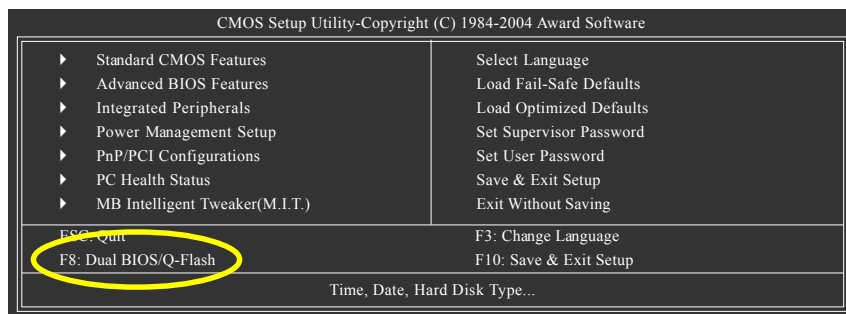
In the following sections, we take GA-8KNXP Ultra as the example to guide you how to flash BIOS from an older version to the latest version. For example, from Fa3 to Fba.

The BIOS file is Fa3 before updating



Entering the Q-Flash™ utility:

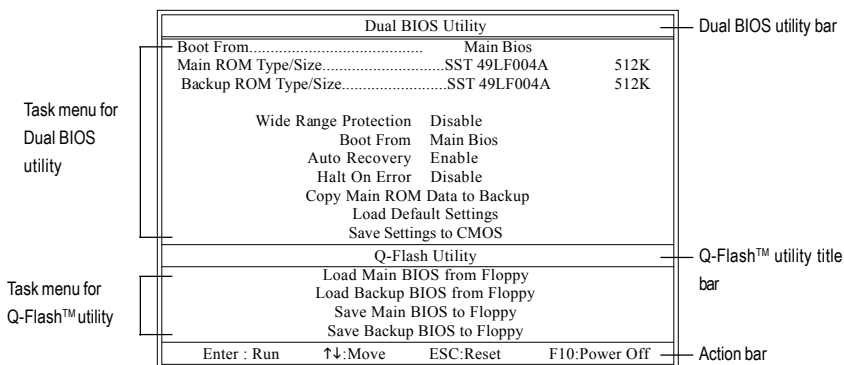
Step1: To use Q-Flash utility, you must press **Del** in the boot screen to enter BIOS menu.



Step 2: Press **F8** button on your keyboard and then **Y** button to enter the Dual BIOS/Q-Flash utility.

Exploring the Q-Flash™ / Dual BIOS utility screen

The Q-Flash / Dual BIOS utility screen consists of the following key components.



Task menu for Dual BIOS utility:

Contains the names of eight tasks and two item showing information about the BIOS ROM type. Blocking a task and pressing Enter key on your keyboard to enable execution of the task.

Task menu for Q-Flash utility:

Contains the names of four tasks. Blocking a task and pressing Enter key on your keyboard to enable execution of the task.

Action bar:

Contains the names of four actions needed to operate the Q-Flash/Dual BIOS utility. Pressing the buttons mentioned on your keyboards to perform these actions.

Using the Q-Flash™ utility:

This section tells you how to update BIOS using the Q-Flash utility. As described in the "Before you begin" section above, you must prepare a floppy disk having the BIOS file for your motherboard and insert it to your computer. If you have already put the floppy disk into your system and have entered the Q-Flash utility, please follow the steps below to flash BIOS.

Steps:

1. Press arrow buttons on your keyboard to move the light bar to "Load Main BIOS from Floppy" item in the Q-Flash menu and press Enter button.

Later, you will see a box pop up showing the BIOS files you previously downloaded to the floppy disk.



If you want to save the current BIOS for backup purpose, you can begin Step 1 with "Save Main BIOS to Floppy" item.

2. Move to the BIOS file you want to flash and press **Enter**.

In this example, we only download one BIOS file to the floppy disk so only one BIOS file, 8KNXPU.Fba, is listed.



Please confirm again you have the correct BIOS file for your motherboard.

Dual BIOS Utility			
Boot From.....	Main Bios		
Main ROM Type/Size.....	SST 49LF004A	512K	
Backup ROM Type/Size.....	SST 49LF004A	512K	
Wide Range Protection Disabled			
8KNXP.U.Fba		1 file(s) found	512K
Total size : 1.39M		Free size : 911.50K	
F5 : Refresh		DEL : Delete	
Save Settings to EEPROM			
Q-Flash Utility			
Load Main BIOS from Floppy			
Load Backup BIOS from Floppy			
Save Main BIOS to Floppy			
Save Backup BIOS to Floppy			
Enter : Run	↑↓:Move	ESC:Reset	F10:Power Off

- BIOS file in the floppy disk.

After pressing **Enter**, you'll then see the progress of reading the BIOS file from the floppy disk.

Dual BIOS Utility		
Boot From	Main Bios	
Main ROM Type/Size.....	SST 49LF004A	512K
Backup ROM Type/Size.....	SST 49LF004A	512K
Wide Range Protection Disable		
Reading BIOS file from floppy ... >>>>>>>>>>>>.....		
Don't Turn Off Power or Reset System		
Save Settings & Exit		
Q-Flash Utility		
Load Main BIOS from Floppy		
Load Backup BIOS from Floppy		
Save Main BIOS to Floppy		
Save Backup BIOS to Floppy		
Enter : Run	↑↓:Move	ESC:Reset F10:Power Off



- Do not turn off power or reset your system at this stage!!

After BIOS file is read, you'll see a confirmation dialog box asking you "Are you sure to update BIOS?"

3. Press Y button on your keyboard after you are sure to update BIOS.

Then it will begin to update BIOS. The progress of updating BIOS will be displayed.



Please do not take out the floppy disk when it begins flashing BIOS.

4. Press any keys to return to the Q-Flash menu when the BIOS updating procedure is completed.

Dual BIOS Utility		
Boot From.....	Main Bios	
Main ROM Type/Size.....	SST 49LF004A	512K
Backup ROM Type/Size.....	SST 49LF004A	512K
Wide Range Protection Disable		
!! Copy BIOS completed - Pass !! Please press any key to continue		
Save Settings to CMOS		
Q-Flash Utility		
Load Main BIOS from Floppy		
Load Backup BIOS from Floppy		
Save Main BIOS to Floppy		
Save Backup BIOS to Floppy		
Enter : Run	↑↓:Move	ESC:Reset F10:Power Off



You can repeat Step 1 to 4 to flash the backup BIOS, too.

5. Press Esc and then Y button to exit the Q-Flash utility. The computer will restart automatically after you exit Q-Flash.

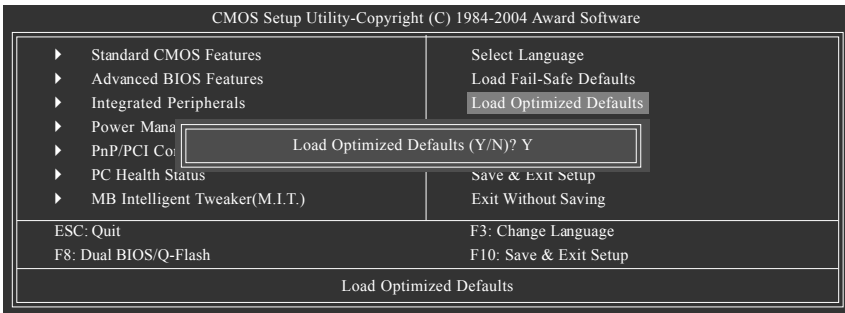
Dual BIOS Utility		
Boot From.....	Main Bios	
Main ROM Type/Size.....	SST 49LF004A	512K
Backup ROM Type/Size.....	SST 49LF004A	512K
Wide Range Protection Disable		
Are you sure to RESET ? [Enter] to continue or [Esc] to abort...		
Save Settings to CMOS		
Q-Flash Utility		
Load Main BIOS from Floppy		
Load Backup BIOS from Floppy		
Save Main BIOS to Floppy		
Save Backup BIOS to Floppy		
Enter : Run	↑↓:Move	ESC:Reset F10:Power Off

After system reboots, you may find the BIOS version on your boot screen becomes the one you flashed.

The BIOS file becomes Fba after updating.

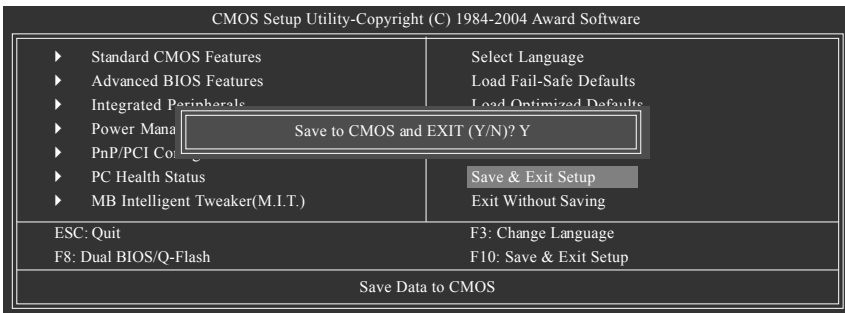
Award Modular BIOS v6.00PG, An Energy Star Ally		Dual BIOS™ DFS2 Dual Master System
Copyright (C) 1984-2003 Award Software, Inc.		
Intel i875P AGPset BIOS (c) 8KNXP Ultra Fba		
Check System Health OK, VCC _{core} = 1.575V		
Main Processor : Intel Pentium(R) 4 1.6GHz (133x12)		
<CPUID : 0F27 Patch ID : 0027>		
Memory Testing : 131072K OK		
Memory Frequency 266 MHz in Single Channel		
Primary Master : FUJITSU MPE3170AT ED-03-08		
Primary Slave : None		
Secondary Master : CREATIVEDVD-RM DVD1242E BC101		
Secondary Slave : None		
Press DEL to enter SETUP / Dual BIOS / Q-Flash / F9 For Xpress Recovery		
09/23/2003-i875P-6A79BG03C-00		

6. Press **Del** to enter BIOS menu after system reboots. When you are in BIOS menu, move to **Load Optimized Defaults** item and press **Enter** to load BIOS Optimized Defaults. Normally the system redetects all devices after BIOS has been upgraded. Therefore, we highly recommend reloading the BIOS defaults after BIOS has been upgraded.



Press **Y** on your keyboard to load defaults.

7. Select **Save & Exit Setup** item to save the settings to CMOS and exit the BIOS menu. System will reboot after you exit the BIOS menu. The procedure is completed.

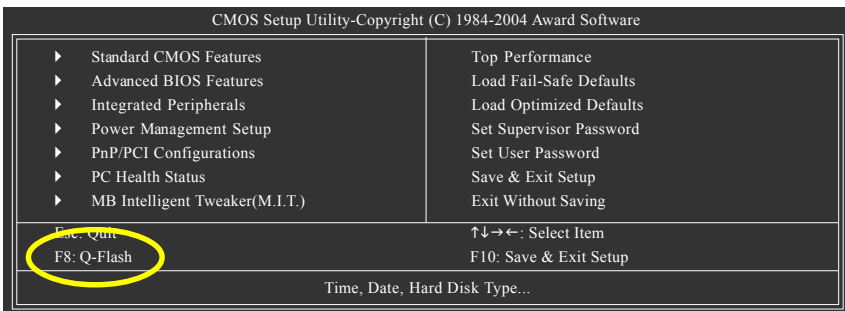


Press **Y** on your keyboard to save and exit.

Part Two:

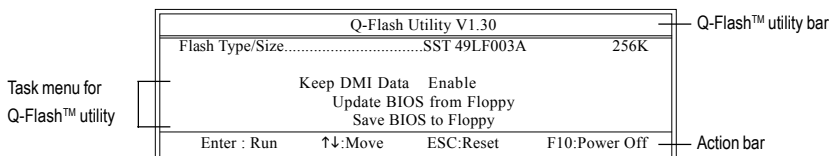
Updating BIOS with Q-Flash™ Utility on Single-BIOS Motherboards.

This part guides users of single-BIOS motherboards how to update BIOS using the Q-Flash™ utility.



Exploring the Q-Flash™ utility screen

The Q-FlashBIOS utility screen consists of the following key components.



Task menu for Q-Flash utility:

Contains the names of three tasks. Blocking a task and pressing Enter key on your keyboard to enable execution of the task.

Action bar:

Contains the names of four actions needed to operate the Q-Flash utility. Pressing the buttons mentioned on your keyboards to perform these actions.

Using the Q-Flash™ utility:

This section tells you how to update BIOS using the Q-Flash utility. As described in the "Before you begin" section above, you must prepare a floppy disk having the BIOS file for your motherboard and insert it to your computer. If you have already put the floppy disk into your system and have entered the Q-Flash utility, please follow the steps below to flash BIOS.

Steps:

1. Press arrow buttons on your keyboard to move the light bar to "Update BIOS from Floppy" item in the Q-Flash menu and press Enter button.
Later, you will see a box pop up showing the BIOS files you previously downloaded to the floppy disk.



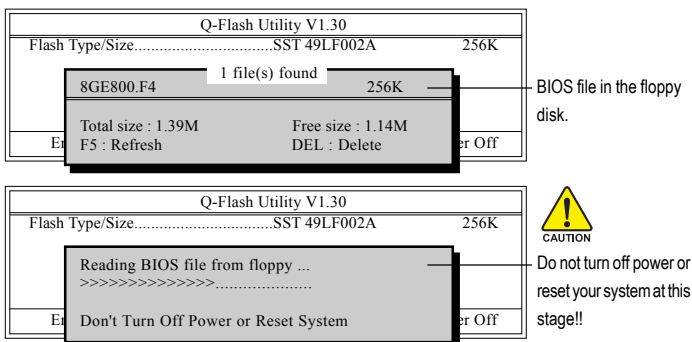
If you want to save the current BIOS for backup purpose, you can begin Step 1 with "Save BIOS to Floppy" item.

2. Move to the BIOS file you want to flash and press Enter.

In this example, we only download one BIOS file to the floppy disk so only one BIOS file, 8GE800.F4, is listed.



Please confirm again you have the correct BIOS file for your motherboard.

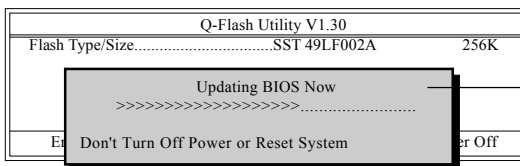


After BIOS file is read, you'll see a confirmation dialog box asking you "Are you sure to update BIOS?"



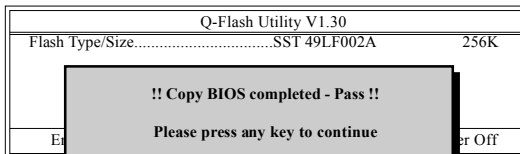
Please do not take out the floppy disk when it begins flashing BIOS.

- Press Y button on your keyboard after you are sure to update BIOS.
Then it will begin to update BIOS. The progress of updating BIOS will be shown at the same time.

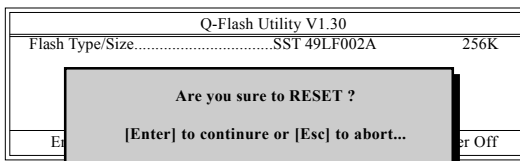


Do not turn off power or reset your system at this stage!!

- Press any keys to return to the Q-Flash menu when the BIOS updating procedure is completed.

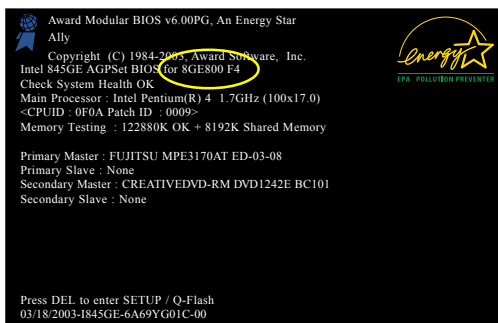


- Press Esc and then Y button to exit the Q-Flash utility. The computer will restart automatically after you exit Q-Flash.



After system reboots, you may find the BIOS version on your boot screen becomes the one you flashed.

The BIOS file becomes F4 after updating



- Press Del to enter BIOS menu after system reboots and "Load BIOS Fail-Safe Defaults". See how to Load BIOS Fail-Safe Defaults, please kindly refer to Step 6 to 7 in **Part One**.

Congratulation!! You have updated BIOS successfully!!

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

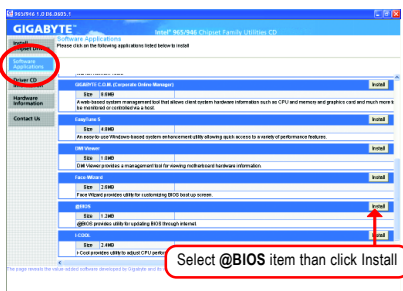


Fig 2. Installation Complete and Run @BIOS

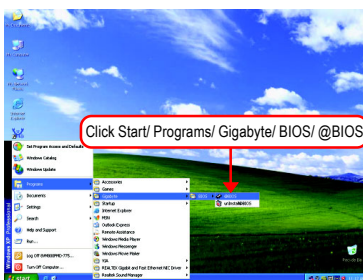


Fig 3. The @BIOS Utility

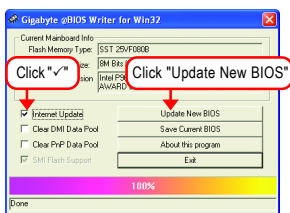
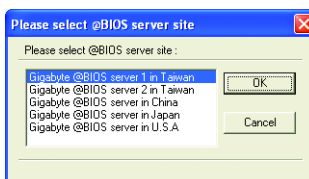


Fig 4. Select the desired @BIOS server



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: 965PDQ6.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.
- (5) Install the SATA controller driver during OS installation.

Before you begin

Please prepare:

- (a) At least 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, you may prepare only one hard drive.
- (b) An empty formatted floppy disk.
- (c) Windows XP/2000 setup disk.
- (d) Driver CD for your motherboard.

A. Intel® ICH8R Southbridge

(1) Installing SATA hard drive(s) in your computer

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. If there are more than one SATA controller on your motherboard, you may refer to the motherboard user's manual to identify the SATA controller for the connector. Then connect the power connector from your power supply to the hard drive.

(Note) Skip this step if you do not want to create RAID array on the SATA controller

(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). If you want to create RAID, set **SATA RAID/AHCI Mode** under the **Integrated Peripherals** menu to **RAID** (**Disabled** by default).

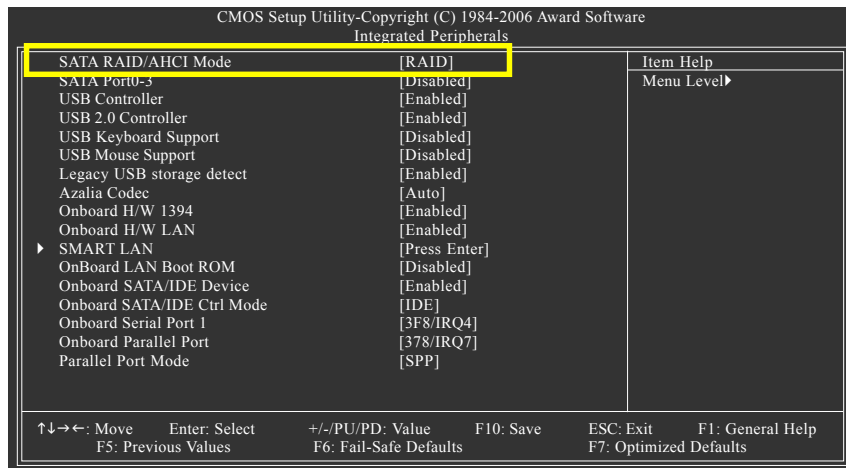


Figure 1



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 CD-ROM after system restarts (Figure 2).

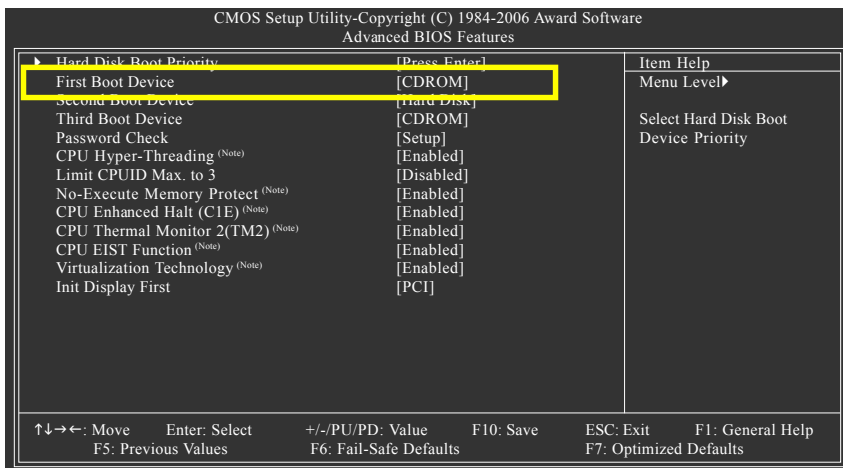


Figure 2

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 Section 4 if you do not want to create RAID.

Step 1:

After the POST memory test begins and before the operating system boot begins, look for a message which says "Press <Ctrl-I> to enter Configuration utility" (Figure 3). Press CTRL+ I to enter the RAID BIOS setup utility.

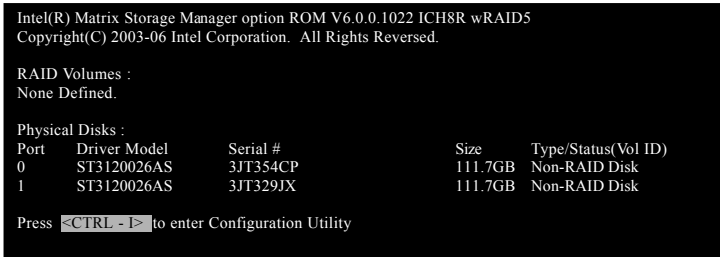


Figure 3

Step 2:

After you press CTRL+ I, the **Create RAID Volume** screen will appear (Figure 4).

Create RAID Volume

If you want to create RAID array, select **Create RAID Volume** in Main Menu and press ENTER.

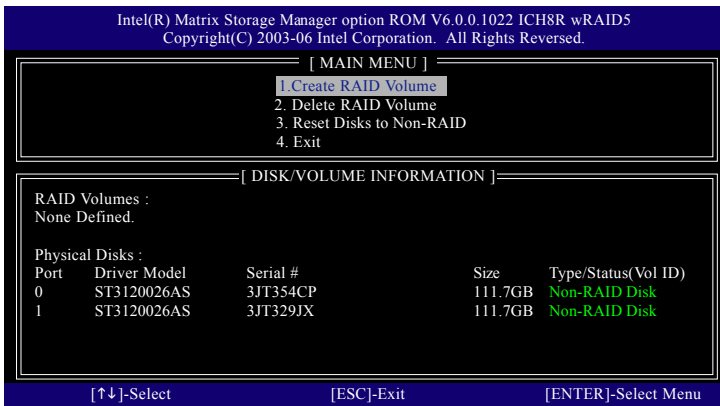


Figure 4

Step 3:

After entering the Create Volume Menu screen, name the disk array with 1~16 letters (letters cannot be special characters) under the Name item. When finished, press ENTER to select a RAID level (Figure 5). There are four RAID levels: RAID0, RAID1, RAID10 and RAID5. Select a RAID level and press ENTER.

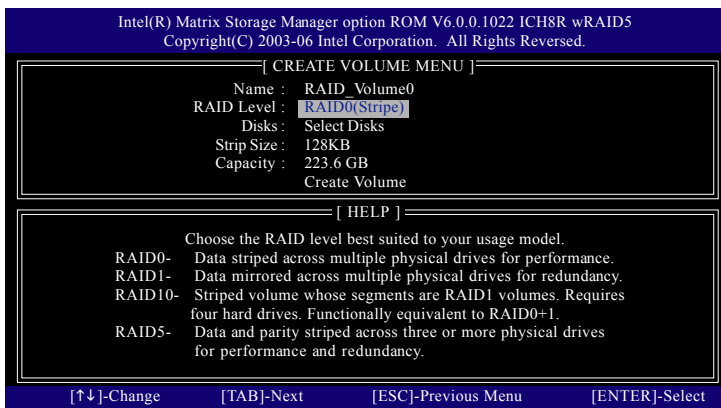


Figure 5

Step 4:

Set the stripe block size (Figure 6). The KB is the standard unit of stripe block size. The stripe block size can be set from 4KB to 128KB. After the setting, press ENTER to set array capacity.

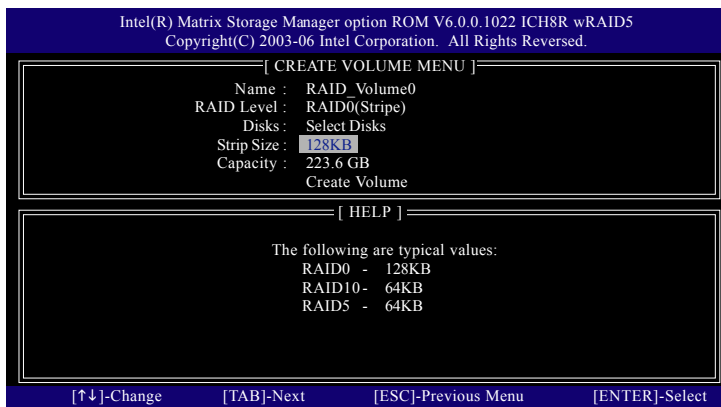


Figure 6

Step 5:
After setting all the items above, select Create Volume and press ENTER (Figure 7) to begin the creation of the RAID array.

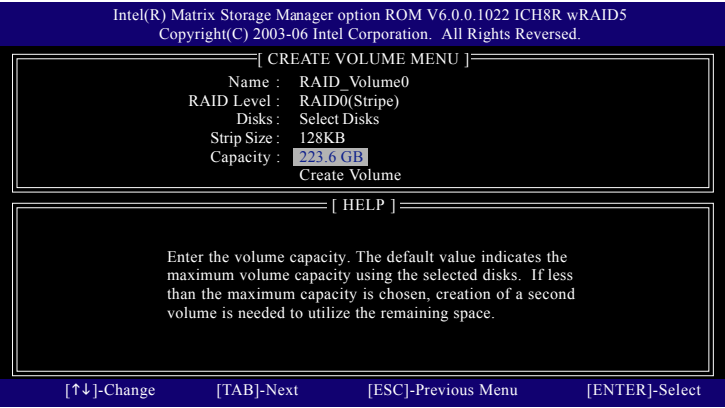


Figure 7

Step 6:
When prompted to confirm whether to create this volume, press Y to create or N to cancel.

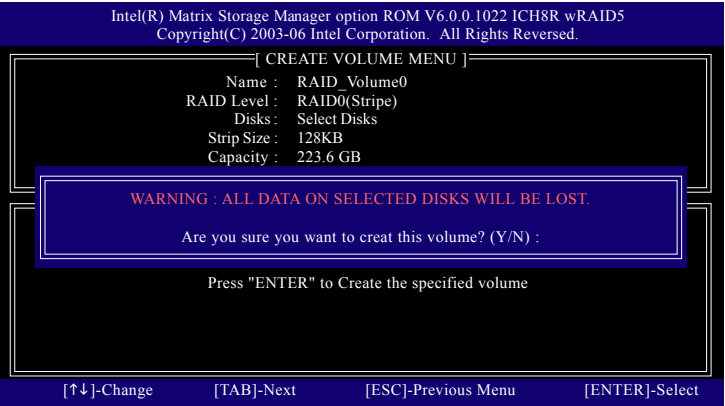


Figure 8

After the creation is completed, you can see detailed information about the RAID Array in the DISK/ VOLUME INFORMATION section, including RAID mode, disk block size, disk name, and disk capacity, etc.

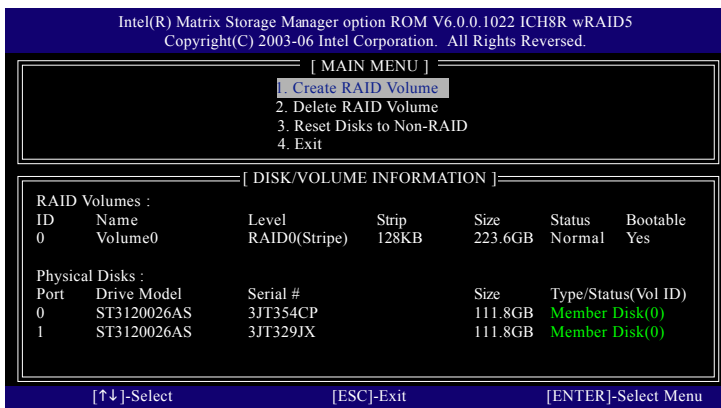


Figure 9

Delete RAID Volume

If you want to delete a RAID volume, select the Delete RAID Volume option in Main Menu. Press ENTER and follow on-screen instructions.

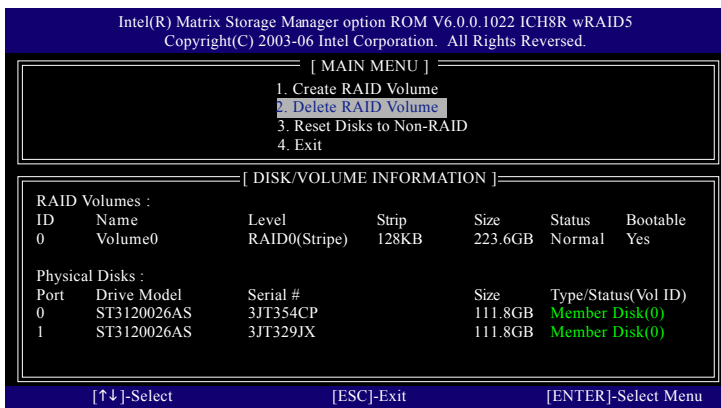


Figure 10

To exit the ICH8R RAID BIOS utility, press ESC in Main Menu.

Now, you can proceed to the installation of the SATA driver and operating system.

(4) Making a SATA Driver Disk

To install operating system onto a serial ATA hard disk 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^(Note1). 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 11):

```
cd bootdrv
menu
```

Step 2: When the controller menu (Figure 12) 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 12, press 7 to select **Intel Matrix Storage Manager 32 bit** for Windows operating system^(Note 2). Your system will then automatically zip and transfer this driver file to the floppy disk. Press 0 to exit when finished.

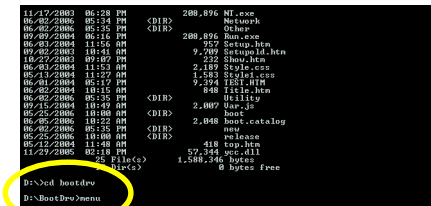


Figure 11

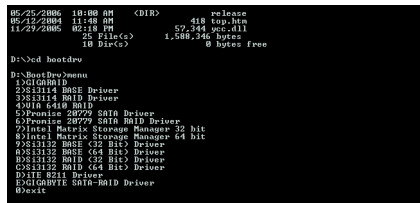


Figure 12

(Note 1) 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 13). A command prompt window will open similar to that in Figure 12.

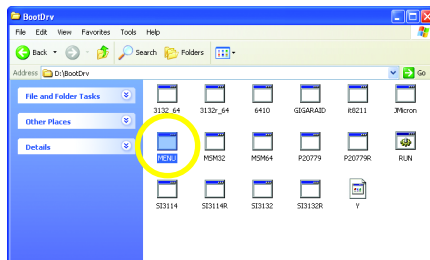


Figure 13

(Note 2) For 64-bit Windows Operating System, please select **Intel(R) Matrix Storage Manager 64 bit.**

(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 14). After pressing F6, there will be a few moments of some files being loaded before you see the next screen.

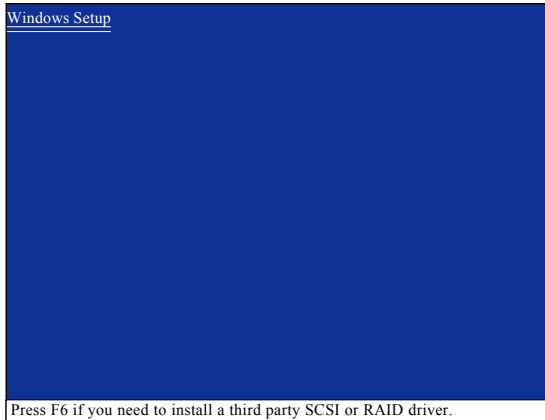


Figure 14

Step 2:

When a screen similar to that below appears, insert the floppy disk containing the SATA driver and press S (Figure 15).

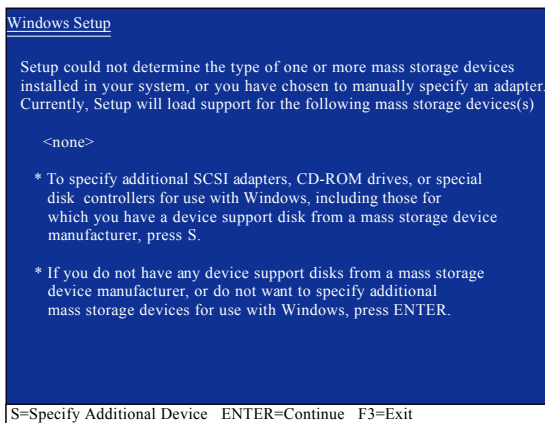


Figure 15

Step 3:

Use the ARROW keys on your keyboard to select **Intel(R) ICH8R/DO/DH SATA RAID Controller (Desktop ICH8R)*** (Figure 16) and press ENTER. Then the system will load the SATA driver from the floppy disk.



Figure 16



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.

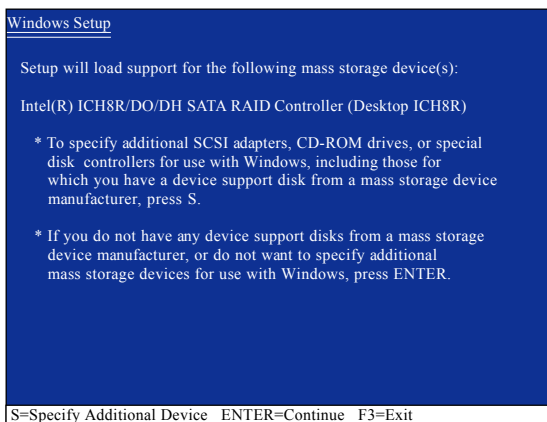


Figure 17

*** If you set the SATA RAID/AHCI Mode item in BIOS Setup to AHCI mode, please select **Intel(R) ICH8R/DO/DH SATA AHCI Controller (Desktop ICH8R)**.

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.

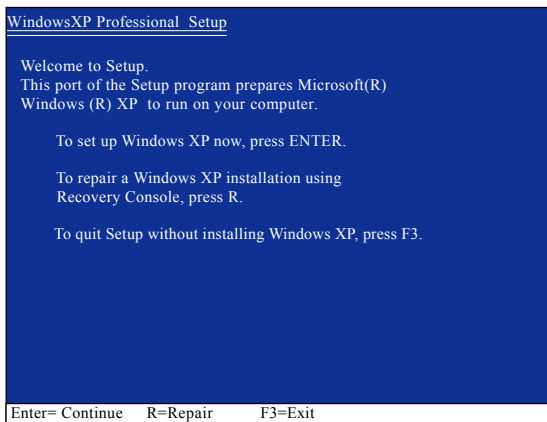


Figure 18

(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.)

B. GIGABYTE SATA2 Controller

(1) Installing SATA hard drive(s) in your computer

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. If there are more than one SATA controller on your motherboard, you may refer to the motherboard user's manual to identify the SATA controller for the connector. Then connect the power connector from your power supply to the hard drive.

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

Make sure to configure the SATA controller mode correctly in system BIOS Setup and set the first boot device.

Step 1:

Turn on your computer and press Del to enter BIOS Setup during POST (Power-On Self Test). In BIOS Setup, go to **Integrated Peripherals**, ensure that the **Onboard SATA/IDE Device** is enabled. Then set **Onboard SATA/IDE Ctrl Mode** to **RAID/IDE** before configuring RAID. If you do not want to create RAID, set this item to **IDE** or **AHCI**, depending on your need (Figure 1).

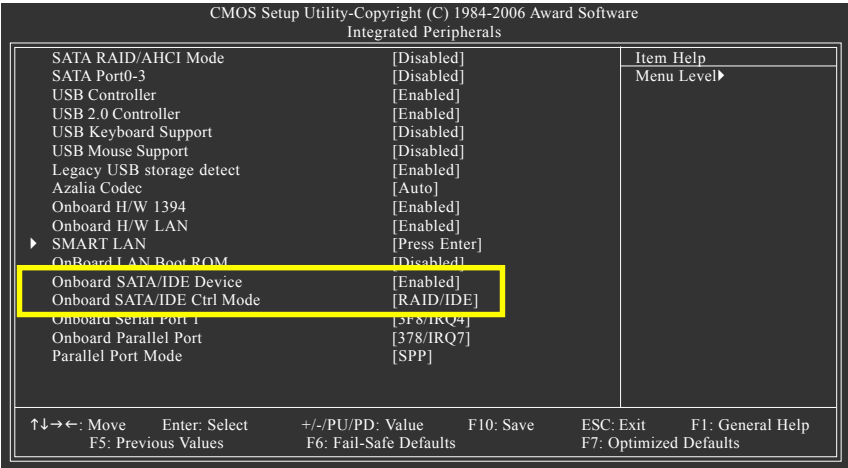


Figure 1



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:

To boot from Windows installation CD-ROM disk, set **First Boot Device** under the **Advanced BIOS Features** menu to **CDROM** (Figure 2).

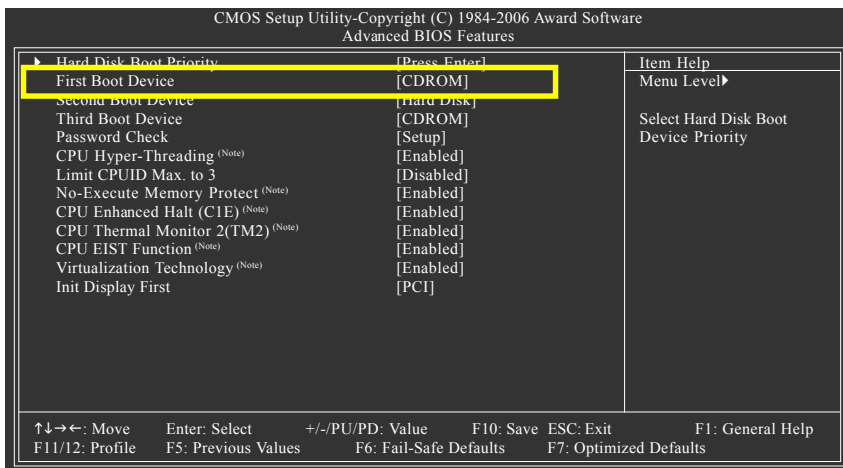


Figure 2

Step 3:

Save and exit BIOS Setup.

(3) Configuring RAID array in RAID BIOS

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

Step 1:

After the POST memory test begins and before the operating system boot begins, look for a message which says "Press <Ctrl-G> to enter RAID Setup Utility" (Figure 3). Press CTRL+ G to enter the GIGABYTE SATA2 RAID BIOS setup utility.



Figure 3

In the main screen of the GIGABYTE SATA2 RAID BIOS utility (Figure 4), use the UP or DOWN ARROW key to highlight through choices. Highlight the item that you wish to execute and press ENTER.

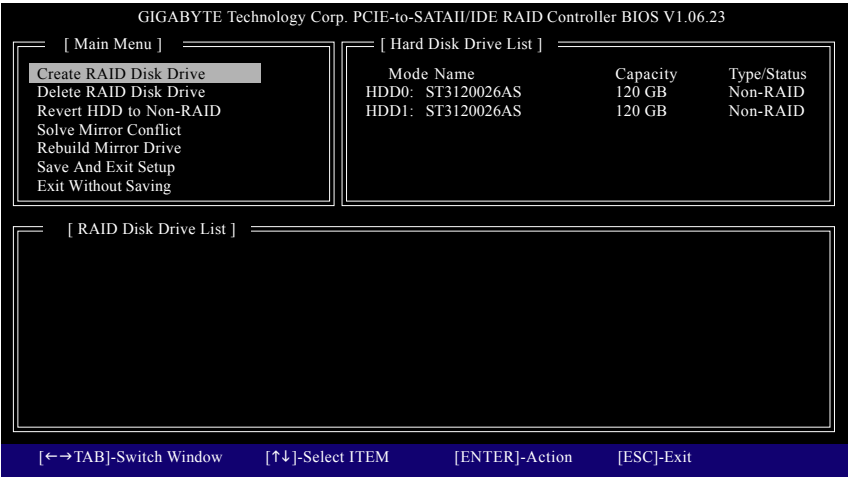


Figure 4

Note: In the main screen, you can select a hard disk in the **Hard Disk Drive List** block and press ENTER. This allows you to check detailed information about the selected hard disk.

A. Create Array:

In the main screen, press ENTER on the **Create RAID Disk Drive** item. Then the RAID creation screen appears (Figure 5).

GIGABYTE Technology Corp. PCIE-to-SATAII/IDE RAID Controller BIOS V1.06.23

[Create New RAID]

Name: JRAID

Level: 0-Stripe

Disks: Select Disk

Block: 128 KB

Size: 240 GB

Confirm Creation

[Hard Disk Drive List]

Mode Name	Available	Type/Status
HDD0: ST3120026AS	120 GB	Non-RAID
HDD1: ST3120026AS	120 GB	Non-RAID

[RAID Disk Drive List]

[Help]

Enter RAID Name

Enter a string between 1 to 16 characters in length for the created RAID drive to be identified by system BIOS or OS.

[←→]-Move Cursor [DEL,BS]-Delete Character [ENTER]-Next [ESC]-Abort

Figure 5

In the RAID creation screen, the **Create New RAID** block displays all the items that need to be set for creating an array (Figure 5). The following procedure uses RAID 0 creation as an example.

Steps:

1. **Enter Array Name:** Under the **Name** item, enter an array name with 1~16 letters (letters cannot be special characters) and press ENTER.
2. **Select RAID Mode:** Under the **Level** item, use UP or DOWN ARROW key to select RAID 0 (Stripe), RAID 1 (Mirror), or JBOD (Figure 6). Then press ENTER to move onto the next step.

GIGABYTE Technology Corp. PCIE-to-SATAII/IDE RAID Controller BIOS V1.06.23

[Create New RAID]

Name: JRAID

Level: 0-Stripe

Disks: Select Disk

Block: 128 KB

Size: 240 GB

Confirm Creation

[Hard Disk Drive List]

Mode Name	Available	Type/Status
HDD0: ST3120026AS	120 GB	Non-RAID
HDD1: ST3120026AS	120 GB	Non-RAID

[RAID Disk Drive List]

[Help]

Select RAID Level

RAID 0 - Data striped for performance

RAID 1 - Data mirrored for redundancy

JBOD - Data concatenated for huge temporarily disk required

[↑↓]-Switch RAID Level [ENTER]-Next [ESC]-Abort

Figure 6

3. **Assign Array Disks:** After RAID mode is selected, RAID BIOS automatically assigns the two hard disks installed as the RAID disks.
4. **Set Block Size (only for RAID 0):** Under the **Block** item, use the UP or DOWN ARROW key to select the block size (Figure 7), ranging from 4K to 128K. Press ENTER when finished.

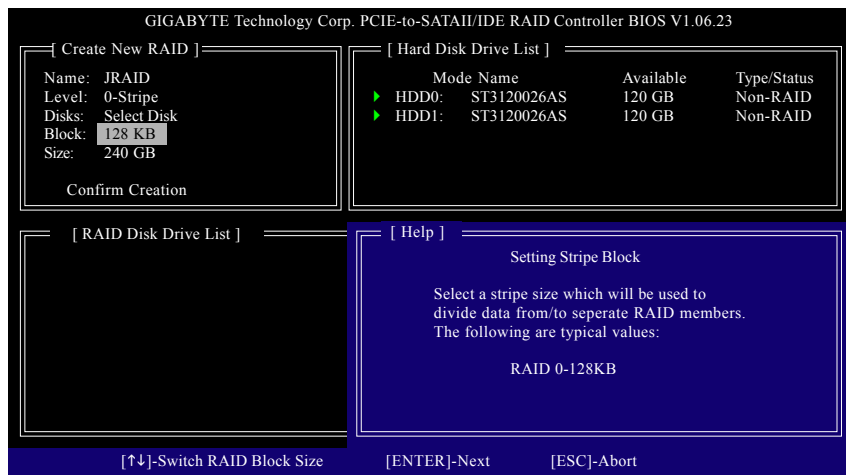


Figure 7

5. **Set Array Size:** Under the **Size** item, type the size of the array (Figure 8), and press ENTER.

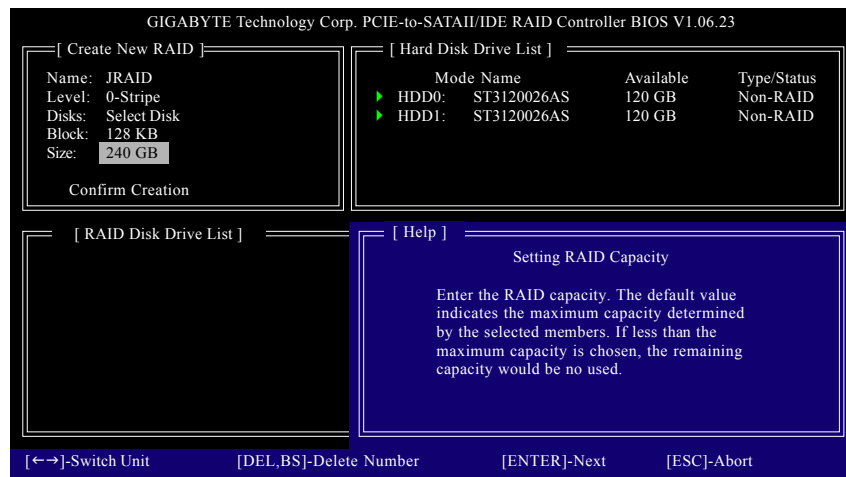


Figure 8

6. **Confirm Creation:** After all of the items are configured, the selection bar automatically jumps to the **Confirm Creation** item. When prompted to confirm your selections (Figure 9), press Y to confirm or N to abort.

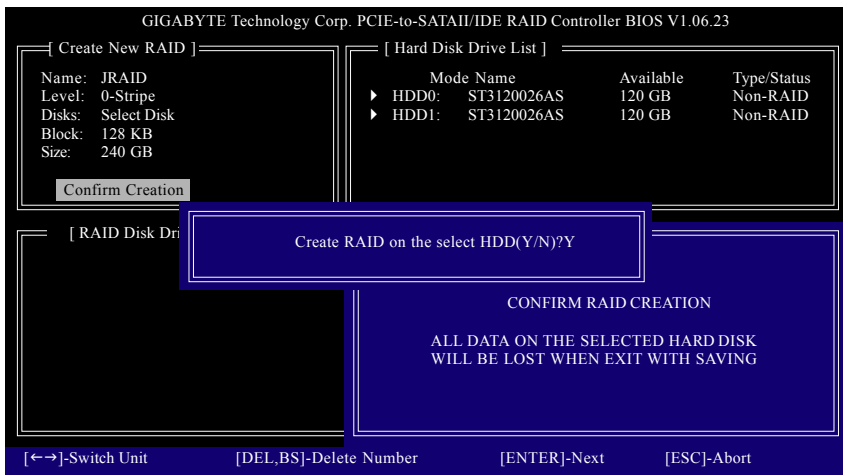


Figure 9

When finished, the new RAID array will be displayed in the **RAID Disk Drive List** block (Figure 10).

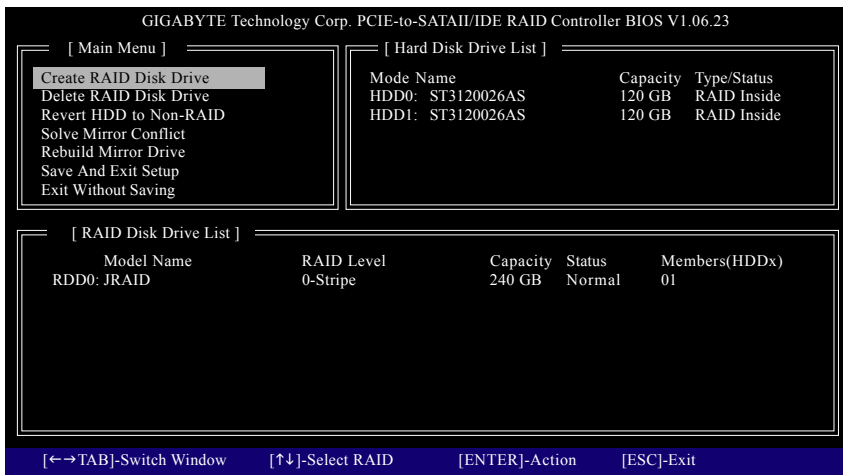


Figure 10

To check more detailed information about the array, use the TAB key while in the **Main Menu** block to move the selection bar to the **RAID Disk Drive List** block. Select the array and press ENTER. A small window displaying the array information will appear in the center of the screen (Figure 11).

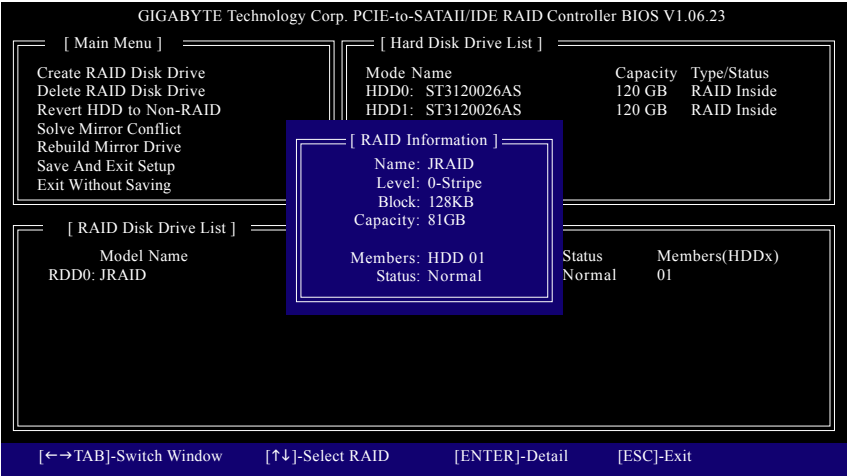


Figure 11

After configuring the RAID array, select the **Save And Exit Setup** item in the main screen to save your settings if you wish to exit the RAID BIOS utility, then press Y (Figure 12).

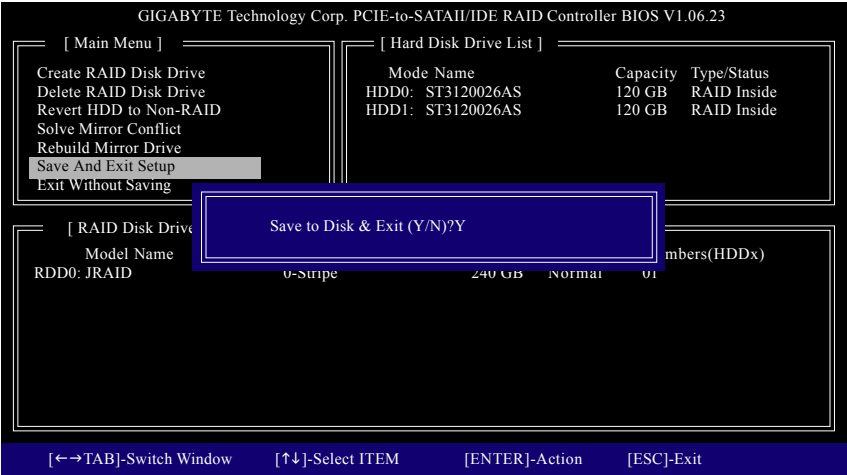


Figure 12

B. Delete Array:

To delete the array, select **Delete RAID Disk Drive** in the main menu and press ENTER. The selection bar will move to the **RAID Disk Drive List** block. Press the SPACEBAR on the array to be deleted; a small triangle will appear to mark the selected array (Figure 13). Press Del.

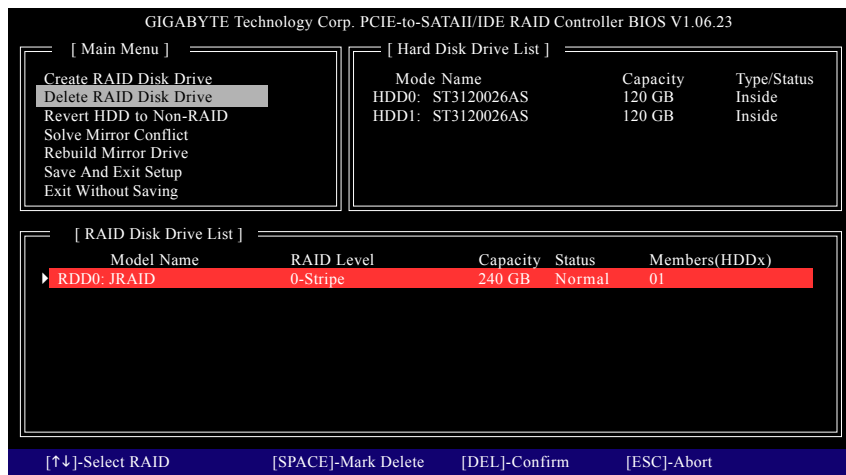


Figure 13

Press Y to confirm yes to the following message (Figure 14) or N to cancel.

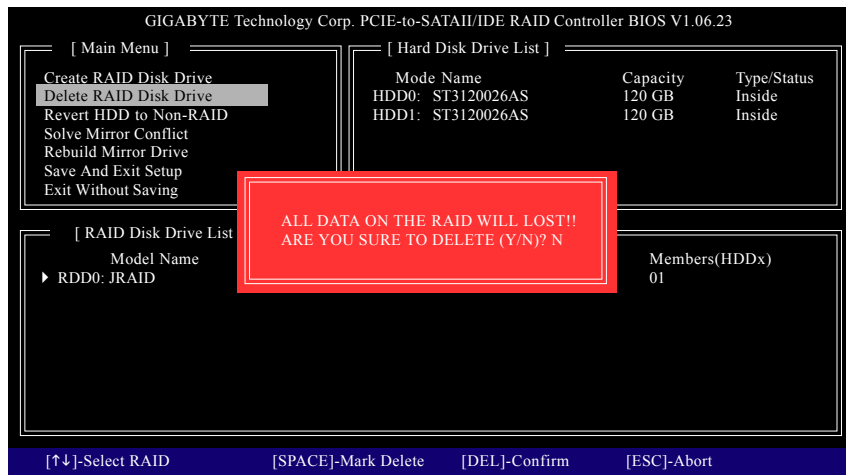


Figure 14

Now, you can proceed to install the SATA controller driver and operating system.

(5) Installing SATA controller driver during OS installation

(Required for AHCI and RAID Mode)

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 18). After pressing F6, there will be a few moments of some files being loaded before you see the next screen.

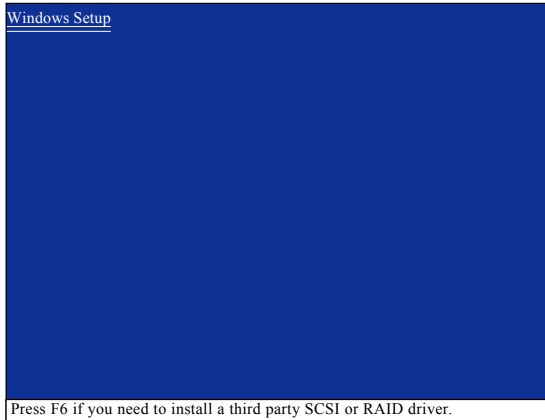


Figure 18

Step 2:

When a screen similar to that below appears, insert the floppy disk containing the SATA driver and press S (Figure 19).

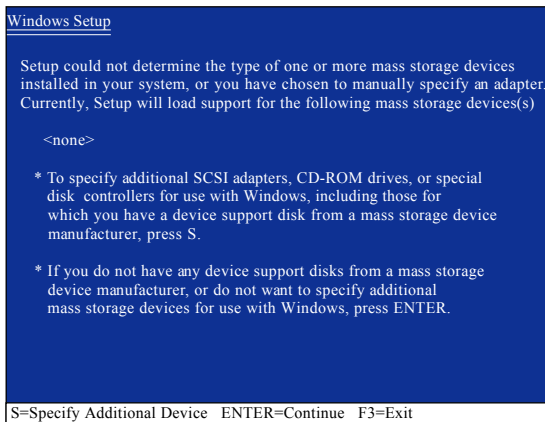


Figure 19

Step 3:

When Setup correctly recognizes the driver in the floppy disk, a controller menu similar to Figure 20 below will appear. Use the ARROW keys to select one of the items displayed depending on the operating system to be installed. For example, select **GIGABYTE GBB36X Controller (Windows 2K/XP/2003)** if you wish to install Windows XP (32-Bit). Then press ENTER.

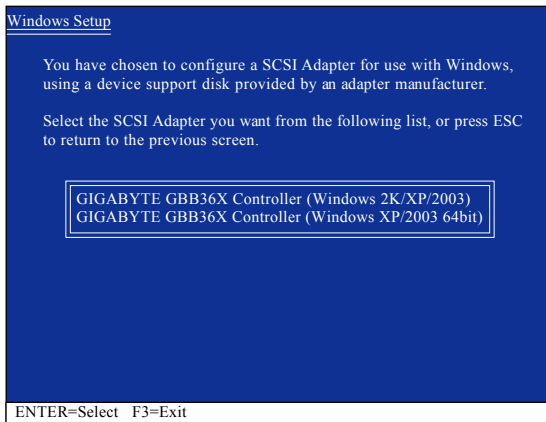


Figure 20



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 next screen (Figure 21) appears, press ENTER to continue the SATA driver installation from the floppy disk.

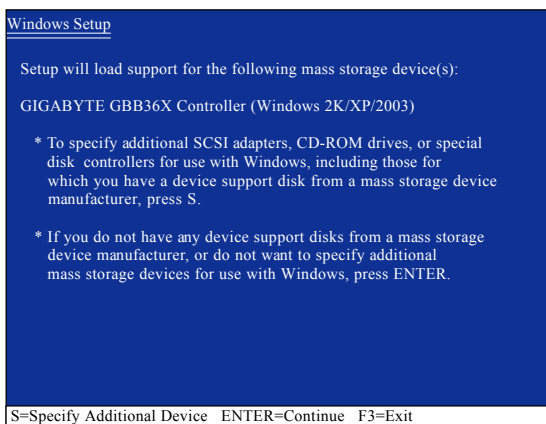


Figure 21

Step 5:

After the SATA controller driver installation is completed, you can proceed with the Windows XP installation.

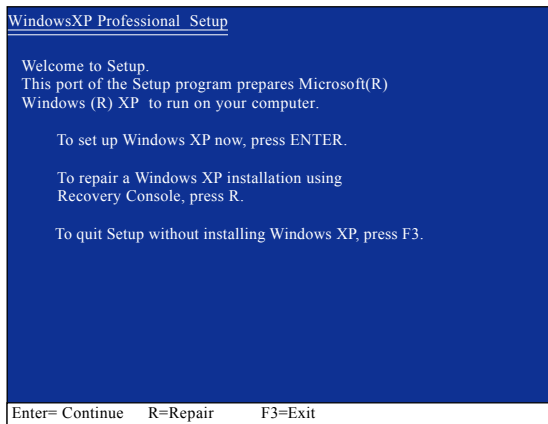


Figure 22



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

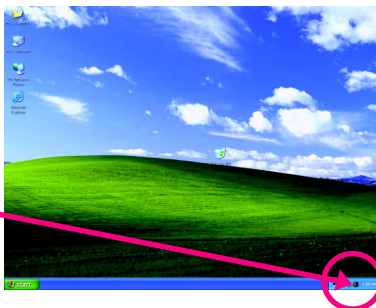
With multiple built-in high quality digital-to-analog converters (DACs) that support audio output at up to 192 kHz/24-bit quality and multi-streaming applications, HD Audio is able to handle multiple audio streams (in and out) simultaneously. Multi-channel audio experiences have become a reality so you 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.

Stereo Speakers Connection and Settings:

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

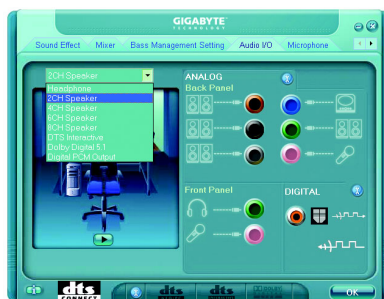
STEP 1 :

After installation of the audio driver, you should find an Audio Manager  icon in your system tray (you can also find the icon in Control Panel). Double-click the icon to open the Audio Control Panel.



STEP 2:

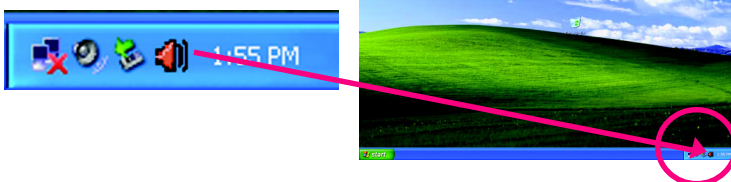
In the Audio Control Panel, click the **Audio I/O** tab.
In the upper left list, click **2CH Speaker**.

**STEP 3:**

After a speaker or headphone is plugged into the rear Line Out jack, a small window will pop up and ask you what type of equipment is connected. Choose **Headphone** or **Line Out** depending on the device connected and click **OK**. The 2-channel audio setup is completed.

**4 Channel Audio Setup****STEP 1 :**

After installation of the audio driver, you should find an Audio Manager icon in your system tray (you can also find the icon in Control Panel). Double-click the icon to open the Audio Control Panel.

**STEP 2:**

In the Audio Control Panel, click the **Audio I/O** tab.
In the upper left list, click **4CH Speaker**.

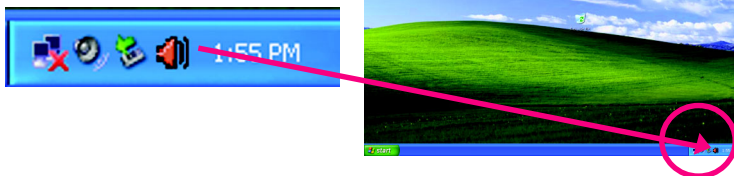


STEP 3:

After plugging in 4-channel speakers to the rear speaker jacks, a small window will pop up and ask you what type of equipment is connected. Choose a device depending on the type of speaker connected (4-channel audio consists of Front Speaker Out (Line Out) and Rear Speaker Out) and then click **OK**. The 4-channel audio setup is completed.

**6 Channel Audio Setup****STEP 1 :**

After installation of the audio driver, you should find an Audio Manager icon in your system tray (you can also find the icon in Control Panel). Double-click the icon to open the Audio Control Panel.

**STEP 2:**

In the Audio Control Panel, click the **Audio I/O** tab. In the upper left list, click **6CH Speaker**.

**STEP 3:**

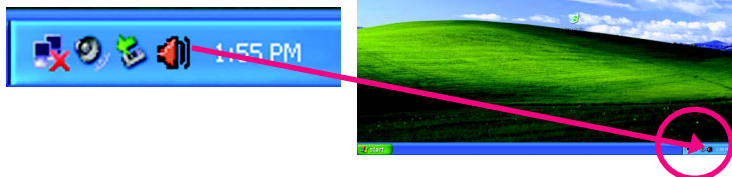
After plugging in 6-channel speakers to the rear speaker jacks, a small window will pop up and ask you what type of equipment is connected. Choose a device depending on the type of speaker connected (6-channel audio consists of Front Speaker Out (Line Out), Rear Speaker Out, and Center/Subwoofer Speaker Out) then click **OK**. The 6-channel audio setup is completed.



8 Channel Audio Setup

STEP 1 :

After installation of the audio driver, you should find an Audio Manager  icon in your system tray (you can also find the icon in Control Panel). Double-click the icon to open the Audio Control Panel.



STEP 2:

In the Audio Control Panel, click the **Audio I/O** tab. In the upper left list, click **8CH Speaker**.



STEP 3:

After plugging in 8-channel speakers to the rear speaker jacks, a small window will pop up and ask you what type of equipment is connected. Choose a device depending on the type of speaker connected (8-channel audio consists of Front Speaker Out (Line Out), Rear Speaker Out, Center/Subwoofer Speaker Out, and Side Speaker Out) then click **OK**. The 8-channel audio setup is completed.



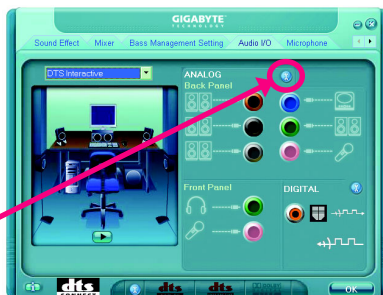
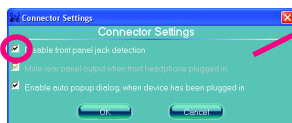
Sound Effect Configuration:

At the **Sound Effect** menu, users can adjust sound option settings as desired.



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 **Audio I/O** tab. In the **ANALOG** area, click the **Tool** icon and then select the **Disable front panel jack detection** check box. This action completes the AC'97 Audio configuration.





Enabling the DTS (Digital Theater Systems) function

Before DTS is enabled, you would get only 2-channel output signals (from the front speakers) when playing 2-channel music. You must play 4-, 6-, or 8-channel music sources to produce 4-, 6-, or 8-channel audio effects.

With DTS enabled, the system will transform two-channel stereo source material into multi-channel audio output, creating a virtual surround sound environment.



After installing the audio driver, at the center bottom of the Audio Control Panel, you should find the DTS control button as shown below:



DTS control button

1. : This button provides you more controls over "dts NEO:PC".

Music Mode ; Cinema Mode

2. "dts NEO : PC" :

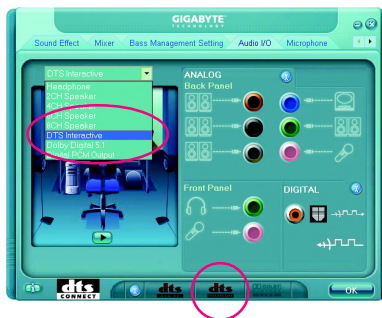
Press this button to enable or disable the dts NEO : PC function.

Enabling dts NEO : PC allows the system to transform ordinary 2-channel stereo content into 4-, 6-, or 8-channel surround sound, depending on your speaker configurations.

3. "dts INTERACTIVE" :

If your surround sound system is connected via an external decoder, click the Audio I/O tab in the Audio Control Panel. Either click DTS Interactive in the upper left list or click the dts INTERACTIVE button at the center bottom of the Audio Control Panel. And click the dts NEO : PC button.

The system will then simulate 5.1 channel surround sound playback from two-channel content.



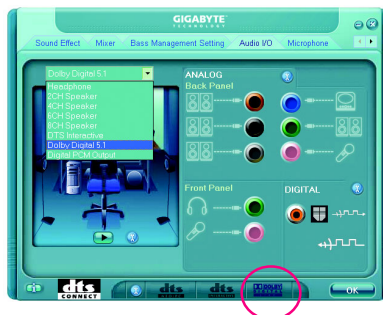
Introduction of Dolby Digital Live:



A real-time encoding technology, Dolby Digital Live converts any audio signal into a Dolby Digital bitstream for transport and playback through a home theater system. With it, your PC or game console can be hooked up to your Dolby Digital-equipped audio/video receiver or

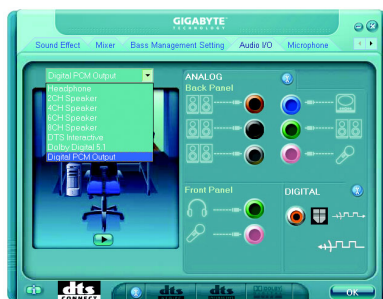
digital speaker system via a single digital connection, eliminating the confusion of multiple cables and ensuring the integrity of the audio signal.

In the Audio Control Panel, click the **Audio I/O** tab. Either click **Dolby Digital 5.1** in the upper left list or click the **Dolby Digital Live** button at the center bottom of the Audio Control Panel.



Digital PCM Output Setup:

In the Audio Control Panel, click the Audio I/O tab. In the upper left list, click Digital PCM Output. Enable this function to allow digital audio sources that are not digitally processed by Dolby or DTS encoding to be output from the SPDIF OUT.



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 MB.
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

[illegible]



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- **GIGABYTE Global Service System**



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

Then select your language to enter the system.