- **The author assumes no responsibility for any errors or omissions that may appear in this document nor does the author make a commitment to update the information contained herein.**

- **Third-party brands and names are the property of their respective owners.**

- **Please do not remove any labels on motherboard, this may void the warranty of this motherboard.**

- **Due to rapid change in technology, some of the specifications might be out of date before publication of this booklet.**

WARNING: *Never run the processor without the heatsink properly and firmly attached. PERMANENT DAMAGE WILL RESULT!*

Mise en garde : *Ne faites jamais tourner le processeur sans que le dissipateur de chaleur soit fix correctement et fermement. UN DOMMAGE PERMANENT EN RÉSULTERA !*

Achtung: *Der Prozessor darf nur in Betrieb genommen werden, wenn der W rmeableiter ordnungsgem ß und fest angebracht ist. DIES HAT EINEN PERMANENTEN SCHADEN ZUR FOLGE!*

Advertencia: *Nunca haga funcionar el procesador sin el disipador de calor instalado correcta y firmemente. ¡SE PRODUCIRÁ UN DAÑO PERMANENTE!*

Aviso: *Nunca execute o processador sem o dissipador de calor estar adequado e firmemente conectado. O RESULTADO SERÁ UM DANO PERMANENTE!*

警告，　将散热板平稳地安装到处理器上之前，不要运行处理器。这势将永远损坏处理器!

警告:　将散热器牢固地安装到處理器上之前，不要運行處理器，這勢將永遠損壞處理器!

경고:　*히트싱크를 제대로 또 단단히 부착시키지 않은 채 프로세서를 구동시키지 마십시오. 영구적 고장이 발생합니다!*

警告:　*永久的な損傷を防ぐため、ヒートシンクを正しくしっかりと取り付けるまでは、プロセッサを動作させないようにしてください。*

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-8SR533 Series**

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 inference received, including that may cause undesired operation.

Representative Person's Name: ERIC LU

Signature: Eric Lu

Date: May 17,2002

Declaration of Conformity

We, Manufacturer/Importer
(full address)

G.B.T. Technology Träding GMbH
Ausschlager Weg 41, 1F, 20537 Hamburg, Germany

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

Mother Board
GA-8SR533 Series
is in conformity with
(reference to the specification under which conformity is declared)
in accordance with 89/336 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*** ☒ **EN 60555-2**	Disturbances in supply systems cause by household appliances and similar electrical equipment "Harmonics"
☐ **EN 55013**	Limits and methods of measurement of radio disturbance characteristics of broadcast receivers and associated equipment	☐ **EN 61000-3-3*** ☒ **EN 60555-3**	Disturbances in supply systems cause by household appliances and similar electrical equipment "Voltage fluctuations"
☐ **EN 55014**	Limits and methods of measurement of radio disturbance characteristics of household electrical appliances, portable tools and similar electrical apparatus	☒ **EN 50081-1**	Generic emission standard Part 1: Residual commercial and light industry
		☒ **EN 50082-1**	Generic immunity standard Part 1: Residual commercial and light industry
☐ **EN 55015**	Limits and methods of measurement of radio disturbance characteristics of fluorescent lamps and luminaries	☐ **EN 55081-2**	Generic emission standard Part 2: Industrial environment
☐ **EN 55020**	Immunity from radio interference of broadcast receivers and associated equipment	☐ **EN 55082-2**	Generic emission standard Part 2: Industrial environment
☒ **EN 55022**	Limits and methods of measurement of radio disturbance characteristics of information technology equipment	☐ **ENV 55104**	Immunity requirements for household appliances tools and similar apparatus
☐ **DIN VDE 0855** ☐ **part 10** ☐ **part 12**	Cabled distribution systems; Equipment for receiving and/or **distribution** from sound and television signals	☐ **EN50091-2**	EMC requirements for uninterruptible power systems (UPS)

☒ **CE marking** CE (EC conformity marking)

The manufacturer also declares the conformity of above mentioned product with the actual required safety standards in accordance with LVD 73/23 EEC

☐ **EN 60065**	Safety requirements for mains operated electronic and related apparatus for household and similar general use	☐ **EN 60950**	
☐ **EN 60335**	Safety of household and similar electrical appliances	☐ **EN 50091-1**	

Manufacturer/Importer

(Stamp)

Date : May 17, 2002

Signature: Timmy Huang
Name: Timmy Huang

GA-8SR533 Series
P4 Titan-DDR Motherboard

USER'S MANUAL

Pentium®4 Processor Motherboard

Rev. 2003

12ME-8SR533-2003

English

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Item Checklist

- ☑ The GA-8SR or GA-8SR533 motherboard
- ☑ IDE cable x 1/ Floppy cable x 1
- ☑ CD for motherboard driver & utility (TUCD)
- ☑ GA-8SR533 Series user's manual

WARNING!

Computer motherboards and expansion cards contain very delicate Integrated Circuit (IC) chips. To protect them against damage from static electricity, you should follow some precautions whenever you work on your computer.

1. Unplug your computer when working on the inside.
2. Use a grounded wrist strap before handling computer components. If you do not have one, touch both of your hands to a safely grounded object or to a metal object, such as the power supply case.
3. Hold components by the edges and try not touch the IC chips, leads or connectors, or other components.
4. Place components on a grounded antistatic pad or on the bag that came with the components whenever the components are separated from the system.
5. Ensure that the ATX power supply is switched off before you plug in or remove the ATX power connector on the motherboard.

Installing the motherboard to the chassis…

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

Chapter 1 Introduction

Features Summary

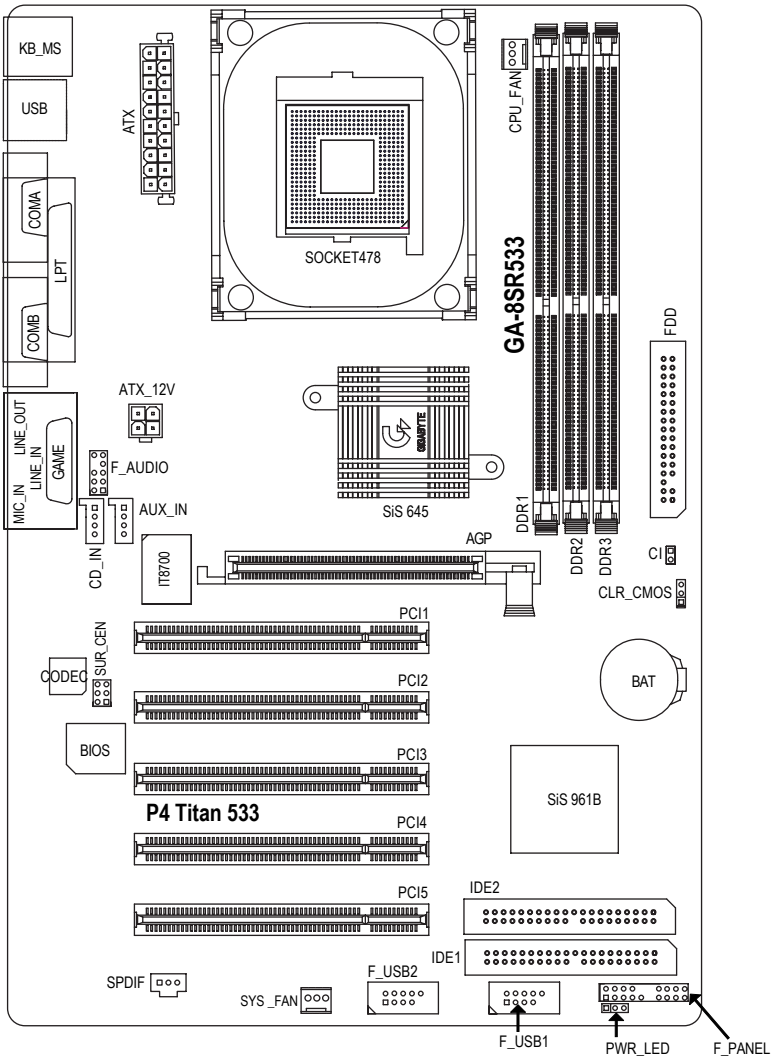
Form Factor	• 29.4cm x 20cm ATX size form factor, 4 layers PCB.
Motherboard	• GA-8SR533 Series Motherboard: GA-8SR and GA-8SR533
CPU	• Socket 478 for Intel® Micro FC-PGA2 Pentium® 4 processor • Support Intel ® Pentium ® 4 (Northwood, 0.13μm) processor • Intel Pentium®4 400MHz FSB • This motherboard can auto detect and optimized setting for Pentium ® 4 FSB 533MHz processor (8SR533 only) • 2nd cache depends on CPU
Chipset	• SiS 645 Host/Memory controller • SiS 961B MuTIOL Media I/O
Memory	• 3 184-pin DDR DIMM sockets • Supports DDR333/DDR266/DDR200 DIMM • Supports Up to 2 un-buffer DIMM DDR333 or up to 3 un-buffer Double-sided DIMM DDR266/200 • Supports up to 3GB DRAM (Max)(DDR266/200) • Supports only 2.5V DDR DIMM
I/O Control	• IT8700
Slots	• 1 Universal AGP slot (1X/2X/4X) device support • 5 PCI slot supports 33MHz & PCI 2.2 compliant
On-Board IDE	• 2 IDE bus master (UDMA33/ATA66/ATA100/ATA133) IDE ports for up to 4 ATAPI devices • Supports PIO mode3,4 (UDMA 33/ATA66/ATA100/ATA133) IDE & ATAPICD-ROM
On-Board Peripherals	• 1 Floppy port supports 2 FDD with 360K, 720K,1.2M, 1.44M and 2.88M bytes. • 1 Parallel port supports Normal/EPP/ECP mode • 2 Serial ports (COMA&COMB) • 6 USB 1.1 ports ((2 x Rear,4 xFront by cable) • 1 Front Audio Connector
Hardware Monitor	• CPU/System Fan Revolution detect • CPU/System Fan Fail Warning

to be continued.....

On-Board Sound	• Realtek ALC650 CODEC • Line Out / 2 front speaker • Line In / 2 rear speaker(by s/w switch) • Mic In / center& subwoofer(by s/w switch) • SPDIF out • CD_In/ AUX_IN/Game Port
PS/2 Connector	• PS/2 Keyboard interface and PS/2 Mouse interface
BIOS	• Licensed AWARD BIOS, 2M bit Flash ROM • Supports Q-Flash
Additional Features	• PS/2 Keyboard power on by password • PS/2 Mouse power on • STR(Suspend-To-RAM) • AC Recovery • USB KB/Mouse wake up from S3 • Supports EasyTune 4 • Supports @BIOS

Please set the CPU host frequency in accordance with your processor's specifications. We don't recommend you to set the system bus frequency over the CPU's specification because these specific bus frequencies are not the standard specifications for CPU, chipset and most of the peripherals. Whether your system can run under these specific bus frequencies properly will depend on your hardware configurations, including CPU, Chipsets,SDRAM,Cards….etc.

GA-8SR533 Series Motherboard Layout



English

Chapter 2 Hardware Installation Process

To set up your computer, you must complete the following steps:

Step 1- Install the Central Processing Unit (CPU)

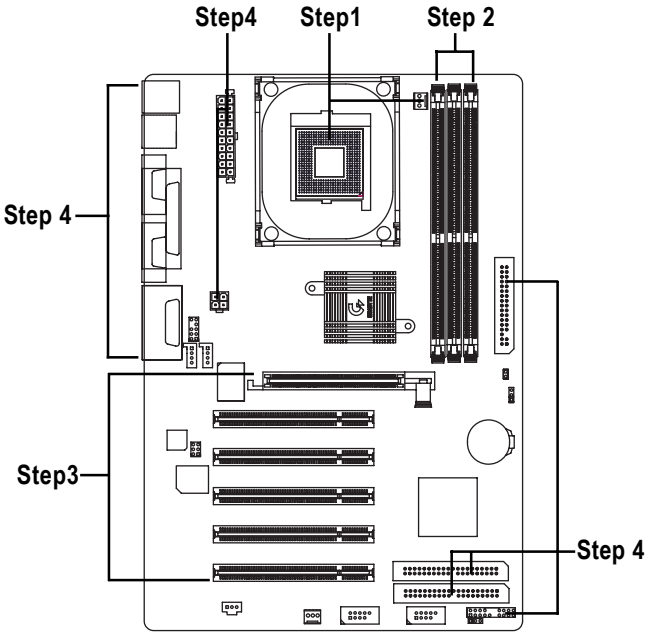
Step 2- Install memory modules

Step 3- Install expansion cards

Step 4- Connect ribbon cables, cabinet wires, and power supply

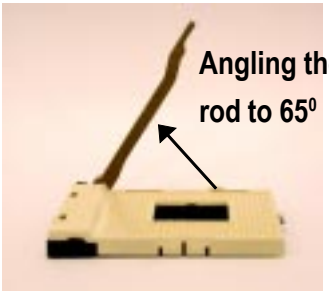
Step 5- Setup BIOS software

Step 6- Install supporting software tools

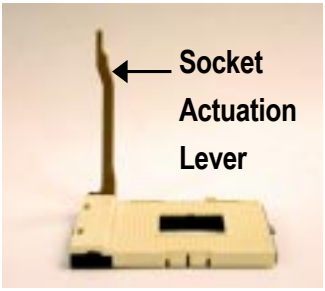


Step 1: Install the Central Processing Unit (CPU)

Step1-1 : CPU Installation



1. Angling the rod to 65-degree maybe feel a kind of tight , and then continue pull the rod to 90-degree when a noise "cough" made.



2. Pull the rod to the 90-degree directly.

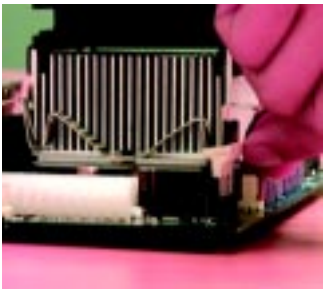
3. CPU Top View

4. Locate Pin 1 in the socket and look for a (golden) cut edge on the CPU upper corner. Then insert the CPU into the socket.

- **Please make sure the CPU type is supported by the motherboard.**
- **If you do not match the CPU socket Pin 1 and CPU cut edge well, it will cause improper installation. Please change the insert orientation.**

Step1-2 : CPU Heat Sink Installation

1. Hook one end of the cooler bracket to the CPU socket first.



2. Hook the other end of the cooler bracket to the CPU socket.

- **Please use Intel approved cooling fan.**
- **We recommend you to apply the thermal tape to provide better heat conduction between your CPU and heatsink.**
  (The CPU cooling fan might stick to the CPU due to the hardening of the thermal paste. During this condition if you try to remove the cooling fan, you might pull the processor out of the CPU socket alone with the cooling fan, and might damage the processor. To avoid this from happening, we suggest you to either use thermal tape instead of thermal paste, or remove the cooling fan with extreme caution.)
- **Make sure the CPU fan power cable is plugged in to the CPU fan connector, this completes the installation.**
- **Please refer to CPU heat sink user's manual for more detail installation procedure.**

Step 2: Install memory modules

The motherboard has 3 dual inline memory module (DIMM) sockets. The BIOS will automatically detects memory type and size. To install the memory module, just push it vertically into the DIMM Slot.

The DIMM module can only fit in one direction due to the notch. Memory size can vary between sockets.

Support Unbuffered DDR DIMM Sizes type:

64 Mbit (2Mx8x4 banks)	64 Mbit (1Mx16x4 banks)	128 Mbit(4Mx8x4 banks)
128 Mbit(2Mx16x4 banks)	256 Mbit(8Mx8x4 banks)	256 Mbit(4Mx16x4 banks)
512 Mbit(16Mx8x4 banks)	512 Mbit(8Mx16x4 banks)	

DDR

1. The DIMM slot has a notch, so the DIMM memory module can only fit in one direction.
2. Insert the DIMM memory module vertically into the DIMM slot. Then push it down.
3. Close the plastic clip at both edges of the DIMM slots to lock the DIMM module.
   Reverse the installation steps when you wish to remove the DIMM module.

Please note that the DIMM module can only fit in one direction due to the one notches. Wrong orientation will cause improper installation. Please change the insert orientation.

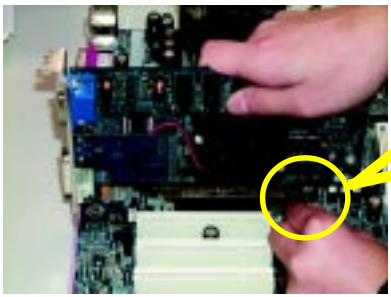
DDR Introduction

Established on the existing SDRAM industry infrastructure, DDR (Double Data Rate) memory is a high performance and cost-effective solution that allows easy adoption for memory vendors, OEMs and system integrators.

DDR memory is a sensible evolutionary solution for the PC industry that builds on the existing SDRAM infrastructure, yet makes awesome advances in solving the system performance bottleneck by doubling the memory bandwidth. DDR SDRAM will offer a superior solution and migration path from existing SDRAM designs due to its availability, pricing and overall market support. PC2100 DDR memory (DDR266) doubles the data rate through reading and writing at both the rising and falling edge of the clock, achieving data bandwidth 2X greater than PC133 when running with the same DRAM clock frequency. With peak bandwidth of 2.1GB per second, DDR memory enables system OEMs to build high performance and low latency DRAM subsystems that are suitable for servers, workstations, high-end PC's and value desktop SMA systems. With a core voltage of only 2.5 Volts compared to conventional SDRAM's 3.3 volts, DDR memory is a compelling solution for small form factor desktops and notebook applications.

Step 3: Install expansion cards

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.

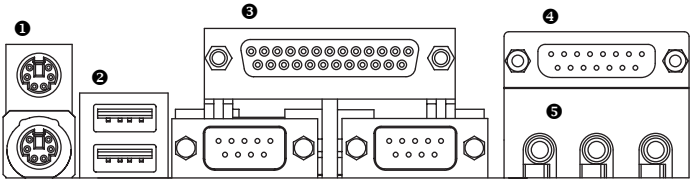


AGP Card

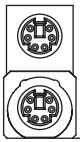
Please carefully pull out the small white-drawable bar at the end of the AGP slot when you try to install/ Uninstall the AGP card. Please align the AGP card to the onboard AGP slot and press firmly down on the slot . Make sure your AGP card is locked by the small white- drawable bar.

Step 4: Connect ribbon cables, cabinet wires, and power supply

Step4-1:I/O Back Panel Introduction



❶ PS/2 Keyboard and PS/2 Mouse Connector

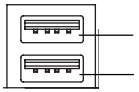


PS/2 Mouse Connector (6 pin Female)

PS/2 Keyboard Connector (6 pin Female)

➢This connector supports standard PS/2 keyboard and PS/2 mouse.

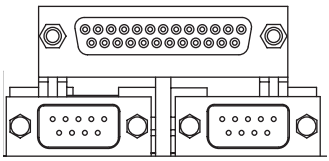
❷ USB Connector



➢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 (Win 95 with USB supplement, Win98, Windows 2000, Windows ME, Win NT with SP 6) 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.

❸ Parallel Port and Serial Ports (COMA/COMB)

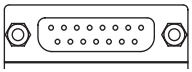
Parallel Port
(25 pin Female)



Serial Port (9 pin Male)

➢This connector supports 2 standard COM ports and 1 Parallel port. Device like printer can be connected to Parallel port ; mouse and modem etc can be connected to Serial ports.

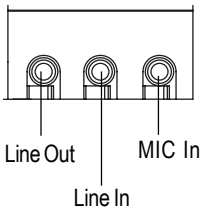
❹ Game /MIDI Ports



Joystick/ MIDI (15 pin Female)

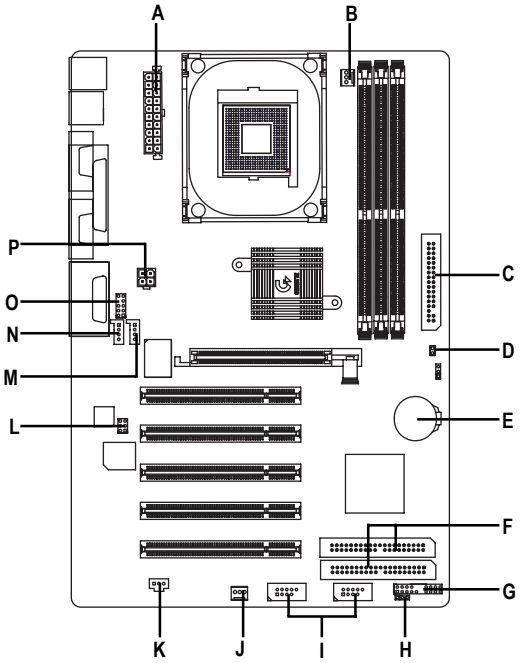
➢This connector supports joystick, MIDI keyboard and other relate audio devices.

❺ Audio Connectors



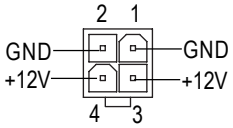
➢ After install onboard audio driver, you may connect speaker to Line Out jack, micro phone to MIC In jack. Device like CD-ROM , walkman etc can be connected to Line-In jack.

Step 4-2 : Connectors Introduction



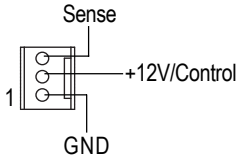
A) ATX	J) SYS_FAN
B) CPU_FAN	K) SPDIF
C) FDD	L) SUR_CEN
D) CI	M) AUX_IN
E) BAT	N) CD_IN
F) IDE1/IDE2	O) F_AUDIO
G) F_PANEL	P) ATX_12V
H) PWR_LED	
I) F_USB1/F_USB2	

P) ATX_12V (+12V Power Connector)



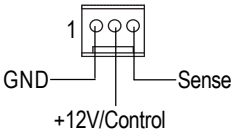
➢ This connector (ATX +12V) supplies the CPU operation voltage (Vcore).
If this " ATX+ 12V connector" is not connected, system cannot boot.

B) CPU_FAN (CPU FAN Connector)

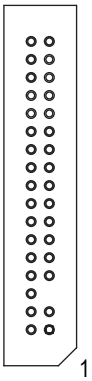


➢ Please note, a proper installation of the CPU cooler is essential to prevent the CPU from running under abnormal condition or damaged by overheating.The CPU fan connector supports Max. current up to 600 mA.

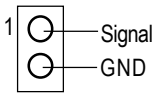
J) SYS_FAN (System FAN Connector)



C) FDD (Floppy Connector)

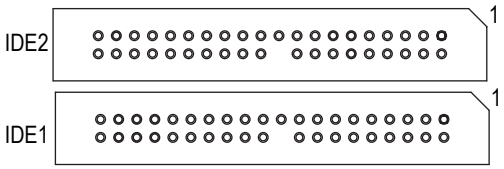


D) CI (CASE OPEN)



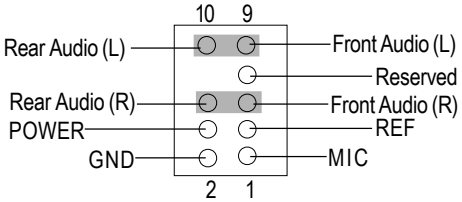
➢ This 2 pin connector allows your system to enable or disable the system alarm if the system case begin remove.

F) IDE1/ IDE2 [IDE1 / IDE2 Connector(Primary/Secondary)]



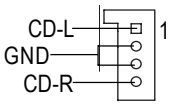
➢ Important Notice:
Please connect first harddisk to IDE1 and connect CDROM to IDE2.

O) F_AUDIO (Front Audio Connector)

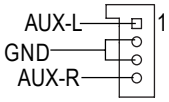


➢If you want to use "Front Audio" connector, you must remove 5-6, 9-10 Jumper. In order to utilize the front audio header, your chassis must have front audio connector. Also please make sure the pin assigment on the cable is the same as the pin assigment on the MB header. To find out if the chassis you are buying support front audio connector, please contact your dealer.

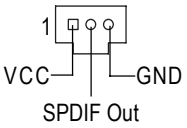
N) CD_IN (CD Audio Line In)



M) AUX_IN (AUX In Connector)

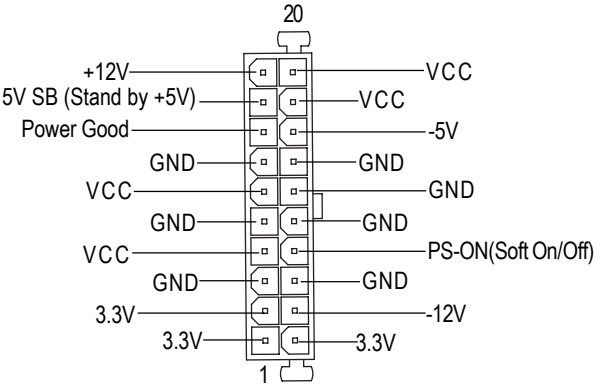


K) SPDIF (SPDIF)



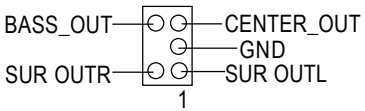
- The SPDIF output is capable of providing digital audio to external speakers or com pressed AC3 data to an external Dolby Digital Decoder. Use this feature only when your stereo system has digital input function.The SPDIF output is capable of providing digital signal to AC3 decoder which can support upto 5.1 speakers.

A) ATX (ATX Power)

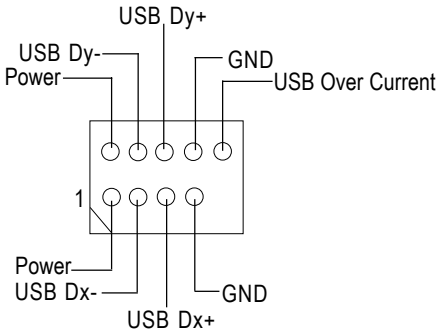


- AC power cord should only be connected to your power supply unit after ATX power cable and other related devices are firmly connected to the mainboard.

L) SUR_CEN



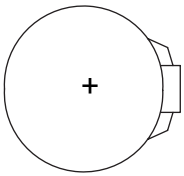
I) F_USB1/F_USB2 (Front USB Connector)



- Be careful with the polarity of the front panel USB connector. Check the pin assignment while you connect the front panel USB cable. Please contact your nearest dealer for optional front panel USB cable.

H) PWR_LED

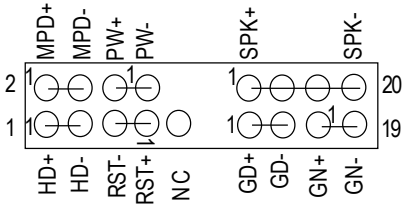
E) BAT (Battery)



CAUTION

- 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.

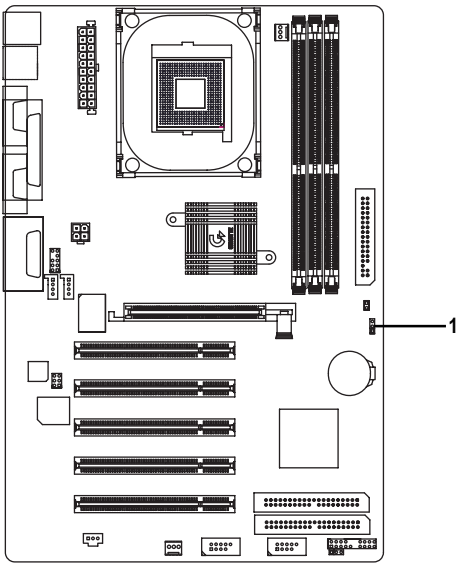
G) F_PANEL (2x10 pins connector)



GN (Green Switch)	Open: Normal Operation Close: Entering Green Mode
GD (Green LED)	Pin 1: LED anode(+) Pin 2: LED cathode(-)
HD (IDE Hard Disk Active LED)	Pin 1: LED anode(+) Pin 2: LED cathode(-)
SPK (Speaker Connector)	Pin 1: VCC(+) Pin 2- Pin 3: NC Pin 4: Data(-)
RST (Reset Switch)	Open: Normal Operation Close: Reset Hardware System
PW (Soft Power Connector)	Open: Normal Operation Close: Power On/Off
MPD(Message LED/Power/ Sleep LED)	Pin 1: LED anode(+) Pin 2: LED cathode(-)
N C	N C

- 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 above.

Step4-3: Jumper Introduction



1) CLR_CMOS (Clear CMOS)#

1-2 close: Clear CMOS

2-3 open: Normal

➢ You may clear the CMOS data to its default values by this jumper.

"#" Default doesn't include the "Shunter" to prevent from improper use this jumper. To clear CMOS, temporarily short 1-2 pin.

Chapter 3 BIOS Setup

BIOS Setup is an overview of the BIOS Setup Program. The program that allows users to modify the basic system configuration. This type of information is stored in battery-backed CMOS RAM so that it retains the Setup information when the power is turned off.

ENTERING SETUP

Powering ON the computer and pressing <Del> immediately will allow you to enter Setup. If you require more advanced BIOS settings, please go to "Advanced BIOS" setting menu. To enter Advanced BIOS setting menu, press "Ctrl+F1" key on the BIOS screen.

CONTROL KEYS

<↑>	Move to previous item
<↓>	Move to next item
<←>	Move to the item in the left hand
<→>	Move to the item in the right hand
<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
<+/PgUp>	Increase the numeric value or make changes
<-/PgDn>	Decrease the numeric value or make changes
<F1>	General help, only for Status Page Setup Menu and Option Page Setup Menu
<F2>	Reserved
<F3>	Reserved
<F4>	Reserved
<F5>	Restore the previous CMOS value from CMOS, only for Option Page Setup Menu
<F6>	Load the file-safe default CMOS value from BIOS default table
<F7>	Load the Optimized Defaults
<F8>	Q-Flash function
<F9>	Reserved
<F10>	Save all the CMOS changes, only for Main Menu

GETTING HELP

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>.

The Main Menu (For example: BIOS Ver. : F2h)

Once you enter Award BIOS CMOS Setup Utility, the Main Menu (Figure 1) will appear on the screen. The Main Menu allows you to select from eight setup functions and two exit choices. Use arrow keys to select among the items and press <Enter> to accept or enter the sub-menu.

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▶Standard CMOS Features	Top Performance
▶Advanced BIOS Features	Load Fail-Safe Defaults
▶Integrated Peripherals	Load Optimized Defaults
▶Power Management Setup	Set Supervisor Password
▶PnP/PCI Configurations	Set User Password
▶PC Health Status	Save & Exit Setup
▶Frequency/Voltage Control	Exit Without Saving
ESC:Quit	↑↓→←:Select Item
F8: Q-Flash	F10:Save & Exit Setup
Time, Date, Hard Disk Type...	

Figure 1: Main Menu

- **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 Configurations**

  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.

- **Frequency/Voltage Control**

  This setup page is control CPU's clock and frequency ratio.

- **Top Performance**

  If you wish to maximize the performance of your system, set "Top Performance" as "Enabled".

- **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.

Standard CMOS Features

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Standard CMOS Features

		Item Help
Date (mm:dd:yy)	Fri, May 3 2002	[illegible]
Time (hh:mm:ss)	17:56:23	Change the day, month, year
▸IDE Primary Master	None	
▸IDE Primary Slave	None	<Week>
▸IDE Secondary Master	None	Sun. to Sat.
▸IDE Secondary Slave	None	
		<Month>
Drive A	1.44M, 3.5 in.	Jan. to Dec.
Drive B	None	
Floppy 3 Mode Support	Disabled	<Day>
		1 to 31 (or maximum allowed in the month)
Halt On	All, But Keyboard	
Base Memory	640K	<Year>
Extended Memory	130048K	1999 to 2098
Total Memory	131072K	

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

Figure 2: Standard CMOS Features

☞ 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 Primary Master, Slave / IDE Secondary Master, Slave

The category identifies the types of hard disk from drive C to F that has been installed in the computer. There are two types: auto type, and manual type. Manual type is user-definable; Auto type which will automatically detect HDD type.

Note that the specifications of your drive must match with the drive table. The hard disk will not work properly if you enter improper information for this category.

If you select User Type, related information will be asked to enter to the following items. Enter the information directly from the keyboard and press <Enter>. Such information should be provided in the documentation form your hard disk vendor or the system manufacturer.

- CYLS. Number of cylinders
- HEADS Number of heads
- PRECOMP Write precomp
- LANDZONE Landing zone
- SECTORS Number of sectors

If a hard disk has not been installed select NONE and press <Enter>.

☞ Drive A / Drive B

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

- None No floppy drive installed
- 360K, 5.25 in. 5.25 inch PC-type standard drive; 360K byte capacity.
- 1.2M, 5.25 in. 5.25 inch AT-type high-density drive; 1.2M byte capacity (3.5 inch when 3 Mode is Enabled).
- 720K, 3.5 in. 3.5 inch double-sided drive; 720K byte capacity
- 1.44M, 3.5 in. 3.5 inch double-sided drive; 1.44M byte capacity.
- 2.88M, 3.5 in. 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.
▸▸Drive B	Drive B is 3 mode Floppy Drive.
▸▸Both	Drive A & B are 3 mode Floppy Drives.

☞ Halt on

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

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

☞ Memory

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

Base Memory

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

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

Extended Memory

The BIOS determines how much extended memory is present during the POST. This is the amount of memory located above 1 MB in the CPU's memory address map.

Advanced BIOS Features

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Advanced BIOS Features

First Boot Device	Floppy	Item Help
Second Boot Device	HDD-0	↺↪▶↓↺↪▶
Third Boot Device	CDROM	Select Boot Device
Boot Up Floppy Seek	Disabled	priority
Init Display First	AGP	
		[Floppy]
		Boot from floppy
		[LS120]
		Boot from LS120
		[HDD-0]
		Boot from First HDD
		[HDD-1]
		Boot from second HDD

↑↓→←: Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help

F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults

Figure 3: Advanced BIOS Features

☞ First / Second / Third Boot Device

⏩Floppy	Select your boot device priority by Floppy.
⏩LS120	Select your boot device priority by LS120.
⏩HDD-0~3	Select your boot device priority by HDD-0~3.
⏩SCSI	Select your boot device priority by SCSI.
⏩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	Select your boot device priority by Disabled.

☞ Boot Up Floppy Seek

During POST, BIOS will determine the floppy disk drive installed is 40 or 80 tracks. 360 K type is 40 tracks 720 K, 1.2 M and 1.44 M are all 80 tracks.

- ⏩ Enabled — BIOS searches for floppy disk drive to determine it is 40 or 80 tracks. Note that BIOS can not tell from 720 K, 1.2 M or 1.44 M drive type as they are all 80tracks.
- ⏩ Disabled — BIOS will not search for the type of floppy disk drive by track number. Note that there will not be any warning message if the drive installed is 360 K. (Default value)

☞ Init Display First

- ⏩ AGP — Set Init Display First to AGP. (Default value)
- ⏩ PCI — Set Init Display First to PCI.

Integrated Peripherals

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Integrated Peripherals

IDE1 Conductor Cable	Auto	Item Help
IDE2 Conductor Cable	Auto	↺↹▶♪↹▶
On-Chip Primary PCI IDE	Enabled	[Auto]
On-Chip Secondary PCI IDE	Enabled	Auto-detect IDE
AC97 Audio	Enabled	cable type
USB Controller	Enabled	
USB Legacy Support	Disabled	[ATA66/100]
Onboard Serial Port 1	3F8/IRQ4	Set Conductor cable
Onboard Serial Port 2	2F8/IRQ3	to ATA66/100(80-pins)
UART Mode Select	Normal	
x UR2 Duplex Mode	Half	[ATA33]
Onboard Parallel Port	378/IRQ7	Set Conductor cable
Parallel Port Mode	SPP	to ATA33(40-pins)
x ECP Mode Use DMA	3	
Game Port Address	201	
Midi Port Address	330	
Midi Port IRQ	10	

↑↓→←: Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help

F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults

Figure 4: Integrated Peripherals

☞ IDE1 Conductor Cable

▸▸Auto	Will be automatically detected by BIOS. (Default Value)
▸▸ATA66/100	Set IDE1 Conductor Cable to ATA66/100 (Please make sure your IDE device and cable is compatible with ATA66/100).
▸▸ATA33	Set IDE1 Conductor Cable to ATA33 (Please make sure your IDE device and cable is compatible with ATA33).

☞ IDE2 Conductor Cable

▸▸Auto	Will be automatically detected by BIOS. (Default Value)
▸▸ATA66/100	Set IDE2 Conductor Cable to ATA66/100 (Please make sure your IDE device and cable is compatible with ATA66/100).
▸▸ATA33	Set IDE2 Conductor Cable to ATA33 (Please make sure your IDE device and cable is compatible with ATA33).

☞ On-Chip Primary PCI IDE

▸▸Enabled	Enable onboard 1st channel IDE port. (Default value)
▸▸Disabled	Disable onboard 1st channel IDE port.

☞ On-Chip Secondary PCI IDE

▸▸Enabled	Enable onboard 2nd channel IDE port. (Default value)
▸▸Disabled	Disable onboard 2nd channel IDE port.

☞ AC97 Audio

▸▸Enabled	Enable onboard AC'97 audio function. (Default value)
▸▸Disabled	Disable this function.

☞ USB Controller

▸▸Enabled	Enable USB Controller. (Default value)
▸▸Disabled	Disable USB Controller.

☞ USB Legacy Support

▸▸Enabled	Enable USB Legacy Support.
▸▸Disabled	Disable USB Legacy Support. (Default value)

☞ Onboard Serial Port 1

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

☞ Onboard Serial Port 2

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

☞ UART Mode Select

(This item allows you to determine which Infra Red(IR) function of Onboard I/O chip)

▸▸ASKIR	Set onboard I/O chip UART to ASKIR Mode.
▸▸IrDA	Set onboard I/O chip UART to IrDA Mode.
▸▸Normal	Set onboard I/O chip UART to Normal Mode. (Default Value)

☞ UR2 Duplex Mode

▸▸Half	IR Function Duplex Half. (Default Value)
▸▸Full	IR Function Duplex Full.

☞ Onboard Parallel 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.
▸▸Disabled	Disable onboard LPT port.
▸▸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.

☞ECP Mode Use DMA

- ⏩3 Set ECP Mode Use DMA to 3. (Default Value)
- ⏩1 Set ECP Mode Use DMA to 1.

☞Game Port Address

- ⏩201 Set Game Port Address to 201. (Default Value)
- ⏩209 Set Game Port Address to 209.
- ⏩Disabled Disable this function.

☞Midi Port Address

- ⏩300 Set Midi Port Address to 300.
- ⏩330 Set Midi Port Address to 330.(Default Value)
- ⏩Disabled Disable this function.

☞Midi Port IRQ

- ⏩5 Set Midi Port IRQ to 5.
- ⏩10 Set Midi Port IRQ to 10. (Default Value)

Power Management Setup

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Power Management Setup

ACPI Suspend Type	S1(POS)	Item Help
Soft-Off by PWR_BTTN	Off	↺➔▶♪➔▶
System After AC Back	Off	[S1]
IRQ [3-7, 9-15], NMI	Enabled	Set suspend type to
ModemRingOn/WakeOnLan	Enabled	Power On Suspend under
PME Event Wake Up	Enabled	ACPI OS
Power On by Keyboard	Password	
Power On by Mouse	Disabled	[S3]
Resume by Alarm	Disabled	Set suspend type to
x Month Alarm	NA	Suspend to RAM under
x Day (of Month)	0	ACPI OS
x Time (hh:nn:ss)	0 0 0	
Power LED in S1 state	Blinking	

↑↓→←: Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help

F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults

Figure 5: Power Management Setup

☞ ACPI Suspend Type

- ▸▸S1(POS) Set ACPI suspend type to S1. (Default Value)
- ▸▸S3(STR) Set ACPI suspend type to S3.

☞ Soft-off by PWR_BTTN

- ▸▸Off The user press the power button once, he can turn off the system. (Default Value)
- ▸▸Suspend The user press the power button once, then he can enter suspend mode.

☞ System after AC Back

- ▸▸LastState When AC-power back to the system, the system will return to the Last state before AC-power off.
- ▸▸Off When AC-power back to the system, the system will be in "Off" state. (Default Value)
- ▸▸On When AC-power back to the system, the system will be in "On" state.

☞ IRQ [3-7, 9-15], NMI

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

☞ ModemRingOn/WakeOnLAN

- ▸▸Disabled Disable Modem Ring on/wake on Lan function.
- ▸▸Enabled Enable Modem Ring on/wake on Lan. (Default Value)

☞ PME Event Wake Up

- ▸▸Disabled Disable this function.
- ▸▸Enabled Enable PME Event Wake up. (Default Value)

☞ Power On by Keyboard

- ▸▸Password Input password (from 1 to 8 characters) and press Enter to set the Keyboard Power On Password.(Default Value)
- ▸▸Any Key Set Keyboard power on by any key.

☞Power On by Mouse

- ▸▸Enabled Enable Power On by Mouse function.
- ▸▸Disabled Disable this function. (Default Value)

☞ Resume by Alarm

You can set "Resume by Alarm" item to enabled and key in Data/time to power on system.

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

If RTC Alarm Lead To Power On is Enabled.

Month Alarm :	NA, 1~12
Day (of Month) :	1~31
Time (hh: mm: ss) :	(0~23) : (0~59) : (0~59)

☞ Power LED in S1 state

- ▸▸Blinking In standby mode(S1), power LED will blink. (Default Value)
- ▸▸Dual/Off In standby mode(S1):
  a. If use single color LED, power LED will turn off.
  b. If use dual color LED, power LED will turn to another color.

PnP/PCI Configurations

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PnP/PCI Configurations

PCI 4 IRQ Assignment	Auto	Item Help
PCI 1/5 IRQ Assignment	Auto	↵▶↓↵◀
PCI 2 IRQ Assignment	Auto	
PCI 3 IRQ Assignment	Auto	

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

Figure 6: PnP/PCI Configurations

☞ PCI 4 IRQ Assignment

▸▸Auto	Auto assign IRQ to PCI 4. (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 4.

☞ PCI 1/5 IRQ Assignment

▸▸Auto	Auto assign IRQ to PCI 1/5. (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 1/5.

☞ 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.

☞ PCI 3 IRQ Assignment

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

PC Health Status

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PC Health Status

Reset Case Open Status	Disabled	Item Help
Case Opened	No	↺⇨▶↺⇨⇨▶
Current CPU FAN Speed	4386 RPM	[Disabled]
Current SYSTEM FAN Speed	0 RPM	Don't reset case
CPU FAN Fail Warning	Disabled	open status
SYSTEM FAN Fail Warning	Disabled	
		[Enabled]
		Clear case open
		status at next boot

↑↓→←: Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help

F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults

Figure 7: PC Health Status

☞ Reset Case Open Status

☞ Case Opened

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

If the case have been opened, "Case Opened" will show "Yes".

If you want to reset "Case Opened" value, set "Reset Case Open Status" to "Enabled" and save CMOS, your computer will restart.

☞ Current CPU/SYSTEM FAN Speed (RPM)

▸▸Detect CPU/SYSTEM Fan speed status automatically.

☞ CPU FAN Fail Warning

▸▸Disabled	Fan Warning Function Disable. (Default value)
▸▸Enabled	Fan Warning Function Enable.

☞ SYSTEM FAN Fail Warning

▸▸Disabled	Fan Warning Function Disable. (Default value)
▸▸Enabled	Fan Warning Function Enable.

Frequency/Voltage Control

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Frequency/Voltage Control

CPU Clock Ratio	10X	Item Help
Linear Frequency Control	Disabled	
x CPU Clock	100	
x DRAM Clock (MHz)	200	
x AGP Clock (MHz)	AUTO	
x PCI Clock (MHz)	AUTO	

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

Figure 8: Frequency/Voltage Control

☞ CPU Clock Ratio

This option will not be shown or not be available if you are using a CPU with the locked ratio.

▸▸10X~24X It's depends on CPU Clock Ratio.

☞ Linear Frequency Control

▸▸Disabled Disable this function. (Default value)

▸▸Enabled Enable this function.

☞ CPU Clock

▸▸100~355 Select CPU Clock to 100MHz~355MHz.

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

☞ DRAM Clock (MHz)

▸▸Please set DRAM Clock according to your requirement.

If you use DDR200 DRAM module, please set "DRAM Clock(MHz)" to 200. If you use DDR333 DRAM module, please set "DRAM Clock(MHz)" to 333.

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

☞ AGP Clock (MHz)

▸▸Please set AGP Clock according to your requirement.

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

☞ PCI Clock (MHz)

▸▸Please set PCI Clock according to your requirement.

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

Top Performance

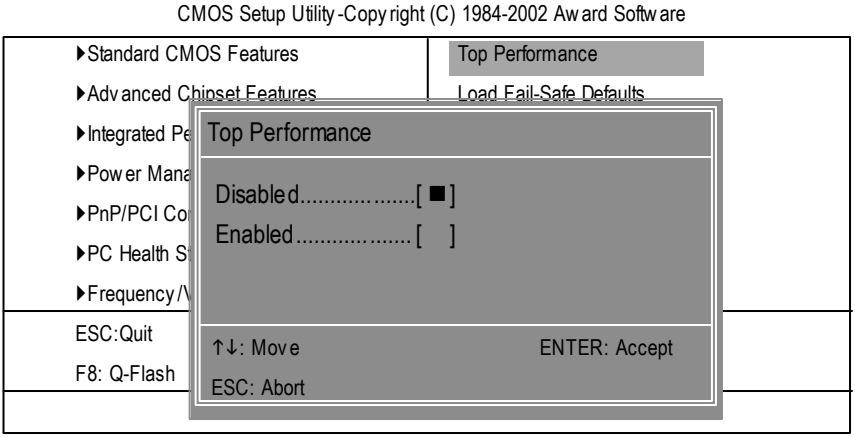


Figure 9: Top Performance

Top Performance

If you wish to maximize the performance of your system, set "Top Performance" as "Enabled".

- Disabled Disable this function. (Default Value)
- Enabled Enable Top Performance function.

Load Fail-Safe Defaults

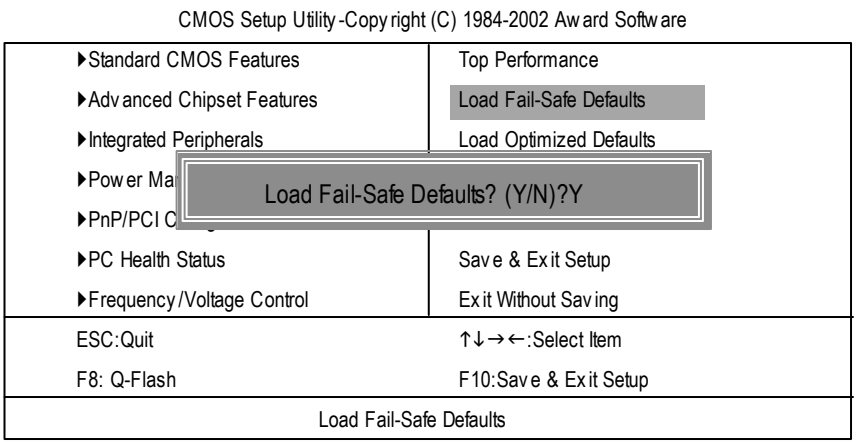


Figure 10: Load Fail-Safe Defaults

Load Fail-Safe Defaults

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

Load Optimized Defaults

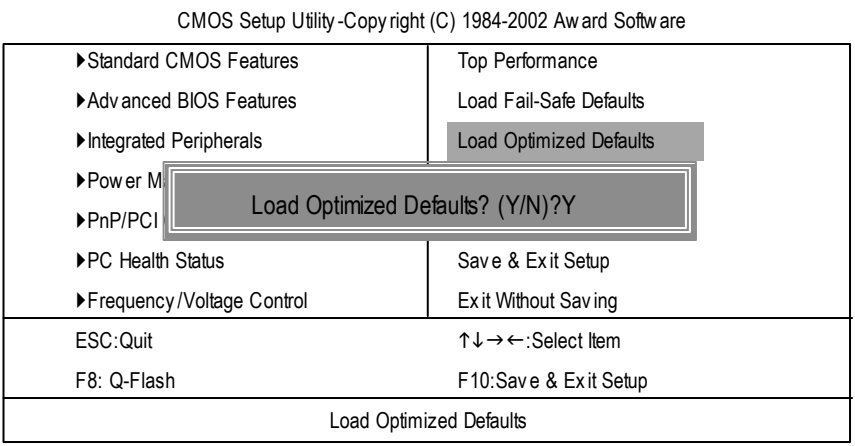


Figure 11: Load Optimized Defaults

Load Optimized Defaults

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

Set Supervisor/User Password

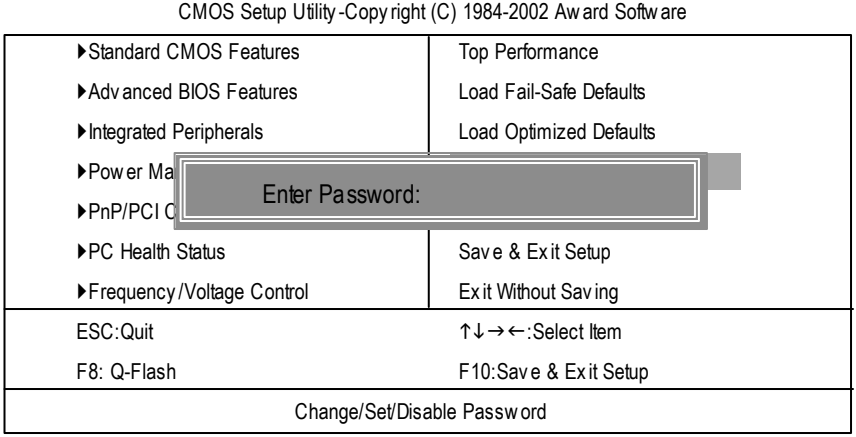


Figure 12: Password Setting

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.

Save & Exit Setup

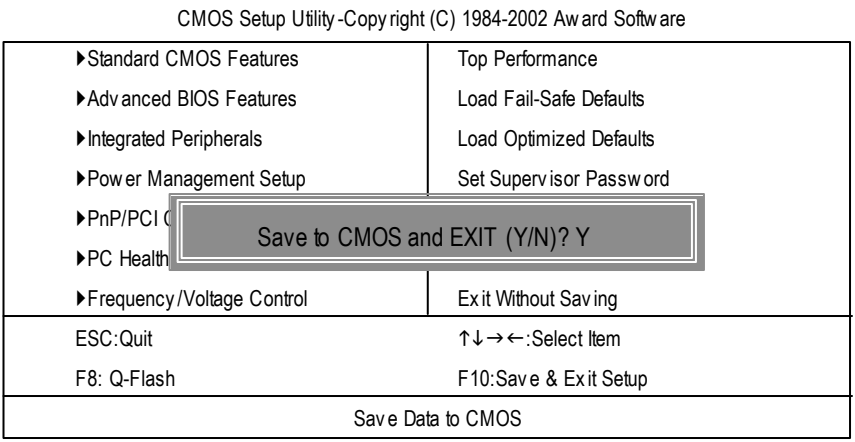


Figure 13: Save & Exit Setup

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

Type "N" will return to Setup Utility.

Exit Without Saving

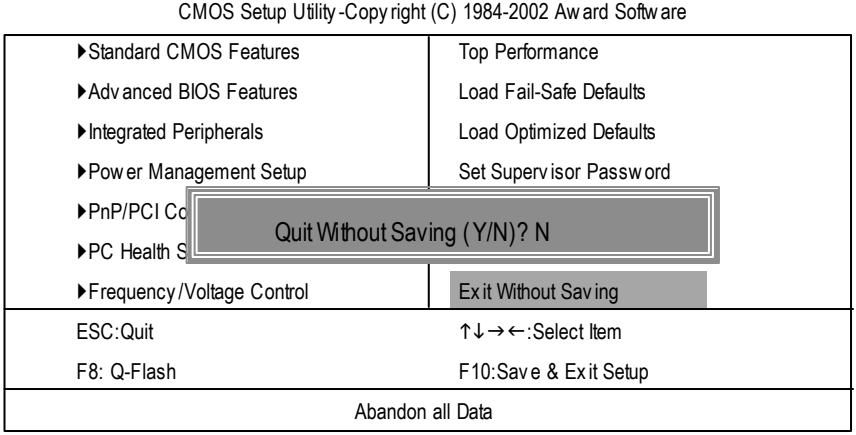


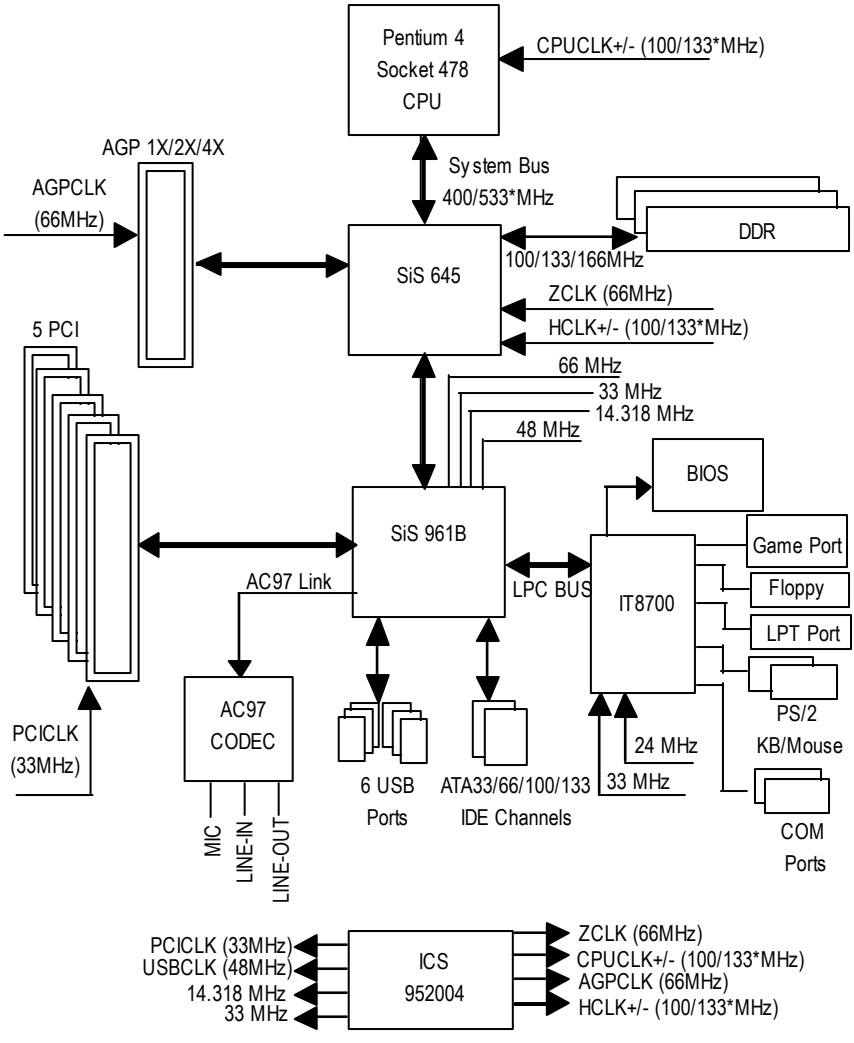
Figure 14: Exit Without Saving

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

Type "N" will return to Setup Utility.

Chapter 4 Technical Reference

Block Diagram



"*" This motherboard can auto detect and optimized setting for Pentium® 4 FSB 533MHz processor. (8SR533 only)

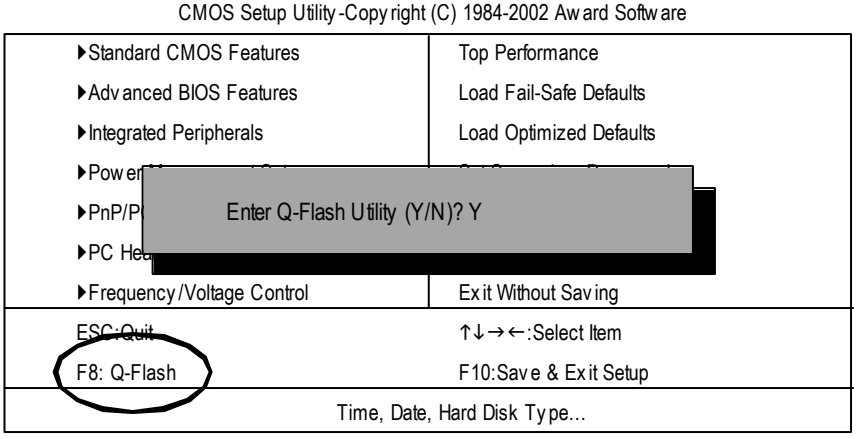
Q-Flash Introduction

A. What is Q-Flash Utility?

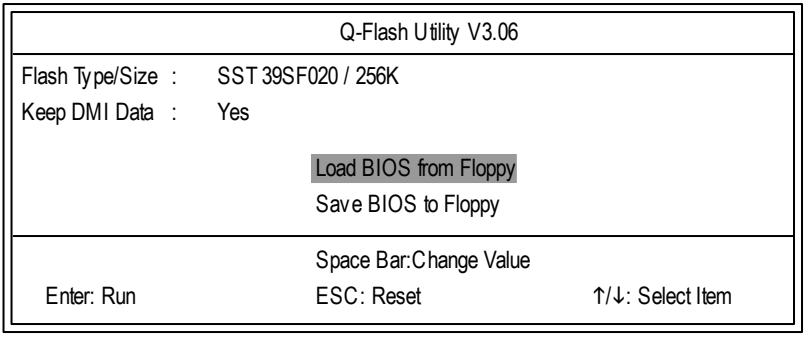
Q-Flash utility is a pre-O.S. BIOS flash utility enables users to update its BIOS within BIOS mode, no more fooling around any OS.

B. How to use Q-Flash?

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

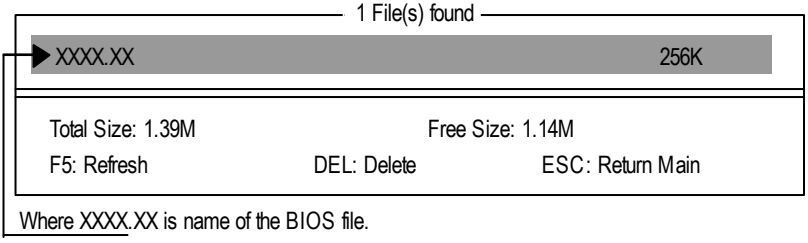


b. Q-Flash Utility



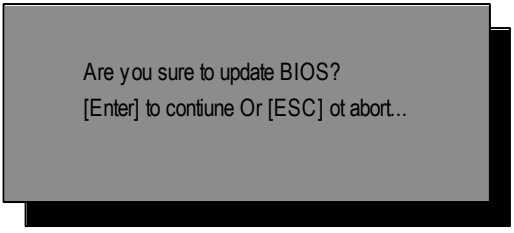
Load BIOS From Floppy

✎In the A:drive, insert the "BIOS" diskette, then Press Enter to Run.

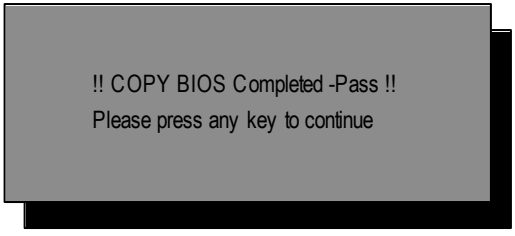


Where XXXX.XX is name of the BIOS file.

✎Press Enter to Run.



✎Press Enter to Run.



Congratulation! You have completed the flashed and now can restart system.

@BIOS™ Introduction

Gigabyte announces @ BIOS
Windows BIOS live update utility

Have you ever updated BIOS by yourself? Or like many other people, you just know what BIOS is, but always hesitate to update it? Because you think updating newest BIOS is unnecessary and actually you don't know how to update it.

Maybe not like others, you are very experienced in BIOS updating and spend quite a lot of time to do it. But of course you don't like to do it too much. First, download different BIOS from website and then switch the operating system to DOS mode. Secondly, use different flash utility to update BIOS. The above process is not a interesting job. Besides, always be carefully to store the BIOS source code correctly in your disks as if you update the wrong BIOS, it will be a nightmare.

Certainly, you wonder why motherboard vendors could not just do something right to save your time and effort and save you from the lousy BIOS updating work? Here it comes! Now Gigabyte announces @BIOS—the first Windows BIOS live update utility. This is a smart BIOS update software. It could help you to download the BIOS from internetand update it. Not like the other BIOS update software, it's a Windows utility. With the help of "@BIOS', BIOS updating is no more than a click.

Besides, no matter which mainboard you are using, if it's a Gigabyte's product*, @BIOS help you to maintain the BIOS. This utility could detect your correct mainboard model and help you to choose the BIOS accordingly. It then downloads the BIOS from the nearest Gigabyte ftp site automatically. There are several different choices; you could use "Internet Update" to download and update your BIOS directly. Or you may want to keep a backup for your current BIOS, just choose "Save Current BIOS" to save it first. You make a wise choice to use Gigabyte, and @BIOS update your BIOS smartly. You are now worry free from updating wrong BIOS, and capable to maintain and manage your BIOS easily. Again, Gigabyte's innovative product erects a milestone in mainboard industries.

For such a wonderful software, how much it costs? Impossible! It's free! Now, if you buy a Gigabyte's motherboard, you could find this amazing software in the attached driver CD. But please remember, connected to internet at first, then you could have a internet BIOS update from your Gigabyte @BIOS.

Easy Tune™ 4 Introduction

Gigabyte announces *EasyTune™ 4*

Windows based Overclocking utility

EasyTune 4 carries on the heritage so as to pave the way for future generations.

Overclock" might be one of the most common issues in computer field. But have many users ever tried it? The answer is probably "no". Because "Overclock" is thought to be very difficult and includes a lot of technical know-how, sometimes "Overclock" is even considered as special skills found only in some enthusiasts. But as to the experts in "Overclock", what's the truth? They may spend quite a lot of time and money to study, try and use many different hardware or BIOS tools to do "Overclock". And even with these technologies, they still learn that it's quite a risk because the safety and stability of an "Overclock" system is unknown. Now everything is different because of a Windows based overclocking utility "EasyTune 4" --announced by Gigabyte. This windows based utility has totally changed the gaming rule of "Overclock". This is the first windows based overclocking utility is suitable for both normal and power users. Users can choose either "Easy Mode" or "Advanced Mode" for overclocking at their convenience. For users who choose "Easy Mode", they just need to click "Auto Optimize" to have autoed and immediate CPU overclocking. This software will then overdrive CPU speed automatically with the result being shown in the control panel. If users prefer "Overclock" by them, there is also another choice. Click "Advanced Mode" to enjoy "sport drive" class Overclocking user interface. "Advanced Mode", allows users to change the system bus / AGP / Memory working frequency in small increments to get ultimate system performance. It operates in coordination with Gigabyte motherboards. Besides, it is different from other traditional over-clocking methods, EasyTune 4 doesn't require users to change neither BIOS nor hardware switch/ jumper setting; on the other hand, they can do "Overclock" at easy step . Therefore, this is a safer way for "Overclock" as nothing is changed on software or hardware. If user runs EasyTune 4 over system's limitation, the biggest lost is only to restart the computer again and the side effect is then well controlled. Moreover, if one well-performed system speed has been tested in EasyTune 4, user can "Save" this setting and "Load" it in next time. Obviously, Gigabyte EasyTune 4 has already turned the "Overclock" technology toward to a newer generation. This wonderful software is now free bundled in Gigabyte motherboard attached in driver CD. Users may make a test drive of "EasyTune 4" to find out more amazing features by themselves.

*Some Gigabyte products are not fully supported by EasyTune 4. Please find the products supported list in the web site.

*Any "Overclocking action" is at user's risk, Gigabyte Technology will not be responsible for any damage or instability to your processor, motherboard, or any other components.

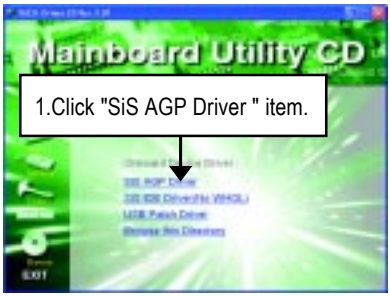
Chapter 5 Appendix

Picture below are shown in Windows XP (TUCD driver version 2.01)

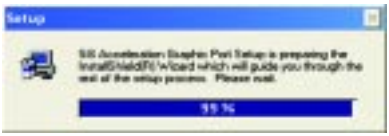
Appendix A: SiS 645/645DX Chipset Driver Installation

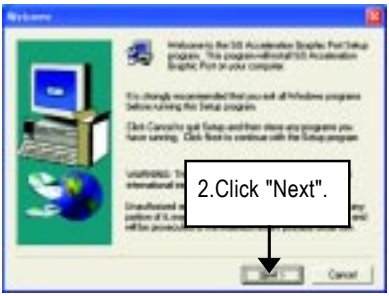
A. SiS AGP Driver:

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



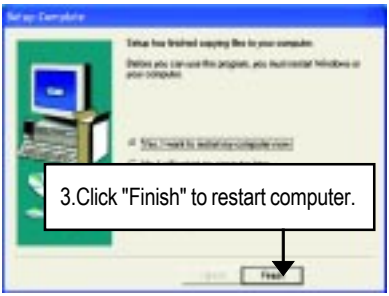
(1)





(2)

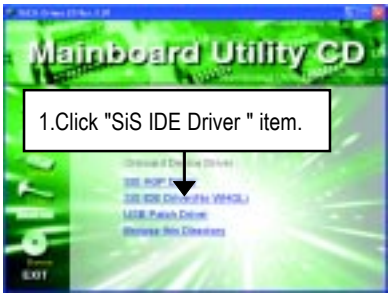
(3)



(4)

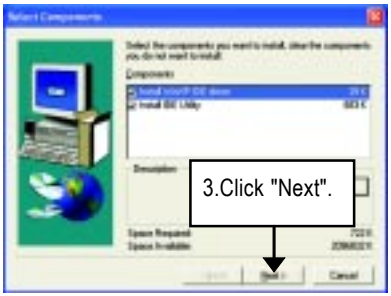
B. SiS IDE Driver:

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



(1)

(2)



(3)

(4)

(5)

C. USB Patch Driver:

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

(1)

(2)

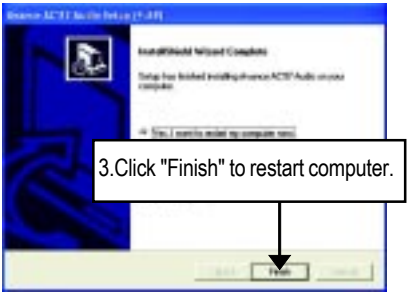
Appendix B: RealTek AC'97 Audio Driver

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

(1)

(2)

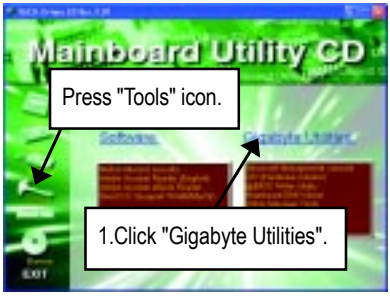
(3)



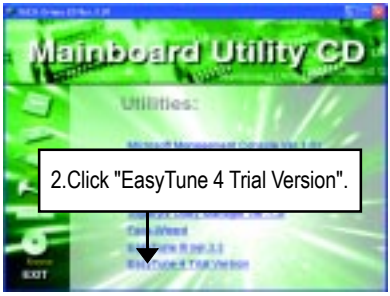
(4)

Appendix C: EasyTune 4 Utilities Installation

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



(1)



(2)

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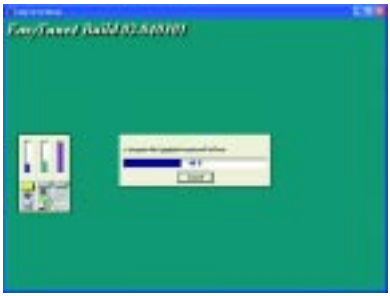


(5)

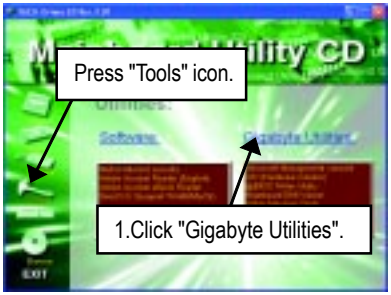
(6)

Appendix D: BIOS Flash Procedure

BIOS update procedure:

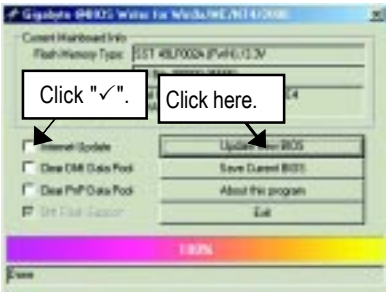
Method 1:

If your OS is Win9X, we recommend that you used Gigabyte @BIOS™ Program to flash BIOS.



(1)

(2)



(3)

Methods and steps:

I. Update BIOS through Internet

a. Click "Internet Update" icon
b. Click "Update New BIOS" icon
c. Select @BIOS™ sever ("Gigabyte @BIOS™ sever 1 in Taiwan" and "Gigabyte @BIOS™ sever 2 in Taiwan" are available for now, the others will be completedsoon)
d. Select the exact model name on your motherboard
e. System will automatically download and update the BIOS.

II. Update BIOS NOT through Internet:

a. Do not click "Internet Update" icon
b. Click "Update New BIOS"
c. Please select "All Files" in dialog box while opening the old file.
d. Please search for BIOS unzip file, downloading from internet or any other methods (such as: 8SR.F1).
e. 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.

Note:

a. 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.
b. 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.
c. 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.
d. Please note that any interruption during updating will cause system unbooted

Method 2:

We use GA-7VTX motherboard and Flash841 BIOS flash utility as example.

Please flash the BIOS according to the following procedures if you are now under the DOS mode.

Flash BIOS Procedure:

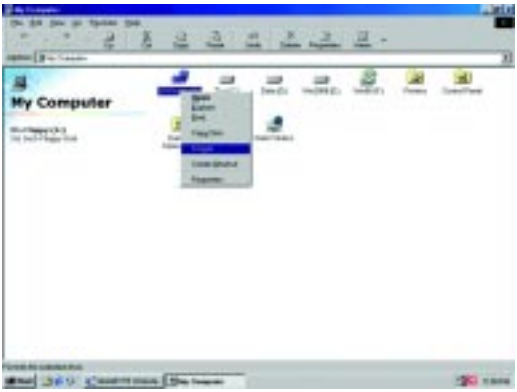
STEP 1:

(1) Please make sure your system has installed the extraction utility such as winzip or pkunzip.
Firstly you have to install the extraction utility such as winzip or pkunzip for unzip the files. Both of these utilities are available on many shareware download pages like http://www.shareware.cnet.com

STEP 2: Make a DOS boot diskette. (See example: Windows 98 O.S.)

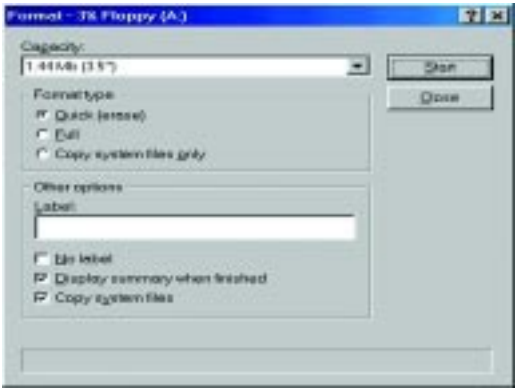
Beware: Windows ME/2000 are not allowed to make a DOS boot diskette.

(1) With an available floppy disk in the floppy drive. Please leave the diskette "UN-write protected" type. Double click the "My Computer" icon from Desktop, then click "3.5 diskette (A)" and right click to select "Format (M)"



(2) Select the "Quick (erase)" for Format Type, and pick both "Display summary when finished" and "Copy system files", after that press "Start". That will format the floppy and transfer the needed system files to it.

Beware: This procedure will erase all the prior data on that floppy, so please proceed accordingly.



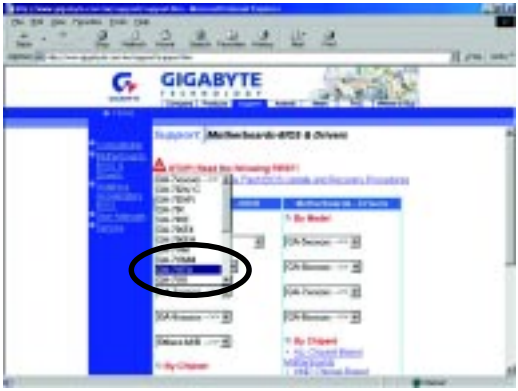
(3) After the floppy has been formatted completely, please press "Close".

STEP 3: Download BIOS and BIOS utility program.

(1) Please go to Gigabyte website http://www.gigabyte.com.tw/index.html, and click "Support".

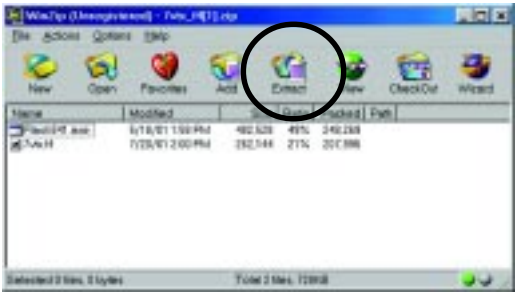
(2) From Support zone, click the "Motherboards BIOS & Drivers".

(3) We use GA-7VTX motherboard as example. Please select GA-7VTX by Model or Chipset optional menu to obtain BIOS flash files.



(4) Select an appropriate BIOS version (For example: F4), and click to download the file. It will pop up a file download screen, then select the "Open this file from its current location" and press "OK".

(5) At this time the screen shows the following picture, please click "Extract" button to unzip the files.



(6) Please extract the download files into the clean bootable floppy disk A mentioned in STEP 2, and press "Extract".

STEP 4: Make sure the system will boot from the floppy disk.

(1) Insert the floppy disk (contains bootable program and unzip file) into the floppy drive A. Then, restart the system. The system will boot from the floppy disk. Please press <DEL> key to enter BIOS setup main menu when system is boot up.

(2) Once you enter the BIOS setup utility, the main menu will appear on the screen. Use the arrows to highlight the item "BIOS FEATURES SETUP".

AMIBIOS SIMPLE SETUP UTILITY - VERSION 1.24b

(C) 1999 American Megatrends, Inc. All Rights Reserved

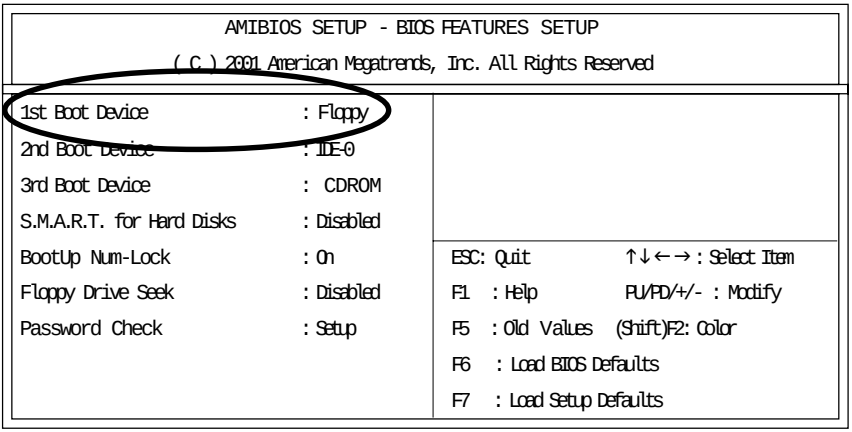
STANDARD CMOS SETUP	INTEGRATED PERIPHERALS
BIOS FEATURES SETUP	HARDWARE MONITOR & MISC SETUP
CHIPSET FEATURES SETUP	SUPERVISOR PASSWORD
POWER MANAGEMENT SETUP	USER PASSWORD
PNP / PCI CONFIGURATION	IDE HDD AUTO DETECTION
LOAD BIOS DEFAULTS	SAVE & EXIT SETUP
LOAD SETUP DEFAULTS	EXIT WITHOUT SAVING

ESC: Quit ↑↓←→ : Select Item (Shift)F2 : Change Color F5: Old Values

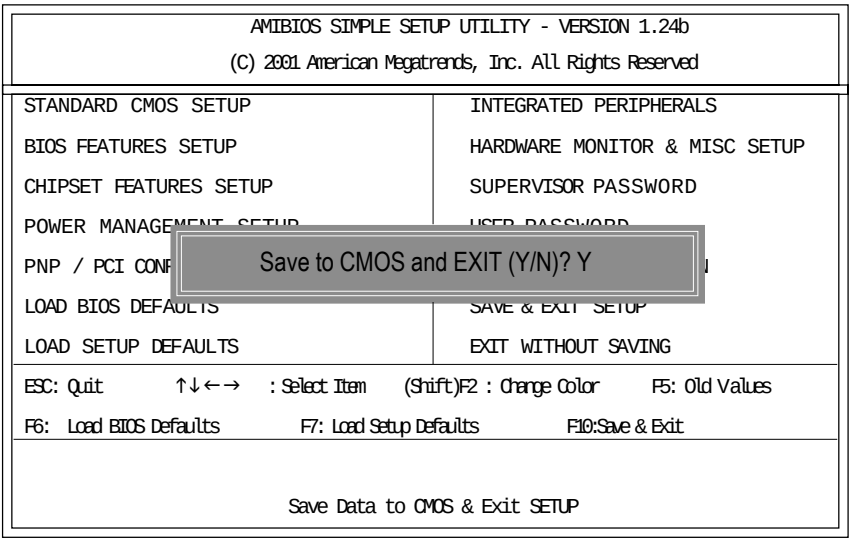
F6: Load BIOS Defaults F7: Load Setup Defaults F10:Save & Exit

Time, Date , Hard Disk Type..

(3) Press "Enter" to enter "BIOS FEATURES SETUP" menu. Use the arrows to highlight the item "1st Boot Device", and then use the "Page Up" or "Page Down" keys to select "Floppy".



(4) Press "ESC" to go back to previous screen. Use the arrows to highlight the item "SAVE & EXIT SETUP" then press "Enter". System will ask "SAVE to CMOS and EXIT (Y/N)?" Press "Y" and "Enter" keys to confirm. Now the system will reboot automatically, the new BIOS setting will be taken effect next boot-up.

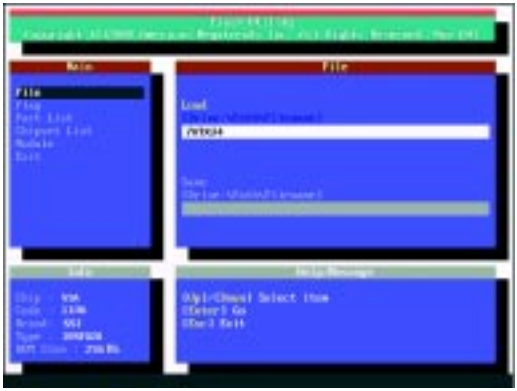


STEP 5: BIOS flashing.

(1) After the system boot from floppy disk, type "A:\> dir/w" and press "Enter" to check the entire files in floppy A. Then type the "BIOS flash utility" and "BIOS file" after A:\>. In this case you have to type "A:\> Flash841 7VTX.F4" and then press "Enter".

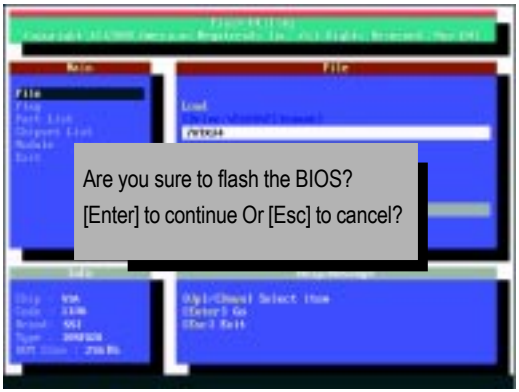
```
Starting Windows 98…

Microsoft(R) Windows98
   © Copyright Microsoft Corp 1981-1999

A:\> dir/w
   Volume in drive A has no label
Volume Serial Number is 16EB-353D
Directory of A:\
COMMAND.COM     7VTX.F4     FLASH841.EXE
            3 file(s)      838,954  bytes
            0 dir(s)       324,608  bytes free

A:\> Flash841 7VTX.F4
```

(2) Now screen appears the following Flash Utility main menu. Press "Enter", the highlighted item will locate on the model name of the right-upper screen. Right after that, press "Enter" to start BIOS Flash Utility.

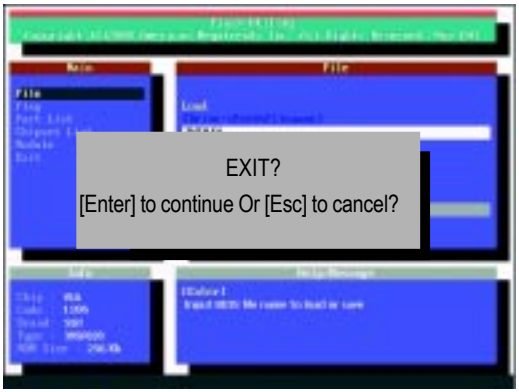


(3) It will pop up a screen and asks "Are you sure to flash the BIOS?" Press [Enter] to continue the procedure, or press [ESC] to quit.

Beware: Please do not turn off the system while you are upgrading BIOS. It will render your BIOS corrupted and system totally inoperative.



(4) The BIOS flash completed. Please press [ESC] to exit Flash Utility.

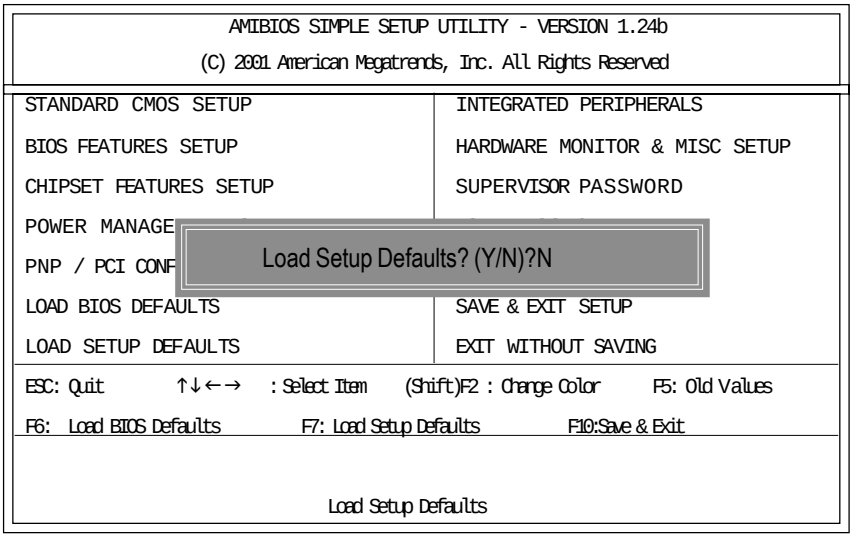


STEP 6: Load BIOS defaults.

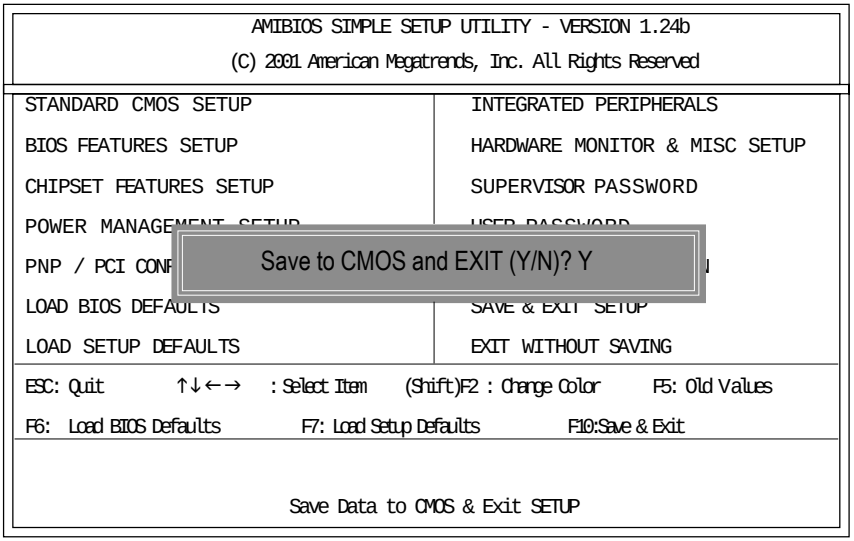
Normally the system redetects all devices after BIOS has been upgraded. Therefore, we highly recommend reloading the BIOS defaults after BIOS has been upgraded. This important step resets everything after the flash.

(1) Take out the floppy diskette from floppy drive, and then restart the system. The boot up screen will indicate your motherboard model and current BIOS version.

(2) Don't forget to press <DEL> key to enter BIOS setup again when system is boot up. Use the arrows to highlight the item "LOAD SETUP DEFAULTS" then press "Enter". System will ask "Load Setup Defaults (Y/N)?" Press "Y" and "Enter" keys to confirm.



(3) Use the arrows to highlight the item "SAVE & EXIT SETUP" and press "Enter". System will ask "SAVE to CMOS and EXIT (Y/N)?" Press "Y" and "Enter" keys to confirm. Now the system will reboot automatically, the new BIOS setting will be taken effect next boot-up.



(4) Congratulate you have accomplished the BIOS flash procedure.

Appendix E: Acronyms

Acronyms	Meaning
ACPI	Advanced Configuration and Power Interface
APM	Advanced Power Management
AGP	Accelerated Graphics Port
AMR	Audio Modem Riser
ACR	Advanced Communications Riser
BIOS	Basic Input / Output System
CPU	Central Processing Unit
CMOS	Complementary Metal Oxide Semiconductor
CRIMM	Continuity RIMM
CNR	Communication and Networking Riser
DMA	Direct Memory Access
DMI	Desktop Management Interface
DIMM	Dual Inline Memory Module
DRM	Dual Retention Mechanism
DRAM	Dynamic Random Access Memory
DDR	Double Data Rate
ECP	Extended Capabilities Port
ESCD	Extended System Configuration Data
ECC	Error Checking and Correcting
EMC	Electromagnetic Compatibility
EPP	Enhanced Parallel Port
ESD	Electrostatic Discharge
FDD	Floppy Disk Device
FSB	Front Side Bus
HDD	Hard Disk Device
IDE	Integrated Dual Channel Enhanced
IRQ	Interrupt Request
I/O	Input / Output
IOAPIC	Input Output Advanced Programmable Input Controller
ISA	Industry Standard Architecture
LAN	Local Area Network

to be continued.....

Acronyms	Meaning
LBA	Logical Block Addressing
LED	Light Emitting Diode
MHz	Megahertz
MIDI	Musical Instrument Digital Interface
MTH	Memory Translator Hub
MPT	Memory Protocol Translator
NIC	Network Interface Card
OS	Operating System
OEM	Original Equipment Manufacturer
PAC	PCI A.G.P. Controller
POST	Power-On Self Test
PCI	Peripheral Component Interconnect
RIMM	Rambus in-line Memory Module
SCI	Special Circumstance Instructions
SECC	Single Edge Contact Cartridge
SRAM	Static Random Access Memory
SMP	Symmetric Multi-Processing
SMI	System Management Interrupt
USB	Universal Serial Bus
VID	Voltage ID

Technical Support/RMA Sheet

Customer/Country:	Company:	Phone No.:
Contact Person:	E-mail Add. :	

Model name/Lot Number:	PCB revision:
BIOS version:	O.S./A.S.:

Hardware Configuration	Mfs.	Model name	Size:	Driver/Utility:
CPU				
Memory Brand				
Video Card				
Audio Card				
HDD				
CD-ROM / DVD-ROM				
Modem				
Network				
AMR / CNR				
Keyboard				
Mouse				
Power supply				
Other Device				

Problem Description: