FCC Compliance Statement:

This equipment has been tested and found to comply with limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in residential installations. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television equipment reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

-Reorient or relocate the receiving antenna

-Move the equipment away from the receiver

-Plug the equipment into an outlet on a circuit different from that to which the receiver is connected

-Consult the dealer or an experienced radio/television technician for additional suggestions

You are cautioned that any change or modifications to the equipment not expressly approve by the party responsible for compliance could void Your authority to operate such equipment.

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

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-7DXE

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*** ☒ **EN60555-2**	Disturbances in supply systems caused by household appliances and similar electrical equipment "Harmonics"
☐ **EN55013**	Limits and methods of measurement of radio disturbance characteristics of broadcast receivers and associated equipment	☐ **EN61000-3-3*** ☒ **EN60555-3**	Disturbances in supply systems caused 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 immunity 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	☐ **EN 50091- 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**	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)

Signature : *Timmy Huang*

Date : Mar. 22, 2002   Name : Timmy Huang

7DXE

AMD Athlon™/Athlon™ XP/Duron™ Socket A Processor Motherboard

USER'S MANUAL

How This Manual Is Organized

This manual is divided into the following sections:

1) Revision List	Manual revision information
2) Item Checklist	Product item list
3) Features	Product information & specification
4) Installation Guide	Instructions on CPU & Memory Installation
5) Block Diagram	Product block diagram
6) Suspend to RAM & Q-Flash	Instructions on STR & Q-Flash installation
7) @BIOS™ & Easy Tune™ 4	@BIOS™ & Easy Tune™ 4 introduction
8) BIOS Setup	Instructions on setting up the BIOS software
9) Technical Support/RMA Sheet	Document equipment used for after sales service
10) Appendix	General reference

Table Of Content

Revision History

Revision	Revision Note	Date
3.1	Initial release of the 7DXE motherboard user's manual.	Jul. 2002

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.

Jul. 26, 2002 Taipei, Taiwan, R.O.C

Item Checklist

- ☑ The 7DXE Motherboard
- ☑ IDE cable x 1
- ☑ Floppy cable x 1
- ☑ CD for motherboard utilities
- ☑ 7DXE User's Manual
- ☑ Quick PC Installation Guide

Features Summary

Form Factor	• 30.5 cm x 24.5 cm ATX size form factor, 4 layers PCB.
CPU	• Socket A processor AMD Athlon™/Athlon™ XP/Duron™ (K7) Socket A processor 128K L1 & 256K/64K L2 cache on die • Supports 1.4GHz and faster • 200/266MHz FSB and DDR bus speeds (PCI 33MHz)
Chipset	7DXE, consisting of: • AMD 761 Memory/PCI/AGP Controller • VT82C686B PCI Super-I/O Integrated Peripheral Controller (PSIPC)
Memory	• 3 184-pin DDR DIMM sockets • Supports PC1600 DDR or PC2100 DDR SDRAM • Supports up to 3GB DRAM (Max) • Supports only 2.5V DDR SDRAM • Supports 64bit ECC type DRAM integrity mode
I/O Control	• VT82C686B
Slots	• 1 AGP slot supports 4X/2X mode & AGP 2.0 compliant • 5 PCI slots supports 33MHz & PCI 2.2 compliant
On-Board IDE	• IDE 1and IDE 2 Supports PIO mode 3, 4 UDMA 33 / ATA 66 / ATA100 IDE & ATAPI CD-ROM
On-Board Peripherals	• 1 floppy port supports 2 FDD with 360K, 720K, 1.2M, 1.44M and 2.88M bytes • 1 parallel ports supports Normal/EPP/ECP mode • 2 serial ports (COM A & COM B) • 2 x USB 1.1 by cable and 2 x USB 1.1 onboard • 1 IrDA connector for IR

To be continued…

Hardware Monitor	• CPU/System fan revolution detect
	• CPU/System temperature detect
	• System voltage detect
On-Board Sound	• CODEC Audio
	• Line In/Line Out/Mic In/CD_In/Game Port
PS/2 Connector	• PS/2® Keyboard interface and PS/2® Mouse interface
BIOS	• Licensed AWARD BIOS, 2M bit flash ROM
Additional Features	• Support External Modem Ring On
	• Support USB & PS/2 KB Wake up from S3
	• Includes 2 fan power connector
	• Poly fuse for keyboard over-current protection
	• Support STR (Suspend-To-RAM) function
	• Support @BIOS™ and Easy Tune™ 4

7DXE Motherboard Layout

Motherboard Ver: 2.0
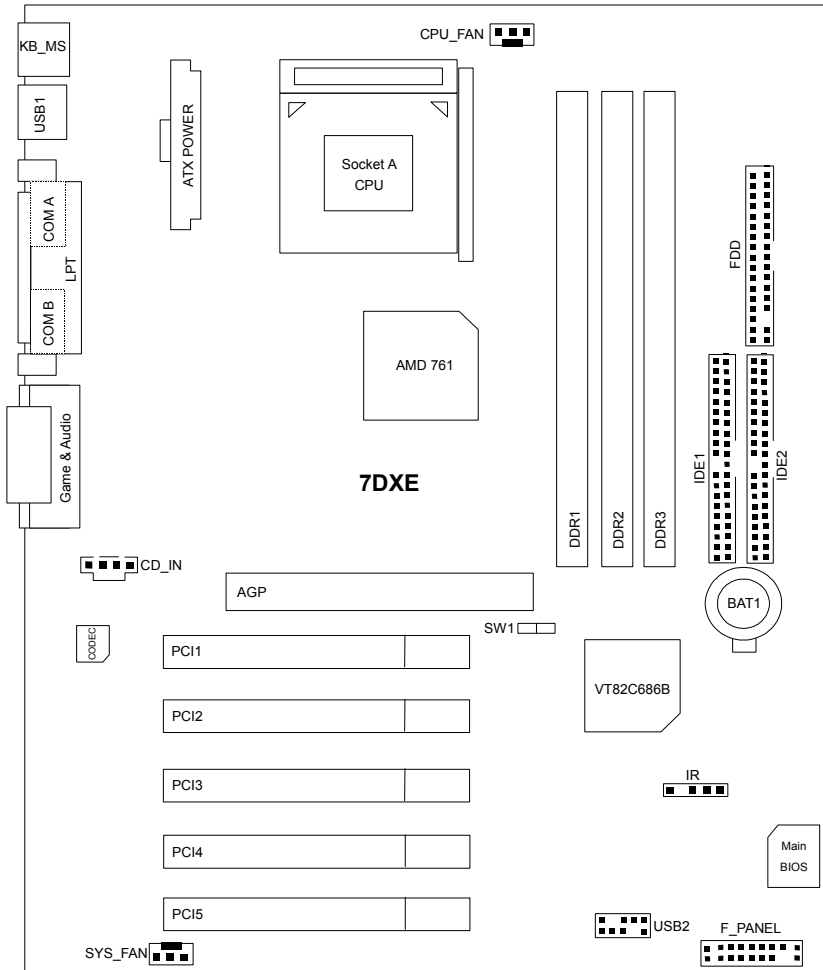
Motherboard Ver: 3.1
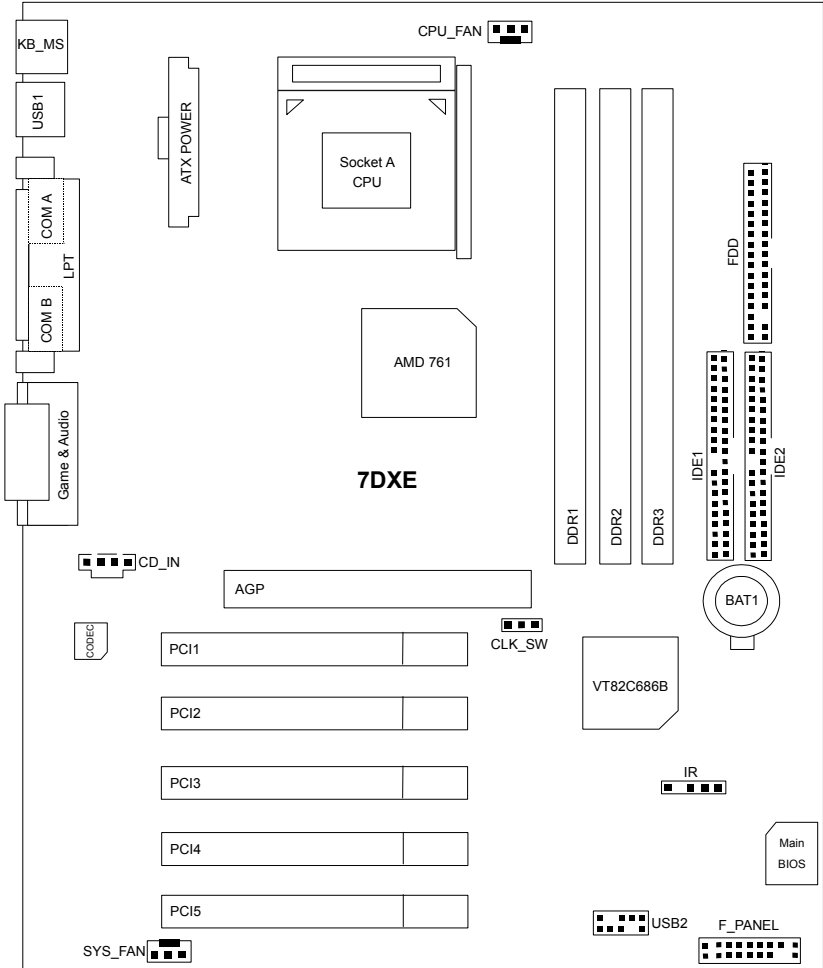
Installation Guide

Getting Started

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.

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

- Step 1 - Set system jumpers
- Step 2- Install the Central Processing Unit (CPU)
- Step 3-Install memory modules
- Step 4-Install expansion cards
- Step 5-Connect ribbon cables, cabinet wires, and power supply
- Step 6-Set up BIOS software
- Step 7-Install supporting software tools

Step 2   Step 3

Step 5   Step 5

Step 4

Step 1
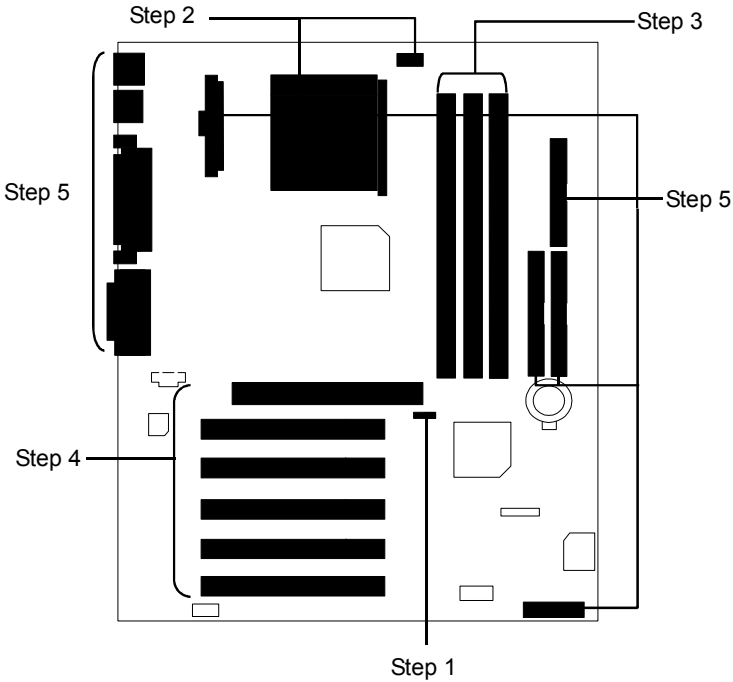
CPU Speed Setup

The system bus speed is selectable at 100/133MHz. The user can select the system bus speed by DIP switch **SW1*** or jumper CLK_SW**(For 100MHz or 133MHz). (The frequency ratio depend on CPU)

SW1: CPU FREQ.*

100 MHz (Default)
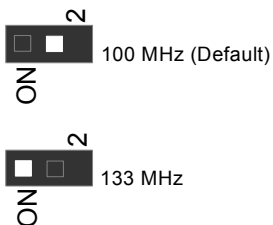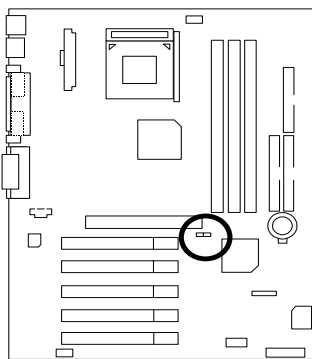
133 MHz

	OFF	ON
2	100MHz	133MHz

CLK_SW: CPU FREQ.**

1 100MHz (Default)
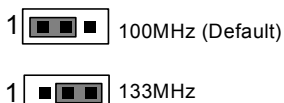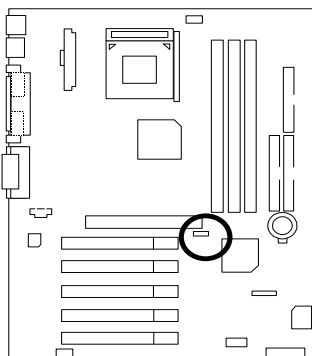
1 133MHz

Pin No.	Definition
1-2 Close	100MHz (Default)
2-3 Close	133MHz

＊**Please depend on your CPU frequency to setup.**

"*" For motherboard ver: 2.0 only.
"" For motherboard ver: 3.1 only.**

CPU Installation

Please make sure the CPU should be supported to the motherboard.
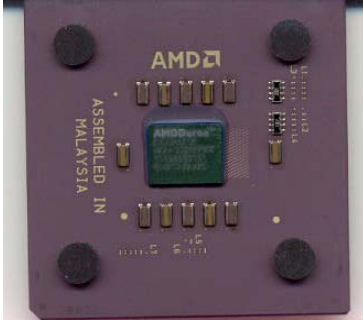
CPU Top View

CPU Bottom View

Socket Actuation Lever
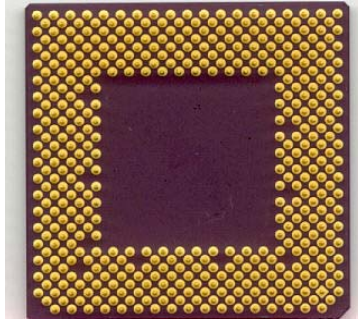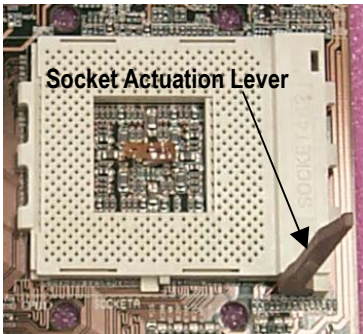
1. Pull up the CPU socket lever
   and up to 90-degree angle.
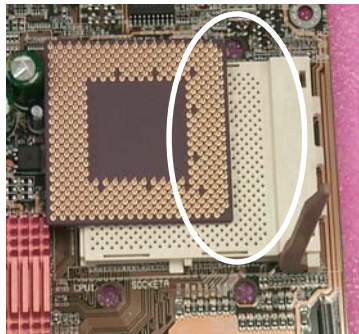
2. Locate Pin 1 in the socket and look
   for a (golden) cut edge on the CPU
   upper corner. Then insert the CPU
   into the socket.

CPU Heat Sink Installation:
Beware: Please check that the heat sink is in good contact with the CPU before you turn on your
system. **The poor contact will cause over heat, and might cause damage to your
processor!**
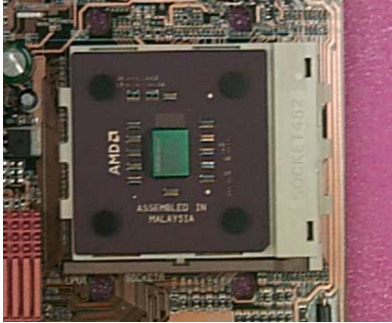
3.Align CPU and insert it

4.Use compliant fan approved by AMD.

(Please refer to your heatsink installation manual for application of thermal grease to provide better heat conduction between your CPU and heatsink.)
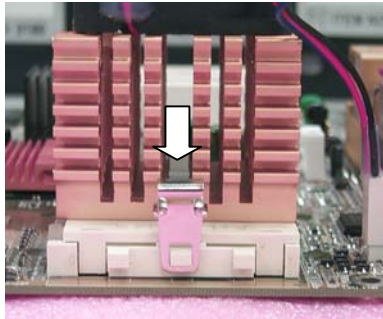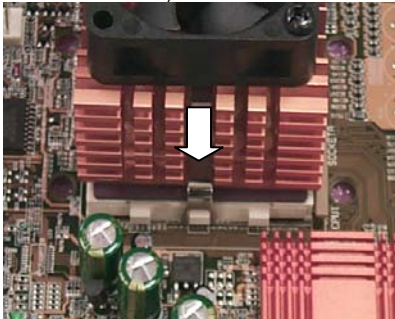
5.Hook one end of the cooler bracket to the CPU socket.

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

 (Please refer to the cooler's installation manual for detailed installation steps)

Memory Installation

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.

Total Memory Sizes With Registered DDR DIMM

Devices used on DIMM	1 DIMM x64/x72	2 DIMMs x64/x72	3 DIMMs x64/x72
64 Mbit (4Mx4x4 banks)	256 MBytes	512 MBytes	768 MBytes
64 Mbit (2Mx8x4 banks)	128 MBytes	256 MBytes	384 MBytes
64 Mbit (1Mx16x4 banks)	64 MBytes	128 MBytes	192 MBytes
128 Mbit (8Mx4x4 banks)	512 MBytes	1 GBytes	1.5 GBytes
128 Mbit (4Mx8x4 banks)	256 MBytes	512 MBytes	768 MBytes
128 Mbit (2Mx16x4 banks)	128 MBytes	256 MBytes	384 MBytes
256 Mbit (16Mx4x4 banks)	1 GBytes	2 GBytes	3 GBytes
256 Mbit (8Mx8x4 banks)	512 MBytes	1 GBytes	1.5 GBytes
256 Mbit (4Mx16x4 banks)	256 MBytes	512 MBytes	768 MBytes
512 Mbit (16Mx8x4 banks)	1 GBytes	2 GBytes	3 GBytes
512 Mbit (8Mx16x4 banks)	512 MBytes	1 GBytes	1.5 GBytes

Total Memory Sizes With Unbuffered DDR DIMM

Devices used on DIMM	1 DIMM x64/x72	2 DIMMs x64/x72	3 DIMMs x64/x72
64 Mbit (2Mx8x4 banks)	128 MBytes	256 MBytes	384 MBytes
64 Mbit (1Mx16x4 banks)	64 MBytes	128 MBytes	192 MBytes
128 Mbit (4Mx8x4 banks)	256 MBytes	512 MBytes	768 MBytes
128 Mbit (2Mx16x4 banks)	128 MBytes	256 MBytes	384 MBytes
256 Mbit (8Mx8x4 banks)	512 MBytes	1 GBytes	1.5 GBytes
256 Mbit (4Mx16x4 banks)	256 MBytes	512 MBytes	768 MBytes
512 Mbit (16Mx8x4 banks)	1 GBytes	2 GBytes	3 GBytes
512 Mbit (8Mx16x4 banks)	512 MBytes	1 GBytes	1.5 GBytes

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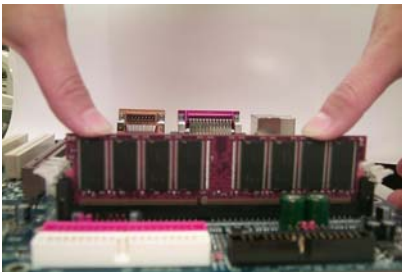
1. The DIMM slot has a notch, so the DIMM memory module can only fit in one direction.
2. Insert the DIMM memory module vertically into the DIMM slot. Then push it down.
3. Close the plastic clip at both edges of the DIMM slots to lock the DIMM module.

▶ Reverse the installation steps when you wish to remove the DIMM module.

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.

Connectors

ATX Power

Pin No.	Definition
3,5,7,13,15-17	GND
1,2,11	3.3V
4,6,19,20	VCC
10	+12V
12	-12V
18	-5V
8	Power Good
9	5V SB (stand by+5V)
14	PS-ON(Soft On/Off)

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

COM A / COM B / LPT Port

LPT Port

COM A   COM B
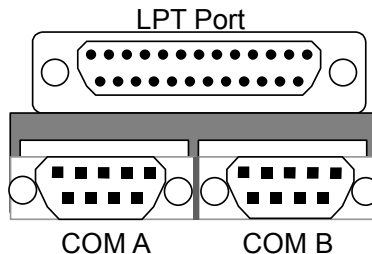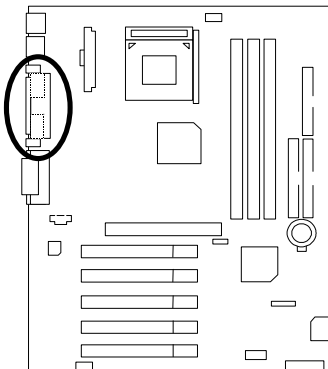
Please note:
This mainboard supports 2 standard COM ports and 1 LPT port. Device like printer can be connected to LPT port ; mouse and modem etc can be connected to COM ports.

PS/2 Keyboard & PS/2 Mouse Connector

PS/2 Mouse
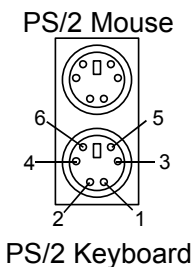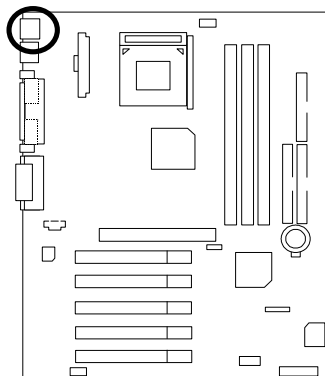
PS/2 Keyboard

PS/2 Mouse/ Keyboard	
Pin No.	Definition
1	Data
2	NC
3	GND
4	POWER
5	Clock
6	NC

Please note:
This mainboard supports standard PS/2 keyboard and PS/2 mouse interface commector.

USB1: Rear USB Connector

5 6 7 8

1 2 3 4
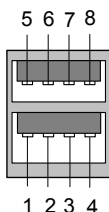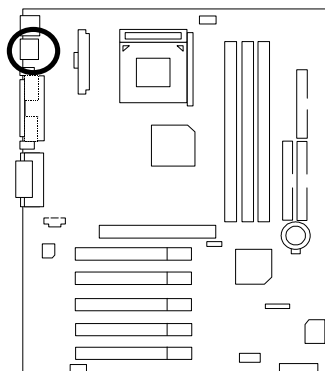
Pin No.	Definition
1	USB Power
2	USB D0-
3	USB D0+
4	GND
5	USB Power
6	USB D1-
7	USB D1+
8	GND

Please note:
Before you connect your device(s) into USB connector(s), please make sure your device(s) has a standard USB interface like, USB keyboard, mouse, scanner, zip, speaker… Also make sure your OS supports USB controller (Win 95 w/ USB supperment, Win98, Windows 2000, Windows ME, Win NT w/ SP 6). If your OS does not support USB controller, please contact OS vander for passible patch or driver upgrade. For more information please contact your OS or device(s) vanders.

USB2: USB Connector
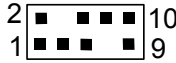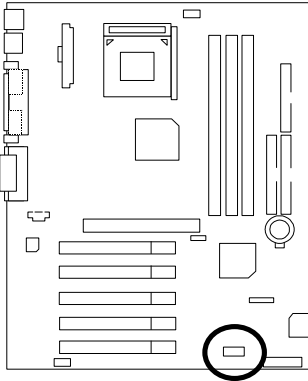
Pin No.	Definition
1	POWER
2	GND
3	USB D2-
4	NC
5	USB D2+
6	USB D3+
7	NC
8	USB D3-
9	GND
10	POWER

Please note:
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.

Floppy Port

RED LINE

Game & Audio Port

Game Port

Line Out 1
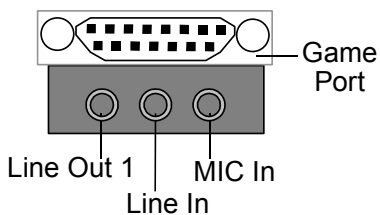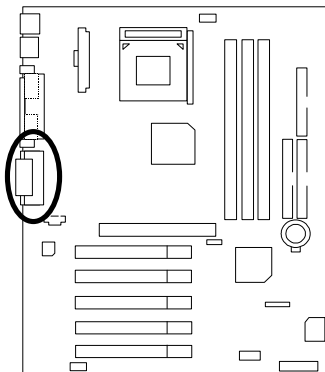
Line In

MIC In

⚠️ **Please note:**
This motherboard supports standard audio port and game port. After install onboard audio driver. you may connector speaker to line out jack, micro phone to MIC in jack Device like CD-ROM , walkman etc can be connected to line-in jack.

IDE1 (Primary), IDE2 (Secondary) Port

RED LINE

IDE 1   IDE 2
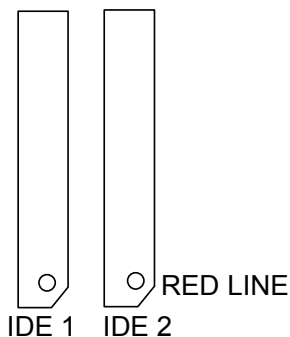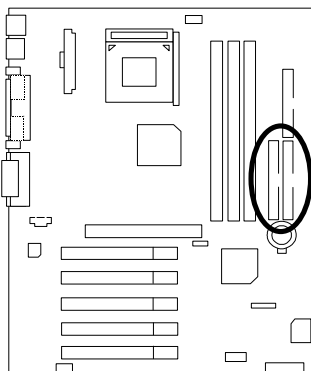
CD_IN: CD Audio Line In

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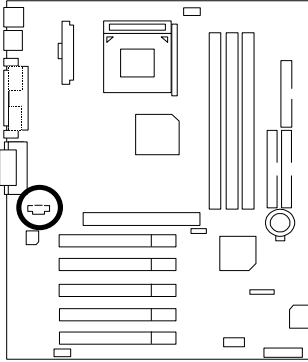
Pin No.	Definition
1	CD-L
2	GND
3	GND
4	CD-R

CPU_FAN: CPU Fan

1 [■ ■ ■]
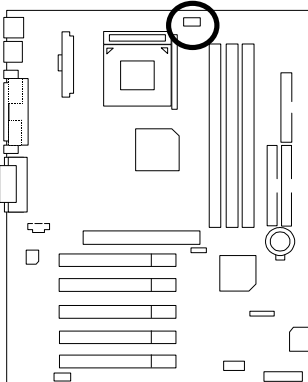
Pin No.	Definition
1	Control
2	+12V
3	SENSE

Please note:
A proper installation of the CPU cooler is essential to prevent the CPU from running under abnormal condition or damaged by overheating.

SYS_FAN: System Fan
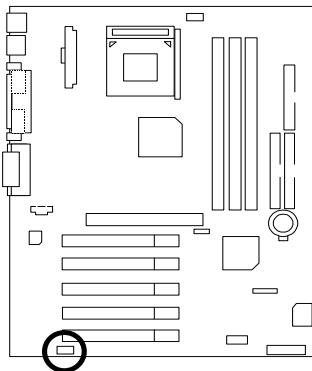
Pin No.	Definition
1	Control
2	+12V
3	SENSE

IR: IR Header
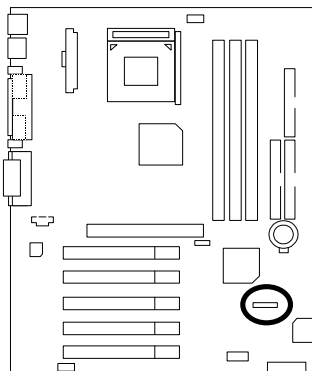
Pin No.	Definition
1	VCC (+5V)
2	NC
3	IR Data Input
4	GND
5	IR Data Output

Please note:
Be careful with the polarity of the IR connector while you connect the IR. Please contact you nearest dealer for optional IR device.

Panel And Jumper Definition

F_PANEL: For 2X11 Pins Jumper
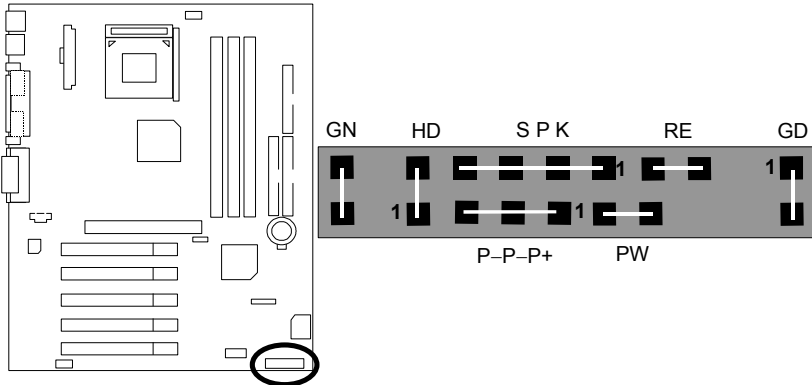
GN (Green Switch)	Open: Normal Operation Close: Entering Green Mode
GD (Green LED)	Pin 1: LED anode(+) Pin 2: LED cathode(−)
HD (IDE Hard Disk Active LED)	Pin 1: LED anode(+) Pin 2: LED cathode(−)
SPK (Speaker Connector)	Pin 1: VCC(+) Pin 2- Pin 3: NC Pin 4: Data(−)
RE (Reset Switch)	Open: Normal Operation Close: Reset Hardware System
P+P−P−(Power LED)	Pin 1: LED anode(+) Pin 2: LED cathode(−) Pin 3: LED cathode(−)
PW (Soft Power Connector)	Open: Normal Operation Close: Power On/Off

Please note:
Please connect the power LED, PC speaker, reset switch and power switch etc of your chassis front panel to the front panel jumper according to the pin assignment above.

BAT1: Battery
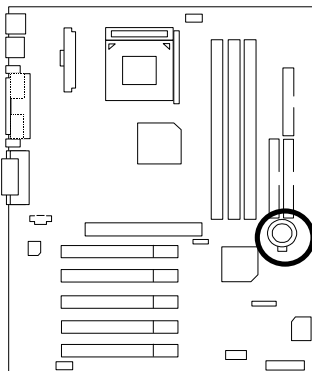
CAUTION

- 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.

Block Diagram

AMD-K7™

CPUCLK (100/133MHz)

AGP
2X/4X

AGPCLK (66MHz)

System Bus 100/133MHz

AMD
761

2.5V DDR SDRAM

100/133MHz

HCLK (100/133MHz)

NPCLK (33MHz)

AGPCLK (66MHz)

PCI Bus 33MHz

33MHz
14.318MHz

48MHz

VT82C
686B

AC-Link

AC97
CODEC

PS/2   Floppy   LPT Port

4 USB Ports

5 PCI

PCI (33MHz)

Game Port

COM Ports

ATA66/100 IDE
Channels

AGPCLK (66MHz)
PCI (33MHz)
48MHz
14.318MHz
33MHz

ICS
94240

HCLK (100/133MHz)
NPCLK (33MHz)
AGPCLK (66MHz)
CPUCLK (100/133MHz)

Suspend To RAM Installation

A.1 Introduce STR function:

Suspend-to-RAM (STR) is a Windows 98/ME/2000 ACPI sleep mode function. When recovering from STR (S3) sleep mode, the system is able, in just a few seconds, to retrieve the last "state" of the system before it went to sleep and recover to that state. The "state" is stored in memory (RAM) before the system goes to sleep. During STR sleep mode, your system uses only enough energy to maintain critical information and system functions, primarily the system state and the ability to recognize various "wake up" triggers or signals, respectively.

A.2 STR function Installation

Please use the following steps to complete the STR function installation.

Step-By-Step Setup

Step 1:

To utilize the STR function, the system must be in Windows 98/ME/2000 ACPI mode.

Putting Windows 98/ME/2000 into ACPI mode is fairly easy.

Setup with Windows 98/ME/2000 CD:

A.   Insert the Windows 98/ME/2000 CD into your CD-ROM drive, select Start, and then Run.

B.   Type (without quotes) **"D:\setup "** in the window provided. Hit the enter key or click OK.

C.   After setup completes, remove the CD, and reboot your system

        (This manual assumes that your CD-ROM device drive letter is D:).

Step 2:

Power on the computer and as soon as memory counting starts, press <Del>. You will enter BIOS Setup. Select the item **"POWER MANAGEMENT SETUP",** then select **"ACPI Sleep Type: S3(STR)"**. Remember to save the settings by pressing "ESC" and choose the **"SAVE & EXIT SETUP"** option.

Congratulation! You have completed the installation and now can use the STR function.

A.3 How to put your system into STR mode? (For example: Windows ME)

There are two ways to accomplish this:

1.   Choose the "Stand by" item in the "Shut Down Windows" area.

A.   Press the "Start" button and then select "Shut Down"
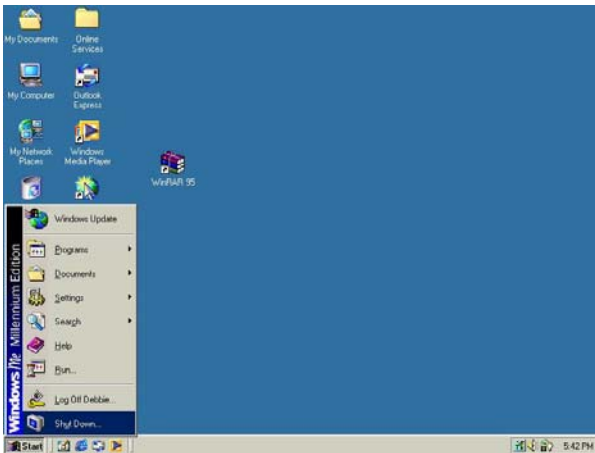
B. Choose the "Stand by" item and press "OK"
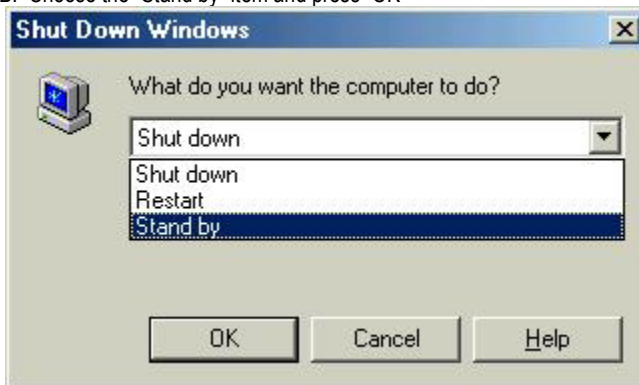
2. Define the system "power on" button to initiate STR sleep mode:

A. Double click "My Computer" and then "Control Panel"

B. Double click the " Power Management" item.
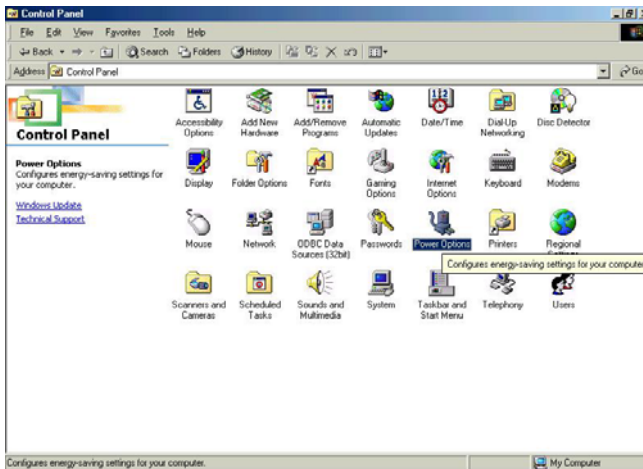
C.   Select the "Advanced" tab and "Standby" mode in Power Buttons.
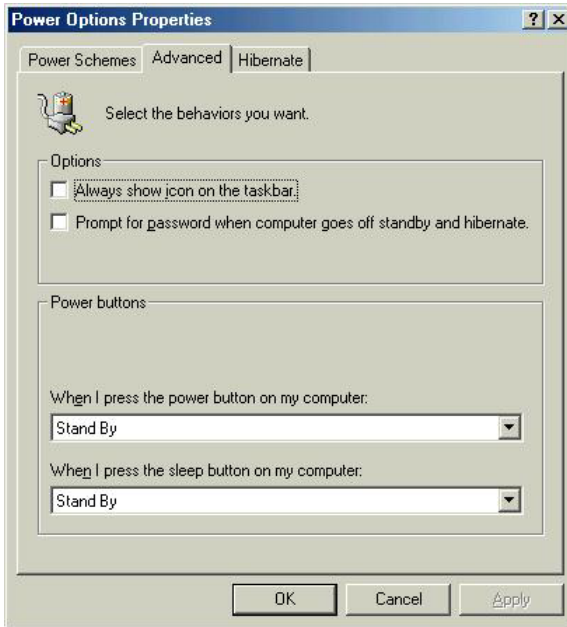
D.   Restart your computer to complete setup.

Now when you want to enter STR sleep mode, just momentarily press the "Power on" button.

A.4 How to recover from the STR sleep mode?

There are four ways to "wake up" the system:

1. Press the "Power On" button.
2. Use the "Resume by Alarm" function.
3. Use the "Wake On LAN" function.
4. Use the "USB Device Wake up" function.

A.5 Notices:

1. In order for STR to function properly, several hardware and software requirements must be satisfied:

    A.   Your ATX power supply must comply with the ATX 2.01 specification (provide more than 720 mA 5V Stand-By current).

    B.   Your DDR SDRAM must be DDR-200 or DDR-266 compliant.

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.

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

   ▶ Standard CMOS Features          Top Performance

   ▶ Advanced BIOS Features          Load Fail-Safe Defaults

   ▶ Integrated Peripherals          Load Optimized Defaults

   ▶ Power Ma
                    Enter Q-Flash Utility (Y/N)? Y
   ▶ PnP/PCI

   ▶ 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…
```

b-1. Q-Flash Utility

```
                 Q-Flash Utility      V3.07

   Flash Type/Size :            SST 39SF020 / 256K
   Keep DMI Data :              Yes



                    Load BIOS from Floppy

                    Save BIOS to Floppy

                  Space Bar: Change Value
   Enter : Run          ESC : Reset        ↑↓ : Select Item
```

Load BIOS From Floppy

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

```
─────────────── 1 File(s) found ───────────────
▶XXXX.XX                                              256K

   Total Size: 1.39M                    Free Size: 1.44M
   F5: Refresh           DEL: Delete    ESC: Return Main
```
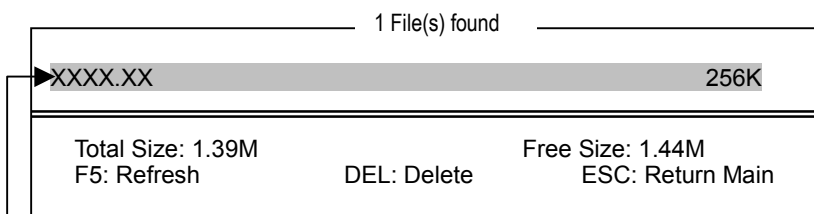
Where XXXX.XX is name of the BIOS file.

✍ Press Enter to Run.

```
Are you sure to update BIOS?

[Enter] to Continue Or [Esc] to abort.
```

✍ Press Enter to Run.

```
!! COPY BIOS Completed –Pass !!

Please press any key to continue
```
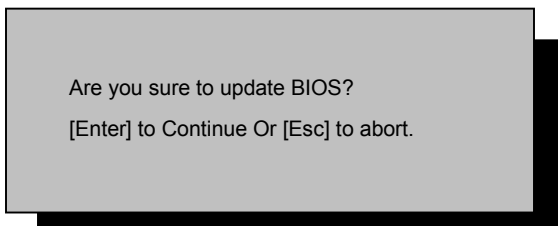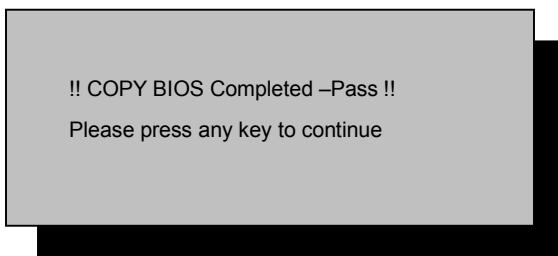
Congratulation! You have completed the flashed and now can restart system.

@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 internet and 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.

BIOS Setup

BIOS Setup is an overview of the BIOS Setup Interface. The interface allows users to modify the basic system configuration, which is stored in battery-backed CMOS RAM so that the Setup information can be retained 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
<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. : F4b)

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 nine setup functions and two exit choices. Use arrow keys to select among the items and press <Enter> to accept or enter the sub-menu.

CMOS Setup Utility-Copyright(C) 1984-2002 Award Software	
▶ 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 adjustable items in standard compatible BIOS.

- **Advanced BIOS Features**

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

- **Integrated Peripherals**

  This setup page includes all onboard peripherals.

- **Power Management Setup**

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

- **PnP/PCI Configurations**

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

- **PC Health Status**

  This setup page is for monitoring system status such as temperature, voltage, and fan speed.

- **Frequency/Voltage Control**

  This setup page is for controlling CPU 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**

  Load Fail-Safe Defaults option loads preset system parameter values to set the system in its most stable configurations.

- **Load Optimized Defaults**

  Load Optimized Defaults option loads preset system parameter values to set the system in its highest performance configurations.

- **Set Supervisor Password**

  Set Change or disable password. It allows you to limit access to the system and/or BIOS setup.

- **Set User Password**

  Set Change 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

The items in Standard CMOS Setup Menu (Figure 2) are divided into 9 categories. Each category includes none, one or more than one setup items. Use the arrows to highlight the item and then use the <PgUp> or <PgDn> keys to select the value in each item.

CMOS Setup Utility-Copyright(C) 1984-2002 Award Software Standard CMOS Features		
Date (mm:dd:yy)	Thu, Jul 11 2002	Item Help
Time (hh:mm:ss)	2 : 31 : 24	Menu Level ▶
▶ IDE Primary Master	None	Change the day, month,
▶ IDE Primary Slave	None	year
▶ IDE Secondary Master	None	
▶ IDE Secondary Slave	None	<Week>
		Sun. to Sat.
Drive A	1.44M, 3.5 in.	
Drive B	None	<Month>
Floppy 3 Mode Support	Disabled	Jan. to Dec.
		<Day>
Halt On	All, But Keyboard	1 to 31 (or maximum
		Allowed in the month)
Base Memory Size	640K	
Extended Memory Size	63488K	<Year>
Total Memory	64512K	1999 to 2098

↑↓→ ←: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 based on the 24-hour military-time clock. For example, 1 p.m. is 13:00:00.

- **IDE Primary Master / Slave, Secondary Master / Slave**

  The category identifies the type of hard disk from drive C to F that has been installed in the computer. There are two settings: Auto, and Manual. Manual: HDD type is user-definable; Auto 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 type 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.
All Errors	The system boot will stop on any error detected.
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 Size

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

640 K for systems with 640 K or more memory installed on the motherboard.

Extended Memory Size

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

```
............................................................................................................
  CMOS Setup Utility-Copyright( C ) 1984-2002 Award Software
                  Advanced BIOS Features
```

First Boot Device	Floppy	Item Help
Second Boot Device	HDD-0	Menu Level ▶
Third Boot Device	CDROM	Select Boot Device
Boot Up Floppy Seek	Disabled	Priority
VGA Boot from	AGP	
		[Floppy]
		Boot from floppy
		[LS120]
		Boot from LS120
		[HDD-0]
		Boot from First HDD
		[HDD-1]
		Boot form second HDD

Figure 3: Advanced BIOS Features

● **First / Second / Third Boot Device**

Floppy	Set your boot device priority to Floppy.
LS120	Set your boot device priority to LS120.
HDD-0~3	Set your boot device priority to HDD-0~3.
SCSI	Set your boot device priority to SCSI.
CDROM	Set your boot device priority to CDROM.
ZIP	Set your boot device priority to ZIP.
Disabled	Disable this function.
USB-FDD	Set your boot device priority to USB-FDD.
USB-ZIP	Set your boot device priority to USB-ZIP.
USB-CDROM	Set your boot device priority to USB-CDROM.
USB-HDD	Set your boot device priority to USB-HDD.
LAN	Set your boot device priority to LAN.

- **Boot Up Floppy Seek**

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

Enabled	BIOS searches for floppy disk drive to determine if it is 40 or 80 tracks. Note that BIOS can't differentiate between from 720, 1.2 or 1.44 drive type as they are all 80 tracks.
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. **(Default Value)**

- **VGA Boot from**

PCI Slot	Set VGA Boot from PCI VGA Card.
AGP	Set VGA Boot from AGP VGA Card. **(Default value)**

Integrated Peripherals

```
.....................................................................................................
               CMOS Setup Utility-Copyright( C ) 1984-2002 Award Software
                              Integrated Peripherals
 ┌─────────────────────────────────────────────────────┬───────────────────────┐
 │ IDE1 Conductor Cable            Auto                  │      Item Help        │
 │ IDE2 Conductor Cable            Auto                  │ Menu Level  ▸         │
 │ OnBoard IDE1                    Enabled               │                       │
 │ OnBoard IDE2                    Enabled               │ [Auto]                │
 │ USB Controller 1                Enabled               │ Auto-detect IDE       │
 │ USB Controller 2                Enabled               │ cable type            │
 │ USB Legacy Support              Disabled              │                       │
 │ AC97 Audio                      Auto                  │ [ATA66/100]           │
 │ Enhance ATAPI Performance       Disabled              │ Set Conductor Cable   │
 │ Onboard Serial Port A           Auto                  │ to ATA66/100 (80-Pins)│
 │ Onboard Serial Port B           Auto                  │                       │
 │ Serial Port B Mode              Normal                │ [ATA33]               │
 │ ※Duplex Mode                    Half                  │ Set Conductor Cable   │
 │ Onboard Parallel Port           378/IRQ7              │ to ATA33 (40-Pins)    │
 │ Onboard Parallel Mode           ECP                   │                       │
 │ ECP Mode Use DMA                3                     │                       │
 │ Game Port (200-207H)            Enabled               │                       │
 │                                                       │                       │
 └─────────────────────────────────────────────────────┴───────────────────────┘
 ↑↓→ ←: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

※ This item will be available when "Serial Port B Mode" is set to HPSIR or ASKIR.

● **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).

● **OnBoard IDE1**

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

● **OnBoard IDE2**

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

● **USB Controller 1**

Enabled	Enable USB Controller 1. **(Default value)**
Disabled	Disable USB Controller 1.

● **USB Controller 2**

Enabled	Enable USB Controller 2. **(Default value)**
Disabled	Disable USB Controller 2.

● **USB Legacy Support**

Enabled	Enable USB Device (Such as USB KB, Mouse) support in Legacy Mode, eg. DOS. Win NT4.0.
Disabled	Disable OnBoard Legacy Audio. **(Default Value)**

● **AC97 Audio**

Auto	Enable onboard AC'97 audio function. **(Default Value)**
Disabled	Disable this function.

- **Enhance ATAPI Performance**

  If you wish to maximize the performance of your ATAPI devices , set "Enhance ATAPI Performance" as "Enabled" . Please note, enabling this function may cause your ATAPI devices   become unstable. For power End-User use only.

Disabled	Disable Enhance ATAPI Performance. **(Default Value)**
Enabled	Enhance ATAPI Performance function.

- **Onboard Serial Port A**

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

- **Onboard Serial Port B**

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

- **Serial Port B Mode**

  (This item allows you to determine which serial port B Mode of onboard I/O chip)

Normal	Normal serial port B operation. **(Default Value)**
HPSIR	Set onboard I/O chip serial port B to HPSIR Mode.
ASKIR	Set onboard I/O chip serial port B to ASKIR Mode.

- **Duplex Mode**

Half	Half Duplex Mode. **(Default Value)**
Full	Full Duplex Mode.

- **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.

- **Onboard Parallel Mode**

Normal	Normal Operation.
EPP	Using Parallel port as Enhanced Parallel Port.
ECP	Using Parallel port as Extended Capabilities Port. **(Default value)**
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 (200-207H)**

Disabled	Disable Game Port (200-207H).
Enabled	Enable Game Port (200-207H). **(Default Value)**

Power Management Setup

```
         CMOS Setup Utility-Copyright( C ) 1984-2002 Award Software
                       Power Management Setup
```

		Item Help
ACPI Sleep Type	S1(POS)	Menu Level ▶
Suspend Time Out (Minute)	Disabled	
Soft-Off by PBTN	Instant-off	
System after AC Back	Off	
PME Event Wake Up	Enabled	
ModemRingOn/WakeOnLan	Enabled	
Resume by RTC Alarm	Disabled	
X Date (of Month) Alarm	0	
X Time (hh:mm:ss) Alarm	0 : 0 : 0	

```
↑↓→ ←: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 Sleep Type**

S1 (POS)	Set ACPI Sleep Type to S1 (Power On Suspend). **(Default value)**
S3 (STR)	Set ACPI Sleep Type to S3 (Suspend to RAM).

- **Suspend Time Out (Minute)**

Disabled	Disable Suspend Time Out Function. **(Default Value)**
30 Sec - 1 Hour	Set the timer to enter Suspend Time Out.

- **Soft-off by PBTN**

Instant-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**

Last State	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.

- **PME Event Wake Up**

Disabled	Disable PME event wake up function.
Enabled	The PME event wake up will bring the system out of soft-off or suspend state if this option is set "Enabled". **(Default Value)**

- **ModemRingOn/WakeOnLan**

Disabled	Disable Modem Ring On / Wake On LAN function.
Enabled	The modem ring / LAN wake up will bring the system out of soft-off or suspend state if this option is set "Enabled". **(Default Value)**

- **Resume by RTC Alarm**

  You can set "Resume by RTC 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 or wake up system from sleep mode.

  If the default value is Enabled.

Date (of Month) Alarm :	0~31
Time (hh: mm: ss) Alarm :	(0~23) : (0~59) : (0~59)

PnP/PCI Configurations

```
....................................................................................................
          CMOS Setup Utility-Copyright( C ) 1984-2002 Award Software
                          PnP/PCI Configurations
.....................................................................................................
   PCI 4 IRQ Assignment          Auto            │       Item Help
   PCI 1/5 IRQ Assignment        Auto            │    Menu Level ▸
   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
.....................................................................................................
```
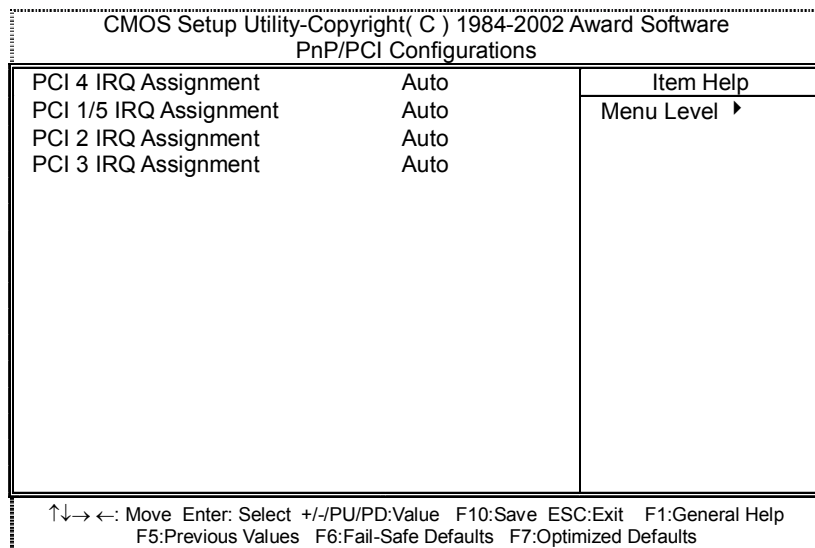
Figure 6: PnP/PCI Configurations

- **PCI 4 IRQ Assignment**

Auto	Auto assign IRQ to PCI4. (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 PCI4.

- **PCI 1/5 IRQ Assignment**

Auto	Auto assign IRQ to PCI1/5. (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 PCI1/5.

- **PCI 2 IRQ Assignment**

Auto	Auto assign IRQ to PCI2. (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 PCI2.

- **PCI 3 IRQ Assignment**

Auto	Auto assign IRQ to PCI3. (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 PCI3.

PC Health Status

```
╔════════════════════════════════════════════════════════════════════╗
        CMOS Setup Utility-Copyright( C ) 1984-2002 Award Software
                           PC Health Status
╠═══════════════════════════════════════════════════╦════════════════╣
   CPU Fan Warning                    No                 Item Help
   System Fan Warning                 No              Menu Level  ▸
   Shutdown Temperature               Disabled **
   Current CPU Temp.                  33°C/91°F
   Current System Temp.               27°C/80°F
   Current CPU Fan Speed              5553 RPM
   Current System Fan Speed           0 RPM
   Vcore                              1.63V
   3.3V                               3.31V
   5V                                 5.10V
   12V                                12.42V



╠═══════════════════════════════════════════════════╩════════════════╣
   ↑↓→ ←: 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

- **CPU Fan Warning**

No	Disable this function. **(Default value)**
Yes	Enable CPU Fan Warning function to display warning message when CPU Fan speed is under lower limit RPM.

- **System Fan Warning**

No	Disable this function. **(Default value)**
Yes	Enable System Fan Warning function to display warning message when System Fan speed is under a lower limit RPM.

- **Shutdown Temperature ****

Disabled	Disable this function. **(Default value)**
80°C / 176°F	Set Shutdown Temperature to 80°C / 176°F.

"**" For motherboard ver: 3.1 only.

85°C / 185°F	Set Shutdown Temperature to 85°C / 185°F.
90°C / 194°F	Set Shutdown Temperature to 90°C / 194°F.
95°C / 203°F	Set Shutdown Temperature to 95°C / 203°F.
100°C / 212°F	Set Shutdown Temperature to 100°C / 212°F.
105°C / 221°F	Set Shutdown Temperature to105°C / 221°F.

- **Current CPU Temp. (°C / °F)**

  Detect CPU Temperature automatically.

- **Current System Temp. (°C / °F)**

  Detect System Temperature automatically.

- **Current CPU Fan / System Fan Speed (RPM)**

  Detect Fan speed status automatically.

- **Voltage (V) Vcore / 3.3V / 5V / 12V**

  Detect system's voltage status automatically.

Frequency/Voltage Control

```
CMOS Setup Utility-Copyright( C ) 1984-2002 Award Software
                    Frequency/Voltage Control
┌──────────────────────────────────────────────┬──────────────────┐
│ CPU Frequency Control          Disabled       │    Item Help     │
│ X CPU Clock                    100            │ Menu Level  ▶    │
│                                               │                  │
│                                               │                  │
│                                               │                  │
│                                               │                  │
│                                               │                  │
│                                               │                  │
│                                               │                  │
│                                               │                  │
│                                               │                  │
│                                               │                  │
│                                               │                  │
└──────────────────────────────────────────────┴──────────────────┘
  ↑↓→ ←: Move  Enter: Select  +/-/PU/PD:Value  F10:Save  ESC:Exit   F1:General Help
        F5:Previous Values  F6:Fail-Safe Defaults  F7:Optimized Defaults
```
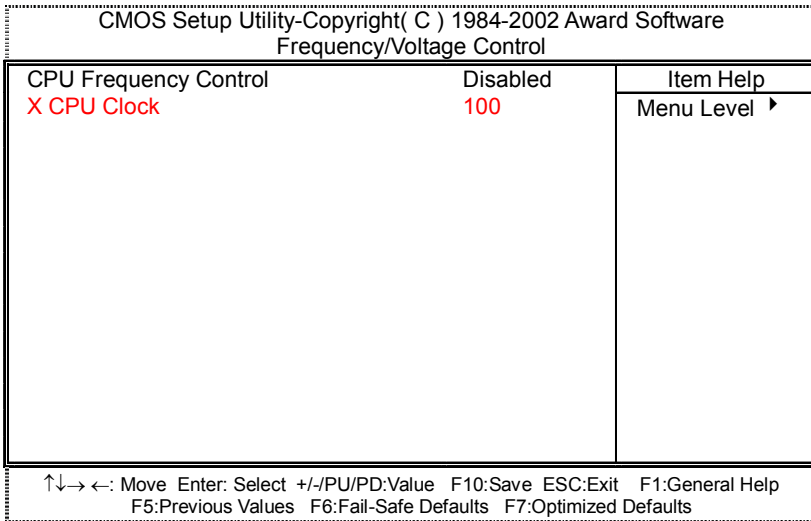
Figure 8: Frequency/Voltage Control

- **CPU Frequency Control**

Disabled	Disable this function. **(Default value)**
Enabled	Enable this function to setup your CPU clock.

- **CPU Clock**

  This item will be available when "CPU Frequency" is set to Enabled. Incorrect using it may cause your system broken. For power End-User use only!

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

Top Performance

CMOS Setup Utility-Copyright(C) 1984-2002 Award Software

▸ Standard CMOS Features

▸ Advanced BIOS Features

▸ Integrated P

▸ Power Mana

▸ PnP/PCI Co

▸ PC Health S

▸ Frequency/\

Top Performance

Load Fail - Safe Defaults

Top Performance

Disabled……..[■]

Enabled……..[   ]

ESC:Quit
F8: Q-Flash

↑↓: Move   ENTER: Accept
ESC: Abort
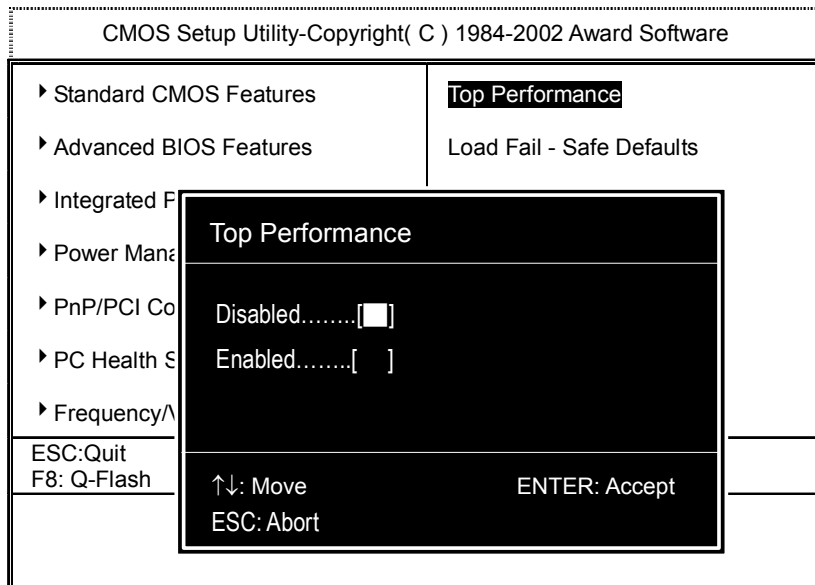
Figure 9: Top Performance

● **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

```
CMOS Setup Utility-Copyright( C ) 1984-2002 Award Software
```

▶ Standard CMOS Features	Top Performance
▶ Advanced BIOS Features	Load Fail - Safe Defaults
▶ Integrated Peripherals	Load Optimized Defaults
▶ Power Ma	
▶ PnP/PCI C	Load Fail-Safe Defaults (Y/N)? N
▶ PC Health Status	Save & Exit Setup
▶ Frequency/Voltage Control	Exit Without Saving

```
ESC:Quit                          ↑↓→ ← : Select Item
F8: Q-Flash                       F10:Save & Exit Setup

                   Load Fail-Safe Defaults
```

Figure 10: Load Fail-Safe Defaults

● **Load Fail-Safe Defaults**

Fail−Safe defaults contain the most appropriate system parameter values of to configure the system to achieve maximum stability.

Load Optimized Defaults

```
CMOS Setup Utility-Copyright( C ) 1984-2002 Award Software

   ▶ Standard CMOS Features          Top Performance

   ▶ Advanced BIOS Features          Load Fail-Safe Defaults

   ▶ Integrated Peripherals          Load Optimized Defaults

   ▶ Power Man                       
                   Load Optimized Defaults (Y/N)? N
   ▶ PnP/PCI Co                      

   ▶ PC Health Status                Save & Exit Setup

   ▶ Frequency/Voltage Control       Exit Without Saving

ESC:Quit                      ↑↓→ ← : Select Item
F8: Q-Flash                   F10:Save & Exit Setup

                  Load Optimized Defaults
```

Figure 11: Load Optimized Defaults

- **Load Optimized Defaults**

   Optimized defaults contain the most appropriate system parameter values to configure the system to achieve maximum performance.

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.

CMOS Setup Utility-Copyright(C) 1984-2002 Award Software	
‣ Standard CMOS Features	Top Performance
‣ Advanced BIOS Features	Load Fail-Safe Defaults
‣ Integrated Peripherals	Load Optimized Defaults
‣ Power Mana	Enter Password:
‣ PnP/PCI Con	
‣ PC Health Status	Save & Exit Setup
‣ Frequency/Voltage Control	Exit Without Saving
ESC:Quit ↑↓→ ← : Select Item F8: Q-Flash F10:Save & Exit Setup	
Change / Set / Disable Password	

Figure 12: Password Setting

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: a **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 Advanced BIOS Feature 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 Advanced BIOS Feature Menu, you will be prompted only when you try to enter Setup.

Save & Exit Setup

CMOS Setup Utility-Copyright(C) 1984-2002 Award Software	
▶ Standard CMOS Features	Top Performance
▶ Advanced BIOS Features	Load Fail-Safe Defaults
▶ Integrated Peripherals	Load Optimized Defaults
▶ Power Man	
▶ PnP/PCI Co	SAVE to CMOS and EXIT (Y/N)? Y
▶ PC Health Status	Save & Exit Setup
▶ Frequency/Voltage Control	Exit Without Saving
ESC:Quit ↑↓→←: Select Item	
F8: Q-Flash F10:Save & Exit Setup	
Save Data to CMOS	

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

CMOS Setup Utility-Copyright(C) 1984-2002 Award Software	
▸ Standard CMOS Features	Top Performance
▸ Advanced BIOS Features	Load Fail-Safe Defaults
▸ Integrated Peripherals	Load Optimized Defaults
▸ Power Man	Quit Without Saving (Y/N)? N
▸ PnP/PCI Co	
▸ PC Health	Save & Exit Setup
▸ Frequency/Voltage Control	Exit Without Saving
ESC:Quit F8: Q-Flash	↑↓→ ← : Select Item F10:Save & Exit Setup
Abandon all Data	

Figure 14: Exit Without Saving

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

Type "N" will return to Setup Utility.

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:

_____

_____

Appendix

Picture below are shown in Windows XP (TUCD driver version 2.1)

Appendix A: AMD 761_VIA 686A/B Chipsets Driver Installation

A.USB Patch Driver: Enable S3 for USB Device Setup is preparing the InstallShield(R) Wizard which will guide you through the setup process.

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.Click "USB Patch Driver" item.

(1)

Setup

Enable S3 for USB Device Setup is preparing the InstallShield(R) Wizard which will guide you through the rest of the setup process. Please wait.

100 %

(2)

2.Click "Finish" to restart computer.

(3)

Appendix B: VIA AC'97 Audio Driver 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.

Press "Audio" icon.

VIA AC'97 Audio Driver

Onboard Sound Device Driver :

VIA AC'97 Audio Driver

Browse this Directory

1.Click "VIA AC'97 Audio Driver".

(1)

VIA PCI Audio Driver Setup Program Setup is preparing the InstallShield(R) Wizard which will guide you through the rest of the setup process. Please wait.

99 %

(2)

Welcome to the VIA Audio Driver Setup Program Setup program. This program will install VIA Audio Driver Setup Program on your computer.

It is strongly recommended that you exit all Windows programs before running this Setup program.

Click Cancel to quit Setup and then close any programs you have running. Click Next to continue with the Setup program.

2.Click "Next".

(3)

Select Install or Uninstall.

○ Install driver
○ Uninstall driver

3.Click "Next".

(4)

Setup has finished installing VIA Audio Driver Setup Program on your computer.

Setup can launch the Read Me file and VIA Audio Driver Setup Program. Choose the options you want below.

4.Click "Finish" to restart computer.

(5)

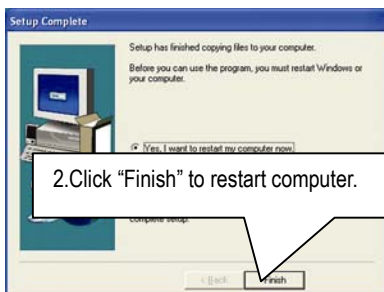## Appendix C: EasyTune 4 Utilities Installation

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.
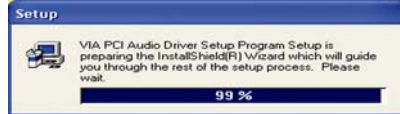

Press "Tools" icon.

1.Click "Gigabyte Utilities".

(1)

2.Click "Easy Tune 4 Trial Version".

(2)

3.Click "Next".

(3)

4.Click "Next".

(4)

EasyTune4 Build 02.040301

(5)

5. Click "Finish" to restart computer.
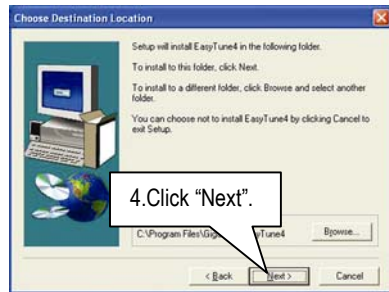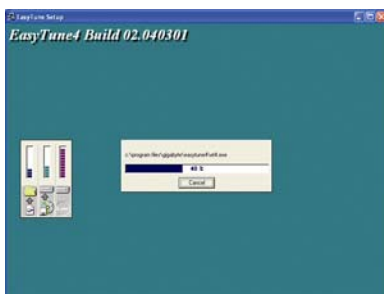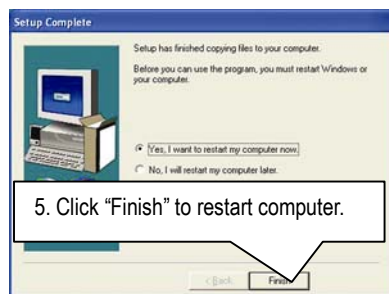
(6)

Appendix D: BIOS Flash Procedure

BIOS update procedure:

Method 1:

If you don't have DOS boot disk, we recommend that you used Gigabyte @BIOS™ Program to flash BIOS.
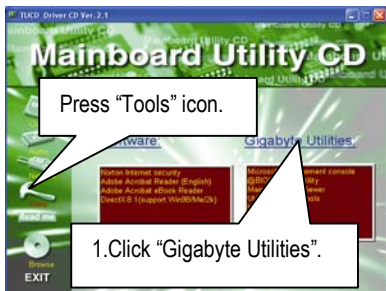
(1)

(2)
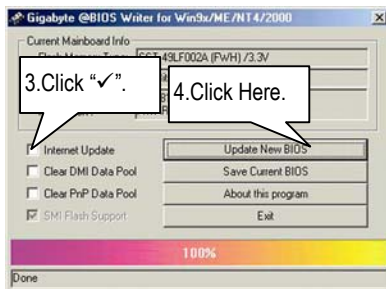
(3)
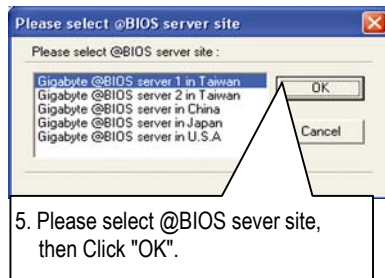
(6)

Methods and steps:

I. Update BIOS through Internet

a. Click "Internet Update" icon

b. Click "Update New BIOS" icon

c. Select @BIOS™ sever

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: 7DXE.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 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^{TM} 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)"
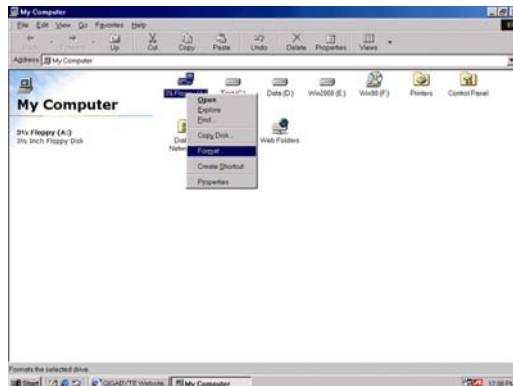
(2) Select the "Quick (erase)" for Format Type, and pick both "Display summary when finished" and "Copy system files", after that press "Start".   That will format the floppy and transfer the needed system files to it.

Beware: This procedure will erase all the prior data on that floppy, so please proceed accordingly.
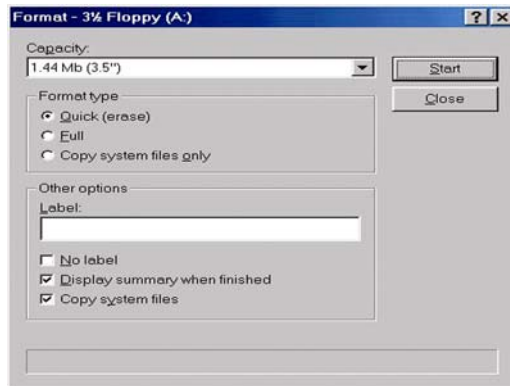
(3) After the floppy has been formatted completely, please press "Close".
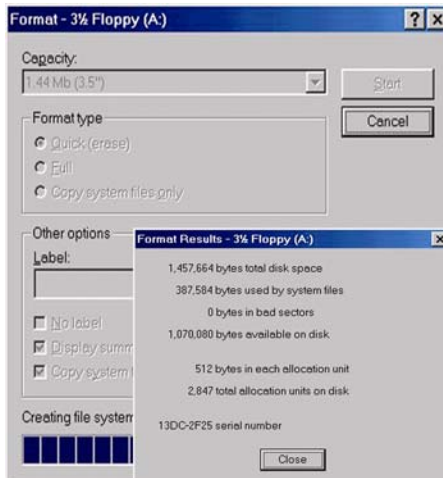
STEP 3: Download BIOS and BIOS utility program.

(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".

Appendix
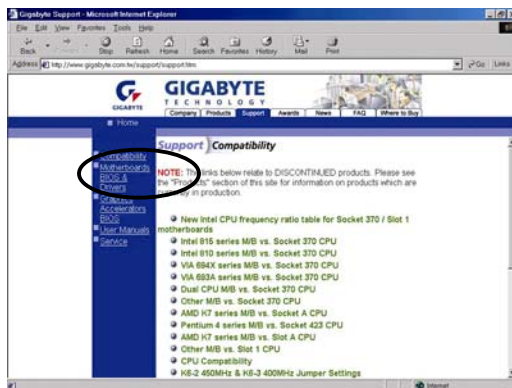
(3) We use GA-7VTX motherboard as example. Please select GA-7VTX by Model or Chipset optional menu to obtain BIOS flash files.
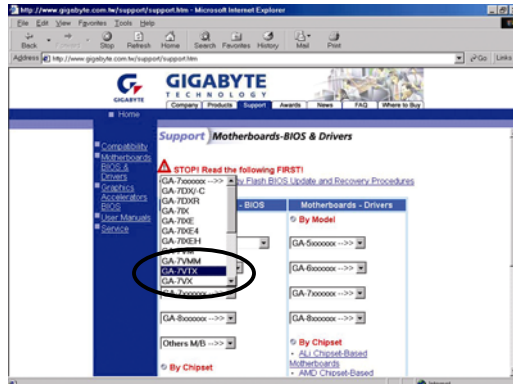
(4) Select an appropriate BIOS version (For example: F4), and click to download the file. It will pop up a file download screen, then select the "Open this file from its current location" and press "OK".
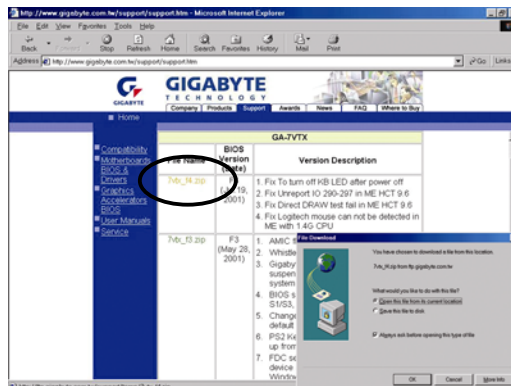
(5) At this time the screen shows the following picture, please click "Extract" button to unzip the files.
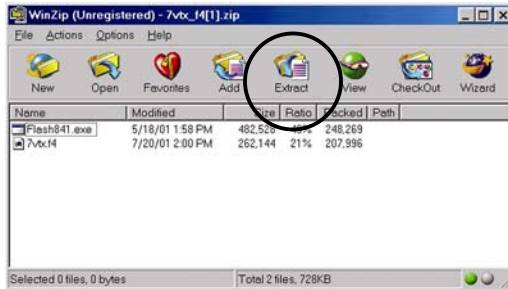
(6) Please extract the download files into the clean bootable floppy disk A mentioned in STEP 2, and press "Extract".
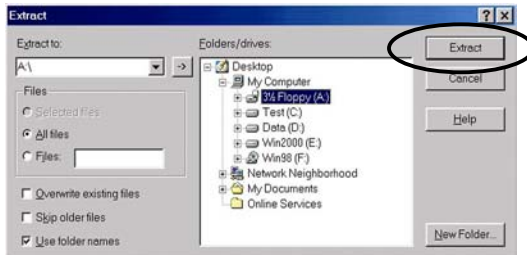
STEP 4: Make sure the system will boot from the floppy disk.

(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.

```
        American     Release:09/16/99
        Megatrends   AMIBIOS (C) 1999 American Megatrends
7VTX F1
Check System Health ok,
AMD-Athlon™ Processor-900MHz
Check NVRAM…
262144KB


Wait…
Press F1 to enter Dual BIOS Utility. Press ESC to quit
Press any key to contiune



( C ) American Megatrends Inc.,
63-0001-001199-00101111-071595-VIA_K7-GA7VTX1-F
```
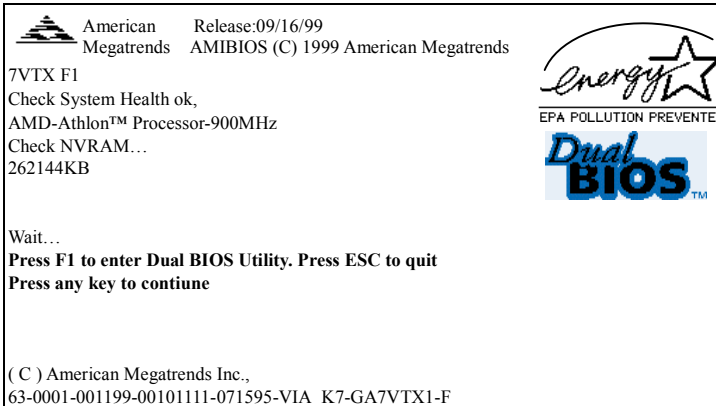
(2) Once you enter the BIOS setup utility, the main menu will appear on the screen. Use the arrows to highlight the item "BIOS FEATURES SETUP".

```
+-----------------------------------------------------------------------+
|             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".

```
                    AMIBIOS SETUP – BIOS FEATURES CMOS SETUP
                 ( C ) 1999 American Megatrends, Inc. All Rights Reserved

 1st Boot Device            :Floppy
 2nd Boot Device            :IDE-0
 3rd Boot Device            :CDROM
 S.M.A.R.T for Hard Disks   :Disabled
 BootUp Num-Lock            :On
 Floppy Drive Seek          :Disabled
 Password Check             :Setup




                                        ESC :Quit          ↑↓←→: Select Item
                                        F1   : Help        PU/PD/+/- : Modify
                                        F5   : Old Values  (Shift)F2 :Color
                                        F6   : Load BIOS Defaults
                                        F7   : Load Setup Defaults
```

(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.

```
                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 MANAGEME┌─────────────────────────────────┐
               │  SAVE to CMOS and EXIT(Y/N)? Y  │
 PNP/PCI CONFIGURA│                          │ON
               └─────────────────────────────────┘
 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

               Save Data to CMOS & Exit Setup
```
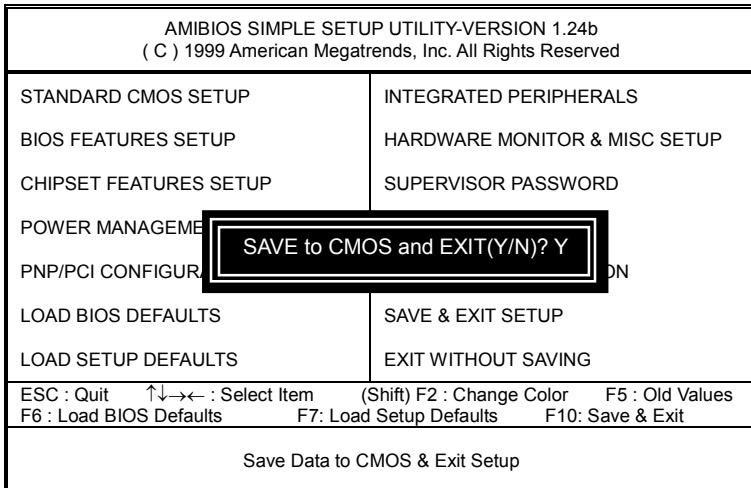
STEP 5: BIOS flashing.
(1) After the system boot from floppy disk, type "A:\> dir/w" and press "Enter" to check the entire files in floppy A. Then type the "BIOS flash utility" and "BIOS file" after A:\>. In this case you have to type "A:\> Flash841 7VTX.F4" and then press "Enter".

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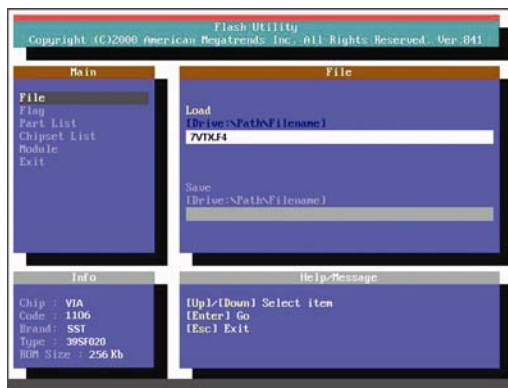
(3) It will pop up a screen and asks "Are you sure to flash the BIOS?" Press [Enter] to continue the procedure, or press [ESC] to quit.

Beware: Please do not turn off the system while you are upgrading BIOS. It will render your BIOS corrupted and system totally inoperative.
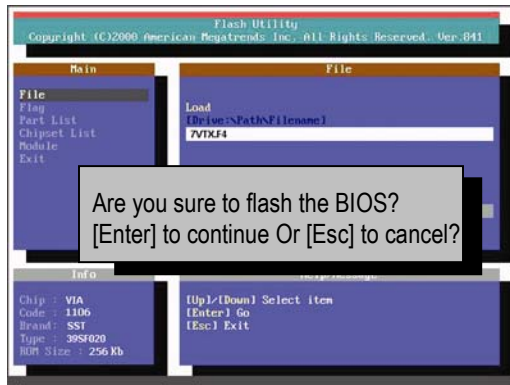
(4) The BIOS flash completed. Please press [ESC] to exit Flash Utility.

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.

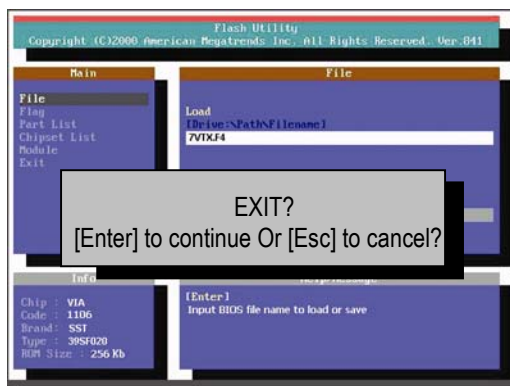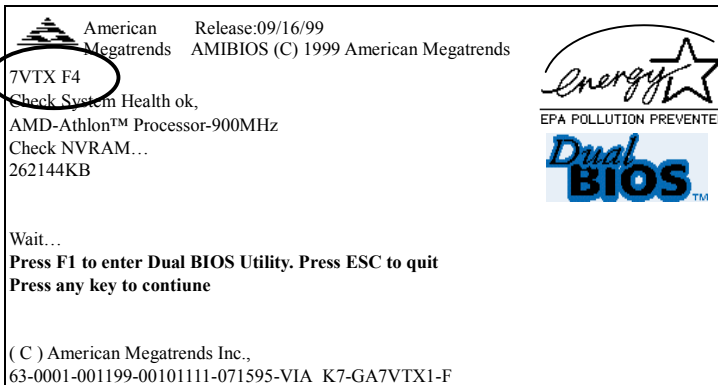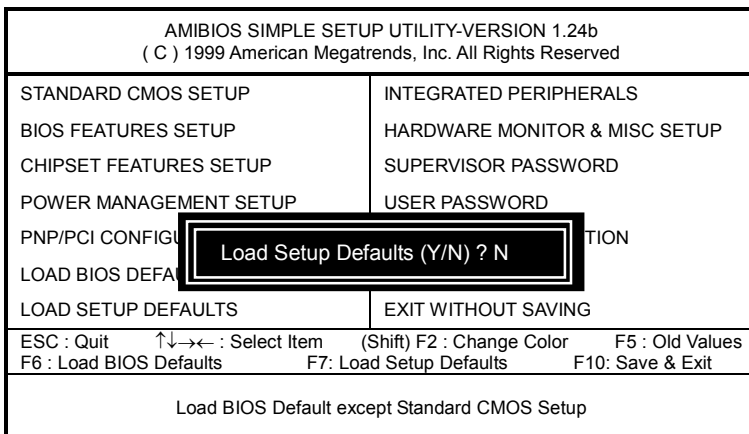(1) Take out the floppy diskette from floppy drive, and then restart the system. The boot up screen will indicate your motherboard model and current BIOS version.

```
   American        Release:09/16/99
   Megatrends    AMIBIOS (C) 1999 American Megatrends

7VTX F4
Check System Health ok,
AMD-Athlon™ Processor-900MHz
Check NVRAM…
262144KB



Wait…
Press F1 to enter Dual BIOS Utility. Press ESC to quit
Press any key to contiune



( C ) American Megatrends Inc.,
63-0001-001199-00101111-071595-VIA_K7-GA7VTX1-F
```

(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.

```
              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 CONFIGU    Load Setup Defaults (Y/N) ? N    TION

LOAD BIOS DEFA

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

              Load BIOS Default except Standard CMOS Setup
```

(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.

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 MANAGEME	SAVE to CMOS and EXIT(Y/N)? Y
PNP/PCI CONFIGURA	ON
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	
Save Data to CMOS & Exit Setup	
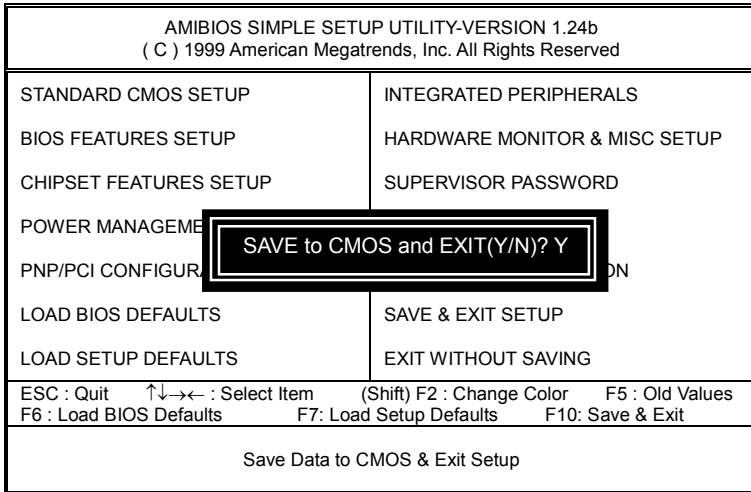
(4) Congratulate you have accomplished the BIOS flash procedure.

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
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

Acronyms	Meaning
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