- 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- Due to rapid change in technology, some of the specifications might be out of date before publicution of this booklet.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 β 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：　将散热板牢固地安装到处理器上之前，不要运行处理器。过热将永远损坏处理器!*

*警告:　將散熱器牢固地安裝到處理器上之前，不要運行處理器。過熱將永遠損壞處理器!*

**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

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-7VKMLS
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** | Safety for information technology equipment including electrical bussiness equipment |
| ☐ **EN 60335** | Safety of household and similar electrical appliances | ☐ **EN 50091-1** | General and Safety requirements for uninterruptible power systems (UPS) |

**Manufacturer/Importer**

(Stamp)

Date : September 10, 2002

Signature: *Timmy Huang*
Name: Timmy Huang

# DECLARATION OF CONFORMITY

Per FCC Part 2 Section 2.1077(a)


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

**Address:** **17358 Railroad Street**
**City of Industry, CA 91748**

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


hereby declares that the product

**Product Name:** **Motherboard**

**Model Number:** **GA-7VKMLS**

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: September 10,2002

# GA-7VKMLS

# AMD Socket A Processor Motherboard

# USER'S MANUAL

AMD Socket A Processor Motherboard
Rev. 3001
12ME-7VKMLS-3001

English

# Table of Content

# Item Checklist

- ☑ The GA-7VKMLS motherboard
- ☑ IDE cable x 1/ Floppy cable x 1
- ☑ CD for motherboard driver & utility (VUCD)
- ☑ GA-7VKMLS user's manual
- ☑ I/O Shield
- ☐ Quick PC Installation Guide
- ☑ Motherboard Settings Label
- ☐ 2 Port USB Cable x 1
- ☐ 4 Port USB Cable x 1
- ☐ SPDIF KIT x 1(SPD-KIT)
- ☐ IEEE 1394 Cable x1
- ☐ Audio combo Kit x1
- ☐ RAID 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

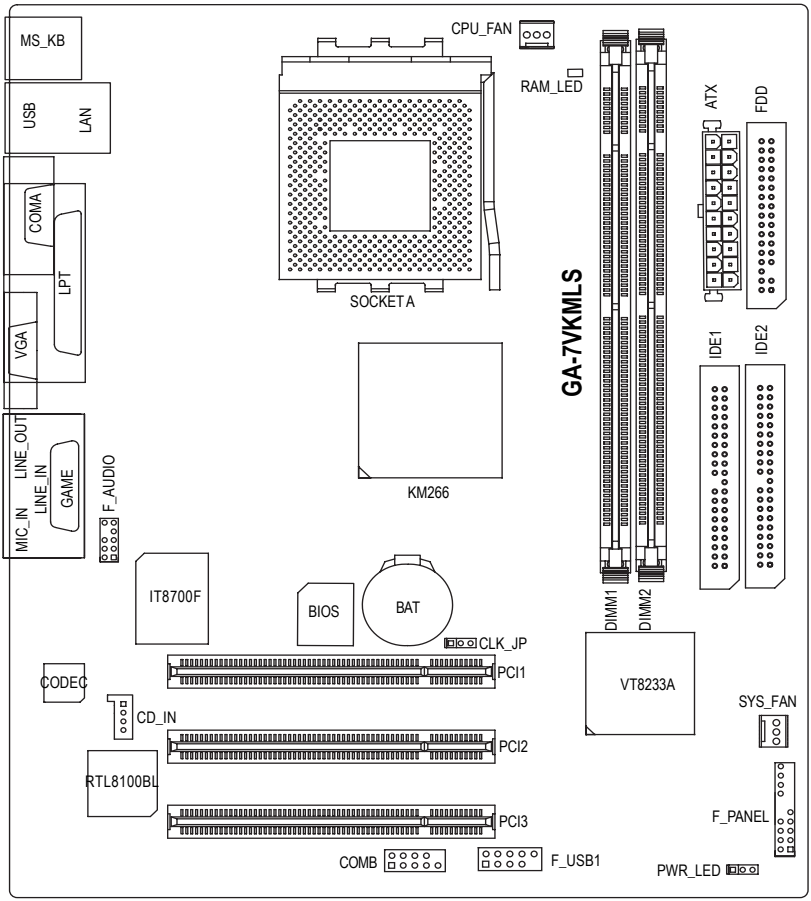
| | |
|---|---|
| Form Factor | • 24.3cm x 19cm Micro ATX size form factor, 4 layers PCB. |
| CPU | • Socket A processor<br>AMD Athlon™/Athlon™ XP/Duron™ (K7) Socket A processor<br>128K L1 & 256K/64K L2 cache on die<br>• Supports 1.4GHz and faster<br>• 200/266MHz FSB and DDR bus speeds (PCI 33MHz) |
| Chipset | • VIA KM266 Memory/AGP/PCI Controller (PAC)<br>• VIA VT8233A Low cost V-LINK Client Highly Intergated |
| Memory | • 2 168-pin SDRAM DIMM sockets<br>• Supports PC-100/PC-133 SDRAM (Auto)<br>• Supports up to 1GB DRAM (Max)<br>• Supports only 3.3V SDRAM DIMM<br>• Supports 64bit DRAM integrity mode |
| I/O Control | • IT8700F |
| Slots | • 3 PCI Slots Supports 33MHz & PCI 2.2 compliant |
| On-Board IDE | • 2 IDE bus master (ATA66/100/133) IDE ports for up to 4 ATAPI devices<br>• Supports PIO mode3,4 (ATA66/100/133) IDE & ATAPI CD-ROM |
| On-Board Peripherals | • 1 Floppy port supports 2 FDD with 360K, 720K,1.2M, 1.44M and 2.88M bytes.<br>• 1 Parallel port supports Normal/EPP/ECP mode<br>• 2 Serial port (COM A, Internal COM B)<br>• 1 VGA port<br>• 4 USB ports (Rear USB x 2, Front USB x 2) |
| Hardware Monitor | • CPU temperature detect |

to be continued.....

| | |
|---|---|
| On-Board Sound | • AC97 CODEC<br>• Line In/Line Out/Mic In/CD_In/AUX_In /Game Port |
| On-Board LAN | • Build in RTL8100BL Chipset |
| PS/2 Connector | • PS/2 Keyboard interface and PS/2 Mouse interface |
| BIOS | • Licensed AMI BIOS, 2M bit Flash ROM<br>• Support Q-Flash Utility |
| Additional Features | • STR(Suspend-To-RAM)<br>• AC Recovery<br>• USB KB/Mouse wake up from S3<br>• PS2 KB/Mouse wake up from S1, S3, S4, S5<br>• Supports @BIOS™<br>• Supports Easy Tune™ 4 |

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-7VKMLS Motherboard Layout



English

# Chapter 2 Hardware Installation Process

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

Step 1- Set system Jumper(CLK_JP)

Step 2- Install the Central Processing Unit (CPU)

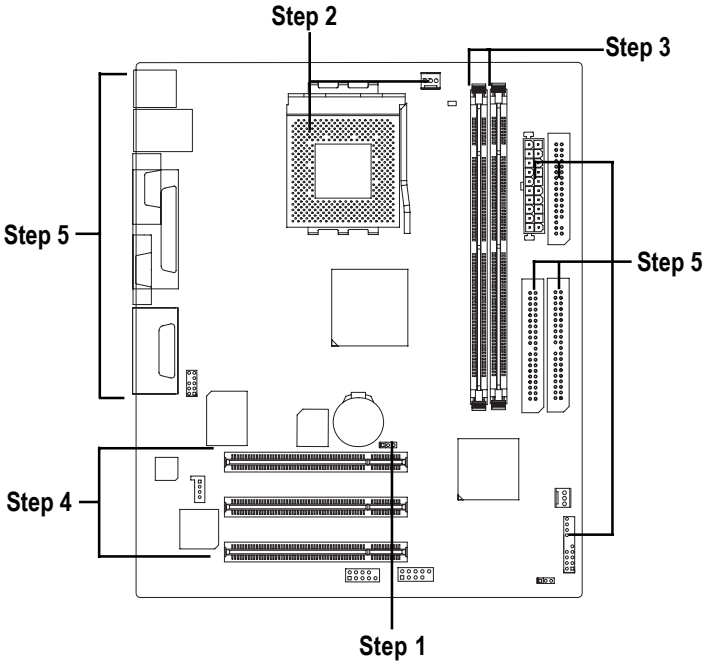
Step 3- Install memory modules

Step 4- Install expansion cards

Step 5- Connect ribbon cables, cabinet wires, and power supply

Step 6- Setup BIOS software

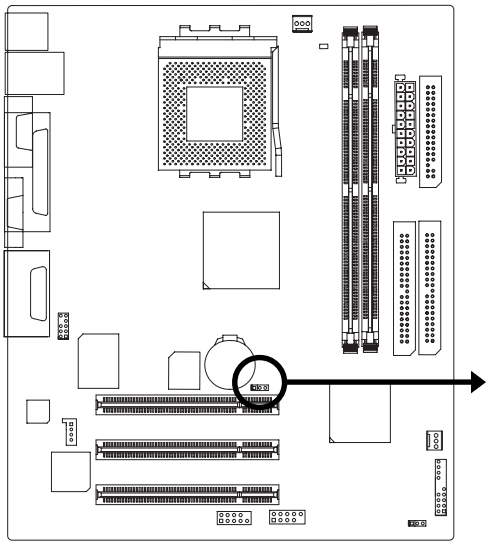
Step 7- Install supporting software tools



# Step 1: Install the Central Processing Unit (CPU)

## Step1-1: CPU Speed Setup

The system bus frequency can be switched at 100/133MHz by adjusting CLK_JP.
(The frequency ratio depend on CPU.)



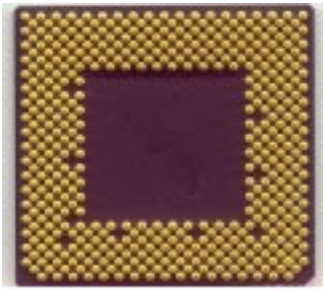
1 1-2 close: 100 MHz

1 2-3 close: 133 MHz

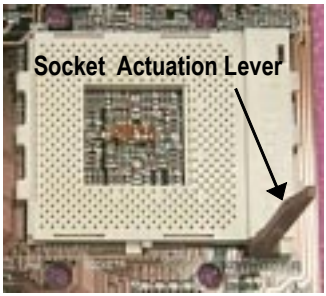
Default Setting: 100MHz

## Step1-2: CPU Installation

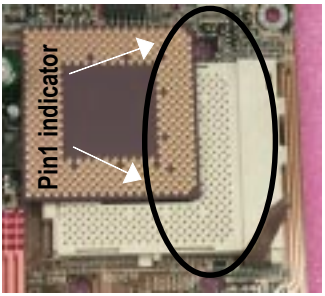

CPU Top View



CPU Bottom View




1. Pull up the CPU socket lever and up to 90-degree angle.



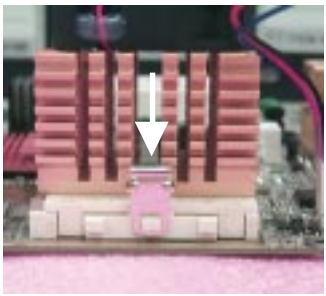

2. Locate Pin 1 in the socket and look for a (golden) cut edge on the CPU upper corner. Then insert the CPU into the socket.

- **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.**

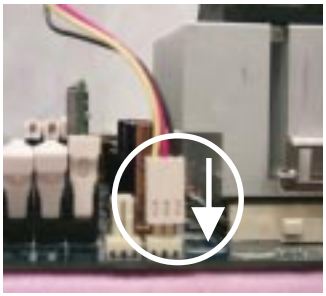
## Step1-3: CPU Heat Sink Installation

1.Press down the CPU socket lever and finish CPU installation.

2.Use qualified fan approved by AMD.



3.Fasten the heatsink supporting-base onto the CPU socket on the main-board.

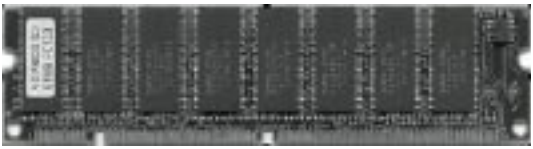


4.Make sure the CPU fan is plugged to the CPU fan connector, than install complete.

- **Please use AMD approved cooling fan.**
- **We recommend you to apply the thermal paste to provide better heat conduction between your CPU and heatsink.**
- **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 2 dual in-line memory module (DIMM) sockets support 6 banks. The BIOS will automatically detects memory type and size. To install the memory module, just push it vertically into the DIMM socket.The DIMM module can only fit in one direction due to the two notch. Memory size can vary between sockets.



SDRAM

1. The DIMM slot has two 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.

**When STR/DIMM LED is ON, do not install/remove SDRAM from socket.**

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

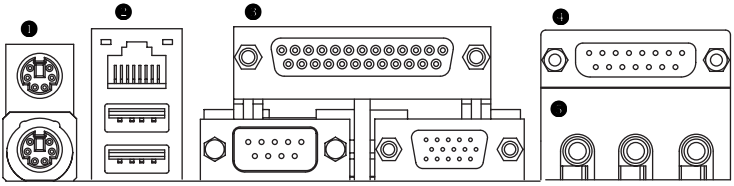
## Step 3: Install expansion cards

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

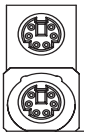
English

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

## Step 4-1: I/O Back Panel Introduction



### ❶ PS/2 Keyboard and PS/2 Mouse Connector

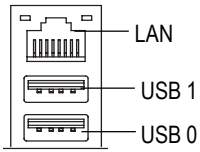


PS/2 Mouse Connector
(6 pin Female)

PS/2 Keyboard Connector
(6 pin Female)

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

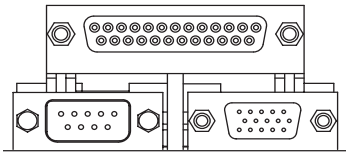
### ❷ USB & LAN Connector




➢ 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 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 VGA Port/COMA Port

Parallel Port
(25 pin Female)

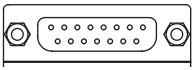


COMA
Serial Port
(9 pin Male)

VGA
VGA Port
(15 pin Female)

➢This mainboard sutports 1 standard COM port, 1 VGA port and 1 LPT port. Device like printer can be connected to LPT port ; mouse and modem etc can be connected to COM port.

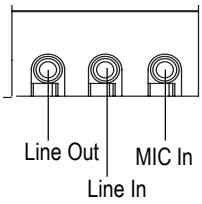
### ❹ Game /MIDI Ports



Joystick/ MIDI (15 pin Female)

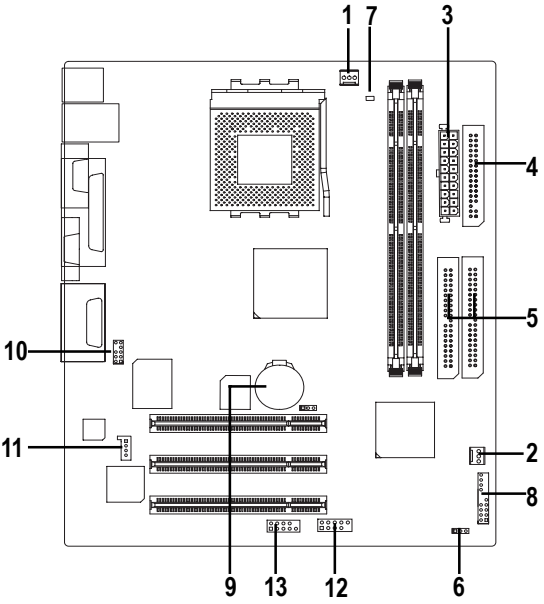
➢This connector supports joystick, MIDI key board and other relate audio devices.

### ❺ Audio Connectors



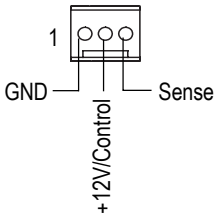

➢After install onboard audio driver, you may connect speaker to Line Out jack, micro phone to MIC In jack. Device like CD-ROM , walkman etc can be connected to Line-In jack.

## Step 4-2: Connectors Introduction



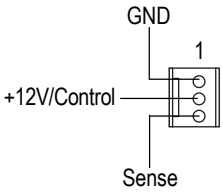

| | |
|---|---|
| 1) CPU_FAN | 9) BAT |
| 2) SYS_FAN | 10) F_AUDIO |
| 3) ATX | 11) CD_IN |
| 4) FDD | 12) F_USB1 |
| 5) IDE1/IDE2 | 13) COMB |
| 6) PWR_LED | |
| 7) RAM_LED | |
| 8) F_PANEL | |

### 1) CPU_FAN (CPU FAN Connector)



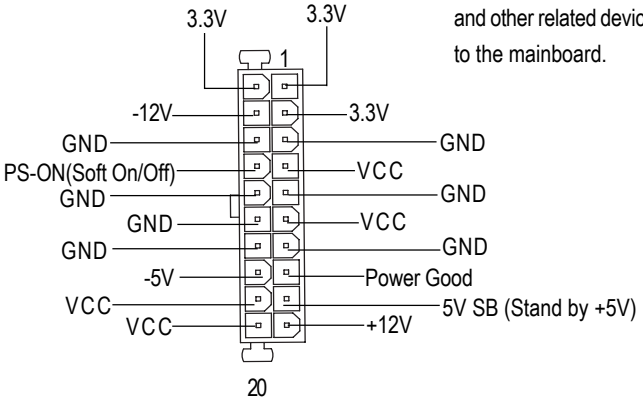

- Please note, a proper installation of the CPU cooler is essential to prevent the CPU from run ning under abnormal condition or damaged by overheating.The CPU fan connector supports Max. current up to 600mA .

### 2) SYS_FAN (System FAN Connector)



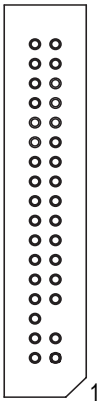

- This connector allows you to link with the cooling fan on the system case to lower the system temperature.

### 3) ATX (ATX Power)



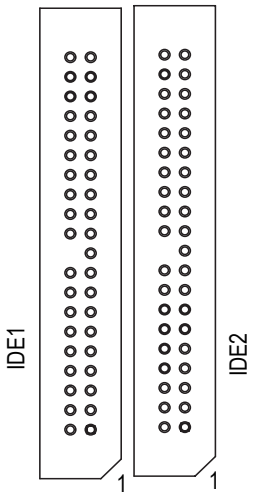

- AC power cord should only be connected to your power supply unit after ATX power cable and other related devices are firmly connected to the mainboard.

### 4) FDD (Floppy Connector)



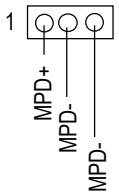

- Please connect the floppy driver ribbon cables to FDD. It supports 360K,1.2M,720K,1.44M and 2.88M bytes floppy disk types.
  The rad stripe of the ribbn cable must be the same side with the Pin1.

### 5) IDE1/IDE2 [IDE1 (Primary), IDE2(Secondary) Connector]




- Important Notice:
  Please connect first harddisk to IDE1 and connect CDROM to IDE2.
  The rad stripe of the ribbn cable must be the same side with the Pin1.

### 6 ) PWR_LED



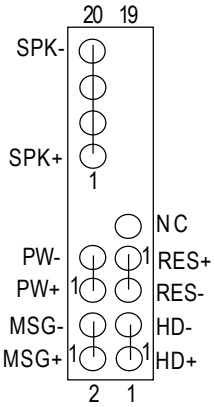

- PWR_LED is connect with the system power indicator to indicate whether the system is on/off. It will blink when the system enters suspend mode. If you use dual color LED, power LED will turn to another color.

**7) RAM_LED**

+ ▭ -

➢ Do not remove memory modules while DIMM LED is on. It might cause short or other unexpected damages due to the 3.3V stand by voltage. Remove memory modules only when AC Power cord is disconnected.

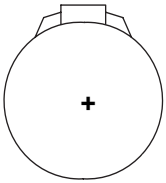
**8) F_PANEL (2x10 pins jumper)**




| | |
|---|---|
| HD (IDE Hard Disk Active LED) | Pin 1: LED anode(+)<br>Pin 2: LED cathode(-) |
| SPK (Speaker Connector) | Pin 1: VCC(+)<br>Pin 2- Pin 3: NC<br>Pin 4: Data(-) |
| RES (Reset Switch) | Open: Normal Operation<br>Close: Reset Hardware System |
| PW (Soft Power Connector) | Open: Normal Operation<br>Close: Power On/Off |
| MSG(Message LED/Power/ Sleep LED) | Pin 1: LED anode(+)<br>Pin 2: LED cathode(-) |
| NC | NC |

➢ 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.

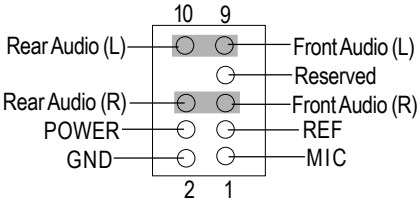
### 9) BAT (Battery)




**CAUTION**

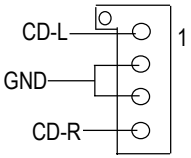
- ❖ Danger of explosion if battery is incorrectly replaced.
- ❖ Replace only with the same or equivalent type recommended by the manufacturer.
- ❖ Dispose of used batteries according to the manufacturer's instructions.

### 10) F_AUDIO (Front Audio)



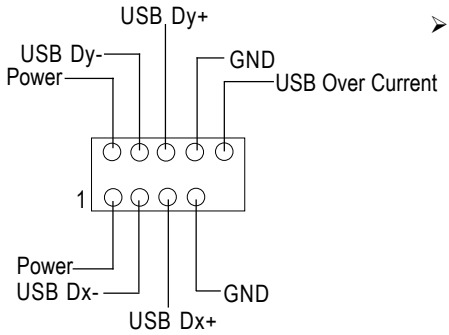

➢ If you want to use "Front Audio" connector, you must move 5-6, 9-10 Jumper. In order to utilize the front audio header, your chassis must have front audio connector. Also please make sure the pin assigment on the cable is the same as the pin assigment on the MB header. To find out if the chassis you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

### 11) CD_IN (CD Audio Line In)



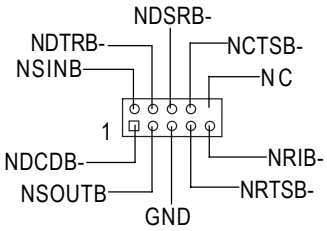

➢ Connect CD-ROM or DVD-ROM audio out to the connector.

### 12) F_USB1 (Front USB Connector)(F_USB1 connector in yellow is for USB 1.1)




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

### 13) COM B (White)




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

# 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.

## 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 |
| <Enter> | Select item |
| <Esc> | Main Menu - Quit and not save changes into CMOS Status Page Setup Menu and Option Page Setup Menu - Exit current page and return to Main Menu |
| <+/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 utility |
| <F9> | System Information |
| <F10> | Save all the CMOS changes, only for Main Menu |

**GETTINGHELP**

**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. : F1)

Once you enter AMI 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.

AMIBIOS SIMPLE SETUP UTILITY - VERSION 2.00
(C) 2001 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 FAIL-SAFE DEFAULTS | SAVE & EXIT SETUP |
| LOAD OPTIMIZED DEFAULTS | EXIT WITHOUT SAVING |

ESC: Quit ↑↓←→: Select Item F5: Old Values F6: Fail-Safe Values
F7: Optimized Values F8: Q-Flash Utility F10:Save & Exit

Time, Date , Hard Disk Type...

Figure 1: Main Menu

- **Standard CMOS Features**

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

- **BIOS Features Setup**

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

- **Chipset Features Setup**

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

- **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.

- **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.

- **Integrated Peripherals**

  This setup page includes all onboard peripherals.

- **Hardware Monitor & MISC Setup**

  This setup page is auto detect fan and temperature status.

- **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.

- **IDE HDD Auto Detection**

  Automatically configure hard disk parameters.

- **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

AMIBIOS SETUP - STANDARD CMOS SETUP

( C ) 2001 American Megatrends, Inc. All Rights Reserved

System Date : Jan 08 2002 Tue

System Time : 14:44:35

| | TYPE | SIZE | CYLS | HEAD | PRECOMP | LANDZ | SECTOR | MODE |
|---|---|---|---|---|---|---|---|---|
| Pri Master : | Auto | | | | | | | |
| Pri Slave : | Auto | | | | | | | |
| Sec Master : | Auto | | | | | | | |
| Sec Slave : | Auto | | | | | | | |

| | |
|---|---|
| Floppy Drive A : 1.44 MB $3^{1/2}$ | Base Memory : 640 Kb |
| Floppy Drive B : Not Installed | Other Memory : 384 Kb |
| | Extended Memory : 95 Mb |
| Virus Protection : Disabled | Total Memory : 96 Mb |
| Date is standard format | ESC : Exit |
| Month : Jan - Dec | ↑↓ : Select Item |
| Day : 01- 31 | PU / PD / + / - :Modify |
| Year : 1990 - 2099 | (Shift) F2 : Color |

Figure 2: Standard CMOS Setup

### ☞ System 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 1990 through 2099

## ☛ System 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.

## ☛ Primary Master, Slave / 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.

| | |
|---|---|
| ⏩ SIZE | HDD Size |
| ⏩ CYLS. | Number of cylinders |
| ⏩ HEADS | number of heads |
| ⏩ PRECOMP | write precomp |
| ⏩ LANDZONE | Landing zone |
| ⏩ SECTORS | number of sectors |
| ⏩ MODE | Logical block addressing |

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

## ☛ Floppy Drive A / Drive B

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

| | |
|---|---|
| ⏩ Not Installed | No floppy drive installed |
| ⏩ 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. |

## ☞ Virus Protection

If it is set to enable, the category will flash on the screen when there is any attempt to write to the boot sector or partition table of the hard disk drive. The system will halt and the following error message will appear in the mean time. You can run anti-virus program to locate the problem.

- ⏩ Enabled — Activate automatically when the system boots up causing a warning message to appear when anything attempts to access the boot sector or hard disk partition table
- ⏩ Disabled — No warning message to appear when anything attempts to access the boot sector or hard disk partition table (Default Value)

## ☞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.

### Other Memory

This refers to the memory located in the 640 K to 1024 K address space. This is memory that can be used for different applications.

DOS uses this area to load device drivers to keep as much base memory free for application programs. Most use for this area is Shadow RAM.

### 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.

# BIOS Features Setup

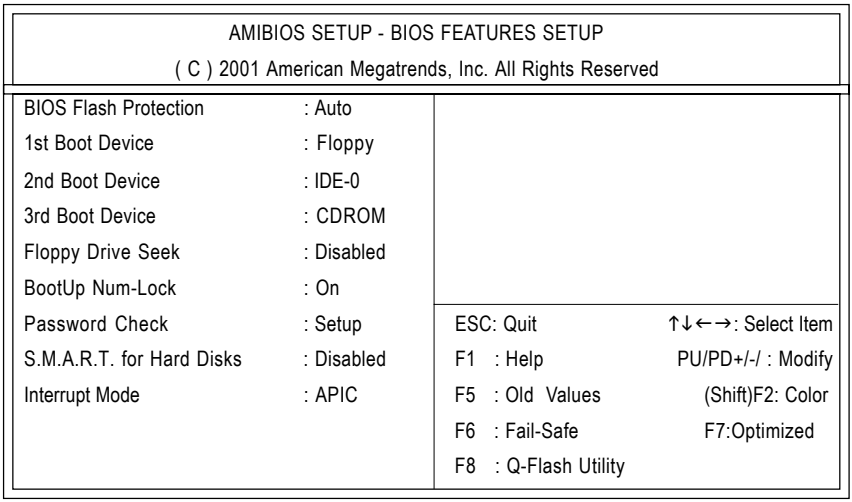



Figure 3: BIOS Feature Setup

### ☞BIOS Flash Protection

This field lets you determine the states that flash BIOS.

- ⏩Auto — BIOS enables flash write access automatically when updating BIOS data/ DMI/ESCD. (Default Value)
- ⏩Enabled — During POST, DMI/ESCD would not be updated. But flash tools can update BIOS always.

### ☞1st / 2nd / 3rd Boot device

- ⏩Floppy — Select your boot device priority by Floppy.
- ⏩CDROM — Select your boot device priority by CDROM.
- ⏩Disabled — Disable this function.
- ⏩IDE-0~3 — Select your boot device priority by IDE-0~3.
- ⏩Realtek Boot — Select your boot device priority by Realtek Lan function.

Boot order depends on the devices you use, for example: Floppy, HDD, CD-ROM...

### ☞Floppy Drive 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)

### ☞Boot Up Num-Lock

- ⏩On Keypad is number keys. (Default value)
- ⏩Off Keypad is arrow keys.

### ☞Password Check

Please refer to the detail on P.48

- ⏩Always The user must enter correct password in order to access the system and/or BIOS Setup.
- ⏩Setup The user must enter correct password in order to access BIOS setup utility. (Default Value)

### ☞S.M.A.R.T. for Hard Disks

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

### ☞Interrupt Mode

- ⏩APIC Through IOAPIC generate more IRQ for system use.(Default value)
- ⏩PIC Use AT stantard IRQ controlles to generate IRQ.

When you already have IOAPIC enable system and want to upgrade the system please note, since running an IOAPIC enabled OS (like Windows NT,Windows 2000, Windows XP...) system with none IOAPIC HW support will cause the system to hang. Following are some situations users might run into:

1.An IOAPIC enabled OS and change the BIOS setting from IOAPIC to PIC, this will cause your system to hang.

# Chipset Features Setup

We would not suggest you change the chipset default setting unless you really need it.

| AMIBIOS SETUP - CHIPSET FEATURES SETUP<br>( C ) 2001 American Megatrends, Inc. All Rights Reserved | | | |
|---|---|---|---|
| Configure SDRAM by SPD | :Enabled | | |
| #SDRAM Frequency | :Auto | | |
| #SDRAM CAS# Latency | :3 | | |
| AGP Mode | :4X | | |
| AGP Comp. Driving | :Auto | | |
| Manual AGP Comp. Driving | :DA | | |
| AGP Fast Write | :Disabled | | |
| AGP Aperture Size | :64MB | | |
| AGP Read Synchronization | :Disabled | | |
| PCI Delay Transaction | :Disabled | | |
| USB Controller | :All USB Port | | |
| USB Legacy Support | :Disabled | ESC: Quit | ↑↓←→: Select Item |
| USB Port 64/60 Emulation | :Disabled | F1 : Help | PU/PD+/-/ : Modify |
| | | F5 : Old Values | (Shift)F2: Color |
| | | F6 : Fail-Safe | F7:Optimized |
| | | F8 : Q-Flash Utility | |

Figure 4: Chipset Features Setup

#These two items will be available when "Configure SDRAM by SPD" is set to Disabled.

### ☛ Configure SDRAM by SPD

- ▸▸Disabled — Disable Configure SDRAM by SPD.
- ▸▸Enabled — Enable Configure SDRAM by SPD. (Default Value)

### ☛SDRAM Frequency

- ▸▸100MHz — Set SDRAM Frequency to 100MHz.
- ▸▸133MHz — Set SDRAM Frequency to 133MHz.
- ▸▸Auto — Set SDRAM Frequency to Auto. (Default Value)

### ☛ SDRAM CAS# Latency

- ▸▸2 — For Fastest SDRAM DIMM module.
- ▸▸3 — For Slower SDRAM DIMM module. (Default Value)

### ☞AGP Mode

- ⏩4X Set AGP Mode to 4X. (Default Value)
- ⏩1X Set AGP Mode to 1X.
- ⏩2X Set AGP Mode to 2X.

### ☞AGP Comp. Driving

- ⏩Auto Set AGP Comp. Driving to Auto. (Default Value)
- ⏩Manual Set AGP Comp. Driving to Manual.

If AGP Comp. Driving is Manual.

Manual AGP Comp. Driving : 00~FF

### ☞ AGP Fast Write

- ⏩Disabled Disable AGP Fast Write. (Default Value)
- ⏩Enabled Enable AGP Fast Write.

### ☞AGP Aperture Size

- ⏩4MB Set AGP Aperture Size to 4MB.
- ⏩8MB Set AGP Aperture Size to 8 MB.
- ⏩16MB Set AGP Aperture Size to 16 MB.
- ⏩32MB Set AGP Aperture Size to 32 MB.
- ⏩64MB Set AGP Aperture Size to 64 MB. (Default Value)
- ⏩128MB Set AGP Aperture Size to 128 MB.
- ⏩256MB Set AGP Aperture Size to 256 MB.

### ☞ AGP Read Synchronization

- ⏩Enabled Enable AGP Read Synchronization.
- ⏩Disabled Disable AGP Read Synchronization. (Default Value)

### ☞ PCI Delay Transaction

- ⏩Enabled Enable PCI Delay Transaction.
- ⏩Disabled Disable PCI Delay Transaction.(Default Value)

## ☞ USB Controller

| | |
|---|---|
| ⏩ Disabled | Disable USB Controller function. |
| ⏩ USB 1 | Enable USB Port 1. |
| ⏩ USB 2 | Enable USB Port 2. |
| ⏩ USB 1&2 | Enable USB Port 1&2. |
| ⏩ USB 3 | Enable USB Port 3. |
| ⏩ USB 1&3 | Enable USB Port 1&3. |
| ⏩ USB 2&3 | Enable USB Port 2&3. |
| ⏩ All USB Port | Enable All USB Port. (Default Value) |

## ☞ USB Legacy Support

| | |
|---|---|
| ⏩ No Mice | Set USB Legacy Support Keyboard / Floppy. |
| ⏩ All Device | Set USB Legacy Support Keyboard / Mouse /Floppy. |
| ⏩ Disabled | Disable USB Legacy Support Function. (Default Value) |

## ☞ USB Port 64/60 Emulation

| | |
|---|---|
| ⏩ Enabled | To use USB mouse under Win NT environment, set USB Legacy Support to KB/Mouse/FDD and USB Port 64/60 Emulation to enabled. |
| ⏩ Disabled | Disable this Function. (Default Value) |

# Power Management Setup

| AMIBIOS SETUP - POWER MANAGEMENT SETUP<br>( C ) 2001 American Megatrends, Inc. All Rights Reserved | | | |
|---|---|---|---|
| ACPI Standby State | :S1/POS | Resume On RTC Alarm | :Disabled |
| Power LED in S1 state | :Blinking | RTC Alarm Date | :15 |
| USB Dev Wakeup From S3 | :Disabled | RTC Alarm Hour | :12 |
| Suspend Time Out (Min.) | :Disabled | RTC Alarm Minute | :30 |
| IRQ3 | :Monitor | RTC Alarm Second | :30 |
| IRQ 4 | :Monitor | | |
| IRQ 5 | :Ignore | | |
| IRQ 7 | :Monitor | | |
| IRQ 9 | :Ignore | | |
| IRQ 10 | :Ignore | | |
| IRQ 11 | :Ignore | | |
| IRQ 13 | :Ignore | | |
| IRQ 14 | :Monitor | | |
| IRQ 15 | :Ignore | | |
| Soft-off by Power Button | :Instant off | | |
| AC Back Function | :Soft-Off | ESC: Quit | ↑↓←→: Select Item |
| Modem Ring / Wake On Lan | :Enabled | F1 : Help | PU/PD+/-/ : Modify |
| PME Event Wake Up | :Enabled | F5 : Old Values | (Shift)F2: Color |
| Keyboard Wakeup From | :S1(Suspend) | F6 : Fail-Safe | F7:Optimized |
| PS/2 Mouse Wakeup From | :S1(Suspend) | F8 : Q-Flash Utility | |

Figure 5: Power Management Setup

### ☞ ACPI Standby State

- ⏩ S1/POS — Set ACPI standby state is S1. (Default Value)
- ⏩ S3/STR — Set ACPI standby state is S3.

### ☞ 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.

### ☛ USB Dev Wakeup From S3

USB Dev Wakeup From S3 can be set when ACPI standby state set to S3/STR.

- ⏩Enabled — Enable USB Dev Wakeup From S3.
- ⏩Disabled — Disable USB Dev Wakeup From S3. (Default Value).

### ☛ Suspend Time Out (Min.)

- ⏩Disabled — Disabled Suspend Time Out Function. (Default Value)
- ⏩1 — Enabled Suspend Time Out after 1min.
- ⏩2 — Enabled Suspend Time Out after 2min.
- ⏩4 — Enabled Suspend Time Out after 4min.
- ⏩8 — Enabled Suspend Time Out after 8min.
- ⏩10 — Enabled Suspend Time Out after 10min.
- ⏩20 — Enabled Suspend Time Out after 20min.
- ⏩30 — Enabled Suspend Time Out after 30min.
- ⏩40 — Enabled Suspend Time Out after 40min.
- ⏩50 — Enabled Suspend Time Out after 50min.
- ⏩60 — Enabled Suspend Time Out after 60min.

### ☛ IRQ 3~IRQ15

- ⏩Ignore — Ignore IRQ3 ~IRQ15.
- ⏩Monitor — Monitor IRQ3~IRQ15.

### ☛ Soft-off by Power Button

- ⏩Instant off — Soft switch ON/OFF for POWER ON/OFF. (Default Value)
- ⏩Suspend — Soft switch ON/OFF for suspend.

### ☛ AC Back Function

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

### ☞ Modem Ring /Wake On LAN

- ⏩Disabled — Disabled Resume Modem Ring / Wake On LAN.
- ⏩Enabled — Enabled Resume Modem Ring / Wake On LAN. (Default Value)

### ☞ PME Event Wake Up

- ⏩Disabled — Disable PME Event Wake Up.
- ⏩Enabled — Enabled PME Event Wake Up. (Default Value)

### ☞ Keyboard Wakeup From

- ⏩S1(Suspend) — Keyboard is able to Wakeup the system from S1(Suspend) state. (Default value)
- ⏩S1/S3 — Keyboard is able to Wakeup the system from S1/S3 state.
- ⏩S1/S3/S4/S5 — Keyboard is able to Wakeup the system from S1/S3/S4/S5 state.

### ☞ PS/2 Wakeup From

- ⏩S1(Suspend) — PS/2 Mouse is able to Wakeup the system from S1(Suspend) state. (Default value)
- ⏩S1/S3 — PS/2 Mouse is able to Wakeup the system from S1/S3 state.
- ⏩S1/S3/S4/S5 — PS/2 Mouse is able to Wakeup the system from S1/S3/S4/S5 state.

### ☞ Resume On RTC Alarm

You can set "RTC Alarm Power On" 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.

RTC Alarm Date: Everyday, 1~31

RTC Alarm Hour: 0~23

RTC Alarm Minute : 0~59

RTC Alarm Second: 0~59

# PNP/PCI Configuration

| AMIBIOS SETUP - PNP/PCI CONFIGURATION<br>( C ) 2001 American Megatrends, Inc. All Rights Reserved | | |
|---|---|---|
| OnChip VGA Frame Buffer | : 32MB | |
| VGA Boot From | : AGP | |
| PCI Slot 1 IRQ Priority | : Auto | |
| PCI Slot 2 IRQ Priority | : Auto | |
| PCI Slot 3 IRQ Priority | : Auto | |
| Realtek LAN ROM initial | : Yes | |
| | | ESC: Quit ↑↓←→: Select Item<br>F1 : Help PU/PD/+/- : Modify<br>F5 : Old Values (Shift)F2: Color<br>F6 : Fail-Safe F7 : Optimized<br>F8 : Q-Flash Utility |

Figure 6: PNP/PCI Configuration

### ☞ OnChip VGA Frame Buffer

- ⏩ 8MB — Set OnChip VGA Frame Buffer to 8MB.
- ⏩ 16MB — Set OnChip VGA Frame Buffer to 16MB.
- ⏩ 32MB — Set OnChip VGA Frame Buffer to 32MB.(Default Value)
- ⏩ None — Disable this function.

### ☞ VGA Boot From

- ⏩ AGP — Set VGA Boot from AGP VGA Card. (Default Value)
- ⏩ PCI — Set VGA Boot from PCI VGA Card.

## ☛ PCI Slot1, 2, 3 IRQ Priority

| | |
|---|---|
| ⏩ Auto | The system will reserved a free IRQ for PCI slot 1, 2, 3 device. (Default Value) |
| ⏩ 3 | The system will reserved IRQ3 for PCI slot 1, 2, 3 device if no legacy ISA device using IRQ3. |
| ⏩ 4 | The system will reserved IRQ4 for PCI slot 1, 2, 3 device if no legacy ISA device using IRQ4. |
| ⏩ 5 | The system will reserved IRQ5 for PCI slot 1, 2, 3 device if no legacy ISA device using IRQ5. |
| ⏩ 7 | The system will reserved IRQ7 for PCI slot 1, 2, 3 device if no legacy ISA device using IRQ7. |
| ⏩ 9 | The system will reserved IRQ9 for PCI slot 1, 2, 3 device if no legacy ISA device using IRQ9. |
| ⏩ 10 | The system will reserved IRQ10 for PCI slot 1, 2, 3 device if no legacy ISA device using IRQ10. |
| ⏩ 11 | The system will reserved IRQ11 for PCI slot 1, 2, 3 device if no legacy ISA device using IRQ11. |

## ☛Realtek LAN ROM initial

| | |
|---|---|
| ⏩ Yes | Enabled Realtek LAN ROM initial. (Default Value) |
| ⏩ No | Disabled Realtek LAN ROM initial. |

# Load Fail-Safe Defaults

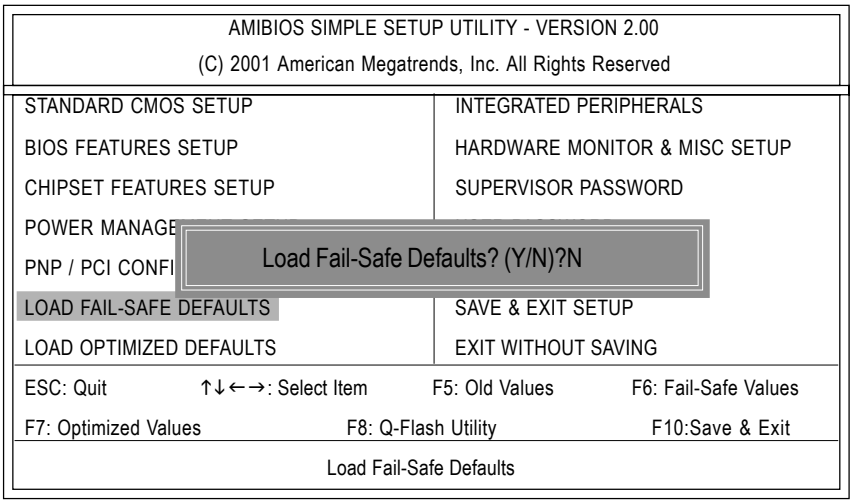



Figure 7: Load Fail-Safe Defaults

### ☛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

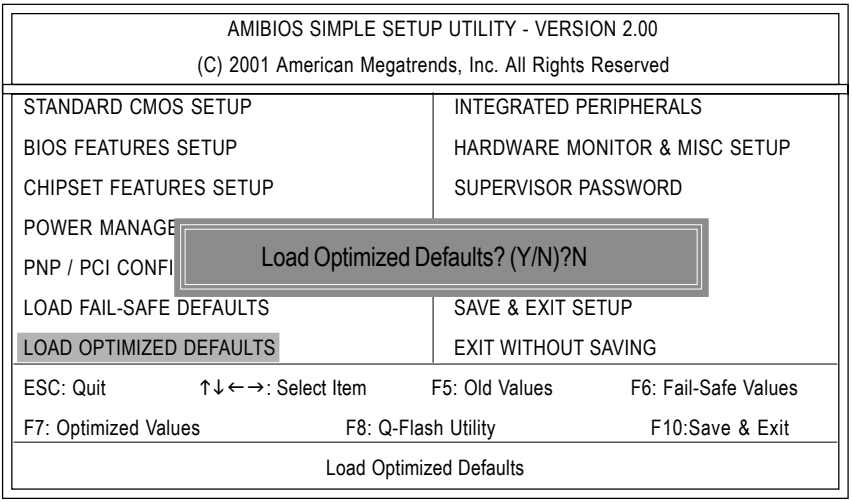



Figure 8: Load Optimized Defaults

### ☛Load Optimized Defaults

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

# Integrated Peripherals

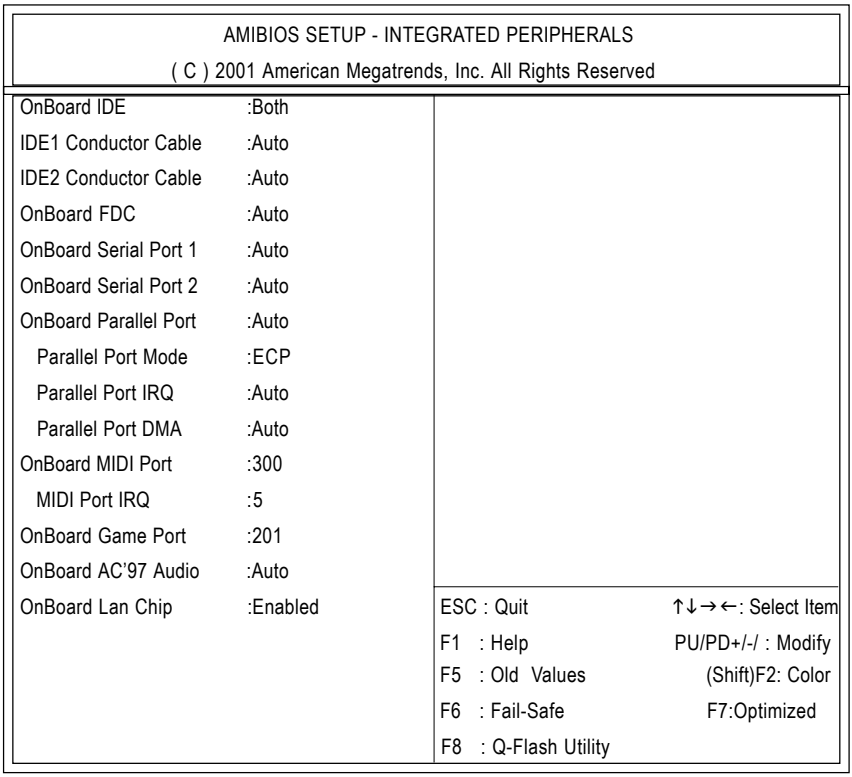



Figure 9: Integrated Peripherals

### ☞ OnBoard IDE

- ⏩ Disabled — Disabled OnBoard IDE
- ⏩ Both — Set OnBoard IDE is Both (Default Value).
- ⏩ Primary — Set OnBoard IDE is Primary
- ⏩ Secondary — Set OnBoard IDE is Secondary

### ☞ 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 Board FDC

| | |
|---|---|
| ⏩Auto | Set On Board FDC is Auto (Default Value). |
| ⏩Disabled | Disabled On Board FDC |
| ⏩Enabled | Enabled On Board FDC |

### ☞Onboard Serial Port 1

| | |
|---|---|
| ⏩Auto | BIOS will automatically setup the port 1 address (Default Value). |
| ⏩3F8/COM1 | Enable onboard Serial port 1 and address is 3F8. |
| ⏩2F8/COM2 | Enable onboard Serial port 1 and address is 2F8. |
| ⏩3E8/COM3 | Enable onboard Serial port 1 and address is 3E8. |
| ⏩2E8/COM4 | 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 (Default Value). |
| ⏩3F8/COM1 | Enable onboard Serial port 2 and address is 3F8. |
| ⏩2F8/COM2 | Enable onboard Serial port 2 and address is 2F8. |
| ⏩3E8/COM3 | Enable onboard Serial port 2 and address is 3E8. |
| ⏩2E8/COM4 | Enable onboard Serial port 2 and address is 2E8. |
| ⏩Disabled | Disable onboard Serial port 2. |

### ☞OnBoard Parallel port

| | |
|---|---|
| ⏩378 | Enable On Board LPT port and address is 378. |
| ⏩278 | Enable On Board LPT port and address is 278. |
| ⏩3BC | Enable On Board LPT port and address is 3BC. |
| ⏩Auto | Set On Board LPT port is Auto. (Default Value) |
| ⏩Disabled | Disable On Board LPT port. |

### ☛Parallel Port Mode

- ⏩EPP Using Parallel port as Enhanced Parallel Port.
- ⏩ECP Using Parallel port as Extended Capabilities Port. (Default Value)
- ⏩Normal Normal Operation.
- ⏩EPP+ECP Using Parallel port as Enhanced Parallel Port & Extended Capabilities Port.

### ☛Parallel Port IRQ

- ⏩7 Set Parallel Port IRQ is 7.
- ⏩Auto Set Auto to parallel Port IRQ DMA Channel. (Default Value)
- ⏩5 Set Parallel Port IRQ is 5.

### ☛Parallel Port DMA

- ⏩3 Set Parallel Port DMA is 3.
- ⏩Auto Set Auto to parallel port mode DMA Channel. (Default Value)
- ⏩1 Set Parallel Port DMA is 1.
- ⏩0 Set Parallel Port DMA is 0.

### ☛OnBoard MIDI Port

- ⏩300 Set 300 for MIDI Port. (Default Value)
- ⏩310 Set 310 for MIDI Port .
- ⏩320 Set 320 for MIDI Port.
- ⏩330 Set 330 for MIDI Port.
- ⏩Disabled Disabled this function.

### ☛Midi Port IRQ

- ⏩5 Set Midi Port IRQ to 5. (Default Value)
- ⏩10 Set Midi Port IRQ to 10.
- ⏩11 Set Midi Port IRQ to 11.

### ☞OnBoard Game Port

- ▸▸201 Set 201 for Game Port.(Default Value)
- ▸▸209 Set 209 for Game Port.
- ▸▸Disabled Disabled this function.

### ☞ OnBoard AC97 Audio

- ▸▸Auto Enable auto detect onboard AC'97 audio. (Default value)
- ▸▸Disabled Disable this function.

### ☞ Onboard Lan Chip

- ▸▸Disabled Disable this function.
- ▸▸Enabled Enable Onboard Lan Chip function. (Default Value)

# Hardware Monitor & MISC Setup

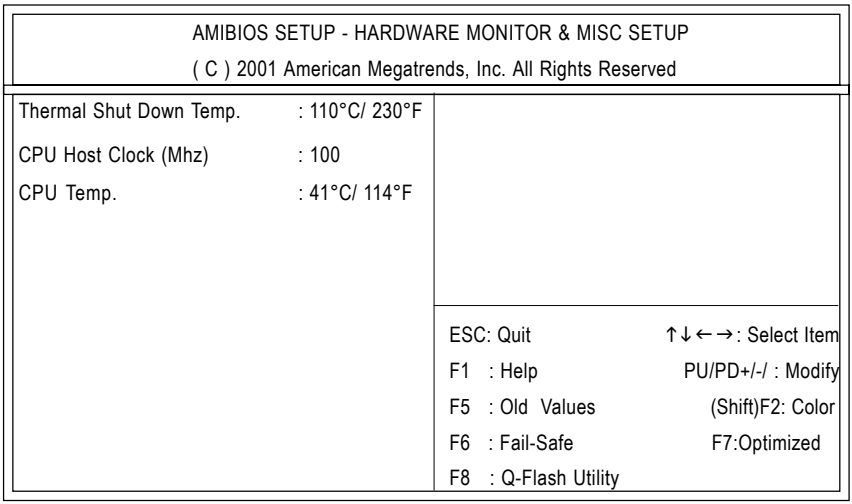



Figure 10: Hardware Monitor & MISC Setup

### ☞Thermal Shut Down Temp.

| | |
|---|---|
| ▸▸Disabled | Disabled this function. |
| ▸▸80°C/176°F | Set Thermal Shut Down Temperature is 80°C/176°F. |
| ▸▸85°C/185°F | Set Thermal Shut Down Temperature is 85°C/185°F. |
| ▸▸90°C/194°F | Set Thermal Shut Down Temperature is 90°C/194°F. |
| ▸▸95°C/203°F | Set Thermal Shut Down Temperature is 95°C/203°F. |
| ▸▸100°C/212°F | Set Thermal Shut Down Temperature is 100°C/212°F. |
| ▸▸105°C/221°F | Set Thermal Shut Down Temperature is 105°C/221°F. |
| ▸▸110°C/230°F | Set Thermal Shut Down Temperature is 110°C/230°F.(Default Value) |

### ☞CPU Host Clock (Mhz)

| | |
|---|---|
| ▸▸By Hw | Set CPU Host Clock by Hw. |
| ▸▸133 | Set CPU Host Clock to 133MHz~161MHz. |
| ▸▸100 | Set CPU Host Clock to 100Mhz~128MHz.(Default Value) |

### ☞CPU Temp.

▸▸Detect CPU Temperature automatically.

# 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.

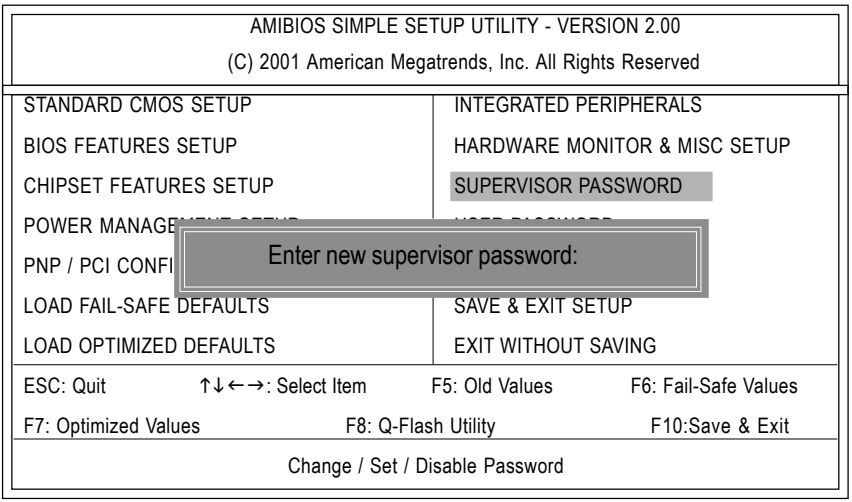



Figure 11: Password Setting

Type the password, up to six 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 PASS WORD 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 "Always" at "Password Check" in BIOS Features Setup 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 BIOS Features Setup Menu, you will be prompted only when you try to enter Setup.

# IDE HDD Auto Detection

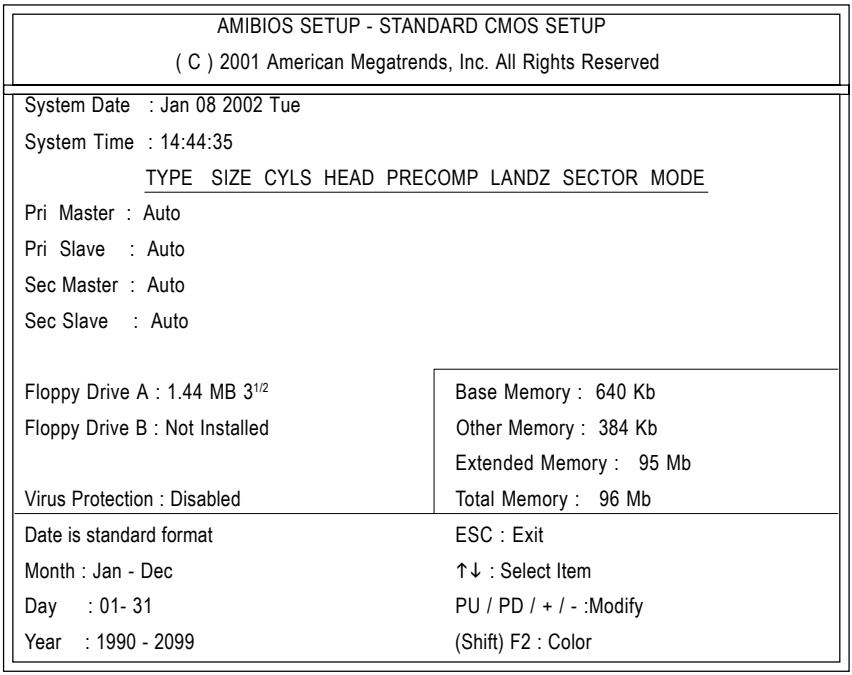



Figure 12: IDE HDD Auto Detection

Type "Y" will accept the H.D.D. parameter reported by BIOS.

Type "N" will keep the old H.D.D. parameter setup. If the hard disk cylinder number is over 1024, then the user can select LBA mode or LARGER mode for DOS partition larger than 528 MB.

# Save & Exit Setup

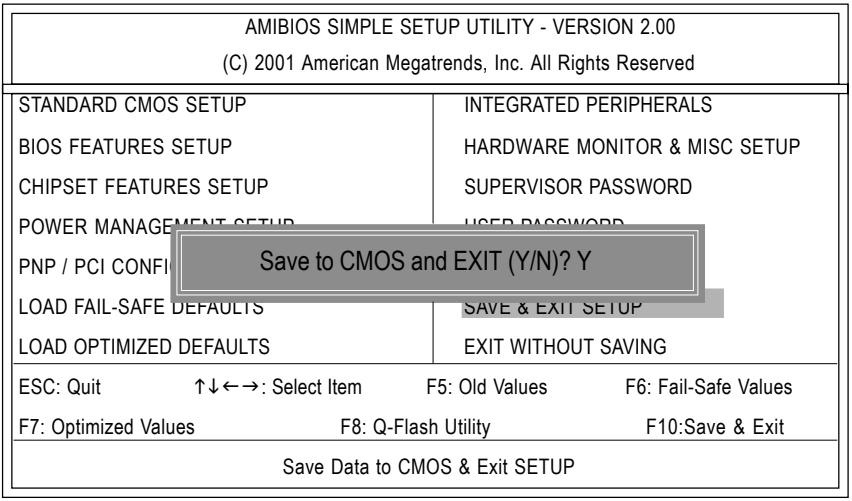



Figure 13: Save & Exit Setup

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

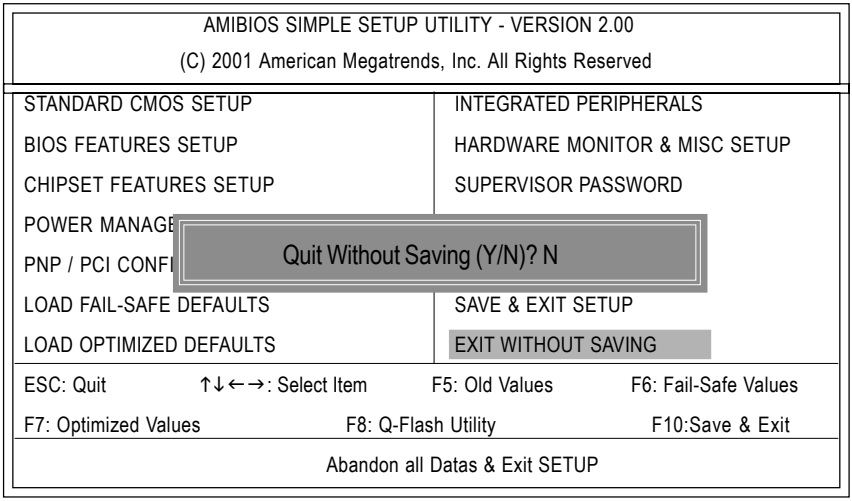


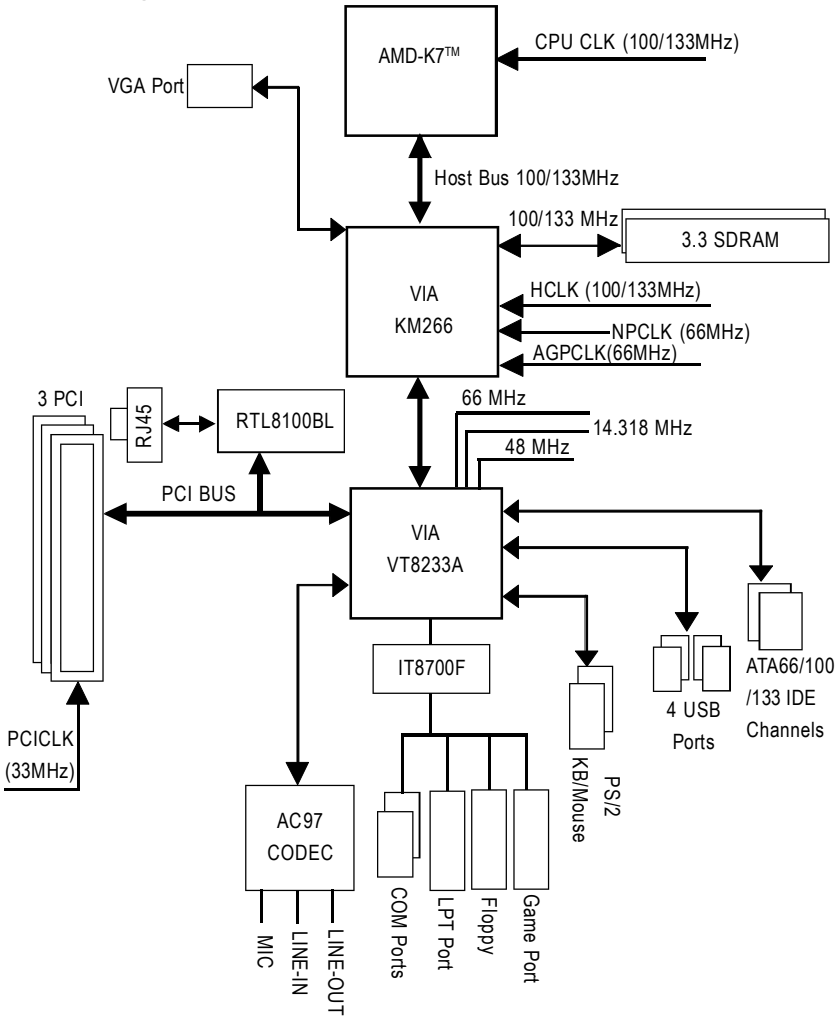

Figure 14: Exit Without Saving

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



English

# @ 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.

English

# Flash BIOS Method Introduction

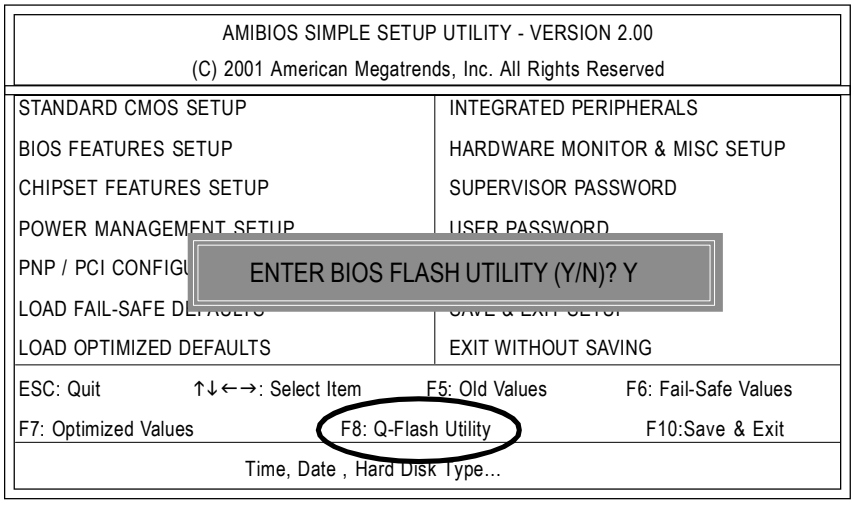
## Method 1: Q-Flash

### A. What is Q-Flash Utility?

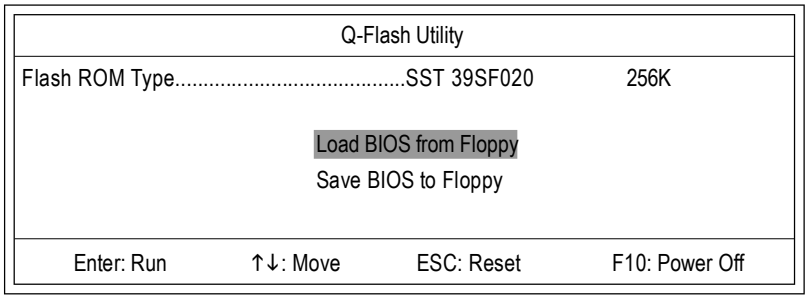
Q-Flash utility is a pre-O.S. BIOS flash utility enables users to update its BIOS within BIOS mode, no more fooling around any OS.

### 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 AMI BIOS CMOS SETUP, then press <F8> to enter Flash utility.

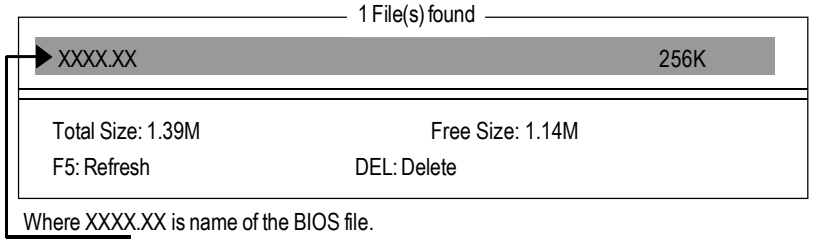



b. Q-Flash Utility



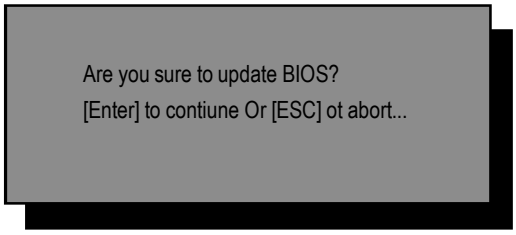
### Load BIOS From Floppy

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

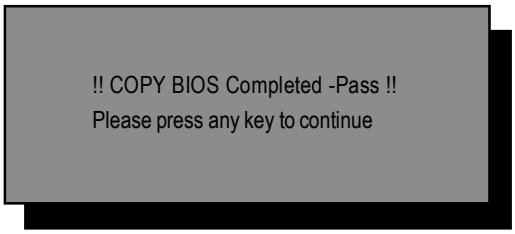



Where XXXX.XX is name of the BIOS file.

✎Press Enter to Run.




✎Press Enter to Run.




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

English

## Method 2: BIOS Flash Utility

### BIOS Flash Procedure

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:

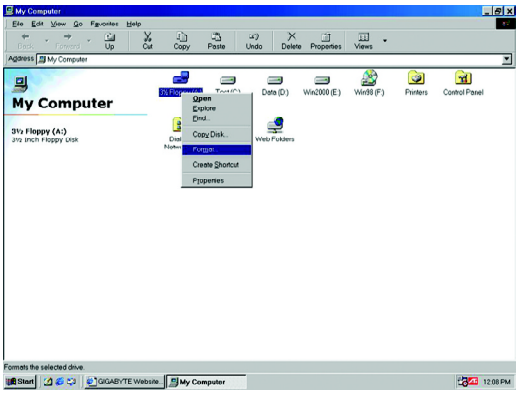
(1) Please make sure you have set "Auto" for BIOS Feature Setup (BIOS Flash Protection).

(2) 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.)

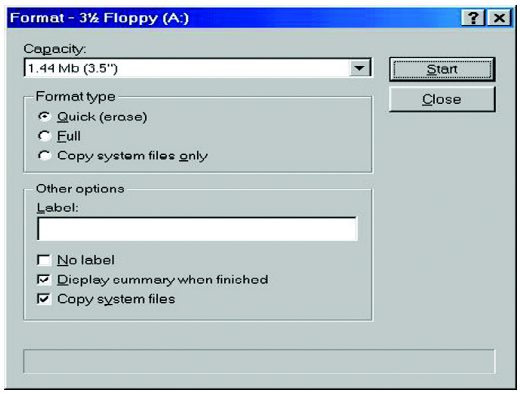
Beware: Windows ME/2000 are not allowed to make a DOS boot diskette.

(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)"

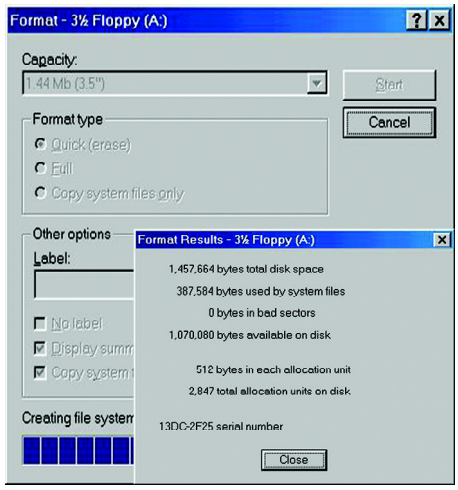


(2) Select the "Quick (erase)" for Format Type, and pick both "Display summary when finished" and "Copy system files", after that press "Start". That will format the floppy and transfer the needed system files to it.

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".

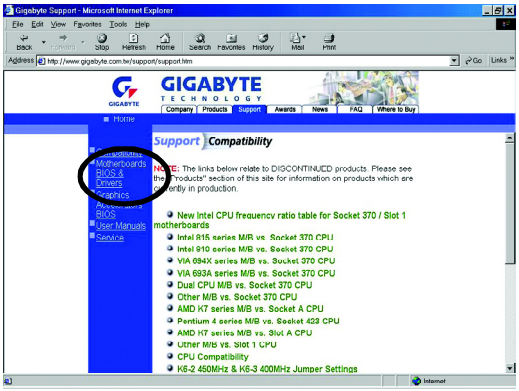


English

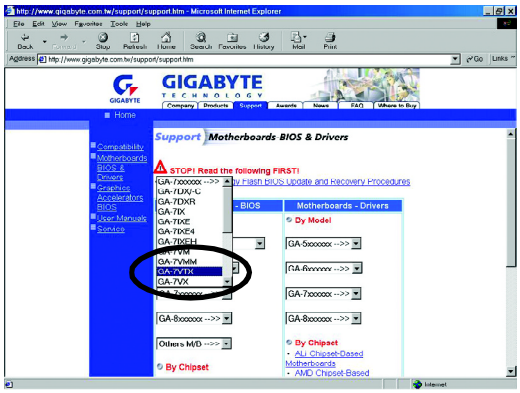
STEP 3: Download BIOS and BIOS utility program.

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

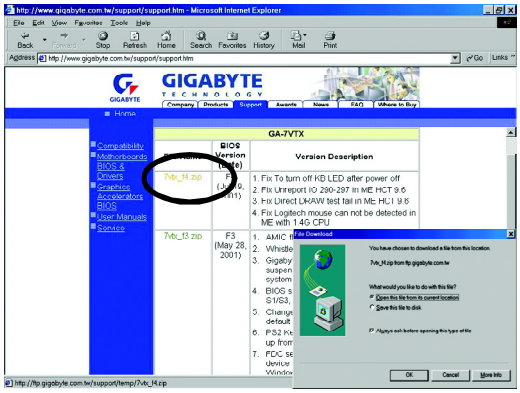

(2) From Support zone, click the "Motherboards BIOS & Drivers".



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

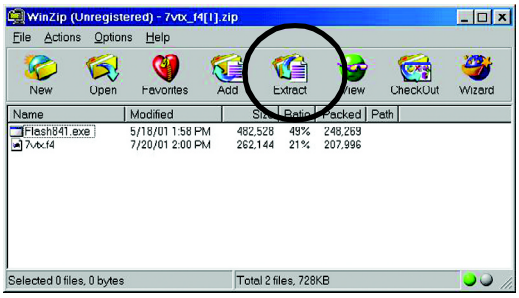



(4) Select an appropriate BIOS version (For example: F4), and click to download the file. It will pop up a file download screen, then select the "Open this file from its current location" and press "OK".

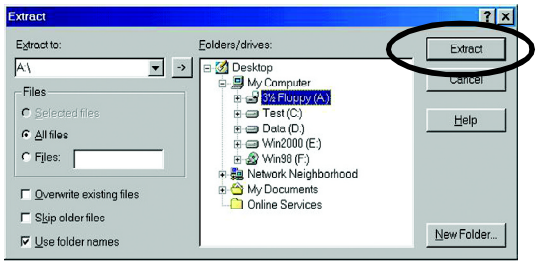


English

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

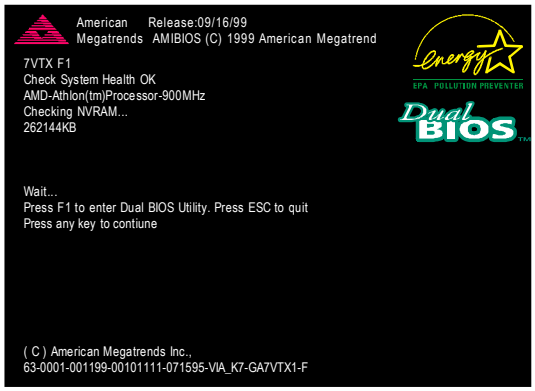



(6) Please extract the download files into the clean bootable floppy disk A mentioned in STEP 2, and press "Extract".



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.

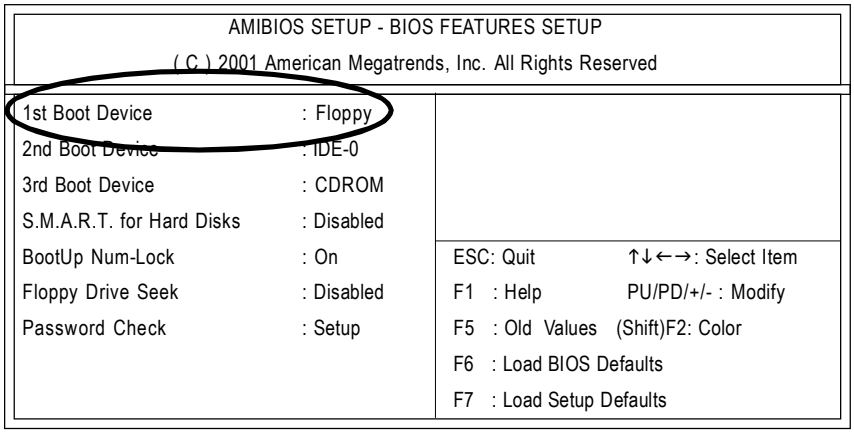



(2) Once you enter the BIOS setup utility, the main menu will appear on the screen. Use the arrows to highlight the item "BIOS FEATURES SETUP".

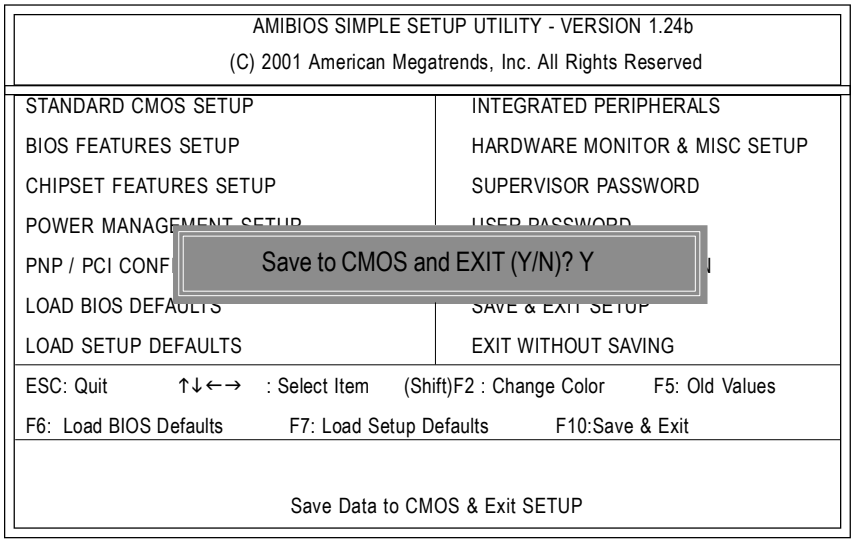
| AMIBIOS SIMPLE SETUP UTILITY - VERSION 1.24b<br>(C) 1999 American Megatrends, Inc. All Rights Reserved | |
|---|---|
| STANDARD CMOS SETUP | INTEGRATED PERIPHERALS |
| BIOS FEATURES SETUP | HARDWARE MONITOR & MISC SETUP |
| CHIPSET FEATURES SETUP | SUPERVISOR PASSWORD |
| POWER MANAGEMENT SETUP | USER 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... | |

English

(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.

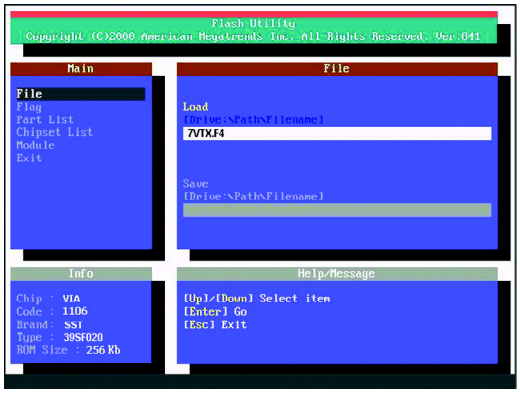


STEP 5: BIOS flashing.

(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".

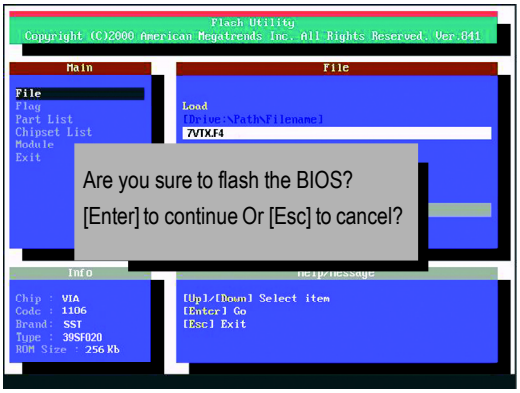
```
Starting Windows 98…

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.

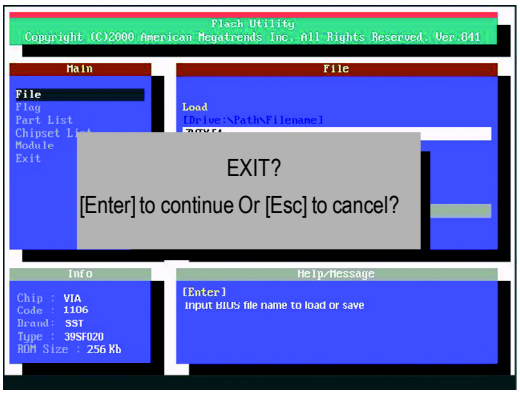


English

(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.

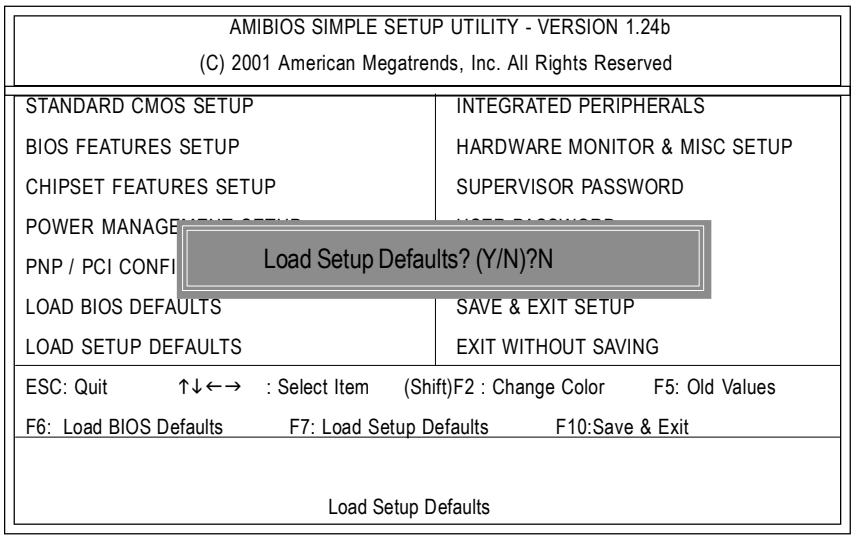


STEP 6: Load BIOS defaults.

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.

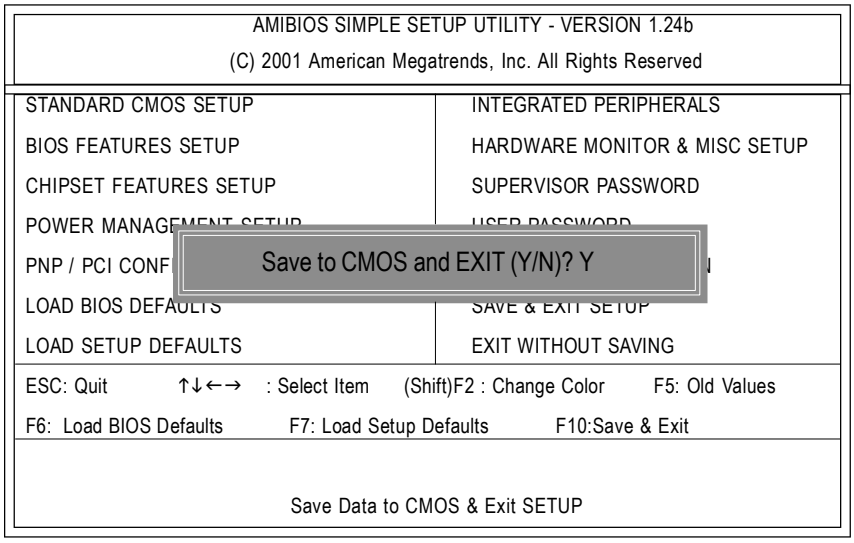
(1) Take out the floppy diskette from floppy drive, and then restart the system. The boot up screen will indicate your motherboard model and current BIOS version.


(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.



English

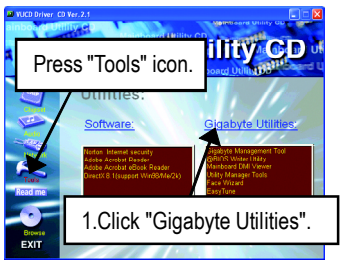
(3) Use the arrows to highlight the item "SAVE & EXIT SETUP" and press "Enter". System will ask "SAVE to CMOS and EXIT (Y/N)?" Press "Y" and "Enter" keys to confirm. Now the system will reboot automatically, the new BIOS setting will be taken effect next boot-up.



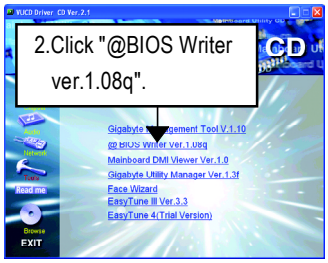

(4) Congratulate you have accomplished the BIOS flash procedure.

## Method 3: @ BIOS Utility

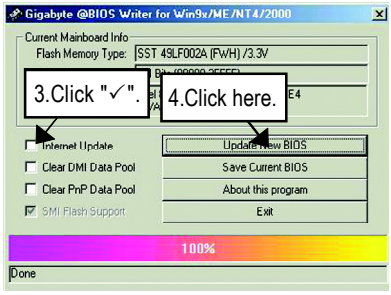
If you don't have DOS boot disk, we recommend that you used Gigabyte @BIOS™ program to flash BIOS.



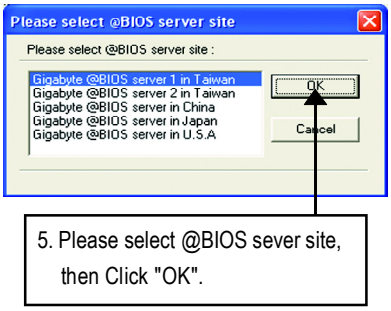

(1)




(2)




(3)




(4)

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.

English

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: 7VKMLS.F1a).
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

English

# Chapter 5 Appendix

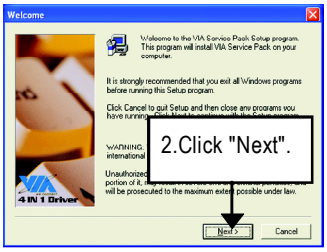
**Picture below are shown in Windows XP (VUCD driver version 2.1)**

## Appendix A: KM266 Chipset Drivers Installation

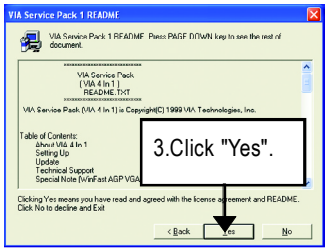
### A. VIA 4 in 1 Service Pack Driver Utility:

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.

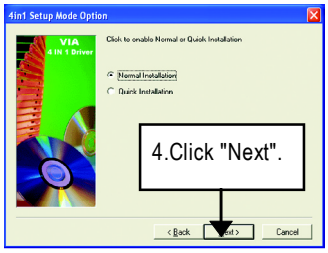

(1)



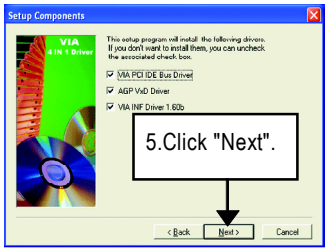

(2)



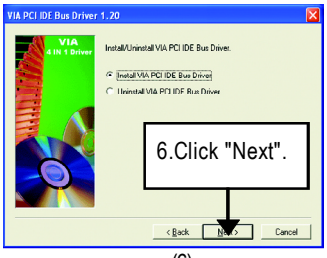

(3)



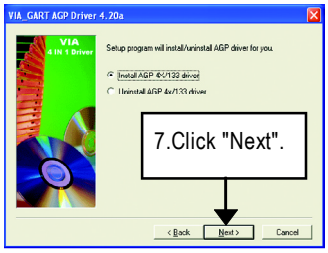

(4)



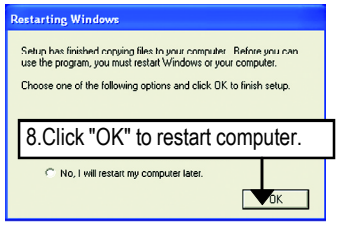

(5)




(6)




(7)

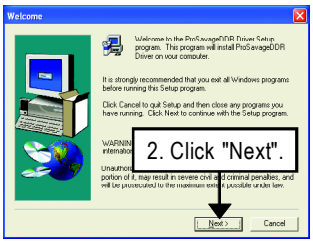



(8)

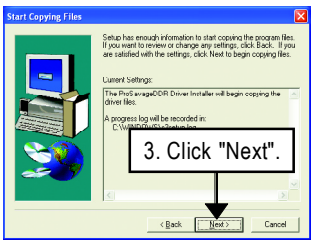
## B. KM266 VGA Driver:

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)

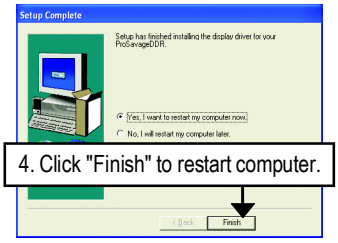



(2)




(3)

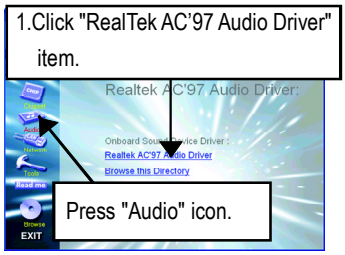

(4)



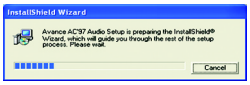

(5)

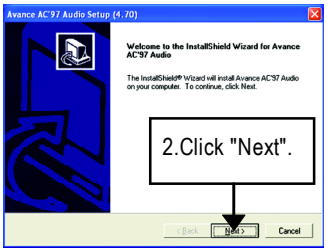
## Appendix B: RealTek AC'97 Audio Driver

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.

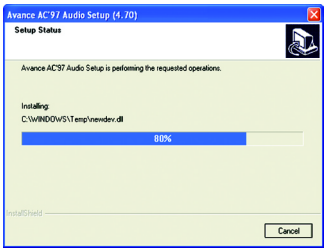



(1)

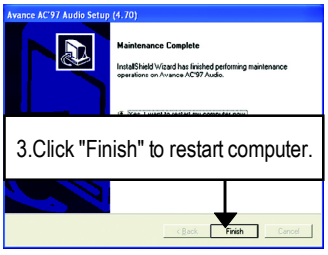



(2)




(3)




(4)

## Appendix C: RealTek 8139/8100 LAN 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.

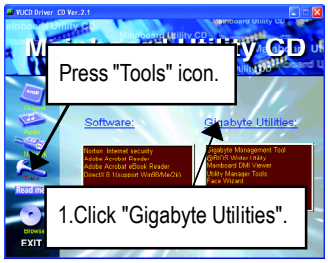

(1)


(2)

English

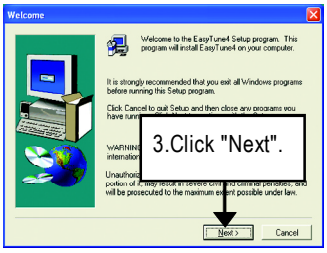
## Appendix D: EasyTune 4 Utilities Installation

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.

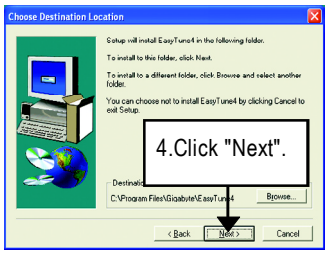



(1)

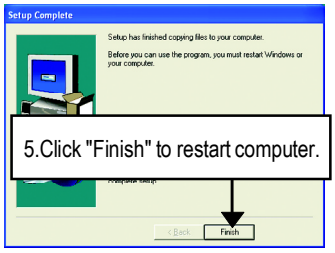

(2)




(3)




(4)




(5)

## 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.....

English

| Acronyms | Meaning |
|---|---|
| LBA | Logical Block Addressing |
| LED | Light Emitting Diode |
| MHz | Megahertz |
| MIDI | Musical Interface 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:

English

English

MEMO

English

MEMO

English

English

English

English