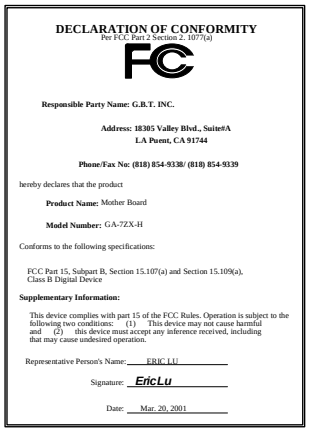
## FCC Compliance Statement:



**DECLARATION OF CONFORMITY**
Per FCC Part 2 Section 2. 1077(a)

FC

**Responsible Party Name: G.B.T. INC.**

**Address: 18305 Valley Blvd., Suite#A**
**LA Puent, CA 91744**

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

hereby declares that the product

**Product Name:** Mother Board

**Model Number:** GA-7ZX-H

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: *EricLu*

Date: Mar. 20, 2001

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-7ZX-H

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)

Date : Mar. 20, 2001

Signature : *Rex Lin*

Name : Rex Lin

# 7ZX-H

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

# USER'S MANUAL

AMD Athlon™/Duron™ Socket A Processor Motherboard
REV. 5.1 First Edition
R-51-01-010419

## How This Manual Is Organized

This manual is divided into the following sections:

| | |
|---|---|
| **1) Revision History** | Manual revision information |
| **2) Item Checklist** | Product item list |
| **3) Features** | Product information & specification |
| **4) Hardware Setup** | Instructions on setting up the motherboard |
| **5) Performance & Block Diagram** | Product performance & block diagram |
| **6) Suspend to RAM & Dual BIOS** | Instructions STR installation & Dual BIOS |
| **7) @BIOS™ & EasyTuneIII™** | @BIOS™ & EasyTuneIII™ introduction |
| **8) BIOS Setup** | Instructions on setting up the BIOS software |
| **9) Appendix** | General reference |

# Table Of Content

# Revision History

| Revision | Revision Note | Date |
|---|---|---|
| 5.1 | Initial release of the 7ZX-H motherboard user's manual. | Apr. 2001 |



Apr. 19, 2001 Taipei, Taiwan, R.O.C

# Item Checklist

- ☑ The 7ZX-H motherboard
- ☑ Cable for IDE / floppy device
- ☑ CD (TUCD) for motherboard driver & utility
- ☑ 7ZX-H user's manual

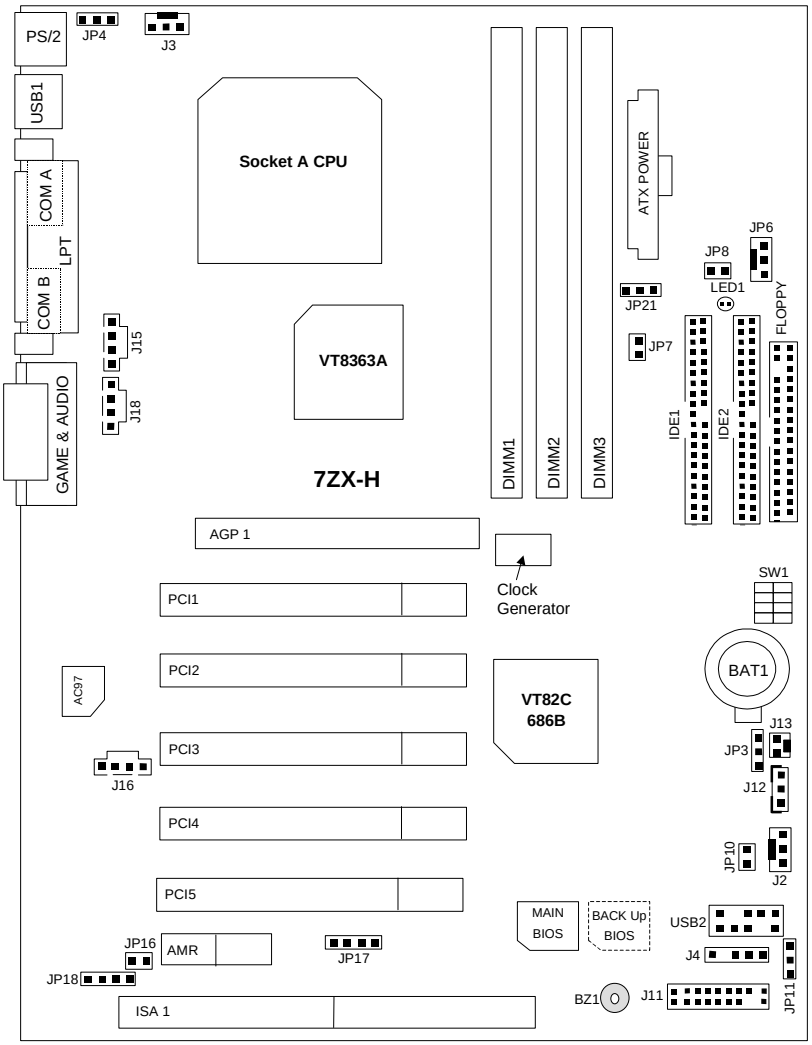
# Summary Of Features

| | |
|---|---|
| Form Factor | • 30.5 cm x 22.8 cm ATX size form factor, 4 layers PCB. |
| CPU | • AMD Athlon™/Duron™ (K7) Socket A Processor<br>• 256K/64K L2 cache on die<br>• Supports 600MHz ~ 1GHz and faster<br>• Support 100/133MHz FSB |
| Chipset | Apollo KT133A, consisting of:<br>• VT8363A Memory/AGP/PCI Controller (PAC)<br>• VT82C686B PCI Super-I/O Integrated Peripheral Controller (PSIPC) |
| Clock Generator | • ICW W230H<br>• ICW W230H<br>100/102/104/106/108/110/112/133 MHz system bus speeds |
| Memory | • 3 168-pin DIMM sockets<br>• Supports PC-100 / PC-133 SDRAM and VCM SDRAM<br>• Supports up to 1.5GB DRAM<br>• Supports only 3.3V SDRAM DIMM |
| I/O Control | • VT82C686B |
| Slots | • 1 AGP slot supports 4X mode & AGP 2.0 compliant<br>• 5 PCI slots supports 33MHz & PCI 2.2 compliant<br>• 1 AMR (Audio Modem Riser) slot<br>• 1 ISA slot (Optional) |
| On-Board IDE | • Supports PIO mode 3, 4, UDMA 33/ATA 66/ATA 100& ATAPI CD-ROM<br>• 2 IDE bus master (UDMA 33 / ATA 66 / ATA 100) IDE ports for up to 4 ATAPI devices |
| On-Board Peripherals | • 1 floppy port supports 2 FDD with 360K, 720K, 1.2M, 1.44M and 2.88M bytes<br>• 1 parallel ports supports Normal/EPP/ECP mode<br>• 2 serial ports (COM A & COM B)<br>• 4 USB ports<br>• 1 IrDA connector for IR |
| Hardware Monitor | • CPU/System fan revolution detect<br>• CPU/System temperature detect<br>• System voltage detect<br>• CPU overheat shutdown detect |

To be continued…

| | |
|---|---|
| PS/2 Connector | • PS/2® Keyboard interface and PS/2® Mouse interface |
| On-Board Sound | • AC'97 CODEC<br>• Line In/Line Out/Mic In/AUX In/CD In/TEL/Game Port |
| BIOS | • Licensed AMI BIOS, 2M bit flash ROM<br>• Support Dual BIOS (Optional) |
| Additional Features | • Support Wake-On-LAN (WOL)<br>• Support Internal / External Modem Ring On<br>• Support USB KB/MS Wake up from S3-S5<br>• Includes 3 fan power connectors<br>• Poly fuse for keyboard over-current protection<br>• Support STR (Suspend-To-RAM) function<br>• Support @BIOS™ and EasyTuneIII™ |

# 7ZX-H Motherboard Layout



# CPU Speed Setup

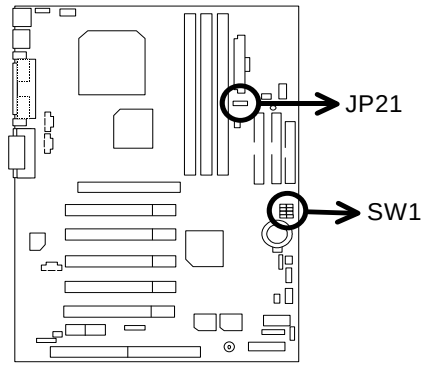
The system bus speed is selectable at 100~133MHz. The user can select the system bus speed by DIP switch **SW1 & JP21**.

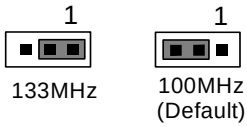
**Set System Bus Speed**

**SW1:** **O: ON / X: OFF**

| FSB | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| 95 | O | O | X | X |
| ★100 | 0 | X | X | X |
| 102 | 0 | 0 | 0 | X |
| 104 | X | X | X | 0 |
| 106 | 0 | X | X | 0 |
| 108 | 0 | 0 | X | 0 |
| 110 | 0 | X | 0 | 0 |
| 112 | 0 | 0 | 0 | 0 |
| 133 | 0 | X | 0 | X |

**JP21: CPU Clock Frequency (Optional)**




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

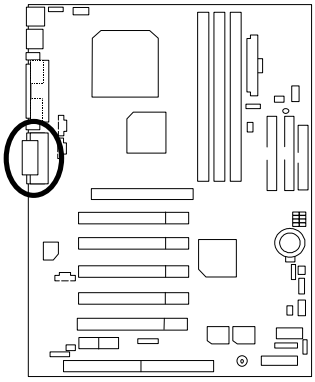
**AMD CPU Heat Sink Installation:**

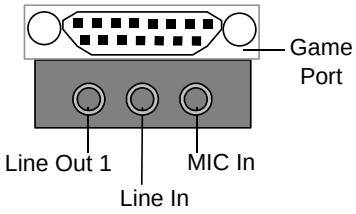
Beware: Please check that the heat sink is in good contact with the CPU before you turn on your system.

**The poor contact will cause over heat, and might cause damage to your processor.**

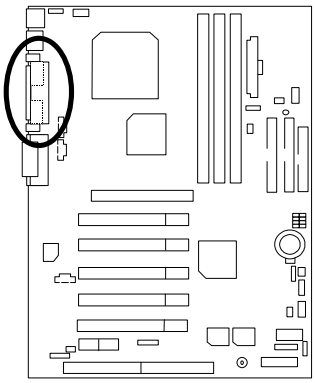
# Connectors

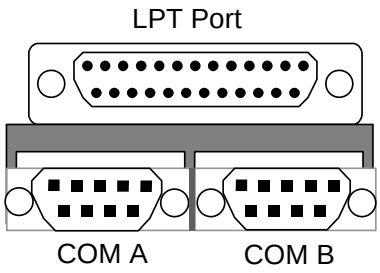
## Game & Audio Port



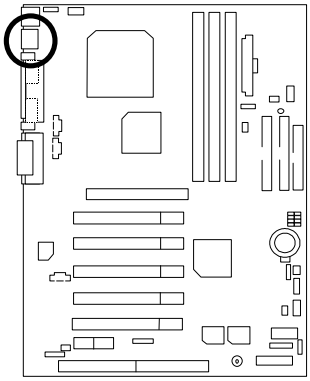


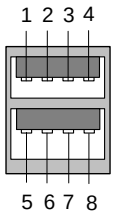

## COM A / COM B / LPT Port





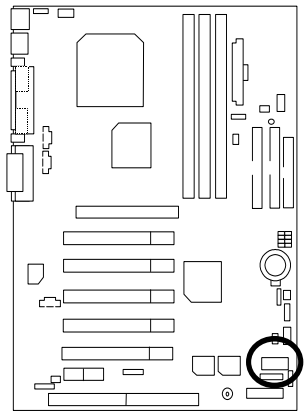
## USB 1 Connector

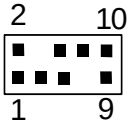





| Pin No. | Definition |
|---|---|
| 1 | USB V0 |
| 2 | USB D0- |
| 3 | USB D0+ |
| 4 | GND |
| 5 | USB V1 |
| 6 | USB D1- |
| 7 | USB D1+ |
| 8 | GND |

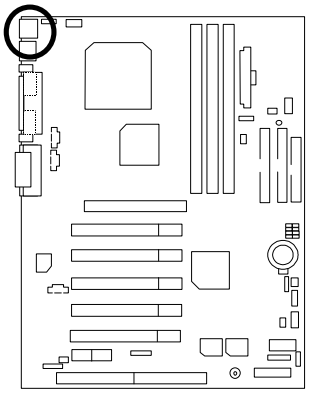
## USB 2 Connector

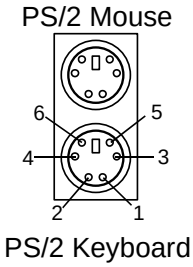





| Pin No. | Definition |
|---|---|
| 1 | +5V |
| 2 | GND |
| 3 | USB D2- |
| 4 | NC |
| 5 | USB D2+ |
| 6 | USB D3+ |
| 7 | NC |
| 8 | USB D3- |
| 9 | GND |
| 10 | +5V |

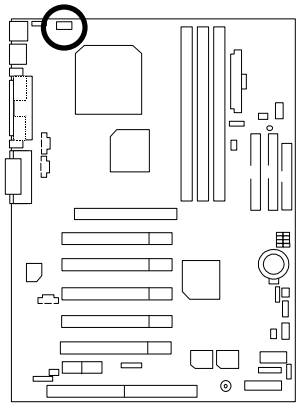
## PS/2 Keyboard & PS/2 Mouse Connector





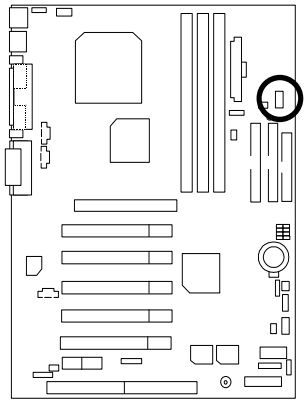

| PS/2 Mouse/Keyboard | |
|---|---|
| Pin No. | Definition |
| 1 | Data |
| 2 | NC |
| 3 | GND |
| 4 | VCC(+5V) |
| 5 | Clock |
| 6 | NC |

## J3: CPU Fan



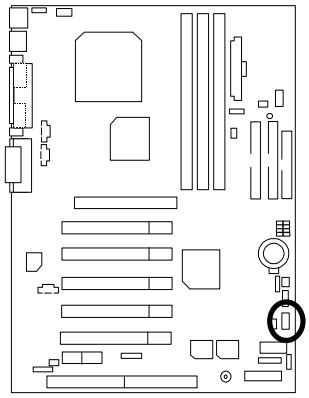

| Pin No. | Definition |
|---|---|
| 1 | Control |
| 2 | +12V |
| 3 | SENSE |

## JP6: Power Fan



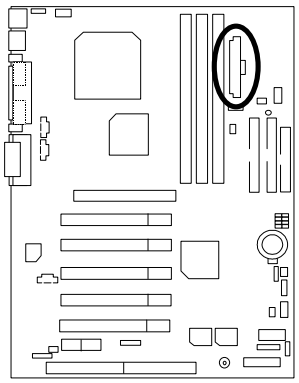

| Pin No. | Definition |
|---|---|
| 1 | Control |
| 2 | +12V |
| 3 | NC |

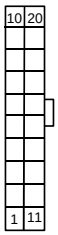
## J2: Sysem Fan




| Pin No. | Definition |
|---|---|
| 1 | Control |
| 2 | +12V |
| 3 | SENSE |

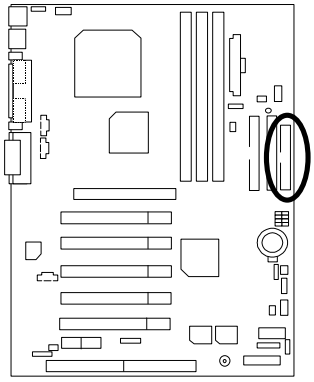
## ATX Power

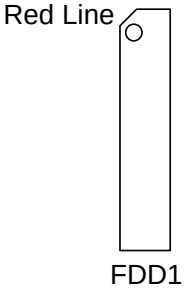




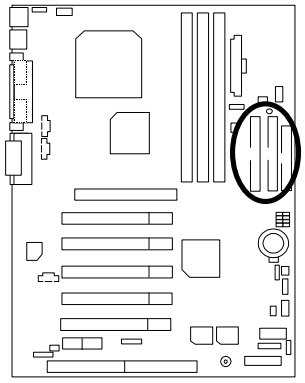

| Pin No. | Definition |
|---|---|
| 3,5,7,13, 15-17 | GND |
| 1,2,11 | 3.3V |
| 4,6,19,20 | VCC |
| 10 | +12V |
| 12 | -12V |
| 18 | -5V |
| 8 | Power Good |
| 9 | 5V SB (stand by+5V) |
| 14 | PS-ON (Soft On/Off) |

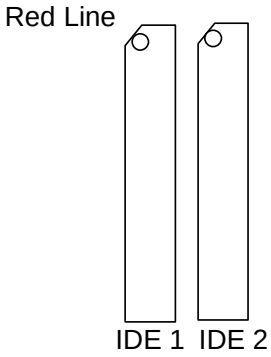
## Floppy Port



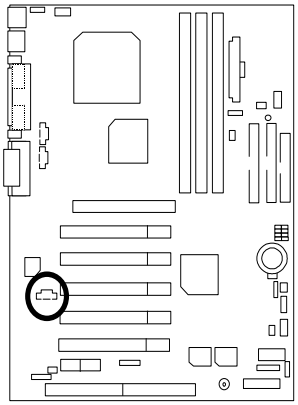


IDE1 (Primary), IDE2 (Secondary) Port



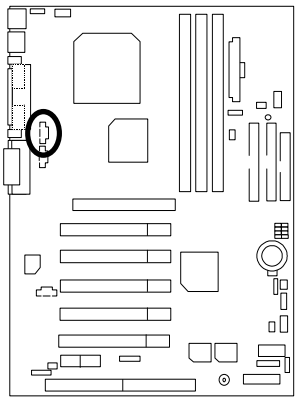


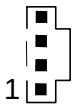

J16 TEL: The connector is for Modem with internal voice connector




| Pin No. | Definition |
|---|---|
| 1 | Signal-In |
| 2 | GND |
| 3 | GND |
| 4 | Signal-Out |

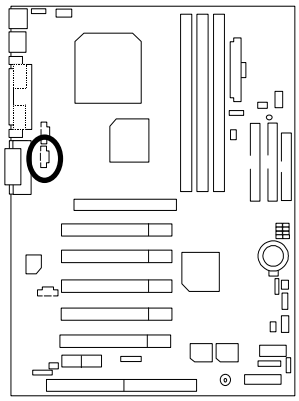
J15: AUX_IN

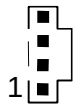





| Pin No. | Definition |
|---|---|
| 1 | AUX-L |
| 2 | GND |
| 3 | GND |
| 4 | AUX-R |

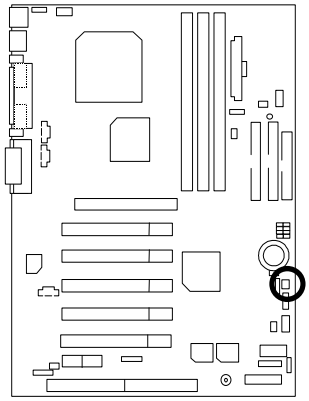
J18: CD Audio Line In





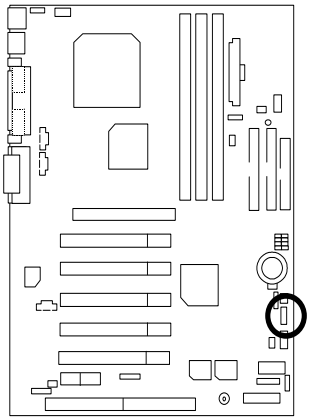

| Pin No. | Definition |
|---|---|
| 1 | CD-L |
| 2 | GND |
| 3 | GND |
| 4 | CD-R |

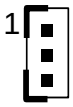
## J13: Ring Power On (Internal Modem Card Wake Up)




| Pin No. | Definition |
|---|---|
| 1 | Signal |
| 2 | GND |

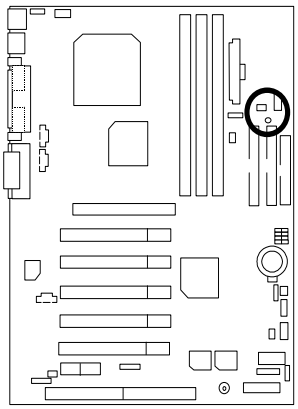
## J12: Wake On LAN






| Pin No. | Definition |
|---|---|
| 1 | +5V SB |
| 2 | GND |
| 3 | Signal |

## JP8 / LED1: STR LED Connector & DIMM LED

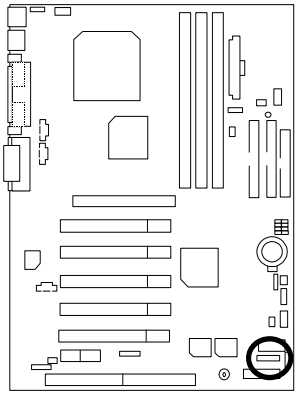


STR LED Connector External.

1 ■ ■

\+ ●● DIMM LED

## J4: IR

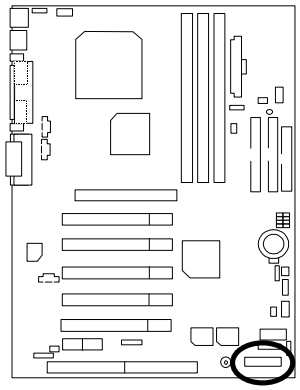


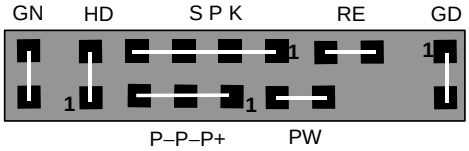
1 ■ ■ ■ ■

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

# Panel And Jumper Definition

J11: 2x11 Pins Jumper

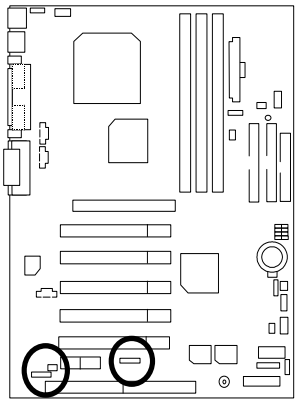


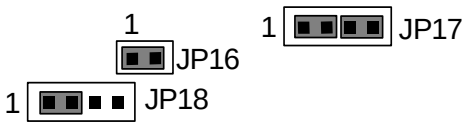



| | |
|---|---|
| GN (Green Switch) | Open: Normal Operation<br>Close: Entering Green Mode |
| GD (Green LED) | Pin 1: LED anode(+)<br>Pin 2: LED cathode(–) |
| HD (IDE Hard Disk Active LED) | Pin 1: LED anode(+)<br>Pin 2: LED cathode(–) |
| SPK (Speaker Connector) | Pin 1: VCC(+)<br>Pin 2- Pin 3: NC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

## JP16 /JP17/JP18: AMR (Primary or Secondary) Select (Optional)

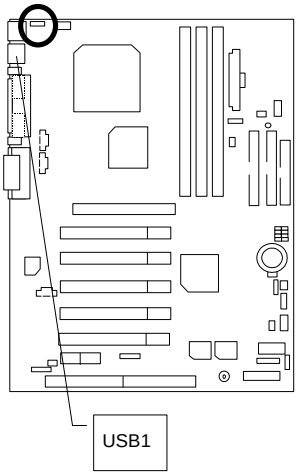
**(AMR→ Audio Modem Riser)**






| | JP16 | JP17 | JP18 |
|---|---|---|---|
| Onboard AC97 | ON | 1-2 | 1-2 |
| AMR (Primary) | OFF | 3-4 | 3-4 |
| Onboard AC97+MR (Secondary) (Default) | ON | 1-2<br>3-4 | 1-2 |

## JP4: Rear USB Device Wake up Selection (USB Connector → USB1)

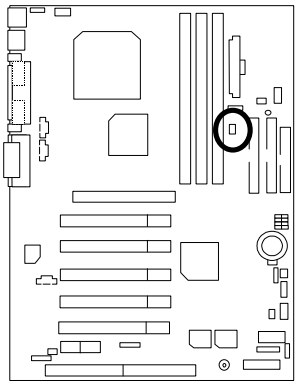




| Pin No. | Definition |
|---|---|
| 1-2 Close | Normal (Default) |
| 2-3 Close | USB Device Wake up |

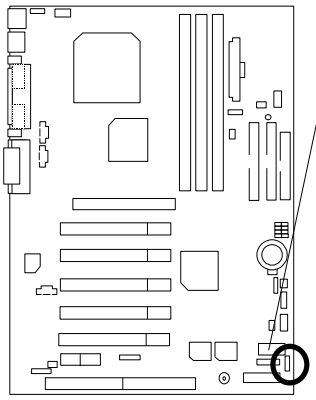
(If you want to use "USB Dev Wakeup From S3-S5" function, you have to set the BIOS setting "USB Dev Wakeup From S3-S5" enabled, and the jumper "JP4" enabled).
*(Power on the computer and as soon as memory counting starts, press <Del>. You will enter BIOS Setup. Select the item "POWER MANAGEMENT SETUP", then select "USB Dev Wakeup From S3-S5: Enabled". Remember to save the setting by pressing "ESC" and choose the "SAVE & EXIT SETUP" option.)

## JP7: STR Function Enable




| Pin No. | Definition |
|---|---|
| Open | Normal (Default) |
| Close | STR Enabled |

## JP11: Front USB Device Wake up Selection (USB Port → USB2)

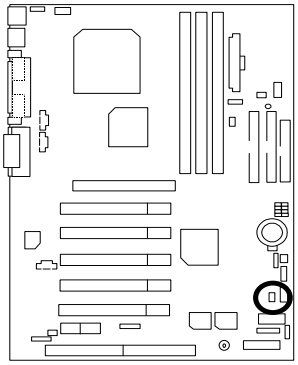




| Pin No. | Definition |
|---|---|
| 1-2 close | Normal (Default) |
| 2-3 close | Enabled Front USB Device Wake up |

(If you want to use "USB Dev Wakeup From S3-S5" function, you have to set the BIOS setting "USB Dev Wakeup From S3-S5" enabled, and the jumper "JP11" enabled).
*(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 "USB Dev Wakeup From S3-S5: Enabled". Remember to save the setting by pressing "ESC" and choose the "SAVE & EXIT SETUP" option.)

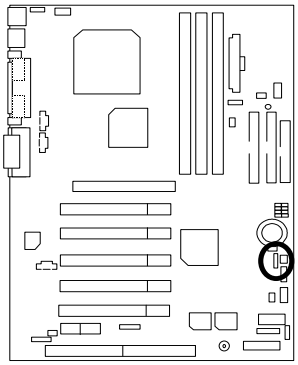
## JP10: BIOS Write Protection (Optional)




| Pin No. | Definition |
|---|---|
| ON | Write Protect Enable |
| OFF | Write Protect Disable (Default) |

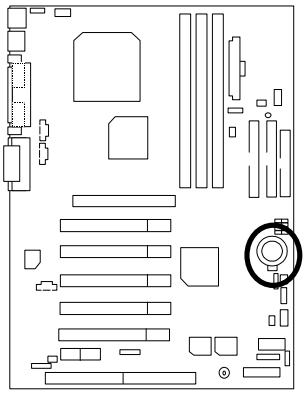
☛Please Set Jumper JP10 to "OFF" to enabled BIOS Write Function when you update new BIOS or new device

## JP3: Clear CMOS Function (Optional)




| Pin No. | Definition |
|---|---|
| 1-2 close | Normal (Default) |
| 2-3 close | Clear CMOS |

## 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.

# Performance List

The following performance data list is the testing results of some popular benchmark testing programs.

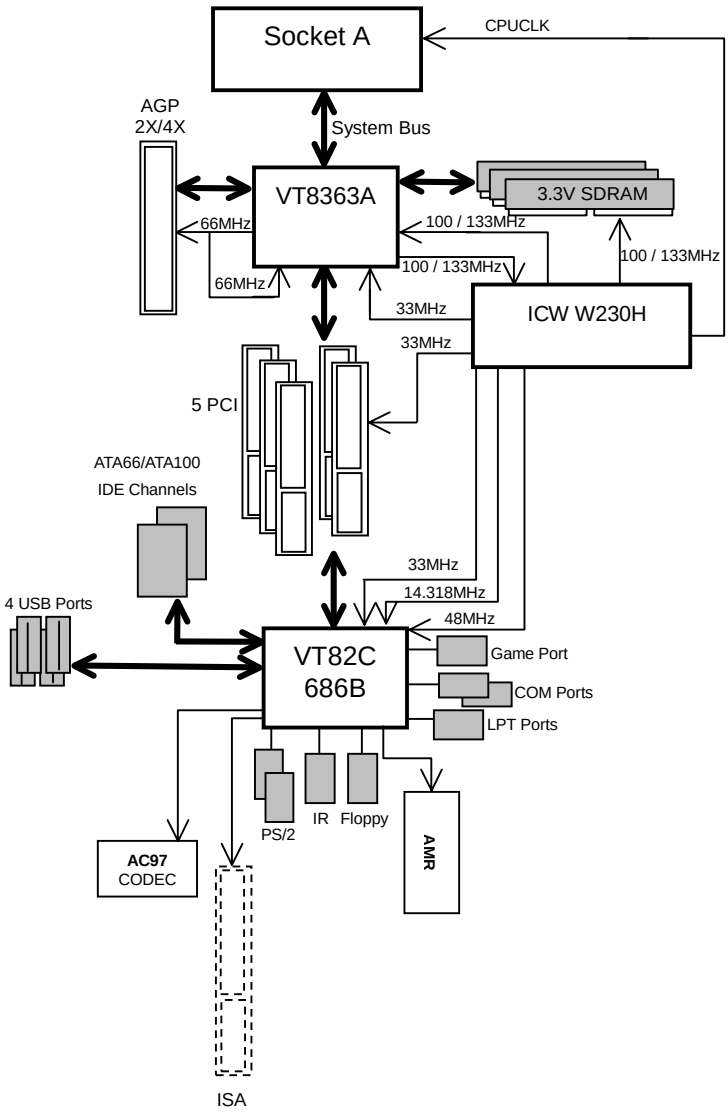
These data are just referred by users, and there is no responsibility for different testing data values gotten by users. (The different Hardware & Software configuration will result in different benchmark testing results.)

- CPU — AMD Althon™ 1200MHz, AMD Duron™ 900MHz
- DRAM — (128x1) MB SDRAM (Winbond W986408CH-75)
- CACHE SIZE — 384 KB included in Althon™<br>192 KB included in Duron™
- DISPLAY — GA-GF2000
- STORAGE — Onboard IDE (Quantum AS30000AT 30GB)
- O.S. — Windows 2000 + SP1 + DirectX8
- DRIVER — Display Driver at 1024 x 768 x 64k colors 75Hz.<br>TUCD ver.1.7

| Processor | AMD Althon™ 1200MHz (100x12) | AMD Duron™ 900MHz (100x9) |
|---|---|---|
| **Winbench99** | | |
| Business Disk Winmark 99 | 7500 | 7700 |
| Hi-End Disk Winmark 99 | 15400 | 15200 |
| Business Graphics Winmark 99 | 525 | 370 |
| Hi-End Graphics Winmark 99 | 1170 | 881 |
| **Winstone 2001** | | |
| Business Winstone 2001 | 42.3 | 31.7 |
| Content Creative Winstone 2001 | 43.7 | 35.2 |

If you wish to maximize the performance of your system, please refer to the detail on P.50

# Block Diagram



# Suspend To RAM Installation

## A.1 Introduce STR function:

Suspend-to-RAM (STR) is a Windows 98 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 ACPI mode.

Putting Windows 98 into ACPI mode is fairly easy.

**Setup with Windows 98 CD:**

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

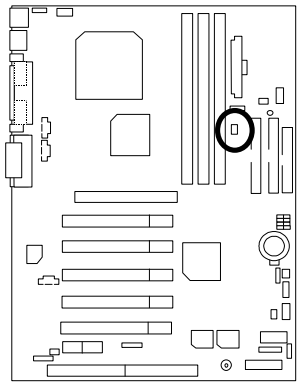
B. Type (without quotes) **"D:\setup"** in the window provided. Hit the enter key or click OK.

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:**

**(If you want to use STR Function, please set jumper JP7 Closed.)**




| Pin No. | Definition |
|---|---|
| Open | Normal (Default) |
| Close | STR Enabled |

**Step 3:**

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.

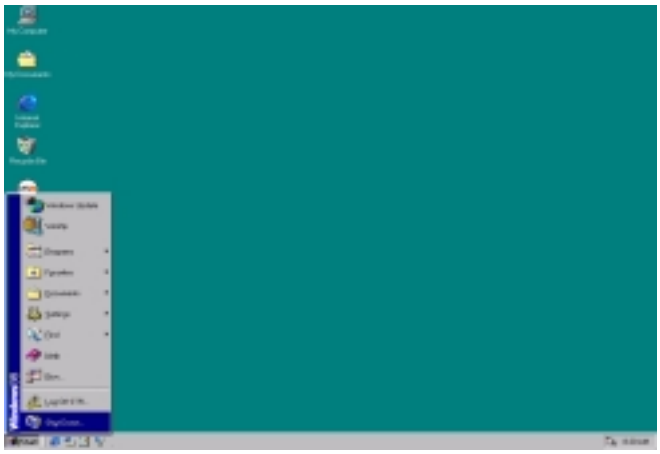
Congratulation! You have completed the installation and now can use the STR function.

### A.3 How to put your system into STR mode?

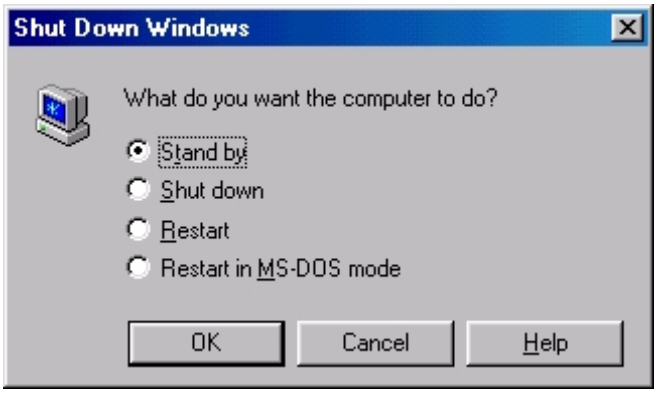
There are two ways to accomplish this:

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

   A. Press the “Start” button and then select “Shut Down”

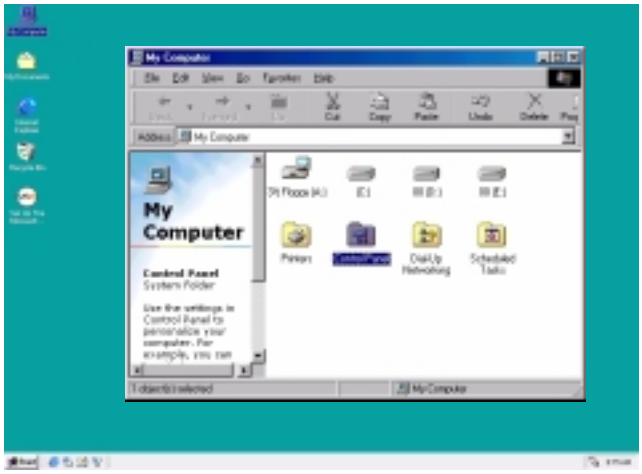


   B. Choose the “Stand by” item and press “OK”

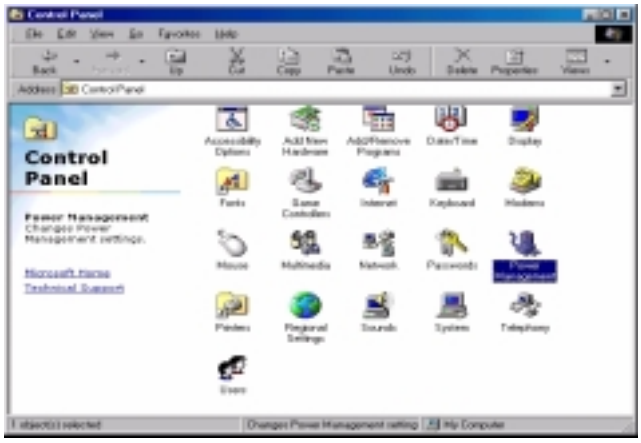


2. Define the system ”power on” button to initiate STR sleep mode:

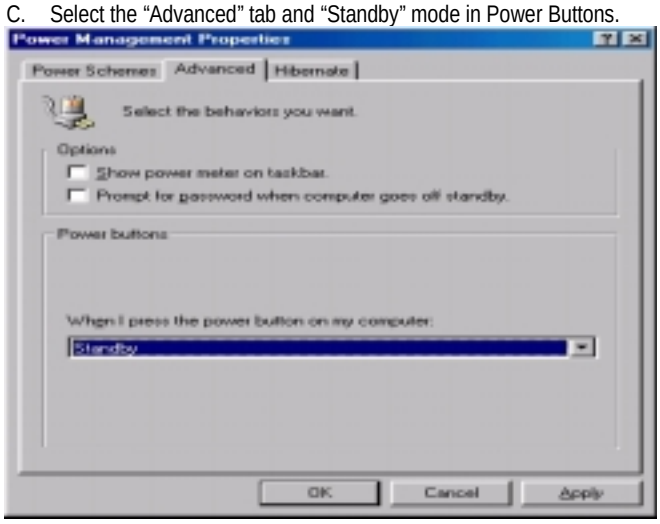
A. Double click “My Computer” and then “Control Panel”




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 five ways to “wake up” the system:

1. Press the “Power On” button.
2. Use the “Resume by Alarm” function.
3. Use the “Modem Ring On” function.
4. Use the “Wake On LAN” function.
5. Use the “USB Device Wake Up” function.

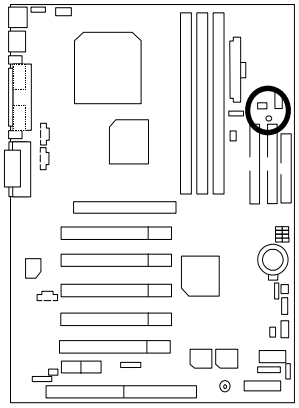
## A.5 Notices:

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 SDRAM must be PC-100/PC-133 compliant.

2. Jumper JP8 is provided to connect to the STR LED in your system chassis. [Your chassis may not provide this feature.] The STR LED will be illuminated when your system is in STR sleep mode.



STR LED Connector External.

1 ■ ■

\+ ●● DIMM LED

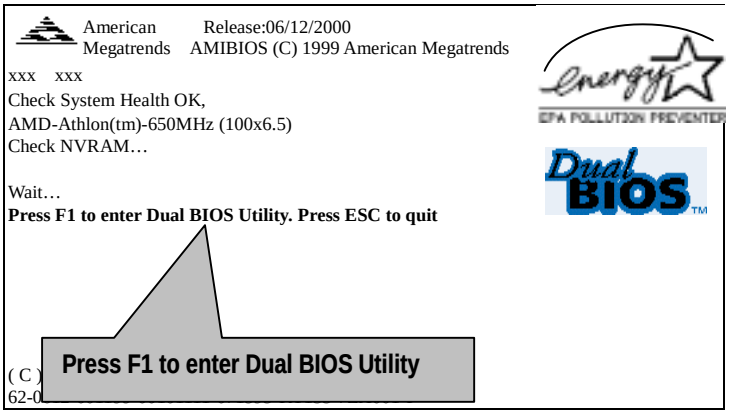
# Dual BIOS Introduction (Optional)

## A. What is Dual BIOS Technology?

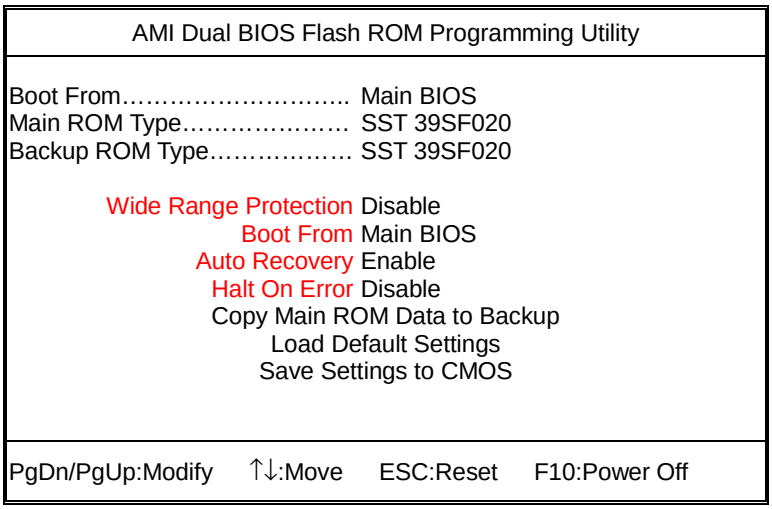
Dual BIOS means that there are two system BIOS (ROM) on the motherboard, one is the Main BIOS and the other is Backup BIOS. Under the normal circumstances, the system works on the Main BIOS. If the Main BIOS is corrupted or damaged, the Backup BIOS can take over while the system is powered on. This means that your PC will still be able to run stably as if nothing has happened in your BIOS.

## B. How to use Dual BIOS?

a. Boot Screen



b. AMI Dual BIOS Flash ROM Programming Utility




c. Dual BIOS Item explanation:

**BIOS will auto detect:**

**Boot From** : Main BIOS
**Main ROM Type** : SST 39SF020
**Backup ROM Type** : SST 39SF020

**Wide Range Protection: Disable(Default), Enable**

*Status 1:*

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

*Status 2:*

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

**Boot From : Main BIOS (Default), Backup BIOS**

*Status 1:*

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

**Auto Recovery : Enable(Default), Disable**

When one of the Main BIOS or Backup BIOS occurs checksum failure, the working BIOS will automatically recover the BIOS of checksum failure.
(In the Power Management Setup of the BIOS Setting, if ACPI Suspend Type is set to Suspend to RAM, the Auto Recovery will be set to Enable automatically.)

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

**Halt On Error : Disable(Default), Enable**

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

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

**Copy Main ROM Data to Backup**

Backup message:

***Are you sure to copy BIOS?***
***[Enter] to continue or [Esc] to abort ...***

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

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

## DualBIOS™ Technology FAQ

GIGABYTE Technology is pleased to introduce DualBIOS technology, a hot spare for your system BIOS. This newness “Value-added” feature, in a long series of innovations from GIGABYTE, is available on GA-7ZX-H motherboard. Future GIGABYTE motherboards will also incorporate this innovation.

### What’s DualBIOS™?

On GIGABYTE motherboards with DualBIOS there are physically two BIOS chips. For simplicity we’ll call one your “Main BIOS” and the other we’ll call your “Backup” BIOS (your “hot spare”). If your Main BIOS fails, the Backup BIOS almost automatically takes over on your next system boot. Almost automatically and with virtually zero down time! Whether the problem is a failure in flashing your BIOS or a virus or a catastrophic failure of the Main BIOS chip, the result is the same - the Backup BIOS backs you up, almost automatically.

## I. Q: What is DualBIOS™ technology?

**Answer:**

DualBIOS technology is a patented technology from Giga-Byte Technology. The concept of this technology is based on the redundancy and fault tolerance theory. DualBIOS™ technology simply means there are two system BIOSes (ROM) integrated onto the motherboard. One is a main BIOS, and the other is a backup BIOS. The mainboard will operate normally with the main BIOS, however, if the main BIOS is corrupt or damaged for various reasons, the backup BIOS will be automatically used when the system powered-On. Your PC will operate as before the main BIOS was damaged, and is completely transparent to the user.

## II. Q: Why does anyone need a motherboard with DualBIOS™ technology?

**Answer:**

In today's systems there are more and more BIOS failures. The most common reasons are virus attacks, BIOS upgrade failures, and/or deterioration of the BIOS (ROM) chip itself.

1. New computer viruses are being found that attack and destroy the system BIOS. They may corrupt your BIOS code, causing your PC to be unstable or even not boot normally.
2. BIOS data will be corrupted if a power loss/surge occurs, or if a user resets the system, or if the power button is pressed during the process of performing a system BIOS upgrade.
3. If a user mistakenly updates their mainboard with the incorrect BIOS file, then the system may not be able to boot correctly. This may cause the PC system hang in operation or during boot.
4. A flash ROM's life cycle is limited according to electronic characteristics. The modern PC utilizes the Plug and Play BIOS, and is updated regularly. If a user changes peripherals often, there is a slight chance of damage to the flash ROM.

With Giga-Byte Technology's patented DualBIOS™ technology you can reduce the possibility of hangs during system boot up, and/or loss BIOS data due to above reasons. This new technology will eliminate valuable system down time and costly repair bills cause by BIOS failures.

### III. Q: How does DualBIOS™ technology work?

**Answer:**

1. DualBIOS™ technology provides a wide range of protection during the boot up procedure. It protects your BIOS during system POST, ESCD update, and even all the way to PNP detection/assignment.
2. DualBIOS™ provides automatic recovery for the BIOS. When the first BIOS used during boot up does not complete or if a BIOS checksum error occurs, boot-up is still possible. In the DualBIOS™ utility, the "Auto Recovery" option will guarantee that if either the main BIOS or backup BIOS is corrupted, the DualBIOS™ technology will use the good BIOS and correct the wrong BIOS automatically.
3. DualBIOS™ provides manual recovery for the BIOS. DualBIOS™ technology contains a built-in flash utility, which can flash your system BIOS from backup to main and/or visa versa. There is no need for an OS-dependent flash utility program.
4. DualBIOS™ contains a one-way flash utility. The built-in one-way flash utility will ensure that the corrupt BIOS is not mistaken as the good BIOS during recovery and that the correct BIOS (main vs. backup) will be flashed. This will prevent the good BIOS from being flashed.

### IV. Q: Who Needs DualBIOS™ technology?

**Answer:**

1. Every user should have DualBIOS™ technology due to the advancement of computer viruses.
   Everyday, there are new BIOS-type viruses discovered that will destroy your system BIOS. Most commercial products on the market do not have solutions to guard against this type of virus intrusion. The DualBIOS™ technology will provide a state-of-the-art solution to protect your PC:
   Case I.) Vicious computer viruses may wipe out your entire system BIOS. With a conventional single system BIOS PC, the PC will not be functional until it is sent for repairs.
   Case II.) If the "Auto Recovery" option is enable in the DualBIOS™ utility, and if a virus corrupts your system BIOS, the backup BIOS will automatically reboot the system and correct the main BIOS.
   Case III.) A user may override booting from the main system BIOS. The DualBIOS™ utility may be entered to manually change the boot sequence to boot from the backup BIOS.

2. During or after a BIOS upgrade, if DualBIOS™ detects that the main BIOS is corrupt, the backup BIOS will take over the boot-up process automatically. Moreover, it will verify the main and backup BIOS checksums when booting-up. DualBIOS™ technology examines the checksum of the main and backup BIOS while the system is powered on to guarantee your BIOS operates properly.

3. Power Users will have the advantage of having two BIOS versions on their mainboard. The benefit is being able to select either version BIOS to suit the performance system needs.
4. Flexibility for high-end desktop PCs and workstation/servers. In the DualBIOS™ utility, the option can be set, "Halt On When BIOS Defects," to be enable to halt your system with a warning message that the main BIOS has been corrupted. Most workstation/servers require constant operation to guarantee services have not been interrupted. In this situation, the "Halt On When BIOS Defects" message may be disable to avoid system pauses during normal booting. Another advantage you gain from Giga-Byte's DualBIOS™ technology is the ability to upgrade from dual 2 Mbit BIOS to dual 4 Mbit BIOS in the future if extra BIOS storage is need.

# @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™.

# EasyTuneIII™ Introduction

## Gigabyte announces **EasyTuneIII™** Windows overdrive utility


"Overdrive" might be one of the most common issues in computer field. But have many users ever tried it? The answer is probably "no". Because "overdrive" is thought to be very difficult and includes a lot of technical know-how, sometimes "overdrive" is even considered as special skills found only in some enthusiasts.

But as to the experts in "overdrive", what's the truth? They may spend quite a lot of time and money to study, try and use many different hardware and software tools to do "overdrive". And even with these technologies, they still learn that it's quite a risk because the safety and stability of an "overdrive" system is unknown.

Now everything is different because of a Windows overdrive utility EasyTuneIII™--announced by Gigabyte. This utility has totally changed the gaming rule of "overdrive". This is the first overdrive utility suitable for both normal and power users. Users can choose either "Easy Mode" or "Advanced Mode" to run "overdrive" at their convenience. For users who choose "Easy Mode", they just need to click "Auto Optimize" to have auto and immediate CPU overclocking. This software will then overdrive CPU speed automatically with the result being shown in the control panel. If someone prefers to "overdrive" by oneself, there is also another choice. Click "Advanced Mode" to enjoy "sport drive" class overclocking. In "Advanced Mode", one can change the system bus speed in small increments to get ultimate system performance. And no matter which mainboard is used, if it's a Gigabyte's product*, EasyTuneIII™ helps to perform the best of system.

Besides, different from other traditional over-clocking methods, EasyTuneIII™ doesn't require users to change neither BIOS nor hardware switch/ jumper setting; on the other hand, they can do "overdrive" at only one click. Therefore, this is a safer way for "overdrive" as nothing is changed on software or hardware. If user runs EasyTuneIII™ 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 been tested in EasyTuneIII™, user can "Save" this bus speed and "Load" it in next time. Obviously, Gigabyte EasyTuneIII™ has already turned the "overdrive" technology toward to a newer generation.

This wonderful software is now free bundled in Gigabyte motherboard attached driver CD. Users may make a test drive of "EasyTuneIII™" to find out more amazing features by themselves.

For further technical information, please link to: http://www.gigabyte.com.tw

**※ Note: For the latest version of EasyTuneIII™, please visit our website.**

# 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 two notch. Memory size can vary between sockets.

Install memory in any combination table:

| DIMM | 168-pin SDRAM DIMM Modules | |
|---|---|---|
| DIMM 1 | Supports 16 / 32 / 64 / 128 / 256 / 512 MB | X 1 pcs |
| DIMM 2 | Supports 16 / 32 / 64 / 128 / 256 / 512 MB | X 1 pcs |
| DIMM 3 | Supports 16 / 32 / 64 /128 / 256 / 512 MB | X 1 pcs |

★Total System Memory (Max 1.5GB)

# 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

Power ON the computer and press <Del> immediately will allow you to enter Setup. If the message disappears before you respond and you still wish to enter Setup, restart the system to try again by turning it OFF then ON or pressing the "RESET" bottom on the system case. You may also restart by simultaneously press <Ctrl> – <Alt>– <Del> keys.

## 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<br>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 default CMOS value from BIOS default table, only for Option Page Setup Menu |
| <F7> | Load the Setup Defaults |
| <F8> | Reserved |
| <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

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 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.

| 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<br>F6 : Load BIOS Defaults F7: Load Setup Defaults F10: Save & Exit | |
| Time, Date, Hard Disk Type, … | |

Figure 1: Main Menu

- **Standard CMOS Setup**

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

- **BIOS Features Setup**

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

- **Chipset Features Setup**

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

- **Power Management Setup**

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

- **PNP/PCI Configurations**

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

- **Load BIOS Defaults**

  Bios Defaults indicates the value of the system parameter which the system would be in the safe configuration.

- **Load Setup Defaults**

  Setup Defaults indicates the value of the system parameter which the system would be in the most appropriate configuration.

- **Integrated Peripherals**

  This setup page includes all onboard peripherals.

- **Hardware Monitor & MISC Setup**

  This setup page is auto detect fan and temperature status.

- **Supervisor password**

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

- **User password**

  Change, set, 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 Setup

The items in Standard CMOS Features Menu (Figure 2) are divided into 9 categories. Each category includes no, 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 you want in each item.

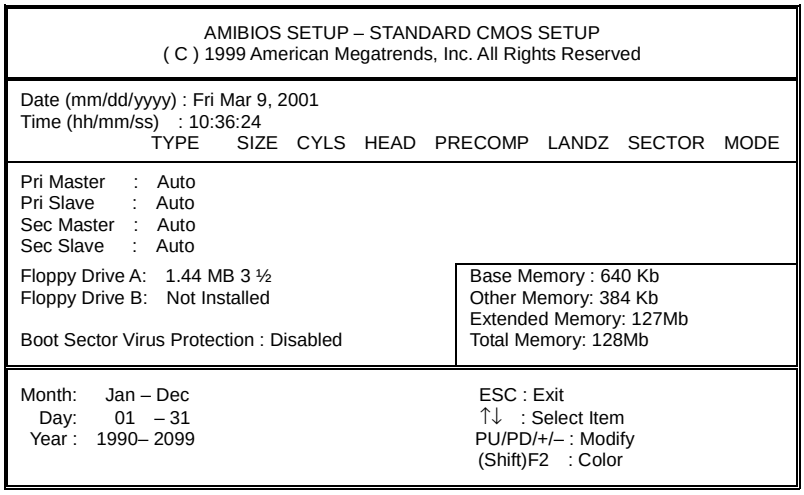



Figure 2: Standard CMOS Setup

- **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 |

- **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 user definable type. User type is user-definable; Auto type which will automatically detect HDD type.

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

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

| | |
|---|---|
| CYLS. | Number of cylinders |
| HEADS | number of heads |
| PRECOMP | write precomp |
| LANDZONE | Landing zone |
| SECTORS | number of sectors |

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

- **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.

| | |
|---|---|
| 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 Enable). |
| 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. |

- **Boot Sector 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.

  **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.

  **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.

# BIOS Features Setup

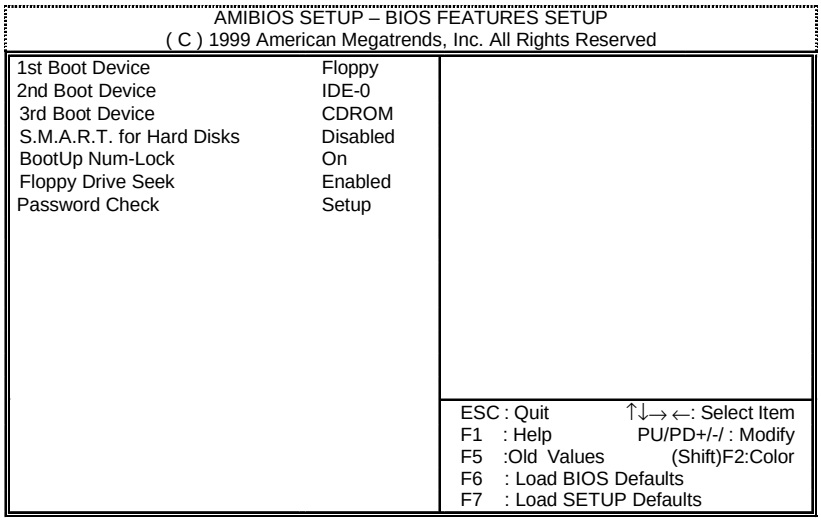



Figure 3: BIOS Features Setup

- **1st / 2nd / 3rd Boot Device**

| | |
|---|---|
| Floppy | Boot Device by Floppy. |
| ZIP A: / LS-120 | Boot Device by ZIP A: / LS-120. |
| CDROM | Boot Device by CDROM. |
| SCSI | Boot Device by SCSI. |
| NETWORK | Boot Device by NETWORK. |
| IDE-0~IDE-3 | Boot Device by IDE-0~IDE-3. |
| Disabled | Boot Device by Disabled. |
| USB FDD | Boot Device by USB FDD. |
| ATAPI ZIP C: | Boot Device by ATAPI ZIP C:. |

- **S.M.A.R.T. for Hard Disks**

| | |
|---|---|
| Enabled | Enable S.M.A.R.T. Hard for Disks. |
| Disabled | Disable S.M.A.R.T. Hard for Disks. **(Default Value)** |

- **Boot Up Num-Lock**

| | |
|---|---|
| On | Keypad is number keys. **(Default Value)** |
| Off | Keypad is arrow keys. |

- **Floppy Drive 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 not tell from 720, 1.2 or 1.44 drive type as they are all 80 tracks. **(Default Value)** |
| 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. |

- **Password Check**

| | |
|---|---|
| Setup | Set Password Check to Setup. **(Default Value)** |
| Always | Set Password Check to Always. |

# Chipset Features Setup

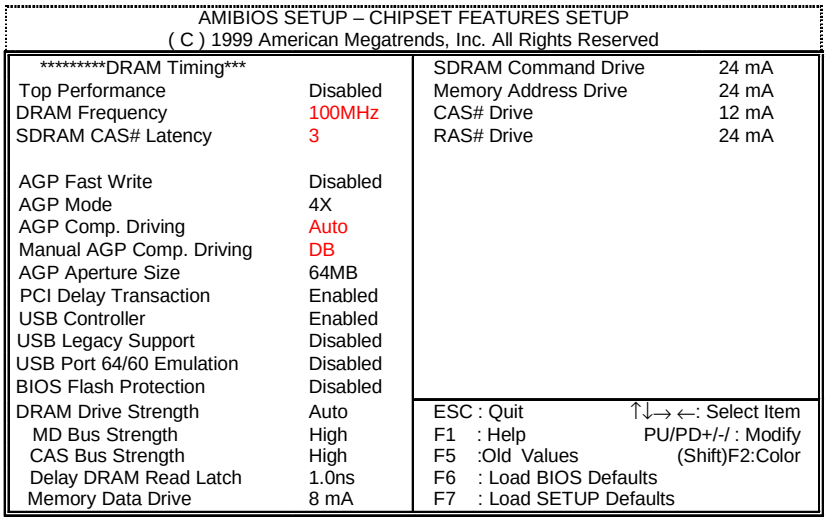



Figure 4: Chipset Features Setup

- **Top Performance**

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

| | |
|---|---|
| Disabled | Top Performance Disable. **(Default Value)** |
| Enabled | Top Performance Enable. |

- **DRAM Frequency**

| | |
|---|---|
| Auto | Set DRAM Frequency to Auto. |
| 100MHz | Set DRAM Frequency to 100MHz. **(Default Value)** |
| 133MHz | Set DRAM Frequency to 133MHz. |

- **SDRAM CAS# Latency**

| | |
|---|---|
| 2 | For Fastest SDRAM DIMM module. |
| 3 | For Slower SDRAM DIMM module. **(Default Value)** |
| Auto | Detect SDRAM CAS# Latency by SPD. |

- **AGP Fast Write**

| | |
|---|---|
| Enabled | Enable this function only if the AGP Card support Fast Write Function. (Enable this function can increase AGP performance). |
| Disabled | Disable this function. **(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 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. |

- **PCI Delay Transaction**

| | |
|---|---|
| Enabled | Enable Delay Transaction. **(Default Value)** |
| Disabled | Disable Delay Transaction. |

- **USB Controller**

| | |
|---|---|
| Enabled | Enable USB Controller. **(Default Value)** |
| Disabled | Disable USB Controller. |

- **USB Legacy Support**

| | |
|---|---|
| Keyboard/FDD | Set USB Legacy Support Keyboard / Floppy. |
| KB/Mouse/FDD | 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)** |

- **BIOS Flash Protection**

| | |
|---|---|
| Enabled | BIOS Flash Write Protection. |
| Disabled | Normal. **(Default Value)** |

- **DRAM Drive Strength**

| | |
|---|---|
| Auto | Set DRAM Drive Strength Auto. **(Default Value)** |
| Manual | Set DRAM Drive Strength Manual. |

**If DRAM Drive Strength is Manual, then you can adjust item below.**

- **MD Bus Strength**

| | |
|---|---|
| High | Set MD Bus Strength High. **(Default Value)** |
| Low | Set MD Bus Strength Low. |

- **CAS Bus Strength**

| | |
|---|---|
| High | Set CAS Bus Strength High. **(Default Value)** |
| Low | Set CAS Bus Strength Low. |

- **Delay DRAM Read Latch**

| | |
|---|---|
| 1.0ns | Set DRAM Read Latch Delay 1.0ns. **(Default Value)** |
| 1.5ns | Set DRAM Read Latch Delay 1.5ns. |
| 0.5ns | Set DRAM Read Latch Delay 0.5ns. |
| No delay | Set DRAM Read Latch No delay. |

- **Memory Data Drive**

| | |
|---|---|
| 6 mA | Set Memory Data Drive 6 mA. |
| 8 mA | Set Memory Data Drive 8 mA. **(Default Value)** |

- **SDRAM Command Drive**

| | |
|---|---|
| 16 mA | Set SDRAM Command Drive 16 mA. |
| 24 mA | Set SDRAM Command Drive 24 mA. **(Default Value)** |

- **Memory Address Drive**

| | |
|---|---|
| 16 mA | Set Memory Address Drive 16 mA. |
| 24 mA | Set Memory Address Drive 24 mA. **(Default Value)** |

- **CAS# Drive**

| | |
|---|---|
| 8 mA | Set CAS# Drive 8 mA. |
| 12 mA | Set CAS# Drive 12 mA. **(Default Value)** |

- **RAS# Drive**

| | |
|---|---|
| 16 mA | Set RAS# Drive 16 mA. |
| 24 mA | Set RAS# Drive 24 mA. **(Default Value)** |

# Power Management Setup

AMIBIOS SETUP – POWER MANAGEMENT SETUP
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| | | | |
|---|---|---|---|
| ACPI Sleep Type | S1/POS | RTC Alarm Date | Every Day |
| USB Dev Wakeup from S3-S5 | Disabled | RTC Alarm Hour | 00 |
| Suspend Time Out(Minute) | Disabled | RTC Alarm Minute | 00 |
| Display Activity | Ignore | RTC Alarm Second | 00 |
| IRQ3 | Monitor | | |
| IRQ4 | Monitor | | |
| IRQ5 | Ignore | | |
| IRQ7 | Monitor | | |
| IRQ9 | Ignore | | |
| IRQ10 | Ignore | | |
| IRQ11 | Ignore | | |
| IRQ13 | Ignore | | |
| IRQ14 | Monitor | | |
| IRQ15 | Ignore | | |
| Soft-Off by Power Button | Instant-Off | | |
| System after AC Back | Soft-Off | ESC : Quit | ↑↓→ ←: Select Item |
| Modem Use IRQ | 4 | F1 : Help | PU/PD+/-/ : Modify |
| Resume On Ring/LAN | Enabled | F5 :Old Values | (Shift)F2:Color |
| PME Event Wake Up | Enabled | F6 : Load BIOS Defaults | |
| Resume On RTC Alarm | Disabled | F7 : Load SETUP Defaults | |

Figure 5: Power Management Setup

- **ACPI Sleep Type**

| | |
|---|---|
| S1/POS | Set ACPI sleep type to S1. **(Default Value)** |
| S3/STR | Set ACPI sleep type to S3. |

- **USB Dev Wakeup from S3-S5**

| | |
|---|---|
| Enabled | Enable USB Dev Wakeup from S3-S5. |
| Disabled | Disable USB Dev Wakeup from S3-S5. **(Default Value)** |

- **Suspend Time Out (Minute.)**

| | |
|---|---|
| Disabled | Disable Suspend Time Out Function. **(Default Value)** |
| 1 | Enable Suspend Time Out after 1min. |
| 2 | Enable Suspend Time Out after 2min. |
| 4 | Enable Suspend Time Out after 4min. |
| 8 | Enable Suspend Time Out after 8min. |
| 10 | Enable Suspend Time Out after 10min. |
| 20 | Enable Suspend Time Out after 20min. |
| 30 | Enable Suspend Time Out after 30min. |
| 40 | Enable Suspend Time Out after 40min. |

| | |
|---|---|
| 50 | Enable Suspend Time Out after 50min. |
| 60 | Enable Suspend Time Out after 60min. |

- **Display Activity**

| | |
|---|---|
| Ignore | Ignore Display Activity. **(Default Value)** |
| Monitor | Monitor Display Activity. |

- **IRQ 3~IRQ15**

| | |
|---|---|
| Ignore | Ignore IRQ3 ~IRQ15. |
| Monitor | Monitor IRQ3~IRQ15. |

- **Soft-off by Power Button**

| | |
|---|---|
| Instant-off | The user press the power button once, he can turn off the system. **(Default Value)** |
| Delay 4 sec | Press power button 4 sec to Power off. Enter suspend if button is pressed less than 4 sec. |

- **System after AC Back**

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

- **Modem USE IRQ**

| |
|---|
| 3, 4, **(Default Value)** 5, 7, N/A |

- **Resume On Ring / LAN**

| | |
|---|---|
| Disabled | Disable Resume On Ring / LAN. |
| Enabled | Enable Resume On Ring / LAN. **(Default Value)** |

- **PME Event Wake Up**

| | |
|---|---|
| Disabled | Disable PME Event Wake Up. |
| Enabled | Enable PME Event Wake Up. **(Default Value)** |

- **Resume On RTC Alarm**

You can set “Resume On RTC Alarm” item to enabled and key in Data/time to power on system.

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

If the “Resume On RTC Alarm” is Enabled.

| | |
|---|---|
| RTC Alarm Date: | Every Day, 1~31 |
| RTC Alarm Hour: | 0~23 |
| RTC Alarm Minute: | 0~59 |
| RTC Alarm Second: | 0~59 |

# PNP/PCI Configurations

AMIBIOS SETUP – PNP / PCI CONFIGURATION
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| | |
|---|---|
| PnP OS Installed | No |
| Reset Configuration Data | No |
| VGA Boot from | AGP |
| PCI AGP Palette Snoop | Disabled |
| PCI Slot 1/5 IRQ Priority | Auto |
| PCI Slot 2 IRQ Priority | Auto |
| PCI Slot 3 IRQ Priority | Auto |
| PCI Slot 4 IRQ Priority | Auto |
| IRQ 3 | PCI/PnP |
| IRQ 4 | PCI/PnP |
| IRQ 5 | PCI/PnP |
| IRQ 7 | PCI/PnP |
| IRQ 9 | PCI/PnP |
| IRQ 10 | PCI/PnP |
| IRQ 11 | PCI/PnP |
| IRQ 14 | PCI/PnP |
| IRQ 15 | PCI/PnP |

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

Figure 6: PNP/PCI Configuration

- **PnP OS Installed**

| | |
|---|---|
| Yes | Enable PNP OS Installed function. |
| No | Disable PNP OS Installed function. **(Default Value)** |

- **Reset Configuration Data**

| | |
|---|---|
| No | Disable this function. **(Default Value)** |
| Yes | Clear PnP information in ESCD & update DMI data. |

- **VGA Boot From**

| | |
|---|---|
| AGP | Primary Graphics Adapter From AGP. **(Default Value)** |
| PCI | Primary Graphics Adapter From PCI. |

- **PCI/VGA Palette Snoop**

| | |
|---|---|
| Enabled | For having Video Card on ISA Bus and VGA Card on PCI Bus. |
| Disabled | For VGA Card only. **(Default Value)** |

- **PCI Slot 1,5 IRQ Priority**

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

- **PCI Slot 2 / 3 / 4 IRQ Priority**

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

- **IRQ (3, 4, 5, 7, 9, 10, 11, 14, 15)**

| | |
|---|---|
| ISA/EISA | The resource is used by Legacy ISA device. |
| PCI/PnP | The resource is used by PCI/ PnP device. |

# Load BIOS Defaults

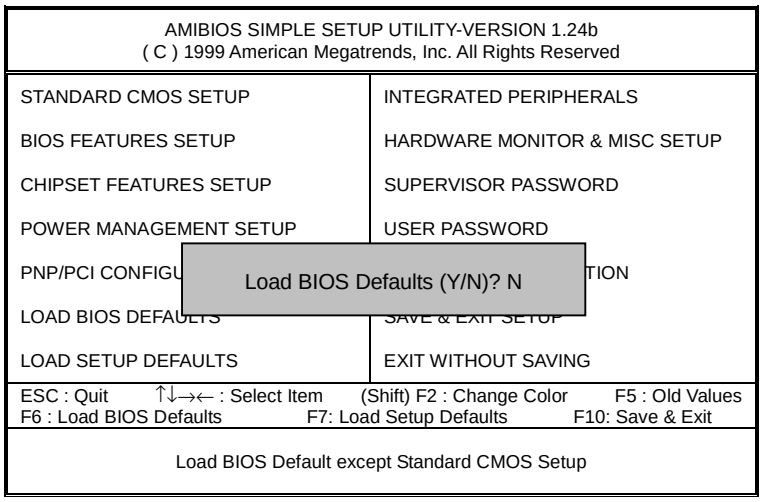



Figure 7: Load BIOS Defaults

- **Load BIOS Defaults**

  BIOS defaults contain the most appropriate values of the system parameters that allow minimum system performance.

# Load Setup Defaults

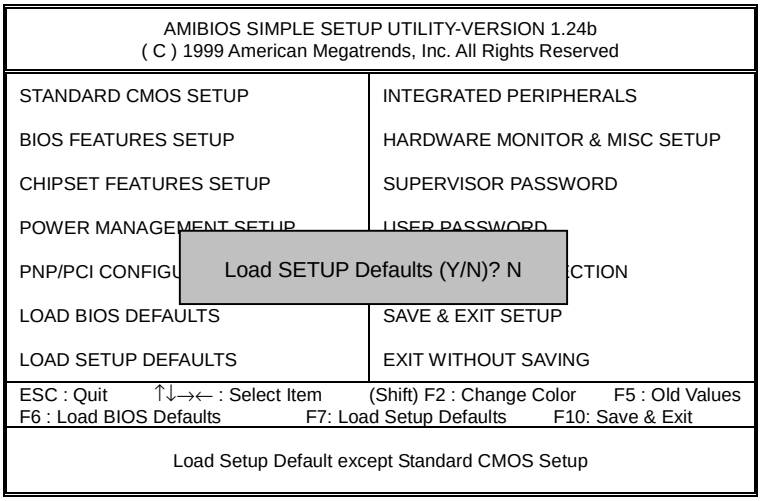



Figure 8: Load Setup Defaults

- **Load Setup Defaults**

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

# Integrated Peripherals

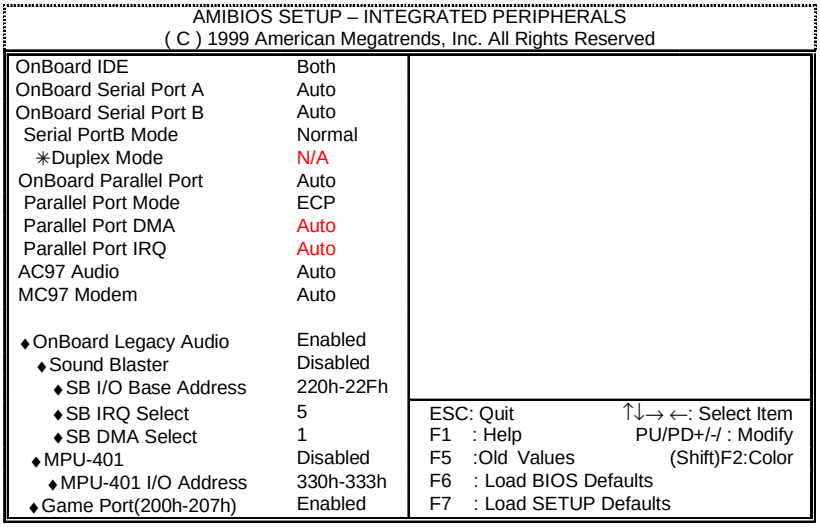



Figure 9: Integrated Peripherals

✳This item will be available when "Serial PortB Mode" is set to IrDA or ASK IR.

♦ These eight items will not be shown when there is sound chip onboard.

- **OnBoard IDE**

| | |
|---|---|
| Disabled | Disable OnBoard IDE. |
| Both | Both Primary & Secondary IDE channel will be enabled. **(Default Value)** |
| Primary | Only Primary IDE channel is enable. |
| Secondary | Only Secondary IDE channel is enable. |

- **OnBoard Serial Port A**

| | |
|---|---|
| Auto | BIOS will automatically setup the port A address. **(Default Value)** |
| 3F8/COM1 | Enable OnBoard Serial port A and address to 3F8. |
| 2F8/COM2 | Enable OnBoard Serial port A and address to 2F8. |
| 3E8/COM3 | Enable OnBoard Serial port A and address to 3E8. |
| 2E8/COM4 | Enable OnBoard Serial port A and address to 2E8. |
| Disabled | Disable OnBoard Serial port A. |

- **OnBoard Serial Port B**

| | |
|---|---|
| Auto | BIOS will automatically setup the port B address. **(Default Value)** |
| 3F8/COM1 | Enable OnBoard Serial port B and address to 3F8. |
| 2F8/COM2 | Enable OnBoard Serial port B and address to 2F8. |
| 3E8/COM3 | Enable OnBoard Serial port B and address to 3E8. |
| 2E8/COM4 | Enable OnBoard Serial port B and address to 2E8. |
| Disabled | Disable OnBoard Serial port B. |

- **Serial Port B Mode**

| | |
|---|---|
| Normal | Normal operation. **(Default Value)** |
| IrDA | Onboard I/O chip supports IRDA |
| ASK IR | Onboard I/O chip supports ASK IR. |

- **Duplex Mode**

| | |
|---|---|
| Half Duplex | IR Function Duplex Half. |
| N/A | Disable this function. **(Default Value)** |
| Full Duplex | IR Function Duplex Full. |

- **OnBoard Parallel port**

| | |
|---|---|
| 378 | Enable OnBoard LPT port and address to 378. |
| 278 | Enable OnBoard LPT port and address to 278. |
| 3BC | Enable OnBoard LPT port and address to 3BC. |
| Auto | Set OnBoard LPT port to Auto. **(Default Value)** |
| Disabled | Disable OnBoard 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 DMA**

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

- **Parallel Port IRQ**

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

- **AC97 Audio**

| | |
|---|---|
| Auto | BIOS will search AC97 Codec. If found, AC97 function will be enabled. If no AC97 Codec found, AC97 function will be disabled. **(Default Value)** |
| Disabled | Disable On Board AC'97 Audio. |

- **MC97 Modem**

| | |
|---|---|
| Auto | BIOS will search MC97 Codec (AMR Modem Card). If found, MC97 function will be enabled. If no MC97 Codec found, MC97 function will be disabled. **(Default Value)** |
| Disabled | Disable On Board MC'97 Modem. |

- **OnBoard Legacy Audio**

| | |
|---|---|
| Enabled | Enable OnBoard Legacy Audio. **(Default Value)** |
| Disabled | Disable OnBoard Legacy Audio. |

- **Sound Blaster**

| | |
|---|---|
| Enabled | Enable Sound Blaster. |
| Disabled | Disable Sound Blaster. **(Default Value)** |

- **SB I/O Base Address**

| | |
|---|---|
| 220h-22Fh | Set SB I/O Base Address to 220h-22Fh. **(Default Value)** |
| 280h-28Fh | Set SB I/O Base Address to 280h-28Fh. |
| 260h-26Fh | Set SB I/O Base Address to 260h-26Fh. |
| 240h-24Fh | Set SB I/O Base Address to 240h-24Fh. |

- **SB IRQ Select**

| |
|---|
| IRQ 5 / 7 / 9 / 10. **(Default Value: 5)** |

- **SB DMA Select**

| |
|---|
| DMA 0 / 1 / 2/ 3. **(Default Value: 1)** |

- **MPU-401**

| | |
|---|---|
| Enabled | Enable MPU-401. |
| Disabled | Disable MPU-401. **(Default Value)** |

**Ps. When Force Feedback joystick is used, MPU-401 needs to be Enable.**

- **MPU-401 I/O Address**

| | |
|---|---|
| 330h-333h | Set MPU-401 I/O Address to 330h-333h. **(Default Value)** |
| 300h-303h | Set MPU-401 I/O Address to 300h-303h. |
| 310h-313h | Set MPU-401 I/O Address to 310h-313h. |
| 320h-323h | Set MPU-401 I/O Address to 320h-323h. |

- **Game Port (200h-207h)**

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

# Hardware Monitor & MISC Setup

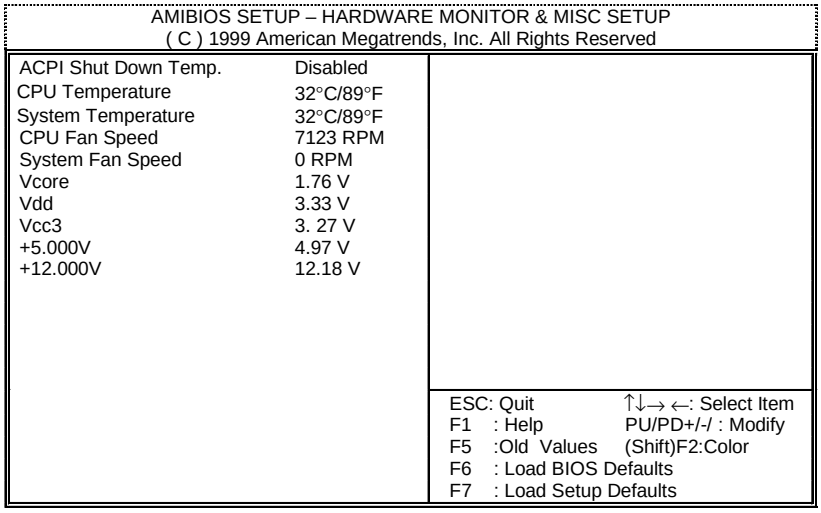



Figure 10: Hardware Monitor & MISC Setup

- **ACPI Shutdown Temp. (°C / °F)**

(This function will be effective only for the operating systems that support ACPI Function.)

| | |
|---|---|
| Disabled | Disable ACPI Shutdown function. **(Default Value)** |
| 60°C / 140°F | Monitor CPU Temp. at 60°C / 140°F, if Temp. > 60°C / 140°F system will automatically power off. |
| 70°C / 158°F | Monitor CPU Temp. at 70°C / 158°F, if Temp. > 70°C / 158°F system will automatically power off. |
| 80°C / 176°F | Monitor CPU Temp. at 80°C / 176°F, if Temp. > 80°C / 176°F system will automatically power off. |
| 90°C / 194°F | Monitor CPU Temp. at 90°C / 194°F, if Temp. > 90°C / 194°F system will automatically power off. |

- **CPU Temperature (°C / °F)**

Detect CPU Temperature automatically.

- **System Temperature (°C / °F)**

Detect System Temperature automatically.

- **CPU Fan Speed**

  Detect CPU Fan speed status automatically.

- **System Fan Speed**

  Detect System Fan speed status automatically.

- **Voltage (V) Vcore / Vdd / Vcc3 / +5V / +12V**

  Detect system's voltage status 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.

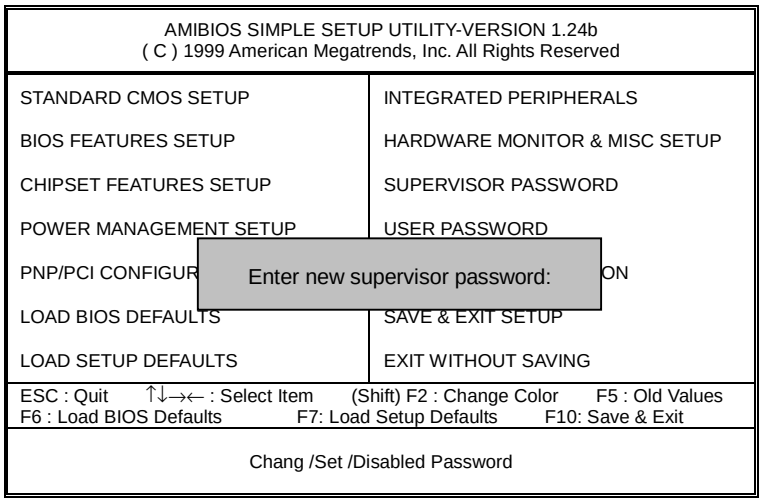



Figure 11: Password Setting

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 disable. Once the password is disable, 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 disable, anyone may access all BIOS Setup program function. When enable, 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

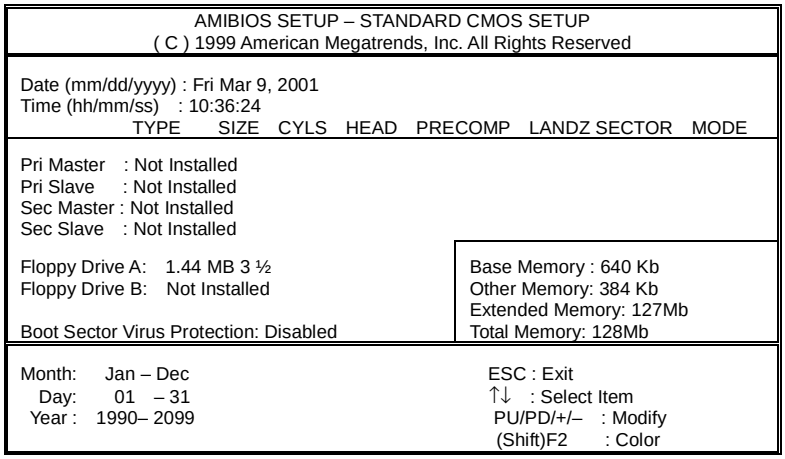



Figure 12: IDE HDD Auto Detection

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

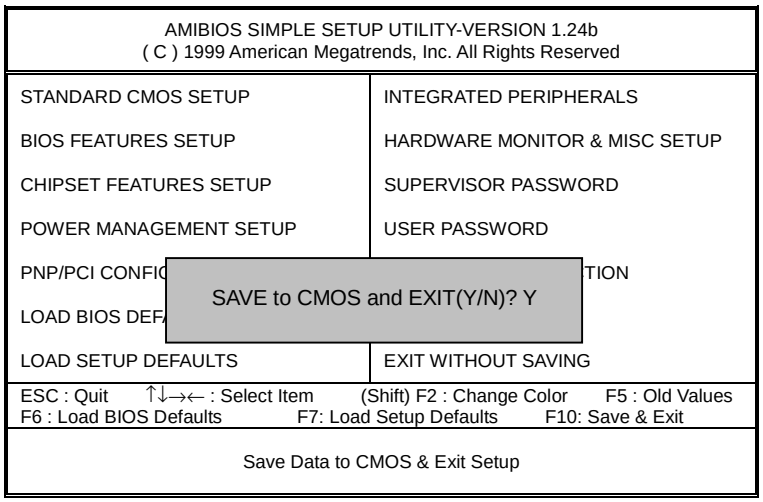



Figure 13: Save & Exit Setup

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

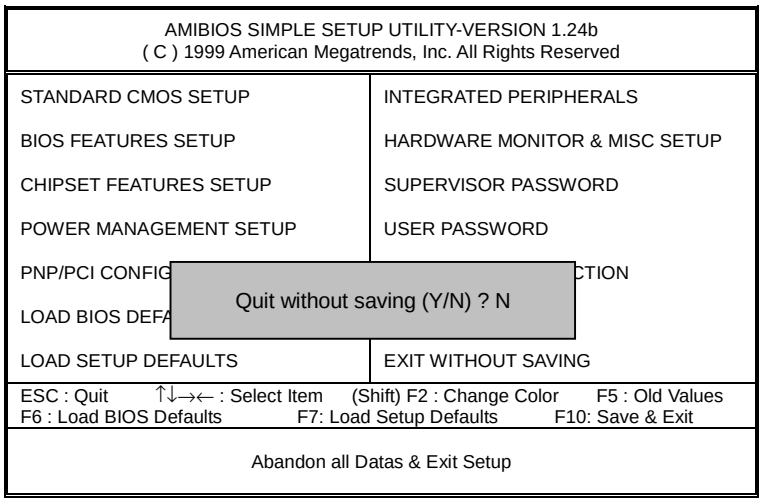



Figure 14: Exit Without Saving

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

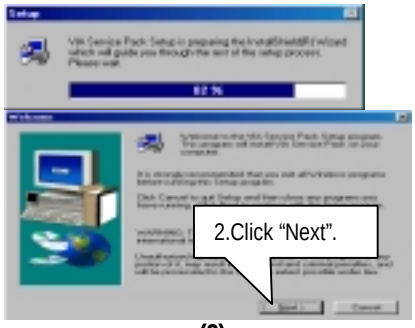
Type "N" will return to Setup Utility.

# Appendix

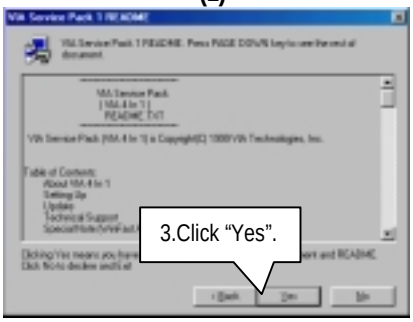
## Appendix A: VIA KT133/KM133 Chipsets Driver Installation

Insert the support CD that came with your motherboard into your CD-ROM driver or double –click the CD driver icon in My Computer to bring up the screen.


(1)

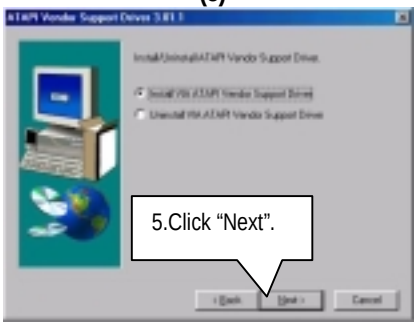



(2)

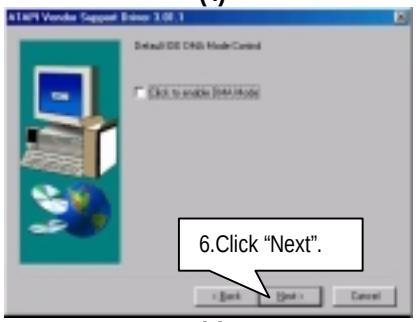



(3)

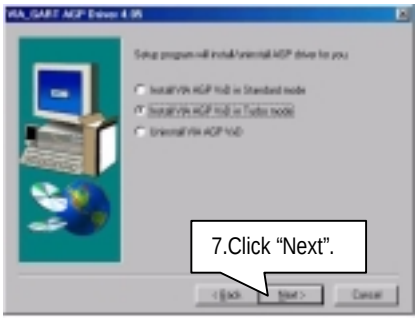

(4)



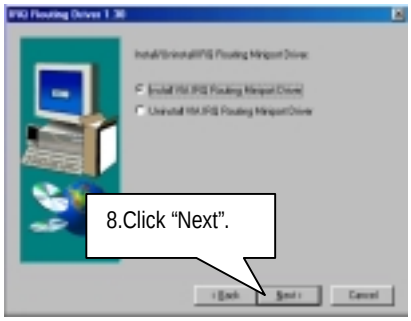

(5)



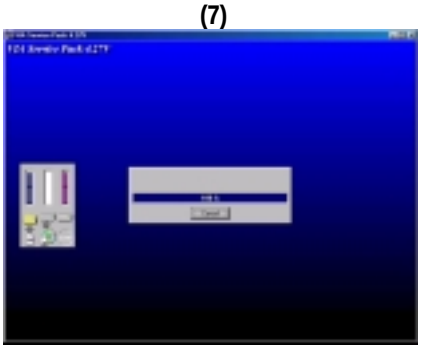

(6)



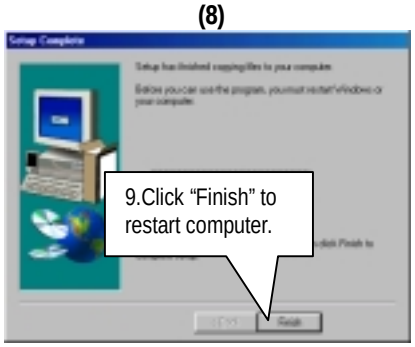

**(7)**




**(8)**



**(9)**

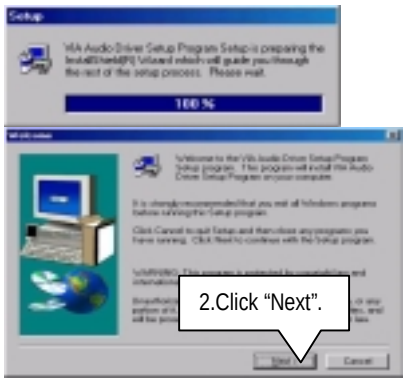



**(10)**

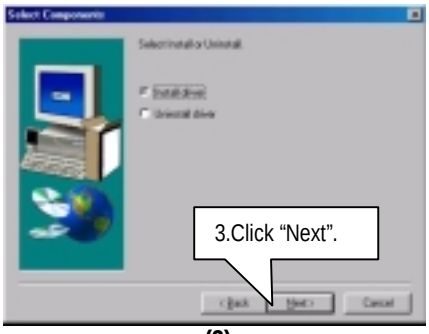
## Appendix B: VIA AC'97 Audio Driver

Insert the support CD that came with your motherboard into your CD-ROM driver or double –click the CD driver icon in My Computer to bring up the screen.

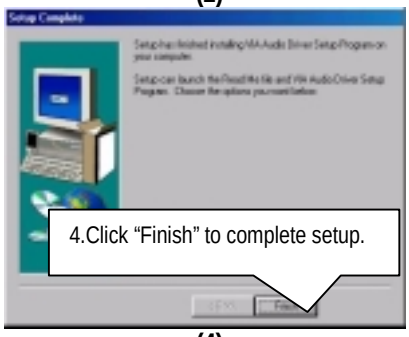

**(1)**



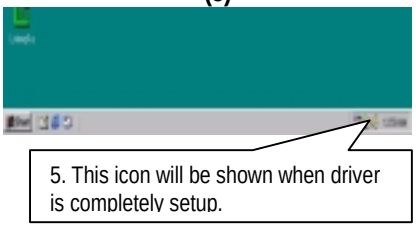

**(2)**




**(3)**



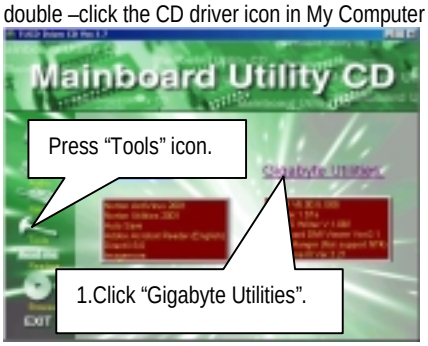

**(4)**



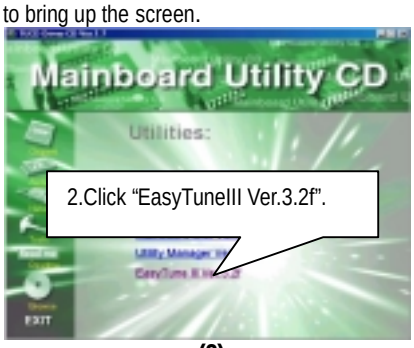

**(5)**

## Appendix C: EasyTuneIII Utilities Installation

Insert the support CD that came with your motherboard into your CD-ROM driver or double –click the CD driver icon in My Computer to bring up the screen.

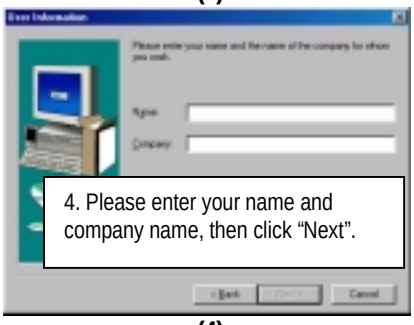



(1)

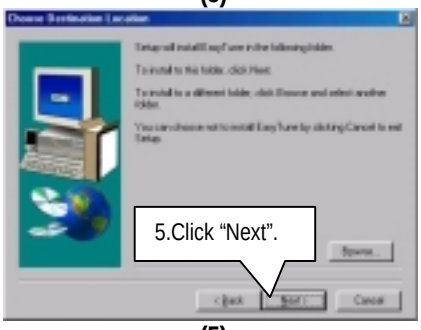



(2)

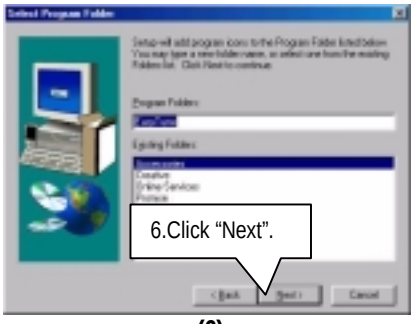

(3)



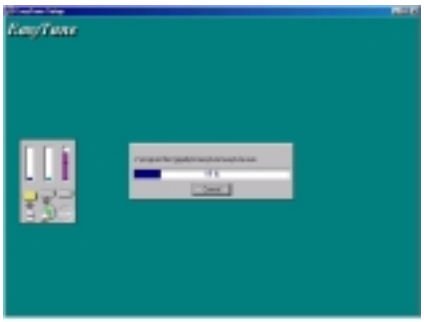

(4)



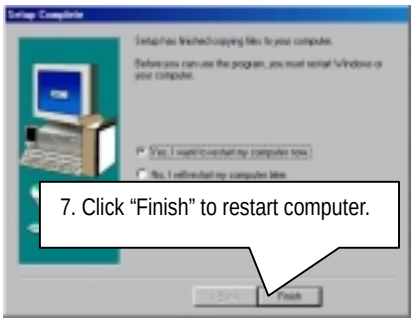

(5)




(6)



(7)

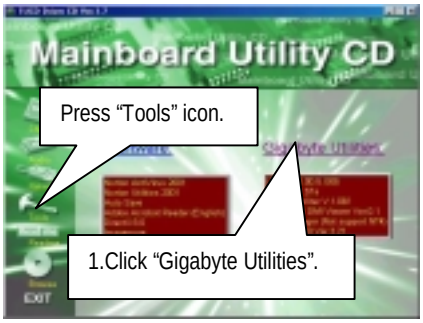



(8)

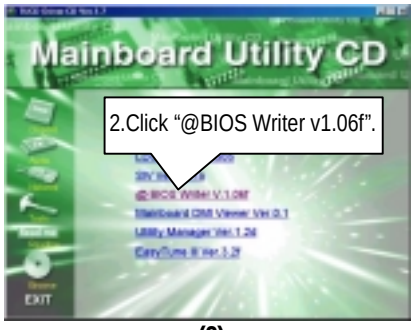
## Appendix D: BIOS Flash Procedure

BIOS update procedure:

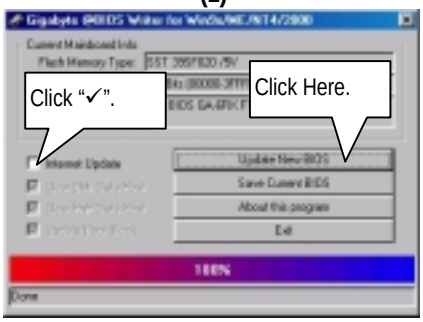
If your OS is Win9X, we recommend that you used Gigabyte @BIOS Program to flash BIOS.




(1)




(2)




(3)

Methods and steps:

I. Update BIOS through Internet

a. Click "Internet Update" icon

b. Click "Update New BIOS" icon

c. Select @BIOS sever ( "Gigabyte @BIOS sever 1 in Taiwan" and "Gigabyte @BIOS sever 2 in Taiwan" are available for now, the others will be completed soon)

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: 7ZX-H.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. Sellecting 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 intercorruption during updating will cause system unbooted

Or else you can select flash BIOS in DOS mode.

- Please check your **BIOS vendor (AMI or AWARD)**, your **motherboard name** and **PCB version** on the motherboard.

1. Format a bootable system floppy diskette by the command "**format a:/s**" in command mode.
2. Visit the Gigabyte website at http:// www.gigabyte.com.tw , Select the BIOS file you need and download it to your bootable floppy diskette.
3. Insert the bootable diskette containing the BIOS file into the floppy diskette driver.
4. Assuming that the floppy diskette driver is A, reboot the system by using the A: driver. At the A: > prompt, run the BIOS upgraded file by executing the Flash BIOS utility and the BIOS file with its appropriate extension.

   Example: *(AMI tool) (Where 7zx-h.f1 is name of the BIOS file name)*

   A:>*flashxxx.exe 7zx-h.f1* ↵

   Example: *(Award tool) (Where 7zx-h.f1 is name of the BIOS file name)*

   *A:>Awdflash.exe 7zx-h.f1* ↵
5. Upon pressing the <Enter> key, a flash memory writer menu will appear on screen. Enter the new BIOS file name with its extension filename into the text box after file name to program.
6. If you want to save the old BIOS file(perform as soon as system is operational, this is recommended), select Y to **DO YOU WANT TO SAVE BIOS**, then type the old BIOS filename and the extension after filename to save: This option allows you to copy the contents of the flash memory chip onto a diskette, giving you a backup copy of the original motherboard BIOS in case you need to re-install it. Select N to **DO YOU WANT TO SAVE BIOS**, if you don't want to save the old BIOS file.
7. After the decision to save the old BIOS file or not is made, select Y to **ARE YOU SURE TO PROGRAM** when the next menu appear; wait until a message showing Power Off or Reset the system appears. Then turn off your system.
8. Remove the diskette and restart your system.
9. Hold down <Delete> key to enter BIOS setup. You must select "Load Setup BIOS Default" to activate the new BIOS, then you may set other item from the main menu.

## 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 Interface Digital Interface |
| MTH | Memory Translator Hub |
| MPT | Memory Protocol Translator |
| NIC | Network Interface Card |
| OS | Operating System |

To be continued…

| 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 |