

FCC Compliance Statement:

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|--|
| <p>DECLARATION OF CONFORMITY Per FCC Part 2 Section 2.107(a)</p> <p>FC</p> <p>Responsible Party Name: G.B.T. INC.</p> <p>Address: 18365 Valley Blvd., Suite#A LA Puente, CA 91744</p> <p>Phone/Fax No: (818) 854-9338/ (818) 854-9339</p> <p>hercby declare s that the product</p> <p>Product Name: Mother Board</p> <p>Model Number: GA 60MM7</p> <p>Conforms to the following specifications:</p> <p>FCC Part 15, Subpart B, Section 15.107(a) and Section 15.109(a), Class B Digital Device.</p> <p>Supplementary Information:</p> <p>This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful and (2) this device must accept any interference received, including that may cause undesired operation.</p> <p>Representative Person's Name: <u>ERIC L.J.</u></p> <p>Signature: <u>ERIC L.J.</u></p> <p>Date: <u>May 22, 2000</u></p> |
|--|

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 Trädung GmbH
Ausschlag Weg 41, 1F, 20537 Hamburg, Germany

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

Mother Board

GA-60MM7

is in conformity with
(reference to the specification under which conformity is declared)
in accordance with 89/336 EEC-EMC Directive

- | | | | |
|---|--|--|---|
| <input type="checkbox"/> EN 55011 | Limits and methods of measurement of radio disturbance characteristics of industrial, scientific and medical (ISM) high frequency equipment | <input type="checkbox"/> EN 61000-3-2* | Disturbances in supply systems caused by household appliances and similar electrical equipment "Harmonics" |
| <input type="checkbox"/> EN55013 | Limits and methods of measurement of radio disturbance characteristics of broadcast receivers and associated equipment | <input checked="" type="checkbox"/> EN61000-3-3* | Disturbances in supply systems caused by household appliances and similar electrical equipment "Voltage fluctuations" |
| <input type="checkbox"/> EN 55014 | Limits and methods of measurement of radio disturbance characteristics of household electrical appliances, portable tools and similar electrical apparatus | <input checked="" type="checkbox"/> EN 50081-1 | Generic emission standard Part 1: Residual, commercial and light industry |
| <input type="checkbox"/> EN 55015 | Limits and methods of measurement of radio disturbance characteristics of fluorescent lamps and luminaries | <input checked="" type="checkbox"/> EN 50082-1 | Generic immunity standard Part 1: Residual, commercial and light industry |
| <input type="checkbox"/> EN 55020 | Immunity from radio interference of broadcast receivers and associated equipment | <input type="checkbox"/> EN 55081-2 | Generic emission standard Part 2: Industrial environment |
| <input checked="" type="checkbox"/> EN 55022 | Limits and methods of measurement of radio disturbance characteristics of information technology equipment | <input type="checkbox"/> EN 55082-2 | Generic immunity standard Part 2: Industrial environment |
| <input type="checkbox"/> DIN VDE 0855 part 10 part 12 | Cabled distribution systems; Equipment for receiving and/or distribution from sound and television signals | <input type="checkbox"/> ENV 55104 | Immunity requirements for household appliances tools and similar apparatus |
| | | <input type="checkbox"/> EN 50091- 2 | EMC requirements for uninterruptible power systems (UPS) |

CE marking



(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

- | | | | |
|-----------------------------------|---|-------------------------------------|---|
| <input type="checkbox"/> EN 60065 | Safety requirements for mains operated electronic and related apparatus for household and similar general use | <input type="checkbox"/> EN 60950 | Safety for information technology equipment including electrical business equipment |
| <input type="checkbox"/> EN 60335 | Safety of household and similar electrical appliances | <input type="checkbox"/> EN 50091-1 | General and Safety requirements for uninterruptible power systems (UPS) |

Manufacturer/Importer

Signature : Rex Lin

Name : Rex Lin

(Stamp)

Date: May, 22, 2000

60MM7
Socket 370 Processor Motherboard

USER'S MANUAL

Socket 370 Processor Motherboard
REV. 1.1 First Edition

R-11-01-000511

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 | Instructions STR installation |
| 7) BIOS Setup | Instructions on setting up the BIOS software |
| 8) Appendix | General reference |

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Revision History

| Revision | Revision Note | Date |
|----------|---|----------|
| 1.1 | Initial release of the 6OMM7 motherboard user's manual. | May.2000 |

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.

Item Checklist

- The 60MM7 motherboard
- Cable for IDE / floppy device
- Diskettes or CD (IUCD) for motherboard driver & utility
- Internal COM B Cable (Optional)
- Internal USB Cable (Optional)
- Cable for SCSI device
- 60MM7 user's manual

Summary Of Features

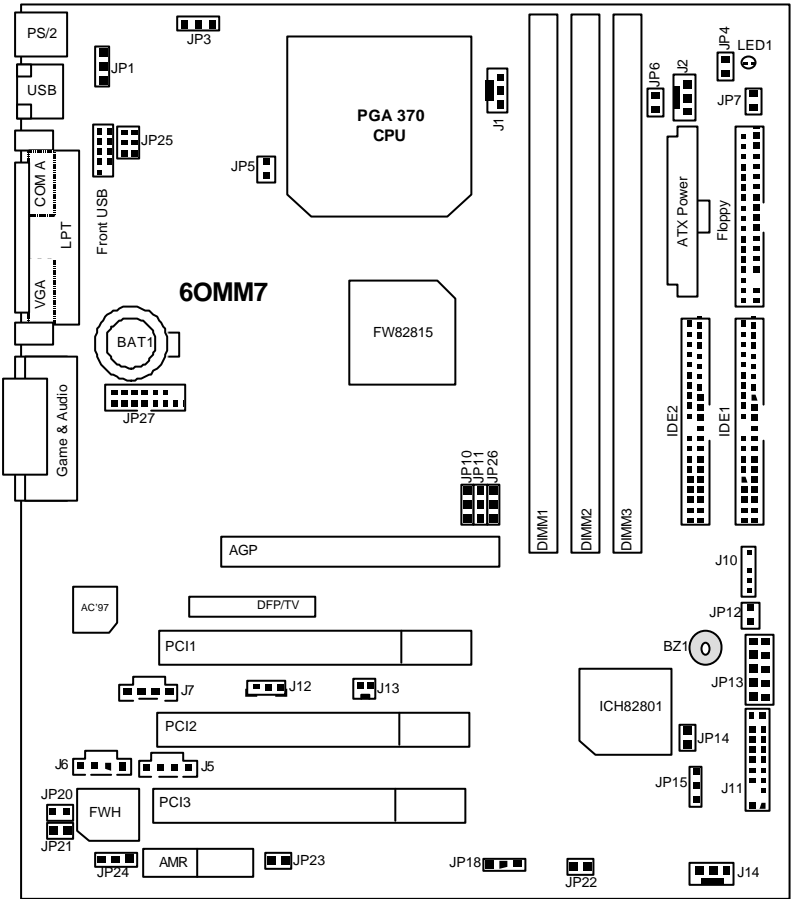
| | |
|----------------------|--|
| Form Factor | <ul style="list-style-type: none"> 24.3 cm x 20.5 cm Micro ATX form factor, 4 layers PCB. |
| CPU | <ul style="list-style-type: none"> Socket 370 processor <ul style="list-style-type: none"> Intel Pentium® III 100/133MHz FSB, Coppermine core FC-PGA Intel Celeron™ 100MHz FSB, Coppermine core PC-PGA 2nd cache in CPU (Depend on CPU) |
| Chipset | <ul style="list-style-type: none"> Intel 815 HOST / AGP / SDRAM Controller 82801AA I/O Controller Hub(ICH) |
| Clock Generator | <ul style="list-style-type: none"> ICS 9250AF-25 66/100/133 MHz system bus speeds |
| Memory | <ul style="list-style-type: none"> 3 168-pin DIMM sockets Supports PC-100 / PC-133 SDRAM and VCM SDRAM Supports up to 512MB(Max) Supports only 3.3V SDRAM DIMM |
| I/O Control | <ul style="list-style-type: none"> IT8712 |
| Slots | <ul style="list-style-type: none"> 1 AGP Slot Supports 4X mode & AGP 2.0 compliant 3 PCI Slot Supports 33MHz & PCI 2.2 compliant 1 AMR (Audio Modem Riser)Slot |
| On-Board IDE | <ul style="list-style-type: none"> 2 IDE bus master (DMA 33/ ATA 66) IDE ports for up to 4 ATAPI devices Supports PIO mode 3, 4 (UDMA33/ATA66) IDE & ATAPI CD-ROM |
| On-Board Peripherals | <ul style="list-style-type: none"> 1 floppy port supports 2 FDD with 360K, 720K, 1.2M, 1.44M and 2.88M bytes 1 parallel ports supports SPP/EPP/ECP mode 1 serial ports (COM A) 2 USB ports 1 IrDA connector for IR/CIR (Optional) |
| Hardware Monitor | <ul style="list-style-type: none"> CPU/Power Supply/System fan revolution detect CPU/Power/System temperature detect System voltage detect CPU overheat shutdown detect |
| On-Board Sound | <ul style="list-style-type: none"> AC'97 CODEC Line In / Line Out / Mic In / AUX In / CD In / TEL / Game Port |

To be continued...

Summary of Features

| | |
|---------------------|--|
| PS/2 Connector | <ul style="list-style-type: none">• PS/2 keyboard interface and PS/2 mouse interface |
| BIOS | <ul style="list-style-type: none">• Licensed AWARD BIOS, 4M bit Flash ROM |
| Additional Features | <ul style="list-style-type: none">• Supports Wake-on-LAN (WOL)• Supports Internal / External modem wake up• Includes 3 fan power connectors• Poly fuse for keyboard over-current protection |

60MM7 Motherboard Layout



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CPU Speed Setup

The system bus frequency can be switched at 66MHz, 100MHz, 133MHz and Auto by adjusting JP10/JP11/JP26 (See Figure 1). The CPU Frequency is control by BIOS.

⚠ The CPU speed must match with the frequency RATIO. It will cause system hanging up if the frequency RATIO is higher than that of CPU.

JP10/JP11/JP26: CPU Speed Setup

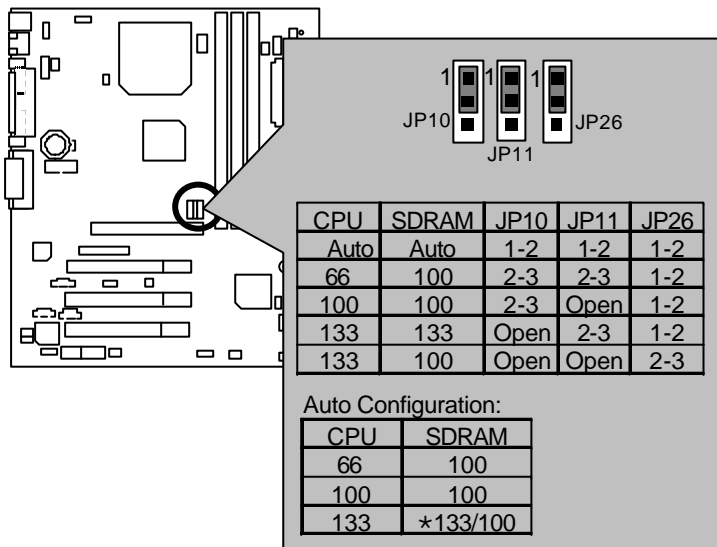


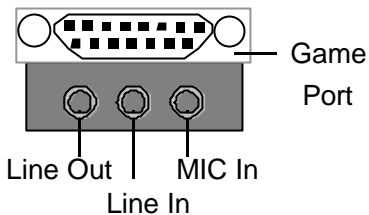
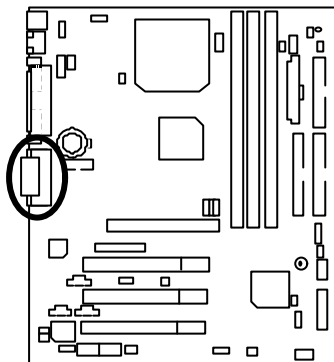
Figure 1

- ★ If the CPU FSB is 133 FSB, the frequency of the SDRAM can be determined by SDRAM's SPD or setting in BIOS.
- ⚠ If JP10, JP11, JP25 is not present, FSB will be determined automatically. If these 3 jumpers are available, you can choose at 66MHz, 100MHz, 133MHz and Auto.
- ⚠ Note: 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

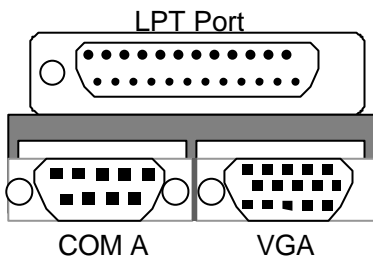
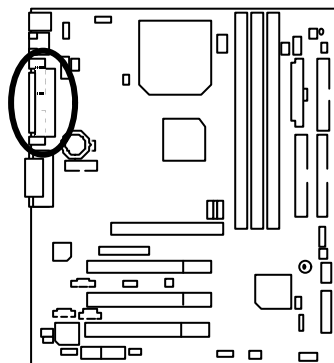
your system can run under these specific bus frequencies properly will depend on your hardware configurations, including CPU, Chipsets, SDRAM, Cards....etc.

Connectors

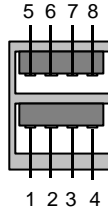
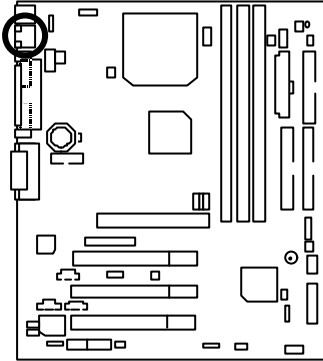
Game & Audio Port



COM A / VGA / LPT Port

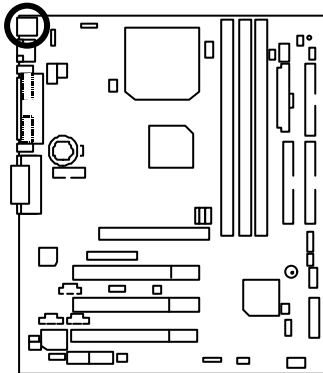


USB Connector

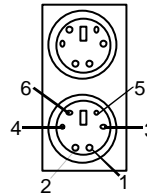


| Pin No. | Definition |
|---------|------------|
| 1 | USB V0 |
| 2 | USB D0- |
| 3 | USB D0+ |
| 4 | GND |
| 5 | USB V1 |
| 6 | USB D1- |
| 7 | USB D1+ |
| 8 | GND |

PS/2 Keyboard & PS/2 Mouse Connector



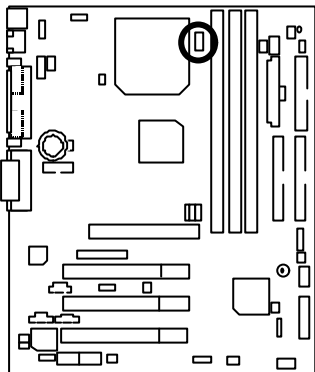
PS/2 Mouse



PS/2 Keyboard

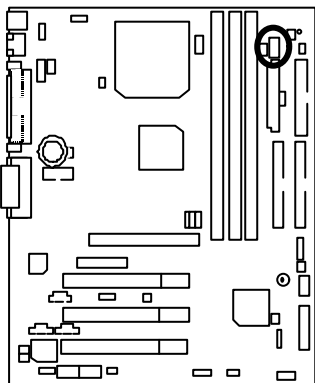
| PS/2 Mouse/ Keyboard | |
|----------------------|------------|
| Pin No. | Definition |
| 1 | Data |
| 2 | NC |
| 3 | GND |
| 4 | VCC(+5V) |
| 5 | Clock |
| 6 | NC |

J1: CPU Fan



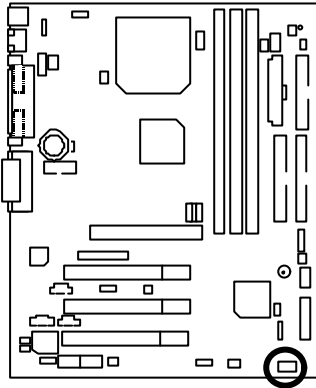
| Pin No. | Definition |
|---------|------------|
| 1 | GND |
| 2 | +12V |
| 3 | SENSE |

J2: Power Fan



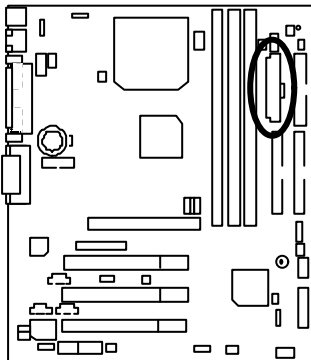
| Pin No. | Definition |
|---------|------------|
| 1 | GND |
| 2 | +12V |
| 3 | SENSE |

J14: System Fan



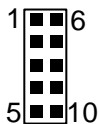
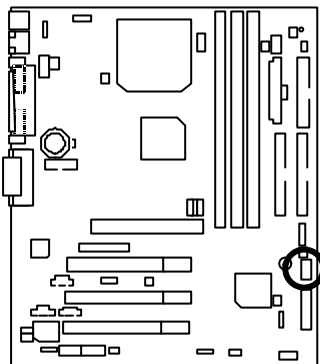
| Pin No. | Definition |
|---------|------------|
| 1 | GND |
| 2 | +12V |
| 3 | SENSE |

ATX Power



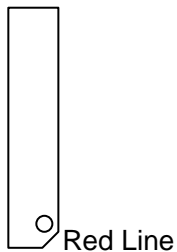
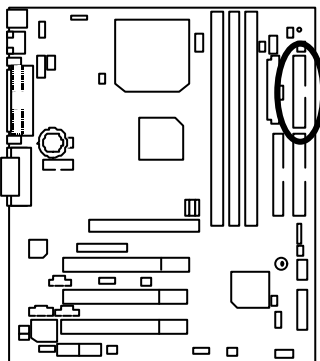
| Pin No. | Definition |
|----------------|--------------------|
| 3.5.7.13.15-17 | GND |
| 1.2.11 | 3.3V |
| 4.6.19.20 | VCC |
| 10 | +12V |
| 12 | -12V |
| 18 | -5V |
| 8 | Power Good |
| 9 | 5V SB stand by+5V |
| 14 | PS-ON(Soft On/Off) |

JP13: IR/CIR

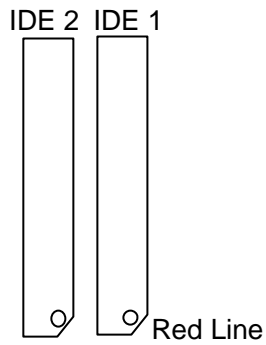
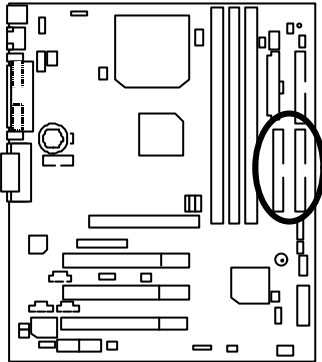


| Pin No. | Definition |
|---------|------------|
| 1 | VCC |
| 2 | NC |
| 3 | IRRX |
| 4 | GND |
| 5 | IRTX |
| 6 | NC |
| 7 | CIRRX |
| 8 | VCC |
| 9 | NC |
| 10 | NC |

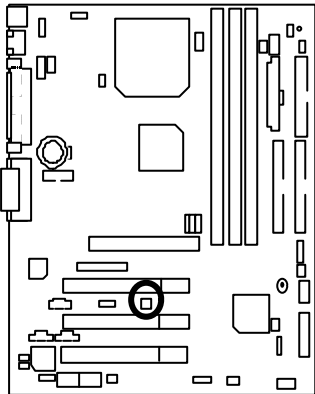
Floppy Port



IDE1 (Primary), IDE2 (Secondary) Port

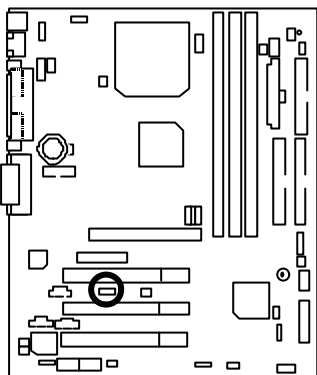


J13: Ring Power On (Internal Modem Card Wake Up)



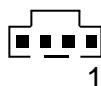
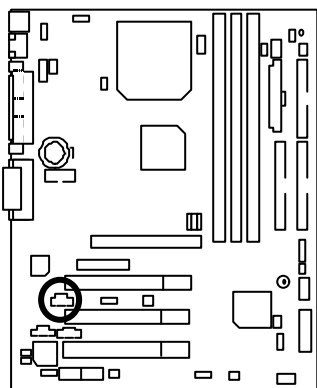
| Pin No. | Definition |
|---------|------------|
| 1 | Signal |
| 2 | GND |

J12: Wake On LAN



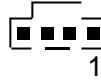
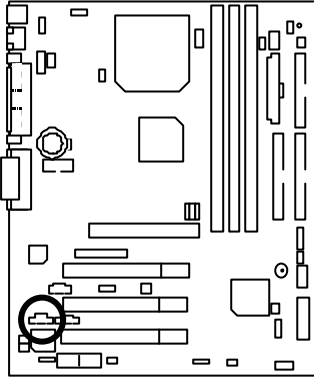
| Pin No. | Definition |
|---------|------------|
| 1 | +5V SB |
| 2 | GND |
| 3 | Signal |

J7: TEL: The connector is for Modem with internal voice connector



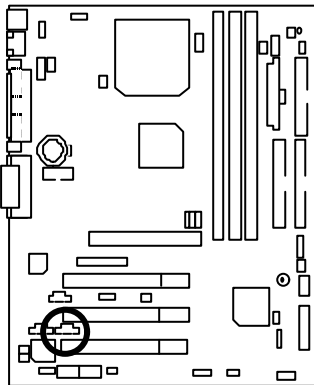
| Pin No. | Definition |
|---------|------------|
| 1 | Signal-In |
| 2 | GND |
| 3 | GND |
| 4 | Signal-Out |

J6: AUX_IN



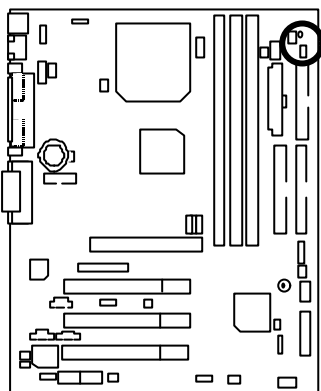
| Pin No. | Definition |
|---------|------------|
| 1 | AUX-L |
| 2 | GND |
| 3 | GND |
| 4 | AUX-R |

J5: CD Audio Line In



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

JP7: STR LED Connector & LED1: DIMM LED

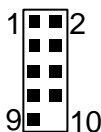
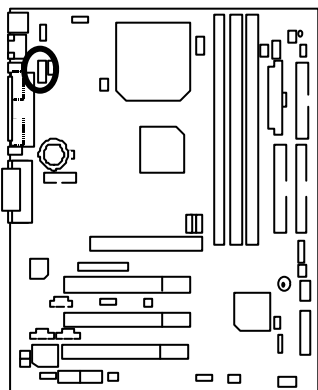


DIMM LED



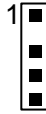
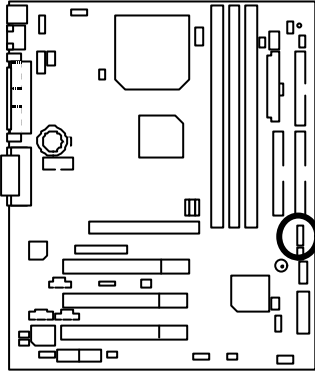
STR LED Connector External

Front USB Port (Optional)



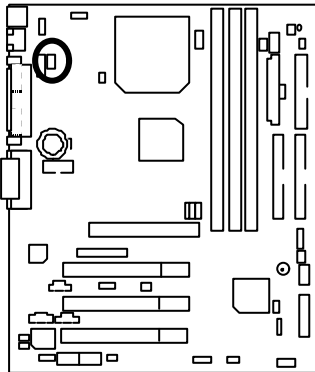
| Pin No. | Definition |
|----------|------------|
| 1,4,5,10 | NC |
| 2 | +5V |
| 3,7,9 | GND |
| 6 | USBP0+ |
| 8 | USBP0- |

J10: Extra SMBUS



| Pin No. | Definition |
|---------|------------|
| 1 | SMB CLK |
| 2 | NC |
| 3 | GND |
| 4 | SMB DATA |
| 5 | +5V |

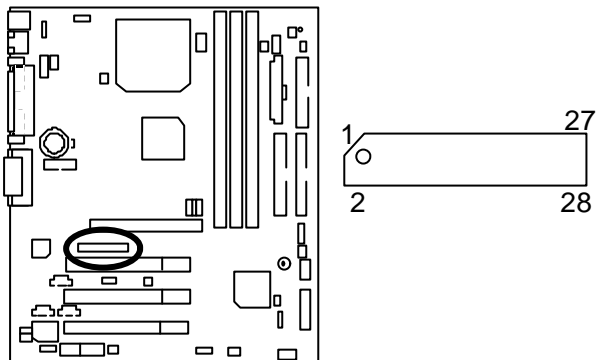
JP25: USB Port Selection (Optional)



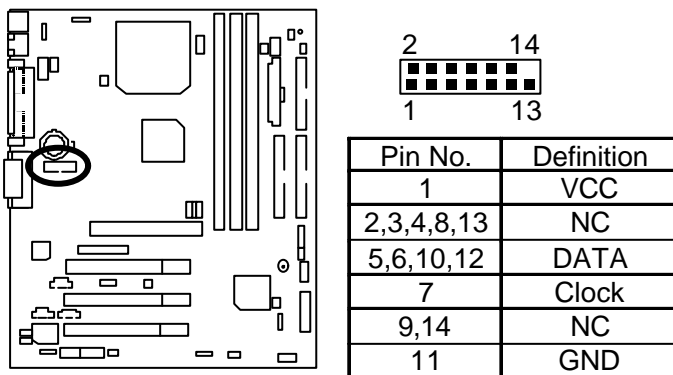
| Front Panel USB Enable | Back Panel USB Enable |
|------------------------|-----------------------|
| FPUSB | BPUSB(Default) |
| 1-2close | 2-3close |
| 4-5close | 5-6close |

DFP/TV Out Connector

*Can be use Gigabyte's Digital Flat Panel/TV-Out Daughter card (GA-DFP-x).

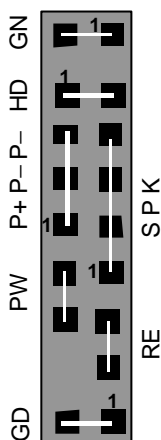
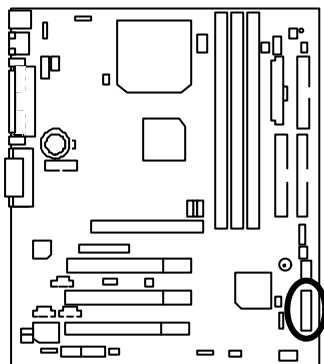


JP27: SCR: Smart Card Reader



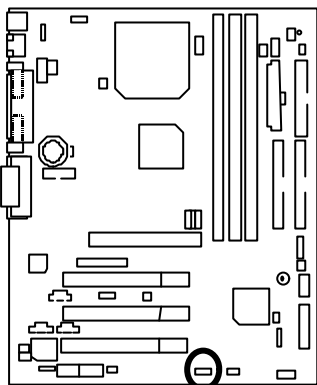
Panel And Jumper Definition

J11: For 2x11 Pins Jumper



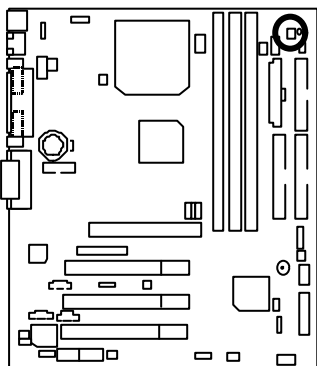
| | |
|-------------------------------|---|
| GN (Green Switch) | Open: Normal Operation Close: Entering Green Mode |
| GD (Green LED) | Pin 1: LED anode(+) Pin 2: LED cathode(-) |
| HD (IDE Hard Disk Active LED) | Pin 1: LED anode(+) Pin 2: LED cathode(-) |
| SPK (Speaker Connector) | Pin 1: VCC(+)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

JP18: Clear CMOS Function



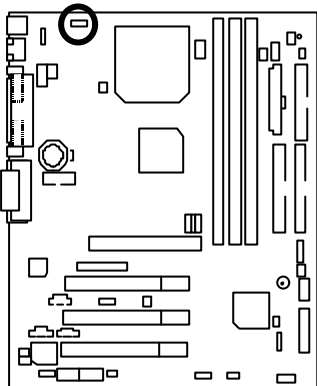
| Pin No. | Definition |
|-----------|------------------|
| 1-2 close | Clear CMOS |
| 2-3 close | Normal (Default) |

JP4: STR Enable



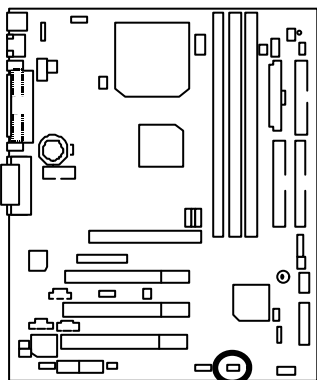
| Pin No. | Definition |
|---------|------------------------|
| Open | STR Disabled (Default) |
| Close | STR Enabled |

JP3: PS/2 Keyboard Power On



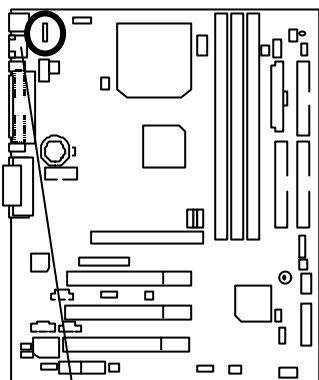
| Pin No. | Definition |
|-----------|--------------------------------|
| 1-2 close | PS/2 Keyboard Power on Enabled |
| 2-3 close | Normal (Default) |

JP22: Case Open



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

JP1: Rear USB Device Wake up Selection (USB Connector → CN2)

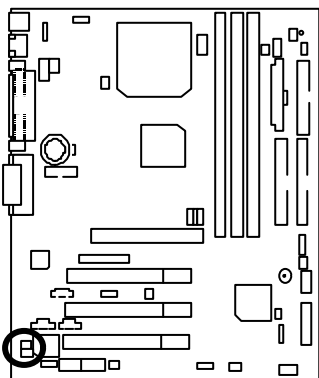


| Pin No. | Definition |
|-----------|---------------------------------|
| 1-2 close | Enabled Rear USB Device Wake up |
| 2-3 close | Normal (Default) |

CN2

(If you want to use **“USB KB/Mouse Wake from S3”** function, you have to set the BIOS setting **“USB KB/Mouse Wake from S3”** enabled, and the jumper **“JP1”** enabled).
 *(Power on the computer and as soon as memory counting starts, press . You will enter BIOS Setup. Select the item **“POWER MANAGEMENT SETUP”**, then select **“USB KB/Mouse Wake from S3: Enabled”**. Remember to save the setting by pressing "ESC" and choose the **“SAVE & EXIT SETUP”** option.)

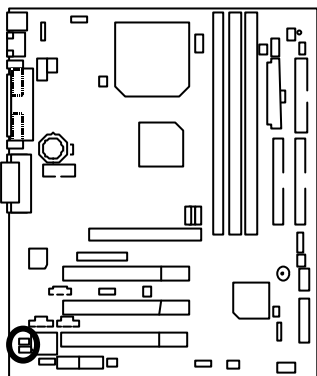
JP20: FWH Flash Write Protect



| Pin No. | Definition |
|---------|------------------|
| Open | Normal (Default) |
| Close | Write Protection |

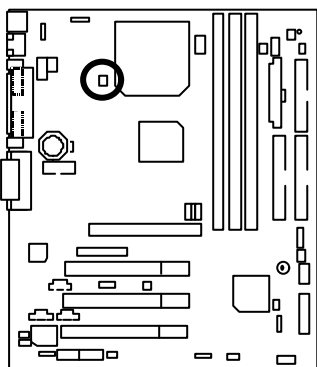
⚡ Please set Jumper JP20 to **“Open”** to enabled BIOS write function when you update new BIOS or new device.

JP21: Top Block Lock



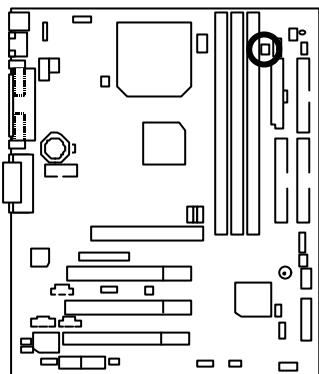
| Pin No. | Definition |
|---------|----------------------------|
| Open | Top Block Lock |
| Close | Top Block Unlock (Default) |

JP5: Over Voltage CPU Speed Up (**Magic Booster**)
 (When JP5 set "Close", CPU Voltage is rising 10%)



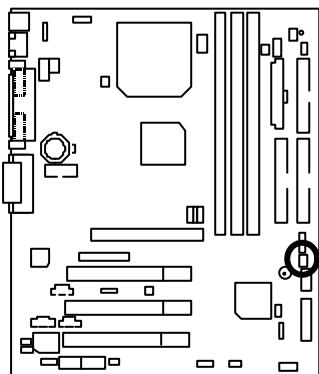
| Pin No. | Definition |
|---------|--|
| Close | Turbo (Default) [Voltage enhance 10%] for over clock use |
| Open | Normal |

JP6: DIMM Over Voltage (Optional)



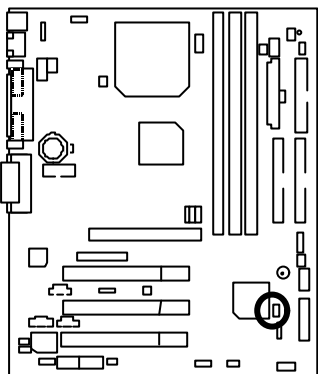
| Pin No. | Definition |
|---------|--------------------------------------|
| Close | Enabled DIMM Over Voltage |
| Open | Disabled DIMM Over Voltage (Default) |

JP12: Internal Buzzer (Optional)



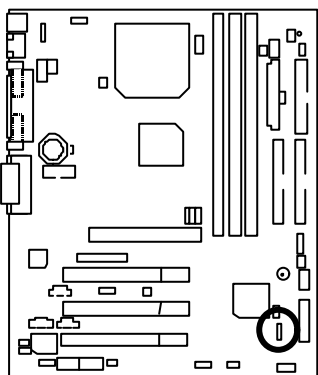
| Pin No. | Definition |
|---------|-----------------------------------|
| Open | Internal Buzzer Disabled |
| Close | Internal Buzzer Enabled (Default) |

JP14: Timeout Reboot Function



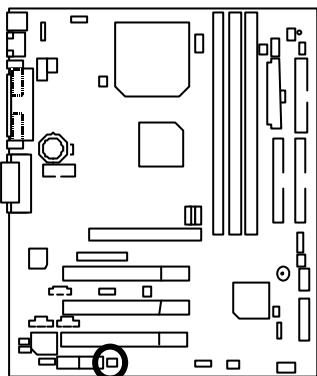
| Pin No. | Definition |
|---------|----------------------|
| Open | Timeout Reboot |
| Close | No Reboot on Timeout |

JP15: Safe mode/Recovery/Normal



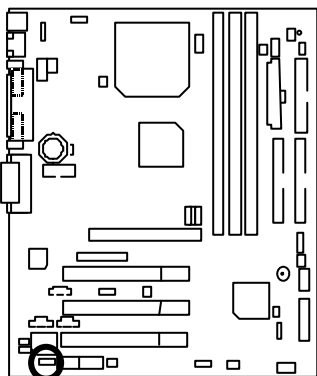
| Pin No. | Definition |
|-----------|------------------|
| 1-2close | Normal (Default) |
| 2-3close | Safe mode |
| 1-2-3open | Recovery |

JP23: PCI/AGP 3VAUX



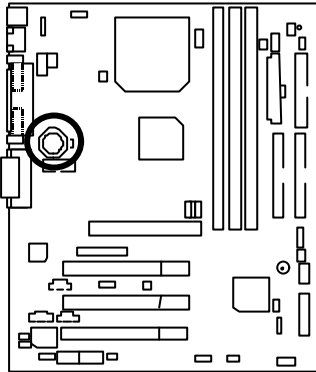
| Pin No. | Definition |
|---------|---------------------------------|
| Open | Disabled PCI/AGP 3VAUX Function |
| Close | Enabled PCI/AGP 3VAUX (Default) |

JP24: AMR Selection (Optional)



| Pin No. | Definition |
|----------|---|
| 1-2close | AMR Secondary |
| 2-3close | AMR Primary AC'97 Disabled (Default) (Disabled Onboard CODEC) |

BAT1: Battery



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

Performance List

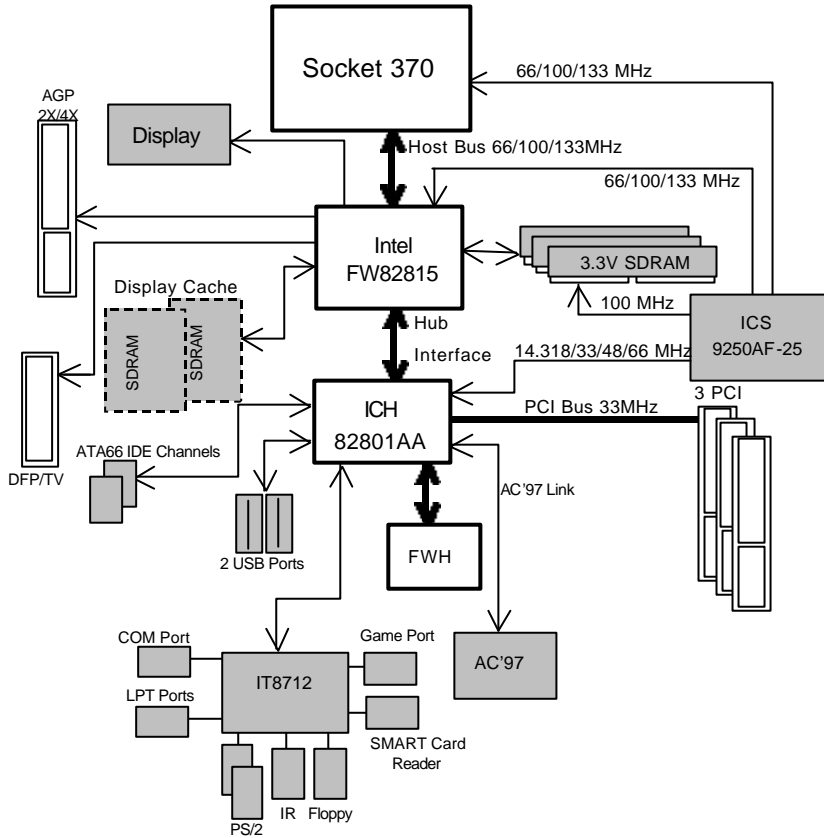
The following performance data list is the testing results of some popular benchmark testing programs. These data are just referred by users, and there is no responsibility for different testing data values gotten by users. (The different Hardware & Software configuration will result in different benchmark testing results.)

- CPU Intel® Pentium® !!! Socket 370 Processor
- DRAM (128 x 1) MB SDRAM (MOSEL 9928PR V54C365804VCT7)
- CACHE SIZE 256 KB included in CPU
- DISPLAY GA-660 Plus AGP Card, Onboard VGA, Onboard VGA&GA-AIMM
- STORAGE Onboard IDE (Quantum KA13600AT)
- O.S. Windows NT™ 4.0 (SP6a)
- DRIVER Display Driver at 1024 x 768 x 16bit x 75Hz

| | | | |
|------------------------------|---------------------------------------|--------------------|-------------|
| Processor | Intel® Pentium® !!! 933MHz (133X7) | | |
| Display | Onboard | Onboard & GA -AIMM | GA-660 Plus |
| Winbench99 | | | |
| CPU mark99 | 80.5 | 80.3 | 83 |
| FPU Winmark 99 | 4900 | 4970 | 4960 |
| Business Disk Winmark 99 | 5450 | 5450 | 5640 |
| Hi-End Disk Winmark 99 | 12000 | 12900 | 12900 |
| Business Graphics Winmark 99 | 106 | 132 | 448 |
| Hi-End Graphics Winmark 99 | 581 | 634 | 875 |
| Winstone99 | | | |
| Business Winstone99 | 35.8 | 40.6 | 46.3 |
| Hi-End Winstone99 | 48.3 | 49.1 | 48.2 |

☛ 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.

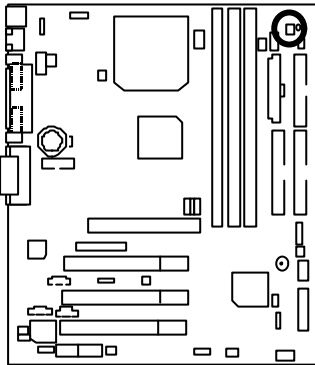
Putting Windows 98 into ACPI mode is fairly easy.

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 /p j**" in the window provided. Hit the enter key or click OK.
▮ In Windows 98 second edition version, all the bios version dated 12/01/99 or later are ACPI compatible. Just type "D:\Setup", the operating system will be installed as ACPI mode. ▮
- 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 JP4 Closed.)



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

Step 3:

Power on the computer and as soon as memory counting starts, press . You will enter BIOS Setup. Select the item **"POWER MANAGEMENT SETUP"**, then select **"ACPI Suspend Type: S3(Suspend to RAM)"**. 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.

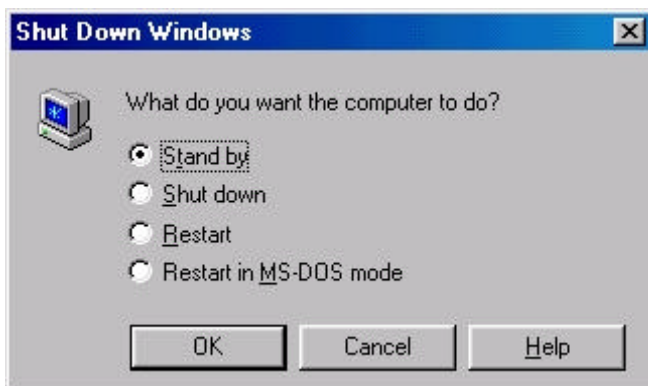
A.3 How to put your system into STR mode?

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"

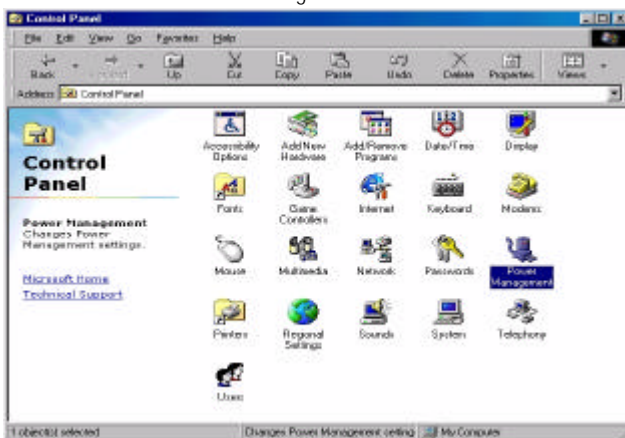


2. Define the system "power on" button to initiate STR sleep mode:

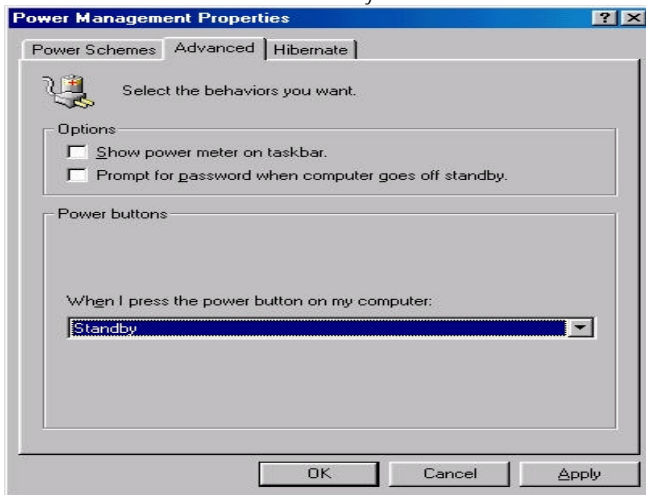
A. Double click "My Computer" and then "Control Panel"



B. Double click the " Power Management" item.



C. Select the "Advanced" tab and "Standby" mode in Power Buttons.



Step 4:

Restart your computer to complete setup.

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

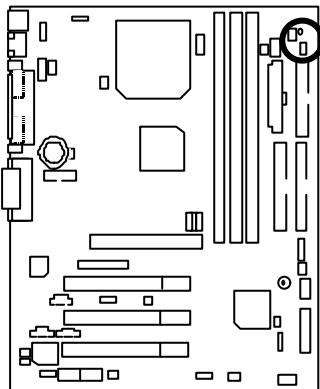
A.4 How to recover from the STR sleep mode?

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

1. Press the "Power On" button.
2. Use the "PS/2 Keyboard Power On" function.
3. Use the "Mouse Power On" function.
4. Use the "Resume by Alarm" function.
5. Use the "Modem Ring On" function.
6. Use the "Wake On LAN" function.
7. 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 compliant.
2. Jumper JP7 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.



DIMM LED




STR LED Connector External

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 | |
| DIMM1 | Supports 16 / 32 / 64 / 128 / 256 / 512MB | X 1 pcs |
| DIMM2 | Supports 16 / 32 / 64 / 128 / 256 / 512MB | X 1 pcs |
| DIMM3 | Supports 16 / 32 / 64 / 128 / 256 / 512MB | X 1 pcs |

| | |
|---|------|
|  Page Index for BIOS Setup | Page |
| Main Menu | P.40 |
| Standard CMOS Features | P.43 |
| Advanced BIOS Features | P.47 |
| Advanced Chipset Features | P.50 |
| Integrated Peripherals | P.52 |
| Power Management Setup | P.57 |
| PnP/ PCI Configurations | P.61 |
| PC Health Status | P.63 |
| Frequency / Voltage Control | P.65 |
| Load Fail-Safe Defaults | P.66 |
| Load Optimized Defaults | P.67 |
| Set Supervisor / User Password | P.68 |
| Save & Exit Setup | P.69 |
| EXIT Without Saving | P.70 |

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 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" button on the system case. You may also restart by simultaneously press <Ctrl> – <Alt> – 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 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 Optimized 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 Award BIOS CMOS Setup Utility, the Main Menu (Figure 2) 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.

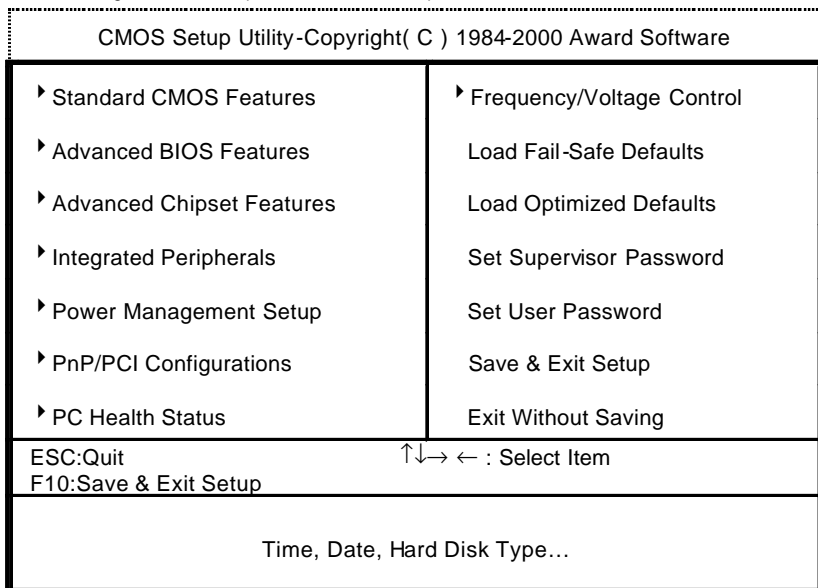


Figure 2: Main Menu

- **Standard CMOS Features**

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

- **Advanced BIOS Features**

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

- **Advanced Chipset Features**

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

- **Integrated Peripherals**

This setup page includes all onboard peripherals.

- **Power Management Setup**

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

- **PnP/PCI Configurations**

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

- **PC Health Status**

This setup page is the System auto detect Temperature, voltage, fan, speed.

- **Frequency/Voltage Control**

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

- **Load Fail-Safe Defaults**

Fail-Safe Defaults indicates the value of the system parameters which the system would be in safe configuration.

- **Load Optimized Defaults**

Optimized Defaults indicates the value of the system parameters which the system would be in best performance configuration.

- **Set Supervisor password**

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

- **Set User password**

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

- **Save & Exit Setup**

Save CMOS value settings to CMOS and exit setup.

- **Exit Without Saving**

Abandon all CMOS value changes and exit setup.

Standard CMOS Features

The items in Standard CMOS Setup Menu (Figure 3) 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

| CMOS Setup Utility - Copyright(C) 1984-2000 Award Software | | |
|--|-------------------|---|
| Standard CMOS Features | | |
| Date (mm:dd:yy) | Mon, Feb 21 2000 | Item Help |
| Time (hh:mm:ss) | 2 : 31 : 24 | Menu Level ▶ |
| ▶ IDE Primary Master | Press Enter None | Change the Day, month, Year and century |
| ▶ IDE Primary Slave | Press Enter None | |
| ▶ IDE Secondary Master | Press Enter None | |
| ▶ IDE Secondary Slave | Press Enter None | |
| Drive A | 1.44M, 3.5 in. | |
| Drive B | None | |
| Floppy 3 Mode Support | Disabled | |
| Video | EGA / VGA | |
| Halt On | All, But Keyboard | |
| Base Memory | 640K | |
| Extended Memory | 63488K | |
| Total Memory | 64512K | |

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

<PgUp> or <PgDn> keys to select the value you want in each item.

Figure 3: Standard CMOS Features

- **Date**

The date format is <week>, <month> <day> <year>.

| | |
|-------|---|
| Week | The week, from Sun to Sat, determined by the BIOS and is display-only |
| Month | The month, Jan. Through Dec. |
| Day | The day, from 1 to 31 (or the maximum allowed in the month) |
| Year | The year, from 1994 through 2079 |

- **Time**

The times format in <hour> <minute> <second>. The time is calculated base on the 24-hour military-time clock. For example, 1 p.m. is 13:00:00.

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

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

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

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

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

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

- **Drive A type / Drive B type**

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

| | |
|----------------|---|
| None | No floppy drive installed |
| 360K, 5.25 in. | 5.25 inch PC-type standard drive; 360K byte capacity. |
| 1.2M, 5.25 in. | 5.25 inch AT-type high-density drive; 1.2M byte capacity (3.5 inch when 3 Mode is Enabled). |
| 720K, 3.5 in. | 3.5 inch double-sided drive; 720K byte capacity |
| 1.44M, 3.5 in. | 3.5 inch double-sided drive; 1.44M byte capacity. |
| 2.88M, 3.5 in. | 3.5 inch double-sided drive; 2.88M byte capacity. |

- **Floppy 3 Mode Support (for Japan Area)**

| | |
|----------|---|
| Disabled | Normal Floppy Drive. (Default value) |
| Drive A | Drive A is 3 mode Floppy Drive. |
| Drive B | Drive B is 3 mode Floppy Drive. |
| Both | Drive A & B are 3 mode Floppy Drives. |

- **Video**

The category detects the type of adapter used for the primary system monitor that must match your video display card and monitor. Although secondary monitors are supported, you do not have to select the type in setup.

| | |
|---------|---|
| EGA/VGA | Enhanced Graphics Adapter/Video Graphics Array. For EGA, VGA, SVGA, or PGA monitor adapters |
| CGA 40 | Color Graphics Adapter, power up in 40 column mode |
| CGA 80 | Color Graphics Adapter, power up in 80 column mode |
| MONO | Monochrome adapter, includes high resolution monochrome adapters |

- **Halt on**

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

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

- **Memory**

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

Base Memory

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

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

Extended Memory

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

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

Advanced BIOS Features

| CMOS Setup Utility - Copyright(C) 1984-2000 Award Software Advanced BIOS Features | | |
|--|----------|--|
| | | Item Help |
| Virus Warning | Disabled | Menu Level ▾ Allows you to choose the VIRUS Warning feature For IDE Hard disk Boot sector Protection. If this Function is enable And someone Attempt to write Data into this area , BIOS will show A warning Message on Screen and alarm beep |
| BIOS Flash Protection | Disabled | |
| *Processor Number Feature | Enabled | |
| First Boot Device | Floppy | |
| Second Boot Device | HDD-0 | |
| Third Boot Device | LS120 | |
| Boot Up Floppy Seek | Enabled | |
| Boot Up NumLock Status | On | |
| Typematic Rate Setting | Disabled | |
| X Typematic Rate (Chars/Sec) | 6 | |
| X Typematic Delay (Msec) | 250 | |
| Security Option | Setup | |
| HDD S.M.A.R.T. Capability | Disabled | |
| Report No FDD For WIN 95 | No | |

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

Figure 4: Advanced BIOS Features

※System will detect automatically and show up when you install the Pentium® !!! processor.

- **Virus Warning**

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) |

- **BIOS Flash Protection**

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

- **Processor Number Feature**

This item will show up when you install the Pentium !!! processor.

| | |
|----------|--|
| Enabled | Pentium !!! Processor Number Feature. (Default value) |
| Disabled | Disable this function. |

- **First / Second / Third Boot device**

| | |
|---------|--|
| Floppy | Select your boot device priority by Floppy. |
| LS120 | Select your boot device priority by LS120. |
| ZIP100 | Select your boot device priority by ZIP100. |
| HDD-0-3 | Select your boot device priority by HDD-0-3. |
| SCSI | Select your boot device priority by SCSI. |
| CDROM | Select your boot device priority by CDROM. |
| Disable | Disable this function. |
| LAN | Select your boot device priority by LAN. |

- **Boot Up Floppy Seek**

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

| | |
|----------|--|
| Enabled | BIOS searches for floppy disk drive to determine it is 40 or 80 tracks. Note that BIOS can not tell from 720 K, 1.2 M or 1.44 M drive type as they are all 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 K. |

- **Boot Up NumLock Status**

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

- **Typematic Rate Setting**

| | |
|----------|---|
| Enabled | Enable Keyboard Typematic rate setting. |
| Disabled | Disable Keyboard Typematic rate setting. (Default value) |

- **Typematic Rate (Chars / Sec.)**

| | |
|------|---|
| 6-30 | Set the maximum Typematic rate from 6 chars. Per second to 30 characters. Per second. (Default value: 6) |
|------|---|

- **Typematic Delay (Msec.)**

| | |
|----------|--|
| 250-1000 | Set the time delay from first key to repeat the same key in to computer. (Default value: 250) |
|----------|--|

- **Security Option**

This category allows you to limit access to the system and Setup, or just to Setup.

| | |
|--------|---|
| System | The system can not boot and can not access to Setup page will be denied if the correct password is not entered at the prompt. |
| Setup | The system will boot, but access to Setup will be denied if the correct password is not entered at the prompt. (Default value) |

- **HDD S.M.A.R.T. Capability**

| | |
|----------|--|
| Enabled | Enabled HDD S.M.A.R.T. Capability. |
| Disabled | Disabled HDD S.M.A.R.T. Capability. (Default value) |

- **Report No FDD For WIN 95**

| | |
|-----|---|
| No | Assign IRQ6 For FDD. (Default value) |
| Yes | FDD Detect IRQ6 Automatically. |

Advanced Chipset Features

| CMOS Setup Utility - Copyright(C) 1984-2000 Award Software Advanced Chipset Features | | |
|---|----------|--------------|
| Top Performance | Disabled | Item Help |
| SDRAM Timing Control | Auto | Menu Level ▶ |
| ※ SDRAM CAS Latency Time | 3 | |
| ※ SDRAM Cycle Time Tras/Trc | 6/8 | |
| ※ SDRAM RAS-to-CAS Delay | 3 | |
| ※ SDRAM RAS Precharge Time | 3 | |
| Delayed Transaction | Enabled | |
| ◆ System Memory Frequency | Auto | |

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

Figure 5: Advanced Chipset Features

※ These four items will be available when "SDRAM Timing Control" is set to Manual.

◆ This item will be show when the system bus frequency is 133MHz.

• Top Performance

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

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

• SDRAM Timing Control

| | |
|--------|--|
| Auto | Set SDRAM Timing Control to Auto. (Default value) |
| Manual | Set SDRAM Timing Control to Manual. |

• SDRAM CAS latency Time

| | |
|---|--|
| 3 | For Slower SDRAM DIMM module. (Default Value) |
|---|--|

| | |
|---|--------------------------------|
| 2 | For Fastest SDRAM DIMM module. |
|---|--------------------------------|

- **SDRAM Cycle Time Tras/Trc**

| | |
|-----|--|
| 6/8 | Set SDRAM Tras/Trc Cycle time is 6/8 SCLKs. (Default value) |
| 5/7 | Set SDRAM Tras/Trc Cycle time is 5/7 SCLKs. |

- **SDRAM RAS -to- CAS delay**

| | |
|---|--|
| 3 | Set SDRAM RAS-to-CAS delay 3 SCLKs. (Default value) |
| 2 | Set SDRAM RAS-to-CAS delay 2 SCLKs. |

- **SDRAM RAS Precharge Time**

| | |
|---|---|
| 3 | Set SDRAM RAS Precharge Time to 3. (Default value) |
| 2 | Set SDRAM RAS Precharge Time to 2. |

- **Delayed Transaction**

| | |
|----------|---|
| Disabled | Normal operation. |
| Enabled | For slow speed ISA device in system. (Default value) |

- **System Memory Frequency**

| | |
|------------|---|
| Auto | Set System Memory Frequency to Auto. (Default value) |
| 100MH z | Set System Memory Frequency to 100MHz. |
| 133MH z | Set System Memory Frequency to 133MHz. |

Integrated Peripherals

| CMOS Setup Utility - Copyright(C) 1984-2000 Award Software Integrated Peripherals | | |
|--|-------------|--------------|
| On-Chip Primary PCI IDE | Enabled | Item Help |
| On-Chip Secondary PCI IDE | Enabled | |
| IDE Primary Master PIO | Auto | Menu Level ▶ |
| IDE Primary Slave PIO | Auto | |
| IDE Secondary Master PIO | Auto | |
| IDE Secondary Slave PIO | Auto | |
| IDE Primary Master UDMA | Auto | |
| IDE Primary Slave UDMA | Auto | |
| IDE Secondary Master UDMA | Auto | |
| IDE Secondary Slave UDMA | Auto | |
| USB Controller | Enabled | |
| USB Keyboard Support | Disabled | |
| USB Mouse Support | Disabled | |
| Init Display First | PCI Slot | |
| AC97 Audio | Auto | |
| AC97 Modem | Auto | |
| IDE HDD Block Mode | Enabled | |
| POWER ON Function | BUTTON ONLY | |
| X KB Power ON Password | Enter | |
| Onboard FDC Controller | Enabled | |
| Onboard Serial Port 1 | 3F8/IRQ4 | |
| Onboard IR Port | 2F8/IRQ3 | |
| UART Mode Select | IrDA | |
| UR2 Duplex Mode | Half | |
| Onboard Parallel Port | 378/IRQ7 | |
| Parallel Port Mode | SPP | |
| AC Back Function | Memory | |
| Game Port Address | 201 | |
| Midi Port Address | 330 | |
| Midi Port IRQ | 10 | |

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

Figure 6: Integrated Peripherals

- On-Chip Primary PCI IDE

| | |
|----------|--|
| Enabled | Enabled onboard 1st channel IDE port. (Default value) |
| Disabled | Disabled onboard 1st channel IDE port. |

- **On-Chip Secondary PCI IDE**

| | |
|----------|--|
| Enabled | Enabled onboard 2nd channel IDE port. (Default value) |
| Disabled | Disabled onboard 2nd channel IDE port. |

- **IDE Primary Master PIO (for onboard IDE 1st channel)**

| | |
|---------|---|
| Auto | BIOS will automatically detect the IDE HDD Accessing mode. (Default value) |
| Mode0-4 | Manually set the IDE Accessing mode. |

- **IDE Primary Slave PIO (for onboard IDE 1st channel)**

| | |
|---------|---|
| Auto | BIOS will automatically detect the IDE HDD Accessing mode. (Default value) |
| Mode0-4 | Manually set the IDE Accessing mode. |

- **IDE Secondary Master PIO (for onboard IDE 2nd channel)**

| | |
|---------|---|
| Auto | BIOS will automatically detect the IDE HDD Accessing mode. (Default value) |
| Mode0-4 | Manually set the IDE Accessing mode. |

- **IDE Secondary Slave PIO (for onboard IDE 2nd channel)**

| | |
|---------|---|
| Auto | BIOS will automatically detect the IDE HDD Accessing mode. (Default value) |
| Mode0-4 | Manually set the IDE Accessing mode. |

- **IDE Primary Master UDMA**

| | |
|----------|---|
| Auto | BIOS will automatically detect the IDE HDD Accessing mode. (Default value) |
| Disabled | Disable UDMA function. |

- **IDE Primary Slave UDMA**

| | |
|----------|---|
| Auto | BIOS will automatically detect the IDE HDD Accessing mode. (Default value) |
| Disabled | Disable UDMA function. |

- **IDE Secondary Master UDMA**

| | |
|----------|--|
| Auto | BIOS will automatically detect the IDE HDD Accessing mode. (Default value) |
| Disabled | Disable UDMA function. |

- **IDE Secondary Slave UDMA**

| | |
|----------|--|
| Auto | BIOS will automatically detect the IDE HDD Accessing mode. (Default value) |
| Disabled | Disabled UDMA function. |

- **USB Controller**

| | |
|----------|--|
| Enabled | Enabled USB Controller. (Default value) |
| Disabled | Disabled USB Controller. |

- **USB Keyboard Support**

| | |
|----------|---|
| Enabled | Enabled USB Keyboard Support. |
| Disabled | Disabled USB Keyboard Support. (Default value) |

- **USB Mouse Support**

| | |
|----------|--|
| Enabled | Enabled USB Mouse Support. |
| Disabled | Disabled USB Mouse Support. (Default value) |

- **Init Display First**

| | |
|-------------|--|
| PCI Slot | Set Init Display First to PCI Slot. (Default value) |
| Onboard/AGP | Set Init Display First to onboard/AGP. |

- **AC97 Audio**

| | |
|----------|---|
| Auto | BIOS will automatically detect onboard AC97 Audio or YAMAHA 744 audio. (Default value) |
| Disabled | Disabled AC97 Audio. |

- **AC97 Modem**

| | |
|----------|---|
| Auto | Bios will automatically detect onboard AC97 Modem. (Default value) |
| Disabled | Disabled AC97 Modem. |

- **IDE HDD Block Mode**

| | |
|----------|--|
| Enabled | Enabled IDE HDD Block Mode. (Default value) |
| Disabled | Disabled IDE HDD Block Mode. |

- **POWER ON Function**

| | |
|-------------|---|
| Password | Enter from 1 to 5 characters to set the Keyboard Power On Password. |
| Mouse Click | Double click on PS/2 mouse left button. |
| BUTTON ONLY | If your keyboard have "POWER Key" button, you can press the key to power on your system. (Default value) |
| Keyboard 98 | Windows 98 keyboard "Power" key. |

- **KB Power ON Password**

| | |
|-------|---|
| Enter | Enter from 1 to 5 characters to set the Keyboard Power On Password. |
|-------|---|

- **Onboard FDC Controller**

| | |
|----------|--|
| Enabled | Enabled onboard FDC port. (Default value) |
| Disabled | Disabled onboard FDC port. |

- **Onboard Serial Port 1**

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

- **Onboard IR Port**

| | |
|----------|--|
| Auto | BIOS will automatically setup the IR Port address. |
| 3F8/IRQ4 | Enabled onboard IR Port and address is 3F8. |
| 2F8/IRQ3 | Enabled onboard IR Port and address is 2F8. (Default Value) |
| 3E8/IRQ4 | Enabled onboard IR Port and address is 3E8. |
| 2E8/IRQ3 | Enabled onboard IR Port and address is 2E8. |
| Disabled | Disabled onboard IR Port. |

- **UART Mode Select**

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

| | |
|-------|--|
| ASKIR | Set onboard I/O chip UART to ASKIR Mode. |
| IrDA | Set onboard I/O chip UART to IrDA Mode. (Default Value) |
| SCR | Set onboard I/O chip UART to SCR Mode. |

- **UR2 Duplex Mode**

| | |
|------|---|
| Half | IR Function Duplex Half. (Default Value) |
| Full | IR Function Duplex Full. |

- **Onboard Parallel port**

| | |
|----------|--|
| 378/IRQ7 | Enabled onboard LPT port and address is 378/IRQ7. (Default Value) |
| 278/IRQ5 | Enabled onboard LPT port and address is 278/IRQ5. |
| Disabled | Disabled onboard LPT port. |
| 3BC/IRQ7 | Enabled onboard LPT port and address is 3BC/IRQ7. |

- **Parallel Port Mode**

| | |
|---------|---|
| SPP | Using Parallel port as Standard Parallel Port. (Default Value) |
| EPP | Using Parallel port as Enhanced Parallel Port. |
| ECP | Using Parallel port as Extended Capabilities Port. |
| ECP+EPP | Using Parallel port as ECP & EPP mode. |

- **AC Back Function**

| | |
|----------|--|
| Memory | This function depends on computer status. (Default value) |
| Soft-Off | Set System Soft-Off Status. |
| Full-On | Set System Full-On Status. |

- **Game Port Address**

| | |
|----------|--|
| Disabled | Disabled this function. |
| 201 | Set onboard game port is 201. (Default Value) |
| 209 | Set onboard game port is 209. |

- **Midi Port Address**

| | |
|----------|---|
| Disabled | Disabled On Board Midi Port. |
| 300 | Set On Board Midi Port is 300. |
| 330 | Set On Board Midi Port is 330. (Default Value) |

- **Midi Port IRQ**

| | |
|----|--|
| 5 | Set 5 for Midi Port IRQ. |
| 10 | Set 10 for Midi Port IRQ. (Default Value) |

Power Management Setup

| CMOS Setup Utility - Copyright(C) 1984-2000 Award Software Power Management Setup | | |
|--|---------------------|--------------|
| ACPI Suspend Type | S1(PowerOn suspend) | Item Help |
| Video Off Method | DPMS | Menu Level ▶ |
| Suspend Type | Stop Grant | |
| MODEM Use IRQ | 3 | |
| Suspend Mode | Disabled | |
| HDD Power Down | Disabled | |
| Soft-Off by PWR-BTTN | Instant-off | |
| Power LED in Suspend | Blinking | |
| Wake-Up by PCI card | Enabled | |
| ModemRingOn/WakeOnLan | Enabled | |
| USB KB/Mouse Wake From S3 | Disabled | |
| FAN Off In Suspend | Enabled | |
| CPU Thermal-Throttling | 50% | |
| Resume by Alarm | Disabled | |
| X Date(of Month) Alarm | 0 | |
| X Time(hh:mm:ss) Alarm | 0 0 0 | |
| ** Reload Global Timer Events ** | | |
| Primary IDE 0 | Disabled | |
| Primary IDE 1 | Disabled | |
| Secondary IDE 0 | Disabled | |
| Secondary IDE 1 | Disabled | |
| FDD,COM,LPT Port | Disabled | |
| PCI PIRQ[A-D]# | Disabled | |

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

Figure 7: Power Management Setup

- ACPI Suspend Type

| | |
|---------------------|---|
| S1(PowerOn Suspend) | Set ACPI Suspend type to S1. (Default value) |
| S3(Suspend to RAM) | Set ACPI Suspend type to S3. |

- **Video off Method**

| | |
|----------------|--|
| V/H SYNC+Blank | BIOS will turn off V/H-SYNC when gets into Green mode for Green monitor power saving. |
| Blank Screen | BIOS will only black monitor when gets into Green mode. |
| DPMS | BIOS will use DPMS Standard to control VGA card. (The Green type VGA card will turn off V/H-SYNC automatically.) (Default value) |

- **Suspend Type**

| | |
|---------------|--|
| Stop Grant | Set Suspend type is stop grant. (Default value) |
| PwrOn Suspend | Set Suspend type is Power on Suspend. |

- **MODEM Use IRQ**

| | |
|----|--|
| NA | Set MODEM Use IRQ to NA. |
| 3 | Set MODEM Use IRQ to 3. (Default value) |
| 4 | Set MODEM Use IRQ to 4. |
| 5 | Set MODEM Use IRQ to 5. |
| 7 | Set MODEM Use IRQ to 7. |
| 9 | Set MODEM Use IRQ to 9. |
| 10 | Set MODEM Use IRQ to 10. |
| 11 | Set MODEM Use IRQ to 11. |

- **Suspend Mode**

| | |
|----------------|---|
| Disabled | Disabled Suspend Mode. (Default value) |
| 1 min - 1 Hour | Setup the timer to enter Suspend Mode. |

- **HDD Power Down**

| | |
|------------|---|
| Disabled | Disabled HDD Power Down mode function. (Default value) |
| 1-15 mins. | Enabled HDD Power Down mode between 1 to 15 mins. |

- **Soft-off by PWR-BTTN**

| | |
|--------------|---|
| Instant-off | Soft switch ON/OFF for POWER ON/OFF. (Default value) |
| Delay 4 Sec. | Soft switch ON 4sec. for POWER OFF. |

- **Power LED in Suspend**

| | |
|----------|---|
| Blinking | Set Power LED in Suspend at Blinking mode. (Default value) |
| On | Set Power LED in Suspend at On mode. |
| Off/Dual | Set Power LED in Suspend at Off/Dual color mode. |

- **Wake-Up by PCI card**

| | |
|----------|---|
| Disabled | Disabled this function. |
| Enabled | Enabled wake-up by PCI card. (Default value) |

- **ModemRingOn / WakeOnLan**

| | |
|----------|---|
| Disabled | Disabled these functions. |
| Enabled | Enabled these functions. (Default value) |

- **USB KB/Mouse Wake From S3**

| | |
|----------|--|
| Disabled | Disabled this function. (Default value) |
| Enabled | Enabled USB KB/Mouse Wake From S3 function. |

- **FAN Off In Suspend**

| | |
|----------|---|
| Disabled | Disabled this function. |
| Enabled | Stop CPU FAN when entering Suspend mode. (Default value) |

- **CPU Thermal-Throttling**

| | |
|-------|---|
| 87.5% | Monitor CPU Temp. will cause system slow down CPU Duty Cycle to 87.5%. |
| 75.0% | Monitor CPU Temp. will cause system slow down CPU Duty Cycle to 75.0%. |
| 62.5% | Monitor CPU Temp. will cause system slow down CPU Duty Cycle to 62.5%. |
| 50.0% | Monitor CPU Temp. will cause system slow down CPU Duty Cycle to 50.0%. (Default value) |
| 37.5% | Monitor CPU Temp. will cause system slow down CPU Duty Cycle to 37.5%. |
| 25.0% | Monitor CPU Temp. will cause system slow down CPU Duty Cycle to 25.0%. |
| 12.5% | Monitor CPU Temp. will cause system slow down CPU Duty Cycle to 12.5%. |

- **Resume by Alarm**

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

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

If the default value is Enabled.

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

- **Primary IDE 0/1**

| | |
|----------|--|
| Disabled | Disabled this function. (Default value) |
| Enabled | Enabled monitor Primary IDE 0/1 for Green event. |

- **Secondary IDE 0/1**

| | |
|----------|--|
| Disabled | Disabled this function. (Default value) |
| Enabled | Enabled monitor Secondary IDE 0/1 for Green event. |

- **FDD,COM,LPT Port**

| | |
|----------|--|
| Disabled | Disabled this function. (Default value) |
| Enabled | Enabled monitor FDC,COM,LPT for Green event. |

- **PCI PIRQ[A-D] #**

| | |
|----------|--|
| Enabled | Monitor PCI PIRQ[A-D]# IRQ Active. |
| Disabled | Ignore PCI PIRQ[A-D]# IRQ Active. (Default value) |

PnP/PCI Configurations

| CMOS Setup Utility - Copyright (C) 1984-2000 Award Software PnP/PCI Configurations | | |
|---|-----------------------------------|--|
| Reset Configuration Data | Disabled | Item Help |
| Resources Controlled By X IRQ Resources | Auto (ESCD) Press Enter | Menu Level ▸ |
| PCI/VGA Palette Snoop | Disabled | When resources are controlled manually, assign each system interrupt a type, depending on the type of device using the interrupt |
| ↑↓→← Move Enter: Select +/-PU/PD: Value F10: Save ESC: Exit F1: General Help F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults | | |

Figure 8: PnP/PCI Configurations

- **Reset Configuration Data**

| | |
|----------|--|
| Disabled | Disable this function. (Default value) |
| ESCD | Clear PnP information in ESCD. |
| DMI | Update Desktop Management Information data. |
| Both | Clear PnP information in ESCD & update DMI data. |

- **Resources Controlled by**

| | |
|-------------|--|
| Manual | User can set the PnP resource (I/O Address, IRQ & DMA channels) used by legacy ISA DEVICE. |
| Auto (ESCD) | BIOS automatically use these PnP rescuers. (Default value) |

- **IRQ (3,4,5,7,9,10,11,12,15)**

| | |
|------------|-------------------------------------|
| PCI Device | The resource is used by PCI device. |
| Reserved | Set the resource to reserved. |

- **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) |

PC Health Status

| CMOS Setup Utility-Copyright(C) 1984-2000 Award Software | | |
|--|------------|--------------|
| PC Health Status | | |
| Item | Value | Item Help |
| Reset Case Open Status | Disabled | |
| Case Opened | No | |
| VCORE | 1.936 V | Menu Level ▸ |
| VGTL | 1.424 V | |
| VCC3 | 3.264 V | |
| + 5V | 4.730 V | |
| +12V | 12.160V | |
| - 12V | -12.280 V | |
| 5VSB(V) | 5.026 V | |
| VBAT(V) | 3.104 V | |
| Current CPU Temperature | 31°C | |
| CPU FAN Speed | 5443 RPM | |
| Power FAN Speed | 0 RPM | |
| System FAN speed | 0 RPM | |
| CPU Temperature Select | 80°C/176°F | |
| Shutdown Temperature | 90°C/194°F | |
| CPU FAN Fail Alarm | Disabled | |
| Power FAN Fail Alarm | Disabled | |
| System FAN Fail Alarm | Disabled | |

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

Figure 9: PC Health Status

- **Reset Case Open Status**
- **Case Opened**
If the case is closed, "Case Opened" will show "No".
If the case have been opened, "Case Opened" will show "Yes".
If you want to reset "Case Opened" value, set "Reset Case Open Status" to "Enabled" and save CMOS, your computer will restart.
- **Current Voltage (V) VCORE / VGTL/ VCC3 / ± 12V / +5V / 5VSB / VBAT**
Detect system's voltage status automatically.
- **Current CPU Temperature (°C / °F)**
Detect CPU Temp. automatically.

- **CPU FAN / Power FAN / System FAN Speed (RPM)**

Detect Fan speed status automatically.

- **CPU Temperature Select (°C)**

| | |
|--------------|---|
| 65°C / 149°F | Monitor CPU Temp. at 65°C / 149°F. |
| 70°C / 158°F | Monitor CPU Temp. at 70°C / 158°F. |
| 75°C / 167°F | Monitor CPU Temp. at 75°C / 167°F. |
| 80°C / 176°F | Monitor CPU Temp. at 80°C / 176°F. (Default value) |
| 85°C / 185°F | Monitor CPU Temp. at 85°C / 185°F. |
| 90°C / 194°F | Monitor CPU Temp. at 90°C / 194°F. |
| 95°C / 203°F | Monitor CPU Temp. at 95°C / 203°F. |
| Disabled | Disabled this function. |

- **Shutdown Temperature (°C / °F)**

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

| | |
|--------------|--|
| Disabled | Normal Operation |
| 65°C / 149°F | Monitor CPU Temp. at 65°C / 149°F, if Temp. > 65°C / 149°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. |
| 75°C / 167°F | Monitor CPU Temp. at 75°C / 167°F, if Temp. > 75°C / 167°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. |
| 85°C / 185°F | Monitor CPU Temp. at 85°C / 185°F, if Temp. > 85°C / 185°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. (Default value) |
| 95°C / 203°F | Monitor CPU Temp. at 95°C / 203°F, if Temp. > 95°C / 203°F system will automatically power off. |

- **Fan Fail Alarm**

CPU / Power / System

| | |
|----------|--|
| Disabled | Fan Fail Alarm Function Disabled. (Default value) |
| Enabled | Fan Fail Alarm Function Enabled. |

Frequency/Voltage Control

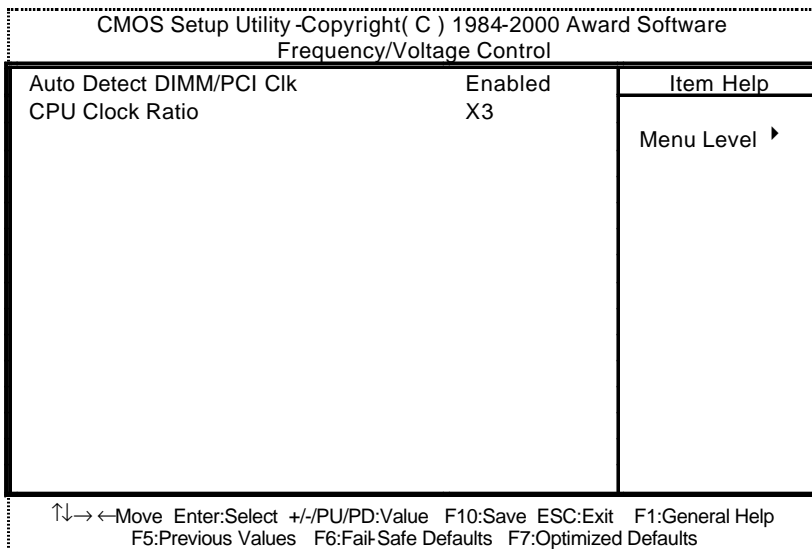


Figure 10: Frequency/Voltage Control

- **Auto Detect DIMM/PCI Clk**

| | |
|----------|--|
| Disabled | Disabled Auto Detect DIMM/PCI Clk. |
| Enabled | Enabled Auto Detect DIMM/PCI Clk. (Default value) |

- **CPU Clock Ratio**

This option will not be shown is you are using a CPU with the clock ratio locked.

| |
|--|
| X3/X3.5/X4/X4.5/X5/X5.5/X6/X6.5/X7/X7.5/X8 |
|--|

Load Fail-Safe Defaults

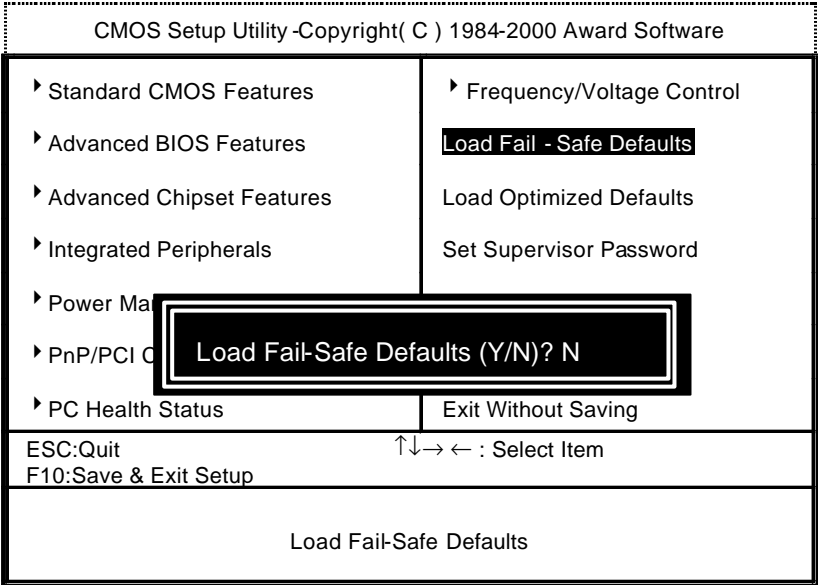


Figure 11: Load Fail-Safe Defaults

- **Load Fail-Safe Defaults**

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

Load Optimized Defaults

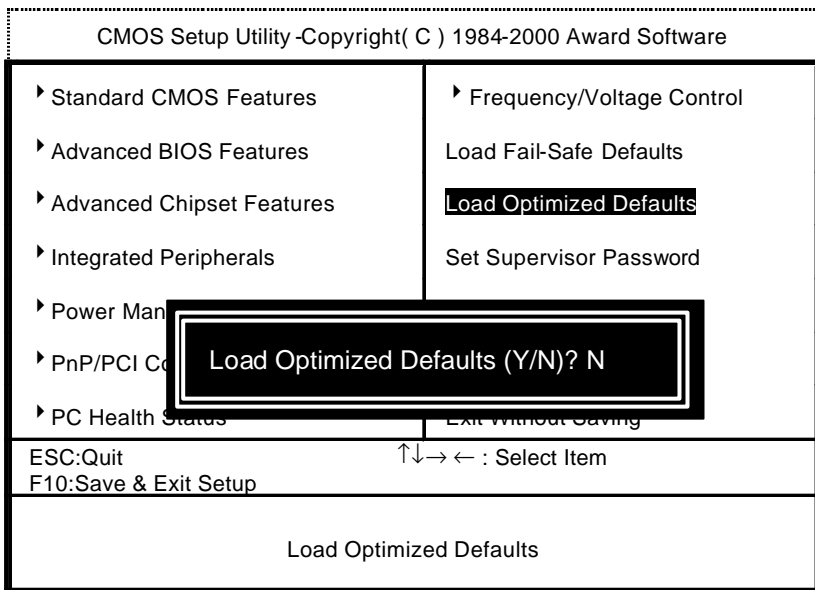


Figure 12: Load Optimized Defaults

- **Load Optimized Defaults**

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

Set Supervisor / User Password

When you select this function, the following message will appear at the center of the screen to assist you in creating a password.

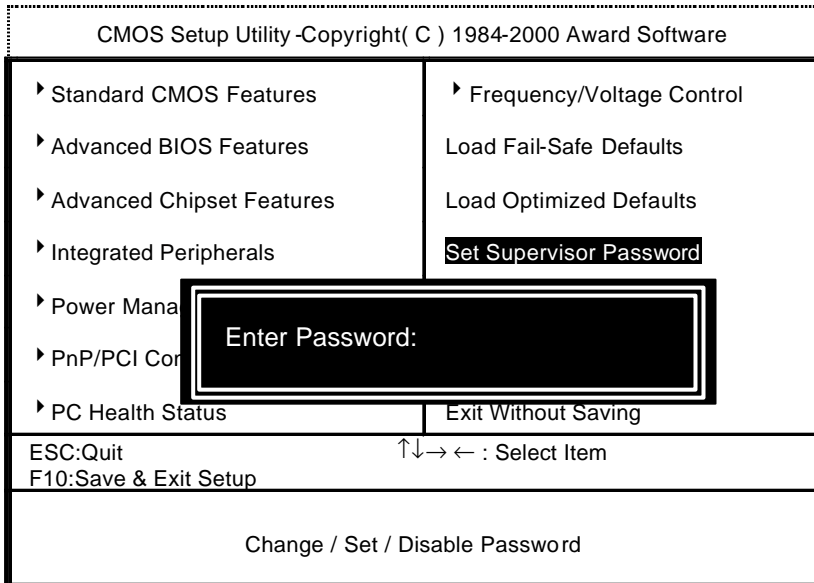
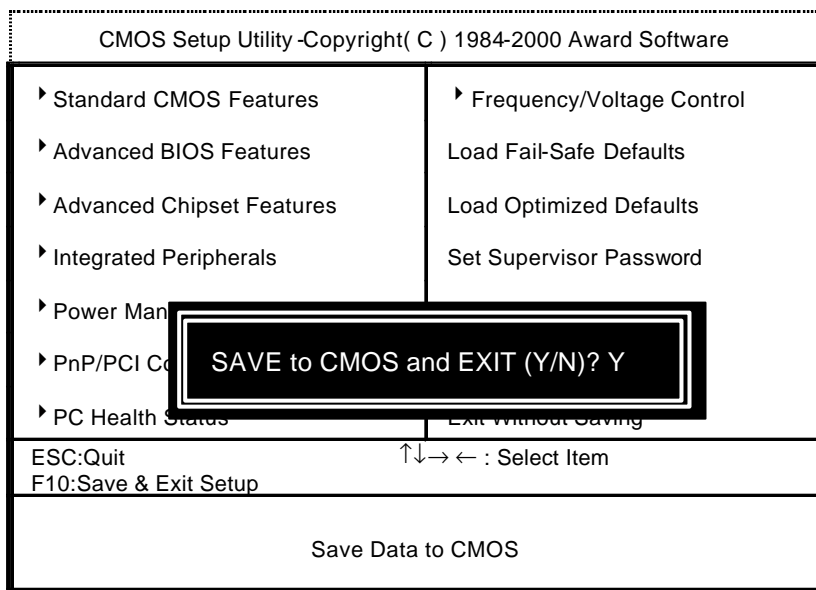


Figure 13: Password Setting

Type the password, up to eight characters, and press <Enter>. The password typed now will clear the previously entered password from CMOS memory. 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.

If you select "System" at "Security Option" 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 "Security Option" in BIOS Features Setup Menu, you will be prompted only when you try to enter Setup.



Save & Exit Setup

Figure 14: 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

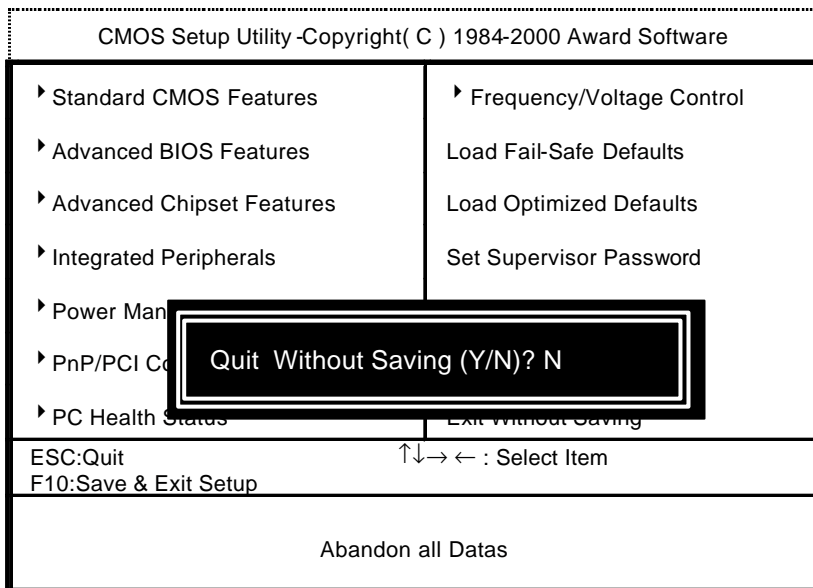


Figure 15: Exit Without Saving

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

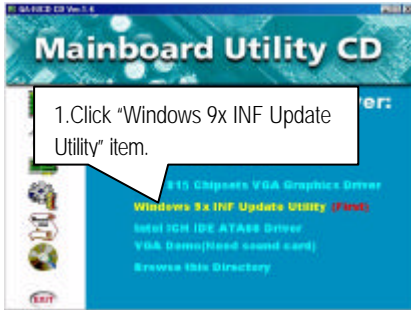
Type "N" will return to Setup Utility.

Appendix

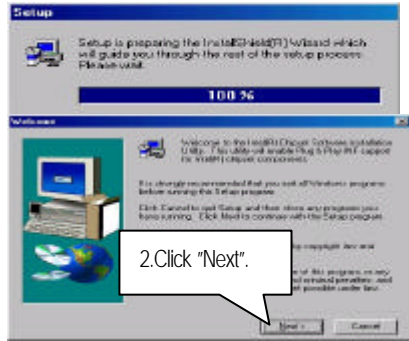
Appendix A: Intel 815 Chipset Driver Installation

A. Windows 9x INF Update Utility

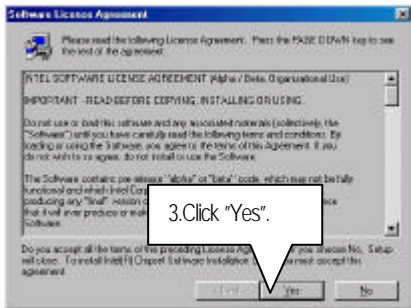
Insert the support CD that came with your motherboard into your CD-ROM drive or double-click the CD drive icon in **My Computer** to bring up the setup screen.



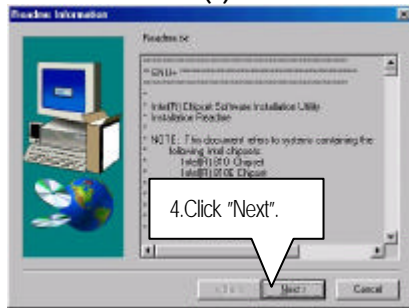
(1)



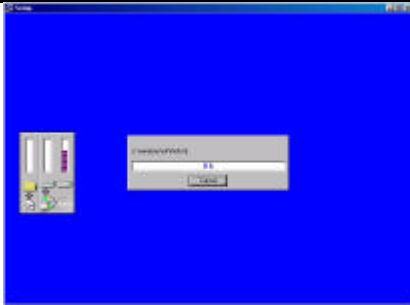
(2)



(3)



(4)



(5)

● When the Windows 9x INF Update Utility installation is completed, please restart your computer.

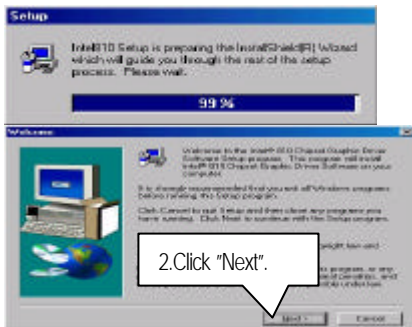
(6)

B: Intel 815 Chipset VGA Graphics Driver Installation

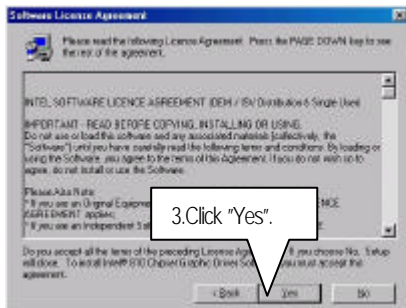
Insert the support CD that came with your motherboard into your CD-ROM drive or double-click the CD drive icon in **My Computer** to bring up the setup screen.



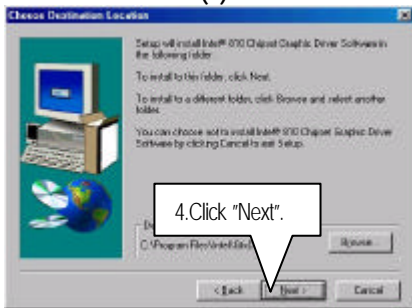
(1)



(2)



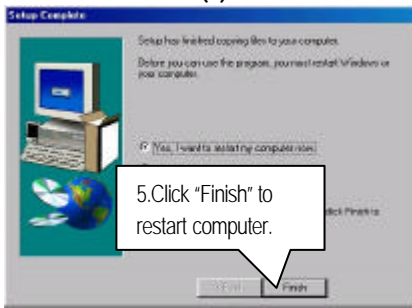
(3)



(4)



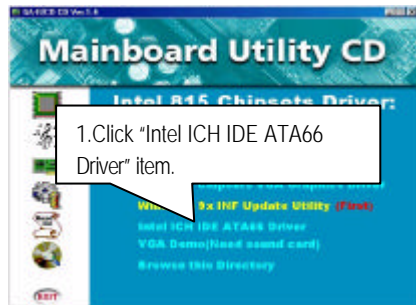
(5)



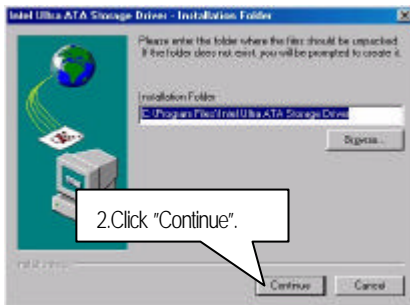
(6)

C. Intel ICH IDE ATA66 Driver Installation

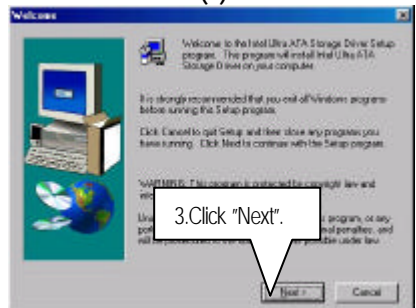
Insert the support CD that came with your motherboard into your CD-ROM drive or double-click the CD drive icon in **My Computer** to bring up the setup screen.



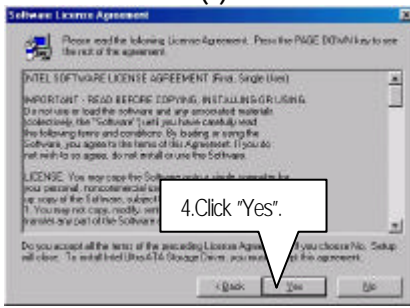
(1)



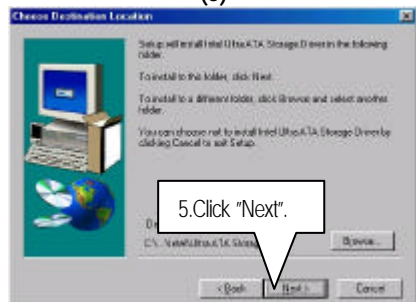
(2)



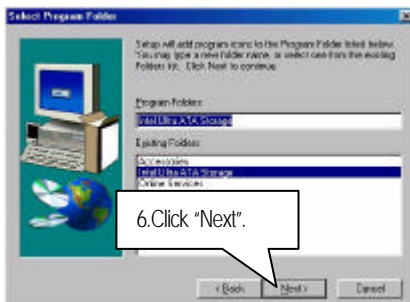
(3)



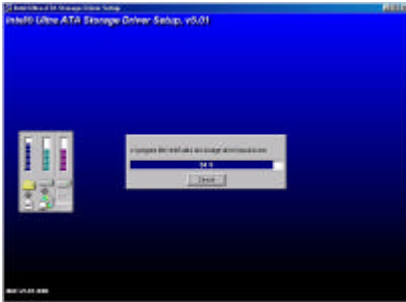
(4)



(5)



(6)



(7)



(8)

Appendix B: BIOS Flash Procedure

BIOS update procedure:

- ✓ Please check your BIOS vendor (AMI or AWARD) on the motherboard.
- ✓ It is recommended you copy the AWDFlash.exe or AMIFlash.exe in driver CD (D:\>Utility\BIOSFlash) and the BIOS binary files into the directory you made in your hard disk. **【i.e.:C:\>Utility\ (C:\>Utility : denotes the driver and the directory where you put the flash utilities and BIOS file in.)】**
- ✓ Restart your computer into MS-DOS mode or command prompt only for Win95/98, go into the directory where the new BIOS file are located use the utility AWDFlash.exe or AMIFlash.exe to update the BIOS.
- ✓ Type the following command once you have enter the directory where all the files are located C:\utility\ AWDFlash or AMIFlash <filename of the BIOS binary file intended for flashing>.
- ✓ Once the process is finished, reboot the system.

● Note: Please download the newest BIOS from our website (www.gigabyte.com.tw) or contact your local dealer for the file.

Appendix C: Issues To Beware Of When Installing AMR

Please use inverse AMR card like the one in order to avoid mechanical problem. (See Figure A)

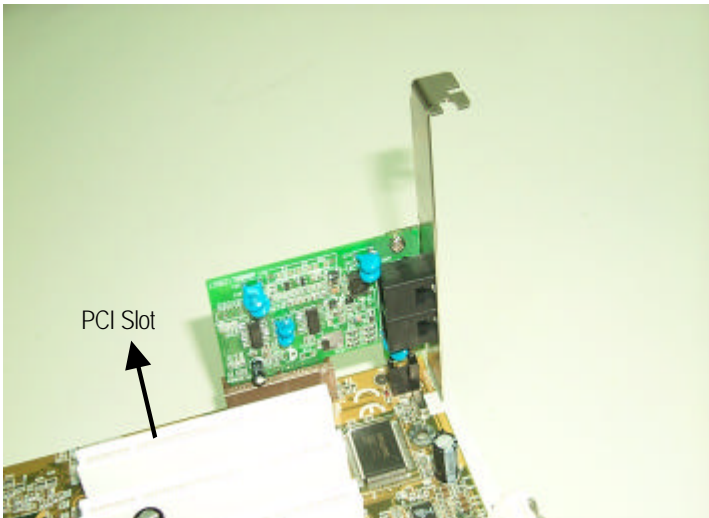


Figure A: Inverse AMR Card (Default)

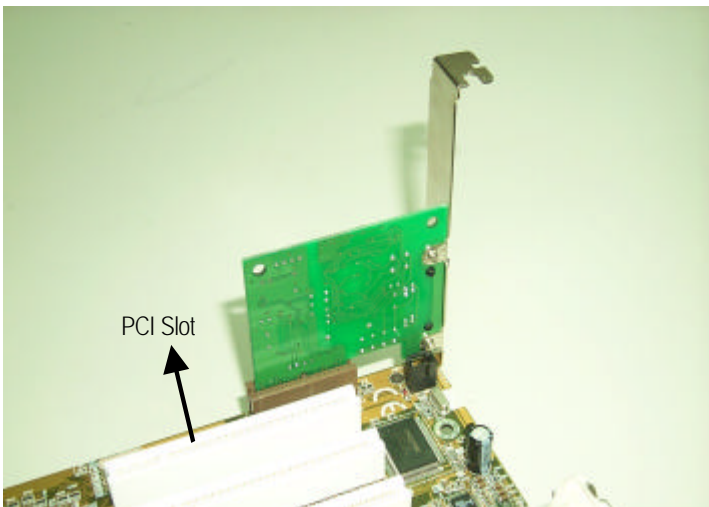


Figure B: Non inverse AMR Card

Appendix D: Acronyms

| Acor. | Meaning |
|----------|---|
| ACPI | Advanced Configuration and Power Interface |
| POST | Power-On Self Test |
| LAN | Local Area Network |
| ECP | Extended Capabilities Port |
| APM | Advanced Power Management |
| DMA | Direct Memory Access |
| MHz | Megahertz |
| ESCD | Extended System Configuration Data |
| CPU | Central Processing Unit |
| SMP | Symmetric Multi-Processing |
| USB | Universal Serial Bus |
| OS | Operating System |
| ECC | Error Checking and Correcting |
| IDE | Integrated Dual Channel Enhanced |
| SCI | Special Circumstance Instructions |
| LBA | Logical Block Addressing |
| EMC | Electromagnetic Compatibility |
| BIOS | Basic Input / Output System |
| SMI | System Management Interrupt |
| IRQ | Interrupt Request |
| NIC | Network Interface Card |
| A.G.P. | Accelerated Graphics Port |
| S.E.C.C. | Single Edge Contact Cartridge |
| LED | Light Emitting Diode |
| EPP | Enhanced Parallel Port |
| CMOS | Complementary Metal Oxide Semiconductor |
| I/O | Input / Output |
| ESD | Electrostatic Discharge |
| OEM | Original Equipment Manufacturer |
| SRAM | Static Random Access Memory |
| VID | Voltage ID |
| DMI | Desktop Management Interface |
| MIDI | Musical Interface Digital Interface |
| IOAPIC | Input Output Advanced Programmable Input Controller |

Appendix

| | |
|------|------------------------------|
| DIMM | Dual Inline Memory Module |
| DRAM | Dynamic Random Access Memory |
| PAC | PCI A.G.P. Controller |
| AMR | Audio Modem Riser |

To be
continued...

| Acor. | Meaning |
|-------|-----------------------------------|
| PCI | Peripheral Component Interconnect |
| RIMM | Rambus in-line Memory Module |
| DRM | Dual Retention Mechanism |
| ISA | Industry Standard Architecture |
| MTH | Memory Translator Hub |
| CRIMM | Continuity RIMM |