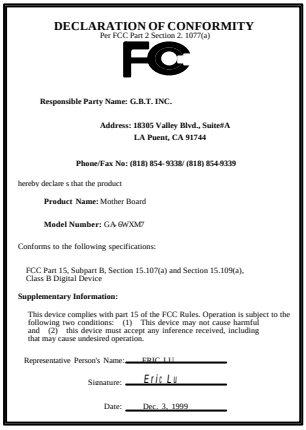
FCC Compliance Statement:



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 declare s that the product

Product Name: Mother Board

Model Number: GA 6WXM7

Conforms to the following specifications:

FCC Part 15, Subpart B, Section 15.107(a) and Section 15.109(a), Class B Digital Device

Supplementary Information:

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

Representative Person's Name: ERIC LU

Signature: Eric Lu

Date: Dec. 3, 1999

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-6WXM7

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***	Disturbances in supply systems caused
		☒ **EN60555-2**	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***	Disturbances in supply systems caused
		☒ **EN60555-3**	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 : Dec. 3, 1999

Signature : Rex Lin

Name : Rex Lin

6WXM7 Series

Intel® 810 Socket 370 Motherboard

USER'S MANUAL

INTEL® 810 Socket 370 Processor MAINBOARD

R-20-01-091201

REV. 2.0 First Edition

How this manual is organized

This manual is divided into the following sections:

1) Revision List	Manual revision information
2) Item Checklist	Product item list
3) Features	Product information & specification
4) 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 function (Optional)
7) BIOS Setup	Instructions on setting up the BIOS software
8) Appendix	General reference

Table Of Content

Revision History

Revision	Revision Note	Date
1.4	Initial release of the 6WXM7 Series motherboard user's manual.	Jul.1999
2.0	Initial release of the 6WXM7 Series motherboard user's manual.	Dec.1999

Dec. 1, 1999 Taipei, Taiwan, R.O.C

Item Checklist

☑ The 6WXM7 Series Motherboard

☑ Cable for IDE / Floppy device

☑ Diskettes or CD (IUCD) for motherboard utilities

☑ Internal COM2 Cable (Optional)

☐ Internal USB Cable

☐ Cable for SCSI device

☑ 6WXM7 Series User's Manual

☑ Internal DFP and TV-Out Cable (Optional)

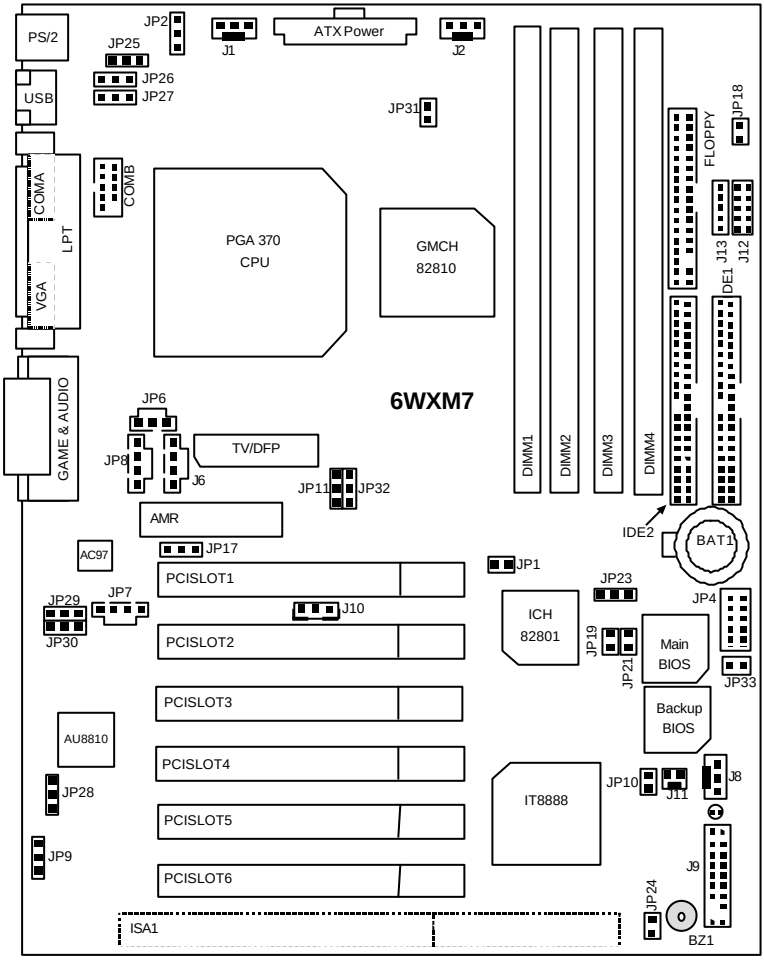
Summary of Features

Form factor	• 30.5 cm x 19.1 cm ATX SIZE form factor, 4 layers PCB.
Motherboard	• 6WXM7 series includes 6WXM7,6WXM7-1,6WXM7-E
CPU	• Socket 370 Processor • 128 KB 2nd cache in CPU(Depend on CPU)
Chipset	Intel® 810 ,consisting of: • 82810E PCI/AGP Controller(PAC) /82810DC100/82810 • 82801AA I/O Controller Hub(ICH)
Clock Generator	• Supports 66 / 100 / 133MHz
Memory	• 4 168-pin DIMM Sockets • Supports PC-100/133 SDRAM 16MB~256MB • Supports only 3.3V SDRAM DIMM
I/O Control	• ITE IT8712
Slots	• 1 AMR • 6 32-bit Master PCI Bus slots • 1 16-bit ISA Bus slots (Optional)
On-Board IDE	• An IDE controller on the Intel® 82801AA PCI chipset provides IDE HDD/ CD-ROM with PIO, Bus Master and Ultra DMA33/ATA66 operation modes • Can connect up to four IDE devices
On-Board Peripherals	• 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 • 2 Serial Ports (COMA & COMB) • 2 USB ports(FPUSBx1/BPUSBx1) • 4MB Display cache RAM (Optional) • 1 IrDA connector for IR/CIR (Optional)
On-Board Sound (Optional)	• Aureal AU8810(Optional) • Line In / Line Out / Mic In / AUX In / CD In / TEL / SPDIF / Game Port
Hardware Monitor (Optional)	• CPU/Power Supply/Chassis Fan Revolution detect • CPU Fan Control • System Voltage Detect • CPU Overheat Warning • Chassis Intrusion Detect • Display Actual Current Voltage

To be continued...

PS/2 Connector	• PS/2® Keyboard interface and PS/2® Mouse interface
BIOS	• Licensed AWARD BIOS, 4M bit FLASH ROM
Additional Features	• Internal/External Modem Wake up • Keyboard Password Wake up • System after AC back • Support Dual BIOS Function (Optional) • Support STR Function
Drivers & Utilities	• Display/Bus Master/Audio/Network Driver • Patch 95/98 Utility • DirectX 6.1 • Intel® LDCM® • Adobe® Acrobat Reader

6WXM7 Series Motherboard Layout

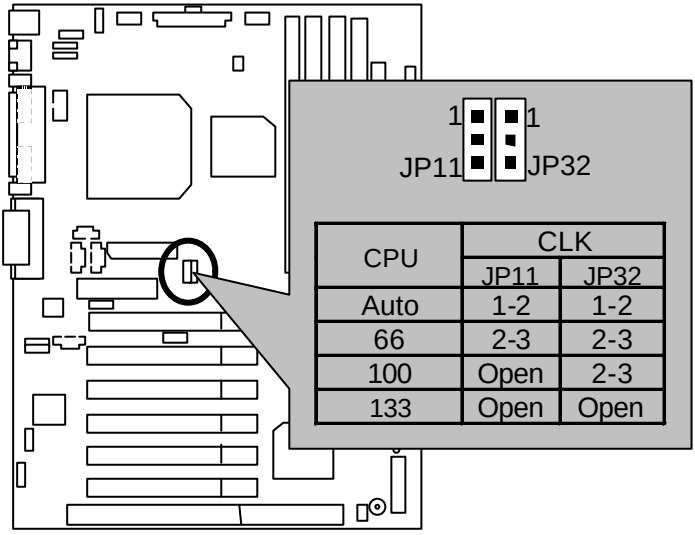


CPU Speed Setup

The system bus frequency can be switched at 66MHz, 100MHz, 133MHz(For Intel 810E)(Optional) and Auto by adjusting JP11/JP32 (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.

JP11/JP32 : CPU Speed Setup



CPU	CLK	
	JP11	JP32
Auto	1-2	1-2
66	2-3	2-3
100	Open	2-3
133	Open	Open

Figure 1

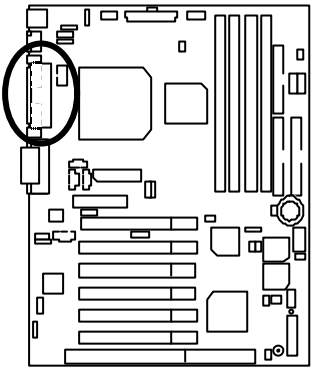
★ Note : Please set the CPU host frequency in accordance with your processor's specifications. We don't recommend you to set the system bus frequency over the CPU's specification because these specific bus frequencies are not the standard specifications for CPU, chipset and most of the peripherals. Whether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

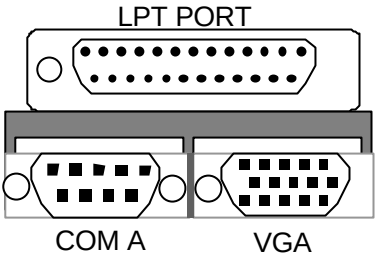
★ Note : JP32 is only available when the motherboard use 82810E chipset.

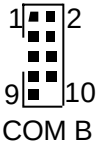
★ Note : 133MHz only 82810E support.

Connectors

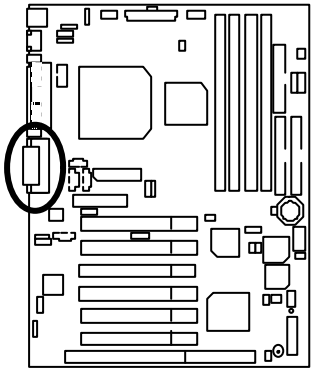
COM A / COM B / VGA / LPT Port

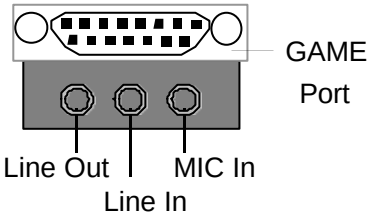




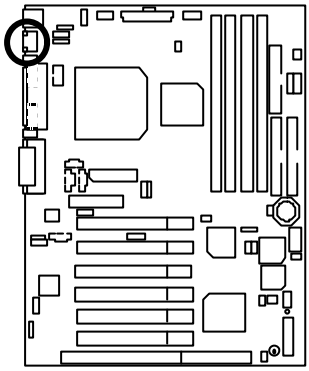


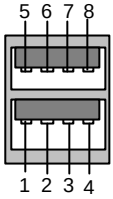
Game & Audio Port





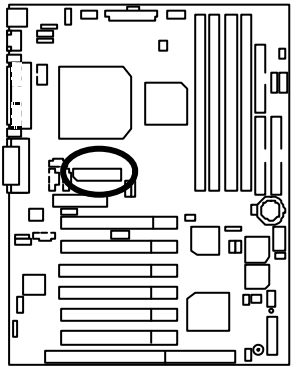
USB Connector

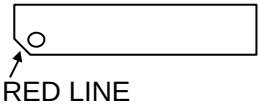




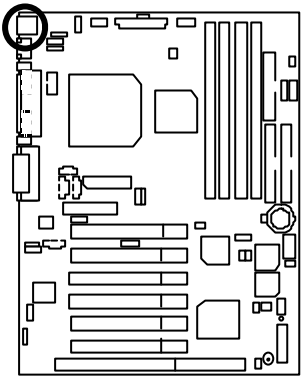
Pin No.	Definition
1	USB V0
2	USB D0-
3	USB D0+
4	GND
5	USB V1
6	USB D1-
7	USB D1+
8	GND

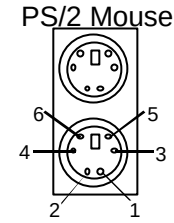
TV/DFP : TV-Out / Digital Flat Panel Daughter card connector.





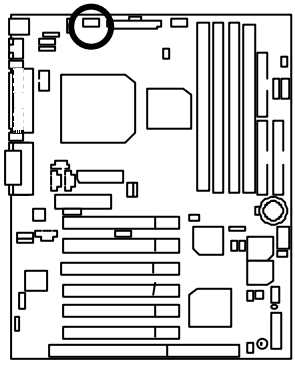
PS/2 Keyboard & PS/2 Mouse Connector





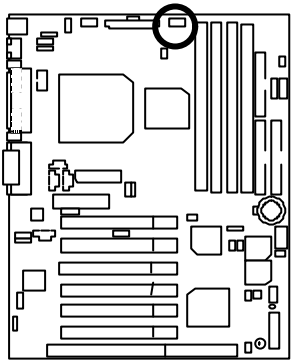
PS/2 Mouse/ Keyboard	
Pin No.	Definition
1	Data
2	NC
3	GND
4	VCC(+5V)
5	Clock
6	NC

CPU Cooling FAN Power Connector



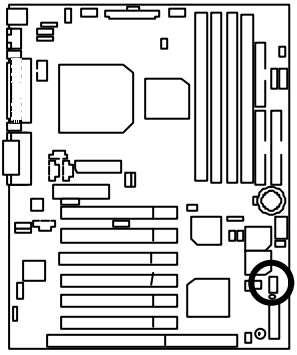
Pin No.	Definition
1	Control
2	+12V
3	SENSE

Power Cooling FAN Power Connector



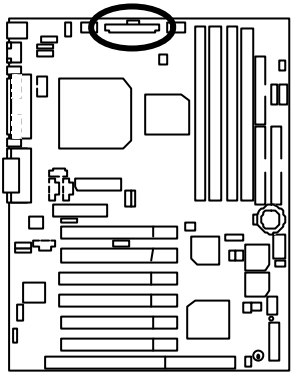
Pin No.	Definition
1	Control
2	+12V
3	SENSE

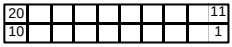
System Cooling FAN Power Connector



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

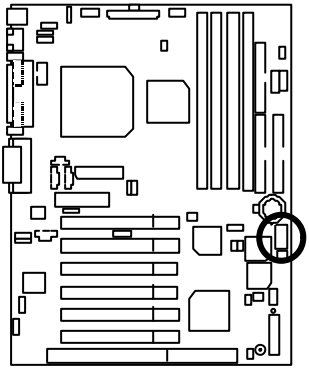
ATX Power

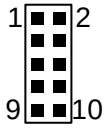




Pin No.	Definition
3,5,7,13, 15-17	GND
1,2,11	3.3V
4,6,19,20	VCC
10	+12V
12	-12V
18	-5V
8	Power Good
9	5V SB stand by+5V
14	PS-ON(Soft On/Off)

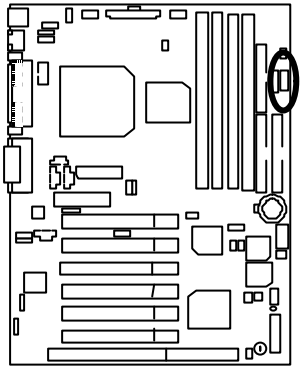
Front Panel USB Port

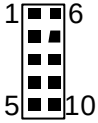




Pin No.	Definition
1,4,5,10	NC
2	+5V
3,7,9	GND
6	USBP0+
8	USBP0-

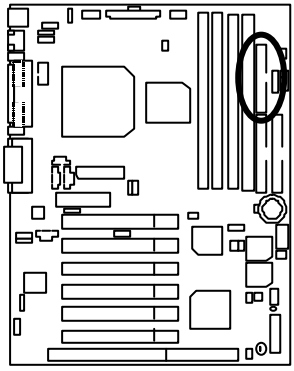
IR/CIR

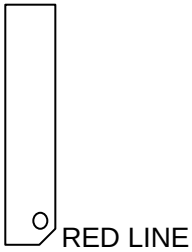




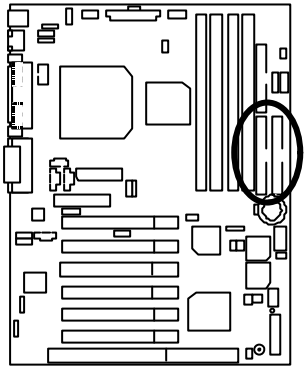
Pin No.	Definition
1	VCC
2,6,9	NC
3	IRRX
4	GND
5	IRTX
7	CIRRX
8	KBVcc
10	CIRTX

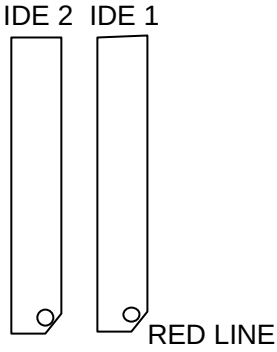
Floppy Port



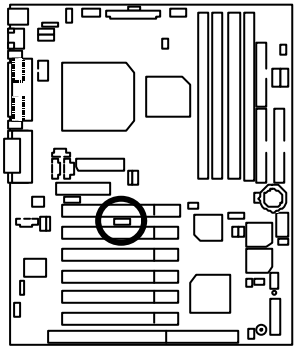


IDE1(Primary) , IDE2 (Secondary) Port



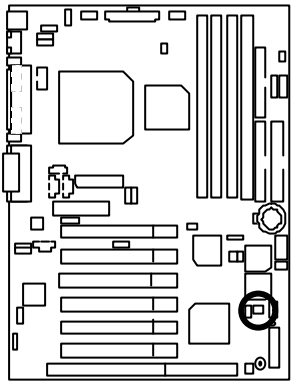


J10 : Wake on LAN



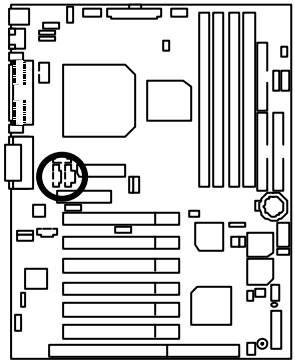
Pin No.	Definition
1	+5V SB
2	GND
3	Signal

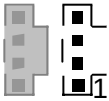
J11 : Ring Power On (Internal Modem Card Wake Up)



Pin No.	Definition
1	Signal
2	GND

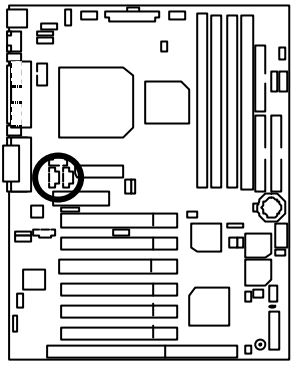
J6 : CD Audio Line In (Optional)

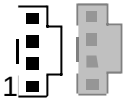




Pin No.	Definition
1	CD-L
2	GND
3	GND
4	CD-R

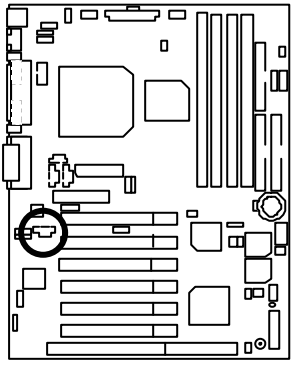
JP8 : AUX IN (Optional)

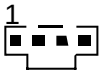




Pin No.	Definition
1	AUX-L
2	GND
3	GND
4	AUX-R

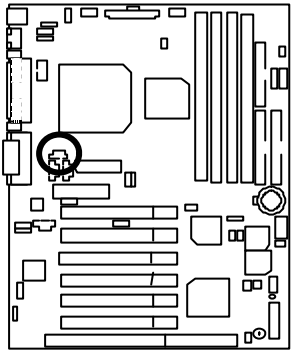
JP7 : TEL : The connector is for Modem with internal voice connector (Optional)





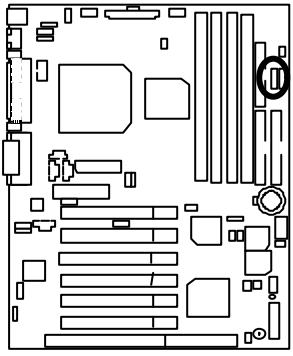
Pin No.	Definition
1	Signal-In
2	GND
3	GND
4	Signal-Out

JP6 : SPDIF(The SPDIF output is capable of providing digital audio to external speakers or compressed AC3 data to an external Dobly digital decoder.)(Optional)



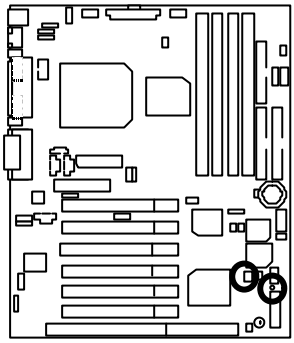
Pin No.	Definition
1	VCC
2	SPD OUT
3	GND

J13 : SMBUS



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

JP10 : STR LED Connector & DIMM LED

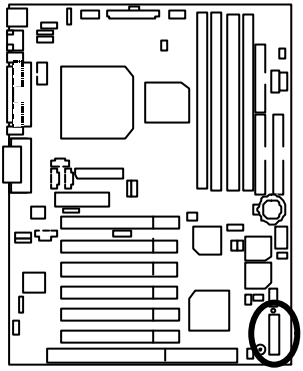


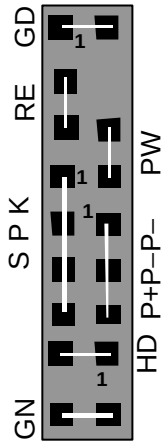
STR LED Connector External.

RAM Indicator LED1

Panel and Jumper Definition

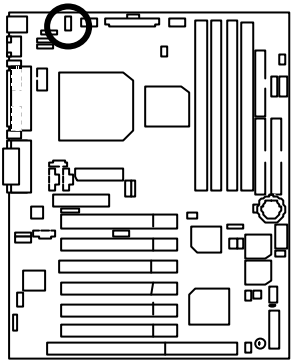
J9 : For 2X11 Pins Jumper





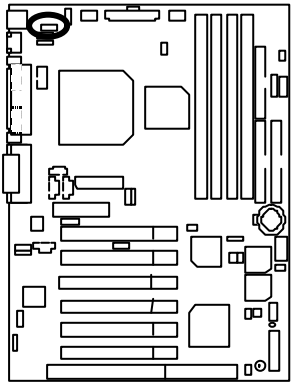
GN (Green Switch)	Open: Normal Operation Close: Entering Green Mode
GD (Green LED)	Pin 1: LED anode(+) Pin 2: LED cathode(–)
HD (IDE Hard Disk Active LED)	Pin 1: LED anode(+) Pin 2: LED cathode(–)
SPK (Speaker Connector)	Pin 1: VCC(+) Pin 2- Pin 3: NC Pin 4: Data(–)
RE (Reset Switch)	Open: Normal Operation 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

JP2 : Keyboard Power On



Pin No.	Definition
1-2 close	Keyboard Power on Enabled
2-3 close	Keyboard Power on Disabled (Default)

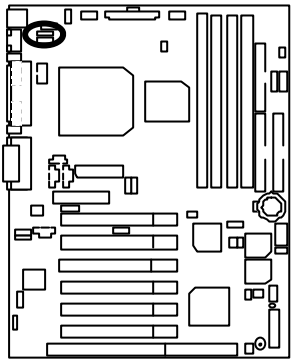
JP25 : USB Device Wake up Selection

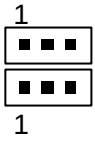


Pin No.	Definition
1-2 close	Disabled USB Device Wake up(Default)
2-3 close	Enabled USB Device Wake up

(If you want to use "**USB KB Wake from S3**" function, you have to set the BIOS setting "USB KB Wake from S3" enabled, and the jumper "**JP25**" 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 KB Wake from S3**". Remember to save the setting by pressing "ESC" and choose the "SAVE & EXIT SETUP" option.)

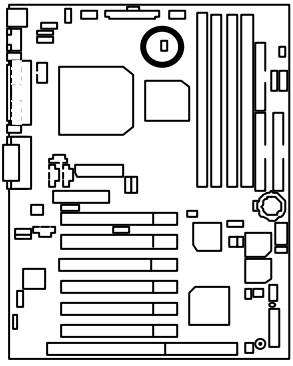
JP26/JP27 : USB Port Selection





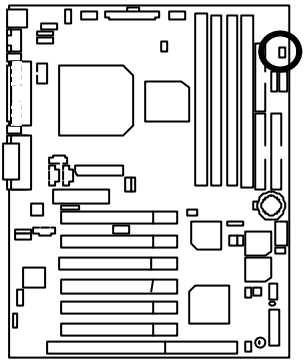
	Front Panel USB Enable	Back Panel USB Enable
	FPUSB	BPUSB
JP26	1-2close	2-3close
JP27	1-2close	2-3close

JP31 : Over Voltage CPU Speed Up (Magic Booster)
(When JP31 set "Open", CPU Voltage is rising 10%)



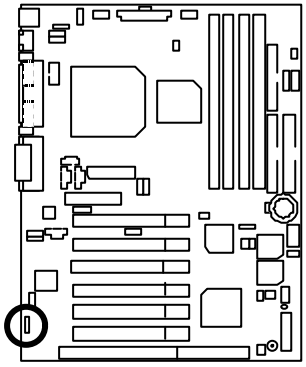
Pin No.	Definition
Open	Over Voltage
Close	Normal

JP18 : Case Open



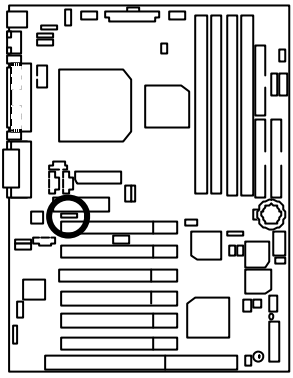
Pin No.	Definition
1	Signal
2	GND

JP9 : Clear CMOS Function



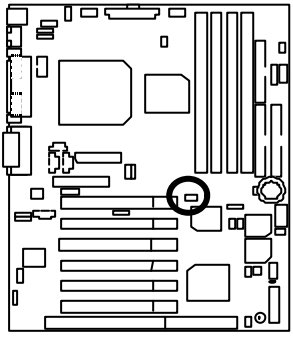
Pin No.	Definition
1-2 close	Clear CMOS
2-3 close	Normal (Default)

JP17 : AMR Selection (Optional)



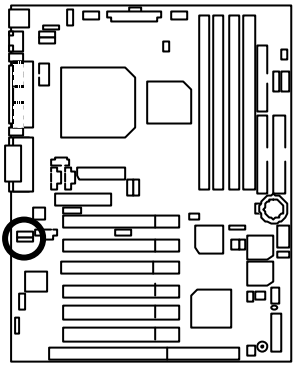
Pin No.	Definition
1-2close	AMR Secondary
2-3close	AC'97 Disabled (Disabled Onboard CODEC)

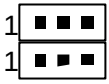
JP1 : STR Function Selection



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

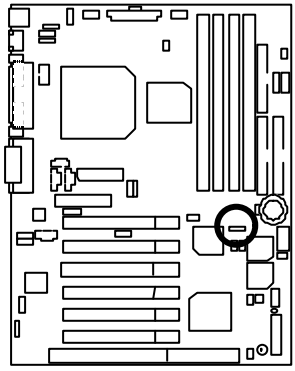
JP29 & JP30 : Quad Speaker (Optional)





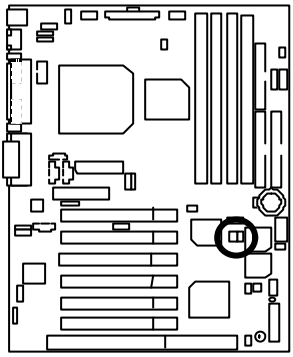
Pin No.	Definition
1-2 close	Normal Sound
2-3 close	Quad Speaker

JP23 : Safe mode/Recovery/Normal



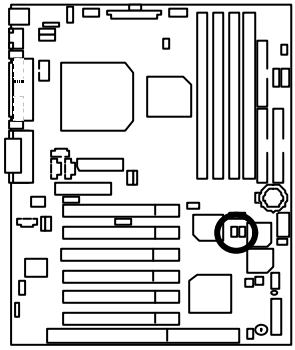
Pin No.	Definition
1-2close	Normal(Default)
2-3close	Safe mode
1-2-3open	Recovery

JP19 : Timeout Reboot Function



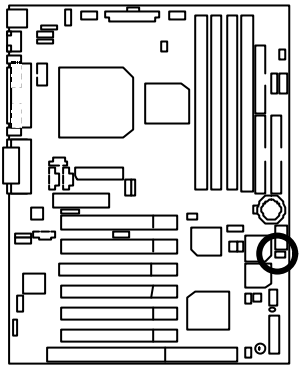
Pin No.	Definition
Open	Timeout Reboot
Close	No Reboot on Timeout (Default)

JP21 : Top Block Lock



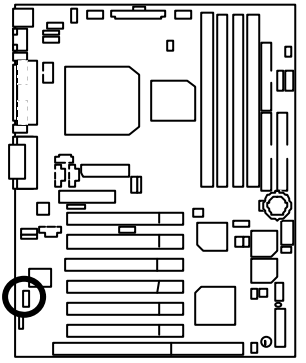
Pin No.	Definition
Open	TBL Lock
Close	Unlock (Default)

JP33 : FWH Write Protection



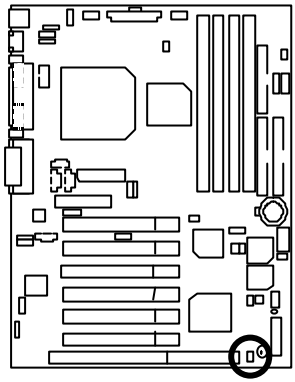
Pin No.	Definition
Close	Write Protect
Open	Normal (Default)

JP28 : Onboard Sound Function Selection (Optional)



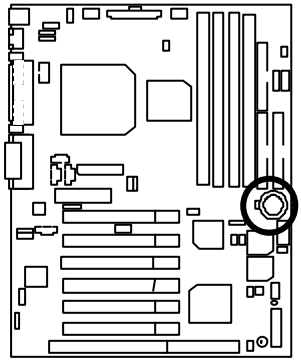
Pin No.	Definition
1-2 close	Enabled Onboard Sound (Default)
2-3 close	Disabled Onboard Sound

JP24 : Buzzer Enabled (Optional)



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

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.

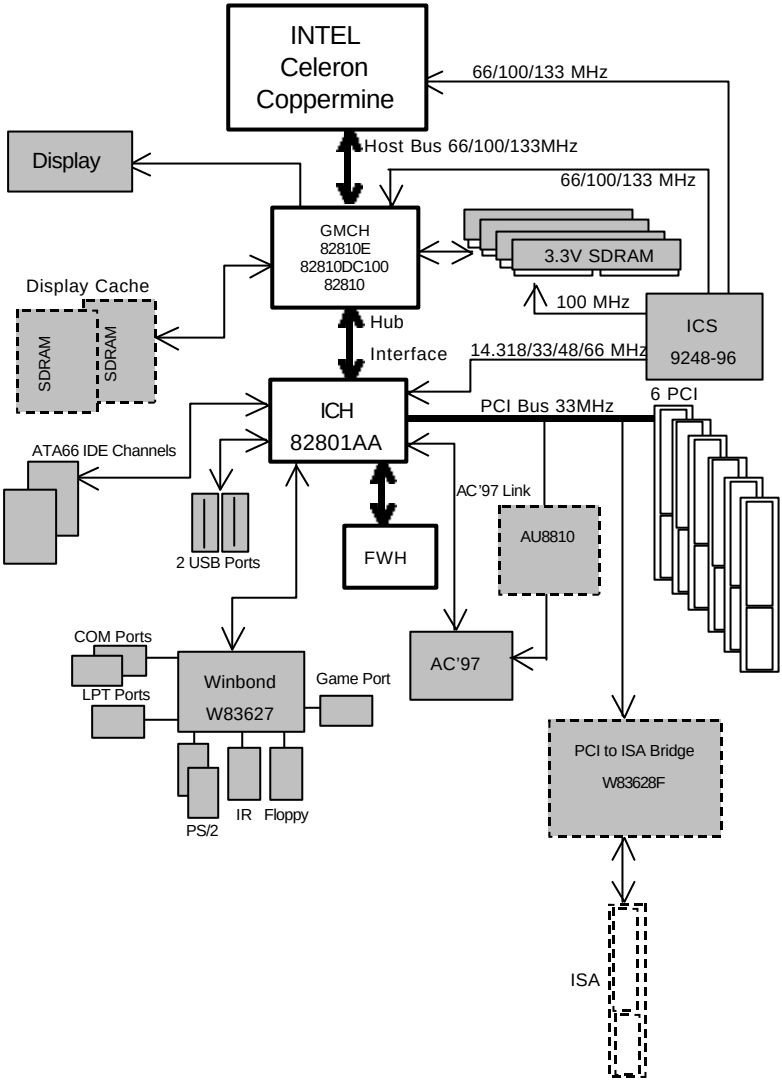
Performance List

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® Celeron™ 400/533MHz processor, Intel® Coppermine 600MHz processor
- DRAM — (128x1) MB SDRAM (LGS GM72V66841ET7J)
- CACHE SIZE — 128 KB included in CPU
- DISPLAY — Onboard Intel Corporation 810 Graphics Controller Hub(4MB SDRAM)
- STORAGE — Onboard IDE (Quantum KA13600AT)
- O.S. — Windows NT™ 4.0 SPK5
- DRIVER — Display Driver at 1024 x 768 65536 colors 75Hz. Intel Ultra ATA Storage Driver V5.0 Engineering Sample , Build 12i (v5.00.0012i)

Processor	Intel® Celeron™ 400(100x4)	Intel® Celeron™ 533(66x8)	Intel® Coppermine 600(100x6)	Intel® Coppermine 600(133x4.5)
Winbench99				
CPU mark 99	29.9	32.7	48.9	49.9
FPU Winmark 99	2150	2860	3230	3230
Business Disk Winmark 99	4550	4840	5320	5330
Hi-End Disk Winmark 99	12600	12500	13400	13900
Business Graphics Winmark 99	132	131	168	185
Hi-End Graphics Winmark 99	300	337	458	470
Winstone99				
Business Winstone99	25.4	25.8	33.8	34.2
Hi-End Winstone99	22.5	23.3	30.7	31.1

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.

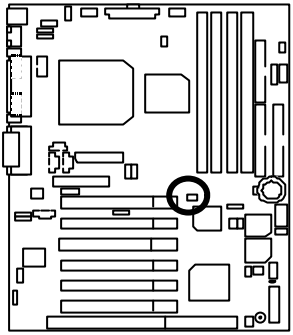
B. Type (without quotes) "D:\setup /p j" in the window provided. Hit the enter key or click OK.

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 JP1 Closed.)



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

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 Suspend Type: S3(Suspend to RAM)". Remember to save the settings by pressing "ESC" and choose the "SAVE & EXIT SETUP" option.

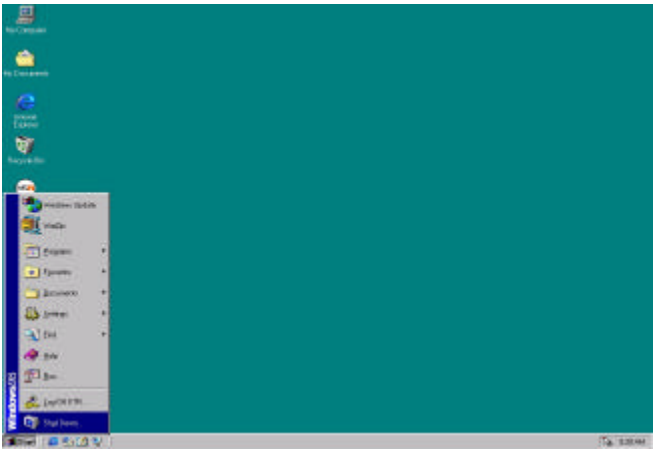
Congratulation! You have completed the installation and now can use the STR function.

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

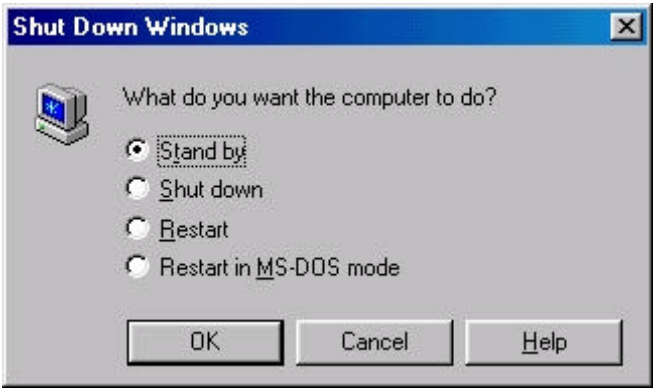
There are two ways to accomplish this:

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

   A. Press the "Start" button and then select "Shut Down"

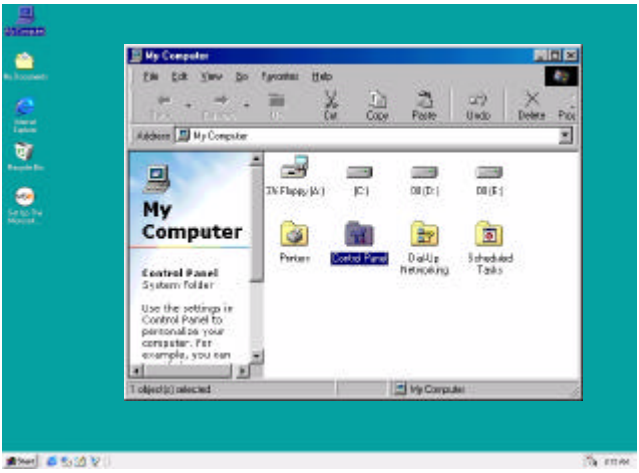


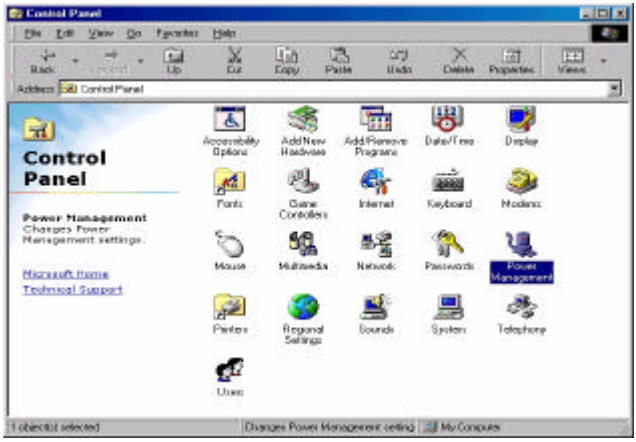
   B. Choose the "Stand by" item and press "OK"



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

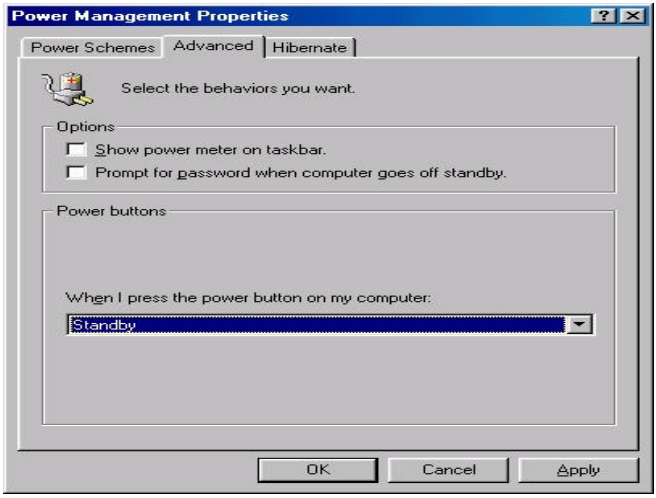
A. Double click "My Computer" and then "Control Panel"





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 "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.

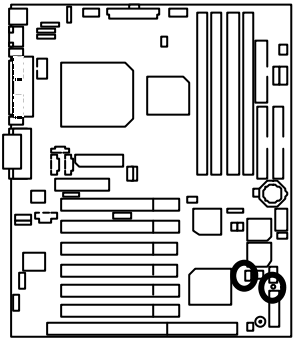
A.5 Notices :

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 JP10 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.

RAM Indicator LED

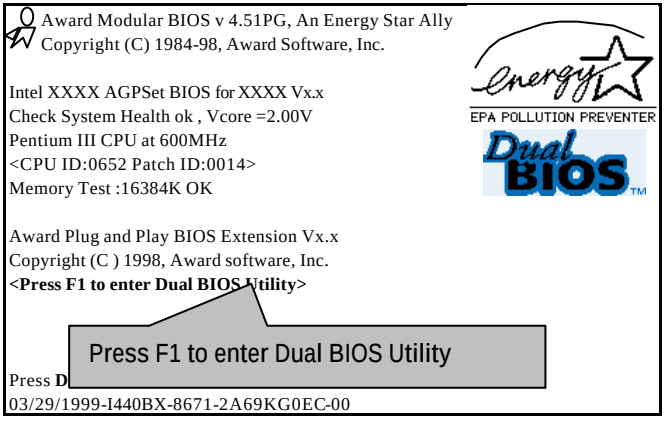
Introduce Dual BIOS (Optional)

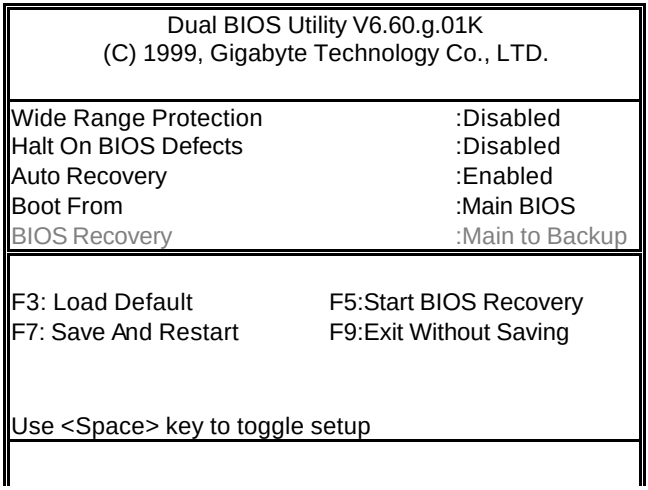
A. What is Dual BIOS Technology?

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. Dual BIOS Utility

c. Dual BIOS Item explanation:

Wide Range Protection: Disabled(Default), Enabled

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.

Halt On BIOS Defects : Disabled(Default), Enabled

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

Auto Recovery : Enabled(Default), Disabled

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.)

Boot From : Main BIOS(Default), Backup BIOS

Status 1:

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

Status 2:

If one of the main BIOS or the Backup BIOS fails, this item *"Boot From : Main BIOS(Default)"* will become gray and will not be changed by user.

BIOS Recovery : Main to Backup

Auto recovery message:

BIOS Recovery: Main to Backup

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

BIOS Recovery: Backup to Main

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 newest "value-added" feature, in a long series of innovations from GIGABYTE, is available on GA-6WXM7 Series 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 enabled 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 enabled 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 disabled 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.

Memory Installation

The motherboard has 4 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:

Location	168-pin SDRAM DIMM Modules	Note
DIMM1	Single – Sided	
	Double – Sided	DIMM4 must be empty
DIMM2	Single – Sided	
	Double – Sided	DIMM3 must be empty
DIMM3	Single – Sided	DIMM2 must have single-sided
	Double – Sided	DIMM2 must be empty
DIMM4	Single – Sided	DIMM1 must have single-sided
	Double – Sided	DIMM1 must be empty
Total System Memory (Max 512MB)		

★Supports 16 / 32 / 64 / 128 / 256 MB SDRAM DIMM Modules .

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 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.

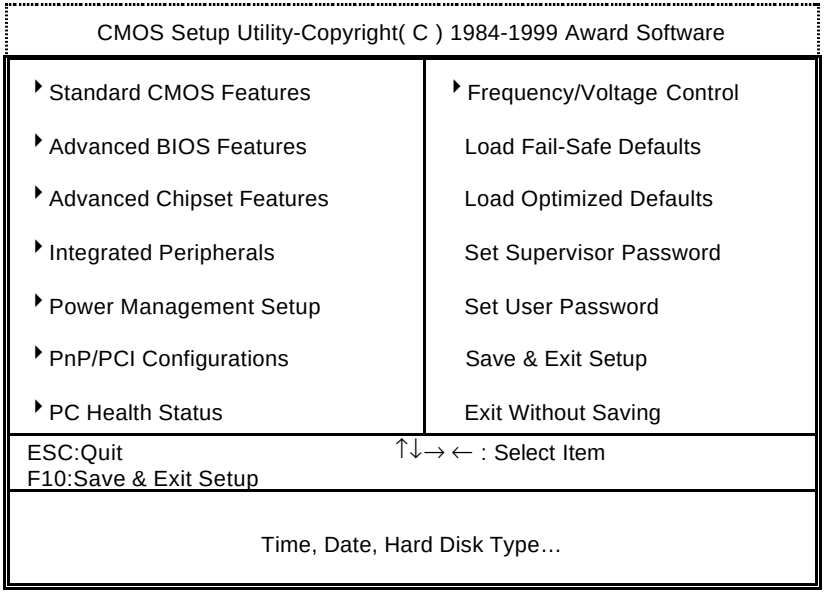


Figure 2: Main Menu

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

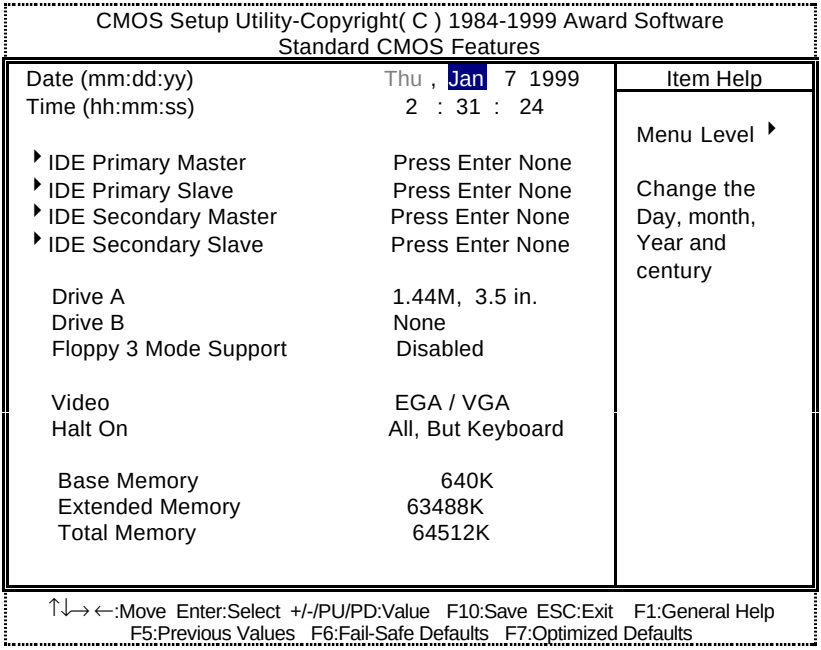


Figure 3: Standard CMOS Features

- Date

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

day	The day, from Sun to Sat, determined by the BIOS and is display -only
month	The month, Jan. Through Dec.
date	The date, 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.
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 BOS 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
All, But Diskette	The system boot will not stop for a disk error; it will stop for all other errors
All, But Disk/Key	The system boot will not stop for a keyboard or disk error; it will stop for all other errors

- Memory

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

Base Memory

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

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

Extended Memory

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

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

Advanced BIOS Features

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Advanced BIOS Features

		Item Help
Virus Warning	Disabled	
CPU Cache	Enabled	
CPU L2 Cache ECC Checking	Disabled	Menu Level ▸
Quick Power On Self Test	Enabled	Allows you to
First Boot Device	Floppy	choose the VIRUS
Second Boot Device	HDD-0	Warning feature
Third Boot Device	LS/ZIP	For IDE Hard disk
Boot Other Device	Enabled	Boot sector
Swap Floppy Drive	Disabled	Protection. If this
Boot Up Floppy Seek	Enabled	Function is enable
Boot Up NumLock Status	On	And someone
Gate A20 Option	Fast	Attempt to write
Typematic Rate Setting	Disabled	Data into this area
Typematic Rate (Chars/Sec)	6	, BIOS will show
Typematic Delay (Msec)	250	A warning
Security Option	Setup	Message on
OS Select For DRAM >64MB	Non-OS2	Screen and alarm
HDD S.M.A.R.T. Capability	Disabled	beep
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

- 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)

- CPU Cache

These two categories speed up memory access. However, it depends on CPU / chipset design.

Enabled	Enable cache. (Default value)
Disabled	Disable cache.

- CPU L2 Cache ECC Checking

Enabled	Enable CPU L2 Cache ECC Checking.
Disabled	Disable CPU L2 Cache ECC Checking. (Default value)

- Quick Power On Self Test

This category speeds up Power On Self Test (POST) after you power on the computer. If it is set to Enable, BIOS will shorten or skip some check items during POST.

Enabled	Enable quick POST. (Default value)
Disabled	Normal POST.

- First / Second / Third Boot device

Floppy	Select your boot device priority by Floppy.
LS/ZIP	Select your boot device priority by LS/ZIP.
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 other device

Enabled	Enabled select your boot device priority function. (Default value)
Disabled	Disabled this function

- Swap Floppy Drive

Enabled	Floppy A & B will be swapped under DOS.
Disabled	Floppy A & B will be normal definition. (Default value)

- 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.

- Gate A20 Option

Normal	Set Gate A20 Option is Normal.
Fast	Set Gate A20 Option is Fast. (Default value)

- 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)

- OS Select For DRAM>64MB

Non-OS2	Using non-OS2 operating system. (Default value)
OS2	Using OS2 operating system and DRAM>64MB.

- 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

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Advanced Chipset Features

		Item Help
SDRAM CAS Latency Time	Auto	
SDRAM Cycle Time Tras/Trc	5/7	
SDRAM RAS-to-CAS Delay	2	Menu Level ▸
SDRAM RAS Precharge Time	2	Set the SDRAM
SDRAM Buffer Strength	Auto	Timing
DRAM Page Closing Policy	Precharge Bank	
System BIOS Cacheable	Enabled	
Video BIOS Cacheable	Enabled	
Delayed Transaction	Disabled	
On-Chip Video Window Size	64MB	
* Onboard Display Cache Setting *		
Initial Display Cache	Enabled	
Display Cache Timing	Auto	
Local Memory Frequency	100MHz	

↑↓→←: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

- SDRAM CAS latency Time

Auto	Set SDRAM CAS Latency Time to Auto. (Default value)
3	For 67 / 83 MHz SDRAM DIMM module.
2	For 100 MHz SDRAM DIMM module.

- SDRAM Cycle Time Tras/Trc

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

- SDRAM RAS-to-CAS delay

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

- SDRAM RAS Precharge

3	Set SDRAM RAS Precharge is 3.
2	Set SDRAM RAS Precharge is 2. (Default value)

- SDRAM Buffer Strength

Auto	Set SDRAM Buffer Strength is Auto. (Default Value)
Auto+1	Set SDRAM Buffer Strength is Auto+1.
Auto-1	Set SDRAM Buffer Strength is Auto-1.

- DRAM Page Closing Policy

Precharge Bank	Closing Policy Precharge Bank. (Default value)
Precharge All	Closing Policy Precharge All.

- System BIOS Cacheable

Enabled	Enable System BIOS Cacheable. (Default value)
Disabled	Disable System BIOS Cacheable.

- Video BIOS Cacheable

Enabled	Enable video BIOS Cacheable. (Default value)
Disabled	Disable video BIOS Cacheable.

- Delayed Transaction

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

- On-Chip Video Window Size

32MB	Set Graphics Aperture Size to 32MB.
64MB	Set Graphics Aperture Size to 64MB. (Default value)

- Initialize Display Cache

Disabled	Disabled Initialize Display Cache.
Enabled	Enabled Initialize Display Cache. (Default value)

- Display Cache Timing

Auto	Set Display Cache Timing to Auto. (Default value)
Fast	Set Display Cache Timing to Fast.

Normal	Set Display Cache Timing to Normal.

- Local Memory Frequency (For 82810E)

100MHz	Set Local Memory Frequency to 100MHz. (Default value)
133MHz	Set Local Memory Frequency to 133MHz.

Integrated Peripherals

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Integrated Peripherals

		Item Help
On-Chip Primary PCI IDE	Enabled	
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	
Init Display First	PCI Slot	
AC97 Audio	Auto	
AC97 Modem	Auto	
IDE HDD Block Mode	Enabled	
POWER ON Function	BUTTON ONLY	
*KB Power ON Password	Enter	
Onboard FDC Controller	Enabled	
Onboard Serial Port 1	Auto	
Onboard Serial Port 2	Auto	
UART Mode Select	Normal	
*UR2 Duplex Mode	Half	
Onboard Parallel Port	378/IRQ7	
Parallel Port Mode	SPP	
*ECP Mode Use DMA	3	
Game Port Address	201	
Midi Port Address	330	
Midi Port IRQ	5	
CIR Port Address	Disabled	
*CIR Port IRQ	11	

↑↓→←: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	Enable onboard 1st channel IDE port. (Default value)
Disabled	Disable onboard 1st channel IDE port.

- On-Chip Secondary PCI IDE

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

- 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	Disable UDMA function.

- USB Controller

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

- USB Keyboard Support

Enabled	Enable USB Keyboard Support.
Disabled	Disable USB Keyboard Support. (Default value)

- Init Display First

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

- AC'97 Audio

Auto	BIOS will automatically detect onboard AC'97 Audio or YAMAHA 744 audio. (Default value)
Enabled	Enabled AC'97 Audio.
Disabled	Disabled AC'97 Audio.

- AC'97 Modem

Auto	Bios will automatically detect onboard AC' 97 Modem.(Default value)
Enabled	Enabled AC'97 Modem.
Disabled	Disabled AC'97 Modem.

- IDE HDD Block Mode

Enabled	Enable IDE HDD Block Mode. (Default value)
Disabled	Disable IDE HDD Block Mode.

- POWER ON Function

Password	Enter from 1 to 5 characters to set the Keyboard Power On Password.
Mouse Move	Move the PS/2 Mouse.
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.

- Onboard FDC Controller

Enabled	Enable onboard FDC port. (Default value)
Disabled	Disable onboard FDC port.

- Onboard Serial Port 1

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

- Onboard Serial Port 2

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

- UART Mode Select

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

ASKIR	Onboard I/O chip supports ASKIR.
IrDA	Onboard I/O chip supports IrDA.
SCR	Onboard I/O chip supports SCR.
Normal	Onboard I/O chip supports Normal. (Default value)

- UR2 Duplex Mode

Half	Set UR2 Duplex Mode to Half. (Default value)
Full	Set UR2 Duplex Mode to Full.

- Onboard Parallel port

378/IRQ7	Enable onboard LPT port and address is 378/IRQ7. (Default value)
278/IRQ5	Enable onboard LPT port and address is 278/IRQ5.
Disabled	Disable onboard LPT port.
3BC/IRQ7	Enable onboard LPT port and address is 3BC/IRQ7.

- Parallel Port Mode

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

- EPP Mode Use DMA

1	Set EPP Mode Use DMA is 1.
3	Set EPP Mode Use DMA is 3. (Default value)

- 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. (Default value)
10	Set 10 for Midi Port IRQ.

- CIR Port Address

Disabled	Disabled On Board CIR Port. (Default value)
310	Set On Board CIR Port is 310.
320	Set On Board CIR Port is 320.

- CIR Port IRQ

5	Set 5 for CIR Port IRQ.
11	Set 11 for CIR Port IRQ. (Default value)

Power Management Setup

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Power Management Setup

		Item Help
ACPI Suspend Type	S1(PowerOnSuspend)	
Power Management	User Define	
Video Off Method	DPMS	Menu Level ▸
Video Off In Suspend	Yes	
Suspend Type	Stop Grant	
MODEM Use IRQ	4	
Suspend Mode	Disabled	
HDD Power Down	Disabled	
Soft-Off by PWR-BTTN	Instant-off	
Power LED in Suspend	Blinking	
AC BACK Function	Memory	
Wake-Up by PCI card	Enabled	
ModemRingOn/WakeOnLan	Enabled	
USB KB Wake From S3	Disabled	
FAN Off In Suspend	Enabled	
CPU Thermal-Throttling	50%	
Resume by Alarm	Disabled	
* Date(of Month) Alarm	0	
* 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	Enabled	
PCI PIRQ[A-D]#	Enabled	

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

Figure 7: Power Management Setup

- ACPI Suspend Type

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

- Power Management

User Define	For configuring our own power management features. (Default value)
Min Saving	Enable Green function.
Max Saving	Disable Green function.

- 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)

- Video Off In Suspend

Yes	Enabled video off in suspend. (Default value)
No	Disabled video off in suspend.

- 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.
4	Set MODEM Use IRQ to 4. (Default value)
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	Disable Suspend Mode. (Default value)
1 min - 1 Hour	Setup the timer to enter Suspend Mode.

- HDD Power Down

Disable	Disable HDD Power Down mode function. (Default value)
1-15 mins.	Enable 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.

- 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.

- Wake-Up by PCI card

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

- ModemRingOn / WakeOnLan

Disabled	Disable these functions.
Enabled	Enable these functions. (Default value)

- USB KB Wake From S3

Disabled	Disabled this function. (Default value)
Enabled	Enabled USB KB Wake From S3 function.

- FAN Off In Suspend

Disabled	Disable 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

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	Disable this function. (Default value)
Enabled	Enable monitor Primary IDE 0/1 for Green event.

- Secondary IDE 0/1

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

- FDD/COM/LPT Port

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

- PCI PIRQ[A-D] #

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

PnP/PCI Configurations

CMOS Setup Utility -Copyright(C) 1984-1999 Award Software
PnP/PCI Configurations

		Item Help
PNP OS Installed	No	
Reset Configuration Data	Disabled	Menu Level ▸
Resources Controlled By	Auto (ESCD)	
* IRQ Resources	Press Enter	Select Yes if you Are using a Plug And Play capable Operating system Select No if you Need the BIOS to Configure non-Boot devices
* DMA Resources	Press Enter	
* Memory Resources	Press Enter	
PCI/VGA Palette Snoop	Disabled	
Assign IRQ For USB	Enabled	

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

Figure 8: PnP/PCI Configurations

- PNP OS Installed

Yes	Enable PNP OS Installed function.
No	Disable PNP OS Installed function. (Default value)

- 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, 10,11,12,14,15),DMA(0,1,3,5,6,7) assigned to (Legacy ISA or "PCI/ISA PnP)

Legacy ISA	The resource is used by Legacy ISA device.
PCI/ISA PnP	The resource is used by PCI/ISA PnP device (PCI or ISA).

- Reserved Memory Base

N/A	Disable the MEM. block using. (Default value)
C800 ~ DC00	Select the MEM. block starting address.

- 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)

- Assign IRQ For USB

Enabled	Assign a specific IRQ for USB. (Default value)
Disabled	No IRQ is assigned for USB.

PC Health Status

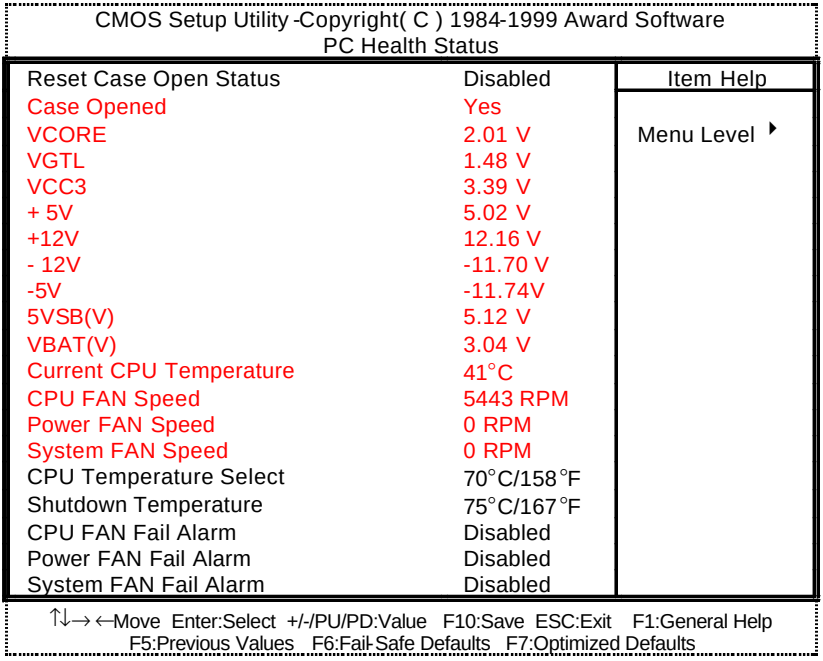


Figure 9: PC Health Status

- 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)

Detect CPU Temp. automatically.

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

  Detect Fan speed status automatically.

- CPU Temperature Select (°C / °F)

65°C / 149°F	Monitor CPU Temp. at 65°C / 149°F.
70°C / 158°F	Monitor CPU Temp. at 70°C / 158°F. (Default value)
75°C / 167°F	Monitor CPU Temp. at 75°C / 167°F.
Disabled	Disabled this function.

- Shutdown Temp. (°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 . (Default value)

- Fan Fail Alarm

  CPU / Power / System

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

Frequency/Voltage Control

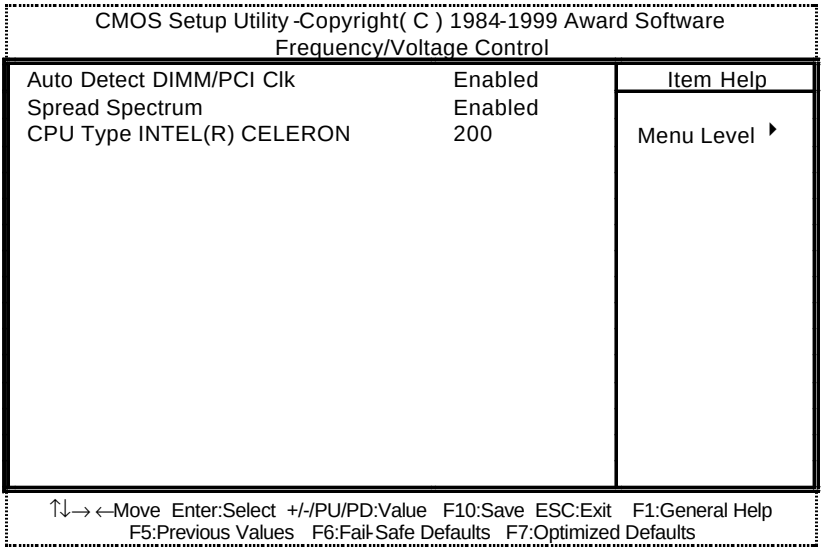


Figure 10: Frequency/Voltage Control

- Auto Detect DIMM/PCI Clk

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

- Spread Spectrum

Disabled	Disabled this function.
Enabled	Enabled Spread Spectrum function. (Default value)

- CPU Type INTEL(R) CELERON

1. System Bus Speed : 66MHz

200 / 233 / 266 / 300 / 333 / 366 / 400 / 433 / 466 / 500 / 533

2. System Bus Speed : 100MHz

300 / 350 / 400 / 450 / 500 / 550 / 600 / 650 / 700 / 750 / 800

3. System Bus Speed : 133MHz

400 / 466 / 533 / 600 / 666 / 733 / 800 / 866 / 933 / 1000 / 1066

Load Fail-Safe Defaults

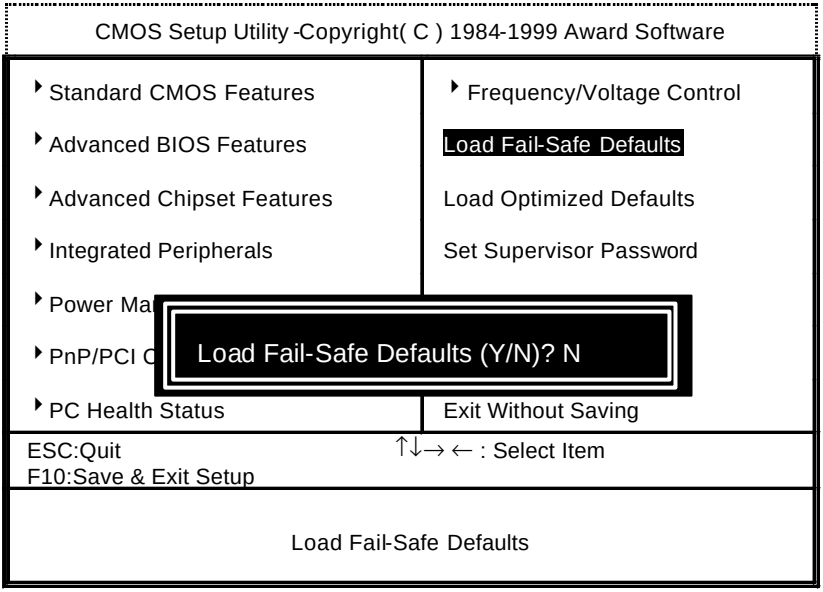


Figure 11: Load Fail-Safe Defaults

- Load Fail-Safe Defaults

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

Load Optimized Defaults

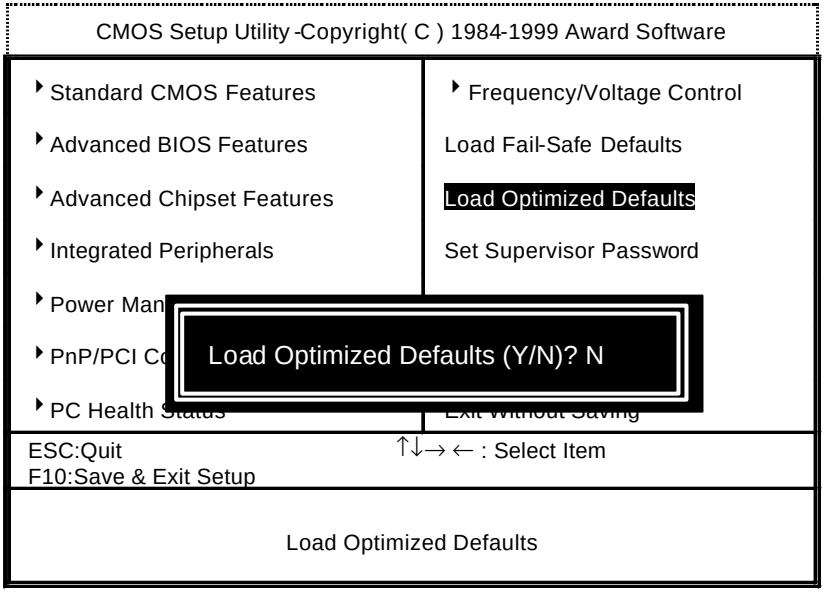


Figure 12: Load Optimized Defaults

- 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.

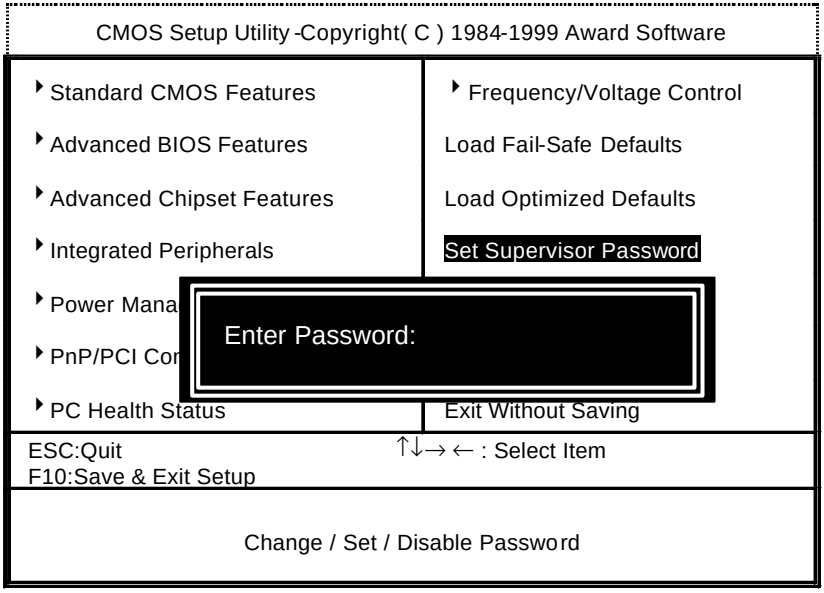


Figure 13: Password Setting

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

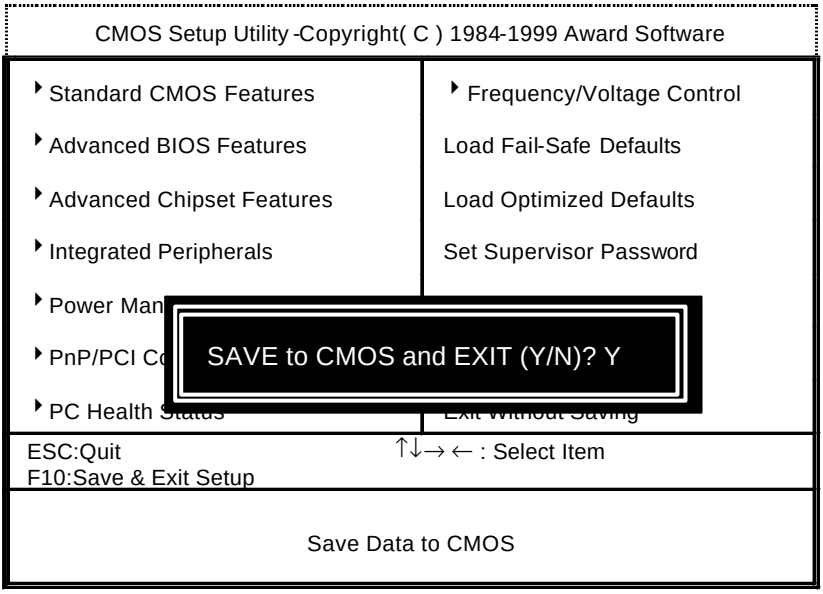
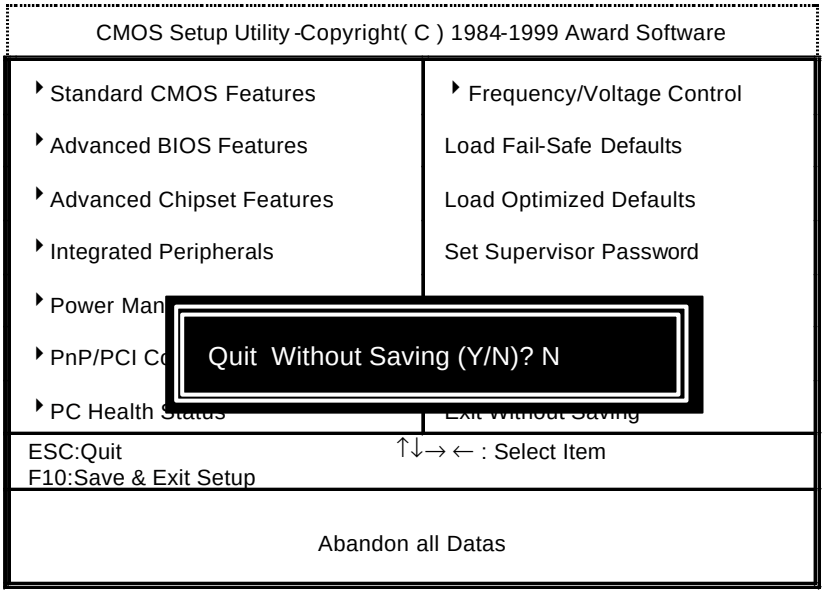


Figure 14: Save & Exit Setup

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

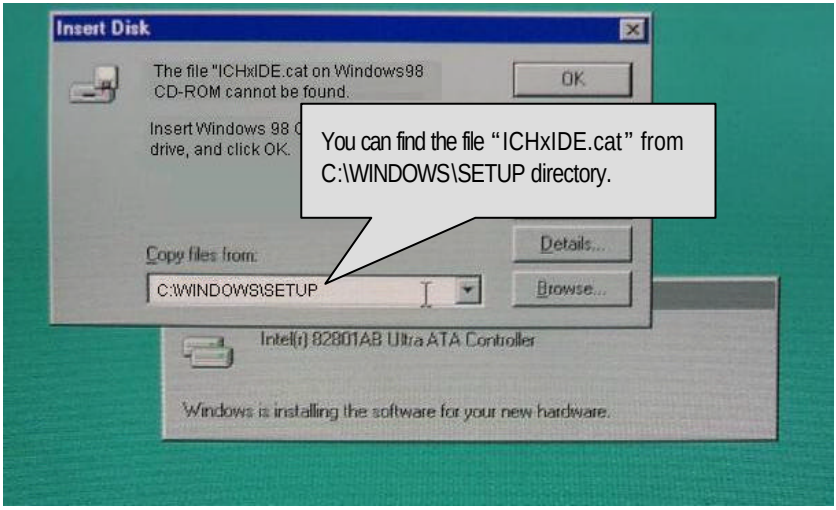
Appendix A : Onboard Driver Installation Procedure

(In this manual, we assume that your CD-ROM Drive letter to be Drive D:)
Please reference IUCD CD directory D: \ Manual \ Whitney 810.pdf

Appendix B : 810 INF update utility can't find ICHxIDE.cat file automatically

1. After the installation is of Winodws98 is completed, run the "Setup.exe" of INF update utility.
2. System restarts.
3. System starts to recognize every new component.
4. System will stop and prompt users to specify the location of "ICHxIDE.cat" file.
5. The system will not find the location of ICHxIDE.cat automatically.

Resolution:



Appendix C : AU8810 Driver Installation

A. DRIVER INSTALLATION

If you have older drivers in your system, please uninstall them first as described in Section C below.

1. Power on the system, placing the "Intel chipset Series Mainboard Utility CD" in the CD-ROM drive.

2. During the load process, Windows 95/98 should detect the Vortex PCI board and display a message such as "New Hardware Found". If Windows prompts you for the drivers of the "PCI Multimedia Audio Device", then select "Driver Disk Provided by Manufacturer" Select the Vortex CD-ROM's directory.

Note: Some Windows 95 versions (OSR2) do not show this prompt. Instead, they ask whether to search the diskette and CD-ROM drives for the appropriate drivers.

Installed drivers may include Vortex PCI audio, Vortex wavetable, Vortex mixer, DOS modem port, Vortex gameport interface, Vortex MPU401 interface, and Vortex Sound Blaster emulation.

Depending on the version of Windows 95 and the configuration of the system, you may be prompted to provide several file locations. Here are the CD-ROMs and directory locations for which you may be prompted:

Vortex Installation & Driver Disk	\aureal\win9X
Windows 95/98 Installation Disk	\aureal\win9X
Microsoft DirectX 6.0	\Utility\directx\dxsetup
Vortex Application Setup	\aureal\win9X
PCI Multifunction Audio Device	\aureal\win9X

B. UNINSTALLING WINDOWS 95/98 DRIVERS

To uninstall the Vortex software, you can use the following procedure:

1. Open to the Windows 95/98 Device Manager (right-click on "My Computer" and select "Properties").

2. Open the "Multifunction Adapters" tree and select "Vortex Multifunction PCI Platform".
3. Press the "Remove" button at the bottom of the Device Manager window pane.
4. The drivers are now removed from memory, but are still on the hard disk. To delete the files from the hard disk:
    a. Open the Windows 95/98 control panel's "Add/Remove Programs" applet.
    b. To remove the drivers, double-click "Aureal Vortex". A Vortex uninstaller application starts.
    c. To remove the demo applications, double-click "Aureal Vortex Applications". There is no need to reboot the computer.

For Technical Support please contact your board manufacturer.

Appendix D : 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 E : Acronyms

Acro.	Meaning	Acro.	Meaning	Acro.	Meaning
ACPI	Advanced configuration and power interface	ECC	Error checking and correcting	IRQ	Interrupt request
POST	Power-on self test	IDE	Integrated dual channel enhanced	NIC	Network interface card
LAN	Local area network	SCI	Special circumstance instructions	A.G.P.	Accelerated graphics port
ECP	Extended capabilities port	LBA	Logical block addressing	S.E.C.C.	Single edge contact cartridge
APM	Advanced power management	EMC	Electromag-netic compatibility	LED	Light emitting diode
DMA	Direct memory access	BIOS	Basic input / output system	EPP	Enhanced parallel port
MHz	Megahertz	SMI	System management interrupt	CMOS	Complementary metal oxide semiconductor
ESCD	Extended system configuration data	I/O	Input / Output	DMI	Desktop Management Interface
CPU	Central processing unit	ESD	Electrostatic DISCHARGE	MIDI	Musical interface digital interface
SMP	Symmetric multi-processing	OEM	Original equipment manufacturer	IOAPIC	Input Output Advanced Programmable Input Controller
USB	Universal serial bus	SRAM	Static random access memory	DIMM	Dual inline memory module
OS	Operating System	VID	Voltage ID	DRAM	Dynamic random access memory

					To be continued

Acro.	Meaning	Acro.	Meaning	Acro.	Meaning
DRM	Dual retention mechanism	PAC	PCI A.G.P. controller	PCI	Peripheral component interconnect
ISA	Industry standard architecture	AMR	Audio Modem Riser	RIMM	Rambus In-line Memory Midule
CRIMM	Continuity RIMM				