

HOT-687V

**PPGA Celeron/Coppermine processor
Based AGP MAINBOARD**

User's Manual

Shuttle® Spacewalker™ HOT-687V

PPGA Celeron/Copprtmnir processor based AGPset Mainboard Manual Version 2.0

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This equipment generates, uses and can radiate radio frequency energy. If not installed and used properly, in strict accordance with the manufacturer's 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 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.
- Increase the separation between the equipment and receiver.
- Connect 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 help and for additional suggestions.

The user may find the following booklet prepared by the Federal Communications Commission helpful "How to Identify and Resolve Radio-TV Interference Problems." This booklet is available from the U.S. Government Printing Office, Washington, DC 20402, Stock 004-000-00345-4

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- Immunity is in accordance with EN 50082-1 (1992).
- Emissions are in accordance with EN 55022 (1987) Class B.



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1

INTRODUCTION

Congratulations on your purchase of the **HOT-687V** computer mainboard.

HOT-687V is a highly integrated IBM PC/ATX compatible system board designed to meet the industry's most demanding desktop applications.

Based on the VIA VT82C693A AGPset chipset which support up to 600+MHz PPGA Celeron processor with MMX technology and Coppermine FC-PGA 667+MHz.

HOT-687V is equipped with an Accelerated Graphics Port (A.G.P.), a high-performance interconnect for graphic-intensive application, such as 3D applications. The A.G.P. is independent of the PCI bus and is designed to exclusively use with graphical-display devices. The HOT-687V supports 3.3 V A.G.P. devices with data transfer rates up to 133 MHz, allowing data throughput of 500 MB/sec.

The VIA VT82C693A AGPset chipset provides an integrated Bus Mastering IDE controller with two high performance IDE interfaces which allows up to four IDE devices connection and up to 66 MB/sec of data transfer rates.

Onboard FM801 is an advanced PCI audio controller, it is compatible with Microsoft Windows, DirectX and Adlib Music Synthesizer, Sound Blaster Pro and supports thousands of DOS games.

The on-board I/O controller provides standard PC I/O functions:

floppy drive interface, two FIFO serial ports, an IrDA device port and a SPP/EPP/ECP capable parallel port.

HOT-687V is built with three PCI local bus slots providing a high bandwidth data path for data-movement intensive functions such as graphics, and with one ISA slot.

HOT-687V provides the foundation for cost effective, high performance and highly expandable platforms, which delivers the latest in the Intel FC-PGA Coppermine processor and new advanced chipset technology.

2

FEATURES

Specification

The HOT-687V Mainboard is carefully designed for the demanding PC user who wants high performance and many intelligent features in a compact package:

Chipset:

Features VIA VT82C693A AGPset with I/O subsystems.

CPU Support:

Intel PPGA Celeron processor 300~600+ MHz.

Intel Coppermine FC-PGA 500~667+ MHz.

Versatile Memory Supports:

Supports **three banks of normal or PC66/PC100/PC133 SDRAM** maximum memory size up to 768MB.

Configurable support for ECC (Error Checking and Correcting)

PCI and ISA Expansion Slots:

Provides three 32-bit PCI slots, one 16-bit ISA slot and one AGP slot.

AGP (Accelerated Graphics Port):

AGP Specification 1.0

HOT-687V main board equipped with an AGP slot for an AGP VGA card that supports 133MHz 2X mode for texture mapping z-buffering and alpha blending. AGP allows 3D applications to run faster and smoothly.

Onboard I/O:

One Floppy port;

One PS/2 mouse and PS/2 Keyboard port connector

Two high-speed UART compatible serial ports

Serial Port 2 can also be directed from COM2 to the Infrared Module for wireless connections.

One parallel port with ECP and EPP capabilities.

Onboard Audio Controller:

Proprietary logic for Real DOS games support

Hardware Synthesizer for AdLib and General MIDI compatibility

Optional QSound HSP dynamic 3-D positional audio support

S/PDIF digital output port

Built-in SRC (sampling rate converter)

Onboard PCI Bus Master IDE Controller:

Two **Ultra DMA33/66 Bus Master IDE** Ports supports four IDE devices up to 66 MB/sec IDE transfers and supports Enhanced PIO Modes 3 and 4 and Bus Master IDE DMA Mode 2 devices.

Onboard 20-pin ATX Power Supply:

ATX power supply unit can connect to the 20-pin ATX power connector onboard, supporting Suspend and soft-on/off by dual-function power button.

System BIOS:

Provides licensed Award V4.51PG BIOS on Flash EEPROM.
Supports Green PC, DMI and Bundled with NCR SCSI BIOS.

ACPI:

Support **ACPI (Advanced Configuration and Power Interface)** function. ACPI provide more Energy Saving Features for the future operating system supporting OS Direct Power Management (OSPM) functionality.

Board Size:

Micro-ATX form factor 244mm x 190mm.

Advanced Features:

Low EMI -- Spread Spectrum built in - $\pm 0.5\%$ or $\pm 0.3\%$ modulation and automatic clock shut-off of unused PCI/SDRAMS slots to reduce the EMI.

Dual Function Power Button -- The system can be one of two states, one is Suspend mode and the other is the Soft-off mode. Pushing the power button for less than 4 seconds will place the system into Suspend mode. When push the power button for more than 4 seconds, the system enters the Soft-off mode.

Wake-On-LAN -- The system will power-on automatically by activating of LAN.
(This function support Intel LAN card only).

Modem Ring Power-on -- The system will power-on automatically by activating of modem ring.

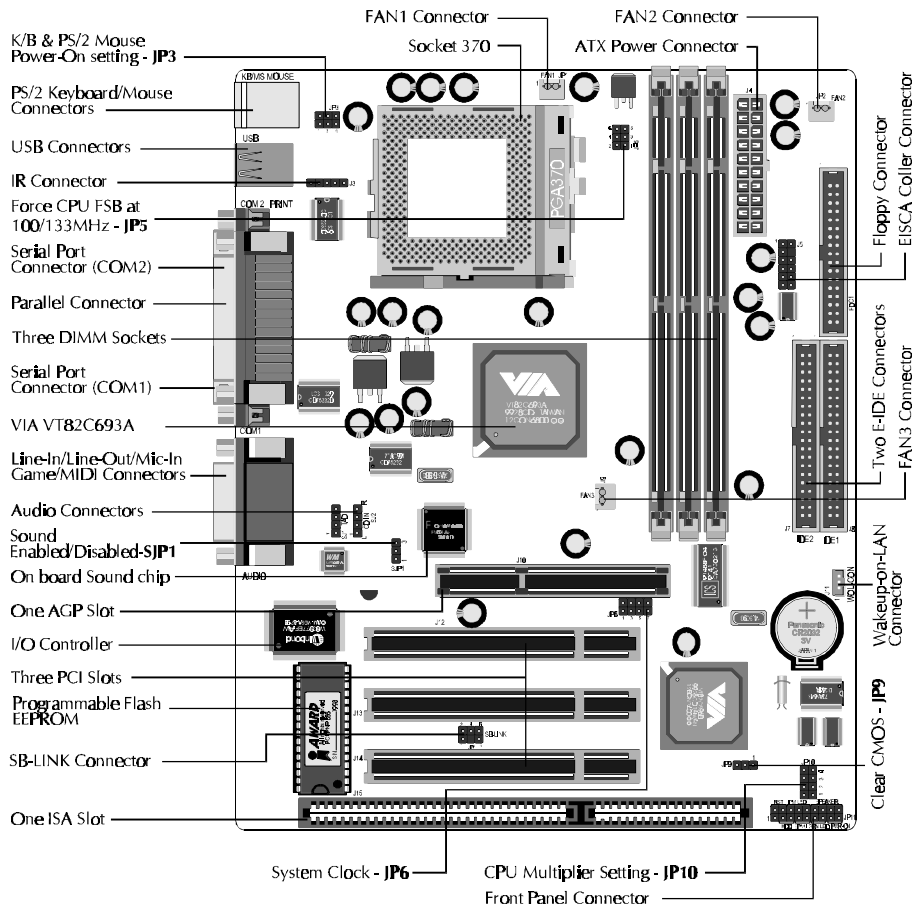
PS/2 Keyboard & Mouse Power-on -- The system will power-on automatically by stroke keyboard or double click PS/2 mouse.

Optional Features:

Voltages Monitoring -- System voltages levels are monitored to ensure stable current to main board components.
System voltages include V_{CORE} and V_{TT} for CPU, and +5V, +12V, -5V, -12V for system.

FAN Status Monitoring -- To prevent CPU overheat, CPU fans is monitored for RPM and failure. (CPU Cooling FAN with RPM sensor is required)

Accessories of H0T-687V



3

HARDWARE INSTALLATION

Install The CPU

The Installation PPGA Celeron Processor

HOT-687V mainboard provides a 370-pin ZIF Socket370 for Intel PPGA Celeron and FC-PGA Coppermine CPU. The CPU that came with the mainboard should have a fan attached to it to prevent overheating. If this is not the case then purchase a fan before you turn on your system.

To install a CPU, first turn off your system and remove its cover. Locate the ZIF Socket370 and open it by first pulling the lever sideways away from the socket then upwards to a 90-degree right angle. Insert the CPU with the correct orientation as shown. (Figure 3-1) Use the notched corner of the CPU as your guide. The notched corner should point towards the end of the lever. Notice that there are two blank area where one hole is missing from that corner of the square array of pin holes. Because the CPU has a corner pin for two of the four corner, the CPU will only fit in the one orientation, hold down on the CPU and close the socket's lever.

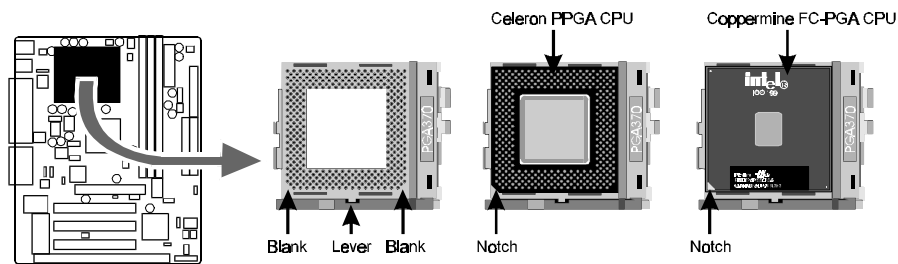


Figure 3-1

Then you should have a CPU fan that will cover the face of the CPU. Apply thermal jelly to the CPU metallic top and then install the fan onto the CPU. (Figure 3-2)

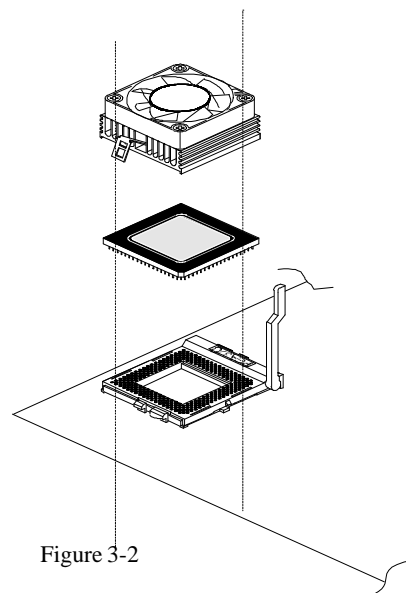




Figure 3-2

Jumpers

Several hardware settings are made through the use of jumper caps to connect jumper pins on the main board. The jumper's pin 1 on main board will be on the top or on the left when holding the main board with the keyboard connector away from yourself.

Jumpers with two pins will be shown as  for Close (On) and  for Open (Off). To connect the pins, simply place a plastic jumper cap over the two pins.

CPU Host Frequency Setting - JP6 and JP10

The CPU host frequency is set to Auto-detecting by BIOS. It is defined according to Intel Celeron CPU specification. We strongly advise novice users not to modify the original setting, for setting an incorrect value may damage your CPU.

For experienced users, the HOT-687V mainboard provides an alternative Hard-Configure function to adjust your CPU host frequency manually.

Note: Before you adjust your CPU host frequency by jumper, you need to set CPU Host Clock (CPU/PCI) to Disabled in Chipset Features Setup of BIOS setup program.

Insert mini-jumper caps properly on JP6 and JP10 to reach desired CPU Host Frequency, as shown in the following table.

System Clock (JP6)	1-2	3-4	5-6	7-8
66 MHz	OFF	OFF	ON	ON
75 MHz	OFF	ON	ON	ON
83 MHz	ON	OFF	ON	ON
100 MHz	OFF	OFF	OFF	ON
103 MHz	ON	ON	OFF	ON
112 MHz	OFF	ON	OFF	ON
124 MHz	ON	OFF	OFF	OFF
133 MHz / (BIOS Setup)	OFF	OFF	OFF	OFF

Table 3-1

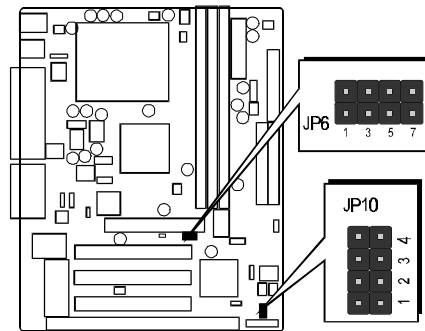


Figure 3-3

Multiplier (JP10)	1-6	2-7	3-8	4-9	(66) MHz	(100) MHz
3.5X	ON	OFF	ON	OFF		350
4X	OFF	ON	ON	ON		400
4.5X	OFF	ON	ON	OFF	300	450
5X	OFF	OFF	ON	ON	333	500
5.5X	OFF	OFF	ON	OFF	366	550
6X	ON	ON	OFF	ON	400	600
6.5X	ON	ON	OFF	OFF	433	650
7X	ON	OFF	OFF	ON	466	700
7.5X	ON	OFF	OFF	OFF	500	
8X	OFF	ON	OFF	ON		

Table 3-2

Note: Normally, Celeron and Coppermine processor's ratio are not adjustable.

CPU Host Clock and Clock Ratios Configuration Table (Table 3-3) shows the PPGA Celeron processor 300 MHz ~ 600+ MHz and Coppermine FC-PGA 500~667+ MHz quick setting on the mainboard.

Processor	300 MHz (66MHz x 4.5)	333 MHz (66MHz x 5)	366 MHz (66MHz x 5.5)	400 MHz (66MHz x 6)	433 MHz (66MHz x 6.5)	466 MHz (66MHz x 7)	500 MHz (66MHz x 7.5)	350 MHz (100MHz x 3.5)
System Clock JP6								
Multiplier JP10								
Processor	400 MHz (100MHz x 4)	450 MHz (100MHz x 4.5)	500 MHz (100MHz x 5)	550 MHz (100MHz x 5.5)	600 MHz (100MHz x 6)	533 MHz (133MHz x 4)	600 MHz (133MHz x 4.5)	667 MHz (133MHz x 5)
System Clock JP6								
Multiplier JP10								

Table 3-3

Force CPU FSB at 100/133MHz - JP5

HOT-687V mainboard provide jumper JP5 to set CPU host clock auto-detect by system BIOS or hardware configure the CPU host clock to 66MHz, 100MHz or 133MHz manually for over-clocking your 66MHz-based processor up to 100MHz, or over-clocking your 100MHz-based processor up to 133MHz.

- Set CPU host clock Auto-detecting and setting by system BIOS (Default)
- Set CPU host clock hard-configure to 100MHz.
- Set CPU host clock hard-configure to 133MHz.

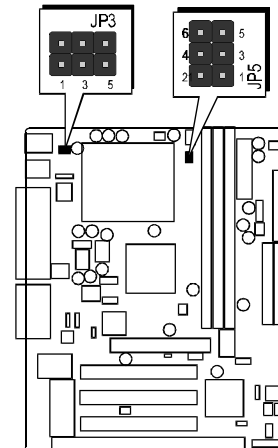


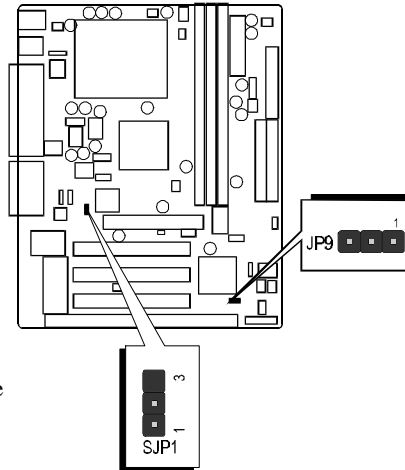
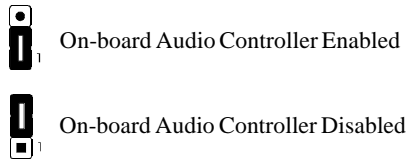
Figure 3-4

However, HOT-687V provide over clocking feature to processor host clock, it is not a recommended practice, for this may cause severe damage to the system.

Warning: Over-clocking is not a recommended practice for it may damage both the mainboard and the processor.

On Board Audio Controller Setting - SJP1

HOT-687V mainboard provides on-board QSound HSP dynamic 3-D positional audio controller chip. Jumper SJP1 is used to enabled or disabled it.



Clear CMOS - JP9

HOT-687V mainboard supports jumper **JP9** for discharging mainboard's CMOS memory.

This jumper can clear the CMOS data stored in the Giga I/O chip. To clear the CMOS data please follow listed steps:

- 1) Turn off the PC,
- 2) Remove mini jumper from JP9 pin 1-2,
- 3) Insert mini jumper to JP9 pin 2-3 for a brief while,
- 4) Remove mini jumper from JP9 in 2-3,
- 5) Reinsert mini jumper to JP9 pin 1-2,
- 6) Turn on the PC.

Figure 3-5

Keyboard & PS/2 Mouse Power-On Setting - JP3

HOT-687V mainboard provides an optional power-on function by stroke any key (or hot-key) on keyboard or double click on PS/2 mouse.

Note: Power-on by serial mouse is not supported

JP3 is the jumper used to set the functions of keyboard & PS/2 mouse power-on Enabled or Disabled.

When you enabled K/B & PS/2 Mouse Power-ON function, you also have to set the proper item on **POWER ON function** category of **Integrated Peripherals** of BIOS setup.

K/B & PS/2 Mouse Power-On JP3		
Keyboard & PS/2 Mouse Power-On Disabled	Keyboard & PS/2 Mouse Power-On Enabled	PS/2 Mouse Power-On Enabled

Table 3-4

Connectors

Front Panel Connectors (JP11)

Speaker Connector - SPEAKER

PC speaker connector may attach a 4-pin PC speaker cable from the case to this connector.

HDD LED Connector - IDE LED

Attach a 2-pin IDE drive LED cable to this connector. The LED lights when an IDE device is active.

ATX Power On/Off Switch Connector - PW ON

Attach a 2-pin momentary type switch to this connector for turning on or off your ATX power supply.

Hardware Reset Connector - RST

Attach 2-pin hardware reset switch to it. Closing the reset switch restarts the system.

PW-LED Connector - PW LED

Power LED connector is a 3-pin connector for attached to the case's Power LED.

EPMI Connector - EPMI

Hardware System Management Interface connector may attach a 2-pin momentary switch to it. When push it will force system get into power saving mode, and the system will resume when switch is pushed again.

GLEED Connector - GREEN LED

Attach a 2-pin Green LED cable to it. The Green LED lights when the system get into power saving mode.

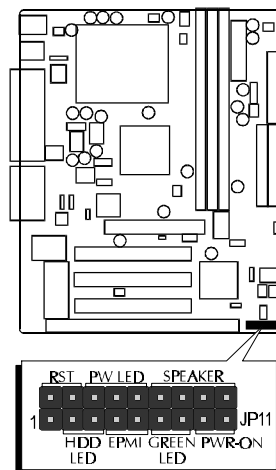


Figure 3-6

Back Panel Connectors

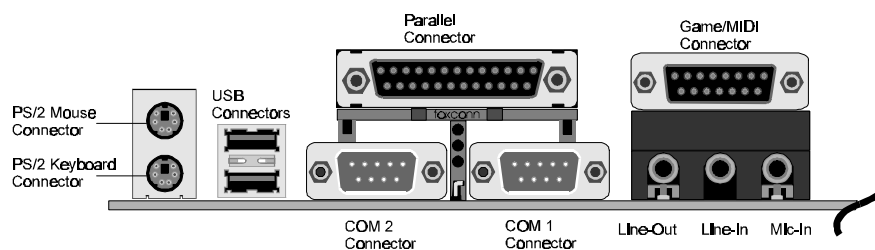


Figure 3-7

COM1/COM2 Connectors

This mainboard can accommodate up to two serial devices on COM1 and COM2. Attach each serial device cable to the DB9 serial port COM1/COM2 at the back panel of your computer.

PS/2 Keyboard & PS/2 Mouse Connector

Two 6-pin female PS/2 keyboard & Mouse connectors are located at the rear panel of the main board. Depending on the computer housing you use (desktop or minitower), the PS/2 Mouse connector is situated at the top of the PS/2 Keyboard connector when the mainboard is laid into a desktop, as opposed to a mini-tower where the PS/2 Mouse connector is located at the right of the PS/2 Keyboard's. Plug the PS/2 keyboard and mouse jacks into their corresponding connectors.

Parallel Port Connector

One DB25 female parallel connector is located at the rear panel of the mainboard. Plug the connection cable from your parallel device (printer, scanner, etc.) into this connector.

USB1/USB2 Port Connectors

Two female connectors USB1/USB2 share the same USB (Universal Serial Bus) bracket at the rear panel of your mainboard. Plug each USB device jack into an available USB1/USB2 connector.

Line-Out

Line-Out is a stereo output through which the combined signal of all internal and external audio sources on the board is output. It can be connected to 1/8-inch TRS stereo headphones or to amplified speakers.

Line-In

Line-In is a stereo line-level input that accepts a 1/8-inch TRS stereo plug. It can be used as a source for digital sound recording, a source to be mixed with the output, or both.

Mic-In

MIC-IN is a 1/8-inch jack that provides a mono input. It can use a dynamic mono or stereo microphone with a resistance of not more than 600 ohms.

GAME/MIDI

The GAME/MIDI port is a 15-pin female connector. This port can be connected to any IBM PC compatible game with a 15-pin D-sub connector.

MIDI Instrument Connection

You need a MIDI adapter to connect a MIDI instrument to the sound card. The MIDI adapter can be connected to the Joystick/MIDE port. You will also need MIDI sequencing software to run MIDI instruments with your computer.

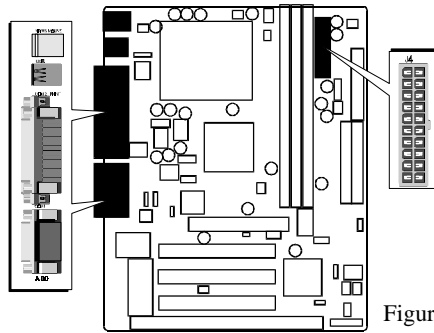


Figure 3-8

Other Connectors

ATX Power Supply Connector - J4

It is a 20-pin male header connector is connected to the ATX power supply. The plug of the power supply will only insert in one orientation because of the different hole shade and size. Find the proper orientation and push down firmly making sure that the pins are aligned.

IR Connector - J3

If you have an Infrared device, this mainboard can implement IR (Infrared) transfer and meet both ASKIR and HPSIR specifications. To enable the IR transfer function, follow these steps:

- Step 1.** Attach the 5-pin infrared device cable to J3 connector. (Refer to the above diagram for IR pin assignment.)
- Step 2.** Configure the Infrared transfer mode in the UR2 Mode field of Integrated Peripherals menu in BIOS Setup. This mainboard supports IrDA 1.0, ASKIR, MIR 0.57M and MIR 1.15M transfer modes. FIR is not currently supported.

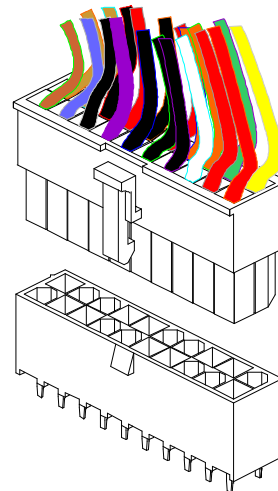


Figure 3-9

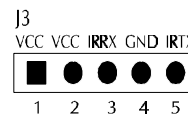


Figure 3-10

Audio Connectors SJ1/SJ2

MODEM/TAD IN/OUT

Port SJ1 can be used to connect a modem audio line to H0T-687V. You would use this connector when using telephone answering machine software for input and output.

TAD

SJ1:

1=PHONE 2=Ground 3=Ground 4=MONO



CD AUDIO INPUT

Port SJ2 is used to attach a CD-ROM audio connector.

CD_IN

SJ2:

1=Left Channel 2=Ground 3=Ground 4=Right Channel



CPU, Chassis & AGP cooling Fan connectors - FAN1, FAN2, FAN3

The main board provides three onboard 12V cooling fan power connectors. Depending on the fan maker, the wiring and plug may be different. The red wire should be connected to +12V and black wire should be connected to ground (GND).

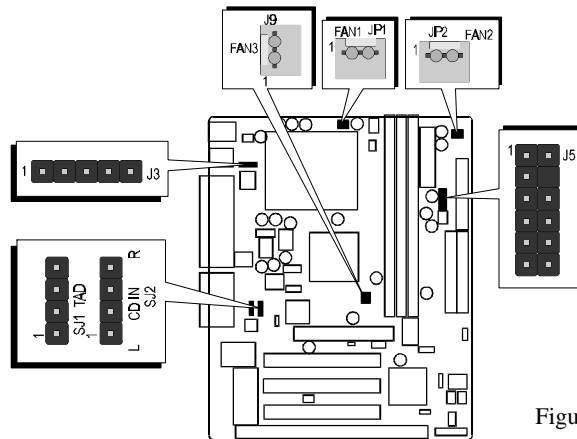


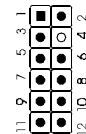
Figure 3-11

EISCA Coller Connector - J5

Pin Assignments:

1=SMBCLK 2=SMBDATA 3=THRM 4=Empty 5=Vcc 6=SPK1

7=GND 8=Vcore 9=FAN2 10=Vcc3 11=FAN1 12= Vcc



Wake-On-LAN Connector - J11

Attach a 3-pin connector from the LAN card which supports the Wake-On-LAN (WOL) function. This function lets users wake up the connected system through the LAN card.

Enhanced IDE and Floppy connectors

The mainboard features two 40-pin dual-channel IDE device connectors (IDE1/IDE2) providing support for up to four IDE devices, such as CD-ROM and Hard Disk Drivers (H.D.D.). This mainboard also includes one 34-pin floppy disk controller (FDC) to accommodate the Floppy Disk Drive (F.D.D.).

This mainboard comes with one 40-pin ribbon cable to connect to IDE H.D.D and one 34-pin ribbon cable for F.D.D.

● Ribbon cables are directional, therefore, make sure to always connect with the red cable-strip on the same side as pin #1 of the IDE1/IDE2 or FDC connector on the mainboard.

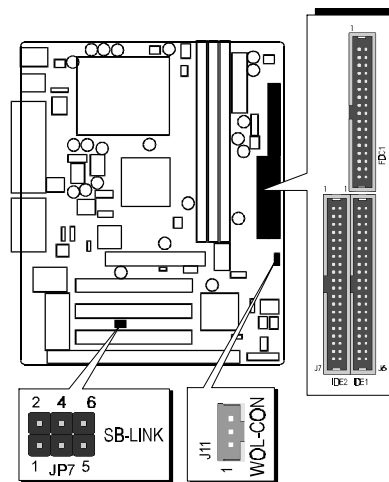


Figure 3-12

SB-Link connector - JP7

The main board provides a 2x3 pin SB-Link header accepts the Creative CT4600 series PCI sound cards with PCI solution to connect the legacy Sound Blaster compatible audio to the PCI bus.

Pin Assignments:

1=GNT#A 2=GND 3=Empty 4=REQ#A 5=GND 6=SERIRQ



4

MEMORY CONFIGURATION

The HOT-687V mainboard provides three 168-pin DIMM sockets that make it possible to install from 16MB up to 768MB of SDRAM. The DIMM socket support 16MB, 32MB, 64MB, 128MB and 256MB 3.3V single- or double- side SDRAM DIMM.

The three DIMM sockets are arranged in three banks of one socket each, Each bank provides a 64/72-bit wide data path.

HOT-687V provides optional data integrity features including EC (Error Checking) or ECC (Error Checking and Correcting) in the memory array. EC mode provides single and multiple bit error detection. In ECC mode, during reads from the DRAM, the HOT-687V provides error checking and correction of the data.

To support ECC, you must use true (opposed to phantom parity generated by TTL chips) 72-bit parity-type DIMM for all modules.

⌘ Install Memory

Install memory in any or all of the banks and in any combination, as follows:

DIMM Socket	Memory Modules	Moudule Quantity
DIMM 1	16MB, 32MB, 64MB, 128MB, 256MB 168-pin 3.3V SDRAM DIMM	x 1
DIMM 2	16MB, 32MB, 64MB, 128MB, 256MB 168-pin 3.3V SDRAM DIMM	x 1
DIMM 3	16MB, 32MB, 64MB, 128MB, 256MB 168-pin 3.3V SDRAM DIMM	x 1

Table 4-1

⌘ Upgrade Memory

You can easily upgrade the system memory by inserting additional SDRAM modules in available DIMM banks. The total system memory is calculated by simply adding up the memory in all DIMM banks. After upgrade, the new system memory value will automatically be computed and displayed by the BIOS Standard CMOS Setup menu.

5

FLASH UTILITY

This chapter briefly discusses Award Flash utility in order to guide you through updating your old BIOS. The file name we use to program here is test.bin, and the file name to save old BIOS is 687V.OLD. Please note that those file names are not absolute. They are only examples to let you have a more clear understanding of the updating process.

How to Begin

1. Please type “awdf flash” and press the ENTER key to begin the updating process.
2. Once you enter, you will see a main menu displaying:
3. Move the cursor to “File Name to Program: “
4. Type the program name “test.bin”, and then press the ENTER key.
5. At the bottom of the menu, you will be requested to answer:

“Do You Want to Save BIOS (Y/N)? “

```
FLASH MEMORY WRITER v7.5
Copyright (C) 1996-1997, Award Software, Inc.

For 8-i440EX-M5135-2A69JH2BC  DATE: 04/20/19
Flash Type - WINBOND 29EE011 /5U

File Name to Program : test.bin

Error Message: Do You Want To Save Bios (Y/N)
```

The following manual is intended to guide you through the process of both “No” and “Yes” cases respectively.

If “No”

If you do not wish to save the old BIOS:

1. Please type “N”, and then press the ENTER key.
2. Then you will be requested to answer:

“Are You Sure to Program? “

3. Answer “N” if you do not want to program, and then it will exit.

If “Yes”

To save the old BIOS:

1. Please respond “Y”, and then press the ENTER key.
2. Move the cursor to “File Name to Save: “
3. Type file name “TEST.BIN”, and then press the ENTER key. (Your old BIOS will be saved in the file name you create. In this case, the old BIOS is saved in the file name, 687V.OLD).
4. Then you will be requested to answer:
“Are You Sure to Program (Y/N)? “

```
FLASH MEMORY WRITER v7.5
Copyright (C) 1996-1997, Award Software, Inc.

For 8-i440EX-M5135-2A69JH2BC DATE: 04/20/19
Flash Type - WINBOND 29EE011 /5U

File Name to Program : test.bin
File Name to Save   : 687vold

Error Message:
```

5. Type “Y” to begin programming, and press the ENTER key.
6. When the programming is finished, the showing message will appear:
7. Once you see the showing message “Power Off or Reset System”, please restart your system.
8. When you power on the computer again, you will find your old BIOS has already been successfully updated.

To view a complete usage of FLASH utility, please type “awdf flash /?” and press the ENTER key.

Notes About Award Flash Utility

Please note that Award Flash Utility cannot run under **EMM386** or **QEMM**. Thus, when executing the command “awdf flash”, an error message will appear:

“Error Message: Fail — Due to EMM386 or QEMM !”







6 SOFTWARE SETUP

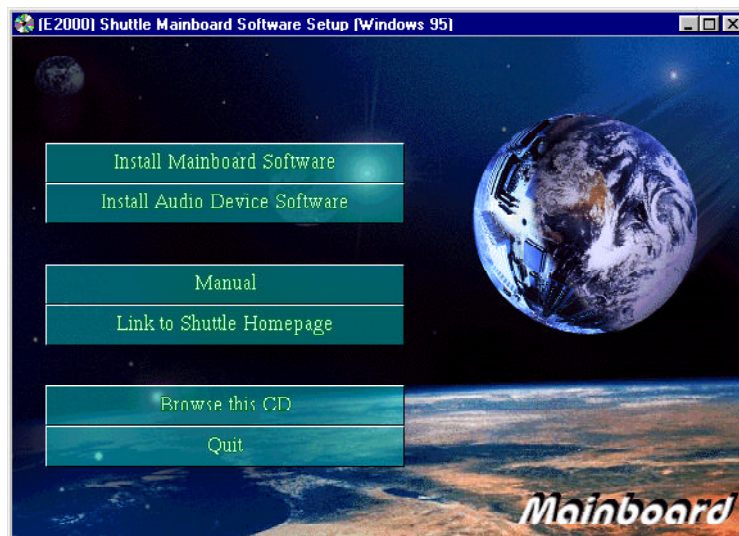
6.1 HOT-687V Mainboard CD Overview

Note: The HOT-687V mainboard attachment CD contents are subject to change without notice.

To start your mainboard CD disc, just insert it into your CD-ROM drive and the CD AutoRun screen should appear. If the AutoRun screen does not appear, double click or run D:\Autorun.exe (assuming that your CD-ROM drive is drive D:)

Navigation Bar Description:

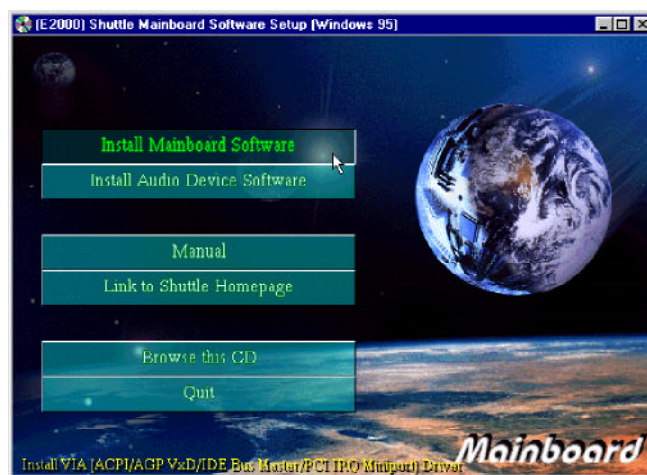
-  **Install Mainboard Software** - Installing HOT-687V Mainboard Drivers for Windows.
-  **Install Audio Driver Software** - Installing Audio software Drivers.
-  **Manual** - HOT-687V series mainboard user's manual in PDF format.
-  **Link to Shuttle Homepage** - Link to shuttle website homepage.
-  **Browse this CD** - Allows you to see the contents of this CD.
-  **Quit** - Close this CD.



6.2 Install Mainboard Driver

Insert the attachment CD into your CD-ROM drive and the CD AutoRun screen should appear. If the AutoRun screen does not appear, double click on Autorun icon in **My Computer** to bring up **Shuttle Mainboard Software Setup** screen.

Select using your pointing device (e.g. mouse) on the “**Install Mainboard Software**” bar.



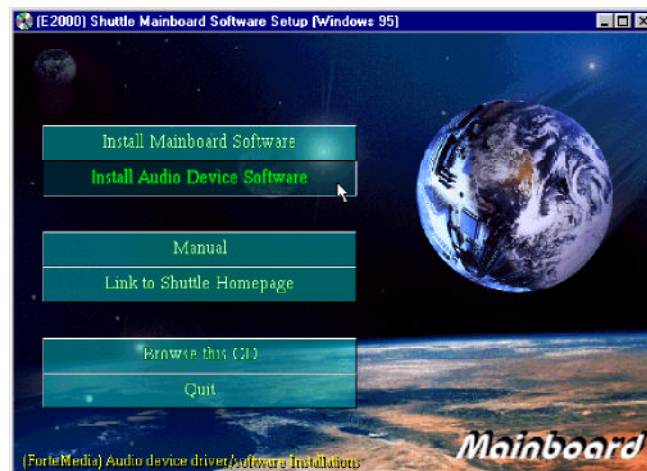
Once you made your selection, a Setup window which automatically runs the installation.

When the files are done copying make sure you **reboot** the system to insure that the files are installed correctly.

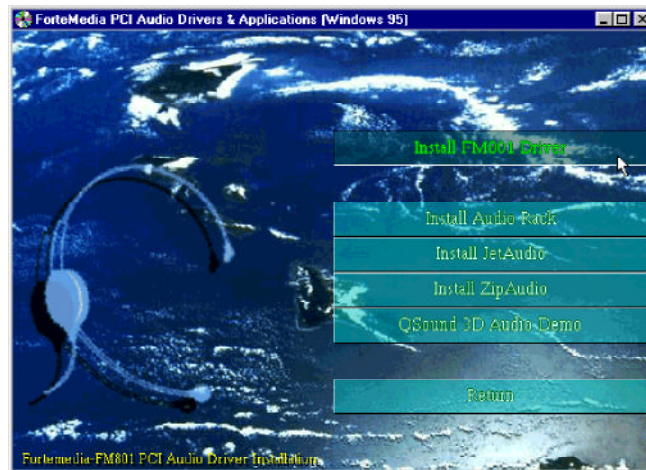
6.3 Install Audio Driver

Insert the attachment CD into your CD-ROM drive and the CD AutoRun screen should appear. If the AutoRun screen does not appear, double click on Autorun icon in **My Computer** to bring up **Shuttle Mainboard Software Setup** screen.

Select using your pointing device (e.g. mouse) on the “**Install Audio Device Software**” bar.



Then **ForteMedia PCI Audio Drivers & Applications** windows will appear on your screen. Click on the “**Install FM801 Driver**” bar.



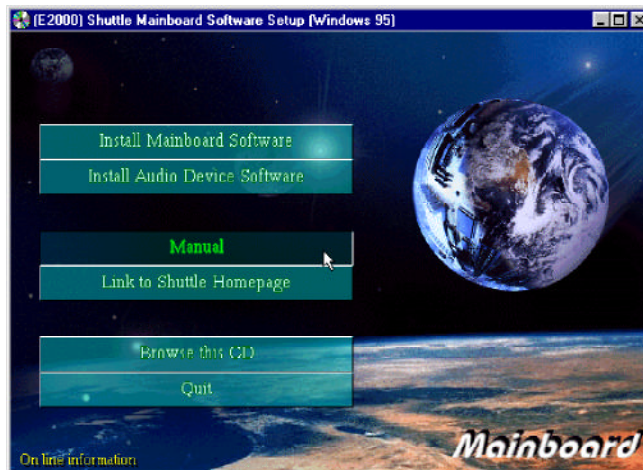
Once you made your selection, a Setup window which automatically runs the installation.

When the files are done copying make sure you **reboot** the system to insure that the files are installed correctly.

6.4 To View the User's Manual

Insert the attachment CD into your CD-ROM drive and the CD AutoRun screen should appear. If the AutoRun screen does not appear, double click on Autorun icon in **My Computer** to bring up **Shuttle Mainboard Software Setup** screen.

Select using your pointing device (e.g. mouse) on the “**Manual**” bar.



Then **Online Information** windows will appear on your screen. Click on the “**Install Acrobat Reader 3.0**” bar if you need to install acrobe reader.



Then click on “**HOT-687V Manual**” bar to view HOT-687V user's manual.

7 BIOS SETUP

The BIOS ROM has a built-in Setup program that allows users to modify the basic system configuration. This type of information is stored in battery-backed 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. The other way to enter Setup is to power on the computer, when the below message appear briefly at the bottom of the screen during the POST (Power On Self Test), press key or simultaneously press <Ctrl>, <Alt>, and <Esc> keys.

“Press DEL 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 the ON or pressing the “RESET” button on the system case. You may also restart by simultaneously press <Ctrl>, <Alt>, and <Delete> keys. If you do not press the keys at the correct time and the system does not boot, an error message will be displayed and you will again be asked to,

“Press F1 to Continue, DEL To Enter Setup”

The Main Menu

ROM PCI/ISA BIOS (286LGH2A) CMOS SETUP UTILITY AWARD SOFTWARE, INC.	
STANDARD CMOS SETUP	INTEGRATED PERIPHERALS
BIOS FEATURES SETUP	SUPERVISOR PASSWORD
CHIPSET FEATURES SETUP	USER PASSWORD
POWER MANAGEMENT SETUP	IDE HDD AUTO DETECTION
PnP/PCI CONFIGURATION	SAVE & EXIT SETUP
LOAD BIOS DEFAULTS	EXIT WITHOUT SAVING
LOAD SETUP DEFAULTS	
Esc : Quit	↑ ↓ + : Select Item
F10 : Save & Exit Setup	(Shift)F2 : Change Color

Standard CMOS setup

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

BIOS features setup

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

Chipset features setup

This setup page includes all items of chipset features.

Power Management Setup

This setup page includes all items of Power Management features.

PnP/PCI Configuration setup

This item specifies the value (in units of PCI bus blocks) of the latency timer for the PCI bus master and the IRQ level for PCI device. Power-on with BIOS defaults

Load BIOS Defaults

BIOS defaults loads the values required by the System for the maximum performance. However, you can change the parameter through each Setup Menu.

Load Setup Defaults

Setup defaults loads the values required by the system for the O.K. performance. However, you can change the parameter through each Setup Menu.

Integrated Peripherals

This setup page includes all items of peripheral features.

Supervisor Password

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

User Password

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

IDE HDD auto detection

Automatically configure IDE hard disk drive parameters.

Save & Exit setup

Save CMOS value change to CMOS and exit setup

Exit without saving

Abandon all CMOS value changes and exit setup.

Standard CMOS Setup

```
ROM PCI/ISA BIOS (2A6LGH2A)
STANDARD CMOS SETUP
AWARD SOFTWARE, INC.

Date (mm:dd:yy) : Tue, Jan 18 2098
Time (hh:mm:ss) : 13 : 18 : 32

HARD DISKS          TYPE   SIZE  CYLS HEAD PRECOMP LANDZ SECTOR  MODE
-----
Primary Master   :   0     0     0   0     0     0     0  NORMAL
Primary Slave    :   0     0     0   0     0     0     0  NORMAL
Secondary Master :   0     0     0   0     0     0     0  NORMAL
Secondary Slave  :   0     0     0   0     0     0     0  NORMAL

Drive A : None
Drive B : None

Video : EGA/UGA
Halt On : All Errors

Base Memory:  0K
Extended Memory:  0K
Other Memory: 512K
-----
Total Memory: 512K

ESC : Quit          ↑ ↓ → ← : Select Item      PU/PD/+/- : Modify
F1  : Help          (Shift)F2 : Change Color
```

Date

The date format is <day>, <month> <date> <year>. Press <F3> to show the calendar.

Time

The time format is <hour> <minute> <second>. The time is calculated base on the 24-hour military-time clock. For example. 5 p.m. is 17:00:00.

Hard Disks Type

This item identify the types of hard disk drives that has been installed in the computer. There are 46 predefined types and a user definable type.

Press PgUp or PgDn to select a numbered hard disk type or type the number and press <Enter>. 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 item. If your hard disk drive type is not matched or listed, you can use Type User to define your own drive type manually.

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

The user may also set those items to AUTO to auto configure hard disk drives parameter when system power-on.

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

Drive A type/Drive B type

This item specifies the types of floppy disk drive A or drive B that has been installed in the system.

Video

This item selects 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.

Error halt

This item determines if the system will stop, when an error is detected during power up.

Memory

This item is display-only. It is automatically detected 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 512K for systems with 512K memory installed on the mainboard, or 640K for systems with 640K or more memory installed on the mainboard.

Extended Memory

The BIOS determines how much extended memory is present during the POST. This is the amount of memory located above 1MB in the CPU's memory address map.

BIOS Features Setup

ROM PCI/ISA BIOS (2A6LGH2A)			
BIOS FEATURES SETUP			
AWARD SOFTWARE, INC.			
Virus Warning	: Disabled	Video BIOS Shadow	: Enabled
CPU Internal Cache	: Enabled	C8000-CBFFF Shadow	: Disabled
External Cache	: Enabled	CC000-CFFFF Shadow	: Disabled
CPU L2 Cache ECC Checking	: Enabled	D0000-D3FFF Shadow	: Disabled
Processor Number Feature	: Enabled	D4000-D7FFF Shadow	: Disabled
Quick Power On Self Test	: Enabled	D8000-DBFFF Shadow	: Disabled
Boot Sequence	: A,C,SCSI	DC000-DFFFF Shadow	: Disabled
Swap Floppy Drive	: Disabled		
Boot Up Floppy Seek	: Enabled		
Boot Up NumLock Status	: On		
IDE HDD Block Mode	: Enabled		
Gate A20 Option	: Fast		
Memory Parity/ECC Check	: Disabled		
TypeMatic Rate Setting	: Disabled		
TypeMatic Rate (Chars/Sec)	: 6		
TypeMatic Delay (Msec)	: 250	ESC : Quit	↑↓ : Select Item
Security Option	: Setup	F1 : Help	PU/PD/+/- : Modify
PCI/UGA Palette Snoop	: Disabled	F5 : Old Values	<Shift>F2 : Color
OS Select For DRAM > 64MB	: Non-OS2	F6 : Load BIOS Defaults	
		F7 : Load Setup Defaults	

Virus Warning

When this item is enabled, the Award BIOS will monitor the boot sector and partition table of the hard disk drive for any attempt at modification. If an attempt is made, the BIOS will halt the system and the following error message will appear. Afterwards, if necessary, you will be able to run an anti-virus program to locate and remove the problem before any damage is done.

!WARNING!
 Disk boot sector is to be modified
 Type "Y" to accept write or "N" to abort write
 Award Software, Inc.

CPU Internal Cache

This item enables CPU internal cache to speed up memory access.

External Cache

This item enables CPU secondary cache to speed up memory access.

CPU L2 Cache ECC Checking

When you select Enabled, memory checking is enabled when the external cache contains ECC SRAMs.

Processor Number Feature

This item Enabled/Disabled the Pentium III processor serial number only Pentium III with processor serial number feature will show this item.

Quick Power On Self Test

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

Boot Sequence

This item determines which drive computer searches first for the disk operating system. Default setting is A, C, SCSI. BIOS also support system boot from CD-ROM drive or SCSI hard disk drive.

Swap Floppy Drive

When this item enables, the BIOS will swap floppy drive assignments so that Drive A: will function as Drive B: and Drive B: as Drive A:.

Boot Up Floppy Seek

When this item enables, the BIOS will swap floppy drive assignments so that Drive A: will function as Drive B: and Drive B: as Drive A:.

Boot Up NumLock Status

When this option enables, BIOS turns on *Num Lock* when system is powered on.

IDE HDD Block Mode

This item is used to set IDE HDD Block Mode. If your IDE Hard Disk supports block mode, then you can enable this function to speed up the HDD access time. If not, please disable this function to avoid HDD access error.

Gate A20 Option

This entry allows you to select how the gate A20 is handled. The gate A20 is a device used to address memory above 1 MByte. Initially, the gate A20 was handled via a pin on the keyboard. Today, while keyboards still provide this support, it is more common, and much faster, set to Fast for the system chipset to provide support for gate A20.

Memory Parity/ECC Check

This item allowa you to set memory error checking, Enabled or Disabled.

Typematic Rate Setting

This determines if the typematic rate is to be used. when disabled, continually holding down a key on your keyboard will generate only one instance. In other words, the BIOS will only report that the key is down. When the typematic rate is enabled, the BIOS will report as before, but it will then wait a moment, and, if the key is still down, it will begin the report that the key has been depressed repeatedly. For example, you would use such a feature to accelerate cursor movements with the arrow keys.

Typematic Rate (Chars/Sec)

When the typematic rate is enabled, this selection allows you select the rate at which the keys are accelerated.

Typematic Delay (Msec)

When the typematic rate is enabled, this selection allows you to select the delay between when the key was first depressed and when the acceleration begins

Security Option

This item allows you to limit access to the System and Setup, or just to Setup.

When *System* is selected, the System will not boot and access to Setup will be denied if the correct password is not entered at the prompt.

When *Setup* is selected, the System will boot, but access to Setup will be denied if the correct password is not entered at the prompt.

PCI/VGA Palette Snoop

This item must be set to enabled if there is a MPEG ISA card installed in the system, and disabled if there is no MPEG ISA card installed in the system.

OS Select For DRAM > 64MB

This item allows you to access the memory that over 64 MB in OS/2.

Video BIOS Shadow

Determines whether video BIOS will be copied to RAM. However, it is optional depending on chipset design. Video Shadow will increase the video speed.

C8000-CBFFF Shadow/DC000-DFFFF Shadow

These categories determine whether option ROMs will be copied to RAM. An example of such option ROM would be support of SCSI Add-on card.

Chipset Features Setup

ROM PCI/ISA BIOS (2A6LGH2A) CHIPSET FEATURES SETUP AWARD SOFTWARE, INC.	
Bank 0/1 DRAM Timing : SDRAM 10ns	CPU Warning Temperature : Disabled
Bank 2/3 DRAM Timing : SDRAM 10ns	Current System Temp. : XX°C/XX°F
Bank 4/5 DRAM Timing : SDRAM 10ns	Current CPU Temperature : XX°C/XX°F
SDRAM Cycle Length : 3	Current CPUFAN1 Speed : XXXXRPM
DRAM Clock : Host CLK	Current CPUFAN2 Speed : XXXXRPM
Memory Hole : Disabled	Current CPUFAN3 Speed : XXXXRPM
Read Around write : Disabled	IN0(U) : XX.XV IN1(U) : XX.XV
Concurrent PCI/Host : Disabled	IN2(U) : XX.XV + 5 U : XX.XV
System BIOS Cacheable : Disabled	+12 U : XX.XV -12 U : -XX.XV
Video RAM Cacheable : Disabled	- 5 U : -XX.XV
AGP Aperture Size : 64M	Shutdown Temperature : 60°C/140°F
AGP-2X Mode : Enabled	
OnChip USB : Disabled	
Wake Up On LAN : Disabled	ESC : Quit F1+ : Select Item
Auto Detect DIMM/PCI Clk : Disabled	F1 : Help PU/PD/+/- : Modify
Sprvad Spectrum : Disabled	F5 : Old Values (Shift)F2 : Color
CPU Host Clock (CPU/PCI) : Disabled	F6 : Load BIOS Defaults
	F7 : Load Setup Defaults

Bank X/X DRAM Timing

This value in this field is set by the system board manufacturer, depending on whether the board has paged DRAMS or EDO DRAMS. The choice: 70ns, 60ns.

SDRAM Cycle Length

This field allows you to set the SDRAM latency timer.

The Choice: 2,3.

DRAM Clock

This item set the DRAM Read/Write timings that the system uses.

Memory Hole

In order to improve performance, some space in memory can be reserved for ISA cards.

Read Around write

This is a new cache technology for the video memory of the processor. It can greatly improve the display speed by caching the display data. You must leave this on the default setting of Disabled if your display card cannot support this feature or else your system may not boot.

Concurrent PCI/Host

This item disable CPU bus will be occupied during the entire PCI operation period.

System BIOS Cacheable

This item allows the user to set whether the system BIOS F000~FFFF areas are cacheable or non-cacheable.

Video RAM Cacheable

This is a new cache technology for the video memory of the processor. It can greatly improve the display speed by caching the display data. You must leave this on the default setting of *Disabled* if your display card cannot support this feature or else your system may not boot.

AGP Aperture Size (MB)

This item allows the user to set memory-mapped, graphics data structures can reside in Graphics Aperture.

AGP-2X Mode

This item allows you to enable/disable AGP-2X function. See www.apgforum.org for AGP information.

OnChip USB

Select Enabled if your system contains a Universal Serial Bus (USB) controller and you have a USB peripheral.

Wake Up On LAN

This item determine the system will resume by activity of LAN. If enabled this feature system will power-on itself from power off when the activity of LAN.

Auto Detect DIMM/PCI Clock

Enabling this item allows system auto detect and close clock signal to empty DIMM/PCI slot to reduce EMI.

Spread Spectrum

This item allows the user to enable Spread Spectrum Modulated to reduce the EMI.

CPU Host Clock (CPU/PCI)

This item allows the user may adjust CPU Host Clock from 66 MHz to 133 MHz.

CPU Warning Temperature (optional peature)

Since the mainboard support CPU temperature monitoring and overhear alert. This item allows the user to set the threshold of CPU warning temperature. When CPU temperature over the threshold, system will slow down clock to prevent CPU damage.

Current System Temp (optional peature)

Since the mainboard support System temperature monitoring and overheat alert. This item indicate the current main board temperature.

Current CPU Temperature (optional peature)

Since the mainboard support CPU temperature monitoring and overheat alert. This item indicate the current Processor temperature.

Current CPUFAN1/2/3 Speed (optional peature)

The mainboard can detect three fans rotation speed for CPU cooler and system.

IN0(V) ~ IN2(V), +5V ~ -5V (optional feature)

The mainboard support CPU and mainboard voltages monitoring. The onboard hardware monitor is able to detect the voltages output of the voltage regulators and power supply.

Shutdown Temperature (optional feature)

Select the combination of lower and upper limits for the system shutdown temperature, if your computer contains an environmental monitoring system. If the temperature extends beyond either limit, the system shuts down.

Power Management Setup

ROM PCI/ISA BIOS <2A6LGH2A> POWER MANAGEMENT SETUP AWARD SOFTWARE, INC.			
ACPI function	: Enabled	Primary INTR	: ON
Power Management	: User Define	IRQ3 <COM 2>	: Primary
PM Control by APM	: Yes	IRQ4 <COM 1>	: Primary
Video Off After	: Suspend	IRQ5 <LPT 2>	: Primary
Video Off Method	: U/H SYNC+Blank	IRQ6 <Floppy Disk>	: Primary
MODEM Use IRQ	: 3	IRQ7 <LPT 1>	: Primary
Soft-Off by PWRBTN	: Instant-Off	IRQ8 <RTC Alarm>	: Disabled
CPU Fan In Suspend	: Off	IRQ9 <IRQ2 Redir>	: Secondary
HDD Power Down	: Disable	IRQ10 <Reserved>	: Secondary
Doze Mode	: Disable	IRQ11 <Reserved>	: Secondary
Suspend Mode	: Disable	IRQ12 <PS/2 Mouse>	: Primary
UGA	: OFF	IRQ13 <Coprocessor>	: Primary
LPT & COM	: LPT/COM	IRQ14 <Hard Disk>	: Primary
HDD & FDD	: ON	IRQ15 <Reserved>	: Disabled
DMA/master	: OFF		
Modem Ring Resume	: Disabled	ESC : Quit	↑↓+ : Select Item
RTC Alarm Resume	: Disabled	F1 : Help	FU/PD/+/- : Modify
		F5 : Old Values	<Shift>F2 : Color
		F6 : Load BIOS Defaults	
		F7 : Load Setup Defaults	
PowerOn by PCI Card:	Disabled		

ACPI function

This item determines whether to support ACPI function or not.

Power Management

This item determines the options of the power management function. *Max Saving* puts the system into power saving mode after a brief period of system inactivity; *Min Saving* is the same as *Max Saving* except the time of the system inactivity period is longer; *Disabled* disables the power saving feature; *User Defined* allows you to set power saving options according to your preference.

PM Control by APM

If this item set to *No*, system BIOS will be ignored and APM calls the power to manage the system.

If this item setup to *Yes*, system BIOS will wait for APM's prompt before it enter any PM mode e.g. *DOZE*, *STANDBY* or *SUSPEND*.

Video Off After

This item define when to activate the video off feature for monitor power management. The settings are N/A, Doze, Standby and Suspend.

Video Off Method

This item define the video off features - *V/H SYNC + Blank*, *DPMS*, and *Blank Only*. The first option, which is the default setting, blanks the screen and turns off vertical and horizontal scanning; *DPMS* allows the BIOS to control the video display card if it supports the *DPMS* feature; *Blank Screen* only blanks the screen.

MODEM Use IRQ

This item determines the IRQ in which the MODEM can use.
The choice: 1, 3, 4, 5, 7, 9, 10, 11, N/A.

Soft-Off by PWRBTN

The setting of **Instant-Off** allows the ATX switch to function as a normal system power off button when pressed for less than 4 seconds. The setting of **Delay 4 Sec.** allows the button to have a dual function where to press the button for less than 4 seconds will place the system in suspend mode, and pressing the button for more than 4 seconds will shut place the system off.

CPU Fan In Suspend

This item determine CPU fan status when the system enters suspend mode.
The options Enabled and Disabled.

HDD Power Down

This item defines the continuous HDD idle time before the HDD enters power saving mode (motor off). The options are from 1 min to 15 min and *Disabled*.

Doze Mode

When enabled and after the set time of system inactivity, the CPU clock will run at slower speed while all other devices still operate at full speed.

Suspend Mode

When enabled and after the set time of system inactivity, all devices except the CPU will be shut off.

**** PM Events ****

PM events are I/O events whose occurrence can prevent the system from entering a power saving mode or can awaken the system from such a mode. In effect, the system remains alert for anything occurs to a device which is configured as On, even when the system is a power down mode.

VGA

When set to On (default), any event occurring at a VGA port will awaken a system which has been powered down.

LPT & COM

When set to LPT/COM (default), any event occurring at a COM (Serial)/LPT port will awaken a system which has been powered down.

HDD & FDD

When set to On (default), any event occurring at a hard or floppy drive port will awaken a system which has been powered down.

DMA/master

When set to On (default), any event occurring to the DMA controller will awaken a system which has been powered down.

Modem Ring Resume

When set to Enabled, any event occurring Modem Ring/activity of LAN will awaken a system which has been powered down.

RTC Alarm Resume

When set to Enabled RTC Alarm Resume, you could set the date (of month) and timer (hh:mm:ss), any event occurring at RTC will awaken system which has been powered down.

Primary INTR

When set to On (default), any event occurring at will awaken a system which has been powered down.

The following is a list of IRQ, Interrupt ReQuests, which can be exemplified much as the COM ports and LPT port above can. When an I/O device wants to gain the attention of the operating system, it signals this by causing an IRQ to occur. When the operation system is ready to respond to the request, it interrupts itself and performs the service.

As above, the choices are *On* and *Off*.

When set On, activity will neither prevent the system from going into a power management mode nor awaken it.

- | | |
|-----------------------|----------------------|
| - IRQ3 (COM 2) | - IRQ4 (COM 1) |
| - IRQ5 (LPT 2) | - IRQ6 (Floppy Disk) |
| - IRQ7 (LPT 1) | - IRQ8 (RTC Alarm) |
| - IRQ9 (IRQ2 Redir) | - IRQ10 (Reserved) |
| - IRQ11 (Reserved) | - IRQ12 (PS/2 Mouse) |
| - IRQ13 (Coprocessor) | - IRQ14 (Hard Disk) |
| - IRQ15 (Reserved) | |

PnP/PCI Configuration Setup

ROM PCI/ISA BIOS (2A6LGH2A) PNP/PCI CONFIGURATION AWARD SOFTWARE, INC.	
PNP OS Installed : No	CPU to PCI Write Buffer: Enabled
Resources Controlled By : Manual	PCI Dynamic Bursting : Enabled
Reset Configuration Data : Disabled	PCI Master 0 WS Write : Enabled
IRQ-3 assigned to : PCI/ISA PnP	PCI Delay Transaction : Enabled
IRQ-4 assigned to : PCI/ISA PnP	PCI#2 Access #1 Retry : Disabled
IRQ-5 assigned to : PCI/ISA PnP	AGP Master 1 WS Write : Enabled
IRQ-7 assigned to : PCI/ISA PnP	AGP Master 1 WS Read : Disabled
IRQ-9 assigned to : PCI/ISA PnP	PCI Latency Timer(CLK) : 64
IRQ-10 assigned to : PCI/ISA PnP	Assign IRQ For USB : Enabled
IRQ-11 assigned to : PCI/ISA PnP	Assign IRQ For UGA : Enabled
IRQ-12 assigned to : PCI/ISA PnP	
IRQ-14 assigned to : PCI/ISA PnP	
IRQ-15 assigned to : PCI/ISA PnP	
DMA-0 assigned to : PCI/ISA PnP	
DMA-1 assigned to : PCI/ISA PnP	ESC : Quit ↑↓ : Select Item
DMA-3 assigned to : PCI/ISA PnP	F1 : Help PU/PD/+/- : Modify
DMA-5 assigned to : PCI/ISA PnP	F5 : Old Values (Shift)F2 : Color
DMA-6 assigned to : PCI/ISA PnP	F6 : Load BIOS Defaults
DMA-7 assigned to : PCI/ISA PnP	F7 : Load Setup Defaults

PNP OS Installed

When this item is set to Yes, it will allow the PnP OS(Windows 95) control the system resources except PCI devices and PnP boot devices.
Default setting is *No*.

Resources Controlled By

The Award Plug and Play BIOS has the capability to automatically configure all of the boot and Plug and Play compatible devices. However, this capability means absolutely nothing unless you are using a Plug and Play operating system as Windows 95.

Reset Configuration Data

This item allows you to determine whether to reset the configuration data or not.

IRQ 3/4/5/7/9/10/11/12/14/15, assigned to

These items allow you to determine the IRQ assigned to the ISA bus and is not available for PCI slot. Choices are *Legacy ISA* and *PCI/ISA PnP*.

DMA 0/1/3/5/6/7 assigned to

These items allow you to determine the DMA assigned to the ISA bus and is not available for PCI slot. Choices are *Legacy ISA* and *PCI/ISA PnP*.

CPU to PCI Write Buffer

When enabled, up to four Dwords of data can be written to the PCI bus without interrupting the CPU. When disabled, a write buffer is not used and the CPU read cycle will not be completed until the PCI bus signals that it is ready to receive the data.

PCI Dynamic Bursting

When Enabled, data transfers on the PCI bus, where possible, make use of the high-performance PCI burst protocol, in which greater amounts of data are transferred at a single command. The choice : Enabled, Disabled.

PCI Master 0 WS Write

When Enabled, writes to the PCI bus are command with zero wait states. The choice : Enabled, Disabled.

PCI Delay Transaction

The chipset has an embedded 32-bit posted write buffer to support delay transactions cycles. Select Enabled to support compliance with PCI specification version 2.1. The choice : Enabled, Disabled.

PCI#2 Access #1 Retry

This item allows you enable/disable the PCI #2 Access #1 Retry. The choice : Enabled, Disabled.

AGP Master 1 WS Write

This implements a single delay when writing to the AGP Bus. By default, two-wait states are used by the system, allowing for greater stability. The choice : Enabled, Disabled.

AGP Master 1 WS Read

This implements a single delay when reading from the AGP Bus. By default, two-wait states are used by the system, allowing for greater stability. The choice : Enabled, Disabled.

PCI Latency Timer (CLK)

The number of clocks programmed in the PCI Latency Timer represents the guaranteed time slice allocated to the chips, after which it must complete the current data transfer phase and surrender the bus as soon as its bus grant is removed.

The PCI Latency Timer is used to guarantee to the PCI agents a minimum amount of the system resource.

Assign IRQ For USB

This item allows the user to assign IRQ to on-board USB controller or not. Since on-board controller is enabled always, if none of IRQ is assigned to it, there will be a question mark report on system device under windows 95.

Assign IRQ For VGA

This item allows the user to set VGA IRQ Routing table Enabled or Disabled.

Load BIOS Defaults

When you press <Enter> on this item you get a confirmation dialog box with a message similar to:

Load BIOS Defaults (Y/N) ? N

Pressing 'Y' loads the BIOS default values for the most stable, minimal-performance system operations.

Load SETUP Defaults

When you press <Enter> on this item you get a confirmation dialog box with a message similar to:

Load SETUP Defaults (Y/N) ? N

Pressing 'Y' loads the default values that are factory settings for optimal performance system operations.

Integrated Peripherals

ROM PCI/ISA BIOS (2A6LGH2A) INTEGRATED PERIPHERALS AWARD SOFTWARE, INC.	
OnChip IDE Channel0 : Enabled	UART Mode Select : Standard
OnChip IDE Channel1 : Enabled	UART2 Duplex Mode : Half
IDE Prefetch Mode : Enabled	RxD , TxD Active : Hi,Lo
Primary Master PIO: Auto	IR Transmission delay : Enabled
Primary Slave PIO: Auto	Onboard Parallel Port : 378/IRQ7
Secondary Master PIO: Auto	Parallel Port Mode : SPP
Secondary Slave PIO: Auto	ECP Mode Use DMA : 3
Primary Master UDMA: Auto	EPP Mode Select : EPP1.7
Primary Slave UDMA: Auto	PWRON After PWR-Fail : Off
Secondary Master UDMA: Auto	
Secondary Slave UDMA: Auto	
Init Display First : PCI Slot	
POWER ON Function : BUTTON ONLY	
KB Power ON Password : Enter	ESC : Quit
Hot Key Power ON : Ctrl-F1	F1+ : Select Item
KBC input clock : 8 MHz	F1 : Help PU/PD/+/- : Modify
Onboard FDC Controller: Enabled	F5 : Old Values (Shift)F2 : Color
Onboard Serial Port 1 : 3F8/IRQ4	F6 : Load BIOS Defaults
Onboard Serial Port 2 :	F7 : Load Setup Defaults

OnChip IDE Channel0

This item is used to defined on chip Primary PCI IDE controller is Enable or Disable setting.

OnChip IDE Channel1

This item is used to defined on chip secondary PCI IDE controller is Enable or Disable setting.

IDE Prefetch Mode

Enable prefetching for IDE drive interfaces that support its faster drive accesses. If you are getting disk drive errors, change the setting to omit the drive interface where the errors occur. Depending on the configuration of your IDE subsystem, this field may not appear, and it does not appear when the Internal PCI/IDE field, above, is Disabled.

The choice : Enabled, Disabled.

Primary Master PIO

In this items, there are five modes defined in manual mode and one automatic mode.

There are 0, 1, 2, 3, 4, and *AUTO* is the default settings for on board Primary Master PIO timing.

Primary Slave PIO

In this items, there are five modes defined in manual mode and one automatic mode.

There are 0, 1, 2, 3, 4, and *AUTO* is the default settings for on board Primary Slave PIO timing.

Secondary Master PIO

In this items, there are five modes defined in manual mode and one automatic mode.

There are 0, 1, 2, 3, 4, and *AUTO* is the default settings for on board Secondary Master PIO timing.

Secondary Slave PIO

In this items, there are five modes defined in manual mode and one automatic mode. There are *0, 1, 2, 3, 4,* and *AUTO* is the default settings for on board Secondary Slave PIO timing.

Primary Master UDMA

On this mainboard, VIA VT82C596B improves IDE transfer rate using Bus Master UltraDMA 33/66 IDE which can handle data transfer up to 33/66 MB/sec. The options are *Disabled, Enabled and Auto, Auto* is the default settings for on board Primary Master UltraDMA33/66.

Note : Your hard drive must also support UDMA for this feature to work.

Primary Slave UDMA

On this mainboard, VIA VT82C596B improves IDE transfer rate using Bus Master UltraDMA33/66 IDE which can handle data transfer up to 33/66 MB/sec. The options are *Disabled, Enabled and Auto, Auto* is the default settings for on board Primary Slave UltraDMA33/66.

Note : Your hard drive must also support UDMA for this feature to work.

Secondary Master UDMA

On this mainboard, VIA VT82C596B improves IDE transfer rate using Bus Master UltraDMA33/66 IDE which can handle data transfer up to 33/66 MB/sec. The options are *Disabled, Enabled and Auto, Auto* is the default settings for on board Secondary Master UltraDMA33/66.

Note : Your hard drive must also support UDMA for this feature to work.

Secondary Slave UDMA

On this mainboard, VIA VT82C596B improves IDE transfer rate using Bus Master UltraDMA33/66 IDE which can handle data transfer up to 33/66 MB/sec. The options are *Disabled, Enabled and Auto, Auto* is the default settings for on board Secondary Slave UltraDMA33/66.

Note : Your hard drive must also support UDMA for this feature to work.

Init Display First

This item is used to determine initial device when system power on. The options are *PCI* and *AGP*.

POWER ON Function

This item is used to defined Keyboard & PS/2 mouse power-on function enabled or disabled. The options are **Button Only, HOT-Key** and **PS/2 Mouse**.

Button Only - Only soft-on/off button on the front panel is available.

KB Power ON Password

This item set the keyboard power-on password. When using keyboard to power on , just Enter the password.

Hot Key Power ON

Power-on by soft-on/off button and keyboard are available. The user may set power-on hot-key from <Ctrl><F1> to <Ctrl><F12>.

KBC input clock

This item to set the input clock to onboard keyboard controller. The options are 8MHz, 12MHz and 16MHz.

Onboard FDC Controller

This item specifies onboard floppy disk drive controller. This setting allows you to connect your floppy disk drives to the onboard floppy connector. Choose the "*Disabled*" settings if you have a separate control card.

Onboard Serial Port 1

This item is used to define onboard serial port 1 to *3F8/IRQ4*, *2F8/IRQ3*, *3E8/IRQ4*, *2E8/IRQ3*, *Auto* or *Disabled*.

Onboard Serial Port 2

This item is used to define onboard serial port 2 to *3F8/IRQ4*, *2F8/IRQ3*, *3E8/IRQ4*, *2E8/IRQ3*, *Auto* or *Disabled*.

UART Mode Select

The main board support IrDA(HPSIR) and Amplitudes Shift Keyed IR(ASKIR) infrared through COM 2 port. This item specifies onboard Infra Red mode to *IrDA 1.0*, *ASKIR*, *MIR 0.57M*, *MIR 1.15M*, *FIR* or *Standard (Disabled)*.

Note : FIR is not available currently.

UART2 Duplex Mode

This item specifies onboard infrared transfer mode to full-duplex. This item will not show up when IrDA, ASKIR or MIR UR2 modes are selected.

RxD , TxD Active

This item specifies the Active level for RxD & TxD signal.

IR Transmission delay

This item enable/disable the delay of the IR state change from Rx to Tx mode or Tx to Rx mode.

Onboard Parallel Port

This item specifies onboard parallel port address to *378H*, *278H*, *3BCH* or *Disabled*.

Parallel Port Mode

This item specifies onboard parallel port mode. The options are *SPP* (Standard Parallel Port), *EPP*(Enhanced Parallel Port), *ECP* (Extended Capabilities Port), and *EPP+ECP*.

ECP Mode Use DMA

This item specifies *DMA* (Direct Memory Access) channel when ECP device is in use. The options are *DMA 1* and *DMA 3*. This item will not show up when SPP and EPP printer mode is selected.

EPP Mode Select

This item select the EPP Mode, EPP 1.9 or EPP 1.7.

PWRON After PWR-Fail

This item to set the ATX power supply status when power resume after unexpected power fail. When off is selected, power supply will maintain on soft-off status, when power is resume. When on is selected, power supply will turn on, and when former-sts is selected, power supply will maintain on the status before unexpected power fail.

Password Setting

This section describes the two access modes that can be set using the options found on the Supervisor Password and User Password.

ROM PCI/ISA BIOS (2A6LGH2A) CMOS SETUP UTILITY AWARD SOFTWARE, INC.	
STANDARD CMOS SETUP	INTEGRATED PERIPHERALS
BIOS FEATURES SETUP	SUPERVISOR PASSWORD
CHIPSET FEATURES SETUP	USER PASSWORD
POWER MANAGEMENT SETUP	IDE HDD AUTO DETECTION
PNP/PCI CONFIGURATION	SAVE & EXIT SETUP
LOAD BIOS DEFAULTS	Enter Password: <input type="text"/> UT SAVING
LOAD SETUP DEFAULTS	
Esc : Quit	↑ ↓ → ← : Select Item
F10 : Save & Exit Setup	(Shift)F2 : Change Color
Change/Set/Disable Password	

Supervisor Password and User Password

The options on the Password screen menu make it possible to restrict access to the Setup program by enabling you to set passwords for two different access modes: Supervisor mode and User mode.

In general, Supervisor mode has full access to the Setup options, whereas User mode has restricted access to the options. By setting separate Supervisor and User password, a system supervisor can limit who can change critical Setup values.

Enter Password

Type the password, up to eight characters, and press <Enter>. The password typed now will clear any 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 will confirm the password being disabled. Once the password is disabled, the system will boot and you can enter Setup freely.

Password Disable

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

Warning : Retain a record of your password in a safe place. If you forget the password, the only way to access the system is to clear CMOS memory, please refer to page 11 "Clear CMOS".

Save & Exit Setup

Pressing <Enter> on this item asks for confirmation:

Save to CMOS and EXIT (Y/N)? Y

Pressing "Y" stores the selections made in the menus in CMOS - a special section of memory that stays on after you turn your system off. The next time you boot your computer, the BIOS configures your system according to the Setup selections stored in CMOS. After saving the values the system is restarted again.

Exit Without Saving

Pressing <Enter> on this item asks for confirmation:

Quit without saving (Y/N)? Y

This allows you to exit Setup without storing in CMOS any change. The previous selections remain in effect. This exits the Setup utility and restarts your computer.