

**MS11**

**PPGA Celeron/Coppermine processor  
Based AGPset MAIN BOARD**

*User's Manual*

# Shuttle MS11

## PPGA Celeron/Coppermine processor based AGPset Mainboard Manual Version 1.0

### Copyright

Copyright© 2000 by Shuttle Inc. All Rights Reserved.

No part of this publication may be reproduced, transcribed, stored in a retrieval system, translated into any language, or transmitted in any form or by any means, electronic, mechanical, magnetic, optical, chemical, photocopying, manual, or otherwise, without prior written permission from Shuttle Inc.

### Disclaimer

Shuttle Inc. shall not be liable for any incidental or consequential damages resulting from the performance or use of this product.

This company makes no representations or warranties regarding the contents of this manual. Information in this manual has been carefully checked for reliability; however, no guarantee is given as to the correctness of the contents. In the interest of continued product improvement, this company reserves the right to revise the manual or include changes in the specifications of the product described within it at any time without notice and without obligation to notify any person of such revision or changes. The information contained in this manual is provided for general use by the customers.

### Trademarks

Spacewalker is a registered trademark of Shuttle Inc.

Intel, Pentium is a registered trademarks of Intel Corporation.

SiS is a registered trademarks of SIS Corporation.

PS/2 is a registered trademark of IBM Corporation.

AWARD is a registered trademark of Award Software Inc.

Microsoft and Windows are registered trademarks of Microsoft Corporation.

**General Notice:** Other brand and product names used herein are for identification purposes only and may be trademarks of their respective owners.

# TABLE OF CONTENTS

---

<b>WHAT'S IN THE MANUAL .....</b>	<b>5</b>
<b>Quick Reference .....</b>	<b>5</b>
<b>About This Manual .....</b>	<b>5</b>
<b>1 INTRODUCTION .....</b>	<b>6</b>
<b>1.1 TO DIFFERENT USERS .....</b>	<b>6</b>
FIRST-TIME DIY SYSTEM BUILDER .....	6
EXPERIENCED DIY USER .....	6
SYSTEM INTEGRATOR .....	6
<b>1.2 ITEM CHECKLIST: .....</b>	<b>7</b>
<b>2 FEATURES .....</b>	<b>8</b>
<b>2.1 MAINBOARD SPECIFICATIONS .....</b>	<b>8</b>
<b>3 HARDWARE INSTALLATION .....</b>	<b>11</b>
<b>3.1 STEP BY STEP INSTALLATION .....</b>	<b>11</b>
MS11 Mainboard with 3 PCI slots .....	11
STEP 1 Install the CPU .....	12
STEP 2 Set Jumpers .....	13
STEP 3 Install SDRAM System Memory .....	13
STEP 4 Install Peripherals in System Case .....	14
STEP 5 Mount the Mainboard on the Computer Chassis .....	15
STEP 6 Connect Front Panel Switches/LEDs/Speaker .....	16
STEP 7 Connect IDE & Floppy Disk Drives .....	18
STEP 8 Connect Other Internal Peripherals .....	19
STEP 9 Connect the Power Supply .....	19
STEP 10 Install Add-on Cards in Expansion Slots .....	20
STEP 11 Connect External Peripherals to Back Panel .....	21
STEP 12 First Time System Boot Up .....	23

---

STEP 13 Install Drivers & Software Components .....	24
<b>3.2 JUMPER SETTINGS .....</b>	<b>25</b>
JUMPERS & CONNECTORS GUIDE .....	26
CPU Host Frequency Setting (JP3) .....	29
Factory Reserved (JP14) .....	30
Set Keyboard & PS/2 Mouse Power-On (JP19) .....	30
Clear the CMOS (JP13) .....	31
Flash EEPROM Protection (JP12) .....	31
Factory Reserved (JP5) .....	32
PS/2 Keyboard & PS/2 Mouse Connectors .....	32
USB1/USB2 Port Connectors .....	32
COM1 Connectors .....	32
VGA Connectors .....	33
Parallel Port Connector .....	33
Line-Out .....	33
Line-In .....	33
Mic-In .....	33
GAME/MIDI Port .....	34
ATX Power On/Off Switch Connector (PW_ON) .....	34
System Management Interface Connector (SMI) .....	34
Hardware Reset Connector (RST) .....	35
KEYLOCK .....	35
Speaker Connector (SPEAKER) .....	35
HDD LED Connector (H_LED) .....	35
Green LED Connector (G_LED) .....	36
PWR LED Connector (P_LED) .....	36
Front Panel USB Connector Header (J5/JP4) .....	36
Enhanced IDE Ports and Floppy Connectors .....	37

---

---

ATX Power Supply Connector (ATP1) .....	37
Cooling Fan Connectors for CPU (FAN1), Chassis (FAN2) & AMR (FAN3) .....	38
COM2 Connector (JP7) .....	38
IR Connector (J7) .....	38
Wake-on LAN Connector (J1) .....	39
Audio Connector VIDEO_In (JP9) .....	39
Audio Connector CD_In (JP10) .....	39
Audio Connector AUX_In (JP11) .....	39
<b>3.3 SYSTEM MEMORY CONFIGURATION .....</b>	<b>40</b>
1. INSTALL MEMORY: .....	40
2. UPGRADE MEMORY: .....	40
<b>4 SOFTWARE UTILITY .....</b>	<b>41</b>
<b>4.1 MS11 Mainboard CD Overview .....</b>	<b>41</b>
<b>4.2 Install Display Adaptor Driver Software .....</b>	<b>42</b>
<b>4.3 Install Audio Device Software .....</b>	<b>43</b>
<b>4.4 To View the User's Manual .....</b>	<b>44</b>
<b>5 BIOS SETUP .....</b>	<b>45</b>
<b>5.1 ENTERING BIOS .....</b>	<b>45</b>
<b>5.2 THE MAIN MENU .....</b>	<b>46</b>
STANDARD CMOS SETUP .....	48
ADVANCED BIOS FEATURES .....	52
ADVANCED CHIPSET FEATURES .....	56
INTEGRATED PERIPHERALS .....	61
POWER MANAGEMENT SETUP .....	65
PNP/PCI CONFIGURATION .....	69

---

---

PC HEALTH STATUS .....	71
FREQUENCY/VOLTAGE CONTROL.....	73
LOAD FAIL-SAFE DEFAULTS .....	74
LOAD OPTIMIZED DEFAULTS .....	74
SET PASSWORD .....	75
SAVE & EXIT SETUP .....	77
EXIT WITHOUT SAVING .....	77

# WHAT'S IN THE MANUAL

---

## Quick Reference

Hardware Installation >> Step-by-Step .....	Page 11
Jumper Settings >> A Closer Look .....	Page 25
Drivers/Software Utilities >> How to Install .....	Page 41
BIOS Setup >> How to Configure .....	Page 45

## About This Manual

For First-Time DIY System Builder .....	Page 6
For Experienced DIY User .....	Page 6
For System Integrator .....	Page 6

# 1 INTRODUCTION

---

## 1.1 To Different Users

### **First-Time DIY System Builder**

Welcome to the DIY world! Building your own computer system is not as difficult as you may think. To make your first computer DIY experience a success, right from the start, we have designed the **3.1 Hardware Installation** section in a step-by-step fashion for all the first-time DIY system builders. Prior to installation, we also suggest you to read the whole manual carefully to gain a complete understanding of your new Shuttle MS11 mainboard.

### **Experienced DIY User**

Congratulations on your purchase of the Shuttle MS11 mainboard. You will find that installing your new Shuttle MS11 mainboard is just that easy. Bundled with an array of onboard functions, the highly-integrated MS11 mainboard provides you with a total solution to build the most stable and reliable system. Refer to section **3.2 Jumper Settings** and **Chapter 4 Drivers/Software Utilities** to find out how to get the best out of your new mainboard. **Chapter 5 BIOS Setup** also contains relevant information on how to tune up your system to achieve higher performance.

### **System Integrator**

You have wisely chosen Shuttle MS11 to construct your system. Shuttle MS11 incorporates all the state-of-the-art technology of the MS11 chipset from Intel. It integrates the most advanced functions you can find to date in a compact MicroATX board. Refer to section **3.2 Jumper Settings** and **Chapter 4 Drivers/Software Utilities** for an in-depth view of system construction.

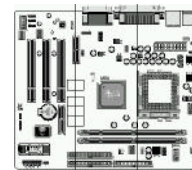


---

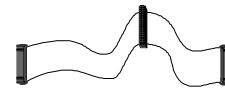
## 1.2 Item Checklist:

Check all items you received with your MS11 mainboard to make sure nothing is missing. The complete package should include:

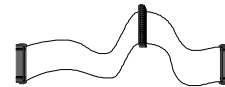
- \* One Shuttle MS11 Mainboard  
(with onboard Socket370, built-in SiS630 and SiS950 chipset , MicroATX form factor, including 2xUSB, 1xSerial, and 1xParallel ports, plus 1xPS/2 Keyboard, and 1xPS/2 Mouse connectors.)



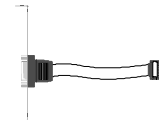
- \* One ATA 33/66 Ribbon Cable



- \* One Floppy Ribbon Cable



- \* One 9-pin COM2 Cable



- \* This MS11 User's Manual



- \* One Shuttle Spacewalker Bundled CD-ROM containing:
  - The MS11 user's manual on file
  - The SiS630 VGA driver
  - The audio CODEC driver
  - The Awdflash Utility



# 2 FEATURES

---

The MS11 mainboard is carefully designed for the demanding PC user who wants high performance and maximum intelligent features in a compact package.

## 2.1 Specifications

### \* CPU Support

Intel PPGA Celeron processors 300 ~ 600+ MHz.

Intel Coppermine FC-PGA processors 500 ~ 850+ /100 MHz FSB.

### \* Chipset

Features 66/100/133 MHz SiS630 system chipset with integrated 128-bit 2D/3D AGP graphics engine and Integrated 3D positional Audio Controll.

### \* Integrated 128-bit 2D/3D Graphics Accelerator

Advanced HW Acceleraton for DVD Playback Including MC, IDCT.

Fully DirectX6 Compliant Graphics Engine.

UMA Architecture with 2/4/8/16/32/64 System Memory Sharable as Display Memory.

Support VESA DDC1, DDC2B & DDC 3.0.

### \* Integrated 3D Positional Audio Controller

64-voice Polyphony Wavetable Synthesizer.

DirectSound 3D Accelerator for IID, IAD and Doppler Effects.

Full-duplex, Independent Sample Rate Converter for Audio Recording and Playback.

AC'97 V2.1 Interface for External Audio Codec.

SoundBlaster Pro/16 compliant-Driver Support for Windows 95/98, NT 4.0, Windows 2000.

### \* Jumperless CPU Configuration

Auto-detect CPU voltage

Soft-configure CPU Speed (The CPU operating speed is software configurable in the CMOS Setup menu of the BIOS Setup utility.)

### \* Versatile Memory Support

Equipped with two DIMM sockets for (8, 16, 32, 64, 128 or 256 MB) 168-pin 66MHz or 100MHz PC SDRAM memory modules up to 512 MB.

---

### \* **PCI Expansion Slots**

Provides three 32-bit PCI slots.

### \* **UPT and AMR Expansion Slots**

Provides one UPT (Panellink-TV out) slot and featuring one AMR (Audio/Modem Riser) slot.

### \* **5 USB Ports Onboard**

➤ 2 × USB connectors on back-panel and two set header for 3 × USB connectors on front panel.

### \* **LPC Super I/O Onboard**

Provides a variety of I/O interfaces:

- 1 × Floppy interface for 3.5-inch FDD with 720KB, 1.44MB, 2.88MB format or for 5.25-inch FDD with 360KB or 1.2MB format.
- 1 × PS/2 mouse connector
- 1 × PS/2 Keyboard connector
- 2 × DB9 Serial connectors 16V550 UART compatible
- 1 × DB15 VGA connector
- 1 × Infrared communications port ASKIR and HPSIR compatible. (Serial port COM2 can also be redirected to an external IrDA Adapter for wireless connection.)
- 1 × DB25 Parallel port supporting Standard Parallel Port and Bi-directional (SPP), Enhanced Parallel Port (EPP), and Extended Capabilities Port (ECP) data transmission schemes.

### \* **PCI Bus Master IDE Controller Onboard**

Two UltraDMA 33/66 Bus Master Dual-channel IDE ports provide support to a maximum of four IDE devices (one Master and one Slave per channel). The IDE Bus implements data transfer speeds of up to 33/66 MB/sec and also supports Enhanced PIO Modes 3 & 4.

### \* **ATX Power Supply Connector**

ATX power supply unit can connect to the onboard 20-pin ATX power connector, supporting Suspend and Soft-On/Off by dual-function power button.

---

### \* **Advanced Configuration and Power Interface**

Features four power savings modes: S1 (Snoop), S3 (Suspend to RAM), S4 (Suspend to Disk), and S5 (Soft-Off). ACPI provides more efficient Energy Savings Features controlled by your operating system that supports OS Direct Power Management (OSPM) functionality.

### \* **System BIOS**

Provides licensed Award BIOS V6.0 PG on 2Mbit flash EEPROM. Supports Green PC, Desktop Management Interface (DMI) and bundled with NCR SCSI BIOS.

### \* **MicroATX Form Factor**

System board conforms to the MicroATX specification.  
Board dimensions: 244mm × 210mm (9.6" x 8.3")

### \* **Advanced Features**

- **Low EMI** -- Built in spread spectrum and automatic clock shut-off of unused PCI/SDRAMS slots to reduce the EMI.
- **Dual Function Power Button** - The system can be in one of two states, one is Suspend mode and the other is Soft-Off mode. Pushing the power button for less than 4 seconds places the system into Suspend mode. When the power button is pressed for longer than 4 seconds, the system enters the Soft-Off mode.
- **Wake-on-LAN (WOL)** - The onboard WOL connector can be attached to a network card that supports this function to wake up the system via the LAN.

### \* **Intelligent Features**

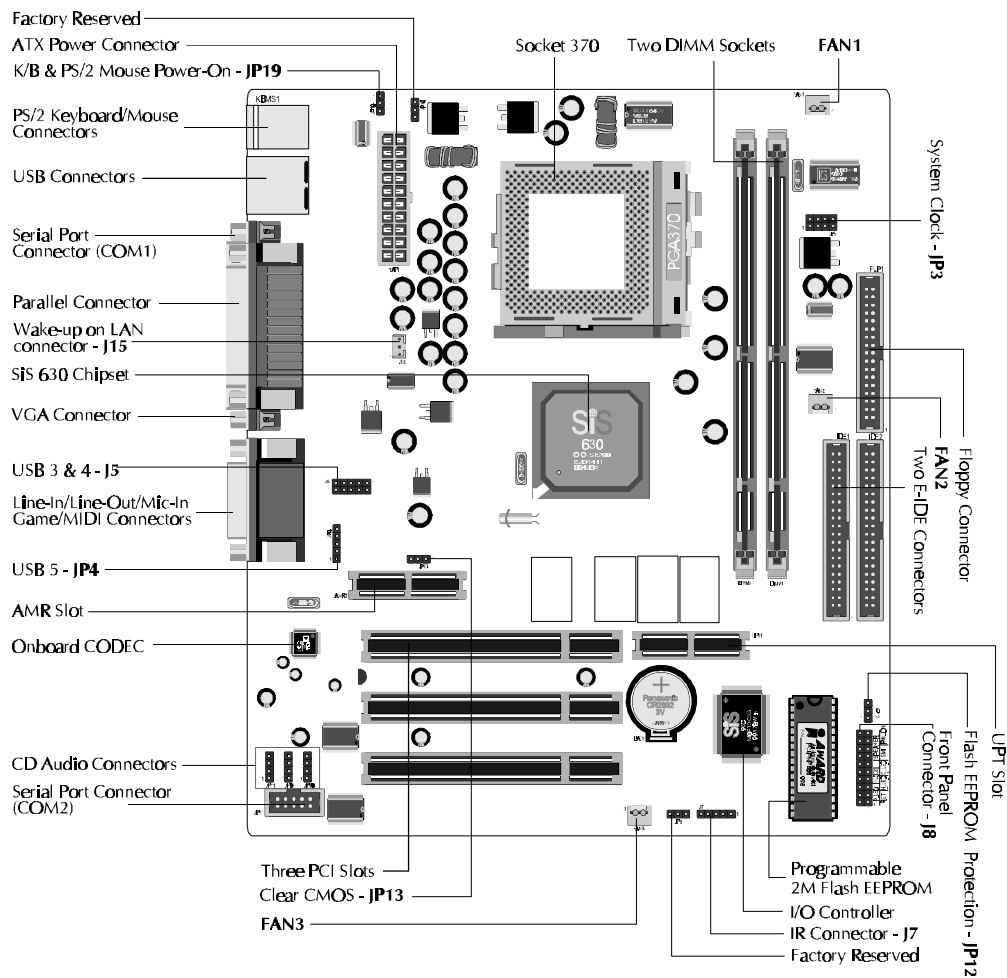
- **Voltage Monitoring** - Monitors various voltages of key elements, such as the CPU, and other critical system voltage levels to ensure stable current reach to mainboard components. System voltages include Vcore/ VTT on CPU, and +5V, +12V, -5V, -12V on system.
- **Fan Status Monitoring** - To prevent overheating of CPU, the CPU fan is monitored for RPM and failure. (CPU Cooling FAN with RPM sensor is required.)

# 3 HARDWARE INSTALLATION

This section outlines how to install and configure your MS11 mainboard. Refer to the following mainboard layout to help you identify various jumpers, connectors, slots, and ports. Then follow these steps designed to guide you through a quick and correct installation of your system.

## 3.1 Step-by-Step Installation

### MS11 Mainboard with 3 PCI Slots

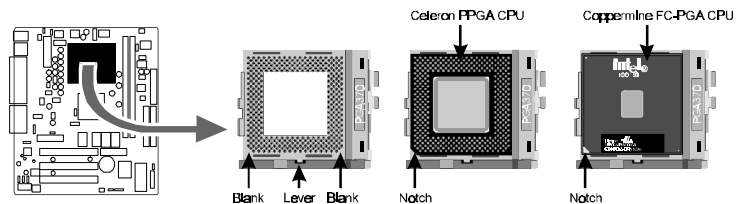


---

## Step 1

### Install the CPU:

1. Locate the CPU ZIF (Zero Insertion Force) socket on the upper-right sector of your mainboard (between the back-panel connectors and the DIMM memory banks).
2. Pull the CPU ZIF socket lever slightly sideways away from the socket to unlock the lever, then bring it to an upward vertical position.
3. Place your PGA 370 Celeron processor in the ZIF socket. Note that the CPU's edges have been purposely designed non-symmetrical to prevent from inserting the processor in the wrong direction. The following diagram demonstrates the correct placement of the CPU in the ZIF socket. You can see that the two blunt-edged corners should face towards the socket-lever.



4. Slightly push the CPU into the socket without applying excessive force while making sure there is no gap between CPU and socket. Then lower the socket-lever all the way down to its horizontal position and lock it to secure the CPU in place.
6. The PGA 370 CPU requires a set of heatsink/fan to ensure proper cooling of the processor. If not already mounted on your CPU, you must purchase the heatsink/fan separately and have it installed. Plug the cable from the heatsink/fan to the CPU fan power connector located at the immediate right of the ZIF socket. Note that there are several types of CPU fan connectors. Normally, if your mainboard supports the hardware monitoring function, a 3-pin fan power connector should allow your system to detect the CPU fan's speed. The CPU fan can also run with a 2-pin fan power connector, however, detection of CPU fan's speed is not supported. Another type of CPU fan may feature a large 4-pin fan power connector, which does not support CPU fan's speed detection and must connect directly to the system's power supply unit. Please refer to the following diagram.

---

## **Step 2.**

### **Set Jumpers**

This mainboard is jumperless! The default jumper settings have been set for the common usage standard of this mainboard. Therefore, you do not need to reset the jumpers unless you require special adjustments as in any of the following cases:

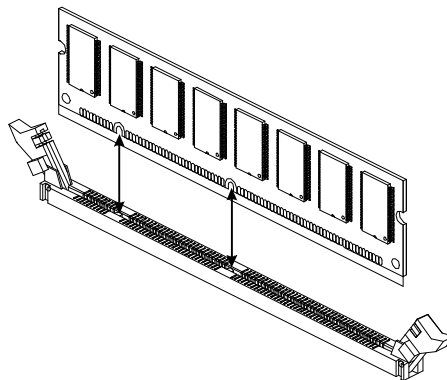
1. Over-clock your CPU
2. Disabled the onboard audio before installing an add-on sound card
3. Clear CMOS
4. Set the wake up function by keyboard/PS2 mouse or USB

For first-time DIY system builders, we recommend that you do not change the default jumper settings if you are not totally familiar with mainboard configuration procedures. The factory-set default settings are tuned for optimum system performance. For the advanced users who wish to customize their system, section **3.2 Jumper Settings** will provide detailed information on how to configure your mainboard manually.

## **Step 3**

### **Install SDRAM System Memory**

To install memory, insert SDRAM memory module(s) in any one or two DIMM banks. Note that SDRAM modules are directional and will not go in the DIMM slots unless properly oriented. After the module is fully inserted into the DIMM socket, lift the clips of both sides of the DIMM bank to lock the module in place.



---

## **Step 4**

### **Install Internal Peripherals in System Case**

Before you install and connect the mainboard into your system case, we recommend that you first assemble all the internal peripheral devices into the computer housing, including but not limited to the hard disk drive (IDE/HDD), floppy disk drive (FDD), CD-ROM drive, and ATX power supply unit. This will greatly facilitate in making the connections to the mainboard described below.

To install IDE & FDD drives, follow this procedure:

1. Set the required jumpers on board each device according to the instructions provided by the manufacturer. (IDE devices, HDD and CD-ROM, have to set jumpers to Master or Slave mode depending on whether you install more than one device of each kind.)
2. Connect IDE cable and FDD cable on the back-panel of the internal peripheral devices. Note that the cable should be oriented with its colored stripe (usually red or magenta) connected to pin#1 both on the mainboard IDE or FDD connector and on the device as well.
3. Connect an available power cable from your system power supply unit to the back-panel of each peripheral device. Note that the power cable is directional and cannot fit in if not properly positioned.

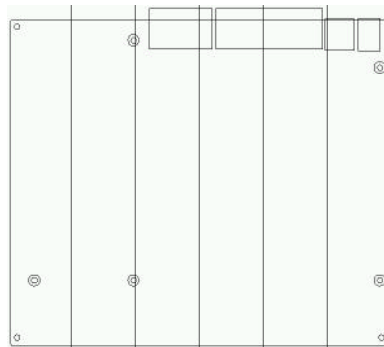


---

## Step 5

### Mount the Mainboard on the Computer Chassis

1. You may find that there are a lot of different mounting hole positions both on your computer chassis and on the mainboard. To choose a correct mounting hole, the key point is to keep the back-panel of the mainboard in a close fit with your system case, as shown below.



2. After deciding on the proper mounting holes, position the studs between the frame of the chassis and the mainboard. The studs are used to fix the mainboard and to keep a certain distance between the system chassis and the mainboard, in order to avoid any electrical shorts between the board and the metal frame of the chassis. (If your computer case is already equipped with mounting studs, you will need to tighten screws to attach the mainboard.)

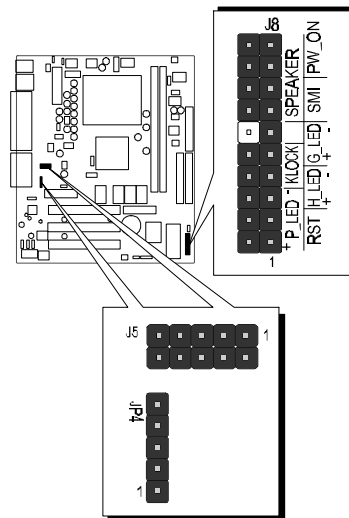
**Note:** In most computer housings, you will be able to find 4 or more attachment points to install mounting studs and fix the mainboard. If there aren't enough matching holes, then make sure to install at least 3 mounting studs to ensure proper attachment of the mainboard.

---

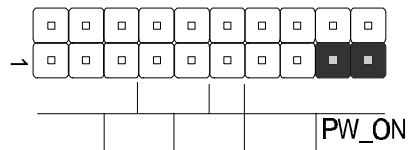
## Step 6

### Connect Front Panel Switches/LEDs/Speaker/USB connectors

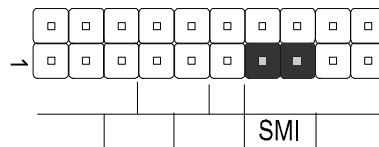
You can find there are several different cables already existing in the system case and originating from the computer's front-panel devices (HDD LED, Power LED, Reset Switch, PC Speaker, etc.) These cables serve to connect the front-panel switches, LEDs and USB connectors to the mainboard's front-panel connectors group (J8 and J5/JP4), as shown below.



1. ATX Soft Power On/Off

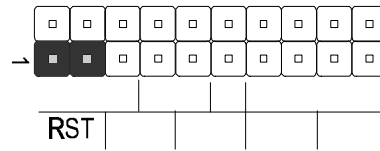


2. SMI  
(Hardware System Management Interface)

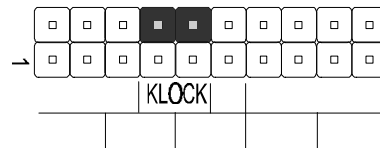


---

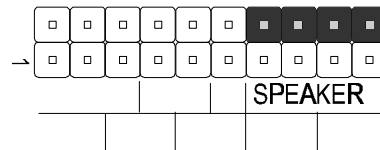
3. Hardware Reset Switch



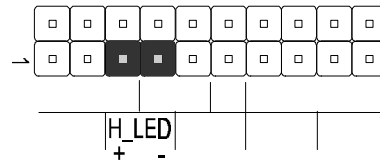
4. Keylock



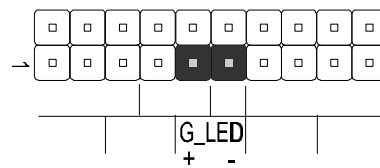
5. PC Speaker



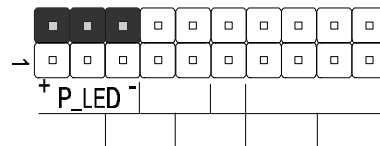
6. HDD-LED



7. Green-LED

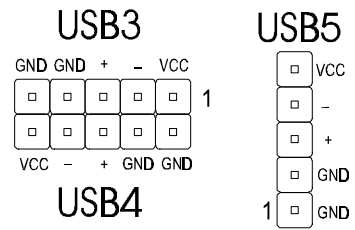


8. Power-LED



---

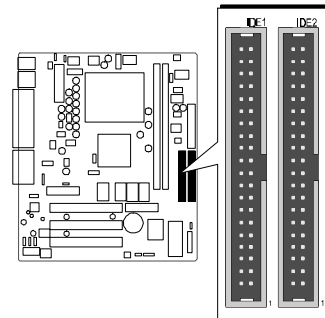
9. Front panel USB connectors header



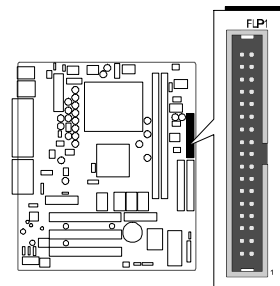
**Step 7**

**Connect IDE & Floppy Disk Drives**

1. IDE cable connector



2. FDD cable connector

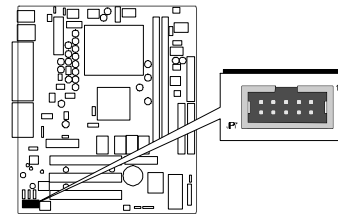


---

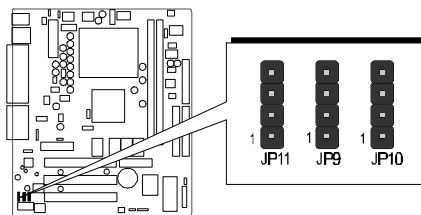
## Step 8

### Connect Other Internal Peripherals

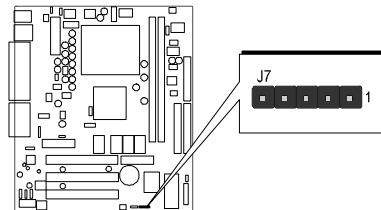
1. COM 2 cable connector



2. AUX-IN, VIDEO-IN, CD-IN connector



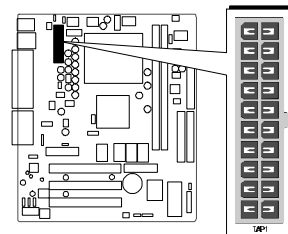
3. IrDA connector



## Step 9

### Connect the Power Supply

1. System power connector



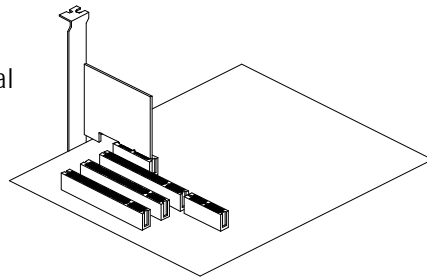
---

## Step 10

### Install Add-on Cards in Expansion Slots

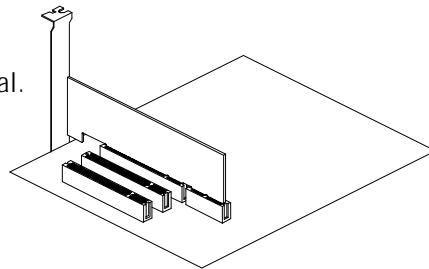
#### 1. Audio Modem Riser (AMR) Card

**Note:** You may purchase the optional Modem Riser Card.

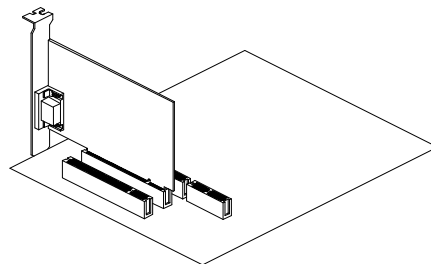


#### 2. PanelLink-TV out (UPT) Card

**Note:** You may purchase the optional UPT interface TV-Out or Panel-Link add-on Card.



#### 3. PCI Card

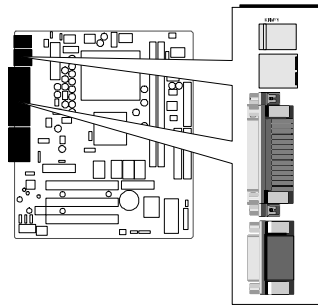


---

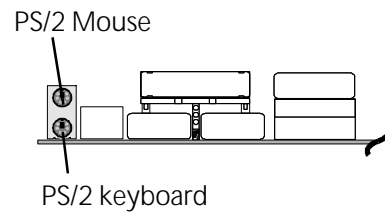
## Step 11

### Connect External Peripherals to Back Panel

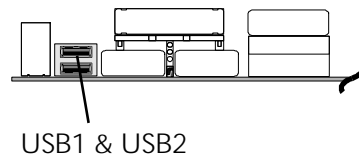
You are now ready to put the computer case back together and get on to the external peripherals connections to your system's back-panel.



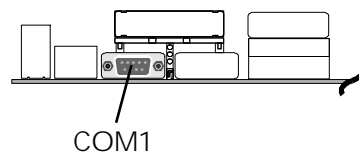
#### 1. PS/2 Mouse and Keyboard



#### 2. USB Devices

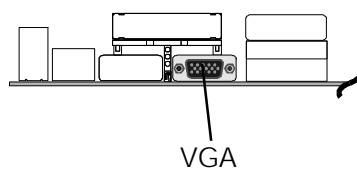


#### 3. COM Port

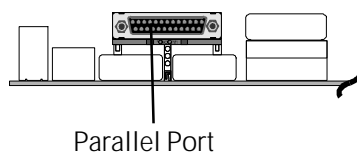


---

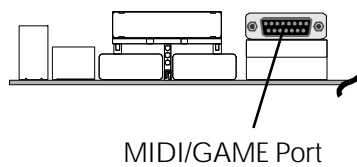
4. VGA Port



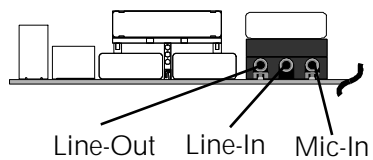
5. Parallel Port



6. MIDI/GAME Port



7. Audio Line-in / Line-out / Mic-in





---

## Step 12

### First Time System Boot Up

To assure the completeness and correctness of your system installation, you may check the above installation steps once again before you boot up your system for the first time.

1. Insert a bootable system floppy disk (DOS 6.2x, Windows 95/98/NT, or others) which contains FDISK and FORMAT utilities into the FDD.
2. Turn on the system power.
3. First, you must use the FDISK utility to create a primary partition of the hard disk. You can also add an extended partition if your primary partition does not use all of the available hard disk space. If you choose to add an extended partition, you will have to create one or more logical partitions to occupy all the space available to the extended partition. The FDISK utility will assign a drive letter (i.e., C:, D:, E:,...) to each partition which will be shown in the FDISK program. After FDISK procedure, reboot your system by using the same system floppy disk.

**Note:** DOS 6.2x and Windows 95A can only support up to 2.1GB of HDD partition. If you use the FDISK utility with one of the operating systems mentioned above, you can only divide your HDD into partitions no larger than 2.1GB each.

4. Now, use the FORMAT utility to format all the partitions you've created. When formatting the primary partition (C:), make sure to use the FORMAT C: /S command.

**Note:** FORMAT C: /S can transfer all the necessary system files into the primary partition of your hard disk. Then, your HDD will become a bootable drive.

5. Install all the necessary drivers for CD-ROM, Mouse, etc.
6. Setup the complete operating system according to your OS installation guide.

---

### **Step 13**

#### **Install Drivers & Software Components**

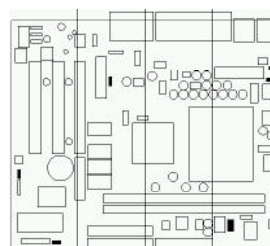
Please note that all the system utilities and drivers are designed for Win 9x operating systems only. Make sure your Windows 9x operating system is already installed before running the drivers installation CD-ROM programs.

1. Insert the MS11 bundled CD-ROM into your CD-ROM drive. The auto-run program will display the drivers main installation window on screen.
2. Select the Video related program.
3. Install the Video driver.
4. Return to the main installation window and select the Audio related program.
5. Install the AD1881 driver.
6. Return to the main installation window and exit the auto-run drivers installation program.

---

## 3.2 Jumper Settings

Several hardware settings are made through the use of jumper caps to connect jumper pins on the mainboard. Pin #1 is located on the top or on the left when holding the mainboard with the keyboard connector or other back-panel connectors opposite from you, as shown below.





3-pin and multi (> 3) pin jumpers show as follows:

Pin #1 on the left:



Pin #1 on the top:



Jumpers with two pins are shown as  for Short [On] or  for Open [Off]. To Short jumper pins, simply place a plastic jumper cap over the desired pair of pins.

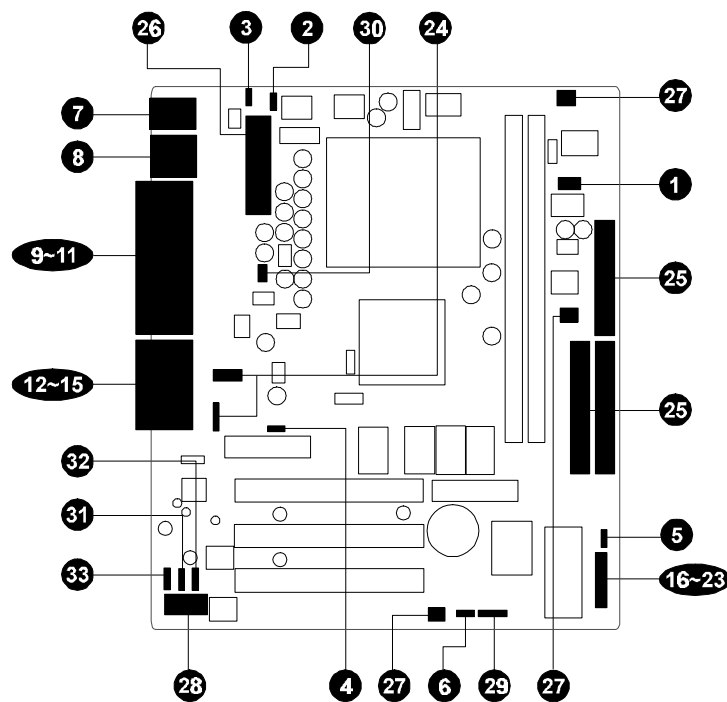
### **Caution!**

1. Do not remove the mainboard from its antistatic protective packaging until you are ready to install it.
2. Carefully hold the mainboard by its edges and avoid touching its components. When putting the mainboard down, place it on top of its original packaging film, on an even surface, and components side up.
3. Wear an antistatic wrist strap or take other suitable measures to prevent electrostatic discharge (ESD) whenever handling this equipment.

---

## Jumpers & Connectors Guide

Use the mainboard layout on page 11 to locate CPU socket, memory banks, expansion slots, jumpers and connectors on the mainboard during the installation. The following list will help you identify jumpers, slots, and connectors along with their assigned functions:



### **CPU/Memory/Expansion Slots**

- Socket370 : CPU Socket for PGA 370 Celeron processors
- DIMM1/2 : Two DIMM Sockets for 8, 16, 32, 64, 128, 256 MB 3.3V SDRAM
- AMR : AMR Expansion Slot for Audio / Modem Riser Cards
- UPT : Panel Link / TV-out Expansion Slot for CV11, CV12
- PCI : Three 32-bit PCI Expansion Slots

---

### ***Jumpers***

- ① JP3 : CPU Host Clock setting
- ② JP14 : Factory Reserved
- ③ JP19 : K/B & PS/2 Power-On
- ④ JP13 : Clear CMOS
- ⑤ JP12 : Flash EEPROM Protection
- ⑥ JP5 : Factory Reserved

### ***Back Panel Connectors***

- ⑦ KB : PS/2 Keyboard
- ⑦ MS : PS/2 Mouse
- ⑧ USB : 2 × USB (Universal Serial Bus)
- ⑨ COM1 : Serial Port 1 (DB9 male)
- ⑩ VGA : VGA Port 2 (DB15 female)
- ⑪ PRINTER : Parallel Port (DB25 female)
- ⑫ LINE-OUT : Line-Out Port
- ⑬ LINE-IN : Line-In Port
- ⑭ MIC-IN : Mic-In Port
- ⑮ MIDI/GAME : MIDI/Game Port

### ***Front Panel Connectors (J8)***

- ⑯ PW\_ON : ATX Power On/Off Momentary Type Switch
- ⑰ SMI : Hardware System Management Interface Momentary Type switch
- ⑱ RST : Hardware Reset Switch
- ⑲ KEYLOCK : KEYLOCK
- ⑳ SPEAKER : Housing Internal Speaker
- ㉑ H\_LED : IDE Drive Active LED
- ㉒ G\_LED : Green LED (ON when system in power savings mode)
- ㉓ P\_LDE : System Power LED
- ㉔ USB : Front Panel USB Connector Header (J5/JP4)

---

### ***Internal Peripherals Connectors***

- ②5 FDD : Floppy Disk Drive Interface
- ②5 IDE1 : IDE Primary Interface (Dual-channel)
- ②5 IDE2 : IDE Secondary Interface (Dual-channel)

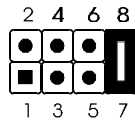
### ***Other Connectors:***

- ②6 ATP1 : ATX Power (20-pin header)
- ②7 FAN1 : CPU Cooling Fan Power
- ②7 FAN2 : Housing Cooling Fan Power
- ②7 FAN3 : Housing Cooling Fan Power
- ②8 COM2 (JP7) : COM2 Connector
- ②9 J7 : IR Connector
- ③0 J1 : Wake-On-LAN Connector
- ③1 JP9 : VIDEO-in
- ③2 JP10 : CD-in
- ③3 JP11 : AUX-in

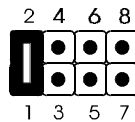
---

## ① CPU Host Clock Setting (JP3)

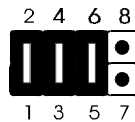
MS11 provide jumper JP3 to set CPU host clock auto-detect or setting by system BIOS. Or you may hardware configure the CPU host clock to 66MHz, 100MHz or 133MHz manually for over-clocking your 66MHz-based processor up to 100MHz, or over-clocking your 100MHz-based processor up to 133MHz.



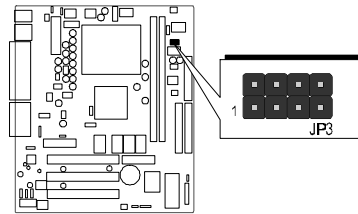
Set CPU host clock  
hard-configure to 66MHz.  
(Default)



Set CPU host clock  
hard-configure to 100MHz.



Set CPU host clock  
hard-configure to 133MHz.



However, MS11 provide over clocking feature to processor host clock, it is not a recommended practice, for this may cause severe damage to the system.

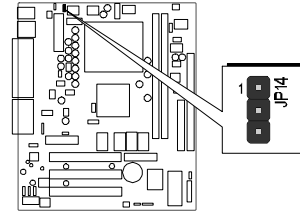
**Warning:** Over-clocking is not a recommended practice for it may damage both the mainboard and the processor.

---

## ② Factory Reserved (JP14)



Pin 2-3 (default)



## ③ Set Keyboard & PS/2 Mouse Power-On (JP19)

MS11 mainboard provides an easy power-on function by keyboard and PS/2 mouse.

**Note:** When you enable Keyboard Power-On, you also need to configure the proper hot-key combination < Ctrl > + < function key F1 ~ F12 > in BIOS setup program.

To Power on the system by keyboard, simply strike the proper hot-key. (A hot-key is the combination of < Ctrl > + < configured function key F1 ~ F12 > )

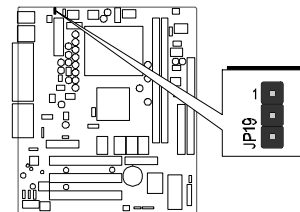
To power on the system by PS/2 mouse, you only need to double-click with the mouse. (Note that power-on by serial mouse is not supported)



Keyboard & PS/2 Mouse  
Power-On Enabled



Keyboard & PS/2 Mouse  
Power-On Disabled (default)






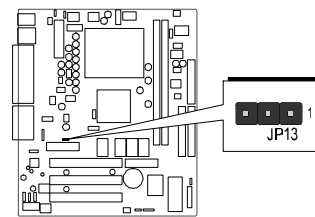
---

#### 4 Clear CMOS (JP13)

JP13 is used to clear the CMOS data. Clearing the CMOS will result in permanently erasing the previous system configuration settings and restoring the original (factory-set) system settings.

 Pin 1-2 (Clear CMOS)


 Pin 2-3 (Default)




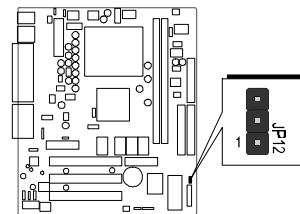
- Step 1. Turn off the system power (PC-> Off)
- Step 2. Remove jumper cap from JP13 pins 2-3
- Step 3. Place the jumper cap on JP13 pin 1-2 for a few seconds
- Step 4. Return the jumper cap to pin 2-3
- Step 5. Turn on the system power (PC-> On)

#### 5 Flash EEPROM Protection (JP12)

JP12 is used to protect the BIOS retain in Flash. If the virus infects the Boot-Block section, your system will not be able to boot forever. You may choose to place jumper cap on pins 2-3 for BIOS protection; however, please place jumper cap on pins 1-2 if you need to reflash the BIOS. A protected function may cause your BIOS reflash failed.

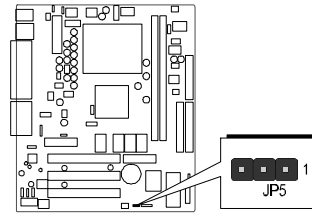
 Pin 2-3  
Flash protected

 Pin 1-2  
Flash All Block (default)



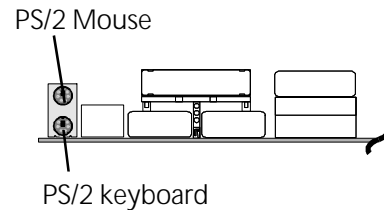
---

## 6 Factory Reserved (JP5)



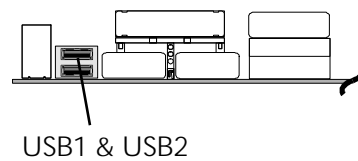
## 7 PS/2 Keyboard & PS/2 Mouse Connectors

Two 6-pin female PS/2 keyboard & Mouse connectors are located at the rear panel of the mainboard. 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 minitower 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.



## 8 USB1/USB2 Port Connectors

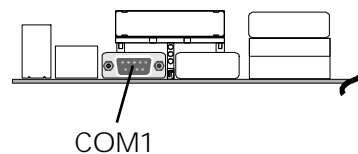
Two female connectors USB1/USB2 share the same USB (Universal Serial Bus) bracket at the rear panel of your mainboard. Plug each USB device jack into an available USB1/USB2 connector.



## 9 COM1 Connectors

This mainboard can accommodate one serial device on COM1 .

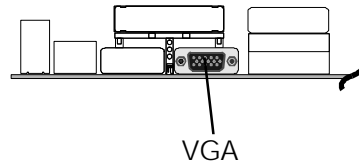
Attach a serial device cable to the DB9 serial port COM1 at the back panel of your computer.



---

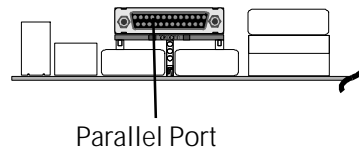
**10 VGA Connectors**

One 15-pin VGA connector is located at the rear panel of the mainboard.



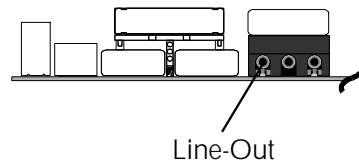
**11 Parallel Port Connector**

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.



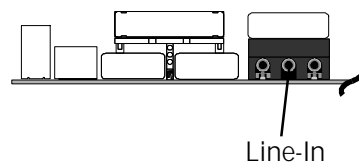
**12 Line-Out**

Line-Out is a stereo output port 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.



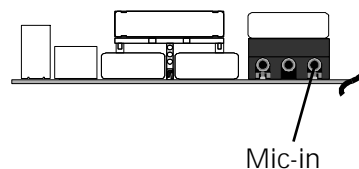
**13 Line-In**

Line-In is a stereo line-level input port 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.



**14 Mic-In**

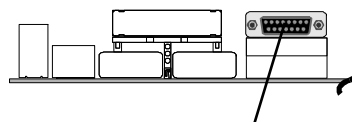
Mic-In is a 1/8-inch jack that provides a mono input. It can use a dynamic mono or stereo microphone with a resistance of not more than 600 Ohms.



---

### 15 MIDI/GAME Port

The MIDI/GAME 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.



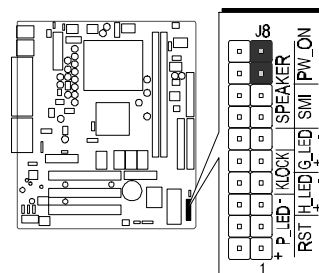
MIDI/GAME Port

#### MIDI Instrument Connection

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

### 16 ATX Power On/Off Switch Connector (PW\_ON)

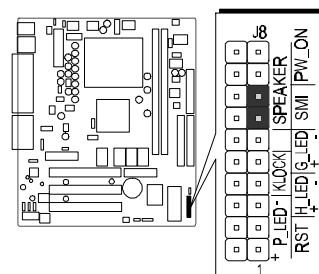
The Power On/Off Switch is a momentary type switch used for turning on or off the system's ATX power supply. Attach the connector cable from the Power Switch to the 2-pin PWON header on the mainboard.



**Note :** Please notice the Speaker and all the LED connector is directional. If your chassis's LED does not light during running, please simply change to the opposite direction.

### 17 System Management Interface Connector (SMI)

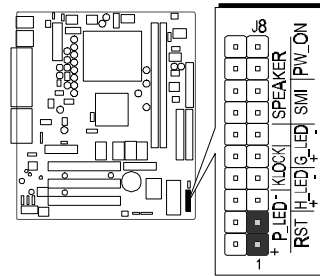
Hardware System Management Interface (SMI) header may attach to 2-pin momentary switch. Press the a switch to force the system into power savings mode; press again to resume normal operation.



---

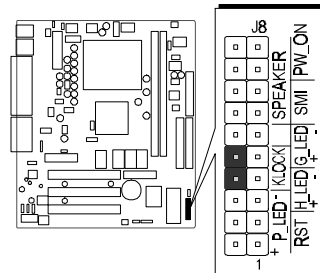
**18 Hardware Reset Connector (RST)**

Attach the 2-pin hardware reset switch cable to the RST header. Pressing the reset switch causes the system to restart.



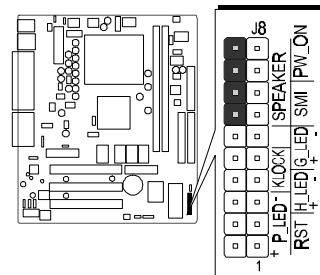
**19 KEYLOCK Connector (KLOCK)**

Keylock connector is a 2-pin connector for a lock that may be installed on the system case for enabling or disabling the keyboard.



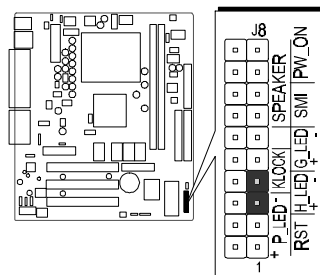
**20 Speaker Connector (SPEAKER)**

Attach the PC speaker cable from the case to the 4-pin speaker connector (SPK).



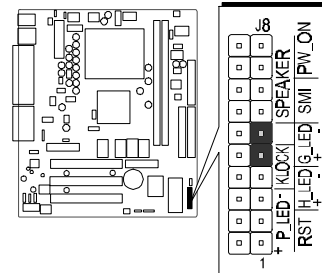
**21 HDD LED Connector (H\_LED)**

Attach the connector cable from the IDE device LED to the 2-pin HDD LED header. The HDD LED lights up whenever an IDE device is active.



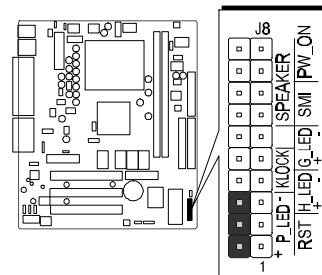
## 22 Green LED Connector (G\_LED)

The Green LED (GLED) indicates that the system is currently in one of the power savings mode (Doze/Standby/Suspend). When the system resumes to normal operation, mode, the Green LED will go off. Attach a 2-pin Green LED cable to GLED header.



## 23 PWR LED Connector (P\_LED)

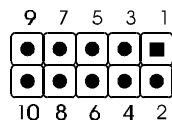
Attach the 3-pin Power-LED connector cable from the housing front panel to the PWR header on the mainboard. The power LED stays lit while the system is running.



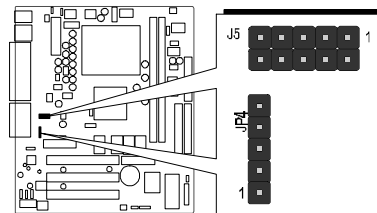
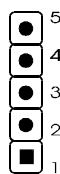
## 24 Front Panel USB Connector Header (J5/JP4)

This deader used to connect the cable attached to USB connectors which mounted on front panel.

J5 (USB3/4)



JP4 (USB5)



Pin Assignments:

J5	1=VCC	3=DATA-	5=DATA+	7=GND	9=GND
	2=GND	4=GND	6=DATA+	8=DATA-	10=VCC
JP4	1=GND	2=GND	3=DATA+	4=DATA-	5=VCC

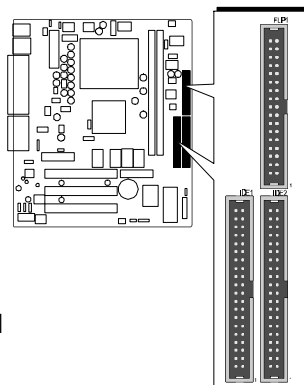
---

## 25 Enhanced IDE Ports and Floppy Connector

The MS11 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 Drives (H.D.D.). This mainboard also includes one 34-pin floppy disk controller (FDC) to accommodate the Floppy Disk Drive (F.D.D.). Moreover, this mainboard comes with one 40-pin ATA33 ( or optional ATA/66 ) ribbon cable to connect to IDE H.D.D. and one 34-pin ribbon cable for F.D.D. connection.

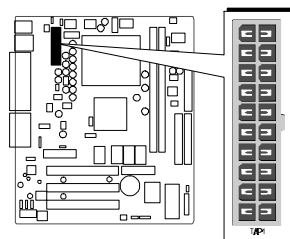
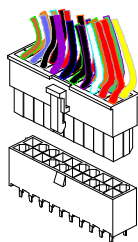
**Note :** Please connect your system H.D.D. on IDE 1

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



## 26 ATX Power Supply Connector (ATP1)

Locate the 20-pin male header ATX power connector (ATP1) on your mainboard. Plug the power cable from the ATX power supply unit directly into ATP1 ATX power supply connector.



**Note 1:** The ATX power connector is directional and will not go in unless the guides match perfectly making sure that pin#1 is properly positioned.

**Note 2:** Make sure the latch of the ATX power connector clicks into place to ensure a solid attachment.

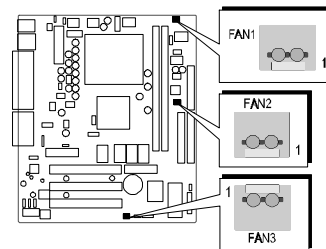
**Note 3:** For the requirement of CPU power consumption, MS11 needs the power supply which with 250W minimum load and minimum 20A DC output current on +5V.

---

## 27 CPU, Chassis Fan connectors - FAN1, FAN2, FAN3

The mainboard provides three onboard 12V cooling fan power connectors to support CPU (FAN1), Chassis (FAN2), and (FAN3) cooling fans.

**Note:** Both cable wiring and type of plug may vary depending on the fan maker. Keep in mind that the red wire should always be connected to the +12V header and the black wire to the ground (GND) header.

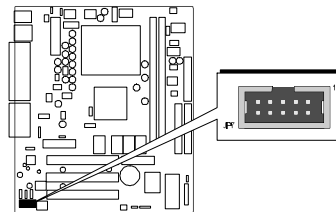
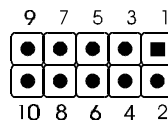


## 28 COM2 Connector (JP7)

This mainboard comes with one 10-pin ribbon cable for COM2.

Pin Assignments:

1 = NDCDB 2 = NSINB  
3 = NSOUTB 4 = NDTRB  
5 = GND 6 = NDSRB  
7 = NRTSB 8 = NCTSB  
9 = NRIB 10 = NC

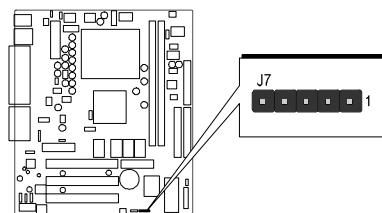
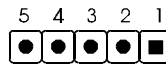


## 29 IR Connector (J7)

If you have an Infrared device, this mainboard can implement IR transfer function. To enable the IR transfer function, follow these steps:

Pin Assignments:

1 = VCC 2 = NC  
3 = IRRX 4 = GND  
5 = IRTX



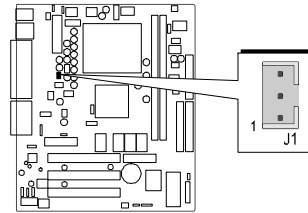
- Step 1.** Attach the 5-pin infrared device cable to J7 connector. (Refer to the above diagram for IR pin assignment.)
- Step 2.** Configure the Infrared transfer mode in the UR2 Mode field of Integrated Peripherals menu in BIOS Setup. This mainboard supports IrDA, ASKIR, SCR transfer modes.



---

### 30 Wake-on LAN Connector (J1)

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.



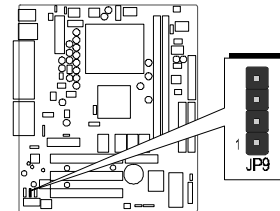
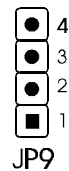
### 31 Audio Connector VIDEO-IN (JP9)

Port JP9 can be used to connect a stereo audio input from such as VIDEO drive.

Pin Assignments:

1 = VIDEO-R 2 = GND

3 = GND 4 = VIDEO-L



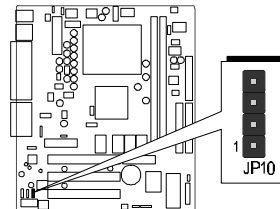
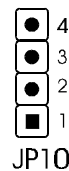
### 32 Audio Connector CD-IN (JP10)

Port JP10 is used to attach an audio connector cable from the CD-ROM drive.

Pin Assignments:

1 = CD-R 2 = GND

3 = GND 4 = CD-L



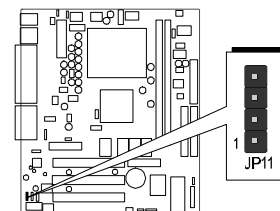
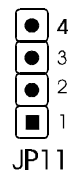
### 33 Audio Connector AUX-IN (JP11)

Port JP11 can be used to connect a stereo audio input from such as CD-ROM, TV-tuner or MPEG card.

Pin Assignments:

1 = AUX-R 2 = GND

3 = GND 4 = AUX\_L



---

### 3.3 System Memory Configuration

The MS11 mainboard has two 168-pin DIMM sockets that allow you to install from 8MB up to 512MB of system memory with SDRAM (Synchronous DRAM). Each DIMM (Dual In-line Memory Module) socket can accommodate 8MB, 16MB, 32MB, 64MB, 128MB, and 256MB 3.3V single or double side SDRAM modules. DIMM sockets are arranged in three banks, each memory bank made of one socket and providing a 64/72-bit wide data path.

#### 1. Install Memory:

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

DIMM Socket	Memory Modules	Module Quantity
DIMM 1	8MB, 16MB, 32MB, 64MB, 128, and 256MB 168-pin 3.3V SDRAM DIMM	x 1
DIMM 2	8MB, 16MB, 32MB, 64MB, 128, and 256MB 168-pin 3.3V SDRAM DIMM	x 1

**Note:** You do not need to set any jumper to configure memory since the BIOS utility can detect the system memory automatically. You can check the total system memory value in the BIOS Standard CMOS Setup menu.

#### 2. 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.

# 4 SOFTWARE UTILITY

---

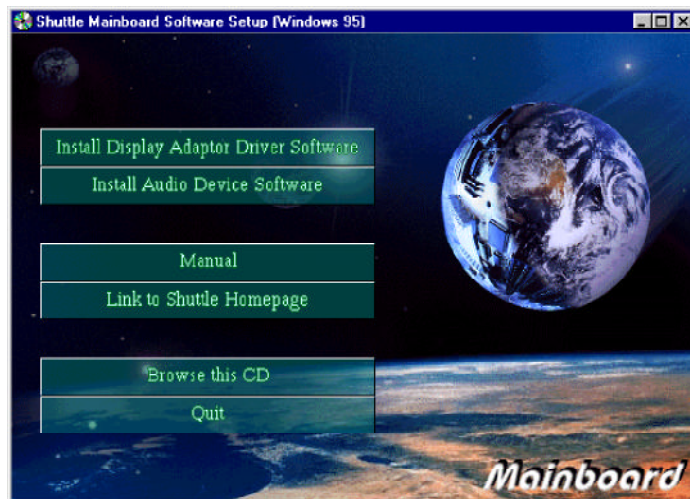
## 4.1 MS11 Mainboard CD Overview

**Note:** The MS11 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 Display Adaptor Driver Software** - Installing SiS630 Integrated VGA driver.
- ☞ **Install Audio Device Software** - Installing onboard CODEC audio driver.
- ☞ **Manual** - MS11 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.



---

## 4.2 Install Display Adaptor Driver Software

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 Display Adaptor Driver 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.

---

### 4.3 Install Audio Device Software

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.



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.

---

#### 4.4 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 "MS11 Manual" bar to view MS11 user's manual.

# 5 BIOS SETUP

---

MS11 BIOS ROM has a built-in Setup program that allows users to modify the basic system configuration. This information is stored in battery-backed RAM so that it retains the Setup information even if the system power is turned off.

The system BIOS is managing and executing a variety of hardware related functions in the system, including:

System date and time

Hardware execution sequence

Power management functions

Allocation of system resources

## 5.1 Entering BIOS

To enter the BIOS (Basic Input / Output System) utility, follow these steps:

- Step 1.** Power on the computer and the system will perform its POST (Power-On Self Test) routine checks.
  
- Step 2.** Press < Del > key immediately or at the following message:  
"Press DEL to enter SETUP"  
or simultaneously press < Ctrl > , < Alt > , < Esc > keys

**Note 1.** If you miss the train (the message disappears before you can respond) and you still wish to enter BIOS Setup, restart the system and try again by turning the computer OFF and ON again or by pressing the < RESET > switch located at the computer's front panel. You may also reboot by simultaneously pressing the < Ctrl > , < Alt > , < Del > keys.

**Note 2.** If you do not press the keys in time and system does not boot, the screen will prompt an error message and you will be given the following options:

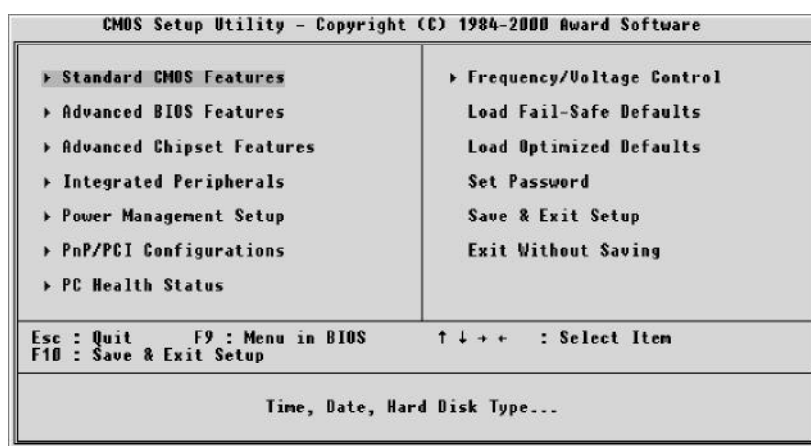
**"Press F1 to Continue, DEL to Enter Setup"**

- Step 3.** As you enter the BIOS program, the CMOS Setup Utility will prompt you the Main Menu, as shown in the next section.

---

## 5.2 The Main Menu

Once you enter the AwardBIOS(tm) CMOS Setup Utility, the Main Menu will appear on the screen. The Main Menu allows you to select from several setup functions and two exit choices. Use the arrow keys to select among the items and press < Enter > to accept and enter the sub-menu.



Note that a brief description of each highlighted selection appears at the bottom of the screen.

### **Standard CMOS features**

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

### **Advanced BIOS features**

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

### **Advanced Chipset features**

This setup page includes all items of chipset features.

### **Integrated Peripherals**

This setup page includes all items of peripheral features.



---

### ***Power Management Setup***

This setup page includes all items of Power Management features.

### ***PnP/PCI Configuration***

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.

### ***PC Health Status***

This entry shows the current system temperature, Voltage and FAN speed.

### ***Frequency/Voltage Control***

Use this menu to specify your settings for frequency/voltage control.

### ***Load Fail-Safe Defaults***

Use this menu to load the BIOS default values for the minimal/stable performance for your system to operate.

### ***Load Optimized Defaults***

Use this menu to load the BIOS default values that are factory settings for optimal performance system operations. While Award has designed the custom BIOS to maximize performance, the factory has the right to change these defaults to meet their needs.

### ***Set Password***

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

### ***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 Features**

The items in Standard CMOS Setup Menu are divided into 10 categories. Each category includes no, one or more than one setup items. Use the arrow keys to highlight the item and then use the < PgUp > or < PgDn > keys to select the value you want in each item.

CMOS Setup Utility - Copyright (C) 1984-2000 Award Software Standard CMOS Features		
Date (mm:dd:yy)	Wed, Mar 1 2000	Item Help
Time (hh:mm:ss)	13 : 39 : 30	Menu Level →
▶ IDE Primary Master	Press Enter None	Change the day, month, year and century
▶ IDE Primary Slave	Press Enter None	
▶ IDE Secondary Master	Press Enter None	
▶ IDE Secondary Slave	Press Enter None	
Drive A	1.44M, 3.5 in.	
Drive B	None	
Video	EGA/UGA	
Halt On	All,But Keyboard	
Base Memory	640K	
Extended Memory	65472K	
Total Memory	1024K	
↑↓←→:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults		

### Date

< Month > < DD > < YYYY >

Set the system date. Note that the 'Day' automatically changes when you set the date.

### Time

< HH : MM : SS >

Set the system time.

### IDE Primary Master

Options are in its sub menu.

Press < Enter > to enter the sub menu of detailed options.

### IDE Primary Slave

Options are in its sub menu.

Press < Enter > to enter the sub menu of detailed options.

---

### **IDE Secondary Master**

Options are in its sub menu.

Press < Enter > to enter the sub menu of detailed options.

### **IDE Secondary Slave**

Options are in its sub menu.

Press < Enter > to enter the sub menu of detailed options.

### **Drive A/Drive B**

Select the type of floppy disk drive installed in your system.

- The choice: None, 360K, 5.25 in, 1.2M, 5.25 in, 720K, 3.5 in, 1.44M, 3.5 in, 2.88M, 3.5 in

### **Video**

Select the default video device.

- The choice: EGA/VGA, CGA 40, CGA 80, MONO

### **Halt On**

Select the situation in which you want the BIOS to stop the POST process and notify you.

- The choice: All Errors, No Errors, All, but Keyboard, All, but Diskette, All, but Disk/Key

### **Base Memory**

Displays the amount of conventional memory detected during boot up.

- The choice: N/A

### **Extended Memory**

Displays the amount of extended memory detected during boot up.

- The choice: N/A

### **Total Memory**

Displays the total memory available in the system.

- The choice: N/A

---

\*\*\*\*\*

### **IDE Adapters**

The IDE adapters control the hard disk drive. Use a separate sub menu to configure each hard disk drive.

#### **IDE HDD Auto-detection**

Press Enter to auto-detect the HDD on this channel. If detection is successful, it fills the remaining fields on this menu.

- Press Enter

#### **IDE Primary Master**

Selecting 'manual' lets you set the remaining fields on this screen. Selects the type of fixed disk. "User Type" will let you select the number of cylinders, heads, etc. Note: PRECOMP = 65535 means NONE !

- The choice: None, Auto, Manual.

#### **Access Mode**

Choose the access mode for this hard disk.

- The choice: Normal, LBA, Large, Auto.

#### **Capacity**

Disk drive capacity (Approximated). Note that this size is usually slightly greater than the size of a formatted disk given by a disk checking program.

- Auto Display your disk drive size.

*The following options are selectable only if the 'IDE Primary Master' item is set to 'Manual'*

#### **Cylinder**

Set the number of cylinders for this hard disk.

- Min = 0, Max = 65535

#### **Head**

Set the number of read/write heads.

- Min = 0, Max = 255



**Precomp**

Warning: Setting a value of 65535 means no hard disk.

➤ Min = 0, Max = 65535

**Landing zone**

Set the Landing zone size.

➤ Min = 0, Max = 65535

**Sector**

Number of sectors per track.

➤ Min = 0, Max = 255

\*\*\*\*\*



---

## **Advanced BIOS Features**

This section allows you to configure your system for basic operation. You have the opportunity to select the system's default speed, boot-up sequence, keyboard operation, shadowing and security.

CMOS Setup Utility - Copyright (C) 1984-2000 Award Software Advanced BIOS Features		
Virus Warning	Disabled	Item Help
CPU Internal Cache	Enabled	Menu Level >
External Cache	Enabled	
CPU L2 Cache ECC Checking	Enabled	
Processor Number Feature	Enabled	
Quick Power On Self Test	Enabled	
First Boot Device	Floppy	Allows you to choose the VIRUS warning feature for IDE Hard Disk boot sector protection. If this function is enabled and someone attempt to write data into this area, BIOS will show a warning message on screen and alarm beep
Second Boot Device	HDD-0	
Third Boot Device	LS/ZIP	
Boot Other Device	Enabled	
Swap Floppy Drive	Disabled	
Boot Up Floppy Seek	Enabled	
Boot Up NumLock Status	On	
Gate A20 Option	Fast	
Typematic Rate Setting	Disabled	
x Typematic Rate (Chars/Sec)	6	
x Typematic Delay (Msec)	250	
Security Option	Setup	
OS Select For DRAM > 64MB	Non-OS2	
Report No FDD For WIN 95	No	
Video BIOS Shadow	Enabled	

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

### Virus Warning

Allows you to choose the VIRUS Warning feature for IDE Hard Disk boot sector protection. If this function is enabled and someone attempt to write data into this area, BIOS will show a warning message on screen and alarm beep.

**Enabled** Activates 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 will appear when anything attempts to access the boot sector or hard disk partition table.

➤ The choice: Enabled, Disabled.

### CPU Internal Cache

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

➤ The choice: Enabled, Disabled.

---

### **External Cache**

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

- The choice: Enabled, Disabled.

### **CPU L2 Cache ECC Checking**

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

- The choice: Enabled, Disabled.

### **Processor Number Feature**

Allows you to Enabled/Disabled, the processor serial number.

- The choice: Enabled, Disabled.

### **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.

- The choice: Enabled, Disabled.

### **First/Second/Third Boot Device**

The BIOS attempts to load the operating system from the devices in the sequence selected in these items.

- The Choice: Floppy, LS/ZIP, HDD-0, SCSI, CDROM, HDD-1, HDD-2, HDD-3, LAN, Disabled.

### **Boot Other Device**

Select Your Boot Device Priority.

- The Choice: Enabled, Disabled.

### **Swap Floppy Drive**

If the system has two floppy drives, you can swap the logical drive name assignments.

- The choice: Enabled, Disabled.

### **Boot Up Floppy Seek**

Seeks disk drives during boot up. Disabling speeds boot up.

- The choice: Enabled, Disabled.

---

### Boot Up NumLock Status

Select power on state for NumLock.

- The choice: Off, On.

### 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.

- The choice: Normal, Fast.

### Typematic Rate Setting

Key strokes repeat at a rate determined by the keyboard controller. When enabled, the typematic rate and typematic delay can be selected.

- The choice: Enabled, Disabled.

### Typematic Rate (Chars/Sec)

Sets the number of times a second to repeat a key stroke when you hold the key down.

- The choice: 6, 8, 10, 12, 15, 20, 24, 30.

### Typematic Delay (Msec)

Sets the delay time after the key is held down before it begins to repeat the keystroke.

- The choice: 250, 500, 750, 1000.

### Security Option

Select whether the password is required every time the system boots or only when you enter setup.

- |               |   |
|---------------|---|
| <b>System</b> | The system will not boot and access to Setup will be denied if the correct password is not entered at the prompt. |
| <b>Setup</b>  | The system will boot, but access to Setup will be denied if the correct password is not entered at the prompt.    |

- The choice: System, Setup.



---

Note: To disable security, select PASSWORD SETTING at Main Menu and then you will be asked to enter password. Do not type anything and just press < Enter > , it will disable security. Once the security is disabled, the system will boot and you can enter Setup freely.

#### **OS Select For DRAM > 64MB**

Select the operating system that is running with greater than 64MB of RAM on the system.

- The choice: Non-OS2, OS2.

#### **Report No FDD For WIN95**

Whether report no FDD for Win95 or not.

- The choice: Yes, No

#### **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.

- The choice: Enabled, Disabled.

#### **C8000-CBFFF Shadow/DC000-DFFFF Shadow**

These categories determine whether option ROMs will be Chipset Features Setup Auto Configuration copied to RAM. An example of such option ROM would be support of on-board SCSI.

- The choice: Enabled, Disabled.

---

## **Advanced Chipset Features**

This section allows you to configure the system based on the specific features of the installed chipset. This chipset manages bus speeds and access to system memory resources, such as DRAM and the external cache. It also coordinates communications between the conventional ISA bus and the PCI bus. It must be stated that these items should never need to be altered.

The default settings have been chosen because they provide the best operating conditions for your system. The only time you might consider making any changes would be if you discovered that data was being lost while using your system.

CMOS Setup Utility - Copyright (C) 1984-2000 Award Software		
Advanced Chipset Features		
	Manual	Item Help
Auto Configuration	Manual	
SDRAM RAS Active Time	7T	
SDRAM RAS Precharg Time	2T	Menu Level >
RAS to CAS Delay	3T	
Dram Background Command	Delay 1T	
LD-Off Dram RD/WR Cycles	Delay 1T	
Write Recovery Time	2T	
UCM REF To ACT/REF Delay	10T	
UCM ACCT - ACT/REF Delay	9T	
Early CKE Delay 1T Cntrl	Normal	
Early CKE Delay Adjust	2ns	
Mem Command Output Time	Delay 1T	
SDRAM/UCM CAS Latency	SPD	
System BIOS Cacheable	Enabled	
Video RAM Cacheable	Enabled	
Memory Hole at 15M-16M	Disabled	
AGP Aperture Size	64MB	
Graphic Window WR Combin	Enabled	
Concurrent function(MEM)	Enabled	
Concurrent function(PCI)	Enabled	
SDVCLK Control	+2.0 ns	
SDVCLK Control CS#/CKE	+2.0 ns	
SDVCLK Control MA/SRAS	+2.0 ns	
SDVCLK Control DQM/MD	+2.0 ns	
EGMCLK Control	+1.5 ns	
EGMCLK Control	+2.5 ns	
PCI Delay Transaction	Enabled	

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

### Auto Configuration

This item will automatically configure the chipset timing. You may select 'manual' to set up following gray items by your specific need.

- The choice: Manual, Auto, 100MHZ, 133MHZ.

### SDRAM RAS Active Time

This item defines SDRAM ACT to PRE command period.

- The Choice: 6T, 7T, 5T, 4T.

---

### **SDRAM RAS Precharge Time**

This item defines SDRAM PRE to ACT command period.

- The Choice: 3T, 2T, 4T.

### **RAS to CAS Delay**

This item defines SDRAM ACT to Read/Write command period.

- The choice: 3T, 2T, 4T.

### **Dram Background Command**

This item is lead-off time control for DRAM background command. When select 'Delay 1T', background commands are issued 1 clock behind memory address (MA) been issued. When select 'Normal', background command and MA are issued at the same time.

- The choice: Delay 1T, Normal.

### **LD-Off Dram RD/WR Cycles**

The item is lead-off time control for DRAM Read/Write Cycles. When select 'Delay 1T', memory read/write command is issued 1 clock behind memory address (MA) been issued.

When select 'Normal', read/write command and MA are issued at the same time.

- The choice: Delay 1T, Normal.

### **Write Recovery Time**

This item defines the Data-in to PRE command period.

- The choice: 1T, 2T

### **VCM REF to ACT/REF Delay**

This item defines VCM REF to REF/ACT command period.

- The choice: 10T, 9T.

### **VCM ACT-ACT/REF Delay**

This item defines VCM ACT to ACT/REF command period.

- The choice: 10T, 9T, 8T.

---

### Early CKE Delay 1T Cntrl

When this item is enabled, CKE is driven out from flip-flop. It is used when system operates under low frequency and CKE delay adjustment method defined in the 'Early CKE Delay Adjustment' which can not meet setup time and hold time requirement.

- The choice: Normal, Delay 1T.

### Early CKE Delay Adjust

This item controls the timing for CKE. Various delay options are provided to ensure that CKE can meet SDRAM setup time and hold time specification when CKE is driven out.

- The Choice: 1ns, 2ns, 3ns, 4ns, 5ns, 6ns, 7ns, 8ns.

### Mem Command Output Time

This item is to control the timing to drive memory command onto memory bus.

- The choice: Normal, Delay 1T.

### SDRAM/VCM CAS Latency

When synchronous DRAM is installed, the number of clock cycles of CAS latency depends on the DRAM timing.

- The Choice: SPP, 2T, 3T.

### System BIOS Cacheable

Selecting Enabled allows caching of the system BIOS ROM at F0000h-FFFFFh, resulting in better system performance. However, if any program writes to this memory area, a system error may result.

- The choice: Enabled, Disabled.

### 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.

- The choice: Enabled, Disabled.

---

### **Memory Hole at 15M-16M**

You can reserve this area of system memory for ISA adapter ROM. When this area is reserved, it cannot be cached. The user information of peripherals that need to use this area of system memory usually discusses their memory requirements.

- The choice: Enabled, Disabled

### **AGP Aperture Size**

Select the size of the Accelerated Graphics Port (AGP) aperture. The aperture is a portion of the PCI memory address range dedicated for graphics memory address space. Host cycles that hit the aperture range are forwarded to the AGP without any translation. See [www.agpforum.org](http://www.agpforum.org) for APG information.

- The choice: 4 MB, 8MB, 16 MB, 32 MB, 64 MB, 128 MB, 256MB.

### **Graphic Window WR Combin**

This item enabled P6 class CPUs (Pentium Pro & II) Write-Combine function for Enhanced 3D Graphic performance.

- The choice: Enabled, Disabled.

### **Concurrent function (MEM)**

This item is CPU & PCI Masters Concurrently Access Memory Function. Select enabled allows CPU access memory cycles and PCI masters access memory cycles concurrently issued onto host bus and PCI bus, respectively, and then the memory access cycles will be rearranged by SiS630 to memory sequentially.

- The choice: Enabled, Disabled

### **Concurrent function (PCI)**

This item is CPU & PCI Masters Concurrently Access PCI Bus Function. Select enabled allows CPU access PCI bus cycle and PCI masters access memory cycles concurrently issued onto host bus and PCI bus, respectively.

- The choice: Enabled, Disabled.

### **SDRCLK Control**

This item controls the phase of SDRCLK that lags behind SDCLK.

- The choice: + 6.5ns ~ -1.0ns.

---

#### **SDWCLK Control CS#/CKE**

This item controls the phase of SDWCLK used for chip set select signals pin that lags ahead SDCLK.

- The choice: +5.0ns ~ -2.5ns.

#### **SDWCLK Control MA/SRAS**

This item controls the phase of SDWCLK used for MA/ SRAS signals that lags ahead SDCLK.

- The choice: +5.0ns ~ -2.5ns.

#### **SDWCLK Control DQM/MD**

This item controls the phase of SDWCLK used for DQM/MD signals that lags ahead SDCLK.

- The choice: +5.0ns ~ -2.5ns.

#### **EGMRCLK Control**

This item controls the phase of EGMRCLK that lags behind SDCLK.

- The choice: -1.0ns ~ +6.5ns.

#### **EGMWCLK Control**

This item controls the phase of EGMWCLK that lags ahead SDCLK.

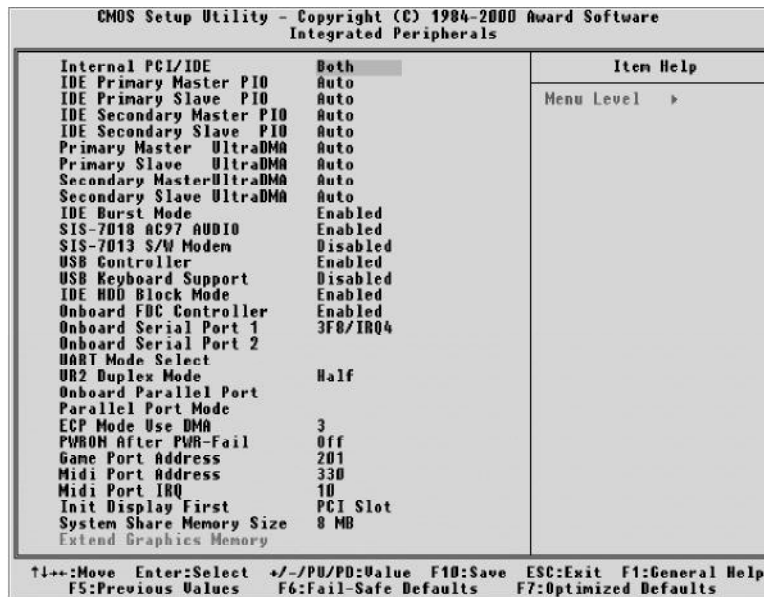
- The choice: +5.0ns ~ -2.5ns.

#### **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.

## **Integrated Peripherals**



### **Internal PCI / IDE**

This chipset contains an internal PCI IDE interface with support for two IDE channels.

- The choice: Primary, Secondary, Both, Disabled.

### **IDE Primary/Secondary Master/Slave PIO**

The four IDE PIO (Programmed Input / Output) fields let you set a PIO mode (0-4) for each of the four IDE devices that the onboard IDE interface supports. Modes 0 through 4 provide successively increased performance. In Auto mode, the system automatically determines the best mode for each device.

- The choice: Auto, Mode 0, Mode 1, Mode 2, Mode 3, Mode 4.

### **Primary/Secondary Master/Slave UDMA**

UDMA (Ultra DMA) is a DMA data transfer protocol that utilizes ATA commands and the ATA bus to allow DMA commands to transfer data at a maximum burst rate of 33 MB/s. When you select Auto in the four IDE UDMA fields (for each of up to four IDE devices that the internal PCI IDE interface supports), the system automatically determines the optimal data transfer rate for each IDE device.

- The choice: Auto, Disabled.

---

### IDE Burst Mode

Selecting Enabled reduces latency between each drive read/write cycle, but may cause instability in IDE subsystems that cannot support such fast performance. If you are getting disk drive errors, try setting this value to Disabled. This field does not appear when the Internal PCI/IDE field, above, is Disabled.

- The choice: Enabled, Disabled.

### SIS-7018 AC97 AUDIO

Select Enabled to support AC97 Audio.

- The choice: Enabled, Disabled.

### SIS-7013 S/W Modem

Select Enabled to support S/W Modem.

- The choice: Enabled, Disabled.

### USB Controller

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

- The choice: Enabled, Disabled.

### USB Keyboard Support

This item is used to defined USB Keyboard is *Enabled* or *Disabled*.

- The choice: Enabled, Disabled.

### IDE HDD Block Mode

The chipset contains a PCI IDE interface with support for two IDE channels. Select Enabled to activate the primary and/or secondary IDE interface. Select Disabled to deactivate this interface, if you install a primary and/or secondary add-in IDE interface IDE interface.

- **Enabled** Secondary HDD controller used
- **Disabled** Secondary HDD controller not used.



---

### **Onboard FDD Controller**

This should be enabled if your system has a floppy disk drive (FDD) installed on the system board and you wish to use it. Even when so equipped, if you add a higher performance controller, you will need to disable this feature.

- The choice: Enabled, Disabled.

### **Onboard Serial Port 1/Port 2**

This item allows you to determine access onboard serial port 1/port 2 controller with which I/O address.

- The choice: 3F8/IRQ4, 2E8/IRQ3, 3E8/IRQ4, 2F8/IRQ3, Disabled, Auto.

### **UART Mode Select**

The main board support IrDA(HPSIR) and Amplitudes Shift Keyed IR(ASKIR) infrared through COM 2 port.

Note : FIR is not available currently.

- The choice: IrDA, ASKIR, Normal.

### **UART2 Duplex Mode**

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

- The choice: Full, Half.

### **Onboard Parallel Port**

This item allows you to determine access onboard parallel port controller with which I/O address.

- The choice: 378/IRQ7, 278/IRQ5, 3BC/IRQ7, Disabled.

### **Parallel Port Mode**

Select an operating mode for the onboard parallel (printer) port. Select Normal, Compatible, or SPP unless you are certain your hardware and software both support one of the other available modes.

- The choice: SPP, EPP, ECP, ECP + EPP.

---

### **ECP Mode Use DMA**

Select a DMA channel for the parallel port for use during ECP mode.

- The choice: 3, 1.

### **POWER 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.

- The choice: On, Former-Sts, Off.

### **Game Port Address**

This item allows you to select the Game Port Address.

- The choice: Disabled, 201, 209.

### **Midi Port Address**

This item allows you to select the Midi Port Address.

- The choice: Disabled, 330, 300

### **Midi Port IRQ**

This item allows you to select the Midi Port IRQ.

- The choice: 5, 10.

### **Init Display First**

This item is used to determine initial device when system power on.

- The choice: AGP, PCI Slot.

### **System Share Memory Size**

This item defines the System Share Memory Size for video.

- The choice: 2MB, 4MB, 8MB, 16MB, 32MB, 64MB, 2 + 2MB, 4 + 4MB, 8 + 8MB, 16 + 16MB, 32 + 32MB

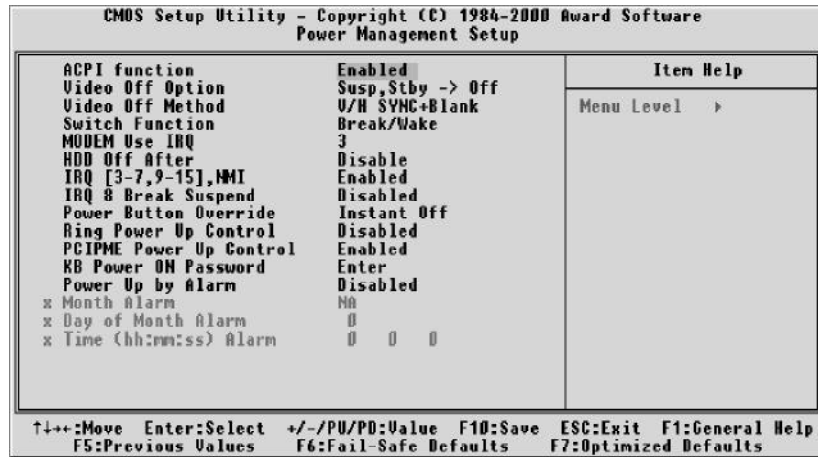
### **Extend Graphics Memory**

This item displays the memory size for the ADIMM.

- The choice: N/A

---

## Power Management Setup



The Power Management Setup allows you to configure your system to most effectively save energy while operating in a manner consistent with your own style of computer use.

### ACPI Function

This item allows you to enable/disable the Advanced Configuration and Power Management (ACPI).

- The choice: Enabled, Disabled.

### Video Off Option

When enabled, this feature allows the VGA adapter to operate in a power saving mode.

- **Always On** Monitor will remain on during power saving modes.
- **Suspend —> Off** Monitor blanked when the system enters the Suspend mode.
- **Susp,Stby —> Off** Monitor blanked when the system enters either Suspend or Standby modes.
- **All Modes —> Off** Monitor blanked when the system enters any power saving mode.

---

### Video Off Method

This determines the manner in which the monitor is blanked.

- **V/H SYNC + Blank** This selection will cause the system to turn off the vertical and horizontal synchronization ports and write blanks to the video buffer.
- **Blank Screen** This option only writes blanks to the video buffer.
- **DPMS** Select this option if your monitor supports the Display Power Management Signaling (DPMS) standard of the Video Electronics Standards to select video power management values.

### Switch Function

You can choose whether or not to permit your system to enter complete Suspend mode.

Suspend mode offers greater power savings, with a correspondingly longer awakening period..

- The choice: Break/Wake, Disabled

### MODEM Use IRQ

Name the interrupt request (IRQ) line assigned to the modem (if any) on your system. Activity of the selected IRQ always awakens the system.

- The choice: 3, 4, 5, 7, 9, 10, 11, NA.

### **\*\*\*\*\* PM Timers \*\*\*\*\***

The following four modes are Green PC power saving functions which are only user configurable when User Defined Power Management has been selected. See above for available selections.

### HDD Off After

By default, this item is Disabled, meaning that no matter the mode the rest of the system, the hard drive will remain ready. Otherwise, you have a range of choices from 1 to 15 minutes or Suspend. This means that you can elect to have your hard disk drive be turned off after a selected number of minutes or when the rest of the system goes into a Suspend mode.

- The choice: Disabled, 1Min ~ 15Min.

---

## **\*\*\*\*\* PM Events \*\*\*\*\***

You may disable activity monitoring of some common I/O events and interrupt requests so they do not wake up the system. The default wake-up event is keyboard activity.

When On (or named, in the case of LPT & COM), any activity from one of the listed system peripheral devices or IRQs wakes up the system.

### **IRQ [ 3-7, 9-15], NMI**

You can Enable or Disable monitoring of IRQ[3-7, 9-15] and Non Maskable Interrupt.

- The choice: Enabled, Disabled.

### **IRQ 8 Break Suspend**

You can Enable or Disable monitoring of IRQ8 (the Real Time Clock) so it does not awaken the system from Suspend mode.

- The choice: Enabled, Disabled.

### **Power Button Over Ride**

You could press the power button for more than 4 seconds forces the system to enter the Soft-Off state when the system has "hung."

- The choice: Instant-Off, Delay 4 Sec.

### **Ring Power Up Control**

When you select Enabled, a signal from ring returns the system to Full On state.

- The choice: Enabled, Disabled.

### **PCIPME Power Up Control**

This item Enabled/Disabled the power on function of PCI Card.

- The choice: Enabled, Disabled.

### **KB Power ON Password**

When you set a password for keyboard, The password you set the keyboard that returns the system to Full On state.

---

### **Power Up by Alarm**

When you select Enabled, the following fields appear. They let you set the alarm that returns the system to Full On state.

- The choice: Enabled, Disabled

### **Month Alarm**

This item select the alarm month.

- Key in a DEC number: Min=0, Max=31.

### **Date (of Month) Alarm**

This item select the alarm date.

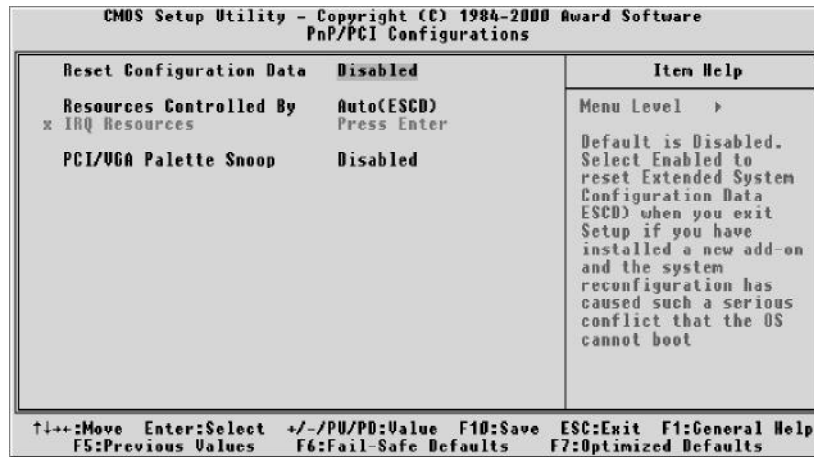
- Key in a DEC number: Min=0, Max=31.

### **Time (hh : mm : ss) Alarm**

This item select the alarm time.

---

## PnP/PCI Configuration



This section describes configuring the PCI bus system. PCI, or Personal Computer Interconnect, is a system which allows I/O devices to operate at speeds nearing the speed the CPU itself uses when communicating with its own special components. This section covers some very technical items and it is strongly recommended that only experienced users should make any changes to the default settings.

### Reset Configuration Data

Normally, you leave this field Disabled. Select Enabled to reset Extended System Configuration Data (ESCD) when you exit Setup if you have installed a new add-on and the system reconfiguration has caused such a serious conflict that the operating system can not boot.

- The choice: Enabled, Disabled .

### Resource controlled by

The Award Plug and Play BIOS has the capacity 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 such as Windows 95. If you set this field to "manual" choose specific resources by going into each of the sub menu that follows this field (a sub menu is preceded by a ">").

- The choice: Auto(ESCD), Manual.

---

### **IRQ Resources**

When resources are controlled manually, assign each system interrupt a type, depending on the type of device using the interrupt.

#### **IRQ3/4/5/7/9/10/11/12/14/15 assigned to**

This item allows you to determine the IRQ assigned to the ISA bus and is not available to any PCI slot. Legacy ISA for devices compliant with the original PC AT bus specification, PCI/ISA PnP for devices compliant with the Plug and Play standard whether designed for PCI or ISA bus architecture.

➤ The Choice: Reserved, PCI Device.

### **PCI/VGA Palette Snoop**

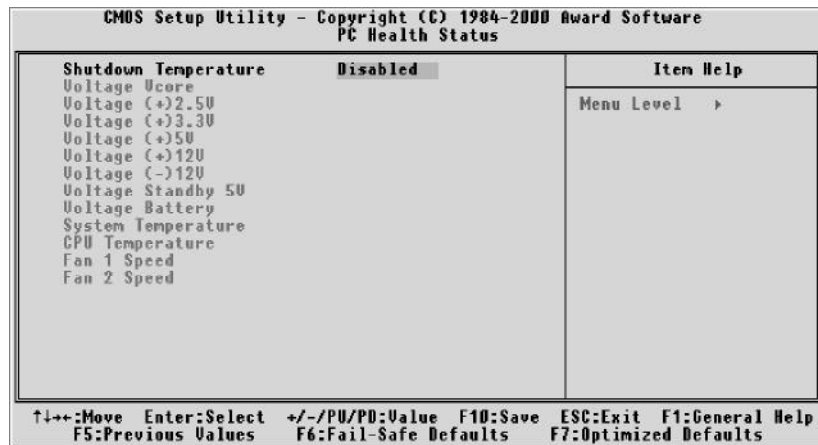
Leave this field at Disabled.

➤ The Choice: Enabled, Disabled.



---

## PC Health Status



**Note:** This screen will be shown up if optional features available.

### Shutdown Temperature

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.

➤ The choice: Disabled, 60°C/140°F, 65°C/149°F, 70°C/158°F.

### Voltage Vcore (+ 2.5V, + 3.3V, 5V, + 12V, -12V)

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.

### Voltage Standby 5V

5V standby voltage by ATX power.

### Voltage Battery

Monitor the output voltage of the a backup battery.

---

### **System Temperature**

Since the mainboard support CPU temperature monitoring and over-heat 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.

- The choice: Disabled, 50°C/122°F, 53°C/127°F, 56°C/133°F, 60°C/140°F, 63°C/145°F, 66°C/151°F, 70°C/158°F.

### **CPU Temperature**

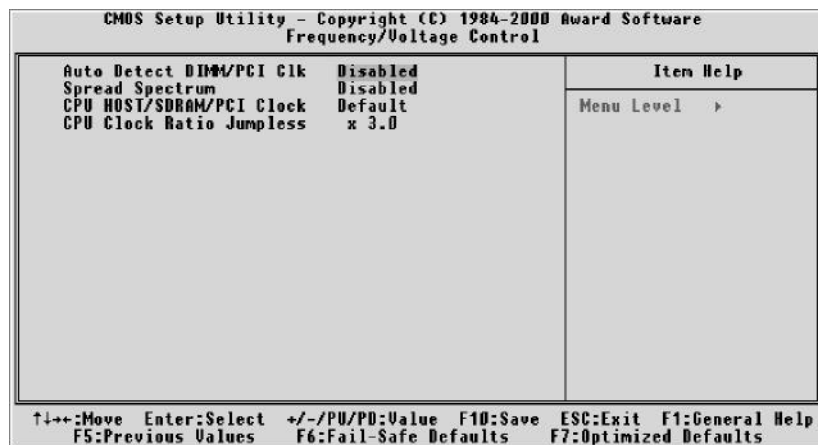
Since the mainboard support CPU temperature monitoring and overheat alert. This item indicate the current Processor temperature.

### **FAN 1/2 Speed**

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

---

## Frequency/Voltage Control



### Auto Detect DIMM/PCI Clk

This item allows you to enable/disable auto detect empty DIMM socket and PCI slot, and prevent any clock be send to then to reduce EMI.

- The choice: Enabled, Disabled.

### Spread Spectrum

This item allows you to enable/disable the spread spectrum modulate to reduce EMI.

- The choice: Enabled, Disabled.

### CPU HOST/SDRAM/PCI Clock

- The choice: Default, 66/100/33MHz, 100/100/33MHz, 133/100/33MHz, 66/133/33MHz, 100/133/33MHz, 133/133/33MHz, 66/66/33MHz, 97/97/33MHz, 95/95/33MHz.

### CPU Clock Ratio Jumpless

This item allows you to select the CPU ratio.

- The choice: By H/W, x3, x3.5, x4, x4.5, x5, x5.5, x6, x6.5, x7, x7.5, x8.

---

 **Load Fail-Safe Defaults**

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

Load Fail-Safe Defaults (Y/N) ? N

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

 **Load Optimized Defaults**

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

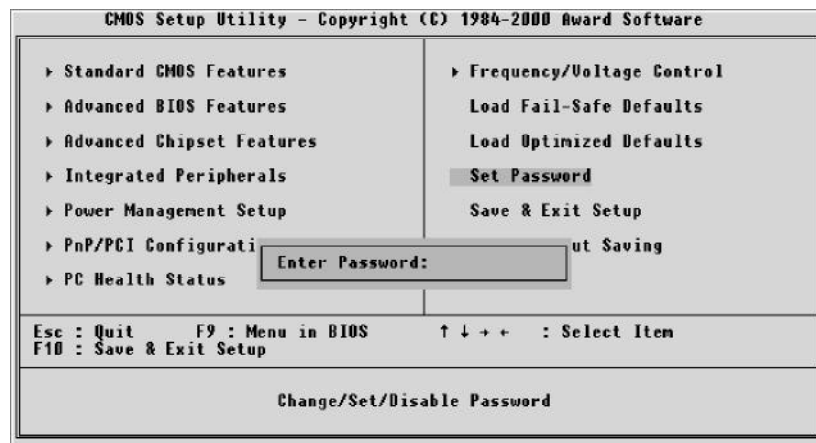
Load Optimized Defaults (Y/N) ? N

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

---

## Set Password

You can set either password. The differences between are:



### Set Password

The options on the Password screen menu make it possible to restrict access to the Setup program by enabling you to set passwords.

### 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, please refer to page 31 "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.