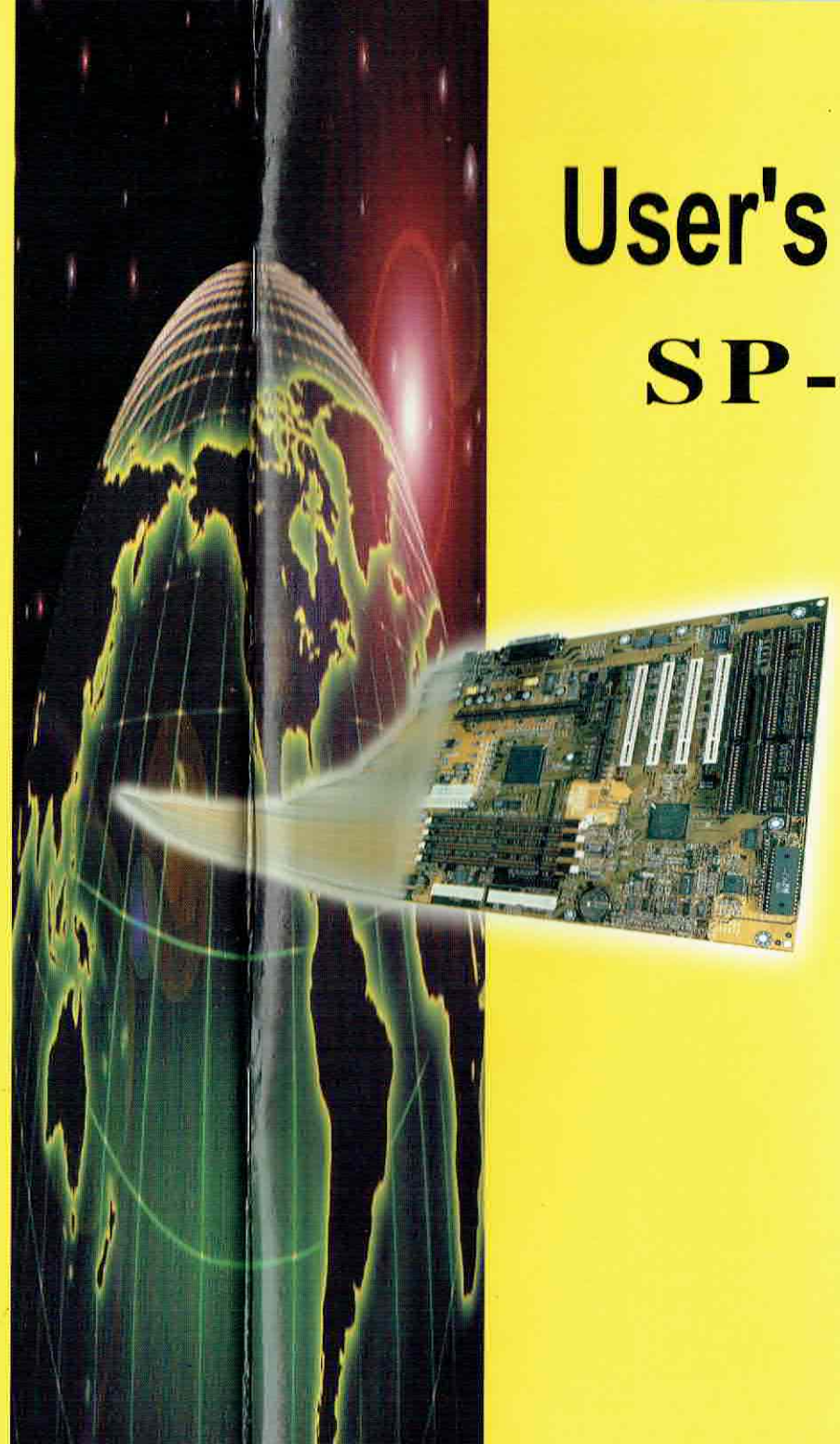
User's Manual

SP-6XS



ISO9001

CONTENTS

User's Manual

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Chapter 1 – Introduction

1.1. Package Checklist

This mainboard package contains the following items. Please inspect the package contents and confirm that everything is there. If anything is missing or damaged, call your vendor for instructions before proceeding. The package includes :

Item	Quantity
6XS Mainboard	1
Flat Cable : Floppy ribbon cable (34-pin)	1
IDE ribbon cable (40-pin)	1
User's Manual	1
Software Support CD-ROM	1
Retention Module	1

1.2. Specifications

Chipset	System	SiS 5600 / 5595
	I/O	SiS 6801 (or ITE8661)
CPU Support		Intel PENTIUM II ™ Series Processor (CPU Clock **66MHz** or **100MHz**)
CPU Host Clock	66MHz	66MHz, 75MHz, 83MHz, 95MHz.
	100MHz	100MHz, 112MHz, 124MHz, 133MHz
From Factor		ATX
BIOS Vendor		AWARD Green , Plug & Play
Voltage		Auto
Memory		Three 168-pin DIMMs [support EDO(3.3V)/ SDRAM / PC-100 MHz SDRAM]
Slots	ISA	Two 16-Bit ISA
	PCI	Four 32-Bit PCI
	AGP	One AGP(Accelerated Graphics Port) for high performance, component level interconnect targeted at 3D graphical display application
I/O		1. Two high speed 16550 compatible serial ports. 2. One Multi-Mode Parallel port fixed (SPP/EPP/ECP standard). 3. Two Universal Serial Bus ports (USB). 4. PS/2 keyboard and PS/2 mouse. 5. Two IDE ports ,supports four IDE devices (PIO mode 4, DMA mode 2, Ultra DMA 33), and LS-120/ZIP disk driver 6. Two720KB/1.2MB/1.44MB/2.88MB Floppy disk controller.
Other		1. System Temperature Sensor. 2. System Voltage Sensor. 3. Fan Speed Monitor. 4. Keyboard Password Power on. 5. CPU FAN control in Suspend ON/OFF. 6. Wake On LAN. 7. Modem Ring wake-up 8. CPU Temperature Sensor (Optional). 9. **SB-LINK** for PCI Sound (Optional).
Dimension		Four-Layer PCB ATX size (304mm X 180mm)
New Function		1. Trend **ChipAwayVirus** in BIOS & PC-cillin in CD diskette.

1.2.1. Technology

☺ AGP (Accelerated Graphics Port)

The system board is equipped with 1 AGP slot, AGP is an interface designed to support high performance 3D graphics card. It utilizes a dedicated pipeline to access system memory for texturing, z-buffering and alpha blending, delivering up to 533MB/sec. Bandwidth for 3D graphics applications. AGP in this Pentium II Processor based system board will deliver faster and better graphics with your PC.

☺ SDRAM (Synchronous Dynamic Random Access Memory)

The system board supports unbuffered SDRAM memory. SDRAM is a DRAM technology that uses the clock on the chip to synchronize with the CPU clock so that the timing of the memory chips and the timing of the CPU are synchronized. This saves time during transmission of data, subsequently increasing system performance.

☺ Ultra DMA-33 Bus Master IDE

Synchronous Ultra DMA mode provides data transfer rate up to a maximum of 33MB/sec. Which is twice the data transfer rate of Enhanced IDE or ATA-2. This enables the CPU to operate more efficiently when handing simultaneous events.

☺ ECC (Error Checking and Correction)

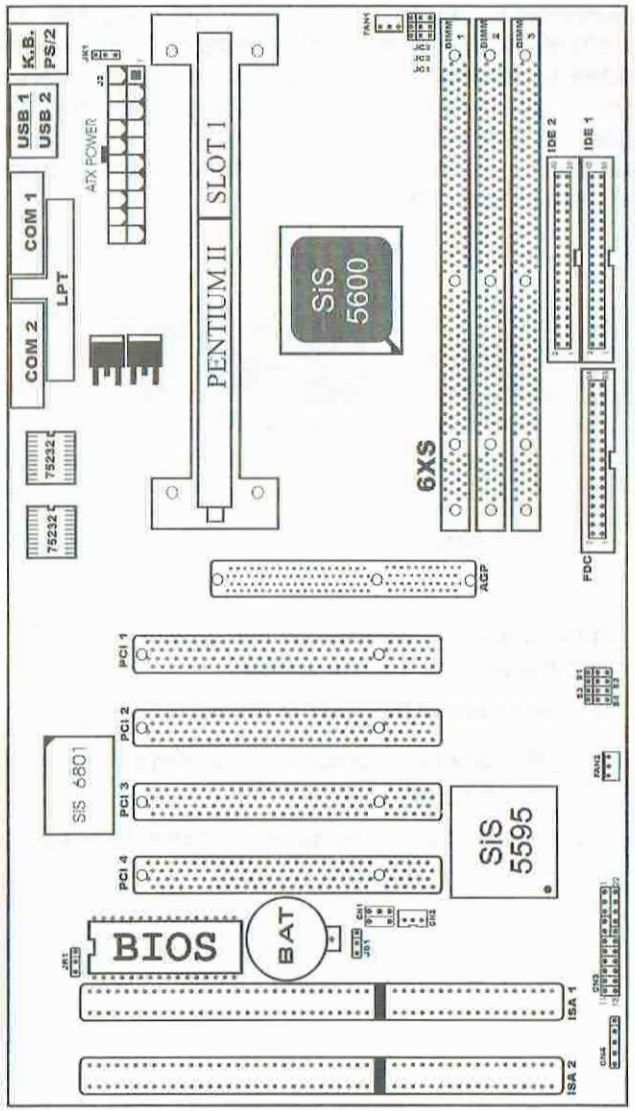
ECC is a function that allows the system to recover from memory failure. It detects single-bit and multiple-bit errors and corrects single-bit error thus providing uninterrupted processing of data. To use this function, you must install DIMM that supports parity. Refer to the "Installing System Memory" section in Chapter 2 (2.1.1.) of this manual.

☺ ACPI (Advanced Configuration and Power Interface)

The system board is designed to meet the ACPI specification. ACPI has energy saving features that enables PCs to implement Power Management and Plug–and–Play with operating systems that support OS Direct Power management.

Chapter 2 – Hardware Installation

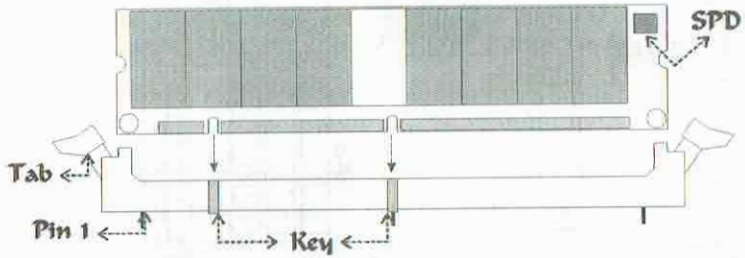
2.1. Mainboard Layout Drawing



2.2. Hardware Installation Steps

2.2.1. Installing System Memory

The mainboard is equipped with three 168-pin DIMM sockets, it supports 8MB, 32MB, 64MB, 128MB and 256MB to form a total memory size between 8MB to 768MB using x64 / x72, 3.3V , unbuffered, PC-66 SDRAM (Synchronous Dynamic Random Access Memory) DIMM for 66MHz front side bus processor, PC-100 SDRAM (Synchronous Dynamic Random Access Memory) DIMM for 100MHz front side bus processor, or EDO (Extended Data Output) DIMM, 3.3V .



A DIMM simply snaps into a socket on the system board. Pin 1 of the DIMM must correspond with pin 1 of the socket

☞ Pull the 'Tabs' which are at the ends of the socket to the side.

☞ Position the DIMM above the socket with the 'Keys' in the module aligned with the 'Keys' on the socket.

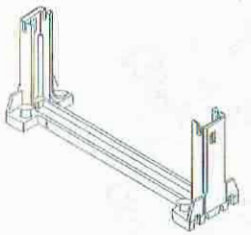
☞ Seat the module vertically into the socket. Make sure it is completely seated. The tabs will hold the DIMM in place.

2.2.2. Installing a Processor

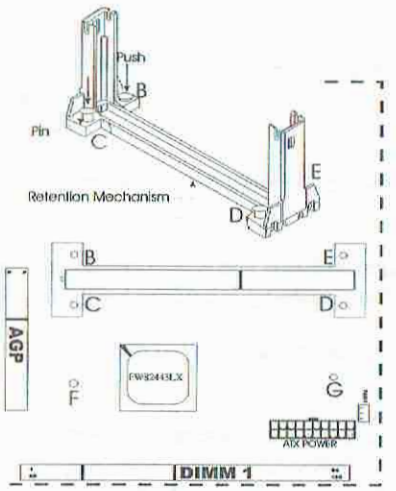
2.2.2.1. Installing the Retention Mechanism

The mainboard is equipped with a 242-pin processor slot for installing an Intel Pentium II processor . The mainboard comes with an easy-to-install Retention Mechanism package . The Retention Mechanism is used to hold an Intel Pentium II series processor to the processor slot, to install the Retention Mechanism , follow the steps below.

1. Unpack the Retention Mechanism package.



2. Hold the Retention Mechanism upright and position it above the processor slot .



3. Now slide the Retention Mechanism downward so that it fits over the processor slot. Firmly press the ends of the Retention Mechanism until it snaps into place. The Retention Mechanism will only fit in one direction. It

has a keying mechanism so that the notch on one of the inner side of the Retention Mechanism will fit into the key on one side of the processor slot.

4. Firmly press the 'pins' located at the four corners (B,C,D,E) of the Retention Mechanism to as far as it will go. These pins will stabilize the Retention Mechanism onto the mainboard.

5. Install the processor CPU into the Retention Mechanism , and slide the supports onto the pegs.

2.2.2.2. Installing OEM Processor

If you are using Intel Pentium II processor in OEM package, please follow the steps bellow.

1. Your OEM package may include Heat Sink Support mechanism, heatsink and processor .

2. Push the Heat Sink Support Base Top Bar sideways to free the Head Sink Support Top Bar from the Retaining Tab of the Heat Sink Support Base.

3. Remove the Heat Sink Support Pins located on each end of the Heat Sink Support Base.

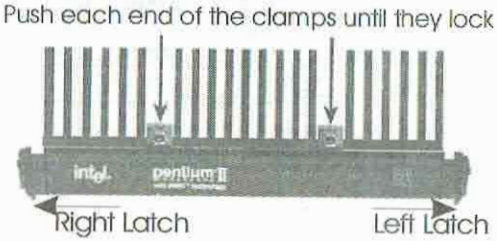
4. Install the Head Sink Support Base by pushing each side down firmly into hole F and G on the mainboard. (The Heat Sink Support Base can only be installed in one direction). Make sure it lock into place.

5. Replace the Head Sink Support Pins on each end of the Heat Sink Support Base. These pins will insert through the Heat Sink Support Base to secure it to the mainboard.

6. Hold the processor and push the latches toward the center of the processor until they click into place.

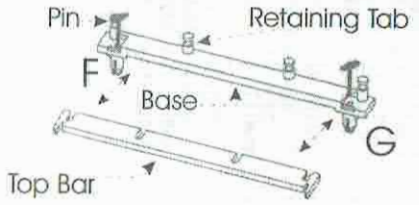
7. Hold the processor so that the headsink is facing toward the Heat Sink Support Base on the mainboard. Slide the processor into the Retention Mechanism. Ensure that the aligment notch in the processor fits into the plug in the processor slot. Push the processor down firmly, with even pressure on both sides of the top, until it is seated.

8. Push the latches on the processor outward until they click into place in the Retention Mechanism. The latches must be secured for proper electrical connection of the processor.

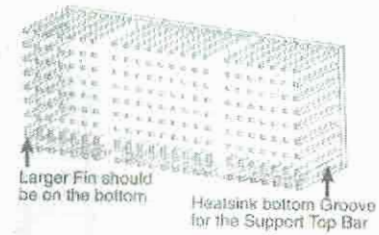


9. Slide the Heat Sink Support Top Bar into the heatsink until it locks into place.

10. Attach the small end of the power cable to the three-pin connector on the heatsink fan, than attach the large end fan connector to the three-pin fan connector on the mainboard.

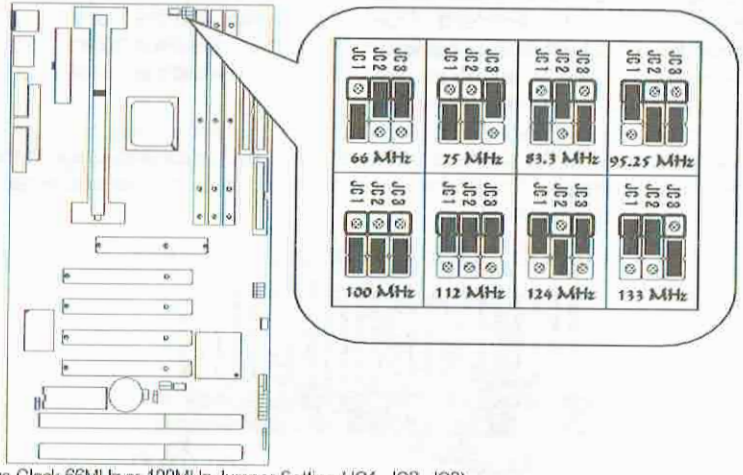


Heat Sink Support



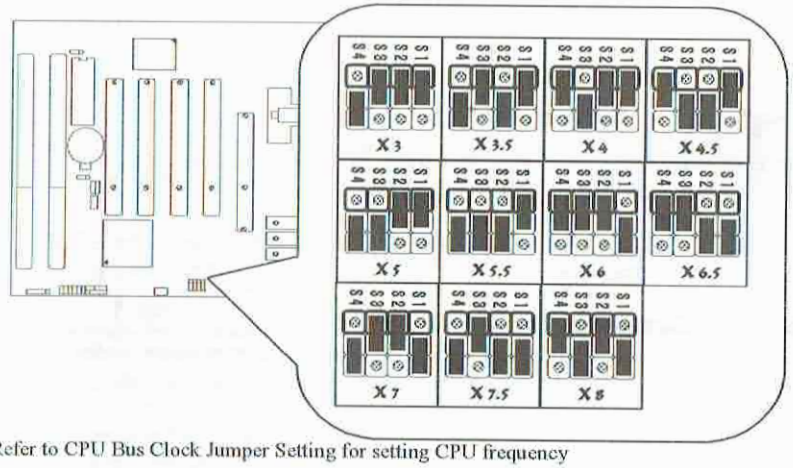
2.2.3. Jumper Setting for the Processor

※ CPU Bus Clock Jumper Setting :



CPU Bus Clock 66MHz or 100MHz Jumper Setting (JC1, JC2, JC3).

※ CPU Ratio Jumper Setting :



Refer to CPU Bus Clock Jumper Setting for setting CPU frequency

2.2.4. Quick Reference Tables of Processor Jumper Setting

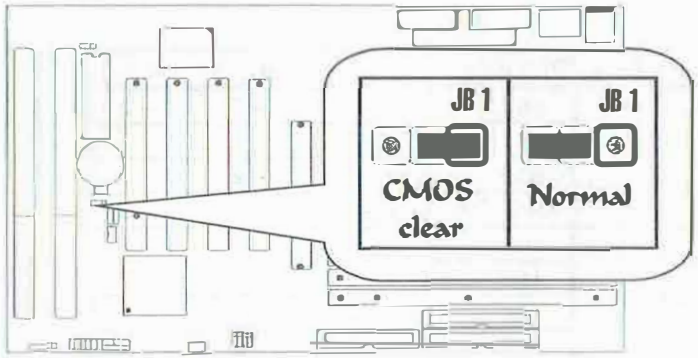
※ QUICK REFERENCE TABLES FOR SETTING CPU FREQUENCY :

CPU Ext. Freq.	BUS CLK	JC1	JC2	JC3
66 MHz	66	2 – 3	1 – 2	1 – 2
	75	2 – 3	2 – 3	1 – 2
	83.3	2 – 3	1 – 2	2 – 3
	95.25	1 – 2	2 – 3	2 – 3
100MHz	100	2 – 3	2 – 3	2 – 3
	112	1 – 2	1 – 2	1 – 2
	124	1 – 2	2 – 3	1 – 2
	133	1 - 2	1 – 2	2 – 3

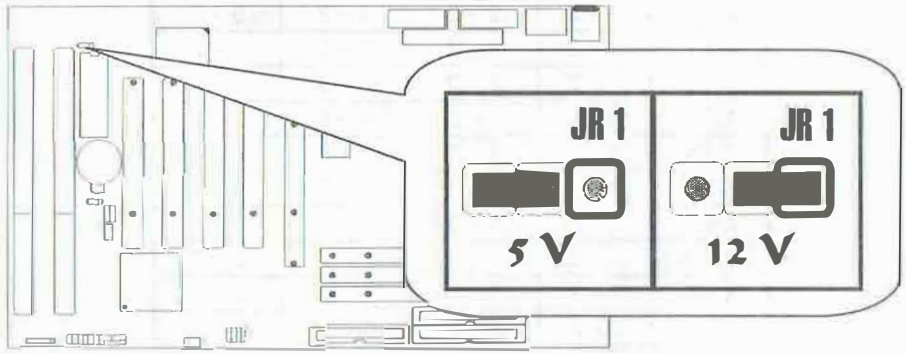
RATIO	S1	S2	S3	S4
X 3	1 – 2	1 – 2	1 – 2	2 – 3
X 3.5	1 – 2	2 – 3	1 – 2	2 – 3
X 4	1 – 2	1 – 2	2 – 3	1 – 2
X 4.5	1 – 2	2 – 3	2 – 3	1 – 2
X 5	1 – 2	1 – 2	2 – 3	2 – 3
X 5.5	1 – 2	2 – 3	2 – 3	2 – 3
X 6	2 – 3	1 – 2	1 – 2	1 – 2
X 6.5	2 – 3	2 – 3	1 – 2	1 – 2
X 7	2 – 3	1 – 2	1 – 2	2 – 3
X 7.5	2 – 3	2 – 3	1 – 2	2 – 3
X 8	2 – 3	1 – 2	2 – 3	1 – 2

2.2.5. Other Jumper Settings on the Mainboard

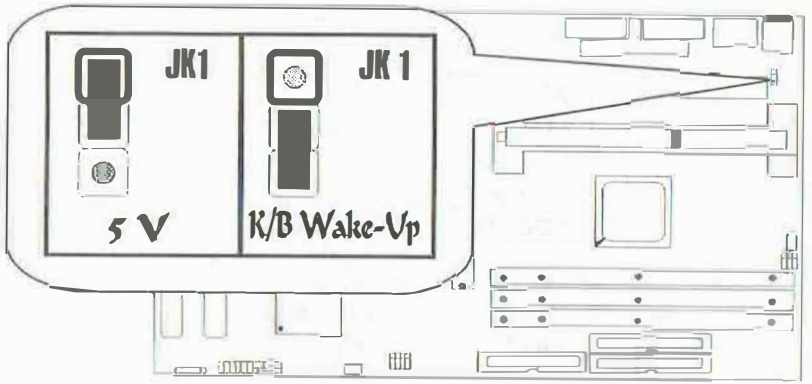
2.2.5.1. Jumper Setting for CMOS Clear



2.2.5.2. Jumper Setting for BIOS flash ROM type

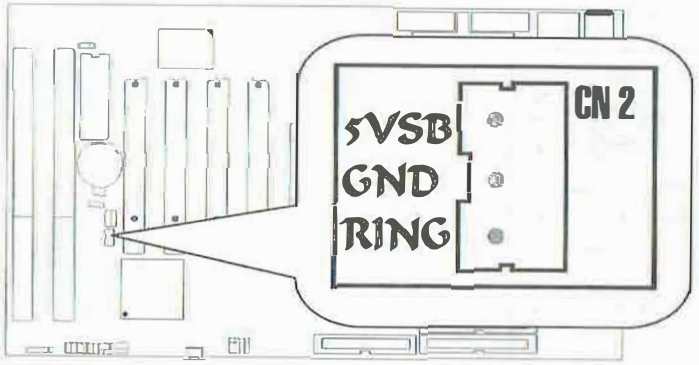


2.2.5.3. Jumper Setting for Keyboard Wake-Up



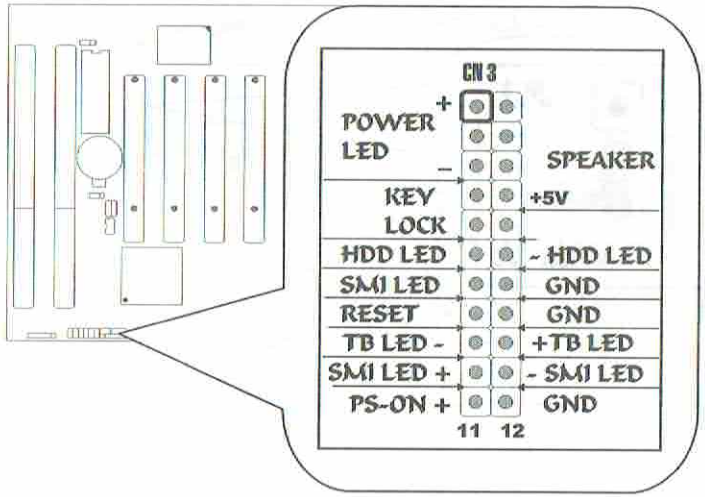
2.2.6. Ports and Connectors on the Mainboard

2.2.6.1. Connector for Wake On LAN

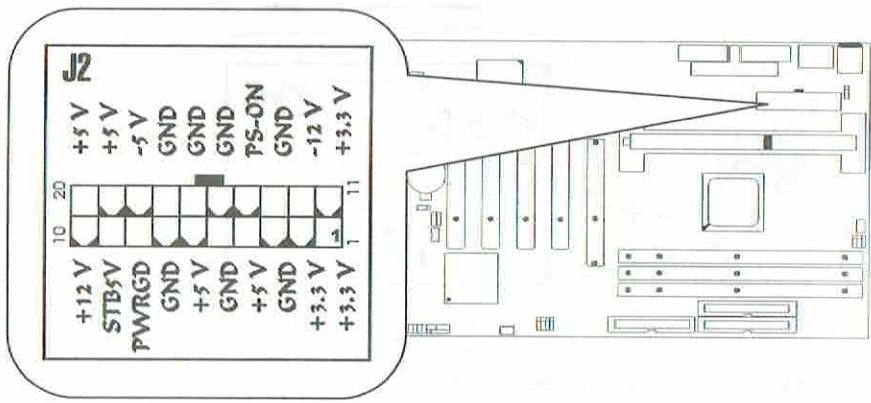


Wake On LAN require 5V stand-by

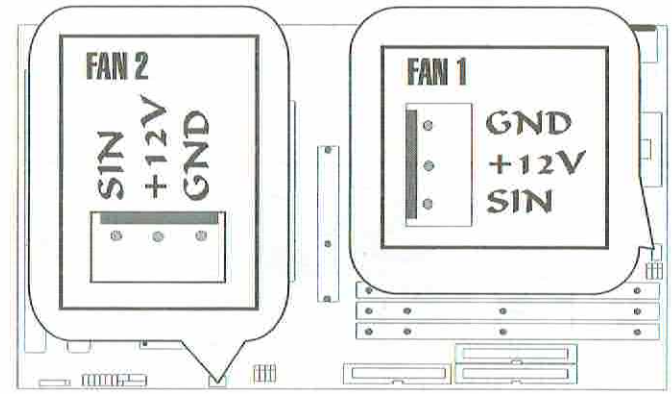
2.2.6.2. Connector for System Panel



2.2.6.3. Connector for ATX Power



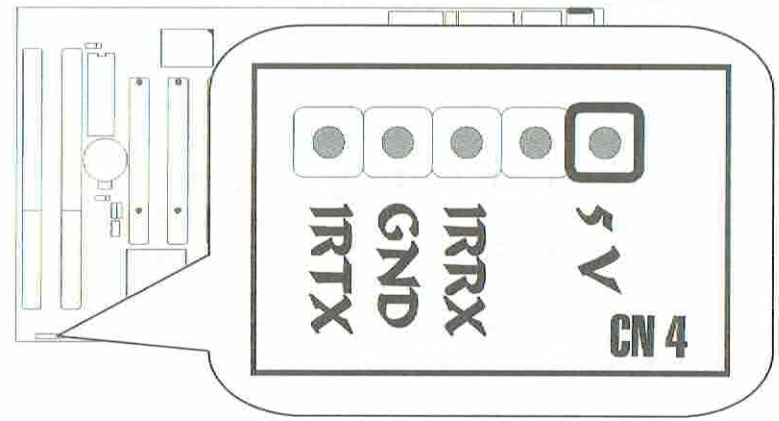
2.2.6.4. Connector for CPU & System FAN



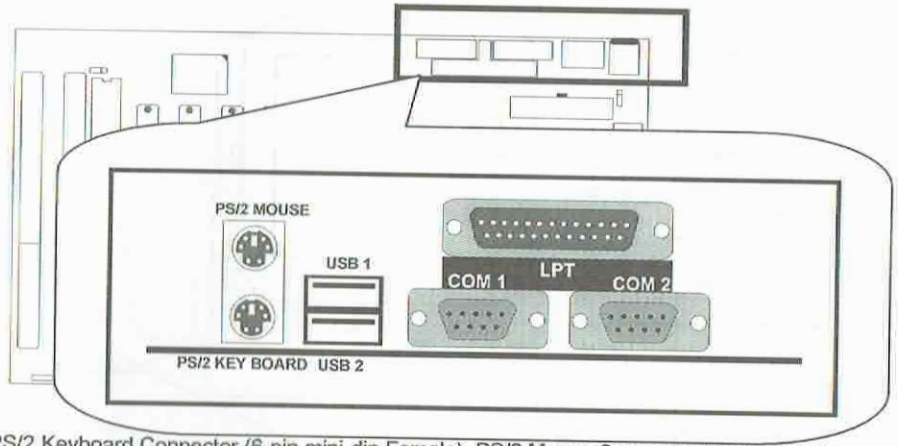
FAN1 – Normally used for "CPU FAN"

FAN2 – Normally used for "System FAN"

2.2.6.5. Connector for InfraRed (IR)

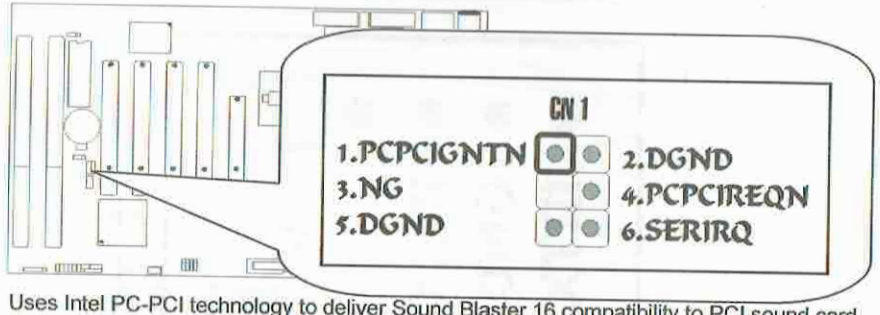


2.2.6.6. Connector for External Panel



PS/2 Keyboard Connector (6-pin mini-din Female), PS/2 Mouse Connector (6-pin mini-din Female), USB (Universal Serial Bus) Port Connector (Two 9-pin Female), LPT Parallel Printer Connector (25-pin D-sub Female), Serial Port COM1 and COM2 Connector (Two 9-pin D-sub Male).

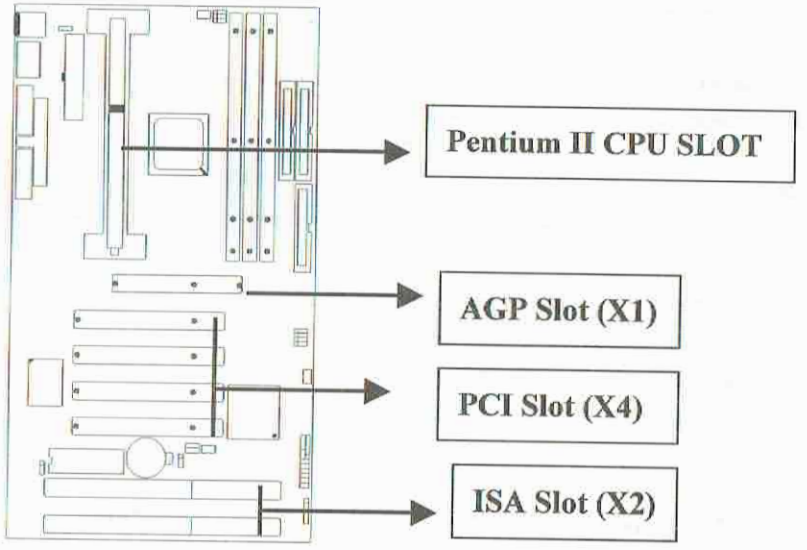
2.2.6.7. Connector for SB-Link (Optional)



Uses Intel PC-PCI technology to deliver Sound Blaster 16 compatibility to PCI sound card (AWE64D) , enabling users to play Real-Mode DOS game.

2.2.7. Installing Expansion Cards

2.2.7.1. Expansion Slots on the Mainboard



2.2.7.2. Installing Steps

1. Switch off computer's power.
2. Locate for a free expansion slot on the system chassis. Remove the screw and slot cover. Save the slot cover for future use.
3. Unpack the expansion card. Refer to the expansion card user's manual for any hardware settings such as jumpers.
4. Position the expansion card above the free slot. When the card's edge – connector is aligned with the slot, press firmly on the top of the card to seat it. Secure it with the screw you removed in step2.
5. Replace the computer's cover and switch on the power.

2.2.7.3. Assigning an IRQ for an Expansion Card

The system has a total of 16 IRQs but most of them have been used by different components on the system leaving only 6 free IRQs available for expansion cards. There are 2 types of ISA cards : Legacy (configured manually using jumpers) and PnP (IRQs are assigned automatically). When both type of cards exist, assign an IRQ for the Legacy cards first. The PnP card will then automatically be assigned an IRQ that has not been used by the Legacy cards.

After all ISA cards have been assigned an IRQ, the PCI cards will then be automatically assigned an IRQ.

Refer to the "Resources Controlled By" field in the PNP/PCI Configuration setup of the BIOS for more information.

To view the used and free IRQs. If you are using Windows 95, double-click 'My Computer' in the Windows 95 desktop. In 'My Computer' , select 'Control Panel'. In 'Control Panel', select 'System'. In 'System', select 'Device Manager' . In 'Device Manager' , select a device to view the interrupt and IRQ used.

2.2.7.4. Assigning an DMA Channel for an Expansion Card

The same method (described above) is applied when assigning a DMA channel to an expansion card. Refer to the "Resources Controlled By" field in the PNP/PCI Configuration setup of the BIOS for more information.

Chapter 3 – AWARD BIOS Setup Utility

3.1. Introduction

This manual discusses Award's Setup program built into the ROM BIOS. The Setup program allows users to modify the basic system configuration. This special information is then stored in battery back-up RAM so that it retains the Setup information when the power is turned off.

The Award Basic Input / Output System (BIOS) has been customized by adding important, but non-standard, features such as virus and password protection as well as special support for detailed fine-tuning of the chipset controlling the entire system.

The rest of this manual is intended to guide you through the process of configuring your system using Setup.

Starting Setup

The Award BIOS is immediately activated when you first power on the computer. The BIOS reads the system information contained in the CMOS and begins the process of checking out the system and configuring it. When it finishes, the BIOS will seek an operating system on one of the disks and then launch and turn control over to the operating system.
While the BIOS is in control, the Setup program can be activated in one of two ways:

1. By pressing <Del> immediately after switching the system on, or
2. by pressing the <Del> key when the following message appears briefly at the bottom of the screen during the POST (Power On Self Test).

Press <DEL> to enter SETUP.

If the message disappears before you respond and you still wish to enter Setup, restart the system to try again by turning it OFF then ON or pressing the "RESET" button on the system case. You may also restart by simultaneously pressing <Ctrl>, <Alt>, and <Delete> keys. If you do not press the keys at the correct time and the system does not boot, an error message will be displayed and you will again be asked to...

PRESS <F1> TO CONTINUE, <DEL> TO ENTER SETUP

Chapter3 - AWARD BIOS Setup Utility

3.1.1. Main Menu

ROM PCI / ISA BIOS
CMOS SETUP UTILITY
AWARD SOFTWARE, INC.

STANDARD CMOS SETUP	INTEGRATED PERIPHERALS
BIOS FEATURES SETUP	PASSWORD SETTING
CHIPSET FEATURES SETUP	IDE HDD AUTO DETECTION
POWER MANAGEMENT SETUP	HDD LOW LEVEL FORMAT
PNP/PCI CONFIGURATION	SAVE & EXIT SETUP
LOAD BIOS DEFAULTS	EXIT WITHOUT SAVING
LOAD SETUP DEFAULTS	
Esc : Quit	↑↓→← : Select Item
F10 : Save & Exit setup	(Shift)F2 : Change Color

Virus Protection, Boot Sequence....

Once you enter the Award BIOS 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.

Setup Items

The main menu includes the following main setup categories. Recall that some systems may not include all entries.

Chapter3 - AWARD BIOS Setup Utility

3.1.2. Standard CMOS Setup

ROM PCI / ISA BIOS
STANDARD CMOS SETUP
AWARD SOFTWARE, INC.

Date (mm: dd: yy) : Wed, Jul, 29, 1998/9/25
Time (hh: mm: ss) : 9 : 25 : 5

HARD DISK	TYPE	SIZE	CYLS	HEAD	PRECOMP	LANDZ	SECTOR	MODE
Primary Master	: Auto	0	0	0	0	0	0	Auto
Primary Slave	: Auto	0	0	0	0	0	0	Auto
Secondary Master	: Auto	0	0	0	0	0	0	Auto
Secondary Slave	: Auto	0	0	0	0	0	0	Auto

Drive A : 1.44M, 3.5in.
Drive B : None

Video : EGA/VGA
Halt On : All Errors

Base Memory :	640K
Extended Memory :	261120K
Other Memory :	384K
Total Memory :	262144K

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

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.

* DATE

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

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

* TIME

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

* DAYLIGHT SAVING

The category adds one hour to the clock when daylight-saving time begins. It also subtracts one hour when standard time returns.

Enabled	Enable daylight-saving
Disabled	Disable daylight-saving

* Primary Master/ Primary Slave/ Secondary Master/ Secondary Slave

The categories identify the types of 2 channels that have been installed in the computer. There are 45 predefined types and 4 user definable types are for Enhanced IDE BIOS. Type 1 to Type 45 are predefined. Type user is user-definable.

Press PgUp or PgDn to select a numbered hard disk type or type the number and press <Enter>. Note that the specifications of your drive must match with the drive table. The hard disk will not work properly if you enter improper information for this category. If your hard disk drive type is not matched or listed, you can use Type "User" to define your own drive type manually.

If you select Type "User", you will need to know the information listed below. Enter the information directly from the keyboard and press <Enter>. This information should be included in the documentation from your hard disk vendor or the system manufacturer.
If the controller of HDD interface is ESDI, the selection shall be "Type 1".
If the controller of HDD interface is SCSI, the selection shall be "None".

If you select Type "Auto", BIOS will Auto-Detect the HDD & CD-ROM Drive at the POST stage and showing the IDE for HDD & CD-ROM Drive.

TYPE	drive type
CYLS.	number of cylinders
HEADS	number of heads
PRECOMP	write precom
LANDZONE	landing zone

SECTORS	number of sectors
MODE	mode type

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

* Drive A Type/ Drive B Type

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

The choice : None, 360K (5.25in) , 1.2M (5.25in) , 720K (3.5in), 1.44M (3.5in), 2.88M (3.5in) .

* VIDEO

The category selects the type of video adapter used for the primary system monitor. Although secondary monitors are supported, you do not have to select the type in Setup.

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

* HALT ON

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

The choice: No errors, All errors; All, But Keyboard; All, But Diskette; All, But Disk/Key .

* MEMORY

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

Base Memory

The POST will determine the amount of base (or conventional) memory installed in the system. The value of the base memory is typically 512K for systems with 512K memory installed on the motherboard, or 640K for systems with 640K or more memory installed on the motherboard.

Extended Memory

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

Other Memory

This refers to the memory located in the 640K to 1024K address space. This is memory that can be used for different applications. DOS uses this area to load device drivers in an effort to keep as much base memory free for application programs. The BIOS is the most frequent user of this RAM area since this is where it shadows RAM

3.1.3. BIOS Features Setup

ROM PCI / ISA BIOS
BIOS FEATURES SETUP
AWARD SOFTWARE, INC.

ChipAwayVirus on Guard	: Enabled	Video BIOS Shadow	: Enabled
CPU Internal Cache	: Enabled	C8000-CBFFF Shadow	: Disabled
External cache	: Enabled	CC000-CFFFF Shadow	: Disabled
CPU L2 Cache ECC Checking	: Enabled	D0000-D3FFF Shadow	: Disabled
Quick Power On Self Test	: Enabled	D4000-D7FFF Shadow	: Disabled
Boot Sequence	: A, C, SCSI	D8000-DBFFF Shadow	: Disabled
Swap Floppy Drive	: Disabled	DC000-DFFFF Shadow	: Disabled
Boot Up Floppy Seek	: Enabled		
Boot Up Numlock Status	: On		
Boot Up System Speed	: High		
Memory Parity Check	: Enabled		
Typematic Rate Setting	: Disabled		
Typematic Rate (Chars/Sec)	: 6		
Typematic Delay (Msec)	: 250		
Security Option	: Setup	Esc : Quit	↑↓→← : Select Item
PCI/VGA Palette Snoop	: Disabled	F1 : Help	PU/PD/+/- : Modify
Assign IRQ for VGA	: Yes	F5 : Old Values	(Shift)F2 : Color
OS Select For DRAM > 64MB	: Non-OS2	F6 : Load BIOS Defaults	
Report No FDD For WIN 95	: Yes	F7 : Load Setup Defaults	

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

* ChipAwayVirus on Guard

When this item is *Trend ChipAwayVirus (TCAV) on Guard.* Boot Viruses pose the most severe threat because they can move from a floppy diskette to your hard drive in less then a second. And it all happens during the loading of the boot sector. Provides a virus-free boot and operating system, experience peace of mind though hardware-base virus protection, detects known and unknown boot viruses with rule-based technology, receive immediate protection! Already installed on this board!.

The Choice: Enabled, Disabled .

* CPU Internal Cache/ External Cache

These two categories speeds up memory access. However, it depends on CPU /Chipset design. The default value is enable.

The Choice: Enabled, Disabled .

* Quick Power On Self Test

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

The Choice: Enabled, Disabled .

* Boot Sequence

This category determines which driver to search first for the disk operating system (i.e.,DOS). Default value is A,C.

The Choice: A,C,SCSI ; C,A,SCSI ; C,CDROM,A ; CDROM,C,A ; D,A,SCSI ; SCSI,A,C ; SCSI,C,A ; C only ; LS/ZIP,C .

* Swap Floppy Driver

This item allows you to determine whether enable the swap floppy driver or not.

The Choice: Enabled, Disabled .

* Boot Up Floppy Seek

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

The Choice: Enabled, Disabled .

* Boot Up Numlock Status

This allows you to determine the default status of the numeric keypad. By default, the system boots up with NumLock on .

The Choice: On , Off .

* Typematic Rate Setting

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

The Choice: Enabled, Disabled .

* Typematic Rate (Chars/Sec)

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

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

* Typematic Delay (Msec)

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

The Choice: 250, 500, 750, 1000 .

* Security Option

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

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 > 64 MB

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

The Choice: Non-OS2 , OS2 .

* PCI / VGA Palette Snoop

It determines whether the MPEG ISA / VESA VGA Cards can work with PCI / VGA or not .

The Choice: Enabled, Disabled .

* 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 copied to RAM. An example of such option ROM would be support of on-board SCSI.

The Choice: Enabled, Disabled .

3.1.4. Chipset Features Setup

ROM PCI / ISA BIOS
CHIPSET FEATURES SETUP
AWARD SOFTWARE, INC.

Auto Configuration	: Enabled	AGP Aperture Size	: 64MB
RAS Pulse Width Refresh	: 5T	System BIOS Cacheable	: Enabled
RAS Precharge Time	: 3T	Video BIOS Cacheable	: Enabled
RAS to CAS Delay	: 2T	Memory Hole at 15M-16M	: Disabled
CPU to PCI Post Write	: Enabled		
Starting Point of Paging	: 2T		
ECC Function for Bank 0	: Disabled		
ECC Function for Bank 1	: Disabled		
ECC Function for Bank 2	: Disabled		
SDRAM CAS Latency	: 3T		
SDRAM WR Retire Rate	: X-2-2-2		
SDRAM Wait State Control	: 1WS		
RAMW# Assertion Timing	: 3T		
CAS Precharrge Time (EDO)	: 2T		
CAS# Pulse Width for EDO	: 2T	Esc : Quit	↑↓→← : Select Item
CAS Precharrge Time (FP)	: 2T	F1 : Help	PU/PD/+/- : Modify
CAS# Pulse Width for FP	: 2T	F5 : Old Values	(Shift)F2 : Color
CPU to PCI Burst Mem. WR	: Disabled	F6 : Load BIOS Defaults	
SDRAM Input Signals	: Delay 0.5ns	F7 : Load Setup Defaults	
SDRAM Output Signals	: Lead 0.0ns		

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.

DRAM SETTING

The first chipset settings deal with CPU access to dynamic random access memory (DRAM). The default timings have been carefully chosen and should only be altered if data is being lost. Such a scenario might well occur if your system had mixed speed DRAM chips installed. So that greater delays may be required to preserve the integrity of the data held in the slower memory chips.

* Auto Configuration

This item allows you selects pre-determined optimal values for chipset parameters. When Disabled, chipset parameters revert to setup information stored in CMOS. Many fields in this screen are not available when Auto Configuration is Enabled.

The Choice: Enabled, Disabled.

Note: When this item is enabled, the pre-defined items will become SHOW-ONLY.

* RAS Pulse Width Refresh

The system designer must select the number of CPU clock cycles allotted for the RAS pulse refresh, according to DRAM specifications.

The Choice: 3T, 4T, 5T, 6T, 7T.

* RAS Precharge Time

The precharge time is the number of cycles it takes for the RAS to accumulate its charge before DRAM refresh. If insufficient time is allowed, refresh may be incomplete and the DRAM may fail to retain data.

The Choice: 2T, 3T, 4T, 5T.

* RAS to CAS Delay

When DRAM is refreshed, both rows and columns are addressed separately. This setup item allows you to determine the timing of the transition from RAS (row address strobe) to CAS (column address strobe).

The Choice: 2T, 3T, 4T, 5T.

* CPU to PCI Post

Select enabled to use a fast buffer for posting writes to memory. Using a fast buffer releases the CPU before completion of a write cycle to DRAM.

The Choice: Enabled, Disabled .

* Starting Point of Paging

This value controls the start timing of memory paging operations.

The Choice: 1T, 2 T, 4T, 8T .

* ECC Function for Bank 0/1/2

Enabled/Disabled the ECC function for Bank 0/1/2.

The Choice: Enabled, Disabled .

* SDRAM CAS Latency

When synchronous DRAM is installed, the number of clock cycles of CAS latency depends on the DRAM timing. Do not reset this field from the default value specified by the system designer.

The Choice: 2T, 3T .

* SDRAM WR Retire Rate

The system designer must select the correct timing for data transfers from the write buffer to memory, according to DRAM specifications..

The Choice: 0WS, 1WS.

* RAMW# Assertion Timing

RAMW is an output signal to enable local memory writes. The system designer select "Normal" or "Faster" (by one time tick) according to DRAM specifications.

The Choice: 2T, 3T.

* CAS Precharge Time (EDO)

Select the number of CPU clocks allocated for the CAS# signal to accumulate its charge before the EDO RAM is refreshed. If insufficient time is allowed, refresh may be incomplete and data lost.

The Choice: 1T, 1T/2T, 2T.

* CAS# Pulse Width for EDO

The system designer must set duration of a CAS signal pulse (in timer tick).

The Choice: 1T, 2T.

* CAS Precharge Tine (FP)

This item allows you to select CAS precharge time for FP RAM.

The Choice: 1T, 1T/2T, 2T.

* CAS# Pulse Width for FP

The system designer must set duration of a CAS signal pulse for FP RAM.

The Choice: 1T, 2T.

* CPU to PCI Burst Mem. WR

Select enabled permits PCI burst memory write cycles, for faster performance. When disabled, performance is slightly slower, but more reliable.

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 for AGP information.

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

* 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 BIOS Cacheable

Selecting Enabled allows caching of the system BIOS ROM at C0000h-F7FFFh, resulting in better system performance. However, if any program writes to this memory area, a system error may result.

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.

3.1.5. Power Management Setup

ROM PCI / ISA BIOS
POWER MANAGEMENT SETUP
AWARD SOFTWARE, INC.

ACPI function	: Enabled	VGA Activity	: Enabled
Power Management	: User Define	IRQ[3-7 , 9-15] , NMI	: Enabled
PM Control by APM	: Yes	IRQ 8 Break Suspend	: Disabled
Video Off Option	: Susp,stby->off	Power ON Function	: Instant of
Video Off Method	: DPMS Supported	Power ON by Ring	: Enabled
MODEM Use IRQ	: 3	K/B Power On Password	: Enter
		Resume by Alarm	: Disabled
		Month Alarm	: NA
** PM Timers	**	Day Of Month Alarm	: 0
HDD off After	: Disabled	Week Alarm	
Doze Mode	: Disabled	*** SUN MON TUE WED THU FRI SAT ***	
Standby Mode	: Disabled	Off Off Off Off Off Off Off	
Suspend Mode	: 10 Min	Time (hh:mm:ss)Alarm : 0: 0: 0	
** PM Events	**	Esc : Quit	↑↓→← : Select Item
HDD Ports Activity	: Enabled	F1 : Help	PU/PD/+/- : Modify
COM Ports Activity	: Enabled	F5 : Old Values	(Shift)F2 : Color
LPT Ports Activity	: Enabled	F6 : Load BIOS Defaults	
		F7 : Load Setup Defaults	

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

* Power Management

This option allows you to select the type (or degree) of power saving for Doze, Standby, and Suspand modes. See the section PM Timers for a brief description of each mode.

This table describes each power management mode :

Disable	No power management. Disables all four modes
Min. Power Saving	Minimum power management. Doze Mode = 1 hr. Standby Mode = 1 hr., Suspend Mode = 1 hr., and HDD Power Down = 15 min.
Max. Power Saving	Maximum power management -- ONLY AVAILABLE FOR SL CPU'S. Doze Mode = 1 min., Standby Mode = 1 min., Suspend Mode = 1 min., and HDD Power Down = 1 min.

User Defined	Allows you to set each mode individually. When not disabled, each of the ranges are from 1 min. to 1 hr. except for HDD Power Down which ranges from 1 min. to 15 min. and disable.

* PM Control APM

When enabled, an Advanced Power Management device will be activated to enhance the Max. Power Saving mode and stop the CPU internal clock. If Advance Power Management (APM) is installed on your system, selecting Yes gives better power savings.
If the Max. Power Saving is not enabled, this will be preset to *No*.

* 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 systems 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.

* 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.

* Standby Mode

When enabled and after the set time of system inactivity, the fixed disk drive and the video would be shut off while all other devices still operate at full speed.

* Doze Mode

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

* Suspend Mode

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

PM Events

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.

* HDD Ports Activity

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

* COM Ports Activity

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

* LPT Ports Activity

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

* VGA Activity

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

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

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

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

* **IRQ [3-7, 9-15], NMI**
* **IRQ 8 Break Suspend :** You can Enabled or Disable monitoring of IRQ 8 (the Real Time Clock) so it does not awaken the system from Suspend mode.

* Power ON Function

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.

* Power ON by Ring

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

The choice: Enabled, Disabled.

* Resume 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

Select a month (1 – 12) or NA if you want the alarm active during all months.

* Day of Month Alarm

Select a date in the month. Select 0 (zero) if you prefer to set a weekly alarm (below).

* Week Alarm

Turn the alarm ON and OFF on specific days.

* Time (hh:mm:ss) Alarm

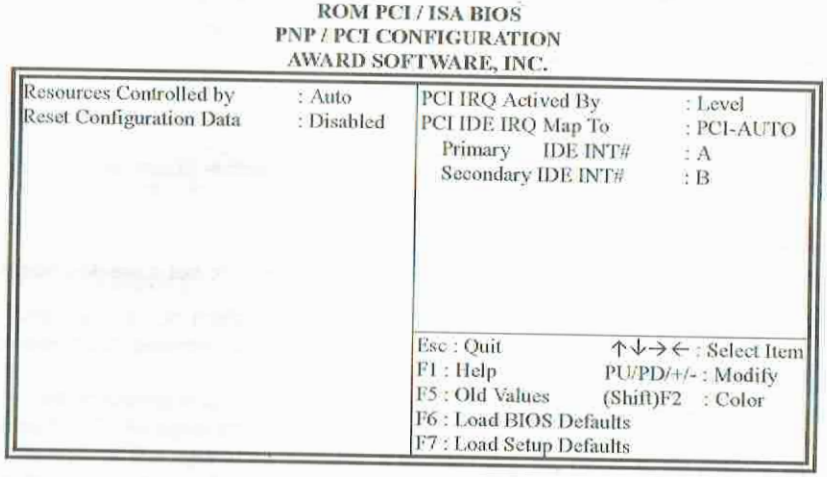
Set the time you want the alarm to go off on the day when it's activated.

* Keyboard Power On Password

This item allows you to select which way to power on your computer. The choices are **"Enter"** is select Keyboard Password power on, you can see "Enter Password" , key 1 ~ 8 latter, double check again your password, "Confirm Password".

> **NOTE:** If you forget the Password you set before, you can read page CMOS Clear to reset your CMOS

3.1.6. 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.

* 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.

The choice: Auto and Manual.

* 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 and Disabled .

* IRQ 3/4/5/7/9/10/11/12/14/15 Assigned To

When resources are controlled manually, assign each system interrupt as one of the following types, depending on the type of device using the interrupt:

Legacy ISA Devices compliant with the original PC AT bus specification, requiring a specific interrupt (such as IRQ4 for serial port 1). PCI/ISA PnP Devices compliant with the Plug and Play standard, whether designed for PCI or ISA bus architecture.

The choice: Legacy ISA and PCI/ISA PnP.

* DMA 0/1/3/5/6/7 Assigned To

When resources are controlled manually, assign each system DMA channel as one of the following types, depending on the type of device using the interrupt:

Legacy ISA Devices compliant with the original PC AT bus specification, requiring a specific interrupt (such as IRQ4 for serial port 1). PCI/ISA PnP Devices compliant with the Plug and Play standard, whether designed for PCI or ISA bus architecture.

The choice: Legacy ISA and PCI/ISA PnP.

* PCI IRQ Activated By

This sets the method by which the PCI bus recognizes that an IRQ service is being requested by a device. Under all circumstances, you should retain the default configuration unless advised otherwise by your system manufacturer.

The choice: Level (default) and Edge.

* PCI IDE IRQ Map To

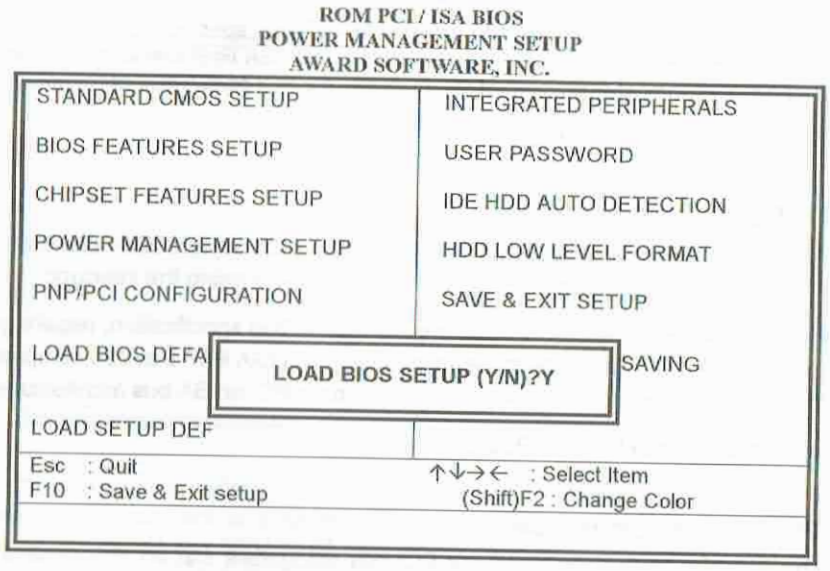
This allows you to configure your system to the type of IDE disk controller in use. By default, Setup assumes that your controller is an ISA (Industry Standard Architecture) device rather than a PCI controller. The more apparent difference is the type of slot being used.

If you have equipped your system with a PCI controller, changing this allows you to specify which slot has the controller and which PCI interrupt (A, B,C or D) is associated with the connected hard drives.

Remember that this setting refers to the hard disk drive itself, rather than individual partitions. Since each IDE controller supports two separate hard drives, you can select the INT# for each. Again, you will note that the primary has a lower interrupt than the secondary as described in "*Slot x Using INT#*" above.

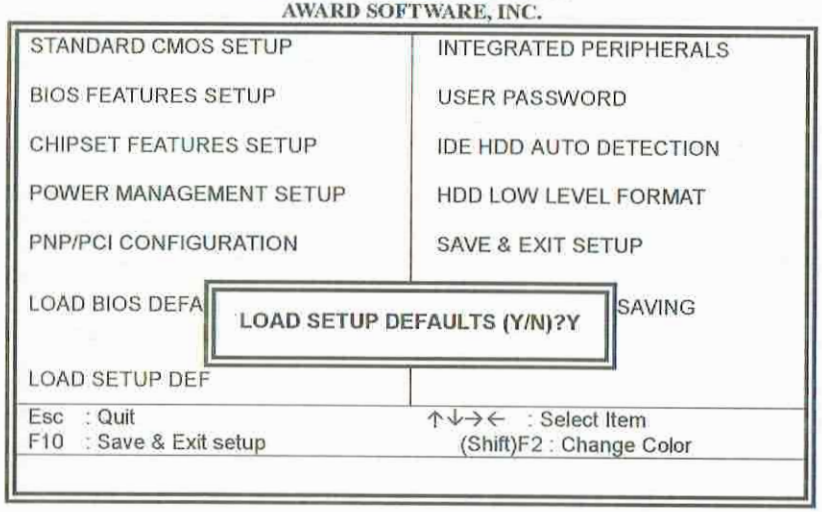
Selecting "P*CI Auto*" allows the system to automatically determine how your IDE disk system is configured.

3.1.7. Load BIOS Setup



This *Load BIOS Defaults* option allows you to load the troubleshooting default values permanently stored in the BIOS ROM . These default setting are non-optimal and disable all high performance features. To load these default setting, highlight *Load BIOS Defaults* on the main screen and then press the <Enter> key. The system displays a confirmation massage on the screen. Press the <Y> key and then the <Enter> key to confirm. Press the <N> key and then the <Enter> key to abort. This feature does not affect the fields on the Standard CMOS Setup screen.

3.1.8. Load BIOS Defaults



This *Load Setup Defaults* option allows you to load the default values to the system configuration fields. These default values are the optimized configuration settings for the system. To load these default values, highlight *Load Setup Defaults* on the main screen and then press the <Enter> key. The system displays a confirmation message on the screen. Press the <Y> key and then the <Enter> key to confirm. Press the <N> key and then the <Enter> key to abort. This feature does not affect the fields on the Standard CMOS Setup screen.

3.1.9. Integrated Peripherals

ROM PCI / ISA BIOS
INTEGRATED PERIPHERALS
AWARD SOFTWARE, INC.

Internal PCI / IDE	: Both	PS/2 mouse function	: Enabled
IDE Primary Master PIO	: Auto	USB Controller	: Enabled
IDE Primary Slave PIO	: Auto	USB Keyboard Support	: Disabled
IDE Secondary Master PIO	: Auto		
IDE Secondary Slave PIO	: Auto	Init Display First	: PCI Slot
Primary Master UltraDMA	: Auto		
Primary Slave UltraDMA	: Auto		
Secondary Master UltraDMA	: Auto		
Secondary Slave UltraDMA	: Auto	Current System Temp	: 44℃/111℉
IDE Burst Mode	: Disabled	Current CPUFAN Speed	: 4500 RPM
IDE HDD Block Mode	: Disabled	Current SYSFAN Speed	: 0 RPM
Onboard FDC Controller	: Enabled	IN0(V): 5.10V IN1(V)	: 3.33V
Onboard Serial Port 1	: 3F8 / IRQ4	IN2(V): 2.46V IN3(V)	: 1.98V
Onboard Serial Port 2	: 2F8 / IRQ3		
IR Address Select	: Disabled		
IR Mode	: HP SIR		
IR IRQ Select	: IRQ 10		
Onboard Parallel Port	: 378 / IRQ7		
Parallel Port Mode	: SPP		
ECP Mode Use DMA	: 3		

* Internal PCI / IDE

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

The choice: Disabled, Both.

* 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 4.

* IDE 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, Mode 0 ~ Mode 4.

* 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.

* 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 I/O address.

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

* IR Address Select

Select Infra Red (IR) address

The choice: Disabled, 3F8H, 2F8H, 3E8H, 2E8H, AUTO.

* IR Mode

Select Infra Red (IR) Mode.

The Choice: HP SIR, ASKIR.

* IR IRQ Select

You could select the IRQ for the IR.

The Choice: IRQ3, IRQ4, IRQ10, IRQ11.

* 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.

* Onboard Parallel Mode

Select an operating mode for the onboard parallel (printer) port. Normal EPP (Extended Parallel Port) ECP (Extended Capabilities Port) CEP+EPP PC AT parallel port Bi-directional port Fast, buffered port Fast, buffered, bi-directional port.

Select Normal unless you are certain your hardware and software both support EPP or ECP mode.

The choice: SPP, ECP+EPP, ECP.

* ECP Mode Use DMA

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

The choice: 3, 1.

* Parallel Port EPP Type

This item allows you to determine the IR transfer mode of onboard I/O chip.

The choice: EPP1.9, EPP1.7.

* USB Controller

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

The choice: Enabled, Disabled.

* USB Keyboard Support

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

The choice: Enabled, Disabled.

3.1.10. User Password Setting

You can set either supervisor or user password, or both of then. The differences between are:

user password : just can only enter but do not have the right to change the options of the setup menus.

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

ENTER PASSWORD:

Type the password, up to eight characters in length, 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 a password, just press <Enter> when you are prompted to enter the password. A message will confirm the password will be disabled. Once the password is disabled, the system will boot and you can enter Setup freely.

PASSWORD DISABLED.

When a password has been enabled, you will be prompted to enter it every time you try to enter Setup. This prevents an unauthorized person from changing any part of your system configuration.

Additionally, when a password is enabled, you can also require the BIOS to request a password every time your system is rebooted. This would prevent unauthorized use of your computer.

You determine when the password is required within the BIOS Features Setup Menu and its Security option . If the Security option is set to "System", the password will be required both at boot and at entry to Setup. If set to "Setup", prompting only occurs when trying to enter Setup.

3.1.11. IDE HDD Auto Detection

ROM PCI / ISA BIOS
CMOS SETUP UTILITY
AWARD SOFTWARE, INC.

HARD DISKS	TYPE	SIZE	CYLS	HEAD	RECOMP	LANDZ	SECTOR	MODE
Primary Master :								

Select Primary Master Option (N=Skip) :N

OPTION	SIZE	CYLS	HEAD	RECOMP	LANDZ	SECTOR	MODE
2(Y)	853	827	32	0	1653	63	LBA
1	853	1654	16	65535	1653	63	Normal
3	853	827	32	65535	1653	63	Large

Note: Some OS (Like SCO-UNIX) must be "NORMAL" for installation

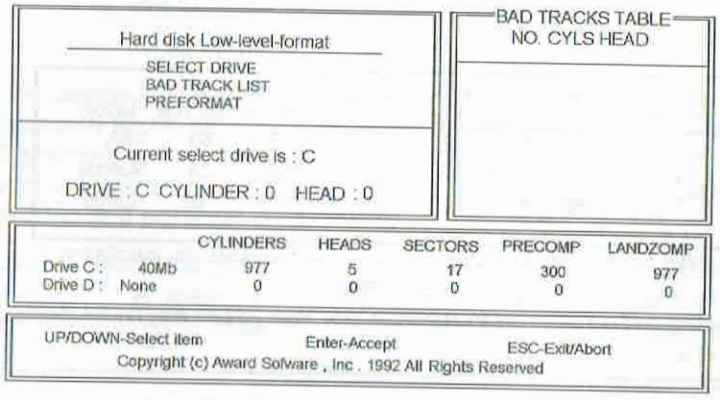
ESC: Skip

The Setting on the screen are for reference only. Your version may not be identical to this one.

Use this option to detect the parameters for the hard disk drives installed in your system. These parameters will then be automatically entered into the "Standard CMOS Setup". The IDE HDD Auto Detection screen displays the following categories of information: Size, Cylinders, Heard, Precomp, LandZone, Sectors, and Mode

3.1.12. HDD Low Level Format

Formatting your hard disk. The Utility automatically looks for the necessary This Award Low-Level-Format Utility is designed as a tool to save your time information of the drive you selected. The Utility also searches for bad tracks and lists them for your reference.
Shown below is the Main Menu after you enter into the Award Low-Level-Format Utility.



* Control Key

Use the Up and Down arrow keys to move around the selections displayed on the upper screen. Press <Enter> to accept the selection. Press <Esc> to abort the selection or exit the Utility.

SELECT DRIVE

Select from installed hard disk drive C or D. Listed at the bottom of the screen is the drive automatically detected by the utility.

BAD TRACK LIST

* Auto Scan Bad Track

The utility will automatically scan bad tracks and list the bad tracks in the window at the right side of the screen.

* Add Bad Track

Directly type in any information about known bad tracks in the window at the right side of the screen.

* Modify Bad Track

Modify information about the added bad tracks in the window at the right side of the screen.

* Delete Bad Track

Delete the added bad tracks in the window at the right side of the screen.

* Clear Bad Track Table

Clear the whole bad track list in the window at the right side of the screen.

PREFORMAT

* Interleave

Select the interleave number of the hard disk drive you wish to perform low level format. You may select from 1 to 8. Check the documentation that came with the drive for the correct interleave number, or select 0 for utility automatic detection.

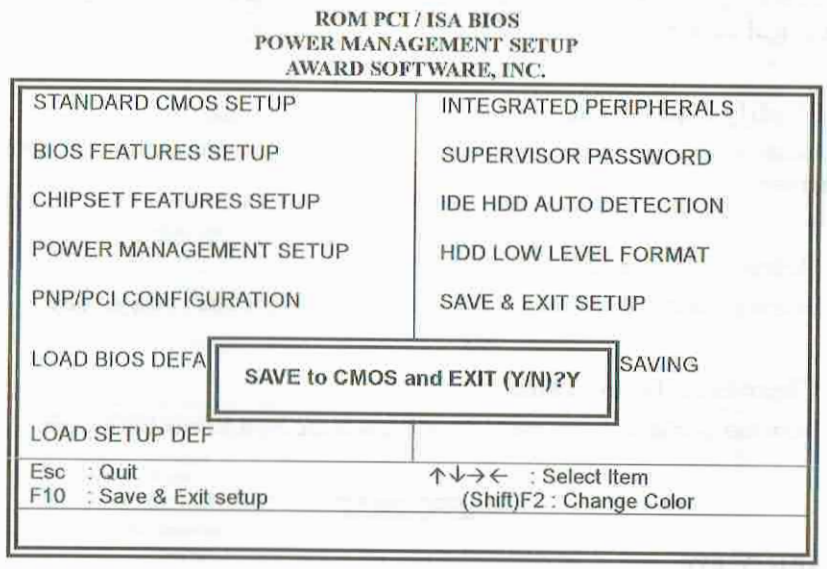
* Auto Scan Bad Track

This allows the utility to scan for bad sectors first then format by each track.

* Start

Press <Y> to start low level format.

3.1.13. Save and Exit Setup



Select this option to save into the CMOS memory all modifications you specify during the current session. To save the configuration changes, highlight the *Save & Exit Setup* option on the main screen and then press the <Enter> key.

3.2. Upgrade BIOS Utility

The upgrade process requires two files , the new BIOS file *(XXXX. bin)* and the upgrade utility *(awdflash. exe)*. Both files can be download from your vendor's Web side.

RUNNING THE UPGRADE PROGRAM:

1. Boot system from the bootable floppy diskette you created. Booting from the diskette bypasses loading drivers from the **CONFIG.SYS** and **AUTOEXE. BAT** files on the hard drive, eliminating the possibility of loading a program *(a.g., a memory manager)* that conflicts with the AWARD flash utility.

> NOTE : The Award flash utility cannot run when EMM386 or QEMM are loaded. If you try, an error message appears.

2. At the **DOS** command line, type **AWDFLASH** and press <Enter>.
3. The cursor should be opposite **"FILE NAME to PROGRAM"**
4. Type the name of the new BIOS file *(for example, newbios. bin),* and press <Enter>.
5. At the bottom of the menu, this prompt appears:

   Do you Want to Save BIOS (Y/N)?

6. If you **DO NOT** wish to save the old BIOS, type **<N>** and press <Enter>. Then move to step 8.
   If you **DO** wish to save the old BIOS, respond **<Y>**, and press <Enter>.
7. In the "File Name to Save" field, type a file name for the old BIOS *(for example, oldbios. bin)*, and press <Enter>.
   Your old BIOS is saved in a file as named, in the default drive and directory *(in this example, on the A drive)*.
8. Then the program prompts you

   Do You Want to Update? (Y/N)

9. If you **DO NOT** wish to update the BIOS, type **<N>** and press <Enter>. The program exits to the command line. Skip the remainder of this section and go directly to the next section.
   If you **DO** wish to update the BIOS, respond **<Y>** and press <Enter>. When the updating is finished, the following message appears:

   Programming Flash Memory – 3FF00(for 2MB) OK

   Please Power off or Reset System

10. Restart you system. You BIOS should be successfully update.

Chapter 4 – Supported Software

4.1. System Hardware Monitor Setup Utility

The mainboard comes with a system hardware health monitor utility contained in the provided CD. This utility shows the current temperature of the processor, power voltages, and processor / chassis fan speed.

The utility also allows you to manually set the range of the processors temperature, power voltages, and processor / chassis fan speed. If the settings / values are over or under the set range, an error massage will pop-up and an alarm will beep. This software driver supported by the OS are : Microsoft Windows 9X and Windows NT

4.2. IDE Driver

The mainboard comes with IDE Bus Master driver supported by the Operating System are :DOS ; Netware (3.12 and 4.1) ; Windows 3.X ; Windows 9X and Windows NT . To install the IDE driver, please refer to the "Readme" file contained in the provided CD.

All steps or procedures to install software drivers are subject to change without notice as the software are occassionally updated. Please refer to the readme files for the latest information.

4.3. AGP Driver

The mainboard comes with AGP (Accelerated Graphics Port) driver supported by the Operating System are : Windows 3.X ; Windows 9X and Windows NT . To install the AGP driver, please refer to the "Readme" file contained in the provided CD.

All steps or procedures to install software drivers are subject to change without notice as the software are occassionally updated. Please refer to the readme files for the latest information.

4.3. Trend OEM English PC-Cillin

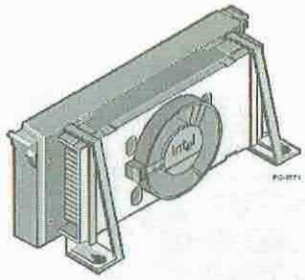
This Trend PC-cillin (OEM-English) for Windows 9X. To installed select Auto Run "PC-cillin", please refer to the "Readme" file contained in the provided CD. For optimum protection against viruses, you must continue to update your virus pattern file, which is used by PC-cillin to detect virus activity. You can download pattern files from either the Internet or BBS after you register the product.

Technical support is available to registered users at Trend offices worldwide. To find a Trend Office nearest you, look in the *tech.txt* file in the program group or under the Technical Support topic in the on-line help or user's guide. You can also find the address of a Trend office near you from our Web site at:

Web Page http://www.antivirus.com ***or*** www.trend.com.tw

Appendix A – Identify Pentium II Processor

How to identify your Pentium II processor



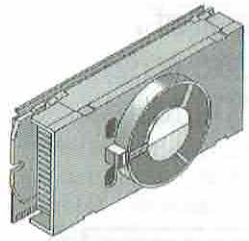
Pentium II Processor at :
66MHz (233 ~ 366 MHz)
100MHz (350 ~ 500 MHz)
L2 Cache : 512K

This page is designed to help interpret the markings on a Pentium II processor, an explain some of the tools available for determining the stepping, voltage, and features of a particular Pentium II processor. The primary tools that will help identify a Pentium II processor are CPUID, the Specification Update, and the Quick Reference Guide. The Pentium II processor S.E.C (Single Edge Contact) cartridge has laser etched markings that indicate the processor speed, L2 cache size, S-spec number, Serialization code, and country of origin. *http://www.intel.com*

DYNAMIC MARK AREA:

97490091 - 289 MALAY

97490091 : FPO # (Test Lost Traceability#)
289 : Serialization Code
MALAY : Country of Origin



Celeron Processor at :
66MHz (266 ~ 300 MHz)
L2 Cache : 0K or 128K

Appendix B – TREND ChipAwayVirus

This Board is Protected by Trend ChipAwayVirus Here's Why it Makes a Better Board:

Provides a virus-free boot and operating system
Experience peace of mind though hardware -base virus protection
Detects known and unknown boot viruses with rule-based technology
Receive immediate protection! Already installed on this board!

You're right to be concerned about viruses. With over 2600 in existence, they pose a very real threat to any PC user. They can strike in an instant, without warning or prejudice – and erase gigabytes of data.
Boot Viruses pose the most severe threat because they can move from a floppy diskette to your hard drive in less than a second. And it all happens during the loading of the boot sector, making anti-virus programs that load through the **config.sys** and **autoexec.bat** files worthless.

Finally, a Solution from Anti-virus expert*

Anti-virus software alone can't do the job. But **Trend ChipAwayVirus** can make up this deficiency. It's a hardware-base anti-virus solution that stops virus damage and infection through a proven ***rule-base*** anti-virus technology – meaning it watches for virus ***behaviors*** rather than virus code.
So Trend ChipAwayVirus can catch both known and unknown viruses, including mutation-engine viruses, both boot sector viruses, stealth viruses and general viruses! For today and tomorrow.

And thanks to **JumpLoading**™ technology, **Trend ChipAwayVirus** takes control early in the boot cycle, before boot viruses have a chance to load. So the entire boot process is virus-free and your computer boots to a clean operating system.

Appendix C

Peace of Mind For You

Best of all **Trend ChipAwayVirus** is here – on this board. The same technology was chosen for Intel motherboards. We are providing a quality board and peace of mind. That's always a great combination!
See how **Trend ChipAwayVirus** protect your computer during the boot-up procedure :