On Board I/O Addresses & IRQ Maps

System Resource	IRQ	I/O Address
1. Timer	IRQ0	040, 043
2. Keyboard	IRQ1	060, 064
3. Programmable INT	IRQ2	0020, 0021, 00A0, 00A1
4. COM2(B)	IRQ3	2F8, 2FF
5. COM1(A)	IRQ4	3F8, 3FF
6. Floppy	IRQ6	3F0, 3F7
7. LPT1	IRQ7	378, 37F
8. Real Time Clock	IRQ8	070, 071
9. PS/2 Mouse	IRQ12	060, 064
10.Math coprocessor	IRQ13	0F0, 0FF
11.IDE 1	IRQ14	1F0, 1F7
12.IDE 2	IRQ15	170, 177

* IRQ 5, 9, 10 and 11 are available for interface cards.

Memo

FC

Declaration of Conformity

According to 47 CFR, Parts 2 and 15 of the FCC Rules

The following designated product:

EQUIPMENT: MAINBOARD
MODEL NO.: CT- 6SLVS

is a Class B digital device that complies with 47 CFR Parts 2 and 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

This declaration is given to the manufacturer:

CHAINTECH COMPUTER U.S., INC.

509 Valley Way, Milpitas, CA 95035, U.S.A.

Tel: 1-408-935-6988

Fax: 1-408-935-6989

Chaintech President: Simon Ho

Signature:

Federal Communications Commission Statement

This device complies with FCC Rules Part 15. Operation is subject to the following two conditions:

   * This device may not cause harmful interference

   * This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy. If this equipment is not installed and used in accordance with the manufacturer's instructions, it may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

   * Reorient or relocate the receiving antenna.

   * Increase the separation between the equipment and receiver.

   * Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.

   * Consult the dealer or an experienced radio/TV technician for help.

The use of shielded cables for connection of the monitor to the graphics card is required to assure compliance with FCC regulations. Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

Canadian Department of Communications Statement

This digital apparatus does not exceed the Class B limits for audio noise emissions from digital apparatuses set out in the Radio Interference Regulations of the Canadian Department of Communications.

Manufacturer's Disclaimer Statement

Printed in Taiwan

May 2001

100% POST-CONSUMER RECYCLED PAPER

Main Board
User's Manual

Table of Contents

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Chapter 1

Introduction

1-1 Product Specifications

❏ **Processor**
   - Supports Socket-370 processors up to 1.1GHz processors
   - Supports 66/100/133MHz system clocks
   - High efficiency switching power modules with dual power delivery

❏ **Chipset**
   - SiS 630S AGPset with integreted **2D/3D** graphics controller

❏ **DRAM Memory**
   - Two 168-pin DIMM sockets support up to 1GB SDRAM
   - Supports PC-133 SDRAM

❏ **Expansion Slots**
   - One AMR slot (v 1.0 compliant)

❏ **2Mb Boot Block Flash ROM**
   - Award System BIOS, supports PnP, APM, DMI, ACPI & Multi-device
     booting features i.e. floppy, LS120, HDD(IDE/SCSI), ZIP-ATAPI etc.
   - Includes Trend **ChipAway Virus** protection for virus-free boot and virus free
     operating system

❏ **Two Ultra DMA-100 PCI IDE Ports**
   - Two IDE ports support up to 4 ATAPI devices
   - Supports up to PIO Mode 4 up to 16.6MBps, Multi Mode 4 up to 66MBps
     and Multi Word Mode 5 up to 100MBps with bus mastering
   - Complete Bus Mastering software drivers for all well known multi-task
     operating systems

❏ **Embbed USB Controller**
   - Two OHCI USB host controller with Root Hub
   - FiveUSB ports with over-current protection (One USB connector for CIR module).

❏ **Embedded Ultra I/O**
   - One Parallel (SPP/ECP/EPP) and one Serial (16550A compliant) ports
   - One floppy disk drive connector supports up to 2.88MB, Japanese 3-Mode,
     and 1Mbps transfer rates
   - Supports HPSIR, ASKIR and CIR function shared with 2nd serial port

❐ **Double Stack Back-Panel I/O Connectors**
- - PS/2 Mini-DIN keyboard and mouse ports
- - Two Channel USB ports
- - One RJ-45 Eternet connector
- - One D-SUB 9-pin male serial port
- - One D-SUB 15-pin female VGA port
- - One 20-pin DFP LCD port
- - One D-SUB 25-pin female Printer port
- - One D-SUB 15-pin female Game/MIDI port
- - Audio Line-out, Line-in
- - One Composite RCA TV jack (optional)
- - One S-Video Mini DIN For TV (optional)
- - One IEEE 1394 port (optional)
- - One 8 pin DIN Power connector for DC-in adapter

❐ **Embbeded PCI Audio Subsystem**
- **-** 64-voices Polyphony Wavetable synthesizer supports all combinations of Stereo/ Mono, 8-/16-bits, and Signed/Unsigned samples
- **-** Per Channel Volume and Envelop Control, Pitch Shift, Left/Right Pan, Tremolo, and Vibrato
- **-** Global Effect Process for Reverb, Chorus and Echo
- **-** DirectMusic and DLS-1 support with unlimited downloadable samples in System Memory
- **-** 64-Voice DS3D sound channels
- - 32-Voice DS3D accelerator with IID, IAD and Doppler effects for DirectX 6 Virtual HRTF interactive 3D audio
- **-** DirectSound accelerator for Volume, Pan and Pitch Shift Control on streaming or static buffers
- - CD quality audio with 90dB+SNR using external high quality AC97/98 CODEC through AC-link
- **-** On-Chip Sample Rate Converter ensures all Internal operation at 48KHz
- **-** Full Legacy Compatibility
- **-** Complete DirectX driver suite(DirectSound3D, DirectSound, DirectMusic, DirectInput) for Win98/2000
- **-** Configuration Installation and Diagnostics under Real Mode DOS, Windows 98 DOS Box
- **-** Windows 98/NT5.0 Configuration, Installation and Mixer Program

❐ **Embbeded 3D AGP VGA controller**
- 128-bit 2D/3D graphics ngine with AGP v2.0 compliant interface
- Supports Ultra-AGP architecture (Pipelined Process in CPU-to-Integrated 3D VGA access)
- Shared System Memory area up to 64MB
- Maximum 64MB frame buffer with Linear addressing
- Peak Polygon Rate: 4M Polygon/Sec @ 1 Pixel/Polygon w/ 16bpp, Bilinear Textured, Z Buffered and Alpha Blended
- Supports Hardware DVD accelerator (Built-in Hardware Motion Compensation, IDCT, VLD for video playback)
- Built-in Programmable 24-bit True-color RAMDAC up to 270MHz pixel/clock
- Supports up to 1920 x 1200 256/32K/64K colors 80Hz NI graphics mode
- Supports up to 4096x4096 Virtual Screen
- Support multiple risers and multiple monitors
- Supports DDC1, DDC2B and DDC 3.0 specifications
- Optimized Direct3D acceleration, complete Direct 6 support

❐ **Embedded System Monitoring Hardware**
- Voltage inputs for CPU Vcore, +12v, 2.5v and 5Vsb,
- 3 temperature inputs VT1 for CPU thermal diode, VT2 for Power temperature and VT3 for System temperature
- 2 Fan speed monitoring with ON/OFF control in Suspend

❐ **Embbeded SiS900 Fast Ethernet Controller**
- Supports IEEE 802.3/802.3u 10/100Based-T
- Supports Auto-negotiation for 10/100Mbps speed selection and Auto-sensing for flexible mixed bandwidth network
- Full duplex Ethernet for up to 200Mbps throughput
- Supports WinNT, Novell, OS2 BIOS Boot-up
- Supports shield RJ-45 phone jack riser with one Link-LED, ACT-LED indicators

❐ **Video Transceiver TV/LCD/2nd CRT Output (Optional)**
- Supports PAL/NTSC TV system with auto sensing
- Supports TV/Primary VGA independent display resolution and Frame rate at enhanced mode
- Supports TMDS LCD panel w/ up to 1280x1024 @ 60NI
- Supports TFT-12/18/24-bit monitor
- Maximum display resolution: 1280x1024 @75NF, 135MHz
- Provides Gamma correction that independent of primary VGA

❐ **Board Dimensions**
- Proprietary board design, 6 layers

❐ **Optional IEEE-1394a Controller**
- TSB43AA22 PCI-to-1394 host controller with 3.3V and compatible with
  3.3V and 5V PCI signaling environment.
- Serial Bus data rates of 100, 200, 400 Mbits/s
- Physical write posting of up to three outstanding transactions.
- Serial ROM interface supports 2-wire devices.
- External cycle timer control for customized synchronization
- Implements PCIburst transfers and deep FIFOs to tolerate large host latency
- Provides two general-purpose I/O
- TSB41LV02 Link-Layer controller supports 2 ports
- Provides three 1394a fully compliant cable ports at 100/200/400 Mbps

1-3 Package Contents

This product comes with the following components:

❐ One mainboard
❐ One 40-pin(80-wire) UDMA-66/100 IDE connector ribbon cable (Figure 1-1)
   * Color coded connection for UDMA-66/100 cable
      Blue to mainboard, Gray to Master and Black to slave
❐ One 34-pin floppy disk drive ribbon cable (Figure 1-2)
❐ One 9-pin serial "COM2 Cable port" (Figure 1-3)
❐ One IEEE1394 internal cable(optional)
❐ One User's Manual
❐ One CD-ROM that includes
   - Acrobat Reader
   - Award System BIOS Flash Utility and Award DMI Utility for DOS
   - SiS AGP VGA/VXD Driver
   - Audio Driver for DOS/Win95/98/NT; Audio Utility for Win95/98/NT
   - Fast Ethernet and Modem Drivers for Win95/98/NT

   ✎ See the Readme.txt file in the CD-ROM's root directory for
      installation instructions of all drivers and software utilities.

Figure 1-1 UDMA-100 IDE cable
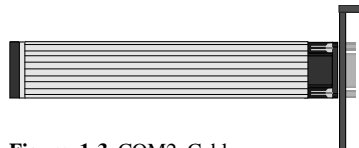
Figure 1- 2 Standard Floppy cable

Figure 1-3 COM2 Cable

1-2 Product Feature

- Poly-fuse over-current protection for USB and keyboard circuitry

- Supports ACPI STR (Suspend to RAM) ready!

- Embedded hardware audio provides full DOS S/W compatibility to support legacy gaming and educational markets

- Complete Data Security
  * **Flash BIOS write protection** against unauthorized access
  * **Trend ChipAway Virus**, to ensure virus-free booting procedure

- **Advanced Management Capabilities:**
  * Power-on events:
    WOL(Wake-on-LAN) network card, Modem ring, RTC Alarm
  * Software power-off control for Win9X
  * Over-ride power button
  * Three states advanced Power-failure recovery: Always On, Always Off, Last state
  * Blinking Power-LED in suspend
  * Hardware reset protect

Memo

Chapter 2

Hardware Setup

If your mainboard has already been installed in your computer you may still need to refer to this chapter if you plan to upgrade your system's hardware.

> ⚠ **Be sure to disconnect the power cable from the power source before performing any work on your mainboard, i. e. installing a CPU, memory module, changing a jumper setting, etc. Not doing so may result in electrical shock!**

2-1 Introduction to Jumpers

Jumpers are used to select between various operating modes. A jumper consists of a row of gold colored pins that protrude from the surface of the mainboard. It is important not to confuse jumpers with connectors or headers.

> ⚠ **Putting jumper caps on anything that is not a jumper may result in damaging your mainboard. Please refer to Section 1-3, Mainboard Layout, for the location of jumpers on your mainboard.**

As indicated in Figure 2-1 below, a cap is used to cover the pins of a jumper, resulting in shorting those pins that it covers. If the cap is removed from the top of the pins, the jumper is left "open." The number 1 shown both in the diagram below and in all multiple pin jumper and header diagrams in this manual indicates the pin designated with the number 1. The numbering of the remaining pins follows in sequence.

Pins   Cap   Setting   Cap Style 2

A 3-pin jumper

A cap over pin 1 and pin 2 shorts these pins
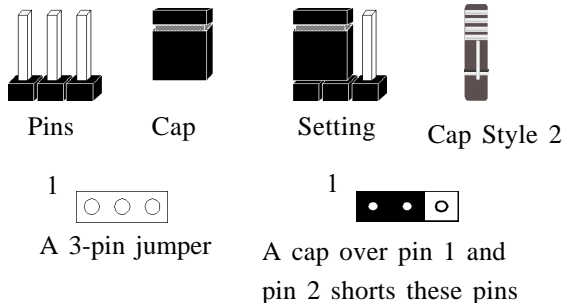
Figure 2-1

2-2 Installing a CPU in Socket 370

The Intel Socket 370, designed for the Celeron processor, has been incorporated as a standard mainboard specification   To insert your CPU into Socket 370 please do the following:

1. Locate a small dot marked on the top surface of the CPU close to one if it's corners. The same corner will also be cut off, leaving a noticeable notch in the CPU's corner. These markings indicate Pin 1 of the CPU.
2. Pull up the lever of Socket 370 so that it is perpendicular with the surface of the mainboard. Gently insert the CPU with Pin 1 at the same corner of Socket 370 that contains the end of the lever. Allow the weight of the CPU to push itself into place. Do not apply extra pressure as doing so may result in damaging your CPU.   Snap the lever back into place.

> Installing a heat sink with cooling fan is necessary for proper heat dissipation from your CPU. Failing to install these items may result in overheating and possible burn-out of your CPU.

2-3 Setting Your CPU's Parameters(*SeePU* Technology)

SeePU is a new user friendly technology that enables the user to setup a mainboard's CPU parameters through an easy to use BIOS setup procedure. It is no longer necessary to make many jumper settings as on conventional mainboards.

1. After installing all your hardware into your PC system, turn on your system's power. Enter the CMOS Setup Utility by pressing the Delete key when your BIOS identification screen appears.
2. Move the cursor to SeePU Setup menu and press Enter. Find the CPU Clock jumpless option. Commands for operating the cursor in BIOS are found at the Bottom of the BIOS screen.
3. Use the CPU Clock Ratio jumpless option to select your CPU's clock ratio(also known as external clock multiplier factor) according to your processor's specifications. Select **By H/W** to let the hardwareauto determine your CPU clock ration (See Figure 2-2).

> SDRAM Frequency Select Jumper (JP1) must be selected according to your memory module. Short pin 1-2 to use PC-100 SDRAM module. Short pin 2-3 to use PC-133 SDRAM module.(See Section 2-4).

> You do not need to make voltage settings because *SeePU* automatically sets your CPU voltage.

4. Press Esc to return to the CMOS Setup Utility, press F10 to Save and Exit Setup and choose 'Y' to confirm. The system will automatically reboot and during startup you will see the correct CPU type shown on the screen.

CMOS Setup Utility- Copyright (C) 1984-2001 Award Software
Frequency/Voltage Control

Auto Detect DIMM/PCI Clk	Enabled	Item Help
Spectrum Spread	0.5%(CNTR)	
CPU Clock Ratio Jumpless	By H/W	Menu Level ▶

↑↓→← :Move Enter:Select   +/-/PU/PD:Value   F10:Save   ESC:Exit   F1:General Help
F5:Previous Values   F6:Fail-Safe Defaults   F7:Optimized Defaults
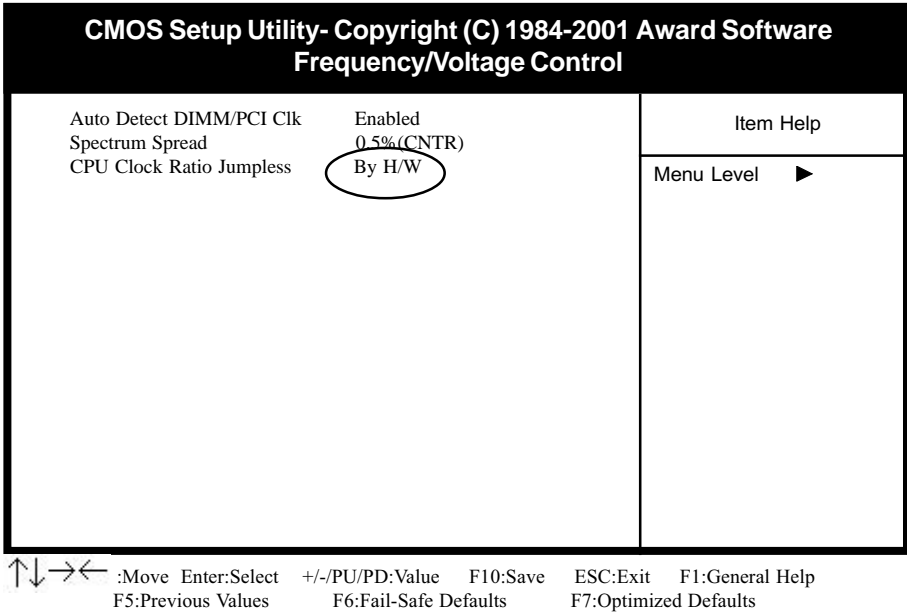
Figure 2-2 SeePU Setup Screen

⚠ Overclocking

Operating a CPU at a higher frequency than its specification allows is called overclocking. If the CPU frequency is set at a higher frequency than its specification allows, it may or may not run at that freqency, depending on the quality of your CPU and the extent to which the frequency has been overset. The mainboard manufacturer highly discourages overclocking as it may result in data loss, CPU burn-out, system failure, etc.

Many processors are frequency locked processors and are not able to perform overclocking. Regardless of whether the processor is a frequency locked, overclocking may cause some processors to hang when turning on the system. When the processor hangs, the screen remains blank and the system does not boot. To solve this problem, do the following:

1. Turn off the computer and then press the Home key on your keyboard
2. Turn on your computer, wait for five seconds and then release the Home key. (Pressing the Home key allows the computer to boot at a low system speed.)
3. Enter BIOS and reconfigure your CPU parameters as described in this section.

FAN1

JP1

JP2/JP3

JP6

FAN2

JP8

CN5

COM1

CN6

CN8

CN7

CN10

CN9

JP4

IR1

JP5

CN1

CN2

CN3

CN4

JP7

CN11
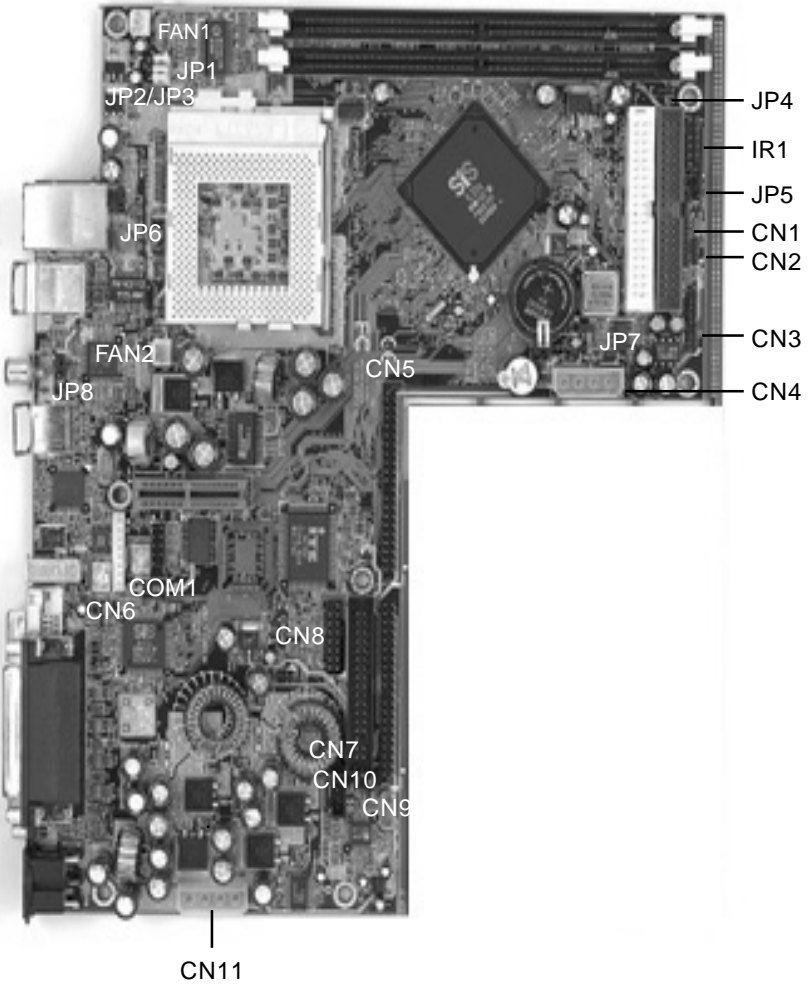
Jumper & Connector No.	Function	Page
JP1	SDRAM Frenquency Select	14
JP2A/JP2B	CPU Bus Frequency Setting	15
JP4	TV Format Setting	15
JP5/JP6	Power On By USB 0/1 & 2/3	15
JP7	Clear CMOS Data Jumper	16
JP8	Power On By Keyboard	16
CN1	Over Ride Power Button connector	12
	Power Indicator LED connector	12
	System Reset Switch connector	13
	System Warning Speaker connector	13
	IDE Activity LED connector	13
PT2/CN2	USB 0/1 Ports and USB 2/3 Connector	17
CN3	Michrophone In and Speaker Out Connector	17
CN4/CN11	Power Connectors	17
CN5/CN9	Card Bus Connectors	17
CN6	IEEE 1394 Connector	18
CN7	Game Port Connector	18
CN8	Speaker Line-in/out Connector	18
CN10	CD-ROM Audio-in	19
CN12	Power Supply Connector	12
COM1	COM2 Header	19
FAN1/FAN2	CPU/System Cooling Fan Connectors	19
IR1	IR/CIR Connector	16
PT1	PS/2 Mouse and Keyboard Ports	19

2-4 Connector and Jumper Settings

Connectors are used to link the system board with other parts of the system, including the power supply, the keyboard, and the various controllers on the front panel of the system case.

> ⚠ **The power supply connector is the last connection to be made while installing a mainboard. Before connecting the power supply, please make sure it is not connected to the power source.**

Power Supply Connector (CN12)

This connector is to be connected to a Power DC adatper and must be the very last part connected when assembling a system.

Software Power-Off Control

This mainboard can be powered down using theWindows 95 Software Power-Off function. To power down your computer, click the START button on the Windows 95 Task Bar. Select "Shut Down The Computer" and the system turns off. The message "It is now safe to turn off your computer" will not be shown when using this function.

Power-On By Modem

While in Soft-off state, if an external modem ring-up signal occurs, the system wakes up and can be remotely accessed. Enable this function in BIOS's Power Management Setup menu.

Front Panel Connector Set (CN1) A through G
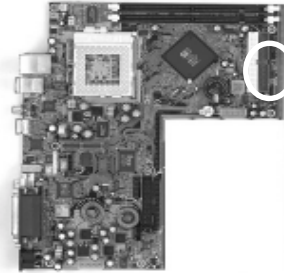
A. Over-ride Power Button Connector

The power button on the ATX chassis can be used as a normal power switch as well as a button to activate Advanced Power Management Suspend mode. This mode is used for saving electricity when the computer is not in use for long periods of time. The Power Button Over Ride function in BIOS's Power Management Setup menu must be set to "Delay 4 Sec." to activate this function.
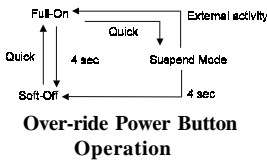
When the Power Button Over Ride function is enabled, pushing the power button rapidly will switch the system to Suspend mode. Any occurence of external activity such as pressing a key on the keyboard or moving the mouse will bring the system back to Full-On. Pushing the button while in Full-On mode for more than 4 seconds will switch the system completely off. See Over-ride Power Button Operation diagram.

Over-ride Power Button Operation

B. Power Indicator LED Connector

The power indicator LED shows the system's power status. It is important to pay attention to the correct cable and pin orientation (i.e., not to reverse the order of these two connectors.)

Power Indicator LED

Pin	Definition
1	+5V DC
2	No Connection
3	Ground

Blinking LED in Suspend Mode

While in Suspend mode, the LED light on the front panel of your computer will flash. Suspend mode is entered by pressing the Override Power Button, pushing the Green button on your ATX case, or enabling the Power Management and Suspend Mode options in BIOS's Power Management menu.
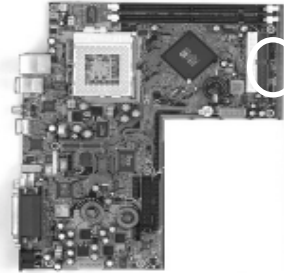
C. System Reset Switch Connector

This connector should be connected to the reset switch on the front panel of the system case. The reset switch allows you to restart the system without turning the power off.

Pin	Definition
1	System
2	GND

D. System Warning Speaker Connector

This 2 pin connector connects to the case mounted speaker

E. IDE Activity LED Connector

The IDE activity LED lights up whenever the system reads/writes to the IDE devices.

Poly-fuse Over Current Protection

The poly-fuse protects the system from dangerous voltages the system might be exposed to via the keyboard or USB connectors. In case of such exposure, the poly-fuse will immediately be disconnected from the circuit, just like a normal fuse. After being disconnected for a certain period of time, the poly-fuse will return to its normal state, after which the keyboard or USB can function properly again. Unlike conventional fuses, the poly-fuse does not have to be replaced, relieving the user wasted time and inconvenience.

SDRAM Frenquency Select (JP1)
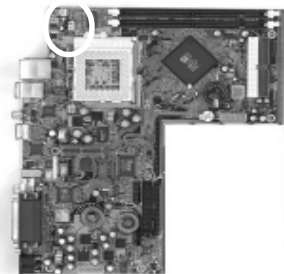
1 ▪▪◦ PC100   1 ◦▪▪ PC133

Short pin 1-2 to use PC-100 SDRAM module. Short pin 2-3 to use PC-133 SDRAM module.

CPU Bus Frequency Setting (JP2/JP3)
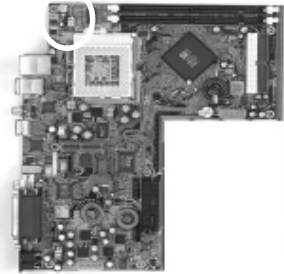
External Freq.	JP2	JP3
Auto (default)	1 ~ 2	1 ~ 2
100MHz	1 ~ 2	2 ~ 3
133MHz	2 ~ 3	2 ~ 3

TV Format Setting (JP4)
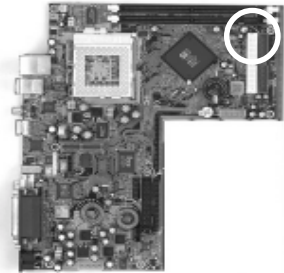
[1] NTSL   [1] PAL

This jumper determines the type of TV format you are using. If you using NTSL system format, put the jumper cap on pin 1-2. If you using PAL system format, put the jumper cap on pin 2-3.

Power On By USB 0/1 & 2/3 (JP5/JP6)
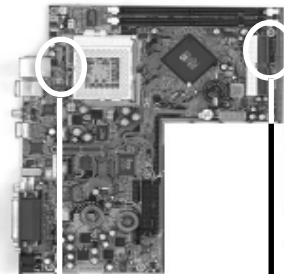
1 Disabled (default)   1 Enabled

This board is able to be turned on by a USB keyboard hot key or a USB mouse click. To use this function, you must set this jumper's cap to pins 2-3 to use this function.

JP6   JP5

Clear CMOS Data Jumper (JP7)
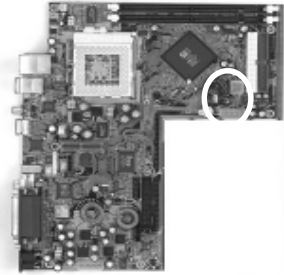
▪▪▫ Normal (default)   1 ▫▪▪ Clear CMOS data

To clear the contents of the CMOS, please follow the steps below.

1. Disconnect the system power supply from the power source.
2. Set the jumper cap at location 2~3 for 5 seconds, then set it back to the default position.
3. Connect the system's power and then start the system.
4. Enter BIOS's CMOS Setup Utility and choose Load Setup Defaults. Type Y and press enter.
5. Set the system configuration in the Standard CMOS Setup menu.

Power On By Keyboard (JP8)
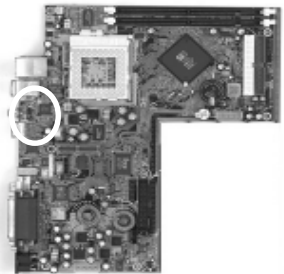
1 ▪▪▫ Disabled (default)   1▫▪▪ Enabled

This board is able to be turned on by the PS/2 keyboard 98 or Password. To use this function, Enable and select a function of your choice at the Power On By Keyboard option under Wake Up Events in the BIOS's Power On Management screen. You must also set this jumper's cap to pins 2-3 to use this function.

IR/CIR Connector (IR1)
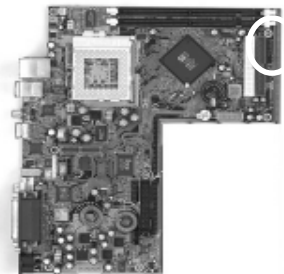
If you enable the IR/CIR Address Select in BIOS's Integrated Peripherals menu the IR/CIR port will let you select the IRQ and IR/CIR Mode to support IR/CIR functions. Connect this connector to the IR/CIR devices to enable this function.

```
        1
VCC  ─┤O O├─ VCC5 SBY
Key  ─┤  O├─ X
IR-RX─┤O O├─ CIR-RX
GND  ─┤O O├─ GND
IR-TX─┤O O├─ CIR-TX
VCC  ─┤O  ├─ Key
```
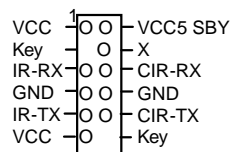
USB 0/1 Ports and USB 2/3 Connector(PT1/CN2)
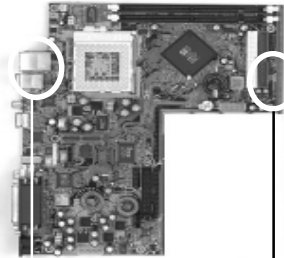
If you want to use a USB keyboard, you must enable the USB keyboard support function in BIOS's Integrated Peripherals menu (See Section 3-4). USB is an open industry standard, providing a simple and inexpensive way to connect up to 125 devices to a single computer port. Keyboards, mice, tablets, digitizers, scanners, barcode readers, modems, printers and many more can all be used at the same time.

PT1   CN2

Michrophone In and Speaker Out Connector (CN3)
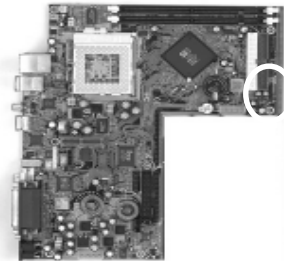
This optional connector must be connected to a speaker out and Mic-in jack adaptor.

```
    GND SPK-L
  1 ┌─────────┐
    │ o o o   │
    │ o o o   │
    └─────────┘
  GND  SPK-R
       MIC
```
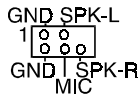
Power Connectors (CN4/CN11)
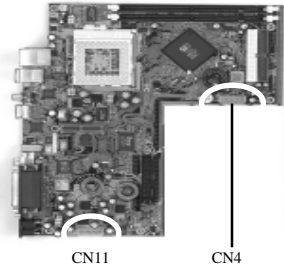
These power connectors are for HDD, FDD, CD-ROM, DVD-ROM drives and etc..

CN11   CN4

Card Bus Connectors (CN5/CN9)
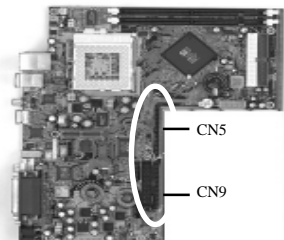
These connectors must be connected to a card bus (optional).

— CN5

— CN9

IEEE 1394 Connector (CN6)

This connector is for front panel IEEE 1394 port, it is to be connected to an IEEE 1394 cable that come with your motherboard.

Game Port Connector (CN7)
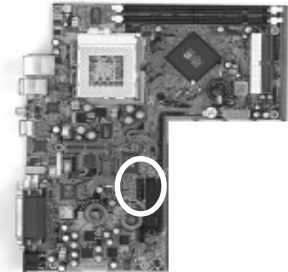
This internal game port connector is to be connected to a game port cable that come with your motherboard.

Speaker Line-in/out Connector (CN8)
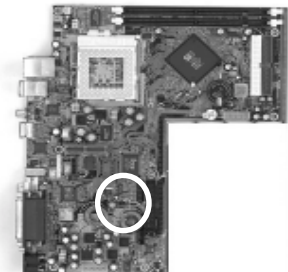
This internal speaker connector is to be connected to a speaker line-in/out jack cable that come with your motherboard.

CD-ROM Audio-in (CN10)
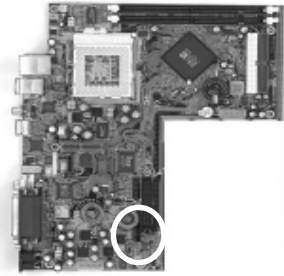
Use the cable enclosed with your CD-ROM disk drive to connect the CD-ROM to your mainboard. This will enable your CD-ROM's audio function.
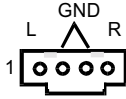
COM2 Header (COM1)
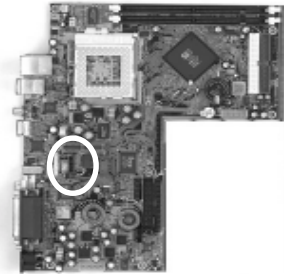
Use the optional serial port cable enclosed with your mainboard. Plug into the header and attached the other end with the bracket to the system case back panel.

CPU/System Cooling Fan Connectors (FAN1/FAN2)
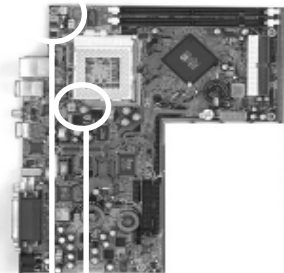
These added connectors allow the fan to draw their power from the mainboard instead of the disk drive connector. The board's management extension hardware is able to detect the CPU and system fan speed in rpm (revolutions per minute). These connectors supports 3-pin cooling fans with minimum of 4000 RPM. The wiring and plug may vary depending on the manufacturer. On standard fans, the red is positive (+12V), the black is ground, and the yellow wire is the rotation signal.

FAN1 FAN2

GND
+12V
NC

2-5 Main Memory Configuration

The DRAM memory system consists two banks and the memory size ranges from **32~512MBytes**. If you only use one bank it does not matter which one you use and if you use two or more banks, it does not matter which bank you install first.

| DIMM1 | Bank0 |
| DIMM2 | Bank1 |
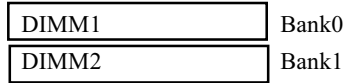
DRAM Specifications

FSB	SDRAM Type	SDRAM Type	Max Memory
66	FSB+33	10ns or faster	
100	FSB	10ns or faster	1GB
	FSB+33	7.5ns or faster	
133	FSB-33	10ns or faster	
	FSB	7.5ns or faster	

DIMM type:	3.3V, 64/72-bit Synchronous DRAM
Module size:	Single/double-sided 32/64/128/256/512MBytes
DRAM speed:	7.5/10ns for Synchronous DRAM
Parity:	Either parity or non-parity

⚠ This mainboard supports 3.3v, unbuffered, 4-clock, SDRAM DIMM only. Buffered, 5V, or 2-clock SDRAM DIMMs should not be used.

⚠ Due to loading anomalies, using DIMM with an 'n x 4' DRAM base on this mainboard is not recommended. For example, a DIMM that uses sixteen 16Mb x 4 devices should not be used.

Chapter 3

Award BIOS Setup Program

Award's BIOS ROM has a built-in setup program that allows users to modify the basic system configuration. This information is stored in CMOS RAM so that it can retain the setup information, even when the power is turned off.

When you turn on or restart the system, press the Delete key to enter the Award BIOS setup program. The primary screen as shown in Figure 3-1 is a list of the menus and functions available in the setup program. Select the desired item and press enter to make changes. Operating commands are located at the bottom of this and all other BIOS screens. When a field is highlighted, on-line help information is displayed on the right side of the screen.

CMOS Setup Utility- Copyright (C) 1984-2001 Award Software	
▶ Standard CMOS Features	▶ SeePU Setup
▶ Advanced BIOS Features	Load Fail-Safe Defaults
▶ Advanced Chipset Features	Load Optimized Defaults
▶ Integrated Peripherals	Set Supervisor Password
▶ Power Management Setup	Set User Password
▶ PnP/PCI Configurations	Save & Exit Setup
▶ PC Health Status	Exit Without Saving
Esc : Quit F10 : Save & Exit Setup	↑↓→← : Select Item
Time, Date, Hard Disk Type...	

Figure 3-1 Setup Program Initial Screen

3-1 Standard CMOS Setup

The Standard CMOS Setup allows users to configure system components such as hard disk drive, floppy disk drive and video display as well as date, time and boot up error signaling. This configuration menu should be changed when installing a mainboard for the first time, changing hardware in your system such as the HDD, FDD, video display, or when the CMOS data has been lost or contaminated. Choose the Standard CMOS Setup option from the CMOS Setup Utility menu (Figure 3-1) to display the following screen. When a field is highlighted, on-line help information is displayed on the left bottom edge of the screen.

CMOS Setup Utility- Copyright (C) 1984-2001 Award Software Standard CMOS Features		
Date (mm : dd : yy)	Thu, Feb 8 2001	Item Help
Time (hh : mm : ss)	17 : 14 : 44	
▶ IDE Primary Master	None	Menu Level ▶
▶ IDE Primary Slave	None	
▶ IDE Secondary Master	None	
▶ IDE Secondary Slave	None	
Drive A	1.44M, 3.5 in.	
Drive B	None	
Floppy 3 Mode Support	Disabled	
Video	EGA/VGA	
Halt On	All Errors	
Base Memory	640K	
Extended Memory	65472K	
Total Memory	66496K	

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

Figure 3-2 Standard CMOS Features Screen

Date/Time
Set the date and time. Do not skip this function as all of your timed events such as power management, saving files, etc. are based on this timer.

Hard Disk Setup (Primary/Secondary; Master/Slave)
This category identifies up to four IDE hard disk drives that have been installed in the computer. This section does not show information on other IDE devices such as CD-ROM drives or other hard drive types such as SCSI drives.

Type (Auto/User/None): Use the fields under the Type column to determine the method you will use to configure the IDE devices. If you choose Auto, BIOS will automatically detect and make optimal settings for most IDE hard drives.

The mainboard manufacturer recommends that you choose Auto for all drives.

Choose User to define your own drive type manually. You must enter values indicated in the table below into each drive parameter field. This information should be included in the documentation from your hard disk vendor or system manufacturer:

TYPE	Setting method
CYLS	Number of cylinders
HEAD	Number of heads
PRECOMP	Write precompensation cylinder
LANDZ	Landing zone
SECTOR	Number of sectors
MODE	Mode type

Table 3-1 Hard Disk Drive Parameters

Cyls/Head/Sector: The number of Cylinders, Heads, and Sectors can usually be found written on the top of the hard disk. If you have a relatively new hard drive, entering this information alone is usually sufficient for normal hard disk operation. The hard disk will not work properly if you enter improper information for these categories.

Precomp: Older hard drives (i.e., MFM or RLL drives) have the same number of sectors per track at the innermost tracks as at the outermost tracks. Thus, the data density at the innermost tracks is higher and the bits are lying closer together. Even though the physical size of a sector gets progressively smaller as the track diameter diminishes, each sector must still hold 512 bytes. Write precompensation circuitry compensates for the difference in sector size by boosting the write current for inner track sectors.

Landz: This defines the address of the landing zone and is only used for older hard drives which do not have an auto-parking feature.

Mode: If the Type value is not None for any device, you must set the Mode value for that device. There are four different Mode values: Auto, Normal, Large, and LBA.

> **Auto** - BIOS detects and enters the IDE drive type during boot up.

> **Normal** - for IDE drives that meet the old IDE specification which support a maximum capacity of 528MB (1024 cylinders, 16 heads, and 63 sectors).

> **Large** - for IDE drives that do not support LBA and have more than 1024 cylinders. Try this setting if your hard disk does not operate properly with the LBA setting. Large mode is not supported by all operating systems, i.e., only certain versions of DOS support large mode.
>
> **LBA** - (Large/Logical Block Addressing) With LBA, the IDE controller transforms the data address described by sector, head, and cylinder number into a physical block address, significantly improving data transfer rates. This mode is for drives with greater than 1024 cylinders and between 528MB and 8.4GB in size. This protocol is the current common standard.

Choose None for Type if there are no IDE HDD devices in your system.

> ✍ You can use the IDE HDD Auto Detection function to auto detect your hard drive parameters. Using this function will automatically insert the parameters discussed under Hard Disk Setup and will indicate User for the Field value. Please see Section 3-9 for more information.

Floppy Disk Drives

Choose the memory capacity and disk size that corresponds with that of your floppy disk drive(s).

Video

Select the type of video adapter present in your system. You can ignore this setting if you are using a VGA monitor since VGA BIOS automatically configures this setting.

Halt

When the system is powered on, BIOS performs a series of diagnosis tests called POST (Power On Self Test). This function stops the computer if BIOS detects a hardware error. You can tell BIOS to halt on all errors, no errors, or not to halt on specific errors.

3-2 Advanced BIOS Features

By choosing the Advanced BIOS Features option from the CMOS Setup Utility menu (Figure 3-1), the screen below is displayed. This sample screen contains the manufacturer's default values for the mainboard**.**

```
CMOS Setup Utility- Copyright (C) 1984-2001 Award Software
                    Advanced BIOS Features

                                              │        Item Help
   Anti-Virus Protection        Disabled    ▲ │
   CPU Internal Cache           Enabled       │ Menu Level    ▶
   External Cache               Enabled       │
   CPU L2 Cache ECC Checking    Enabled       │
   Quick Power On Self Test     Enabled       │
   First Boot Device            Floppy        │
   Second Boot Device           HDD-0         │
   Third Boot Device            CDROM         │
   Boot Other Device            Enabled       │
   Swap Floppy Drive            Disabled      │
   Boot Up Floppy Seek          Enabled       │
   Boot Up NumLock Status       On            │
   Typematic Rate Setting       Disabled      │
   Gate A20 Option              Fast          │
 X Typematic Rate (Chars/Sec)   6             │
 X Typematic Delay (Msec)       250           │
   Security Option              Setup         │
   OS Select (For DRAM > 64MB)  Non-OS2     ▼ │
```

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

Figure 3-3 Advanced BIOS Features Screen

A. *Anti-Virus Protection*

Trend *ChipAway* Virus

Trend ChipAway Virus is a code incorporated in the mainboard's BIOS firmware. During the boot-up sequence, BIOS loads before loading of the partition table or boot sector. ChipAway Virus loads with BIOS and is able to detect boot-up viruses before they have a chance to infect the hard drive. ChipAway Virus employs rule-based logic that doesn't look for specific viruses but rather detects patterns found in every virus, eliminating the need to perform periodical version updates after new viruses have been found.

B. Cache Control

CPU Internal Cache/External Cache

Cache memory is much faster than conventional DRAM system memory. These fields allow you to enable or disable the CPUs Level 1 built-in cache and Level 2 external cache. Both settings are left enabled to significantly increase the performance of your computer.

C. Boot Up Features

After turning on the system, BIOS will perform a series of device initialization and diagnostic tests discussed below.

Quick Power On Self Test (POST)

Enable this function to reduce the amount of time required to run the POST (Power On Self Test). BIOS saves time by skipping some items during POST. It is recommended that you disable this setting. Discovering a problem during boot up is better than loosing data during your work.

First/Second/Third/Boot Other Device

This option sets the sequence of drives BIOS attempts to boot from after POST completes. BIOS will search these drives for an operating system.

Swap Floppy Drive

Enabling this function will swap the floppy drive assignment so that drive A will function as drive B, and drive B will function as drive A. Note that the boot sequence assignment mentioned directly above does not include booting from floppy drive B. This function is useful if floppy drives B and A are of a different format and you want to boot from floppy drive B.

Boot up Floppy Seek

During POST, BIOS will determine if the installed floppy disk drive has 40 or 80 tracks. A 360K drive has 40 tracks and 720K, 1.2M and 1.44M drives have 80 tracks. All modern floppy disk drives have 80 tracks.

Boot Up NumLock Status

This function defines the keyboard's number pad as number keys or arrow keys.

D. Keyboard Interface

Typematic Rate Setting

When enabled, you can set the following two typematic control items. When disabled, keystrokes are determined arbitrarily by the keyboard controller in your system.

Typematic Rate (Chars/Sec)

The typematic rate sets the rate at which characters on the screen repeat when a key is pressed and held down.

Typematic Delay (Msec)

The typematic delay sets how long after you press a key that a character begins repeating.

E. Security Option

The Supervisor and/or User Password functions shown in Figure 3-1 must be set to take advantage of this function. See Section 3-11 for password setting information. When the Security Option is set to System, a password must be entered to boot the system or enter the BIOS setup program. When the Security Option is set to Setup, a password is required to enter the BIOS setup program.

F. OS Select (For DRAM >64MB)

If your system's DRAM is larger than 64MB and you are running OS/2 , select OS/2 as the item value. Otherwise, set the item value to Non-OS/2 for all other operating systems.

3-3 Advance Chipset Features

By choosing the Advanced Chipset Features option from the CMOS Setup Utility menu (Figure 3-1), the screen below is displayed. This sample screen contains the manufacturer's default values for the mainboard**.**
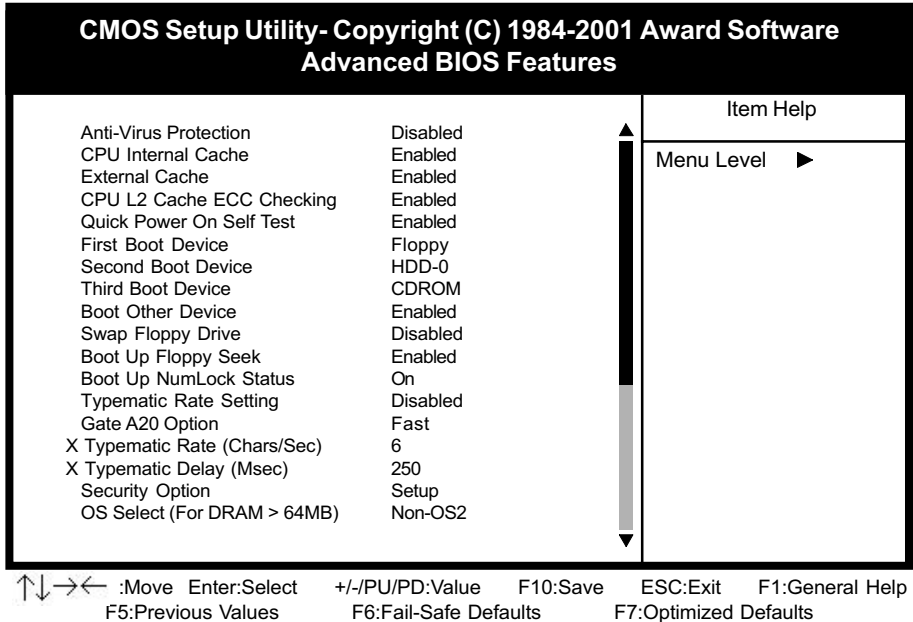
```
╔══════════════════════════════════════════════════════════════════╗
║      CMOS Setup Utility- Copyright (C) 1984-2001 Award Software     ║
║                     Advanced Chipset Features                      ║
╠══════════════════════════════════════════╤═════════════════════════╣
║                                          │       Item Help         ║
║  ▶ Advanced DRAM Control 1   Press Enter │                         ║
║  ▶ Advanced DRAM Control 2   Press Enter │   Menu Level    ▶       ║
║    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     │                         ║
║    CPU Pipeline Control      Enabled     │                         ║
║    PCI Delay Transaction     Enabled     │                         ║
║    Flash BIOS Protection     Disabled    │                         ║
║                                          │                         ║
╚══════════════════════════════════════════╧═════════════════════════╝
```

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

Figure 3-4 Chipset Features Setup Screen

⚠ All of the above settings have been determined by the mainboard manufacturer and should not be changed unless you are absolutely sure of what you are doing. Explanation of the DRAM timing and chipset features setup is lengthy, highly technical and beyond the scope of this manual. Below are abbreviated descriptions of the functions in this setup menu. You can look on the world wide web for helpful chipset and RAM configuration information including AWARD's web site at http://www.award.com.

A. *System BIOS Cacheable*

Enabling this function 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.

B. Video RAM Cacheable

Enabling this function will allows caching of the video RAM, resulting in better system performance. However, if any programs write to this memory area, a system error may occur.

C. Memory Hole at 15M-16M

Enabling this function will reserve the memory address space between 15MB and 16MB for ISA expansion cards. However, enabling this function will result in not allowing the system to have access to memory above 16MB. Please note that some expansion cards require this setting to be enabled. The default setting is Disabled. If Auto Configuration is enabled, you must set the DRAM timing function to 60ns or 70ns, depending on the type of DRAM you install.

D. AGP Aperture Size

This function determines the amount of system memory that is given to the AGP card. Options range from 4MB to 128MB. This is a dynamic memory allotment in that the AGP card will only use the amount of memory that it needs. The remaining memory not in use will be available for the system to use. For example, if 16MB is alloted to the AGP card and the card only needs 8MB, the remaining 8MB will be available for system use.

E. 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.

F. Flash BIOS Protection

The mainboard manufacturer developed BIOS protection technology that protects the System BIOS from accidental corruption by unauthorized users or computer viruses. When enabled, the BIOS data cannot be changed when attempting to update BIOS with the the FLASH utility. When disabled, the BIOS data can be updated by using the FLASH utility.

G. Hardware Reset Protect

When this function is enabled, your PC's hardware reset button will not function. This function is especially useful to prevent accidental resets for file servers and routers, etc., which should be available 24 hrs/day. When disabled, your PC's hardware reset button will function normally.

3-4 Integrated Peripherals

This section provides information on setting peripheral devices. By choosing the Integrated Peripherals option from the CMOS Setup Utility menu (Figure 3-1), the screen below is displayed. This sample screen contains the manufacturer's default values for the mainboard.
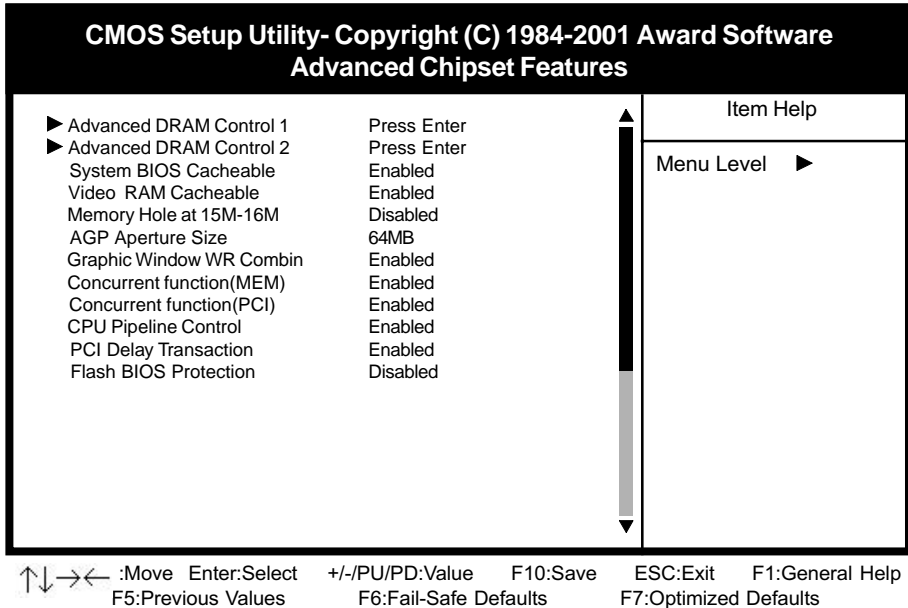
```
        CMOS Setup Utility- Copyright (C) 1984-2001 Award Software
                         Integrated Peripherals

  ► SIS 630 OnChip IDE Device   Press Enter          ▲        Item Help
  ► SIS 630 OnChip PCI Device   Press Enter
  ► SIS 950 SuperIO Device      Press Enter              Menu Level    ►
    USB Controller              Enabled
    USB Keyboard Support        Disabled
    Power Failure Recovery      Off
    System Share Memory Size    8 MB

    SIS301 Display Type         Auto




                                                   ▼
```

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

Figure 3-5 Integrated Peripherals Screen

A. SIS 630 OnChip IDE Device

IDE Primary/Secondary Master/Slave PIO

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

IDE HDD Block Mode

Block mode is also called block transfer, multiple commands, or multiple sector read/write. If your IDE hard drive supports block mode (most new drives do), select Enabled for automatic detection of the optimal number of block read/writes per sector the drive can support.

B. SIS 630 OnChip PCI Device

The mainboard supports SIS PCI AC'97 CODEC/Audio/Ethernet device features. Select auto(enable) to use these functions, select disabled to terminate these functions.

C. SIS 950 Super I/O Device

Onboard FDC Controller

Select Enabled if your system has a floppy disk controller (FDC) installed on the system board and you wish to use it. If you install an add-in FDC or the system has no floppy drive, select Disabled in this field.

COM2 Mode Select

This function allows you to select an operating mode for the second serial port. (**Normal** RS-232C serial port/**IrDA SIR** 1.0 specification/**ASKIR** 0.57-MB/sec infrared port)

Onboard Parallel Port

Select a logical LPT port address and corresponding interrupt for the physical parallel port.

Parallel Port Mode

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

D. USB Controller

Enable the on-board Universal Serial Bus (USB) controller if you want to connect a USB keyboard to your system. Note that if this setting is disabled, you can still temporarily use a USB keyboard during bootup so that you can enter BIOS and enable this setting. If you pass the bootup stage without enabling this function, your PS/2 keyboard will no longer work.

E. USB Keyboard Support

Set to Button Only to control the system power via the button on your system case. Set to Mouse Left/Right Click to turn on the power via a PS/2 mouse, and set to Keyboard 98, Hot Key or Password to turn on the power via keyboard. With Hot Key and Password you must decide on which keys will turn on the power.

3-5 Power Management Setup

This section provides information on the Green PC power management functions. By choosing the Power Management Setup option from the CMOS Setup Utility menu (Figure 3-1), the screen below is displayed. This sample screen contains the manufacturer's default values for the mainboard
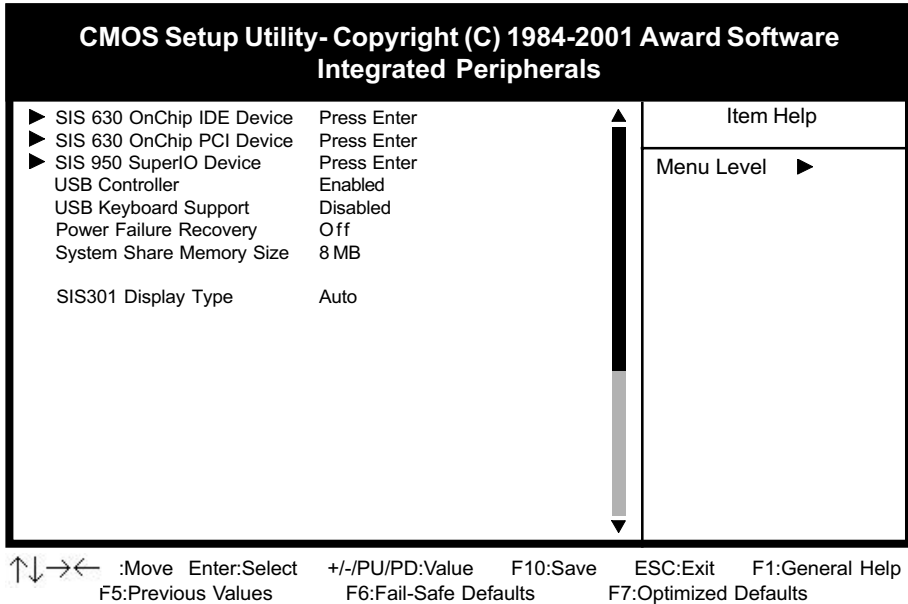
```
CMOS Setup Utility- Copyright (C) 1984-2001 Award Software
                  Power Management Setup

  ACPI  function              Enabled             Items Help
  ACPI  Suspend Type          S1(POS)
  Video  Off  Option          Suspend -> Off      Menu Level    ▶
  Video  Off  Method          DPMS Supported
  MODEM Use IRQ               4
  HDD Off After               Disable
  Power Button Override        Instant  Off
▶ PM  Wake Up  Events         Press  Enter
```

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

Figure 3-6 Power Management Setup Screen

A. *Advanced Configuration Power Interface (ACPI)*

ACPI function enables the operating system to control the amount of power given to each device attached to the computer. With ACPI, the operating system can turn off peripherals devices, such as CD-ROM players, when they are not in use.

B. *Video Off Option*

This setting allow you to selects the power-saving modes during which the monitor goes blank.

C. *Video Off Method*

This function serves as both a screen saver and power saver for monitors. See the next function, Video Off After, for setting the video timer.

Blank - BIOS will only blank the monitor's screen. The electricity saved in this mode is negligible and this function is only used as a screen saver to prevent screen damage while the screen is on but not in use.

V/H SYNC+Blank - The system turns off the vertical and horizontal synchronization ports, writes blanks to the VGA buffer and the monitor's electron gun turns off. This function requires a monitor with Green features in order to take advantage of the power saving function. If you enable this function and do not have a Green monitor, the result will be the same as if you had selected Blank. This function serves as both a screen saver and an electricity saver.

DPMS Supported - Select this option if your video card supports the Display Power Management Signaling (DPMS) standard (i.e., you have a monitor that supports Green features). Use software supplied by your video subsystem to set video power management options.

D. Modem Use IRQ

If your computer has an modem, use this function to tell BIOS which IRQ is being occupied by the modem card. When the system is in Green mode, the modem requires an IRQ assignment to wake up the system and perform tasks. This assignment is compliant with the APM 1.2 specification and is to be used in coordination with APM 1.2 compliant operating systems.

E. Power Button Override

When set to Delay 4 Sec., this function allows the power button to put the system in Suspend, a power saving mode. See Section 2-4 for operation instructions of the override power button operation which puts the system in Suspend mode. When set to Instant-Off the Power Button Override function is disabled and the computer turns completely off when the power button is pressed.

F. PM Wake up Events

Wake Up On LAN
Enable this selection to use the Wake Up On LAN function discussed in Section 2-4 of this manual.

Power On By Modem
When enabled, a modem/LAN that receives a signal will wake up the system from soft off and green mode. You should connect the modem to the COM port and turn on the resume event in green mode.

Power On By Alarm
When enabled, this setting allows the system to turn back on at a designated time of the month. User must designate date of month and time of day. This function is only available when using an ATX power supply and the Software Power-Off function to turn off the computer. See the Software Power-Off feature in Section 2-4 of this manual for instructions.

3-6 PNP/PCI Configuration

This section provides IRQ and DMA setting information. By choosing the PNP/ PCI Configuration option from the CMOS Setup Utility menu (Figure 3-1), the screen below is displayed. This sample screen contains the manufacturer's default values for the mainboard.
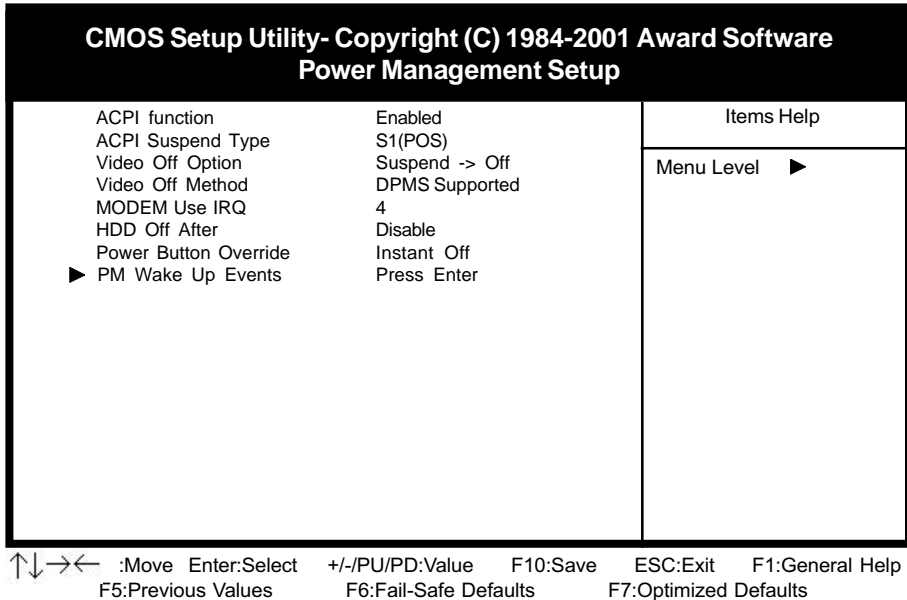
```
CMOS Setup Utility- Copyright (C) 1984-2001 Award Software
                   PnP/PCI Configurations

    Reset  Configuration  Data       Disabled              Item Help

    Resources  Controlled  By        Auto(ESCD)        Menu Level      ▶
  X IRQ Resources                    Press Enter

    PCI/VGA Palette Snoop             Disabled
    Assign IRQ For VGA               Enabled
    FDD IRQ Can Be Free              Yes




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

Figure 3-7 PnP/PCI Configurations Screen

A. *Reset Configuration Data*

Enable setup if you have installed a new add-on card and the system configuration has caused serious conflict that the OS cannot boot.

B. *Resources Controlled By*

When set to Manual the system BIOS will not refer to the ESCD for IRQ & DMA information. Instead, it will refer to the items in the setup menu for assigning IRQ & DMA. When set to Auto the system BIOS will refer to the ESCD for all legacy information.

C. *FDD IRQ Can Be Free*

This function allows user to choose if the FDD IRQ is able to be freed up. The default setting is Yes and this does not allow the IRQ to be free.

3-7 PC Health Status

By choosing the PC Health Status option from the CMOS Setup Utility menu (Figure 3-1), the screen below is displayed. This sample screen contains the manufacturer's default values for the mainboard**.**

```
CMOS Setup Utility- Copyright (C) 1984-2001 Award Software
                      PC Health Status

  Shutdown Temperature        Disabled              Item Help
  CPU Vcore                   0.00V
  +2.5V                       2.48V             Menu Level    ▶
  +3.3V                       3.32V
  +5.0V                       5.05V
  +12V                        12.16V
  3VSB                        3.12VSB
  -12V                        (-) 11.16V
  5VSB                        5.02VSB
  Voltage Battery             3.24V
  Switch Temperature          33 °C
  System Temperature          34 °C
  CPU Temperature             38 °C
  CPU Fan Speed               4500 RPM
  System Fan Speed            4500 RPM



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

Figure 3-8 PC Health Status Screen

A. *Shutdown Temperature*

The system will shutdown when the temperature setting is reached , to prevent the system from overheating. (Support Windows 98 ACPI function only)

3-8 SeePU Setup

By choosing the SeePu Setup option from the CMOS Setup Utility menu (Figure 3-1), the screen below is displayed. This sample screen contains the manufacturer's default values for the mainboard**.**
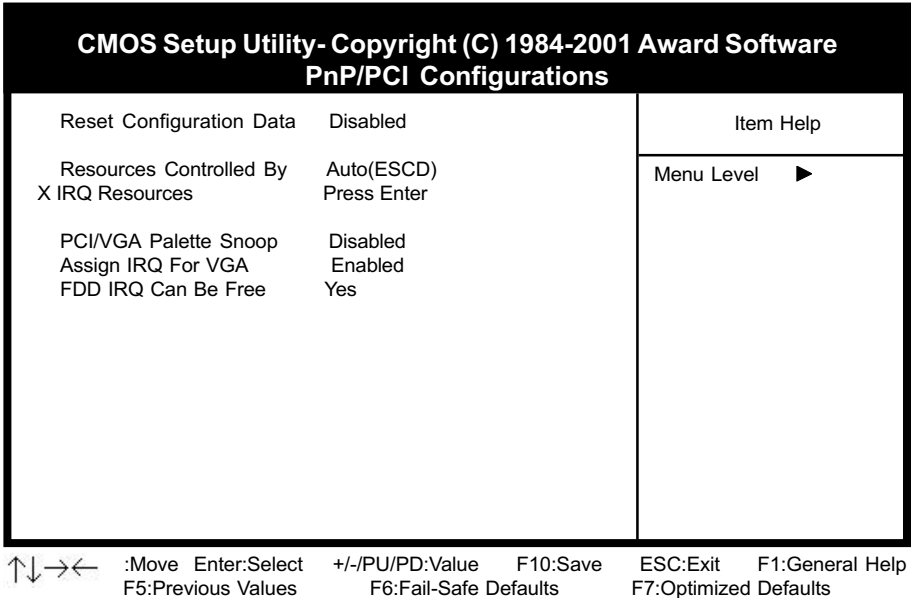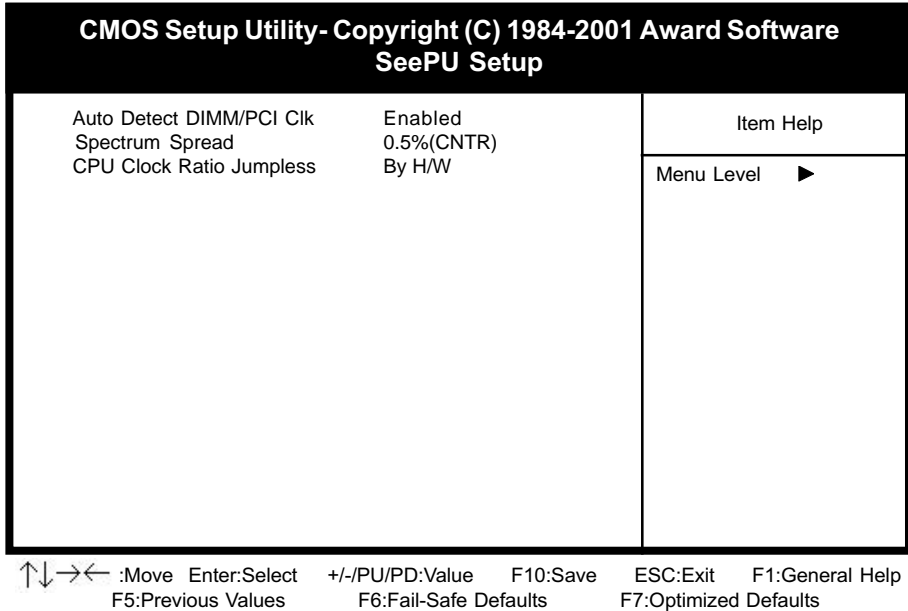
```
╔══════════════════════════════════════════════════════════════════╗
║        CMOS Setup Utility- Copyright (C) 1984-2001 Award Software   ║
║                           SeePU Setup                              ║
╠════════════════════════════════════════════════╦═══════════════════╣
║   Auto Detect DIMM/PCI Clk     Enabled         ║      Item Help     ║
║    Spectrum Spread             0.5%(CNTR)      ╠═══════════════════╣
║   CPU Clock Ratio Jumpless     By H/W          ║  Menu Level    ►   ║
║                                                ║                   ║
║                                                ║                   ║
║                                                ║                   ║
║                                                ║                   ║
║                                                ║                   ║
║                                                ║                   ║
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╚════════════════════════════════════════════════╩═══════════════════╝
```

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

Figure 3-9 SeePU Setup Screen

A. *Auto Detect DIMM/PCI CLK*

When Enabled this function will automatically detect your DIMM/pci clock speed.

B. *Spectrum Spread*

This function allows you to select a pulse value of the clock generator to lower EMI by spreading the system frequency spectrum. When the system clock generator pulses, the extreme values of the pulse generate excess EMI. Enabling pulse spectrum spread modulation changes the extreme values from spikes to flat curves, thus reducing EMI. This benefit may in some cases be outweighed by problems with timing-critical devices, such as a clock-sensitive SCSI device. BX

C. *CPU Host/PCI Clock*

This feature allow your to select a timing combination for the CPU and the PCI bus.

3-9 Load Fail-Safe Defaults

Load Fail-Safe Defaults loads the default BIOS values directly from the CMOS Setup Utility menu (Figure3-1). If the stored record created by the setup program becomes corrupted and therefore unusable, these defaults will be loaded automatically when you turn on the computer.

CMOS Setup Utility- Copyright (C) 1984-2001 Award Software	
► Standard CMOS Features	►SeePU Setup
► Advanced BIOS Features	Load Fail-Safe Defaults
► Advanced Chipset Features	Load Optimized Defaults
► Integrated Peripherals	Set Supervisor Password
► Power Management Setup	Set User Password
► PnP/PCI Configura	**Load Fail-Save Defaults (Y/N) ? N** Setup
► PC Health Status	Saving
Esc : Quit F10 : Save & Exit Setup	↑↓→← : Select Item
Load Fail-Safe Defaults	

Figure 3-10 Load Fail-Safe Defaults Screen

3-10 Load Optimized Defaults

Load Optimized Defaults loads the default system values directly from the CMOS Setup Utility menu (Figure3-1). If the stored record created by the setup program becomes corrupted and therefore unusable, these defaults will be loaded automatically when you turn on the computer.
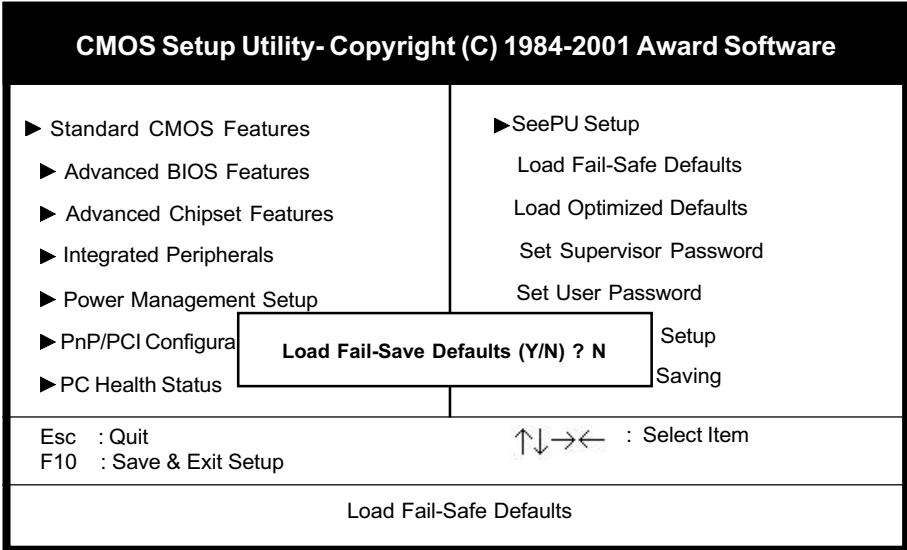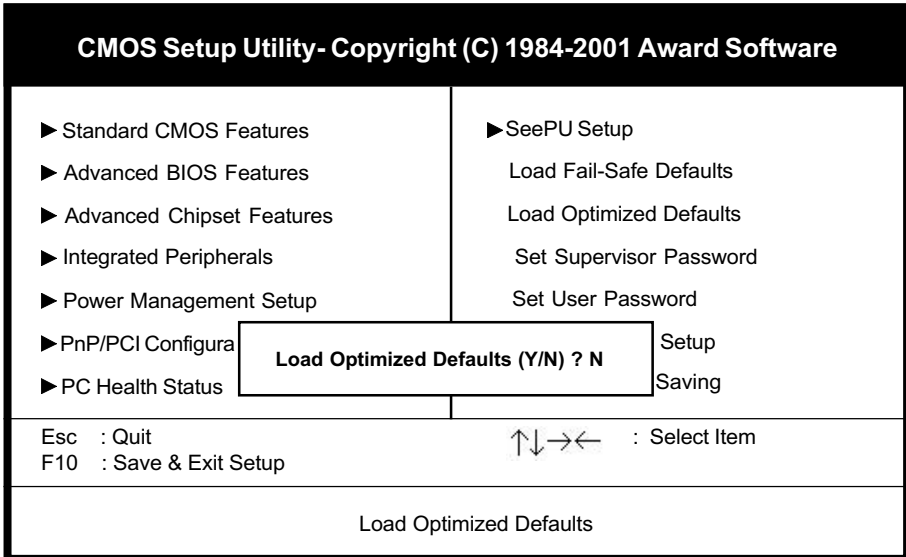
```
┌─────────────────────────────────────────────────────────────────┐
│     CMOS Setup Utility- Copyright (C) 1984-2001 Award Software    │
├─────────────────────────────────────────────────────────────────┤
│                                  │                                │
│  ► Standard CMOS Features        │  ► SeePU Setup                 │
│  ► Advanced BIOS Features        │    Load Fail-Safe Defaults     │
│  ► Advanced Chipset Features     │    Load Optimized Defaults     │
│  ► Integrated Peripherals        │    Set Supervisor Password     │
│  ► Power Management Setup         │    Set User Password           │
│  ► PnP/PCI Configura  ┌─────────────────────────────┐  Setup     │
│  ► PC Health Status   │ Load Optimized Defaults (Y/N) ? N │ Saving│
│                       └─────────────────────────────┘            │
├─────────────────────────────────────────────────────────────────┤
│  Esc  : Quit                     │  ↑↓→←      : Select Item       │
│  F10  : Save & Exit Setup        │                                │
├─────────────────────────────────────────────────────────────────┤
│                      Load Optimized Defaults                      │
└─────────────────────────────────────────────────────────────────┘
```

Figure 3-11 Load Optimized Defaults Screen

3-11 Supervisor Password & User Password Setting

There are four different variables that control password settings. The first two are located under the Security Option function in BIOS Features Setup Menu (Figure 3-1). When the Security Option function is set to Setup, a password is required to enter BIOS and change BIOS settings. When the Security Option function is set to System, a password is required to enter both BIOS and the computer's operating system (for example Windows 98) found on the boot drive. This is shown in Figures 3-12 and 3-13.

The third and fourth variables are user password and supervisor password selected in BIOS (Figure 3-1). The main purpose of separating user and supervisor is to allow only the supervisor to have control over the settings in BIOS. The user, on the other hand, is only allowed to access the computer's operating system and change the user password in BIOS (See Figure 3-13). Note that when there is no supervisor password set, the user password controls access to all BIOS settings (See Figure 3-12 below).

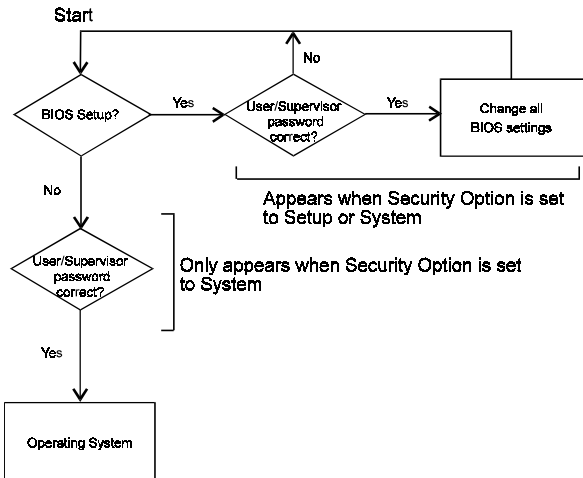## A. Set Either Supervisor Password or User Password

Figure 3-12   Set Either Supervisor or User Password

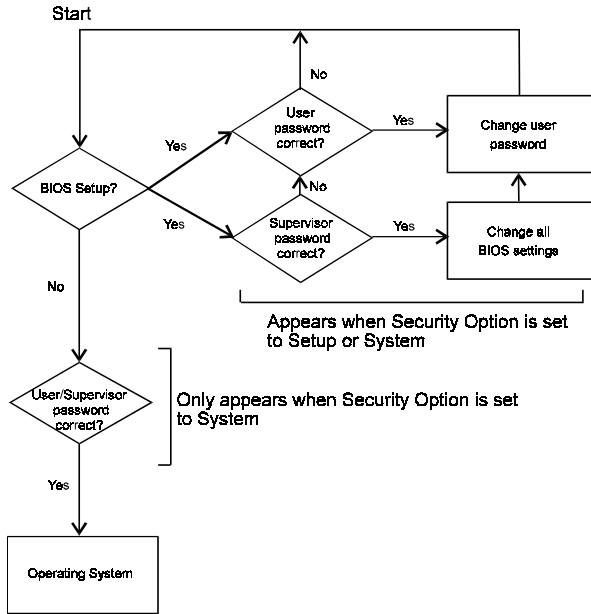## B. Set Both Supervisor Password and User Password

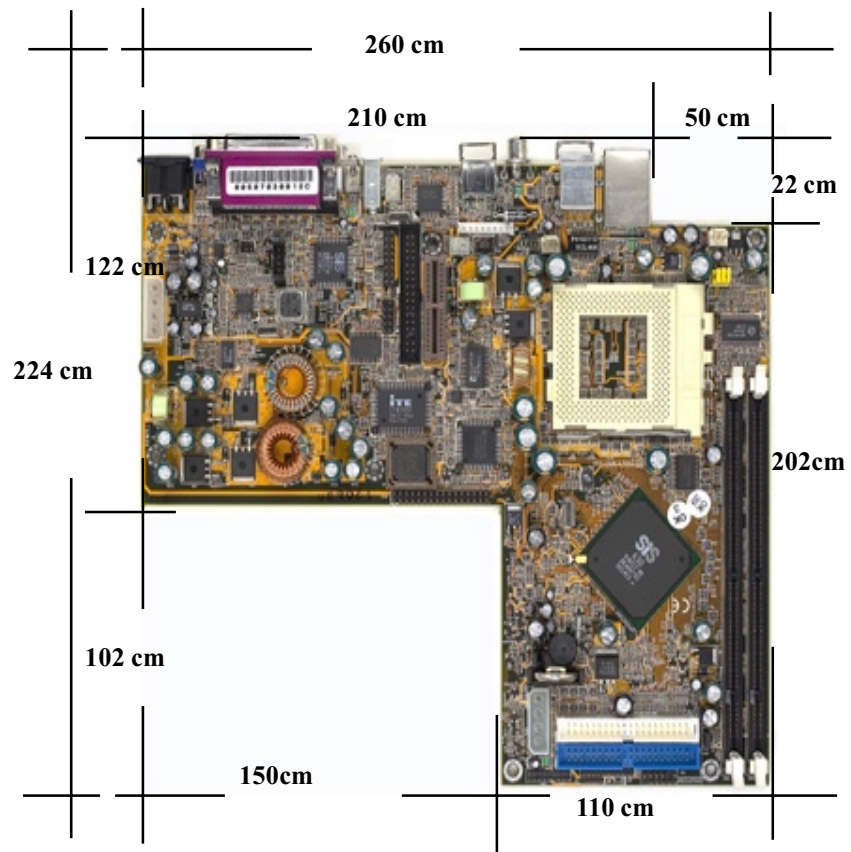**Figure 3-13 Set Both Supervisor and User Password**

3-12 Save and Exit Setup

If you select this and type Y (for yes) followed by the [Enter] key, the values entered in the setup utilities will be recorded in the CMOS memory of the BIOS chip.

3-13 Exit Without Saving

Selecting this option and pressing Y followed by the [Enter] key lets you exit the Setup program without recording any new values or changing old ones.
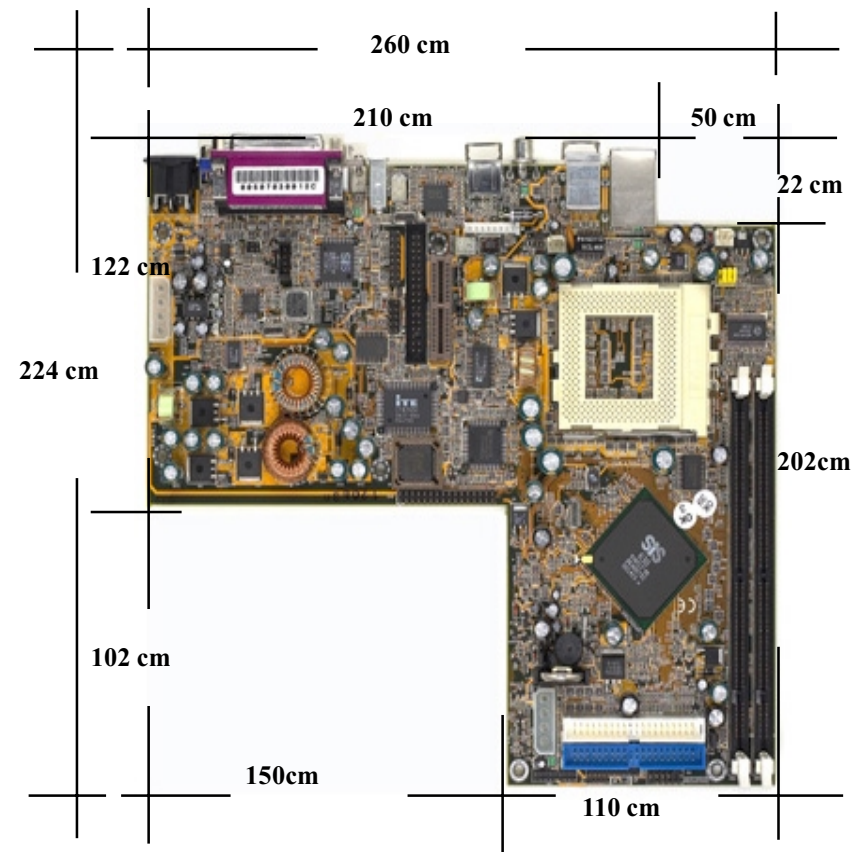
260 cm

210 cm

50 cm

22 cm

122 cm

224 cm

202cm

102 cm

150cm

110 cm