Introduction

1

The Micro-ATX WH1 mainboard is a high-performance computer mainboard based on Intel® 810E chipset. The MS-6137 is designed for Intel® Celeron™ (PPGA) and Pentium® III processors for inexpensive business/personal desktop markets.

The Intel® 810E chipset is the first generation Integrated Graphics chipset for Intel® Celeron™ and Pentium® III processors. The graphics accelerator architecture consists of dedicated multi-media engines executing in parallel to deliver high performance 3D, 2D and motion compensation video capabilities. An integrated centralized memory arbiter allocates memory bandwidth to multiple system agents to optimize system memory utilization. A new chipset component interconnect, the hub interface, is designed into the Intel® 810E chipset to provide an efficient communication channel between the memory controller hub and I/O controller hub.

The Intel® 810E chipset contains three core components. The GMCH integrates a 66/100/133MHz for 810 and 66/100/133 MHz for 810E, P6 family system bus controller, integrates 2D/3D graphics accelerator, 100MHz SDRAM controller and high-speed hub interface for communication with the ICH0/ICH. The ICH0/ICH integrates an Ultra ATA/33 (ICH0) or Ultra ATA/66 (ICH) controller, USB host controller, LPC interface controller, FWH interface controller, PCI interface controller, AC`97 digital controller and a hub interface for communication with the GMCH/GMCHO. The Intel® 82802 Firmware Hub (FWH) component is part of the Intel® 810E chipset. The FWH is key to enabling future security and manageability infrastructure for the PC platform.

This chapter includes the following topics:

Mainboard Specification

CPU
- Supports Socket 370 for Intel® Celeron™ and Pentium® III processors.
- Supports up to 1.1GHz CPU.

Chipset
- Intel® 810E (GMCH) chipset. (421 BGA)
  - Integrated Graphics Controller.
  - Intel DDM Architecture.
  - SDRAM Memory Independent of System Bus.
- Intel® ICH chipset. (241 BGA)
  - AC'97 Controller Integrated.
  - 2 full IDE channels, up to ATA66.
  - Low Pin Count interface for SIO.

Front Side Bus (FSB)
- 66/100/133MHz clocks are supported.

Main Memory
- Support two 168-pin DIMM sockets.
- Support a maximum memory size of 256MB(64-bit) or 512MB(128-bit) SDRAM.

Slots
- Two AMR (Audio Modem Riser) slots.
- Three PCI 2.2 32-bit PCI bus slots (support 3.3v/5v PCI bus interface)

On-Board IDE
- An IDE controller on the ICH chipset provides IDE HDD/CD-ROM with PIO, Bus Master and Ultra DMA66 operation modes.
- Can connect up to four IDE devices.

On-Board Peripherals
- On-Board Peripherals include:
  - 1 floppy port supports 2 FDDs with 360K, 720K, 1.2M, 1.44M and 2.88Mbytes.
  - 2 serial ports (COM A + COM B).
  - 1 parallel port supports SPP/EPP/ECP mode.
  - 4 USB ports (Rear * 2/ Front * 2).

    - 1 IrDA connector for SIR.
    - 1 VGA port.
    - 1 audio/game port.

Video
- GMCH chip integrated.
- 2D/3D Graphics.
- Onboard 4MB Display Cache (optional).

Audio
- AC97 2.0 interface.
- ICH chip integrated.

BIOS
- The mainboard BIOS provides "Plug & Play" BIOS which detects the peripheral devices and expansion cards of the board automatically.
- The mainboard provides a Desktop Management Interface (DMI) function which records your mainboard specifications.
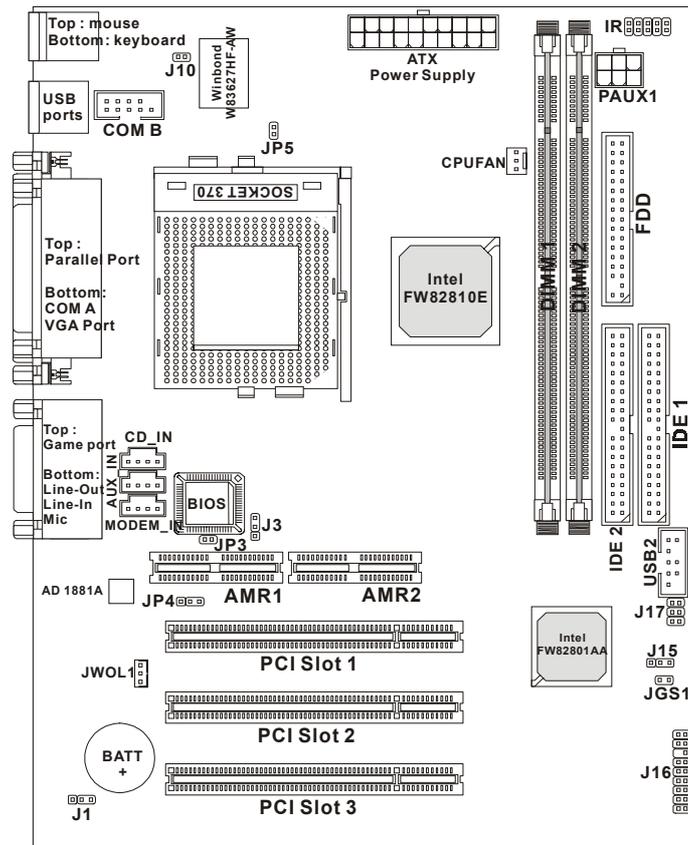
Dimension
- Micro ATX Form Factor.

Mounting
- 6 mounting holes.

System Hardware Monitor
- CPU/Power Supply Fan Revolution Detec.
- CPU Fan Control (the fan will automatically stop when the system enters suspend mode).
- System Voltage Detect.
- CPU Overheat Warning.
- Display Actual Current Voltage.

Mainboard Layout

MS-6137 v3.X Micro ATX Mainboard

Key Features

- Microsoft® PC99 Compliant
- Micro ATX Form Factor
- Audio/Video Chip Integrated
- Support DMI(Desktop Management Interface) through BIOS
- TCAV (Build-in BIOS Anti-Virus)
- TOP Tech. (Thermal Overheat Protection Technology) Optional
- LAN Wake Up Function
- PC Alert™ III system hardware monitor
- Suspend to RAM/Disk

MSI Special Features

T.O.P Tech™ (optional)

The T.O.P Tech™ is an extended sensing device that can 100% accurately detect the CPU's temperature. You can find out the temperature on BIOS setup menu. The PC Alert™ also provides the information.

CPU temperaure on Setup menu

```
          CMOS Setup Utility - Copyright(C) 1984-2001 Award Software
                              PC Health Status
 ┌────────────────────────────────────────────┬──────────────────────────┐
 │ CPU Warning Temperature      [Disabled]     │                          │
 │ Current System Temp.                        │        Item Help         │
 │ Current CPU Temperature                     │                          │
 │ Current Top Tech. III Temp.                 ├──────────────────────────┤
 │ SYSTEM fan                                  │                          │
 │ POWER fan                                   │ Menu Level   >           │
 │ CPU fan                                     │                          │
 │ Vcore                                       │                          │
 │ VTT                                         │                          │
 │ 3.3V                                        │                          │
 │ +5V                                         │                          │
 │ +12V                                        │                          │
 │ -12V                                        │                          │
 │ -5V                                         │                          │
 │ VBAT(V)                                     │                          │
 │ 5VSB(V)                                     │                          │
 │ Chassis Intrusion Detect     [Disabled]     │                          │
 │ Shutdown Temperature         [Disabled]     │                          │
 ├─────────────────────────────────────────────┴─────────────────────────┤
 │ ↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help│
 │       F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults    │
 └─────────────────────────────────────────────────────────────────────────┘
```
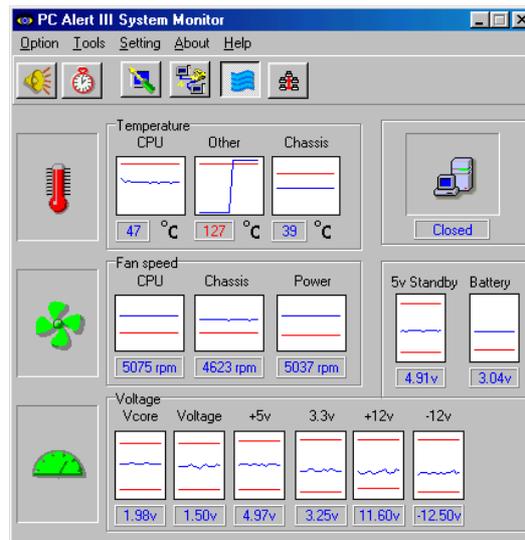
PC Alert™ III

The PC Alert™ III is a utility you can find in the CD-ROM disk. The utility is just like your PC doctor that can detect the following PC hardware status during real time operation:

* monitor CPU & system temperatures
* monitor fan speed(s)
* monitor system voltage
* monitor chassis intrusion

If one of the items above is abnormal, the program main screen will be immediately shown on the screen, with the abnormal item highlighted in red. This will continue to be shown,until user disables the warning.

Note: Items shown on PC Alert III vary depending on your system's status.

Features:
- Network Management
  - Monitoring & remote control
- Basic System Utilities
  - Scandisk & Defragment to maintain your HDD
- 3D Graphics Design
  - Enables a more friendly user interface
- Sofware Utilities
  - SoftCooler Optimized Cooling

Hardware Setup

2

This chapter provides you with the information about hardware setup procedures. While doing the installation, be careful in holding the components and follow the installation procedures. For some components, if you install in the wrong orientation, the components will not work properly.

Use a grounded wrist strap before handling computer components. Static electricity may damage the components.

This chapter contains the following topics:

Central Processing Unit: CPU

The mainboard supports Intel® Celeron™/Pentium® III processors. The mainboard uses a CPU socket called PGA370 for easy CPU installation. When you are installing the CPU, **make sure the CPU has a heat sink and a cooling fan attached on the top to prevent overheating.** If you do not find the heat sink and cooling fan, contact your dealer to purchase and install them before turning on the computer.

CPU Installation Procedures

1. Pull the lever sideways away from the socket. Then, raise the lever up to a 90-degree angle.
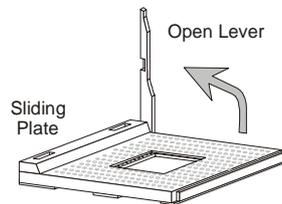
2. Look for the gold arrow. The gold arrow should point towards the end of lever. The CPU will only fit in the correct orientation.
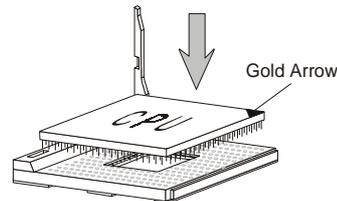
3. Hold the CPU down firmly, and then close the lever to complete the installation.
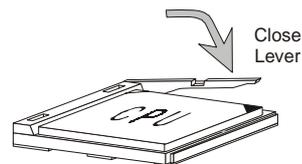
STOP **WARNING!** *Overheating will seriously damage the CPU and system, always make sure the cooling fan can work properly to protect the CPU from overheating.*

CPU Core Speed Derivation Procedure

If   CPU Clock   =   100MHz
          Core/Bus ratio   =   9
then CPU core speed   =   Host Clock x Core/Bus ratio
                              =   100MHz x 9
                              =   900MHz

STOP
WARNING!

Overclocking
*This motherboard is designed to support overclocking. However, please make sure your components are able to tolerate such abnormal setting, while doing overclocking. Any attempt to operate beyond product specifications is not recommended. **We do not guarantee the damages or risks caused by inadequate operation or beyond product specifications.***
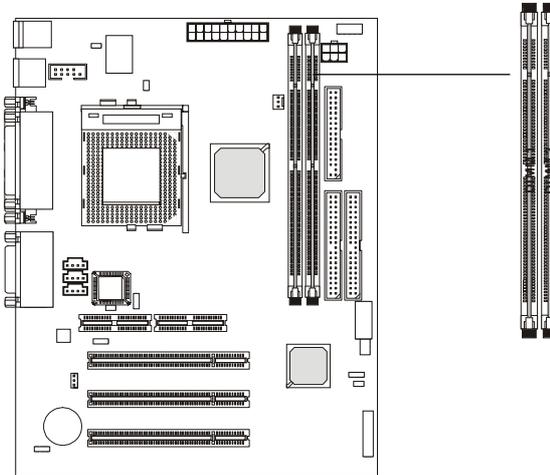

Memory Installation

Memory Bank Configuration

The mainboard supports a maximum memory size of 256MB (64-bit technology) or 512MB (128-bit technology for SDRAM). It provides two 168-pin **unbuffered** DIMMs (Double In-Line Memory Module) slots. It supports 8 MB to 128 Mbytes DIMM memory module.

Synchronous DRAM is a type of dynamic RAM memory chip that has been widely used starting in the latter part of the 1990s. SDRAMs are based on standard dynamic RAM chips, but have sophisticated features that make them considerably faster. First, SDRAM chips are fast enough to be synchronized with the CPU's clock, which eliminates wait states. Second, the SDRAM chip is divided into two cell blocks, and data is interleaved between the two so that while a bit in one block is being accessed, the bit in the other is being prepared for access. This allows SDRAM to burst the second and subsequent, contiguous characters at a rate of 10ns, compared to 60ns for the first character.

SDRAM provides 800 MBps or 1 GBps data transfer depending on whether the bus is 100MHz or 133MHz.

Memory Installation Procedures

Installing DIMM Modules

You can install memory modules in any combination as follows:

Slot	Memory Module	Total Memory
Slot 1 (Bank 0 & Bank 1)	8MB~128MB,	8MB~256MB
Slot 2 (Bank 2 & Bank 3)	8MB~128MB,	8MB~256MB
Total System Memory		8MB~512MB

Memory Population Rules

1. Supports only SDRAM DIMM.
2. To operate properly, at least one 168-pin DIMM module must be installed.
3. This mainboard supports Table Free memory, so memory can be installed on DIMM1 or DIMM 2 in any order.
4. Supports 3.3 volt DIMM.

   1. The DIMM slot has 2 Notch Keys "VOLT and DRAM", so the DIMM memory module can only fit in one direction.
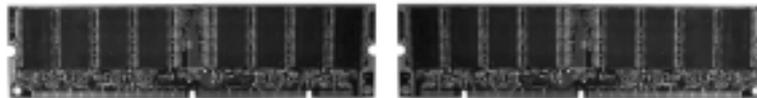
Front View   **Rear View**

   2. Insert the DIMM memory module vertically into the DIMM slot. Then push it in.

DRAM   VOLT
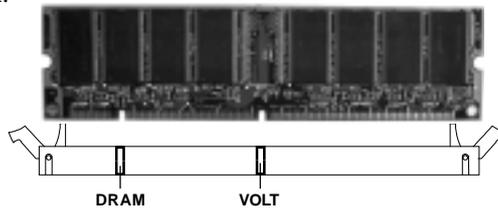
   3. The plastic clip at the side of the DIMM slot will automatically close.

Power Supply

The mainboard supports ATX power supply for the power system. Before inserting the power supply connector, always make sure that all components are installed properly to ensure that no damage will be caused.

ATX 20-Pin Power Connector: JWR1

This connector allows you to connect to an ATX power supply. To connect to the ATX power supply, make sure the plugs of the power supply is inserted in the proper orientation and the pins are aligned. Then push down the power supply firmly into the connector. The power connector supports **instant power on** function which means that system will boot up immediately when the power supply connector is inserted on the board.
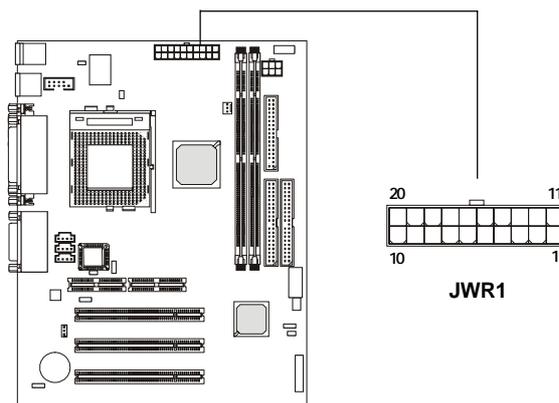
JWR1

JWR1 Pin Definition

PIN	SIGNAL	PIN	SIGNAL
1	3.3V	11	3.3V
2	3.3V	12	-12V
3	GND	13	GND
4	5V	14	PS_ON
5	GND	15	GND
6	5V	16	GND
7	GND	17	GND
8	PW_OK	18	-5V
9	5V_SB	19	5V
10	12V	20	5V

Back Panel

The Back Panel provides the following connectors:

Mouse   **Parallel**   **Midi/Joystick**

Keyboard   **USB**   **COM A**   **VGA**   **L-out**   **L-in**   **MIC**
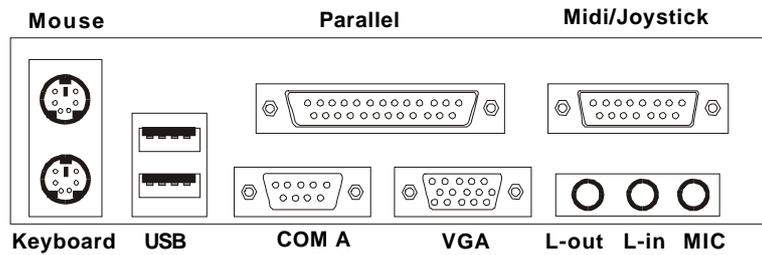
Mouse Connector: JKBMS1

The mainboard provides a standard PS/2® mouse mini DIN connector for attaching a PS/2® mouse. You can plug a PS/2® mouse directly into this connector. The connector location and pin assignments are as follows:

Pin Definition

PS/2 Mouse (6-pin Female)
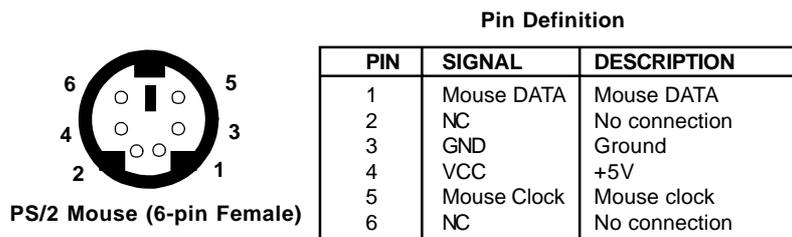
PIN	SIGNAL	DESCRIPTION
1	Mouse DATA	Mouse DATA
2	NC	No connection
3	GND	Ground
4	VCC	+5V
5	Mouse Clock	Mouse clock
6	NC	No connection

Keyboard Connector: JKBMS1

The mainboard provides a standard PS/2® keyboard mini DIN connector for attaching a PS/2® keyboard. You can plug a PS/2® keyboard directly into this connector.

Pin Definition

PIN	SIGNAL	DESCRIPTION
1	Keyboard DATA	Keyboard DATA
2	NC	No connection
3	GND	Ground
4	VCC	+5V
5	Keyboard Clock	Keyboard clock
6	NC	No connection

PS/2 Keyboard (6-pin Female)
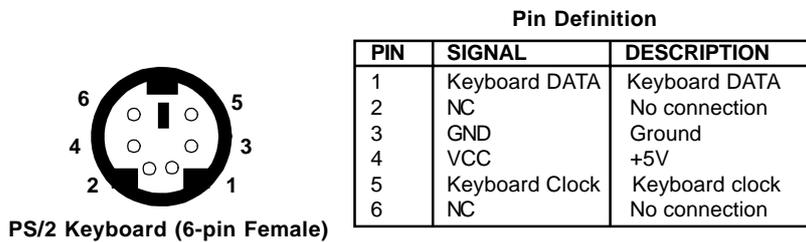
USB Connectors

The mainboard provides a UHCI (Universal Host Controller Interface) Universal Serial Bus root for attaching USB devices such as keyboard, mouse or other USB-compatible devices. You can plug the USB device directly into ths connector.

USB Port Description

PIN	SIGNAL	DESCRIPTION
1	VCC	+5V
2	-Data 0	Negative Data Channel 0
3	+Data0	Positive Data Channel 0
4	GND	Ground
5	VCC	+5V
6	-Data 1	Negative Data Channel 1
7	+Data 1	Positive Data Channel 1
8	GND	Ground

USB Ports
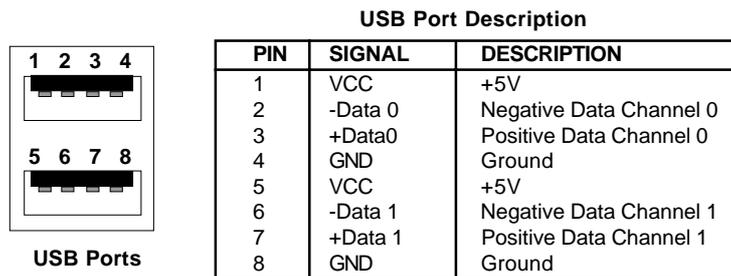
Serial Port Connector: COM A & COM B

The mainboard offers one 9-pin male DIN serial port COM A and one 9-pin COM B pin header. The ports are 16550A high speed communication ports that send/receive 16 bytes FIFOs. You can attach a serial mouse or other serial devices directly to them.

Pin Definition

1 2 3 4 5

6 7 8 9
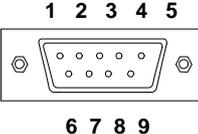
9-Pin Serial Connectors

PIN	SIGNAL	DESCRIPTION
1	DCD	Data Carry Detect
2	SIN	Serial In or Receive Data
3	SOUT	Serial Out or Transmit Data
4	DTR	Data Terminal Ready)
5	GND	Ground
6	DSR	Data Set Ready
7	RTS	Request To Send
8	CTS	Clear To Send
9	RI	Ring Indicate

Joystick/Midi Connectors

You can connect a joystick or game pad to this connector.
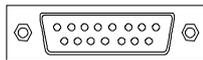
Audio Port Connectors

Line Out is a connector for Speakers or Headphones. **Line In** is used for external CD player, Tape player, or other audio devices. **Mic** is a connector for microphones.

1/8" Stereo Audio Connectors

Line Out   Line In   MIC

Parallel Port Connector: LPT1

The mainboard provides a 25-pin female centronic connector for LPT. A parallel port is a standard printer port that supports Enhanced Parallel Port (EPP) and Extended Capabilities Parallel Port (ECP) mode.
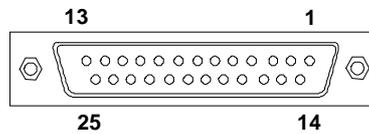
Pin Definition

PIN	SIGNAL	DESCRIPTION
1	STROBE	Strobe
2	DATA0	Data0
3	DATA1	Data1
4	DATA2	Data2
5	DATA3	Data3
6	DATA4	Data4
7	DATA5	Data5
8	DATA6	Data6
9	DATA7	Data7
10	ACK#	Acknowledge
11	BUSY	Busy
12	PE	Paper End
13	SELECT	Select
14	AUTOFEED#	Automatic Feed
15	ERR#	Error
16	INIT#	Initialize Printer
17	SLIN#	Select In
18	GND	Ground
19	GND	Ground
20	GND	Ground
21	GND	Ground
22	GND	Ground
23	GND	Ground
24	GND	Ground
25	GND	Ground

VGA DB 15 Pin Connector

One DB 15-pin VGA connector is supplied for connection to a VGA monitor.

Pin Definition

5   1

15   11
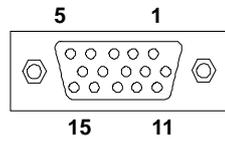
DB 15-Pin Female Connector

Analog Video Display Connector (DB-15S)	
PIN	SIGNAL DESCRIPTION
1	Red
2	Green
3	Blue
4	Not used
5	Ground
6	Ground
7	Ground
8	Ground
9	Power
10	Ground
11	Not used
12	SDA
13	Horizontal Sync
14	Vertical Sync
15	SCL

Connectors

The mainboard provides connectors to connect to FDD, IDE HDD, case, modem, LAN, USB Ports, IR module and CPU/System FAN.

Floppy Disk Drive Connector: FDD

The mainboard provides a standard floppy disk drive connector that supports 360K, 720K, 1.2M, 1.44M and 2.88M floppy disk types.
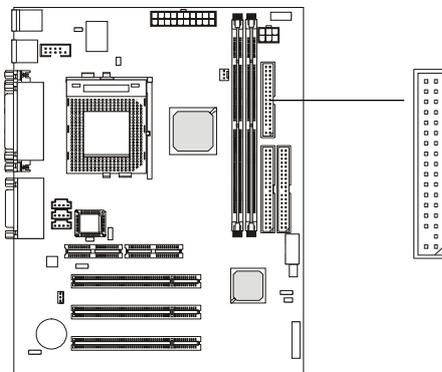
IrDA Infrared Module Connector: IR

This connector allows you to connect an IrDA Infrared module. You must configure the setting through the BIOS setup to use the IR function.

1   5

IR

Pin Definition

PIN	SIGNAL
1	VCC
2	NC
3	IRRX
4	GND
5	IRTX
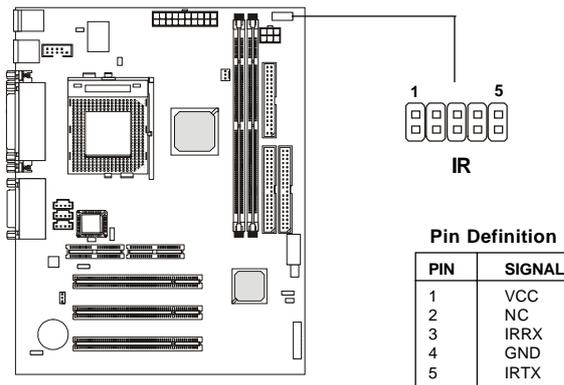
Hard Disk Connectors: IDE1 & IDE2

The mainboard has a 32-bit Enhanced PCI IDE and Ultra DMA 33/66/100 controller that provides PIO mode 0~4, Bus Master, and Ultra DMA/33/66/100 function. You can connect up to four hard disk drives, CD-ROM, 120MB Floppy (reserved for future BIOS) and other devices. These connectors support the provided IDE hard disk cable.
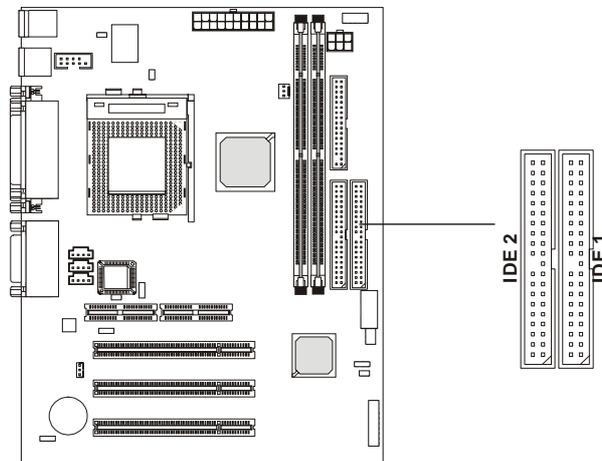
IDE1 (Primary IDE Connector)

The first hard drive should always be connected to IDE1. IDE1 can connect a Master and a Slave drive. You must configure second hard drive to Slave mode by setting the jumper accordingly.

IDE2 (Secondary IDE Connector)

IDE2 can also connect a Master and a Slave drive.

> **TIP:**
> *If you install two hard disks on cable, you must configure the second drive to Slave mode by setting its jumper. Refer to the hard disk documentation supplied by hard disk vendors for jumper setting instructions.*

Case Connector: J16

The case connector J16 allows you to connect to the Power Switch, Reset Swtich, Power LED, and HDD LED on the case.
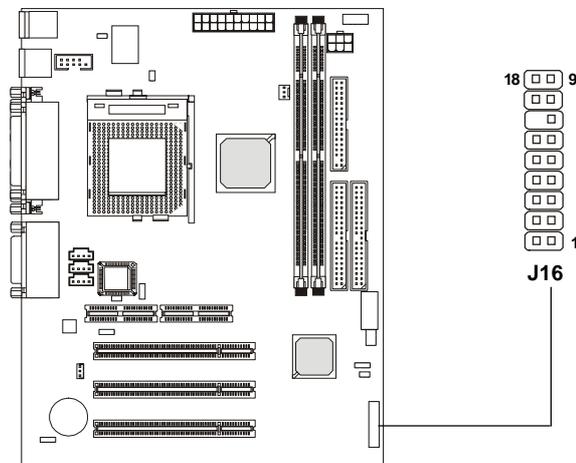
J16 Pin Definition

PIN	SIGNAL	PIN	SIGNAL
1	HDD+	10	PLED1
2	HDD-	11	PLED2
3	GND	12	PWRSW+
4	Reset	13	GND
5	5V	14	SMI
6	IRRX	15	GND
7	GND	16	NC
8	IRTX	17	5V
9	NC	18	NC

CD-In Connector: CD_IN

The connector is for CD-ROM audio connector.

Aux Line-In Connector: AUX_IN

The connector is for DVD add-on card with Line-in connector.

Modem-In Connector: MODEM_IN

The connector is for modem with internal audio connector.
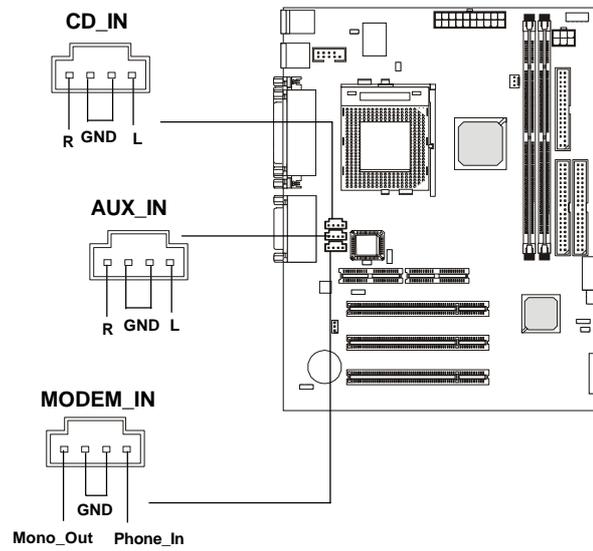
Wake On LAN Connector: JWOL1

This connector allows you to connect to a LAN card with Wake On LAN function. You can wake up the computer via remote control through a local area network.

```
MP_WAKEUP  □
      GND  □
     5VSB  □ 1
```

JWOL1
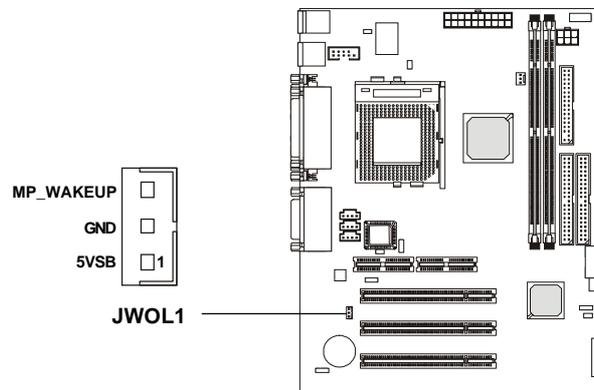
Power Saving Switch Connector: JGS1

Attach a power saving switch to this connector. Pressing the switch once will have the system enter the sleep/suspend state. Press any key to wake up the system.

JGS1
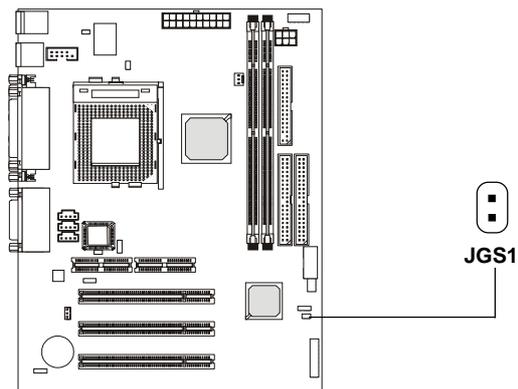
USB Front Connector: USB2 (optional)

The mainboard provides a front Universal Serial Bus connector for you to connect to USB devices.

USB2 Pin Definition

Pin	Description	Pin	Description
1	NC	6	USB1+
2	Power	7	GND
3	GND	8	USB1-
4	NC	9	GND
5	NC	10	NC
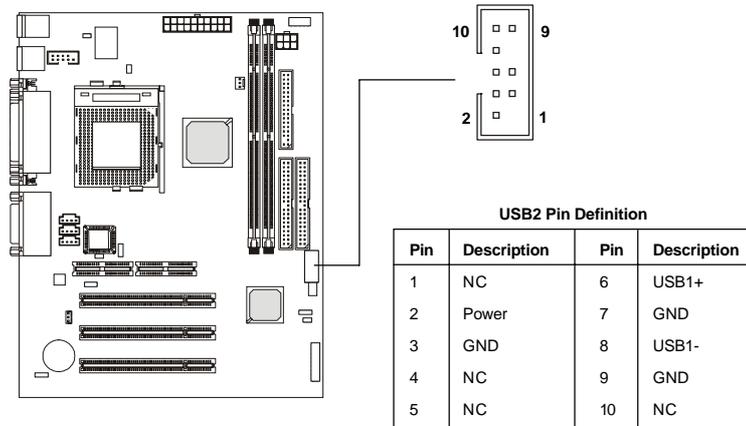
Chassis Intrusion Switch Connector: J10

This connector is connected to 2-pin connector chassis switch. If the chassis is open, the switch will be short. The system will record this status. To clear the warning, you must enter the BIOS settting and clear the status.

2-17
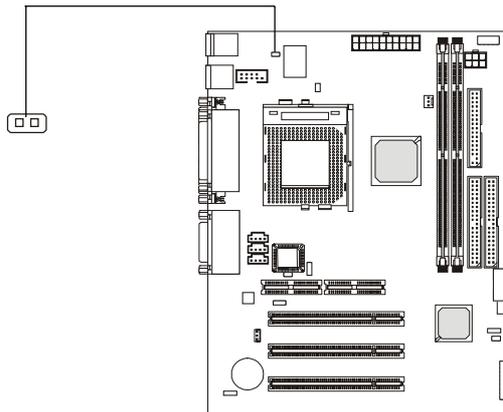
Fan Power Connectors: CPUFAN

The CPUFAN (processor fan) supports system cooling fan with +12V. It supports three-pin head connector. When connecting the wire to the connectors, always take note that the red wire is the positive and should be connected to the +12V, the black wire is Ground and should be connected to GND. If the mainboard has a System Hardware Monitor chipset on-board, you must use a specially designed fan with speed sensor to take advantage of the CPU fan control.

SENSOR
+12V
GND
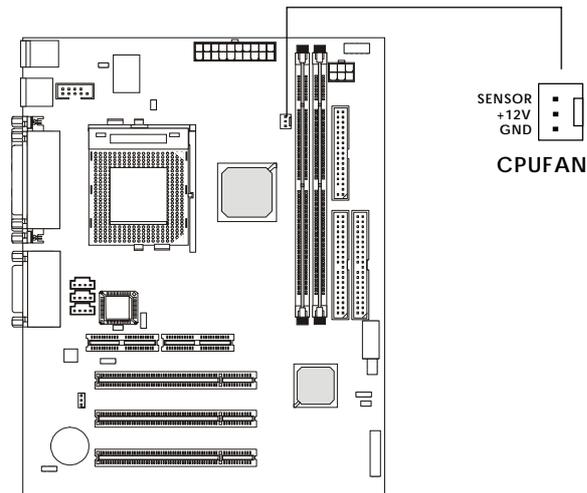
CPUFAN

Note:
1. *Always consult the vendor for proper CPU cooling fan.*
2. *CPU Fan supports the fan control. You can install the PC Alert utility that will automatically control the CPU Fan speed according to the actual CPU temeperature.*

Jumpers

The motherboard provides one jumper for you to set the computer's function. This section will explain how to change your motherboard's function through the use of the jumper.

Clear CMOS Jumper: J1

There is a CMOS RAM on board that has a power supply from external battery to keep the data of system configuration. With the CMOS RAM, the system can automatically boot OS every time it is turned on. That battery has long life time for at least 5 years. If you want to clear the system configuration, use the J1 (Clear CMOS Jumper) to clear data. Follow the instructions below to clear the data:

1

J1

1   3   1   3

Keep CMOS   Clear CMOS
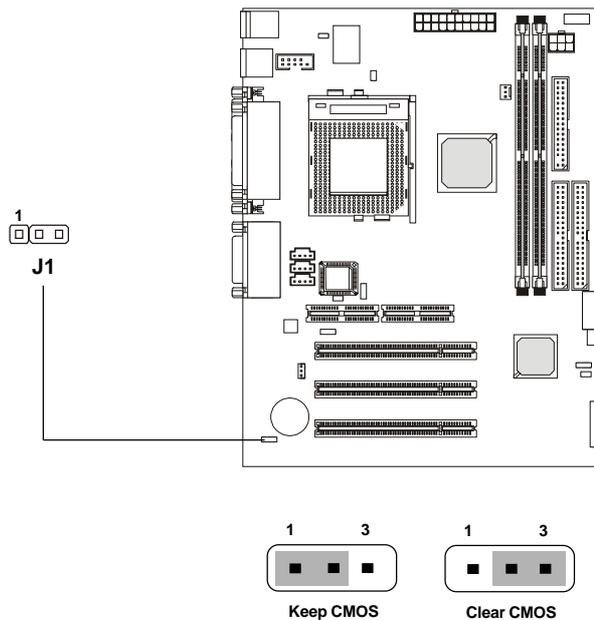
> **STOP**
>
> **WARNING!**
>
> *You can clear CMOS by shorting 2-3 pin while the system is off. Then return to 1-2 pin position. Avoid clearing the CMOS while the system is on; it will damage the mainboard.*

2-19

BIOS Flash Jumper: JP3

The jumper is used to lock or unlock the boot block area on the BIOS. When unlocked, the BIOS boot block area can be updated. When locked, the area cannot be updated.

JP3

Open (Default)   Short
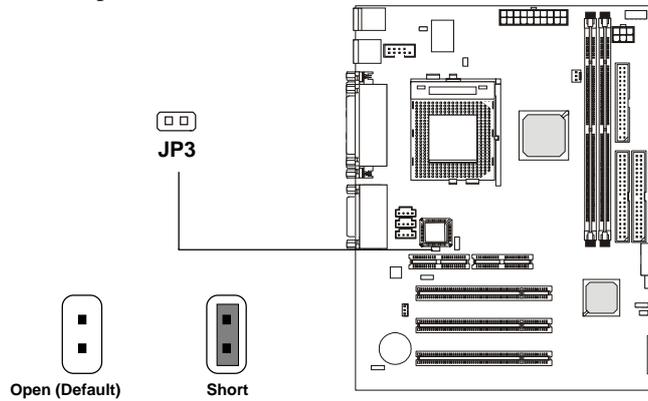
Case Speaker to Audio Speaker Jumper: J15

This jumper is used to enable the case speaker to be transferred to audio speaker.

1   3   1   3

To Audio
Speaker   Normal
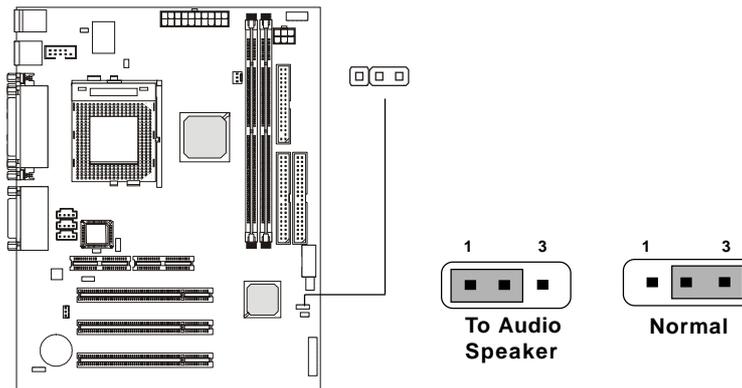
USB Front Connector Enabled/Disabled Jumper: J17

This jumper is used to enable or disable the USB front connector. If the USB front connector is set to enabled, the top USB port at the rear I/O panel will be disabled. If the USB Front connector is set to disabled, the USB ports at the rear I/O panel will both be operational.
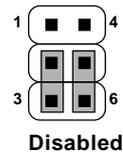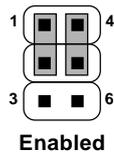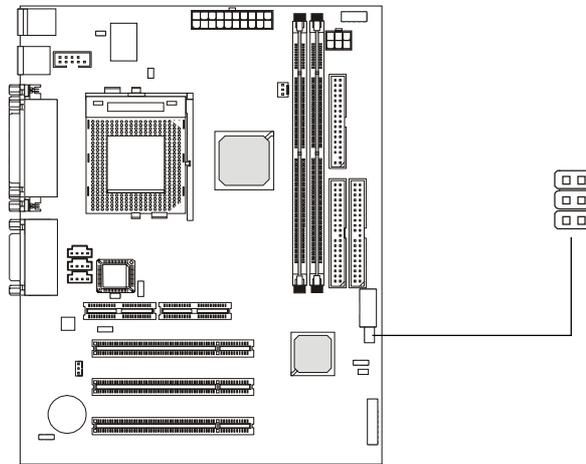
Enabled   **Disabled**

Onboard Audio Jumper: JP4

This jumper is used to enable/disable the onboard audio.

1   **3**   **1**   **3**

Enabled   **Disabled**
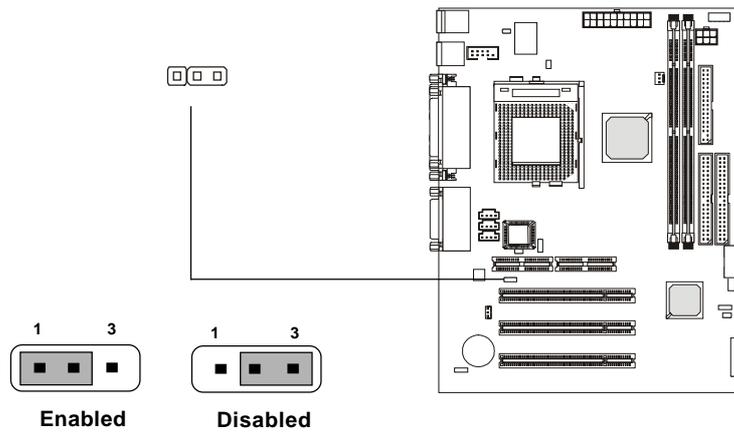
Slots

The motherboard provides three 32-bit Master PCI bus slots and two AMR slots.
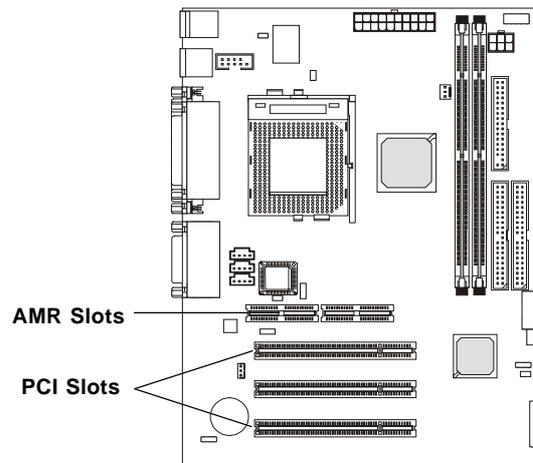
AMR (Audio Modem Riser) Slot

AMR is an Intel specification that lets manufacturers create motherboards without analog I/O functions (codecs). These functions that are required for auido and/or modem operation are placed on a separate AMR card. You can install any AMR card with audio and/or modem codec chip on the AMR slot.

PCI Slots

Three PCI slots allow you to insert the expansion cards to meet your needs. When adding or removing expansion cards, make sure that you unplug the power supply first. Meanwhile, read the documentation for the expansion card to make any necessary hardware or software settings for the expansion card, such as jumpers, switches or BIOS configuration.

Chapter 3

AWARD® BIOS SETUP

Award® BIOS ROM has a built-in Setup program that allows users to modify the basic system configuration. This type of information is stored in battery-backed RAM (CMOS RAM), so that it retains the Setup information when the power is turned off.

3.1 Entering Setup

Power on the computer and press <Del> immediately to allow you to enter Setup. The other way to enter Setup is to power on the computer. When the below message appears briefly at the bottom of the screen during the POST (Power On Self Test), press <Del> key or simultaneously press <Ctrl>, <Alt>, and <Esc> keys.

TO ENTER SETUP BEFORE BOOT, PRESS <CTRL-ALT-ESC>
OR <DEL> KEY

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, <CTRL-ALT-ESC>
OR <DEL> TO ENTER SETUP

3.2 Getting Help

Main Menu

The on-line description of the highlighted setup function is displayed at the bottom of the screen.

Status Page Setup Menu/Option Page Setup Menu

Press F1 to pop up a small help window that describes the appropriate keys to use and the possible selections for the highlighted item. To exit the Help Window, press <Esc>.

3.3 The Main Menu

Once you enter Award® BIOS CMOS Setup Utility, the Main Menu (Figure 1) will appear on the screen. The Main Menu allows you to select from twelve setup functions and two exit choices. Use arrow keys to select among the items and press <Enter> to accept or enter the sub-menu.

CMOS Setup Utility - Copyright(C) 1984-1999

```
STANDARD CMOS Feature      Frequency/Voltage Control

Advanced BIOS Feature      Load Fail-Safe Defaults

Advanced Chipset Feature   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                 ↑↓→←   : Select Item
F10 : Save & Exit Setup  (Shift)F2 : Change Color


          Time, Date, Hard Disk Type...
```

Standard CMOS Setup
        Use this Menu for basic system configurations.

Advanced BIOS Features
        Use this menu to set the Advanced Features available on your system.

Advanced Chipset Features
Use this menu to change the values in the chipset registers and optimize your system's performance.

Integrated Peripherals
Use this menu to specify your settings for integrated peripherals.

Power Management Setup
Use this menu to specify your settings for power management.

PnP/PCI Configuration
This entry appears if your system supports PnP/PCI.

PC Health Status (Optional)
This entry shows your PC health status.

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

Load Fail-Safe Defaults
Use this menu to load the BIOS default values for the minimal/stable performance for your system to operate.

Load Optimized Defaults
Use this menu to load the BIOS default values that are factory settings for optimal performance system operations.

Supervisor/User Password
Use this menu to set User and Supervisor Passwords.

Save & Exit Setup
Save CMOS value changes to CMOS and exit setup.

Exit Without Saving
Abandon all CMOS value changes and exit setup.

3.4 Standard CMOS Setup

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

CMOS Setup Utility - Copyright(C) 1984-1999 Award Software
Standard CMOS Setup

```
┌─────────────────────────────────────────────┬──────────────────────────┐
│ Date(mm:dd:yy):        Tue, Jan 9,2001        │                          │
│ Time(hh:mm:ss):        00:00:00               │        Item Help         │
│                                               │                          │
│                                               ├──────────────────────────┤
│ IDE Primary Master     Press Enter 2557MB     │ Menu Level  >            │
│ IDE Primary Slave      Press Enter None       │                          │
│ IDE Secondary Master   Press Enter None       │ Change the day, month,   │
│ IDE Secondary Slave    Press Enter None       │ year and century         │
│                                               │                          │
│                                               │                          │
│ Drive A                1.44M, 3.5in.          │                          │
│ Drive B                None                   │                          │
│                                               │                          │
│                                               │                          │
│ Video                  EGA/VGA                │                          │
│ Halt On                All But Keyboard       │                          │
│                                               │                          │
│                                               │                          │
│ Based Memory           640K                   │                          │
│ Extended Memory        64512K                 │                          │
│ Total Memory           65536K                 │                          │
│                                               │                          │
│                                               │                          │
├───────────────────────────────────────────────┴──────────────────────────┤
│ ↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help   │
│    F5:Previous Values F6:Fail-safe defaults F7:Optimized Defaults          │
└────────────────────────────────────────────────────────────────────────────┘
```

Date

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

Day	Day of the week, from Sun to Sat, determined by BIOS. Read-only.
month	The month from Jan. through Dec.
date	The date from 1 to 31 can be keyed by numeric function keys.
year	The year, depends on the year of the BIOS

Time

The time format is <hour> <minute> <second>.

PrimaryMaster/PrimarySlave
SecondaryMaster/Secondary Slave

Press PgUp/<+> or PgDn/<-> to select Manual, None, Auto type. Note that the specifications of your drive must match with the drive table. The hard disk will not work properly if you enter improper information for this category. If your hard disk drive type is not matched or listed, you can use Manual to define your own drive type manually.

If you select Manual, related information is asked to be entered to the following items. Enter the information directly from the keyboard. This information should be provided in the documentation from your hard disk vendor or the system manufacturer.

If the controller of HDD interface is SCSI, the selection shall be
                    "None".
If the controller of HDD interface is CD-ROM, the selection shall be
                    "None".

Access Mode	The settings are Auto, Normal, Large,LBA.
Cylinder	number of cylinders
Head	number of heads
Precomp	write precom
Landing Zone	landing zone
Sector	number of sectors

3.5 Advanced BIOS Features

CMOS Setup Utility - Copyright(C) 1984-1999 Award Software
Advanced BIOS Features

```
┌─────────────────────────────────────────┬─────────────────────────┐
│ Anti-Virus Protection        Disabled    │                         │
│ CPU Internal Cache           Enabled      │       Item Help         │
│ External Cache               Enabled      │                         │
│ CPU L2 Cache ECC Checking    Enabled      ├─────────────────────────┤
│ Quick Power On Self Test     Enabled      │ Menu Level  >           │
│ First Boot device            Floppy       │                         │
│ Second Boot device           HDD-0        │ Allows you to choose    │
│ Third Boot device            CDROM        │ the VIRUS warning       │
│ Boot Other device            Enabled      │ feature for IDE Hard    │
│ Swap Floppy Drive            Disabled     │ Disk boot sector        │
│ Boot Up Floppy Seek          Disabled     │ protection.  If this    │
│ Boot Up Numlock Status       On           │ function is enabled     │
│ Gate A20 Option              Fast         │ and someone attempt to  │
│ Typematic Rate Setting       Disabled     │ write data into this    │
│ Typematic Rate (Chars/Sec)   6            │ area, BIOS will show a  │
│ Typematic Delay (Msec)       250          │ warning message on      │
│ Security Option              Setup        │ screen and alarm beep.  │
│ OS Select for DRAM > 64MB    Non-OS2      │                         │
│ Report No FDD for WIN 95     No           │                         │
│                                           │                         │
│                                           │                         │
│                                           │                         │
├───────────────────────────────────────────┴─────────────────────────┤
│ ↑↓→←Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help│
│    F5:Previous Values F6:Fail-safe defaults F7:Optimized Defaults      │
└───────────────────────────────────────────────────────────────────────┘
```

Anti-Virus Protection

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

Disable(default)	No warning message to appear when anything attempts to access the boot sector or hard disk partition table.
Enable	Activates automatically when the system boots up causing a warning message to appear when anything attempts to access the boot sector of hard disk partition table.

CPU Internal Cache

The default value is Enabled.

Enabled (default)   Enable cache

Disabled   Disable cache

Note: The internal cache is built in the processor.

External Cache

Choose Enabled or Disabled. This option enables the level 2 cache memory.

CPU L2 Cache ECC Checking

Choose Enabled or Disabled. This option enables the level 2 cache memory ECC(error check correction).

Quick Power On Self Test

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

Enabled   Enable quick POST

Disabled (default)   Normal POST

First/Second/Third/Other Boot Device

The BIOS attempts to load the operating system from the devices in the sequence selected in these items. The settings are Floppy, LS/ZIP, HDD-0/HDD-1/HDD-2/HDD-3, SCSI, CDROM, LAN, and Disabled.

Swap Floppy Drive

Switches the floppy disk drives between being designated as A and B. Default is Disabled.

Boot Up Floppy Seek

During POST, BIOS will determine if the floppy disk drive installed is 40 or 80 tracks. 360K type is 40 tracks while 760K, 1.2M and 1.44M are all 80 tracks.

Boot Up NumLock Status

The default value is On.

On (default)   Keypad is numeric keys.
Off   Keypad is arrow keys.

Gate A20 Option

Normal   The A20 signal is controlled by keyboard
                  controller or chipset hardware.
Fast(default) The A20 signal is controlled by port 92 or
                  chipset specific method.

Typematic Rate Setting

Key strokes repeat at a rate determined by the keyboard controller.
When enabled, the typematic rate and typematic delay can be selected.
The settings are: Enabled/Disabled.

Typematic Rate (Chars/Sec)

Sets the number of times a second to repeat a key stroke when you
hold the key down. The settings are: 6, 8, 10, 12, 15, 20, 24, 30.

Typematic Delay (Msec)

Sets the delay time after the key is held down before it begins to
repeat the keystroke   The settings are: 250, 500, 750, 1000.

Security Option

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

System   The system will not boot and access to Setup
                  will be denied if the correct password is not
                  entered at the prompt.
Setup(default)The system will boot, but access to Setup will
                  be denied if the correct password is not entered
                  at the prompt.

OS Selection for DRAM > 64MB

Allows OS2® to be used with > 64 MB of DRAM. Settings are Non-OS/2 (default) and OS2. Set to OS/2 if using more than 64MB and running OS/2®.

Report No FDD For Win 95

Whether report no FDD for Win 95 or not. The settings are: Yes, No.

3.6 Advanced Chipset Features

The Advanced Chipset Features Setup option is used to change the values of the chipset registers. These registers control most of the system options in the computer.

Choose the "ADVANCED CHIPSET FEATURES" from the Main Menu and the following screen will appear.

CMOS Setup Utility - Copyright(C) 1984-1999 Award Software
Advanced Chipset Features

```
 SDRAM CAS Latency Time        Auto
 SDRAM Cycle Time Tras/Trc     6/8              Item Help
 SDRAM RAS-to-CAS Delay        3
 SDRAM RAS Precharge Time      3
 System BIOS Cacheable         Disabled    Menu Level   >
 Video BIOS Cacheable          Disabled
 Memory Hole at 15M-16M        Disabled
 CPU Latency Timer             Disabled
 Delayed Transaction           Enabled
 On-Chip Video                 Enabled
 Local Memory Frequency        100MHz

 *Onboard Display Cache Setting*
 Initial Display Cache         Enable
 CAS# Latency                  3
 Paging Mode Control           Open
 RAS-to-CAS Override           by CAS#LT
 RAS# Timing                   Fast
 RAS# Precharge Timing         Fast



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

Note: Change these settings only if you are familiar with the chipset.

SDRAM CAS latency Time

When synchronous DRAM is installed, the number of clock cycles of CAS latency depends on the DRAM timing.   The settings are: 2 and 3.

SDRAM Cycle Time Tras/Trc

Select the number of SCLKs for an access cycle. The settings are: 5/7 and 6/8.

SDRAM RAS-to-CAS Delay

This field lets you insert a timing delay between the CAS and RAS strobe signals, used when DRAM is written to, read from, or refreshed. *Fast* gives faster performance; and *Slow* gives more stable performance. This field applies only when synchronous DRAM is installed in the system. The settings are: 2 and 3.

SDRAM RAS Precharge Time

If an insufficient number of cycles is allowed for the RAS to accumulate its charge before DRAM refresh, the refresh may be incomplete and the DRAM may fail to retain data. *Fast* gives faster performance; and *Slow* gives more stable performance. This field applies only when synchronous DRAM is installed in the system.   The settings are: 2 and 3.

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 settings are: Enabled and Disabled.

Video BIOS Cacheable

Select Enabled allows caching of the video BIOS , resulting in better system performance. However, if any program writes to this memory area, a system error may result. The settings are: Enabled and 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 settings are: Enabled and Disabled.

CPU Latency Timer

During Enabled, A deferrable CPU cycle will only be Deferred after it has been in a Snoop Stall for 31 clocks and another ADS# has arrived. During Disabled, A deferrable CPU cycle will be Deferred immediately after the GMCH receives another ADS#.

Delayed Transaction

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

On-Chip Video

This option enabled/disabled the on-chip video window size for VGA driver use. The settings are: Enabled, Disabled.

Local Memory Frequency (For Intel 810E chipset only)

Select the Onboard Display Cache frequency. The settings are: 133MHz or 100MHz.

Onboard Display Cache Setting (optional)

Initial Display Cache
Enable and Disable Onboard Display Cache. The settings are: Enable and Disable.

CAS# Latency
The number of clock cycles of CAS# Latency depends on the Onboard Display cache timing. The settings are: 2 and 3.

Paging Mode Control
Select the paging mode control. The settings are:Open and Close.

RAS-to-CAS Override
This items allows you to insert a timing delay between the CAS and RAS strobe signals, used when Onboard display cache is written to, read from, or refreshed. During by CAS# LT, this will depend on the Onboard Display Cache CAS# Latency setting. During Override (2), RAS-to-CAS time=2.

RAS# Timing
This option controls RAS# active to Precharge, and refresh to RAS# active delay (in local memory clocks).
Slow RAS# to precharge (t_{RAS}) =7, refresh to RAS# act (t_{RC}) = 10
Fast RAS# to precharge (t_{RAS}) =5, refresh to RAS# act (t_{RC}) = 8

RAS# Precharge Timing
This item controls RAS# precharge (in local memory clocks)
Slow RAS# Precharge Time=3
Fast RAS# Precharge Time=2

3.7 Integrated Peripherals

CMOS Setup Utility - Copyright(C) 1984-1999 Award Software
Integrated Peripherals

```
OnChip Primary PCI IDE      Enabled
OnChip Secondary PCI IDE    Enabled                    Item Help
IDE Primary Master PIO      Auto
IDE Primary Slave PIO       Auto
IDE Secondary Master PIO    Auto          Menu Level  >
IDE Secondary Slave PIO     Auto
IDE Primary Master UDMA     Auto
IDE Primary Slave UDMA      Auto
IDE Secondary Master UDMA   Auto
IDE Secondary Slave UDMA    Auto
USB Controller              Enabled
USB Keyboard Support        Enabled
Init Display First          PCI Slot
AC97 Audio                  Auto
AC97 Modem                  Disabled
IDE HDD Block Mode          Enabled
Power On Function           Button Only
KB Power On Password        Enter Ctrl+F1
Hot Key Power On
Onboard FDC Controller      Enabled
Onboard Serial Port 1       3F8/IRQ4
Onboard Serial Port 2       2F8/IRQ3
UART Mode Select            Normal
```

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

```
RxD, TxD Active             Hi, Lo
IR Transmition Delay        Enabled
UR2 Duplex Mode             Half
USE IR Pins                 IR-Rx2Tx2
Onboard Parallel Port       378/IRQ7
Parallel Port Mode          SPP
EPP Mode Select             EPP 1.7
ECP Mode use UDMA           3
PWRON After PWR-Fail        Off
Game Port Address           201
Midi Port Address           330
Midi Port IRQ               10
Power Status LED            Blinking
```

OnChip Primary/Secondary PCI IDE

The integrated peripheral controller contains an IDE interface with support for two IDE channels. Select *Enabled* to activate each channel separately. The settings are: Enabled and Disabled.

IDE Primary/Secondary Master/Slave PIO

The four IDE PIO (Programmed Input/Output) fields let you set a PIO mode (0-4) for each of the four IDE devices that the onboard IDE interface supports. Modes 0 through 4 provide successively increased performance. In Auto mode, the system automatically determines the best mode for each device. The settings are: Auto, Mode 0, Mode 1, Mode 2, Mode 3, Mode 4.

IDE Primary/Secondary Master/Slave UDMA

Ultra DMA/33 implementation is possible only if your IDE hard drive supports it and the operating environment includes a DMA driver (Windows 95 OSR2 or a third-party IDE bus master driver). If your hard drive and your system software both support Ultra DMA/33 and Ultra DMA/66, select Auto to enable BIOS support. The settings are: Auto, Disabled.

USB Controller

Select *Enabled* if your system contains a Universal Serial Bus (USB) controller and you have USB peripherals. The settings are: Enabled, Disabled.

USB Keyboard Support

Select *Enabled* if your system contains a Universal Serial Bus (USB) controller and you have a USB keyboard. The settings are: Enabled, Disabled.

Init Display First

This item allows you to decide to activate whether PCI Slot or on-chip VGA first. The settings are: PCI Slot, Onboard.

AC97 Audio/Modem

This item allows you to decide to enable/disable the 810 chipset family to support AC97 Audio/Modem. The settings are: Enabled, Disabled.

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. The settings are: Enabled, Disabled.

Power On Function

This function allows you to select the item to power on the system. The settings are : Button Only, Mouse Left, Mouse Right, Password, Hotkey, keyboard 98.

Onboard FDC Controller

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

Onboard Serial Port 1/Port 2

Select an address and corresponding interrupt for the first and second serial ports. The settings are: 3F8/IRQ4, 2E8/IRQ3, 3E8/IRQ4, 2F8/ IRQ3, Disabled, Auto.

UART Mode Select

This item allows you to determine which InfraRed(IR) function of the onboard I/O chip, this functions uses.

Onboard Parallel Port

Disabled	There is a built-in parallel port on the
(3BCH/IRQ7)/	on-board Super I/O chipset that pro-
(278H/IRQ5)/	vides Standard, ECP, and EPP features.
(378H/IRQ7)	It has the following options:

Disable

3BCH/IRQ7	Line Printer port 0
278H/IRQ5	Line Printer port 2
378H/IRQ7	Line Printer port 1

Parallel Port Mode

SPP : Standard Parallel Port
EPP : Enhanced Parallel Port
ECP : Extended Capability Port

SPP/EPP/ECP/	To operate the onboard parallel port as
ECP+EPP	Standard Parallel Port only, choose
	"SPP." To operate the onboard parallel
	port in the EPP modes simultaneously,
	choose "EPP." By choosing "ECP", the
	onboard parallel port will operate in ECP
	mode only. Choosing "ECP + EPP" will
	allow the onboard parallel port to
	support both the ECP and EPP modes
	simultaneously. The ECP mode has to
	use the DMA channel, so choose the
	onboard parallel port with the ECP
	feature. After selecting it, the following
	message will appear: "ECP Mode Use
	DMA" At this time, the user can
	choose between DMA

channels 3 or 1. The onboard parallel port is EPP Spec. compliant, so after the user chooses the onboard parallel port with the EPP function, the following message will be displayed on the screen: "EPP Mode Select." At this time either EPP 1.7 spec. or EPP 1.9 spec. can be chosen.

PWRON After PWR-FAIL

This option will determine how the system will power on after a power failure.

Game Port Address/Midi Port Address

This will determine which Address the Game Port/Midi Port will use.

Power Status LED

This item determines which state the Power LED will use. The settings are Blinking, Dual, and Single. During blinking, the power LED will blink when the system enters the suspend mode. When the mode is in Dual, the power LED will change its color. Choose the single and the power LED will always remain lit.

3.8 Power Management Setup

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.

CMOS Setup Utility - Copyright(C) 1984-1999 Award Software
Power Management Setup

```
┌────────────────────────────────────────────────┬──────────────────────┐
│ ACPI Function              Enabled              │                      │
│ ACPI Suspend Type          S3(STR)              │      Item Help       │
│ Power Management           User Define          │                      │
│ Video Off Method           DPMS                 ├──────────────────────┤
│ Video Off In Suspend       Yes                  │                      │
│ Suspend Type               Stop Grant           │ Menu Level  >        │
│ Modem Use IRQ              NA                    │                      │
│ Suspend Mode               Disabled             │                      │
│ HDD Power Down             Disabled             │                      │
│ Soft-Off by PWR-BTTN       Instant-Off          │                      │
│ Wake-Up by PCI Card        Disabled             │                      │
│ Power On by Ring           Disabled             │                      │
│ Wake-Up on LAN             Disabled             │                      │
│ USB KB Wake-Up from S3     Disabled             │                      │
│ CPU Thermal-Throtting      50.0%                │                      │
│ Resume By Alarm            Disabled             │                      │
│ Date(of Month) Alarm       0                    │                      │
│ Date(hh:mm:ss)             0 0 0                │                      │
│                                                 │                      │
│ **Reload Global Timer Events**                  │                      │
│ Primary IDE 0              Disabled             │                      │
│ Primary IDE 1              Disabled             │                      │
│ Secondary IDE 0            Disabled             │                      │
│ Secondary IDE 1            Disabled             │                      │
│ FDD, COM, LPT Port         Disabled             │                      │
│ PCI PIRQ[A-D]#             Disabled             │                      │
│                                                 │                      │
├────────────────────────────────────────────────┴──────────────────────┤
│ ↑↓→←Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help │
│   F5:Previous Values F6:Fail-safe defaults F7:Optimized Defaults        │
└────────────────────────────────────────────────────────────────────────┘
```

ACPI Function

This item allows you to enable/disable the Advanced Configuration and Power Management (ACPI). The settings are: Enabled and Disabled.

ACPI Suspend Type

This item will set which ACPI suspend type will be used.

S1 (POS)

The S1 sleeping state is low wake-up latency sleeping state. In this state, no system context is lost(CPU or chip set) and hardware maintains all system context.

S3 (STR)

The S3 state is a low wake-up latency sleeping sate where all system context is lost expect system memory. CPU, cache, and chipset context are lost in this state. Hardware maintains memory context and restores some CPU and L2 configuration context.

Power Management

This category allows you to select the type (or degree) of power saving and is directly related to the following modes:

1. Suspend Mode
2. HDD Power Down

There are three selections for Power Management, two of which have fixed mode settings.

Min. Power Saving	Minimum power management. Suspend Mode = 1 hr., and HDD Power Down = 15 min.
Max. Power Saving	Maximum power management — Suspend Mode = 1 min., and HDD Power Down = 1 min.
User Defined (default)	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.

Video Off Method

This determines the manner in which the monitor is blanked.

V/HSYNC+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 (default)	Initial display power management signaling.

Video Off In Suspend
This determines the manner in which the monitor is blanked.
The settings are: Yes and No.

Suspend Type
Select the Suspend Type. The settings are: PWRON Suspend, Stop Grant.

Modem Use IRQ
This determines the IRQ in which the MODEM can use.
The settings are: 3, 4, 5, 7, 9, 10, 11, NA.

Suspend Mode
When enabled and after the set time of system inactivity, all devices except the CPU will be shut off. The settings are: 1/2/4/8/12/20/30/40 Min, 1 Hour, and Disabled.

HDD Power Down
When enabled and after the set time of system inactivity, the hard disk drive will be powered down while all other devices remain active.
The settings are: 1/2/3/4/5/6/7/8/9/10/11/12/13/14/15Min and Disabled.

Soft-Off by PWR-BTTN
Pressing the power button for more than 4 seconds forces the system to enter the Soft-Off state. The settings are: Delay 4 Sec, Instant-Off.

Wake-Up by PCI Card
This will enable the system to wake up through PCI Card peripheral.
The settings are : Enabled and Disabled.

Power On by Ring
During Disabled, the system will ignore any incoming call from the modem. During Enabled, the system will boot up if there's an incoming call from the modem.

Wake-Up on LAN
To use this function, you need a LAN add-on card which support power on functions. It should also support the wake-up on LAN jumper (JWOL1).

Enabled	Wake up on LAN supported.
Disabled	Wake up on LAN not supported.

USB KB Wake-Up From S3
This option is used to Enabled/Disabled USB keyboard wake up with suspend to RAM.

CPU Thermal-Throttling
Select the CPU THRM-Throttling rate. The settings are: 25.0%, 37.5%, 50.0%, 62.5%, 75.0%, 87.5%.

Resume by Alarm
This function is for setting date and time for your computer to boot up. During Disabled, you cannot use this function. During Enabled, choose the Date and Time Alarm:

Date(of month) Alarm	You can choose which month the system will boot up. Set to 0, to boot every day.
Time(hh:mm:ss) Alarm	You can choose what hour, minute and second the system will boot up.

Note: If you have change the setting, you must let the system boot up until it goes to the operating system, before this function will work.

Reload Global Timer Events

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

> **Primary IDE 0**
> **Primary IDE 1**
> **Secondary IDE 0**
> **Secondary IDE 1**
> **FDD, COM, LPT Port**
> **PCI PIRQ[A-D]#**

3.9 PnP/PCI Configuration Setup

This section describes configuring the PCI bus system. PCI, or **P**ersonal **C**omputer **I**nterconnect, 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.

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

```
Reset Configuration Data      Disabled
                                                      Item Help
Resources Controlled By       Auto(ESCD)
IRQ Resources                 Press Enter
DMA Resources                 Press Enter       Menu Level  >

PCI/VGA Palette Snoop         Disabled          Default is 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 OS
                                                cannot boot

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

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 settings are: Enabled and Disabled .

Resource Controlled By

The Award Plug and Play BIOS has the capacity to automatically configure all of the boot and Plug and Play compatible devices. However, this capability means absolutely nothing unless you are using a Plug and Play operating system such as Windows®95/98. If you set this field to "manual" choose specific resources by going into each of the sub menu that follows this field (a sub menu is preceded by a "➢"). The settings are: Auto (ESCD), Manual.

IRQ Resources

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

DMA Resources

This sub menu can let you control the DMA resource.

PCI/VGA Palette Snoop

Leave this field at *Disabled*. The settings are Enabled, Disabled.

3.10 PC Health Status (optional)

This section shows the Status of you CPU, Fan, Warning for overall system status.

```
            CMOS Setup Utility - Copyright(C) 1984-1999 Award Software
                               PC Health Status
┌─────────────────────────────────────────────┬───────────────────────────┐
│ CPU Warning Temperature      Disabled        │                           │
│ Current System Temp          39°C/102°F       │        Item Help          │
│ Current CPU Temperature      66°C/150°C       │                           │
│ Current CPUFAN2 Speed        0RPM            ├───────────────────────────┤
│ Current CPUFAN3              5532RPM         │                           │
│ Vcore                        1.96V           │ Menu Level  >             │
│ VTT                          1.48V           │                           │
│ 3.3V                         3.24V           │                           │
│ +5V                          4.89V           │                           │
│ +12V                         11.79V          │                           │
│ -12V                         -12.19V         │                           │
│ -5V                          -4.53V          │                           │
│ VBAT(V)                      3.10V           │                           │
│ 5VSB(V)                      5.37V           │                           │
│ Chassis Intrusion Detect     Disabled        │                           │
│ Shutdown Temperature         Disabled        │                           │
│                                              │                           │
│                                              │                           │
│                                              │                           │
│                                              │                           │
│                                              │                           │
│                                              │                           │
├─────────────────────────────────────────────┴───────────────────────────┤
│ ↑↓→←Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help   │
│    F5:Previous Values F6:Fail-safe defaults F7:Optimized Defaults          │
└───────────────────────────────────────────────────────────────────────────┘
```

CPU Warning Temperature

       During Enabled, this will warn the user when the CPU temperature reach a certain temperature.

Current System Temp/Current CPU Temperature/Current CPU FAN/Vcore/VTT/3.3V/+5V/+12V/-12V/-5V/VBAT(V)/ 5VSB(V)

This will show the CPU/FAN/System voltage chart and FAN Speed.

Chassis Intrusion Detect

Set this option to Enabled, Reset, or Disabled the chassis intrusion detector. During Enabled, any intrusion on the system chassis will be recorded. The next time you turn on the system, it will show a warning message. To be able to clear those warning, choose reset. After clearing the message it will go back to Enabled.

Shutdown Temperature

This option is for setting the Shutdown temperature level for the processor. When the processor reach the temperature you set, this will shutdown the system.

3.11 Frequency/Voltage Control

This section is for setting CPU Frequency/Voltage Control.

```
              CMOS Setup Utility - Copyright(C) 1984-1999 Award Software
                           Frequency/Voltage Control
 ┌─────────────────────────────────────────────┬───────────────────────────┐
 │                                               │                           │
 │ Auto Detect DIMM/PCI Clk      Enabled         │        Item Help          │
 │ Spread Spectrum               0.5%(Cntr)      │                           │
 │ CPU Host/SDRAM Clock          Default         ├───────────────────────────┤
 │ CPU Clock Ratio               Auto            │ 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         │
 └────────────────────────────────────────────────────────────────────────────┘
```

Auto Detect DIMM/PCI Clk
      This item allows you to enable/disable auto detect DIMM/PCI Clock.

Spread Spectrum
      This item allows you to set the Spread Spectrum.

CPU Host/PCI Clock
      This item allows you to select the CPU Host/PCI Clock.

CPU Clock Ratio
      This item allows you to select the CPU clock ratio.

3.12 Load Fail-Safe/Optimized Defaults

Load Fail-Safe Defaults
When you press <Enter> on this item, you get a confirmation dialog box
with a message similar to:

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

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

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

Load Optimized Defaults (Y/N) ? N

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

3.13 Set Supervisor/User Password

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

Supervisor password :   can enter and change the options of the setup menus.

User password   :   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.

Chapter 4

INTEL 810 INTEGRATED GRAPHICS CONTROLLER

1. Overview

The Intel 810 Chipset extends Intel's graphics capabilities into the value PC segment by incorporating 2D and 3D capabilities with the memory controller, to provide the industry with complete graphics offerings for every computing segment.

1.1 Intel 810 Chipset

- Support 4MB Display Cache (optional)
- Support AGP 2X BUS
- 2D & 3D Graphics Accelerator

1.2 System Requirements

This section describes system requirements for the VGA Driver installation and Usage.

Computer	Intel® Celeron™ processor or higher
Monitor	VGA Support, mimimum 640x480 resolution
Operating system	DOS 5.0 or higher, Windows® 95/98, Windows® NT 3.51 or 4.0, or OS/2®
CD-ROM	Double Speed or Higher
Chipset	Intel® 810 chipset
VGA BIOS	Version 00.23 or Higher

2. Intel 810 VGA Driver Setup & Usage Procedures

Insert the CD-title into your CD-ROM drive. This CD will auto-run. This will display installation for VGA driver and sound driver, Intel 810/820 INF Update (only for Windows 95/98) and Trend PC-cillin 98. Just click the button for automatic installation for VGA driver.

2.1 Windows® 95/98

If you start Windows® 95/98, this will automatically detect this hardware onboard "Standard PCI Graphics Adapter (VGA)". You need to click "Next", then "Finish". Do not click on the "Cancel". The driver need these ID.

Note: Before installing the Intel 810 VGA Driver, you need to install the Intel 810/820 INF update first.

2.1-1 Display Driver Installation Procedure:
Step 1: Insert the provided CD_ROM disk into the CD-ROM drive.
Step 2: Look for the CD_ROM drive, double click on the CD_ROM icon. This will show the setup screen.
Step 3: Click on "Intel 810 VGA Driver" icon.
Step 4: This will show an installation menu.
Step 5: Click on "Display Drivers".
Step 6: Click "OK".
Step 7: This will copy the VGA drivers into the hard drive.
Step 8: A message will appear stating you must restart the Windows® 95/98 system, select **yes** to restart.
Step 9: After restarting, Windows® 95/98 will show a new display setting.

2.2 Windows® NT 4.0

You need to install Windows® NT "Service Pack 3" or higher, before you install Windows® NT driver.

2.2-1 Display Driver Installation Procedure:
Step 1: Click **Start** menu and select **Control Panel** from **Settings** group.
Step 2: Select **Display** icon.
Step 3: Select **Settings** on the Display Properties.
Step 4: Select **Display Type**.
Step 5: Select **Change** from the **Adapter Type** Area.
Step 6: Select **Have Disk** of Change Display.
Step 7: Insert the **CD-Title Disk** into CD-ROM Drive.
Step 8: When the Install from Disk dialog box appears, look for your CD-ROM drive :**SVGA\Intel\810\NT4\WINNT4**
Step 9: When the **Change Display** dialog box appears, click **OK**.
Step 10: When the Third-party Drivers dialog box appears, click **Yes.**
A message will appear stating that the drivers were succesfully installed. Click OK. You must now restart Windows® NT 4.0.

Note: You can also use CD autorun to install the VGA NT driver.

2.2-2 Changing resolution, color depth, and refresh rate:
Step 1: Click **Start** menu and select **Control Panel** from **Settings**
             group.
Step 2: Select **Display** icon.
Step 3: Select **Settings**.
Step 4: Select Color Palette to change between 256 color, 65536
             colors, and 16777216 colors.
Step 5: To select desktop resolution size, go to the Desktop area
             and use the slide bar to change resolution from 640x480,
             800x600, 1024x768, 1152x864, 1280x1024, to 1600x1200.
Step 6: Select Test to test the resolution. If the display test screen
             was good, then select Yes when the Testing Mode dialog
             box appears. If the display test screen was bad, then select
             No. Windows® NT will give you an error message.
Step 7: Click OK. If the display test screen was good and you
             select Yes, Windows® NT 4.0 will change the mode without
             restarting the system.

**2.3 AutoCAD, OS/2 and other application. Please refer
to "On-Line Manual" in the CD-ROM. You need to
install the "Acrobat Reader 3.01" program first.**

Chapter 5

ICH AUDIO DRIVER

1. Overview

The ICH AC' 97 digital controller provides the next generation of audio performance to the PC market.

1.1 Features

- PCI Bus Master for fast DMA.
- Fully Compliant with PC97 Power Management Specification.

1.2 System Requirements

This section describes system requirements for the Audio Driver installation and Usage.

Computer	Intel® Celeron™ processor or higher
Operating system	DOS 5.0 or higher, Windows® 95/98, Windows® NT 3.51 or 4.0, or OS/2®
CD-ROM	Double Speed or Higher
Chipset	ICH

2. Audio Driver Setup & Usage Procedures

Insert the CD-title into your CD-ROM drive. This CD will auto-run. This will display installation for VGA driver and sound driver, Intel 810/820 INF Update (only for Windows 95/98) and Trend PC-cillin 98. Just click the button for automatic installation for audio driver.

2.1 Windows® 95/98
If you start Windows® 95/98, this will automatically detect this hardware onboard "PCI Multimedia Audio Device" and "Gameport Joystick". You need to click "Next", then "Finish". Do not click on the "Cancel". The driver need these ID.

2.1-1 Audio Driver Installation Procedure:
Step 1: Insert the provided CD_ROM disk into the CD-ROM drive.
Step 2: Look for the CD_ROM drive, double click on the CD_ROM icon. This will show the setup screen.
Step 3: Click on "ADI SoundMax Drivers" icon.
Step 4: This will copy the audio drivers into the hard drive.
Step 5: A message will appear stating you must restart the Windows® 95/98 system, select **yes** to restart.

2.2 Windows® NT 4.0

2.2 Audio Driver Installation Procedure:
Step 1: Insert the provided CD_ROM disk into the CD-ROM drive.
Step 2: Look for the CD_ROM drive, double click on the CD_ROM
             icon. This will show the setup screen.
Step 3: Click on "ADI SoundMax Drivers" icon.
Step 4: This will copy the audio drivers into the hard drive.
Step 5: A message will appear stating you must restart the Win-
             dows® NT system, select **yes** to restart.