

AT31

**Pentium 4 Processor
Based MAIN BOARD**

User's Manual

Shuttle AT31

Intel Pentium 4 based Mainboard Manual Version 1.0

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1 INTRODUCTION

1.1 To Different Users

First-Time DIY System Builder

Welcome to the DIY world! Building your own computer system is not as difficult as you may think. To make your first computer DIY experience successful, right from the start, we have designed the **3 Hardware Installation** section in a step-by-step fashion for all the first-time DIY system builders. Prior to installation, we also suggest you to read the whole manual carefully to gain a complete understanding of your new AT31 mainboard.

Experienced DIY User

Congratulate on your purchase of the Shuttle AT31 mainboard. You will find that installing your new Shuttle AT31 mainboard is just easy. Bundled with an array of onboard functions, the highly-integrated AT31 mainboard provides you with a total solution to build the most stable and reliable system. Refer to sections **3.2 Jumper Settings** and **Chapter 4 Software Utility** to find out how to get the best out of your new mainboard. **Chapter 5 BIOS Setup** also contains the relevant information on how to tune up your system to achieve higher performance.

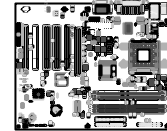
System Integrator

You have wisely chosen Shuttle AT31 to construct your system. Shuttle AT31 incorporates all the state-of-the-art technology of the Intel 82850 chipset. It integrates the most advanced functions you can find to date in a ATX board. Refer to sections **3.2 Jumper Settings** and **Chapter 4 Software Utility** for an in-depth view of system construction.

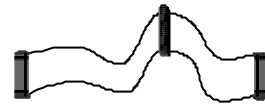
1.2 Item Checklist

Check all items with your AT31 mainboard to make sure nothing is missing. The complete package should include:

- * One Shuttle AT31 Mainboard



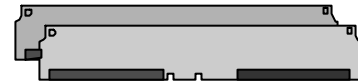
- * One ATA 100/66 Ribbon Cable



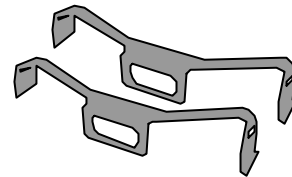
- * One Floppy Ribbon Cable



- * 2 pieces of Dummy RIMM



- * Retention Mechanism for Pentium 4 Cooler



- * AT31 User's Manual



- * One CD-ROM containing:
 - Intel 850 Chipset Driver
 - AC97 Audio Driver
 - AT31 users' manual on PDF format
 - Award Flashing Utility



2 FEATURES

AT31 mainboard is carefully designed for the demanding PC user who wants high performance and maximum intelligent features in a compact package.

2.1 Specifications

* CPU Support

Supports Intel Socket 423 Pentium 4 1.0 ~ 1.50GHz+ with 400MHz system bus designed for Socket 423 technology.

* Chipset

The Intel® 850 chipset consists of three main components: Memory Control Hub (MCH), I/O Control Hub 2 (ICH2) and Firmware Hub (FWH). All these components are interconnected via an Intel® proprietary interface called hub interface. The hub interface designed into the Intel® 850 chipset to provide efficient communication between components. Additional hardware platform features include AGP 4x mode, Direct RDRAM, Ultra ATA/100, Low Pin Count (LPC) interface, Universal Serial Bus (USB). The platform is also ACPI compliant and supports **Full-on, Stop Grant, Suspend to RAM, Suspend to Disk and Soft-off** power management states. Through the use of an appropriate LAN connect, the platform supports **Wake-on-LAN** for remote administration and troubleshooting.

* Expansion Slots

Including five 32-bit/33MHz PCI, one CNR and one AGP 4X slots. The PCI local bus throughput can be up to 132MB/s. The Communication & Networking Riser (CNR) slot provided from AT31 can support CNR interface for a LAN/Modem/Audio card. The Accelerated Graphics Port (AGP) specification provides a new level of video display sophistication and speed. The AGP video cards support data transfer rate up to 1066MB/s. As AT31 motherboard includes one AGP Pro expansion slot for a bus mastering AGP graphic card, For AD and SBA signaling, AT31 can support 133MHz 2X/4X mode.

* **Memory Support**

Provides four 184-pin DRDRAM DIMM socket that support up to 2GB of PC-600/700/800 compliant DRDRAM (Direct Rambus DRAM). You may install 64, 128, 256 or 512MB with ECC (Error Checking and Correction) RDRAM RIMM modules into each socket.

* **Ultra DMA 100/66/33 Bus Master IDE**

Comes with an on-board PCI Bus Master IDE controller with two connectors that supports four IDE devices in two channels, supports Ultra DMA 100/66/33, PIO Modes 3 and 4 and Bus Master IDE DMA Mode 4, and supports Enhanced IDE devices.

* **On-board AC97 Sound**

AT31 uses the SIGMATEL AC97 sound chip. This on-board audio includes a complete audio recording and playback system.

* **Four USB Connectors**

Provides two ports, four USB connectors for USB interface devices, such as mouse, keyboard, modem, scanner, etc.

* **Power Management/Plug and Play**

The AT31 supports the power management function that conforms to the power-saving standards of the U.S. Environmental Protection Agency (EPA) Energy Star program. It also offers Plug-and-Play, which helps save users from configuration problems, thus making to system user-friendlier.

* **Hardware Monitoring Mangement**

Supports CPU or system fans status, temperature and voltage monitoring and alert, through the on-board hardware monitor module.

* **Enhanced ACPI**

Fully implement the ACPI standard for Windows® 95/98/ME/NT/2000 series compatibility, and supports Soft-Off, STR (Suspend to RAM, S3), STD (Suspend to Disk, S4), WOM (Wake On Modem), WOL (Wake On LAN) features.

*** Super I/O Interface:**

The AT31 provides two high-speed UART compatible serial ports and one parallel port with EPP and ECP capabilities. UART2 can also be directed from COM2 to the Infrared Module for the wireless connections.

*** System BIOS**

Provides licensed Award BIOS on 4Mb Firmware Hub.
Supports Green PC and Desktop Management Interface (DMI).

*** ATX Form Factor**

System board conforms to the ATX specification.
Board dimension: 305 mm x 244 mm.

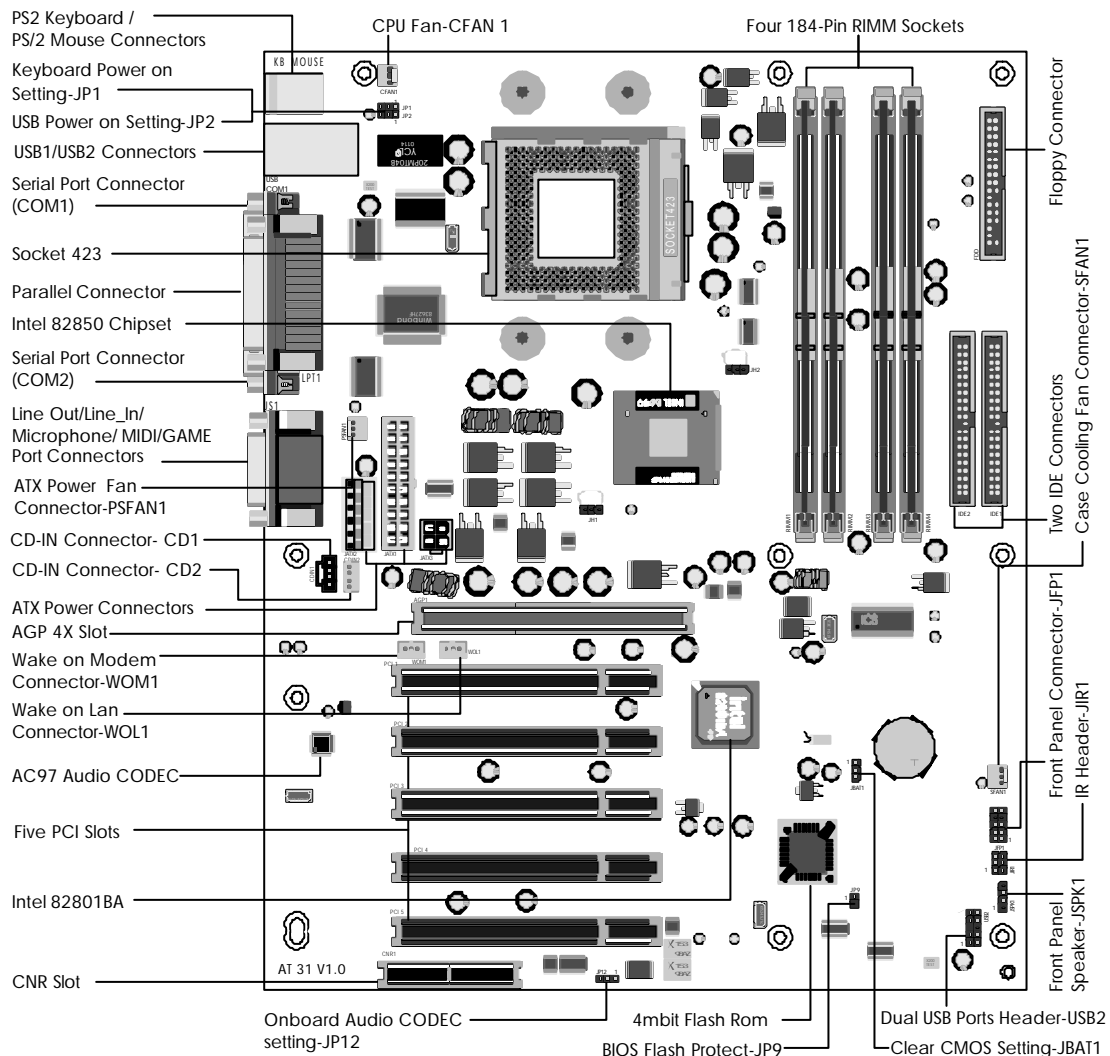
3 HARDWARE INSTALLATION

Before removing or installing any of these devices including CPU, RIMMs, Add-On Cards, Cables, please make sure to unplug the onboard power connector.

This section outlines how to install and configure your AT31 mainboard. Please refer to following mainboard layout to help you identifying various jumpers, connectors, slots, and ports. Then follow these steps designed to guide you through a quick and correct installation of your system.

3.1 Step-by-Step Installation

Accessories Of AT31

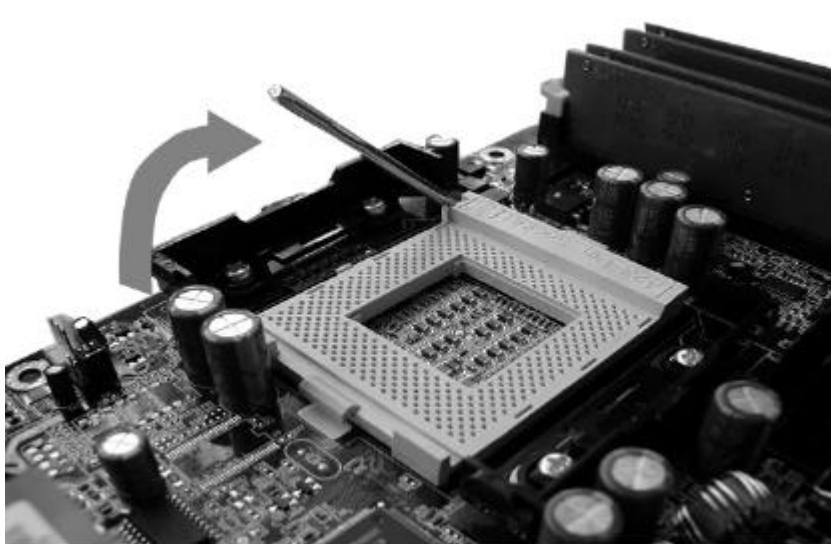


Step 1

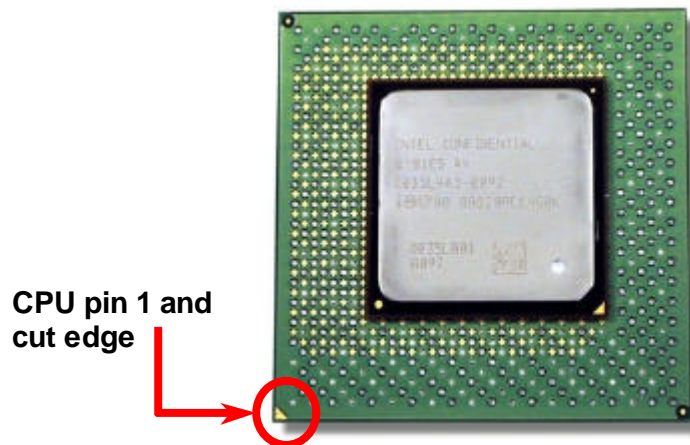
CPU Installation:

This motherboard supports Intel® Pentium® 4 1.30~ 1.50GHz+ Socket 423 series CPU. Please follow the step as below to finish CPU installation. Be careful of CPU orientation when you plug it into CPU socket.

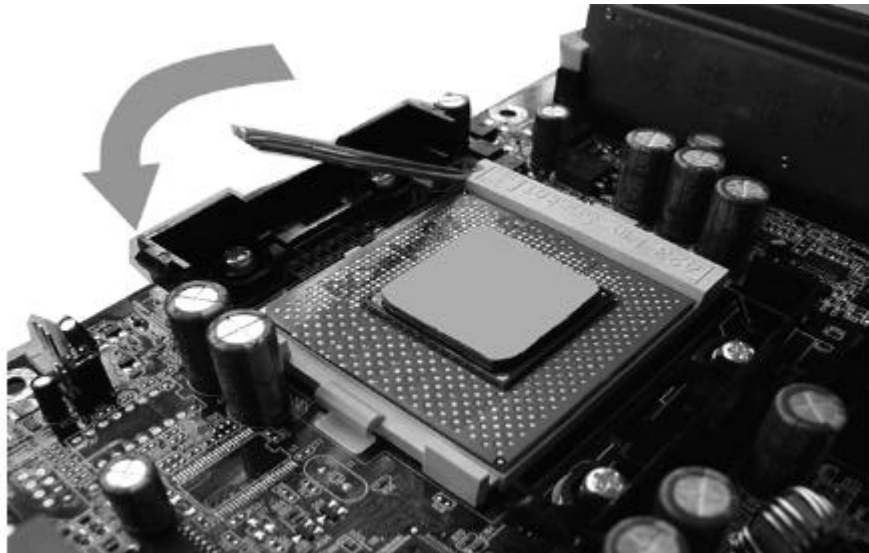
1. Pull up the CPU socket level and up to 90-degree angle.



2. Locate Pin 1 in the socket and look for a black dot or cut edge on the CPU upper interface. Match Pin 1 and cut edge, then insert the CPU into the socket.

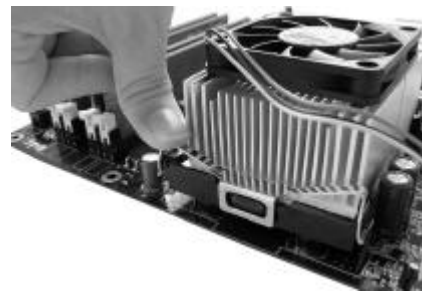
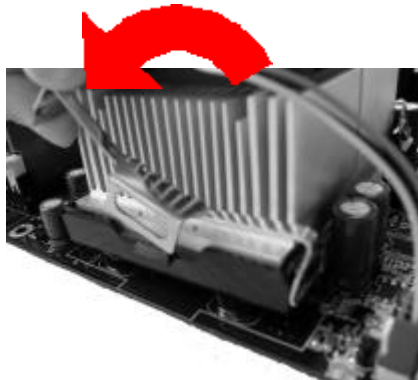


3. Press down the CPU socket level and finish CPU installation.

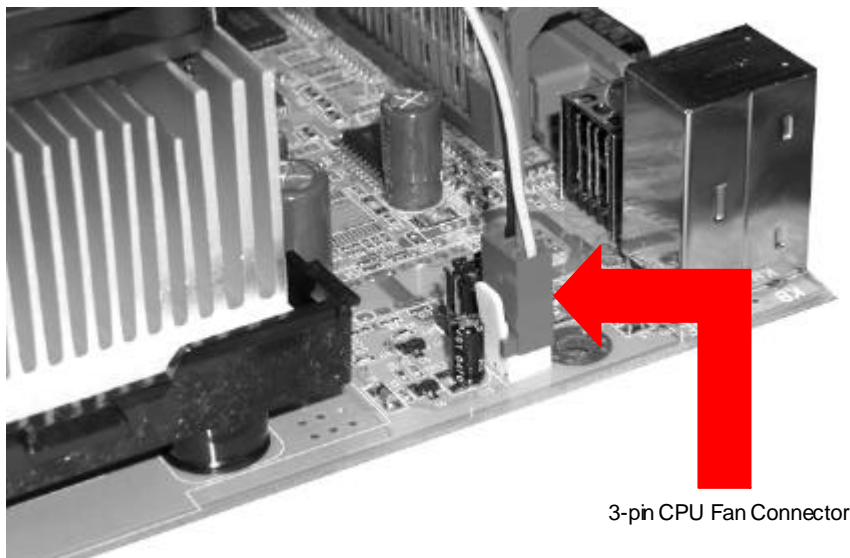


Note: If you do not match the CPU socket Pin 1 and CPU cut edge well, it may damage the CPU.

-
1. Put the CPU heatsink onto the top of CPU insert the retention module clips over the edge of the CPU fan/heatsink. Please just snap retention module clamp holes over the tabs of the retention module.



2. Please plug the fan power cable on the 3-pin CPU fan connector of motherboard.

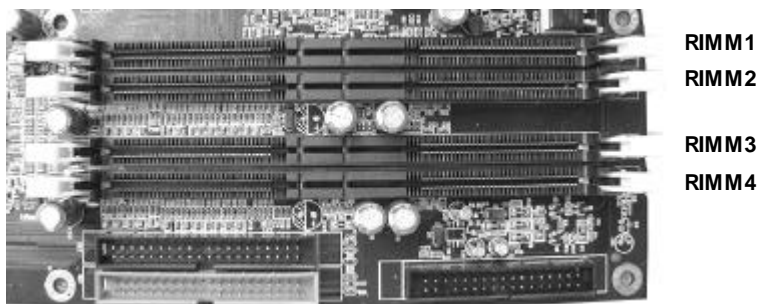


Step 2

Install RIMM System Memory

This motherboard has four 184-pin RIMM sockets that allow you to install PC600, PC700 and PC800 RDRAM up to 2GB. AT31 will detect the RDRAM speed automatically while system POST, but it still allows you select the RDRAM type manually by BIOS setup program.

Note: You must install at least two RIMM modules and RIMM modules installed must be in pairs. All blank RIMM sockets must be inserted with dummy RIMM modules.



Below pictures are Direct RDRAM memory module and dummy RIMM (also called C-RIMM). Please don't forget insert the dummy RIMM into the blank RIMM sockets, otherwise it will cause the failure to boot system.



DRDRAM RIMM Module



Dummy RIMM

Please follow below procedure to finish memory installation.

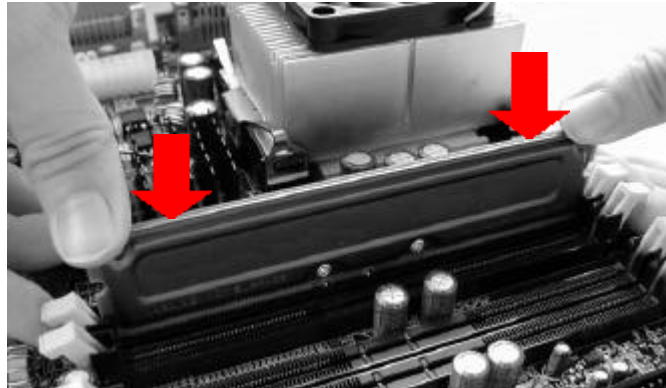
1. Make sure the RIMM module's pin face down and match the socket's size as depicted below.



60 Pins

88 Pins

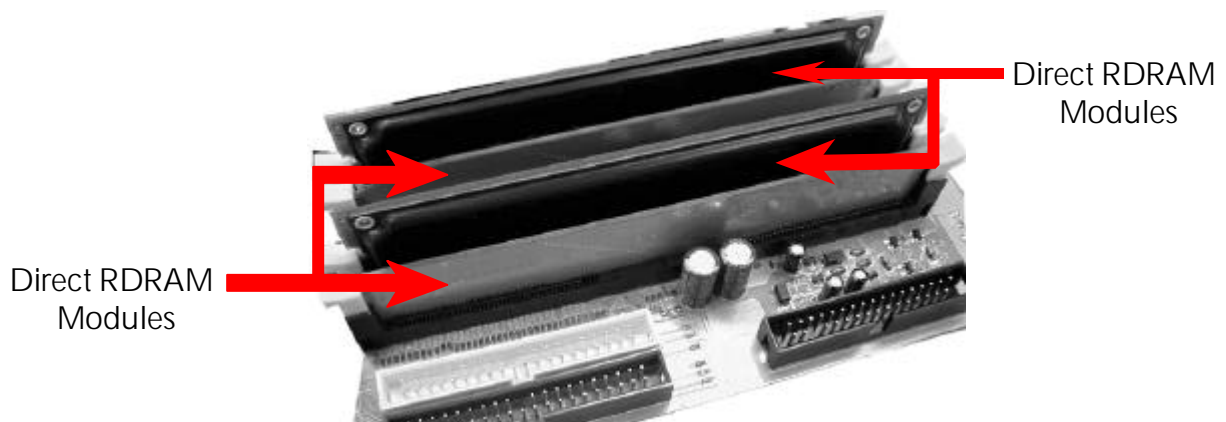
-
2. Insert the module straight down to the RIMM socket with both hands and press down firmly until the RIMM module is securely in place.



The dummy Rambus DRAM modules (C-RIMM) must be inserted in unpopulated slots.

Only the following memory configurations are possible:

RIMM Socket 1	RIMM Socket 2	RIMM Socket 3	RIMM Socket 4
RDRAM	C-RIMM	RDRAM	C-RIMM
C-RIMM	RDRAM	C-RIMM	RDRAM
RDRAM	RDRAM	RDRAM	RDRAM



Step 3.

Set Jumpers

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

- 1. Clear CMOS**
- 2. Make BIOS write protected**
- 3. Power on system through keyboard or USB devices**
- 4. Enable onboard audio CODEC**

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

Step 4

Install Internal Peripherals in System Case

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

To install IDE & FDD drives, follow this procedure:

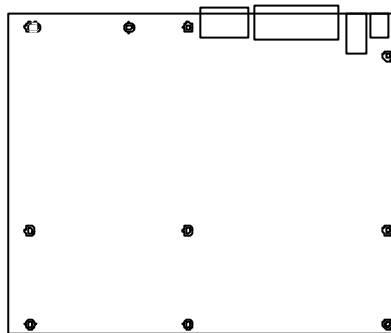
1. Set the required jumpers on each device according to the instructions provided by the manufacturer. (IDE devices, HDD and CD-ROM, must have jumpers on Master or Slave mode depending on your willing to install more than one device for each kind.
2. Connect IDE cable and FDD cable to the back panel of the internal peripheral devices. Note that the cable should be oriented with its colored stripe (usually in red or magenta) connected to pin#1 both on the mainboard IDE or FDD connector and on the device as well.

-
3. Connect an available power cable through your system power supply unit to the back panel of each peripheral device. Note that the power cable is directional and cannot fit in if not properly positioned.

Step 5

Mount the Mainboard on the Computer Chassis

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



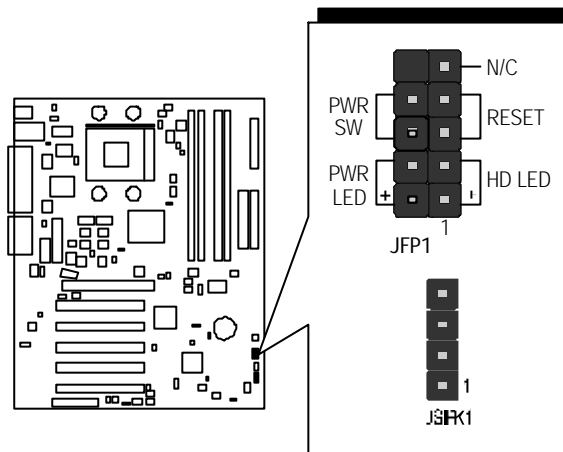
2. After deciding the proper mounting holes, position the studs between the frame of chassis and the mainboard. The studs are used to fix the mainboard and to keep a certain distance between the system chassis and the mainboard, in order to avoid any electrical short between the board and the metal frame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

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

Step 6

Connect Front Panel Switches/LEDs/Speaker

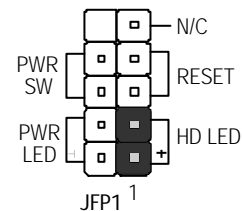
You can find there are several different cables already existing in the system case and originating from the computer's front panel devices (HDD LED, Power LED, Reset Switch, PC Speaker, etc.) These cables serve to connect the front panel switches and LEDs to the mainboard's front panel connectors group,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



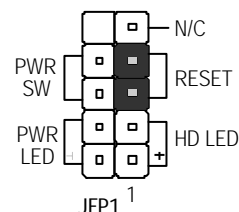
1. PC SPEAKER (JSPK1)



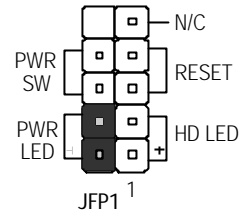
2. HDD LED (HD LED)



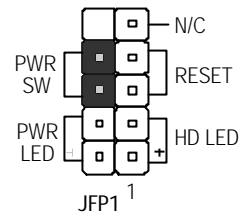
3. Hardware Reset Switch (RESET)



4. Green LED (PWR LED)



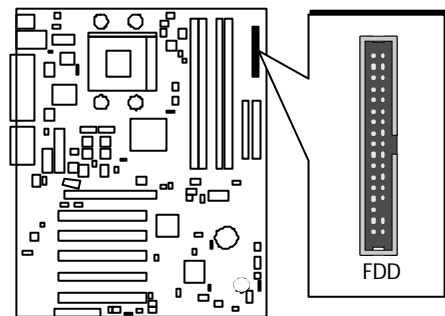
5. ATX Soft Power On/Off (PWR SW)



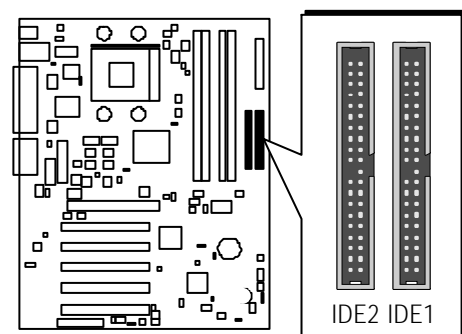
Step 7

Connect IDE & Floppy Disk Drives

1. Floppy cable connector



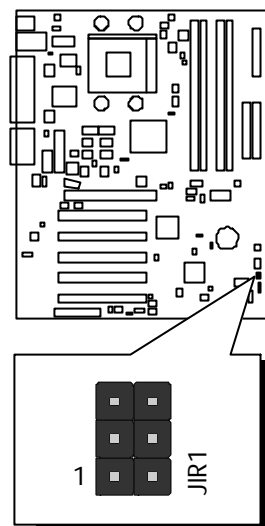
2. IDE cable connectors



Step 8

Connect Other Internal Peripherals

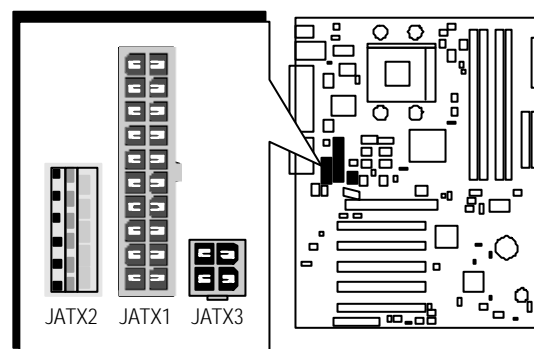
1. IR Header



Step 9

Connect the Power Supply

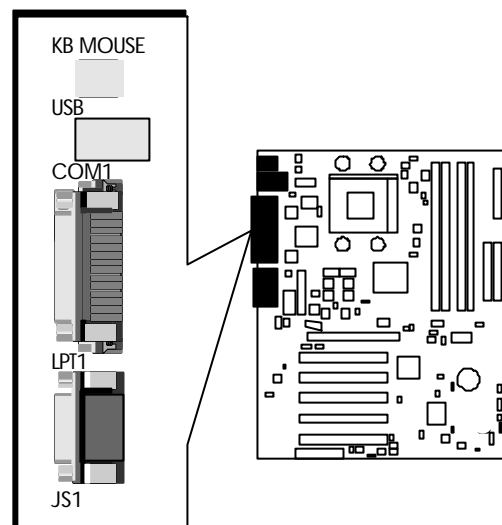
1. System power connector



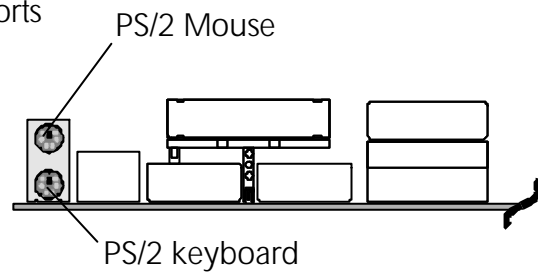
Step 10

Connect External Peripherals to Back Panel

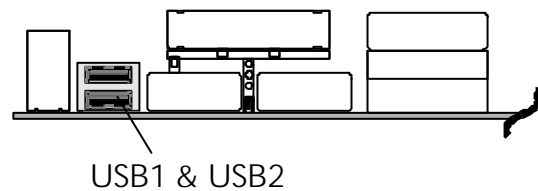
You are now ready to put the computer case back together and get on to the external peripherals connections to your system's back panel.



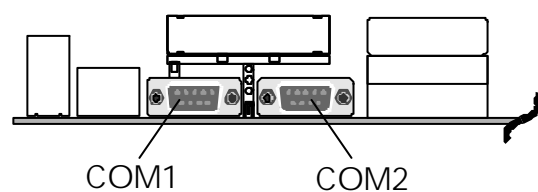
1. PS/2 Mouse and PS/2 Keyboard ports



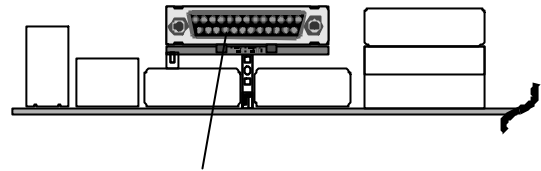
2. USB Ports



3. COM1 and COM2 Ports

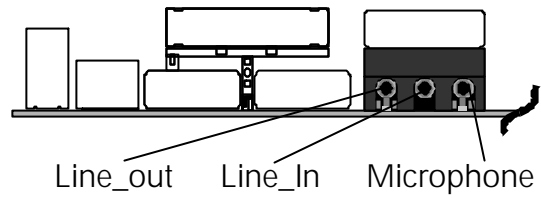


4. Parallel Port



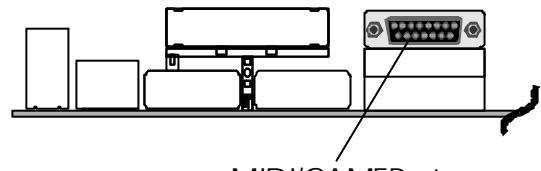
Parallel Port

5. Line_out / Line_In
/ Microphone Ports



Line_out Line_In Microphone

6. MIDI/Game Port



MIDI/GAMEPort

Step 11

First Time System Boot-Up

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

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

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

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

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

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

Step 12

Install Drivers & Software Components

Please note that all the system utilities and drivers are designed for Win 9x/2000/ME/NT operating systems only. Make sure your operating system is already installed before running the driver installation CD-ROM programs.

1. Insert the AT31 bundled CD-ROM into your CD-ROM drive. The auto-run program will display the driver main installation window on screen .
2. Choose " Install Mainboard Software" and complete the installation.
3. Return to the SHUTTLE MAINBOARD SOFTWARE SETUP screen.
4. Choose "Install Audio Device Software" and complete the installation.
5. Return to the main installation window and exit from the auto-run drivers installation program.

3.2 Jumper Settings

Several hardware settings are made through the use of jumper caps to connect jumper pins to the mainboard. Pin #1 is located at any corner of each jumper; you just find a location with pin#1 marked. There are several types of pin1# shown as below:

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

Pin #1 to the left:



Pin #1 on the top:






Pin #1 to the right:



Pin #1 on the bottom:



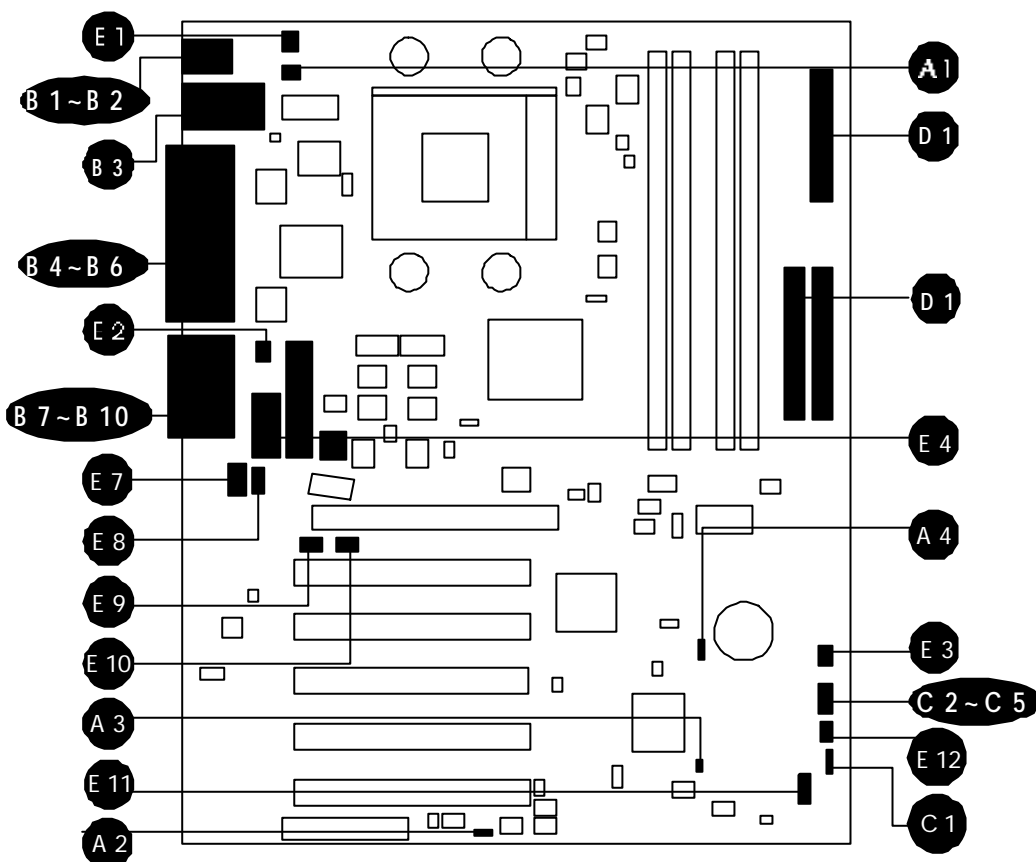
Jumpers with two pins are shown as  for Close [On] or   for Open [Off]. To Short jumper pins, simply place a plastic jumper cap over the desired pair of pins.

Caution!

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

Jumpers & Connectors Guide

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



CPU/Memory/Expansion Slots

Socket 423 : CPU Socket for socket 423 Intel Pentium 4 processors.

RIMM 1/2/3/4 : Four RIMM sockets for PC600, PC700 and PC800 RDRAM up to 2GB.

AGP : One AGP (Accelerated Graphics Port) slot

PCI : Five 32-bit PCI expansion slots

CNR : One CNR (Communications and Networking Riser) slot

Jumpers

- A1** JP1 : Keyboard power on setting.
- A1** JP2 : USB power on setting.
- A2** JP12 : Onboard audio CODEC setting.
- A3** JP9 : BIOS flash protect setting.
- A4** JBAT1 : Clear CMOS setting.

Back Panel Connectors

- B1** KB : PS/2 Keyboard.
- B2** MOUSE : PS/2 Mouse.
- B3** USB : 2 × USB ports (Universal serial Bus).
- B4** COM1 : Serial port 1(DB9 male).
- B5** LPT1 : Parallel port (DB25 female).
- B6** COM2 : Serial port 2 (DB9 male).
- B7** JS1 : Line_out port.
- B8** JS1 : Line_in port.
- B9** JS1 : Microphone port.
- B10** JS1 : Game/MIDI port.

Front Panel Connectors

- C1** JSPK1 : Speaker in housing.
- C2** HD LED : IDE drive active LED.
- C3** RESET : Hardware reset switch.
- C4** PWR LED : System Power LED.
- C5** PW SW : ATX Power On/Off Momentary Type Switch.

Internal Peripherals Connectors

- D1** FDD : Floppy Disk Drive Interface
- D1** IDE1 : IDE Primary Interface (Dual-channel)
- D1** IDE2 : IDE Secondary Interface (Dual-channel)

Other Connectors:

- E1** CFAN1 : CPU cooling fan connector.
- E2** PSFAN1 : System cooling fan connector.
- E3** SFAN1 : Aux case cooling fan connector.
- E4** JATX2 : ATX power header.
- E5** JATX1 : ATX power header.
- E6** JATX3 : ATX power header.
- E7** CDIN1 : Audio CD-in header.
- E8** CDIN2 : Audio CD-in header.
- E9** WOM1 : Wake on modem header.
- E10** WOL1 : Wake on lan header.
- E11** USB2 : Dual USB ports header.
- E12** JIR1 : IR header.

A1 Keyboard Power On Setting (JP1)

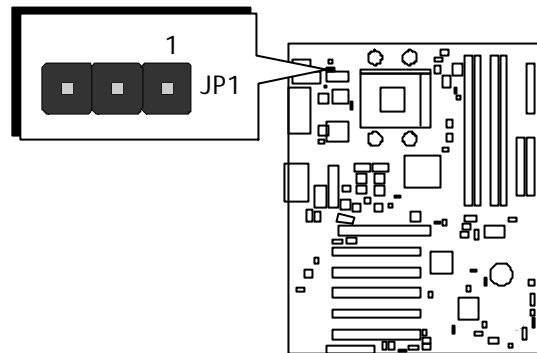
AT31 provides one jumper to set keyboard which connects to back-panel to power-on system from ACPI S3 to S5 stage. Place mini jumper on pin1-2 to enable Keyboard power-on function.



Pin 1-2
(Enable power on function)



Pin 2-3
(Disable power on function)



A1 USB Power On Setting (JP2)

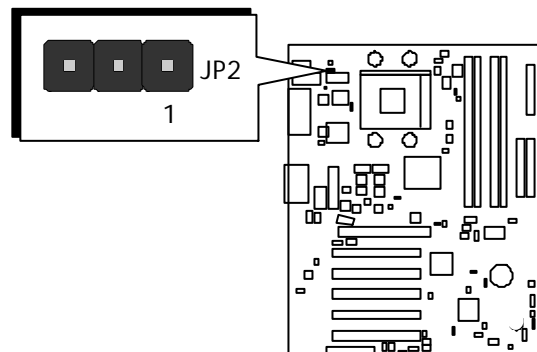
Enable this jumper if you want device activity on front panel USB ports 2/3 activity to turn on the computer.



Pin 1-2
(Enable power on function)



Pin 2-3
(Disable power on function)



A2 Onboard Audio CODEC Setting (JP12)

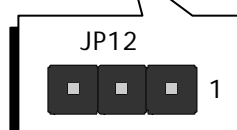
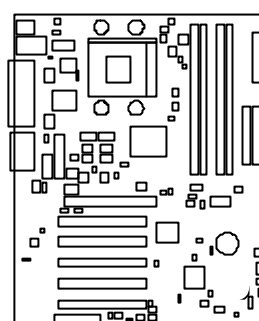
This jumper is to enable or disable onboard audio CODEC.



Pin 1-2
(Enable onboard audio CODEC)



Pin 2-3
(Disable onboard audio CODEC)



A3 BIOS Flash Protect Setting (JP9)

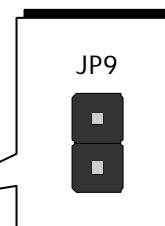
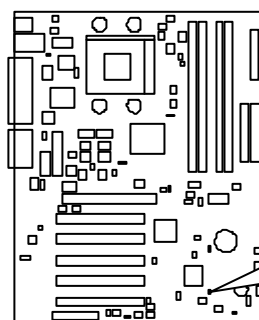
This mainboard offers JP9 jumper to make BIOS read-only.



Short jumper on Pin 1-2
(Disable the function)



Remove jumper from Pin 1-2
(Enable the function)



A4 Clear CMOS Setting (JBAT1)

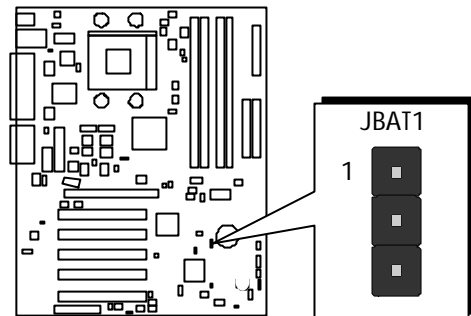
You can clear CMOS to restore system default setting. Please follow below procedure to clear CMOS.



Pin 1-2 (Normal)



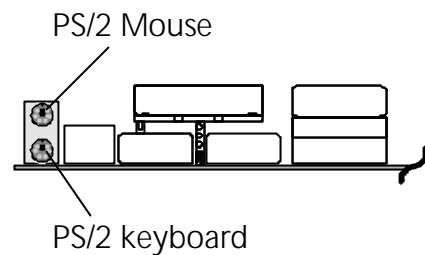
Pin 2-3 (Clear CMOS)



- Step 1.** Turn off the system and unplug the AC power.
- Step 2.** Remove ATX power cable from onboard power connector.
- Step 3.** Locate JBAT1 and short pins 2-3 for a few seconds.
- Step 4.** Return JBAT1 to its normal setting by shorting pins 1-2.
- Step 5.** Connect ATX power cable back to onboard power connector.

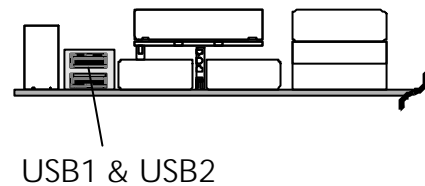
B1 B2 PS/2 Keyboard & PS/2 Mouse Connectors

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



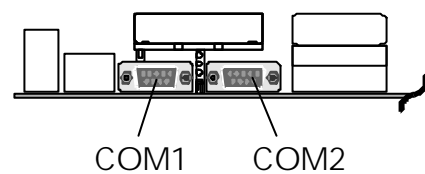
B3 USB1 / USB2 Connectors

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



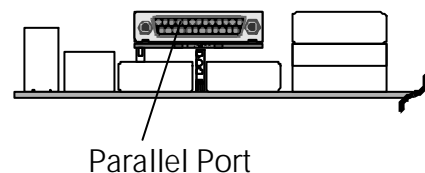
B4 B6 COM1 and COM2 Connectors

This mainboard can accommodate two serial device on COM1 and COM2. Attach a serial device cable to the DB9 serial ports COM1 and COM2 at the back panel of your computer.



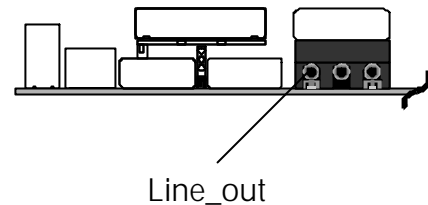
B5 Parallel Port Connector

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



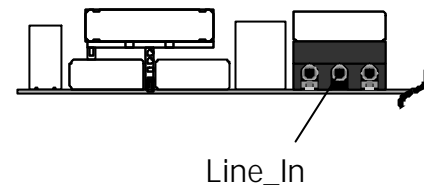
B7 **Line_out Port**

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



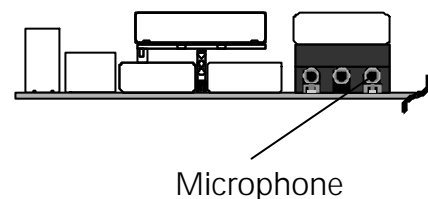
B8 **Line_in Port**

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



B9 **Microphone Port**

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

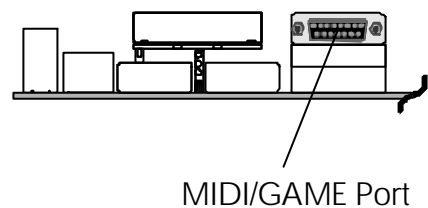


B10 **MIDI/GAME Port**

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

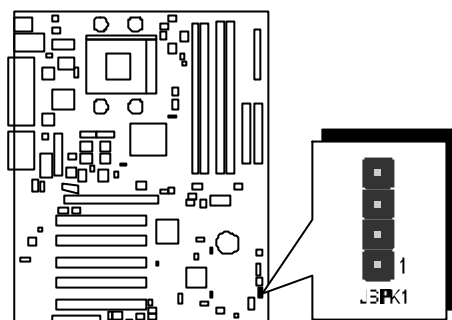
MIDI Instrument Connection

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



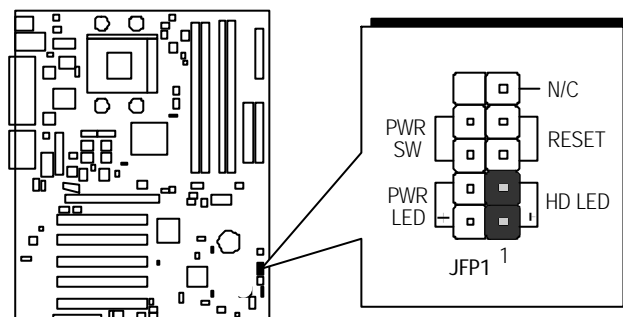
④ Speaker Connector (JSPK1)

Attach PC speaker cable from case to the 4-pin PC speaker connector (JSPK1).



④ HDD LED Connector (HD LED)

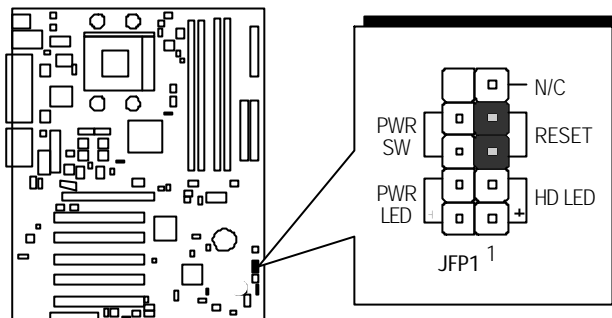
Attach the connector cable from the IDE device LED to the 2-pin HD LED header. The HDD LED lights up whenever an IDE device is active.



Note : Please notice all LED connectors are directional. If any LED of JFP1 does not light up during running, please simply change to the opposite direction.

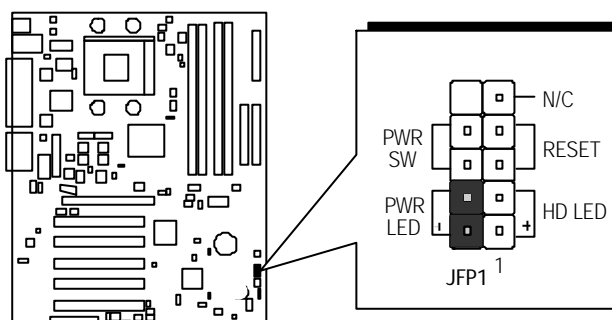
④ Hardware Reset Connector (Reset)

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



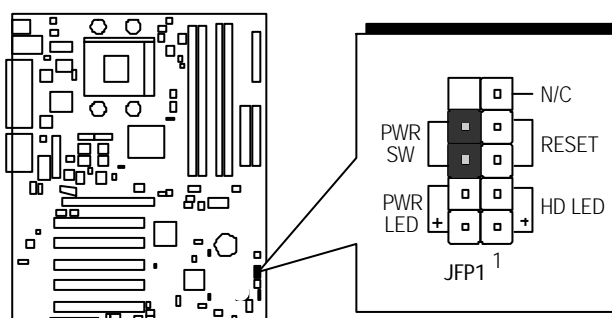
④ Green LED (PWR LED)

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



④ ATX Power On/Off Switch Connector (PWR SW)

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

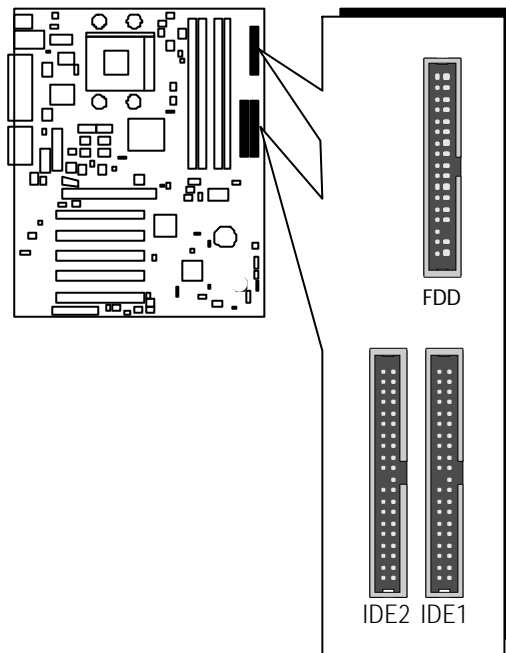


D1 Enhanced IDE and Floppy Connectors

The AT31 mainboard features two 40-pin dual-channel IDE device connectors (IDE1/IDE2) providing the support to up to four IDE devices, such as CD-ROM and Hard Disk Drives (H.D.D.). This mainboard also includes one 34-pin floppy disk controller (FDD) to accommodate the Floppy Disk Drive (FDD). Moreover, this mainboard comes with one 40pin ribbon cable to connect to IDE H.D.D. and one 34-pin ribbon cable for F.D.D. connection.

Note : Please connect your system H.D.D. to IDE 1.

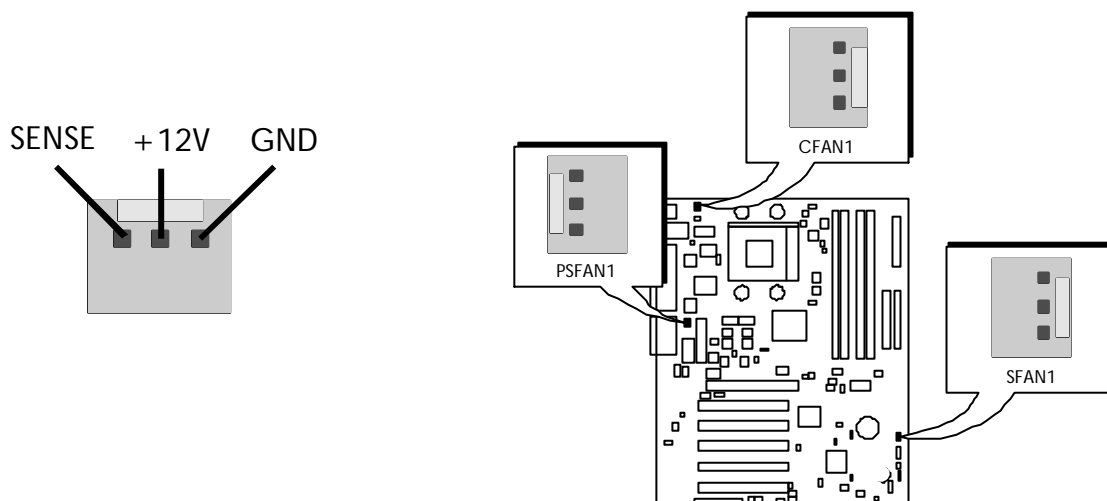
Important: Ribbon cables are directional. The red stripe means pin #1. Please make sure to always have correct connection with cable and pin #1 of IDE1/IDE2 or FDD1 on the mainboard.



E1~E3 Aux Chassis Fan, CPU Fan, Power Fan Headers (SFAN1, CFAN1, PSFAN1)

Plug in the Aux Chassis Fan, CPU Fan, Power Fan cable to 3-pin Fan headers.

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



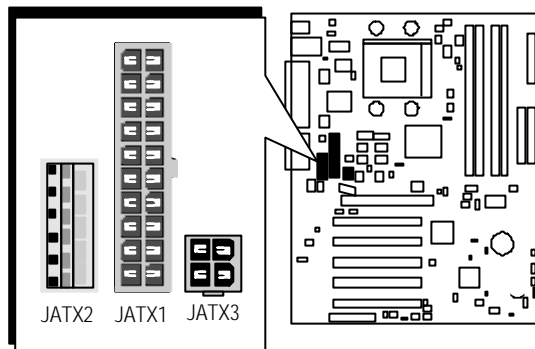
E4~E6 ATX Power Connectors (JATX1~JATX3)

This motherboard uses 20-pin Pentium 4 standard ATX power header, JATX1 and comes with another two headers.

One is JATX2 with 6-pin Aux VccNcc3 ATX power supply header.

Another is JATX3 with 2X2-pin + 12 VPC ATX power supply header.

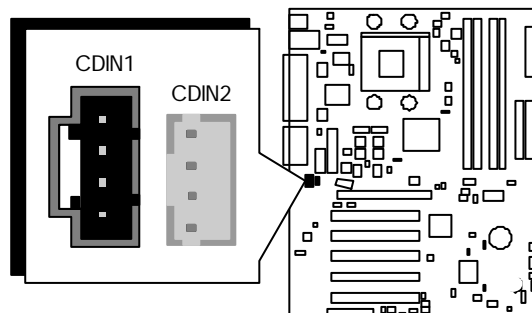
Please make sure you plug in the right direction.



A traditional ATX system should remain at power off stage when AC power resumes from power failure. In such case, if there is no an UPS to keep power-on, the kind of design is inconvenient for a network server or workstation. However, this motherboard implements an AC Power Auto Recovery function to solve this problem. You may enable the function "PWRON After PWR-Fail" that is under sub-menu of "Integrated Peripherals" through BIOS setup program.

E7 E8 Audio CD_in Headers (CDIN1 and CDIN 2)

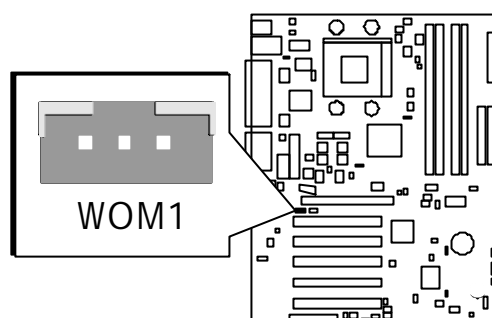
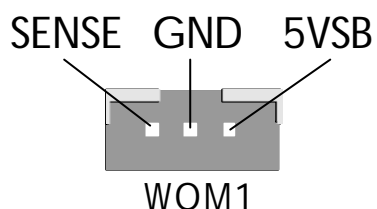
Use the audio cable provided with CD-ROM/DVD ROM drive to join audio connector on rear edge of CD-ROM/DVD ROM drive with one of the two audio-in connectors CDIN1 and CDIN2 on the mainboard.



E9 Wake_on Modem Connector (WOM 1)

If a PCI modem card installed supports WOM function, please connect the cable into WOM1 header on mainboard. When your system is in power-saving mode, any modem signal resumes system automatically. And you also need to enable the function through "Power Management" of BIOS setup program.

Pin definition

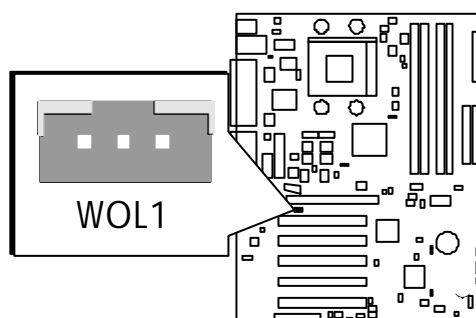
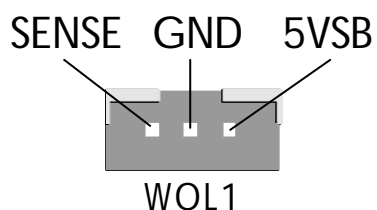


E10 Wake_on Lan Connector (WOL 1)

If a lan card is installed, please connect the cable into WOL1 header on mainboard. While your system is in power-saving mode, any lan signal resumes system automatically. And you also need to enable the function through "Power Management" of BIOS setup program.

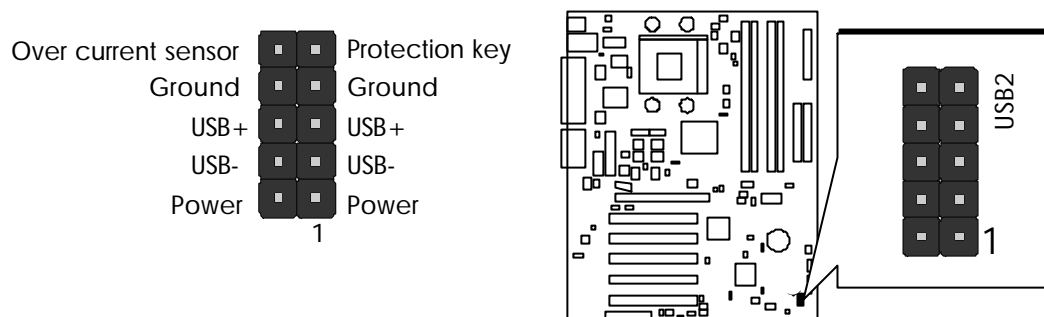
P.S.: Lan card supports wake-on-lan feature is necessary.

Pin definition



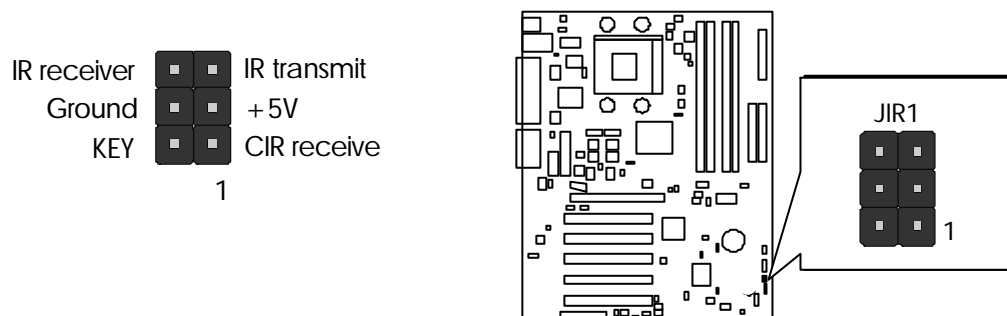
E11 Dual USB Ports Header (USB2)

This motherboard provides 4 USB headers to connect USB devices, such as mouse, keyboard, modem, printer, etc. There are two connectors on the PC99 back panel. You can use proper cable to connect others USB connectors to the back plane or front panel of chassis.



E12 IR Connector (JIR 1)

If you have an Infrared device, this mainboard can implement IR transfer function. Please follow below procedure to enable IR transfer function.



Step 1. Attach the 5-pin infrared device cable to JIR1 connector.
(Refer to above diagram for IR pin assignment.)

Step 2. Configure the Infrared transfer mode through the option "UART Mode Select" in field "Integrated peripherals" through BIOS setup program. This mainboard supports Standard, IRDA, ASKIR transfer modes.

4 SOFTWARE UTILITY

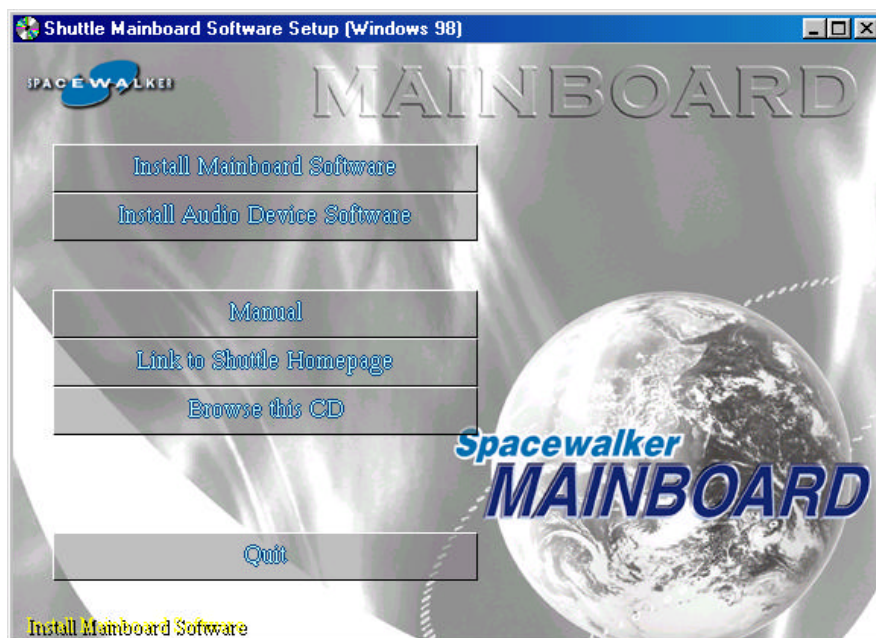
4.1 AT31 Mainboard CD Overview

Note: The CD contents attached in the AT31 mainboard are subject to change without notice.

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

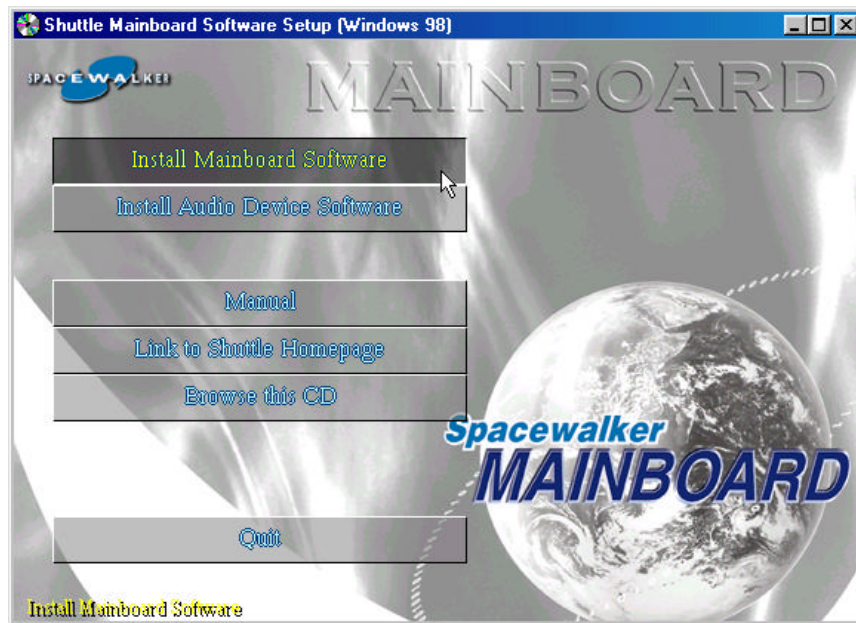
Navigation Bar Description:

- ☞ **Install Mainboard Software** - Mainboard Driver/Software Installation
- ☞ **Install Audio Device Software** - Audio Driver Installation
- ☞ **Manual** - AT31 Mainboard user' s manual on PDF format.
- ☞ **Link to Shuttle Homepage** - Link to shuttle website homepage.
- ☞ **Browse this CD** - Allows you to see contents of this CD.
- ☞ **Quit** - Close this CD.



4.2. Install Chipset System Driver

Select using your pointing device (e.g. mouse) on the "Install Mainboard software" bar to install chipset system driver.



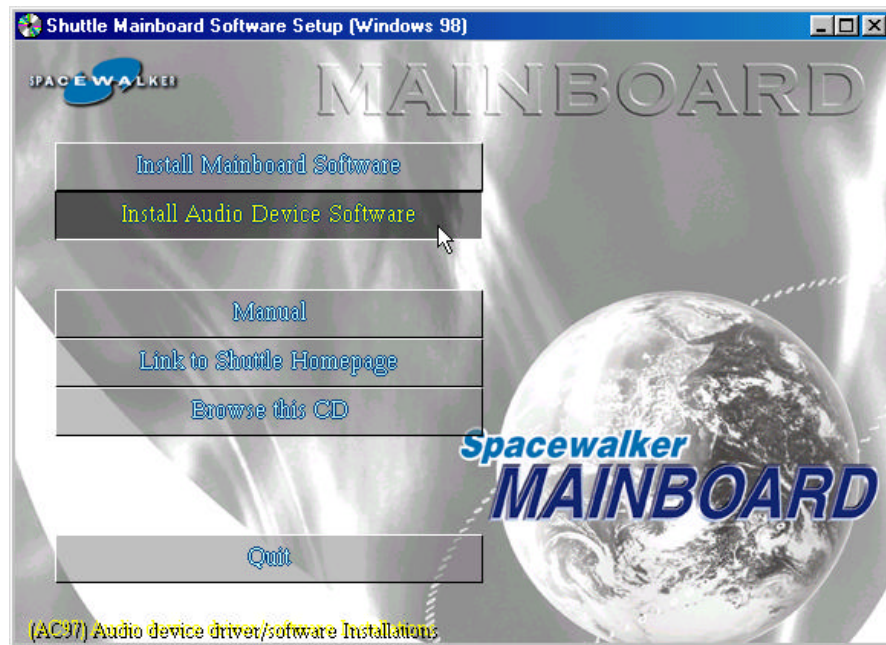
Once you made your selection, a Setup window runs the installation automatically.

When the copying files is done, make sure you **reboot** the system to take the installation effect.

Note: When the Windows 98/95 first reboot after Intel Chipset System drivers installed, some new hardware devices will be found and added. For those new hardware devices, related software driver will be searched for installing. The user may find the software drivers retain on directory *C:\windows\system* if some of software drivers could not be found during searching.

4.3 Install AC97 Audio Driver

Select using your pointing device (e.g. mouse) on the “Install Audio Device Software” bar to install AC97 audio driver.



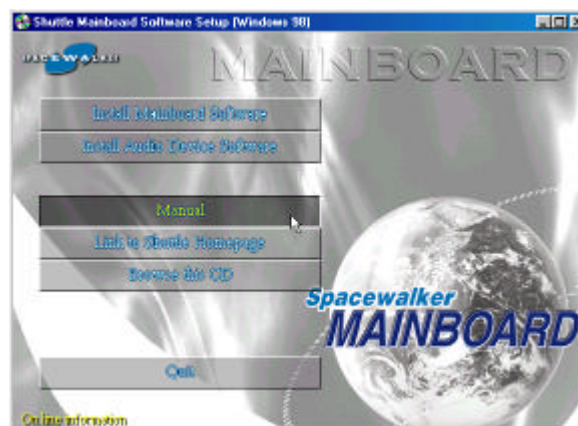
Once you made your selection, a Setup window runs the installation automatically.

When the copying files is done, make sure you **reboot** the system to take the installation effect.

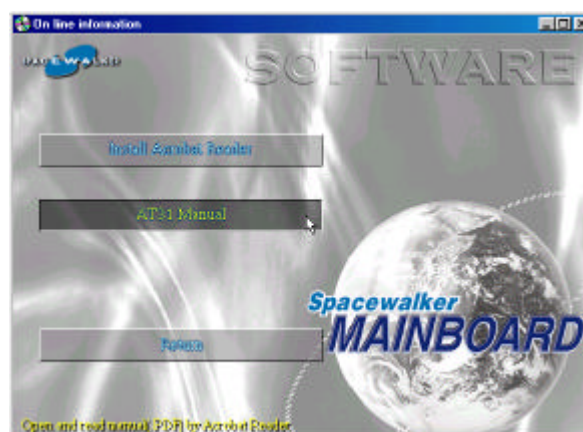
4.4 View User's Manual

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

Use your pointing device (e.g. mouse) to select "Manual" bar.



Then On-line Information window will appear on your screen. Click on the "Install Acrobat Reader" bar if you need to install acrobe reader.



Then click on "AT31 Manual" bar to view user's manual.

5 BIOS SETUP

AT31 BIOS ROM has a built-in Setup program that allows users to modify the basic system configuration. This information is stored in battery-backed RAM so that it retains the Setup information even if the system power is turned off.

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

System date and time

Hardware execution sequence

Power management functions

Allocation of system resources

5.1 Enter the BIOS

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

Step 1. Power on the computer, and the system will perform its POST (Power-On Self Test) routine checks.

Step 2. Press < Del > key immediately, or at the following message:
"Press DEL to enter SETUP"
, or simultaneously press < Ctrl > , < Alt > , < Esc > keys

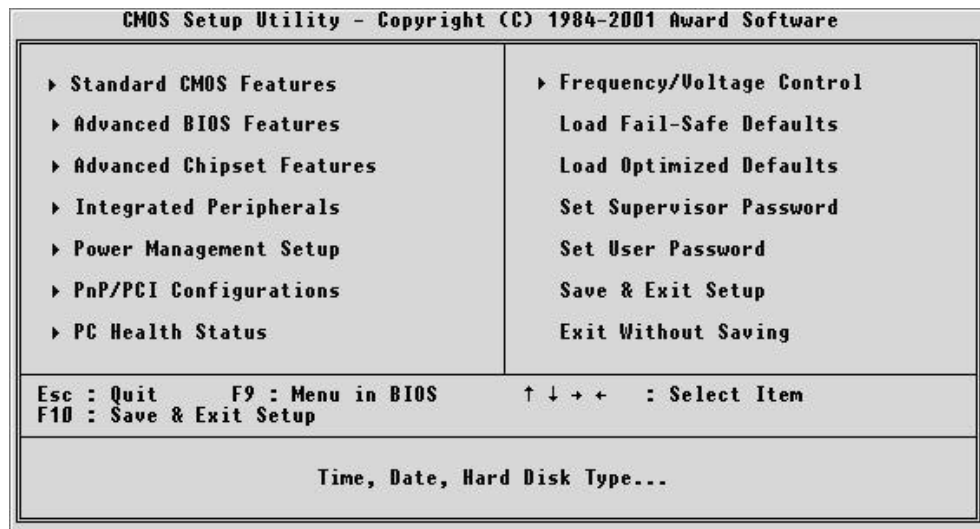
Note 1. If you miss trains of words mentioned in step2 (the message disappears before you can respond) and you still wish to enter BIOS Setup, restart the system and try again by turning the computer OFF and ON again or by pressing the < RESET > switch located at the computer' s front-panel. You may also reboot by simultaneously pressing the < Ctrl > , < Alt > , < Del > keys.

Note 2. If you do not press the keys in time and system does not boot, the screen will prompt an error message, and you will be given the following options:
"Press F1 to Continue, DEL to Enter Setup"

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

5.2 The Main Menu

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



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

Setup Items

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

Standard CMOS Features

Use this menu for basic system configuration.

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

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

Frequency/Voltage Control

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

Load Fail-Safe Defaults

Fail-safe defaults load no great demands on system and are generally stable settings. However, you can change the parameter through each Setup Menu.

Load Optimized Defaults

To load the Turbo defaults is required by the power users who want to push the limitation of system performance by overclocking. **Before you use this function, make sure you fully understand the items in Chipset Setup menu and the components (CPU, DRAM, HDD, etc.) of your system are good enough for optimized setting.**

Set Supervisor Password

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

Set User Password

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

Save & Exit Setup

Save CMOS values changed to CMOS and exit from BIOS setup.

Exit Without Saving

Abandon all CMOS values changed and exit from BIOS setup.



Standard CMOS Features

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

CMOS Setup Utility - Copyright (C) 1984-2001 Award Software		Item Help
Standard CMOS Features		
Date (mm:dd:yy)	Thu, Jun 14 2001	Menu Level ▶ Change the day, month, year and century
Time (hh:mm:ss)	21 : 30 : 20	
▶ IDE Primary Master		
▶ IDE Primary Slave		
▶ IDE Secondary Master		
▶ IDE Secondary Slave		
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	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

< mm > < dd > < yy >

Set system date. Please be noted that once you set "Date" , it just takes effect auto matically.

Time

< hh : mm : ss >

The time is converted based on the 24-hour military-time clock. For example, 5 p.m. is 17:00:00.

IDE Primary Master

Options are in its sub-menu.

Press < Enter > to enter sub-menu for detailed options.

IDE Primary Slave

Options are in its sub-menu.

Press < Enter > to enter sub-menu for detailed options.

IDE Secondary Master

Options are in its sub-menu.

Press < Enter > to enter sub-menu for detailed options.

IDE Secondary Slave

Options are in its sub menu.

Press < Enter > to enter sub-menu for detailed options.

Drive A/Drive B

Select type of floppy disk drive installed in your system.

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

Floppy 3 Mode Support

Floppy 3 mode refers to a 3.5-inch diskette with a capacity of 1.2 MB. Floppy 3 mode is sometimes used in Japan.

Video

Select the default video device.

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

Halt On

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

- The choice: All Errors, No Errors, All, But Keyboard, All, But Diskette, or All, But Disk/Key.

Base Memory

Displays the amount of conventional memory detected during boot up.

- The choice: N/A.

Extended Memory

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



Advanced BIOS Features

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

CMOS Setup Utility - Copyright (C) 1984-2001 Award Software		
Advanced BIOS Features		
Virus Warning	[Disabled]	Item Help Menu Level ▶ 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
CPU L1 & L2 Cache	[Enabled]	
Quick Power On Self Test	[Enabled]	
First Boot Device	[Floppy]	
Second Boot Device	[HDD-0]	
Third Boot Device	[LS120]	
Boot Other Device	[Enabled]	
Swap Floppy Drive	[Disabled]	
Boot Up Floppy Seek	[Enabled]	
Boot Up NumLock Status	[On]	
Gate A20 Option	[Fast]	
Typematic Rate Setting	[Disabled]	
x Typematic Rate (Chars/Sec)	6	
x Typematic Delay (Msec)	250	
Security Option	[Setup]	
OS Select For DRAM > 64MB	[Non-OS2]	
HDD S.M.A.R.T. Capability	[Disabled]	
Report No FDD For WIN 95	[Yes]	
Small Logo(EPA) Show	[Enabled]	
↑↓→←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults		

Virus Warning

When enabled, this item provides protection against viruses that try to write to the boot sector and partition table of your hard disk drive. You need to disable this item when installing an operating system. We recommend that you enable anti-virus protection as soon as you have installed an operating system.

- The choice: Enabled or Disabled.

CPU L1 & L2 Cache

All processors that can be installed in this mainboard use internal level 1 (L1) and external level 2 (L2) cache memory to improve performance. Leave this item at the default value for better performance.

- The choice: Enabled or Disabled.

Quick Power On Self Test

Enable this item to shorten the power on testing (POST) and have your system start up faster. You might like to enable this item after you are confident that your system hardware is operating smoothly.

- The choice: Enabled, or Disabled.

First/Second/Third Boot Device

Use these three items to select the priority and order of the devices that your system searches for an operating system at start-up time.

- The Choice: Floppy, LS120, HDD-0, SCSI, CDROM, HDD-1, HDD-2, HDD-3, ZIP100, USB-FDD, USB-ZIP, USB-CDROM, USB-HDD, LAN, or Disabled.

Boot Other Device

When enabled, the system searches all other possible locations for an operating system if it fails to find one in the devices specified under the first, second, and third boot devices.

- The choice: Enabled or Disabled.

Swap Floppy Drive

If you have two floppy diskette drives in your system, this item allows you to swap the assigned drive letters so that drive A becomes drive B, and drive B becomes drive A.

- The choice: Enabled or Disabled.

Boot Up Floppy Seek

If this item is enabled, it checks the size of the floppy disk drives at start-up time. You don't need to enable this item unless you have a legacy diskette drive with 360K capacity.

- The choice: Enabled or Disabled.

Boot Up NumLock Status

This item defines if the keyboard Num Lock key is active when your system is started.

- The choice: Off or On.

Gate A20 Option

This item defines how the system handles legacy software that was written for an earlier generation of processors. Leave this item at the default value.

- The choice: Normal, or Fast.

Typematic Rate Setting

If this item is enabled, you can use the following two items to set the typematic rate and the typematic delay settings for your keyboard.

- The choice: Enabled or Disabled.

Typematic Rate (Chars/Sec)

Use this item to define how many characters per second are generated by a held-down key.

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

Typematic Delay (Msec)

Use this item to define how many milliseconds must elapse before a held-down key begins generating repeat characters.

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

Security Option

If you have installed password protection, this item defines if the password is required at system start up, or if it is only required when a user tries to enter the Setup Utility.

- | | |
|---------------|--|
| System | The system will not boot and access to Setup will be denied if the correct password is not entered promptly. |
| Setup | The system will boot, but access to Setup will be denied if the correct password is not entered promptly. |

- The choice: System or Setup.

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

OS Select For DRAM > 64MB

This item is only required if you have installed more than 64 MB of memory and you are running the OS/2 operating system. Otherwise, leave this item at the default.

- The choice: Non-OS2 or OS2.

HDD S.M.A.R.T Capability

The S.M.A.R.T. (Self-Monitoring, Analysis, and Reporting Technology) system is a diagnostics technology that monitors and predicts device performance. S.M.A.R.T. software resides on both the disk drive and the host computer.

- The choice: Enabled or Disabled.

Report No FDD For Win 95

Set this item to the default if you are running a system with no floppy drive and using Windows 95; this ensures compatibility with the Windows 95 logo certification.

- The choice: Yes or No.

Small Logo (EPA) Show

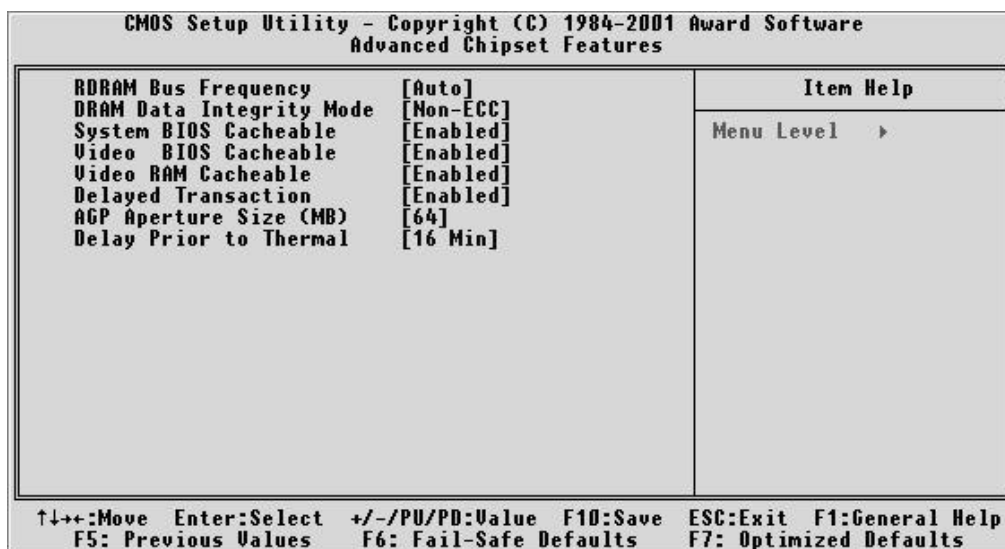
Enables or disables the display of the EPA logo during bootup.

- The choice: Enabled or Disabled.

Advanced Chipset Features

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

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



RDRAM Bus Frequency

Sets the frontside bus bandwidth of the installed RDRAM. Leave this at the default value.

- The choice: Auto or 400MHZ, 300MHZ.

DRAM Data Integrity Mode

Set this to ECC (error-correcting code) or non-ECC according to the type of installed DRAM.

- The choice: Non-ECC or ECC.

System BIOS Cacheable

This item allows the system to be cached in memory for faster execution. Enable this item for better performance.

- The choice: Enabled or Disabled.

Video BIOS/RAM Cacheable

These items allow the video BIOS and RAM to be cached in memory for faster execution. Enable these items for better performance.

- The Choice: Enabled or Disabled.

Delayed Transaction

The chipset has an embedded 32-bit posted write buffer to support delayed transactions cycles. Enable this item to support compliance with PCI specification version 2.1.

- The Choice: Enabled or Disabled.

AGP Graphics Aperture Size (MB)

This item defines the size of the aperture if you use an AGP graphics adapter. The AGP aperture refers to a section of the PCI memory address range used for graphics memory. We recommend that you leave this item at the default value.

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

Delay Prior to Thermal

Enables you to set the delay time before the CPU enters auto thermal mode.

- The Choice: 4 Min, 8 Min, 16 Min or 32 Min.

Integrated Peripherals

CMOS Setup Utility - Copyright (C) 1984-2001 Award Software	
Integrated Peripherals	
On-Chip Primary PCI IDE	[Enabled]
On-Chip Secondary PCI IDE	[Enabled]
IDE Primary Master PIO	[Auto]
IDE Primary Slave PIO	[Auto]
IDE Secondary Master PIO	[Auto]
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	[Disabled]
Init Display First	[PCI Slot]
AC97 Audio	[Auto]
AC97 Modem	[Auto]
IDE HDD Block Mode	[Enabled]
POWER ON Function	[Hot KEY]
KB Power ON Password	[Enter]
Hot Key Power ON	[Ctrl-F12]
Onboard FDC Controller	[Enabled]
Onboard Serial Port 1	[3F8/IRQ4]
Onboard Serial Port 2	[2F8/IRQ3]
UART Mode Select	[Normal]
RxD , TxD Active	[Hi,Lo]
IR Transmission Delay	[Enabled]
UR2 Duplex Mode	[Half]
Use IR Pins	[IR-Rx2Tx2]
Onboard Parallel Port	[378/IRQ7]
Parallel Port Mode	[ECP]
EPP Mode Select	[EPP1.7]
ECP Mode Use DMA	[3]
PWRON After PWR-Fail	[Off]
Game Port Address	[201]
Midi Port Address	[330]
Midi Port IRQ	[10]

Item Help
Menu Level >
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

On-Chip Primary/Secondary PCI IDE

Use these items to enable or disable the PCI IDE channels that are integrated on the mainboard.

- The choice: Enabled or Disabled.

IDE Primary/Secondary Master/Slave PIO

Each IDE channel supports a master device and a slave device. These four items let you assign which kind of PIO (Programmed Input/Output) is used by IDE devices. Choose Auto to let the system auto detect which PIO mode is best, or select a PIO mode from 0-4.

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

IDE Primary/Secondary Master/Slave UDMA

Each IDE channel supports a master device and a slave device. This mainboard supports UltraDMA technology, which provides faster access to IDE devices.

If you install a device that supports UltraDMA, change the appropriate item on this list to Auto. You may have to install the UltraDMA driver supplied with this mainboard in order to use an UltraDMA device.

- The Choice: Auto or Disabled.

USB Controller

Enable this item if you plan to use the Universal Serial Bus ports on this mainboard.

- The choice: Enabled or Disabled.

USB Keyboard Support

Enable this item if you plan to use a keyboard connected through the USB port in a legacy operating system (such as DOS) that does not support Plug and Play.

- The choice: Enabled or Disabled.

Init Display First

Use this item to specify whether your graphics adapter is installed in one of the PCI slots or is integrated on the mainboard.

- The choice: PCI Slot or AGP .

AC97 Audio

Enables and disables the onboard audio chip. Disable this item if you are going to install a PCI audio add-on card.

- The choice: Auto or Disabled.

AC97 Modem

Enables and disables the onboard modem. Disable this item if you are going to install an external modem.

- The choice: Auto or Disabled.

IDE HDD Block Mode

Enable this field if your IDE hard drive supports block mode. Block mode enables BIOS to automatically detect the optimal number of block read and writes per sector that the drive can support and improves the speed of access to IDE devices.

- The choice: Enabled, or Disabled.

POWER ON Function

Enables you to set power on parameters. The default setting enables you to use a hot key to turn on the system.

- The choice: Password, Hot KEY, Mouse Left, Mouse Right, Any KEY, BUTTON ONLY, Keyboard 98.

KB Power ON Password

When the POWER ON Function is set to Password, use this item to set the password.

- The choice: Enter password.

Hot Key Power ON

When the POWER ON Function is set to Hot KEY, use this item to set the hot key combination that turns on the system.

- The choice: Ctrl-F1 ~ Ctrl-F12.

Onboard FDC Controller

This option enables the onboard floppy disk drive controller.

- The choice: Enabled, or Disabled.

Onboard Serial Port 1/Port 2

This option is used to assign the I/O address and address and interrupt request (IRQ) for onboard serial port 1(COM1)/port 2 (COM2).

- The choice: 3F8/IRQ4, 2F8/IRQ3, 3E8/IQ4, 2E8/IQ3, Auto or Disabled.

UART Mode Select

This field is available if the Onboard Serial Port 2 field is set to any option but Disabled. UART Mode Select enables you to select the infrared communication protocol-Normal (default), IrDA, or ASKIR. IrDA is an infrared communication protocol with a maximum baud rate up to 115.2K bps. ASKIR is Sharp's infrared communication protocol with a maximum baud rate up to 57.6K bps.

- The choice: IrDA, ASKIR or Normal.

TxD, RxD Active

This item defines the voltage level for Infrared module RxD (receive) mode and TxD (transmit) mode. This setting must match the requirements of the infrared module used in the system.

- The choice: Hi,Lo, Lo,Hi, Lo,Lo, or Hi, Hi.

IR Transmission Delay

When enabled, utilizes mainboard features to allow faster infrared transmission rates.

- The choice: Enabled, or Disabled.

UR2 Duplex Mode

This field is available when UART 2 Mode is set to either ASKIR or IrDA. This item enables you to determine the infrared (IR) function of the onboard infrared chip. The options are Full and Half (default).

Full-duplex means that you can transmit and send information simultaneously. Half-duplex is the transmission of data in both directions, but only one direction at a time.

- The choice: Half or Full.

Use IR Pins

This item selects Infrared module pin out.

- The choice: IR-Rx2Tx2, Rx2D2 or Tx2D2.

Onboard Parallel Port

This item allows you to determine onboard parallel port controller I/O address setting.

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

Parallel Port Mode

Enables you to set the data transfer protocol for your parallel port. There are four options: SPP (Standard Parallel Port), EPP (Enhanced Parallel Port), ECP (Extended Capabilities Port) and ECP + EPP.

SPP allows data output only. Extended Capabilities Port (ECP) and Enhanced Parallel Port (EPP) are bi-directional modes, allowing both data input and output. ECP and EPP modes are only supported with EPP and ECP aware peripherals.

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

ECP Mode Use DMA

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

- The choice: 1 or 3.

PWRON After PWR-Fail

Set this item to On to enable your computer to automatically restart after a power failure. Set the item to Former-Sts to enable the computer to go to it's state before the power failure occurred.

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

Game Port Address

This item sets the I/O address for the game port.

- The choice: Disabled, 201 or 209.

Midi Port Address

This item sets the I/O address for the Midi function.

- The choice: Disabled, 330, 300, or 290.

Midi Port IRQ

This item sets the interrupt request for the Midi function.

- The choice: 5 or 10.



Power Management Setup

CMOS Setup Utility - Copyright (C) 1984-2001 Award Software		
Power Management Setup		
ACPI Function	[Enabled]	Item Help
ACPI Suspend Type	[S1(POS)]	
Power Management	[Min Saving]	Menu Level ▶
Video Off Method	[DPMS]	
Video Off In Suspend	[Yes]	
Suspend Type	[Stop Grant]	
MODEM Use IRQ	[3]	
Suspend Mode	1 Hour	
HDD Power Down	15 Min	
Soft-Off by PWR-BTTN	[Instant-Off]	
Wake-Up by PCI card	[Enabled]	
Power On by Ring	[Enabled]	
Wake Up On LAN	[Enabled]	
USB KB Wake-Up From S3	[Disabled]	
Resume by Alarm	[Disabled]	
x Date(of Month) Alarm	0	
x Time(hh:mm:ss) Alarm	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		

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

ACPI Function

This mainboard supports ACPI (Advanced Configuration and Power management Interface). Use this item to enable or disable the ACPI feature.

Note: ACPI is a power management specification that makes hardware status information available to the operating system. ACPI enables a PC to turn its peripherals on and off for improved power management. It also allows the PC to be turned on and off by external devices, so that mouse or keyboard activity wakes up the computer.

➤ The choice: Enabled or Disabled.

ACPI Suspend Type

Use this item to define how your system suspends. In the default, S1(POS), the suspend mode is equivalent to a software power down. If you select S3 (STR), the suspend mode is a suspend to RAM - the system shuts down with the exception of a refresh current to the system memory.

➤ The choice: S1(POS) or S3(STR).

Power Management

This item acts like a master switch for the power-saving modes and hard disk timeouts. If this item is set to Max Saving, power-saving modes occur after a short timeout. If this item is set to Min Saving, power-saving modes occur after a longer timeout. If the item is set to User Define, you can insert your own timeouts for the power-saving modes.

Min Saving Minimum power management.

Suspend Mode= Allows you to set each mode individually.

HDD Power Down= 15min.

Max Saving Maximum power management.

Suspend Mode= Allows you to set each mode individually.

HDD Power Down= 1min.

User Defined Allows you to set each mode individually. When this item 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.

➤ The choice: User Define, Min Saving, or Max Saving.

Video Off Method

This item defines how the video is powered down to save power. This item is set to DPMS (Display Power Management Software) by default.

V/H SYNC + Blank This selection will cause the system to turn off the vertical and horizontal synchronization ports and write blanks to the video buffer.

Blank Screen This option only writes blanks to the video buffer.

DPMS Initial display power management signaling.

➤ The choice: Blank Screen, V/H SYNC + Blank, or DPMS.

Video Off In Suspend

This option defines if the video is powered down when the system is put into suspend mode.

➤ The choice: Yes or No.

Suspend Type

If this item is set to the default Stop Grant, the CPU will go into Idle Mode during power saving mode.

➤ The choice: PwrOn Suspend, Stop Grant.

MODEM Use IRQ

If you want an incoming call on a modem to automatically resume the system from a power-saving mode, use this item to specify the interrupt request line (IRQ) that is used by the modem. You might have to connect the fax/modem to the mainboard Wake On Modem connector for this feature to work.

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

Suspend Mode

The CPU clock will be stopped and the video signal will be suspended if no Power Management events occur for a specified length of time. Full power function will return when a Power Management event is detected.

- The choice: 1Min to 1Hour, or Disabled.

HDD Power Down

The IDE hard drive will spin down if it is not accessed within a specified length of time.

- The choice: 1Min to 15Min, or Disabled.

Soft-Off by PWR-BTTN

Under ACPI (Advanced Configuration and Power management Interface) you can create a software power down. In a software power down, the system can be resumed by Wake Up Alarms. This item lets you install a software power down that is controlled by the normal power button on your system. If the item is set to Instant-Off, then the power button causes a software power down. If the item is set to Delay 4 Sec. then you have to hold the power button down for four seconds to cause a software power down.

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

Wake-Up by PCI Card

When this item is enabled, the system power will be turned on if there is any PCI card activity.

- The choice: Enabled or Disabled.

Power On by Ring

If this item is enabled, it allows the system to resume from a software power down or a power-saving mode whenever there is an incoming call to an installed fax/modem. You have to connect the fax/modem to a mainboard Wake On Modem connector for this feature to work.

➤ The choice: Enabled or Disabled.

Wake Up On LAN

When set to Enabled, the system power will be turned on if the LAN port receives an incoming signal. You have to connect the fax/modem to a mainboard Wake On LAN connector for this feature to work.

➤ The choice: Enabled or Disabled.

USB KB Wake-Up S3

If you are using a USB keyboard, and the ACPI suspend type is set to S3, you can enable this item to allow a keystroke to wake up the system from power saving mode.

➤ The choice: Enabled or Disabled.

Resume by Alarm

When set to Enabled, the following two fields become available and you can set the date (day of the month), hour, minute and second to turn on your system. When set to 0 (zero) for the day of the month, the alarm will power on your system every day at the specified time.

➤ The choice: Enabled or Disabled.

**** Reload Global Timer Events ****

Global Timer (power management) 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 that occurs to a device that is configured as Enabled, even when the system is in a power-down mode.

Primary/Secondary IDE 0/1

When these items are enabled, the system will restart the power-saving timeout counters when any activity is detected on any of the drives or devices on the primary or secondary IDE channels.

➤ The choice: Enabled or Disabled.

FDD, COM, LPT Port

When this item is enabled, the system will restart the power-saving timeout counters when any activity is detected on the floppy disk drive, serial ports, or the parallel port.

- The choice: Enabled or Disabled.

PCI PIRQ[A-D]#

When disabled, any PCI device set as the Master will not power on the system.

- The choice: Enabled or Disabled.



PnP/PCI Configurations

CMOS Setup Utility - Copyright (C) 1984-2001 Award Software PnP/PCI Configurations		Item Help
Reset Configuration Data	[Disabled]	Menu Level → 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
Resources Controlled By	[Auto(ESCD)]	
x IRQ Resources	Press Enter	
PCI/UGA Palette Snoop	[Disabled]	
INT Pin 1 Assignment	[Auto]	
INT Pin 2 Assignment	[Auto]	
INT Pin 3 Assignment	[Auto]	
INT Pin 4 Assignment	[Auto]	
INT Pin 5 Assignment	[Auto]	
INT Pin 6 Assignment	[Auto]	
INT Pin 7 Assignment	[Auto]	
INT Pin 8 Assignment	[Auto]	
↑↓←→:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults		

This section describes the configuration of PCI bus system. PCI or Personal Computer Interconnection is a system which allows I/O devices to operate at the speed CPU itself keeps when CPU communicating with its own special components.

This section covers some very technical items, and it is strongly recommended that only experienced users should make any changes to the default settings.

Reset Configuration Data

If you enable this item and restart the system, any Plug and Play configuration data stored in the BIOS setup is cleared from memory. New updated data is created.

- The choice: Enabled or Disabled .

Resource controlled By

You should leave this item at the default Auto(ESCD). Under this setting, the system dynamically allocates resources to plug and play devices as they are required.

If you cannot get a legacy ISA (Industry Standard Architecture) expansion card to work properly, you might be able to solve the problem by changing this item to Manual, and then opening up the IRQ Resources and Memory Resources sub-menus.

In the IRQ Resources sub-menu, if you change any of the IRQ assignments to Legacy ISA, then that Interrupt Request Line is reserved for a legacy ISA expansion card. Press < Esc > to close the IRQ Resources sub-menu.

In the Memory Resources sub menu, use the first item Reserved Memory Base to set the start address of the memory you want to reserve for the ISA expansion card. Use the second item Reserved Memory Length to set the amount of reserved memory. Press < Esc > to close the Memory Resources sub-menu.

➤ The choice: Auto(ESCD) or Manual.

PCI/VGA Palette Snoop

This item is designed to overcome some problems that can be caused by some non-standard VGA cards. This board includes a built-in VGA system that does not require palette snooping so you must leave this item disabled.

➤ The choice: Enabled or Disabled.

INT Pin1 ~ 8 Assignment

Names the interrupt request (IRQ) line assigned to a device connected to the PCI interface on your system.

➤ The choice: Auto, 3, 4, 5, 7, 9, 10, 11, 12, 14, 15



PC Health Status

CMOS Setup Utility - Copyright (C) 1984-2001 Award Software		
PC Health Status		
CPU Warning Temperature	[120]	Item Help
CPU Temperature	XX C / XX F	Menu Level ▶
System Temperature	XX C / XX F	
System FAN Speed	XXXX RPM	
POWER FAN Speed	XXXX RPM	
CPU FAN Speed	XXXX RPM	
IN0(U)	X.XX V	
IN1(U)	X.XX V	
IN2(U)	X.XX V	
+ 5 U	X.XX V	
+12 U	X.XX V	
- 12 U	X.XX V	
- 5 U	X.XX V	
VBAT(U)	X.XX V	
5VSB(U)	X.XX V	
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

Enables you to set the maximum temperature the system can reach before warning you of an over-temperature condition.

- The choice: 30 ~ 120

System Component Characteristics

These fields provide you with information about the systems current operating status. You cannot make changes to these fields.

Characteristics contains as below:

CPU temperature, system temperature,

FAN speed of CPU, system and power.

system voltages: IN0/1/2(V), +5V, -5V, +12V, -12V, VBAT(V), 5VSB(V)

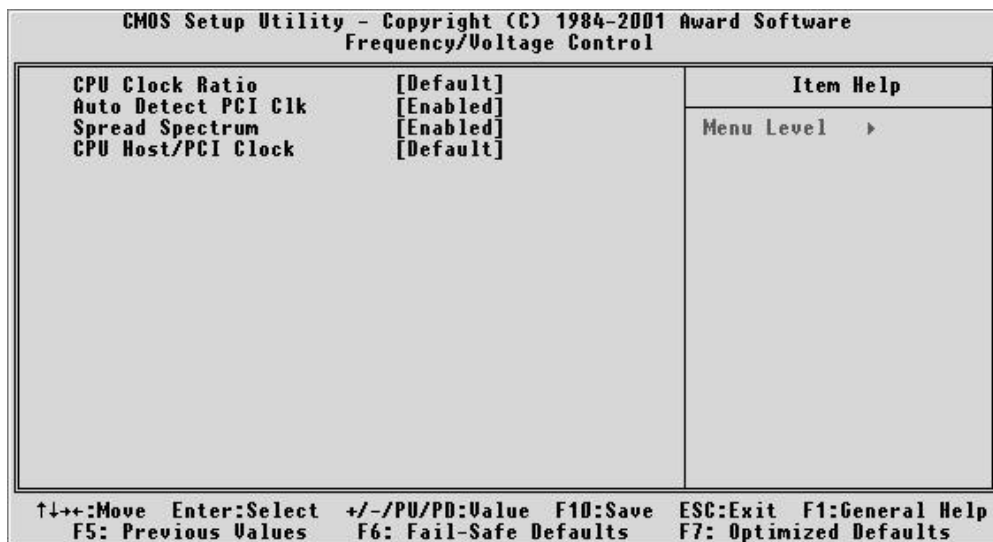
Shutdown Temperature

Enables you to set the maximum temperature the system can reach before powering down.

- The choice: Disabled, 60°C/140°F, 65°C/149°F, 70°C/158°F, or 75°C/167°F.



Frequency/Voltage Control



CPU Clock Ratio

Enables you to set the CPU clock. The CPU clock ratio times the CPU Host/PCI Clock should equal the core speed of the installed processor.

Example:

CPU Clock Ratio 9
CPU Host/PCI Clock x 100
Installed CPU clock speed 900 MHz

- The choice: Default or x9 ~ x23.

Auto Detect PCI Clk

When this item is enabled, BIOS will disable the clock signal of free DIMM and PCI slots.

- The choice: Enabled or Disabled.

Spread Spectrum

If you enable spread spectrum, it can significantly reduce the EMI (Electro-Magnetic Interference) generated by the system.

- The choice: Enabled or Disabled.

CPU Host/PCI Clock

Use the CPU Host Clock to set the frontside bus frequency for the installed processor.

- The choice: Default, 100/33MHZ, 105/35MHZ, 110/37MHZ, 115/38MHZ, 120/40MHZ, 125/42MHZ, 130/43MHZ, 133/33MHZ, 136/34MHZ, 140/35MHZ, 145/36MHZ, 150/38MHZ, 154/39MHZ.



Load Fail-Safe Defaults

When you press < Enter > on this item, you will 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.



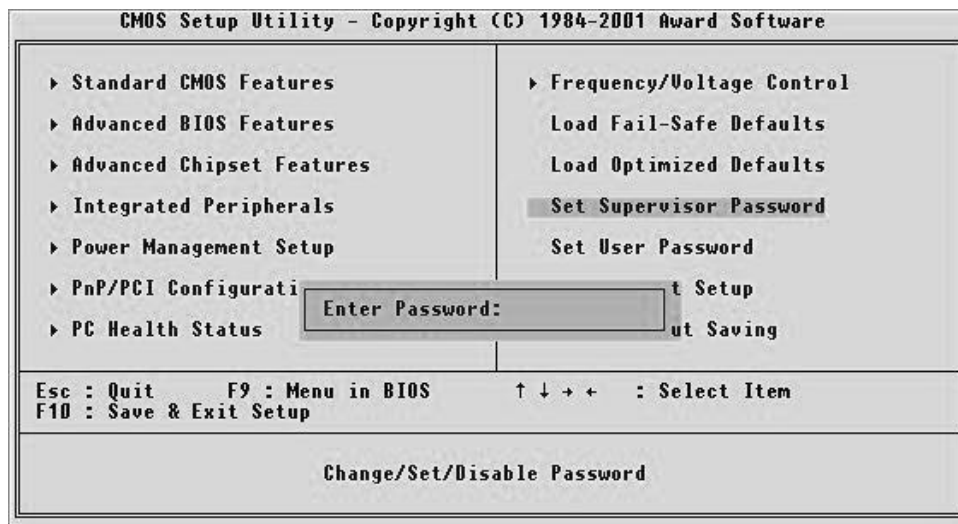
Load Optimized Defaults

When you press < Enter > on this item, you will 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-set for optimal performance system operation.

Set Password Setting



Set Supervisor/User Password

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

Enter Password

Type the password up to eight characters, and press < Enter > . The password typed now will clear any previously entered password from CMOS memory. You will be asked to confirm the password. Type the password again and press < Enter > . You may also press < Esc > to abort the selection and not enter a password.

To disable password, just press < Enter > when you are prompted to enter password. A message will confirm the password being disabled. Once the password is disabled, the system will boot and you can enter Setup freely.

Password Disable

If you select System at Security Option of BIOS Features Setup Menu, you will be prompted in entering the password whenever the system is rebooted or you try to enter Setup. If you select Setup at Security Option of BIOS Features Setup Menu, you will be prompted only when you try to enter Setup.

 **Save & Exit Setup**

Pressing < Enter > on this item asks for confirmation:

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

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

 **Exit Without Saving**

Pressing < Enter > on this item asks for confirmation:

Quit without saving (Y/N)? Y

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