BX Pentium® II Mainboard

User's Manual

Version 1.00

INTRODUCTION

This mainboard is designed for the new generation CPU. It supports the Intel CPU SLOT1 (Pentium$^{®}$ II), up to 512MB of memory, super I/O, and Green PC functions. The mainboard provides high performance for the server system and meets the requirements of the desktop system for multimedia in the future.

This mainboard based on the new 440BX chipset which revolutionizes the way Pentium® II PCs use memory by employing an Open Page Architecture, a new memory architecture that lets the CPU access main memory faster. Essentially, this means the CPU can leave a virtual finger in up to 32 different pages of its memory, making it easy for you to flip back to any of them at any time. Currently, like a dogged A-to-Z reader of the encyclopedia, a Pentium II can only keep its memory open to one page at a time. The CPU uses pages of memory in a similar manner to people leafing through reference works. It wants to flip back and forth between a particular set of pages at a time. Flipping right to them instead of taking that extra microsecond to find them makes the whole PC runs faster.

Another improvement in the chipset helps the CPU when it finds a single-bit error while reading error-correcting memory (that is, one bit in a byte of information is incorrect). With the 440BX, the error can be corrected on the fly, with the correction written back into memory. Current Pentium® IIs can't write the correction back.

However, this mainboard offers more obvious improvements. Most importantly, support for the faster system bus will have a profound effect on performance.

But other performance benefits accrue for mainstream desktops as well. The most obvious of these is support for 2x AGP. This means the AGP bus is clocked twice as fast and Sideband channel (a slower side channel for control information) is also used. Current AGP implementations only use a single-speed main channel and mix control information with the data.

Contents

SPECIFICATIONS

▤ **CPU**	• CPU SOFT MENU™II eliminates the need for jumpers or DIP switches needed to set CPU parameters
	• Employs switching type regulators to stabilize CPU operation
	• Supports 66MHz and 100MHz CPU external clock speeds
	• Supports Pentium® II 350~400MHz processor cartridge (Based on 100 MHz) and Pentium® II 233~333MHz processor cartridge (Based on 66 MHz).
▤ **Chipset**	• Intel 440BX chipset (82443BX and 82371EB)
	• Supports Ultra DMA/33 IDE protocol
	• Supports Advanced Configuration and Power Management Interface(ACPI)
	• Accelerated Graphics Port connector supports AGP 1x and 2x mode (Sideband) 3.3V device
▤ **Cache Memory**	• Level 1 and Level 2 cache built into Intel Pentium II processor package.
▤ **Memory (DRAM)**	• Four 168-pin DIMM sockets support SDRAM
	• Supports up to 512MBytes
	• ECC support

▣ System BIOS

- AWARD BIOS

- Supports Plug-and-Play (PnP)

- Supports Advanced Configuration Power Interface (ACPI)

- Supports Desktop Management Interface (DMI)

- Year 2000 Compliant

▣ Multi I/O Functions

- Floppy port supports up to 2.88MB, and 3 mode floppy

- Ultra DMA/33 bus master IDE supports up to 4 IDE devices (Including LS-120MB floppy drive)

- Built-in Standard/EPP/ECP parallel port connector

- Two built-in 16550 fast UART compatible serial port connectors

- Built-in PS/2 keyboard and PS/2 mouse port connectors

- Built-in standard IrDA TX/RX header

- Two built-in USB connectors

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▣ **Miscellaneous**

- ATX form factor

- One AGP slot, Four PCI slots and Three ISA slots

- Reserved circuitry for LDCM feature

- Hardware monitoring – Included fan speed, voltages, and system environment temperature

- Board size: 305 * 245mm

Note: All brand names and trademarks are the property of their respective owners.
*Above 100/66 MHz bus speed supported but not guaranteed due to the PCI specs.

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LAYOUT DIAGRAM

PS/2 KEYBoard/Mouse

USB 1

ATXPWR

COMM./LPT PORTS

CPU SLOT1

443BX

DIMM 1
DIMM 2
DIMM 3
DIMM 4

FDI

IDE 1

IDE 2

Green_LED
SPEAKER
RST
SM POW-ON HD-LED KEYLOCK

AGP SLOT

PCI 1

WOL
PCI 2

ALi

1   5

IR

BIOS

PCI 3

PCI 4

SB-LINK
2 4 6
1 5

PCI 5

1   3
CCOMS 1

PIIX4

ISA 1

1   5

WOR

ISA 2

BAT
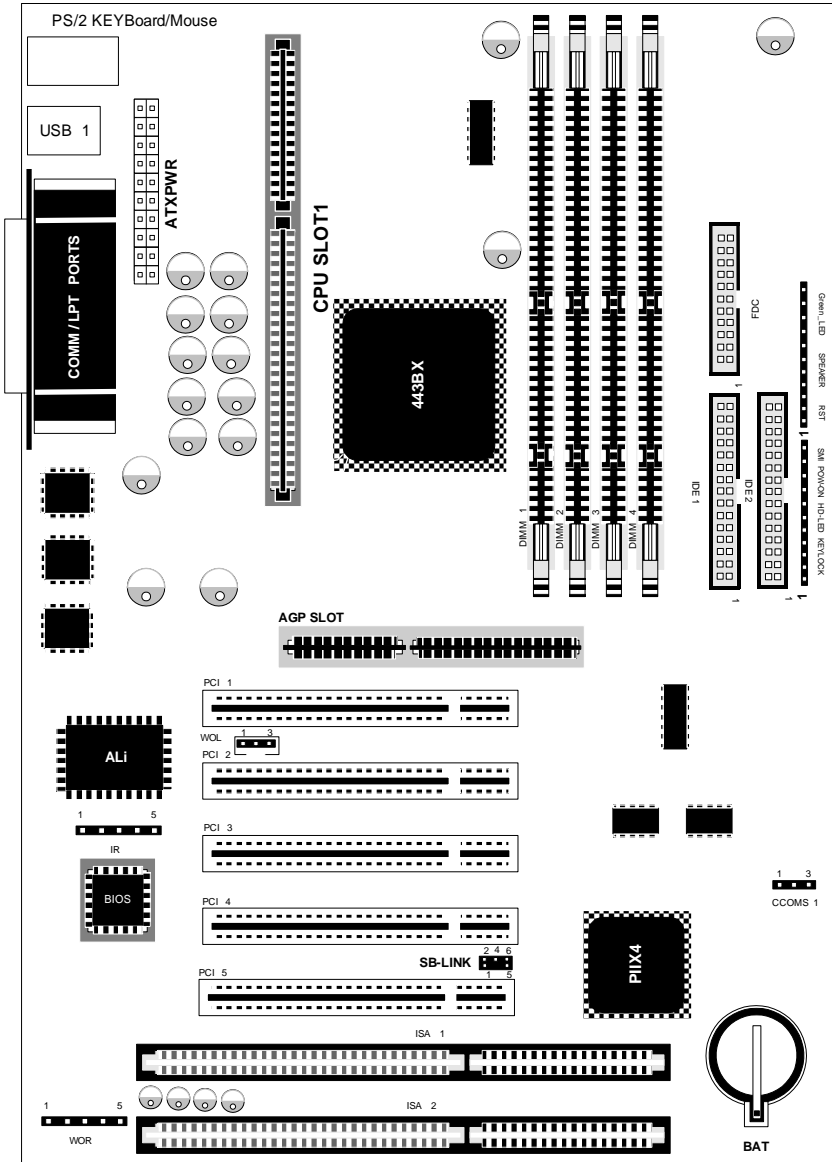
BX Component Locations

SYSTEM BLOCK DIAGRAM

CPU-SLOT1

Control
Address
Data

AGP SLOT

PMC 82443BX

Address
Control

Main Memory (DRAM)

PCI BUS

USB 1   USB 2

PIIX4E

PCI IDE HEADER

PCI SLOT(s)

Universal Serial BUS

ISA SLOT(s)

ISA BUS

Buffer

KBC

RTC

FLASH BIOS

X BUS

83977F

Serial

LPT

IrDA

FDC

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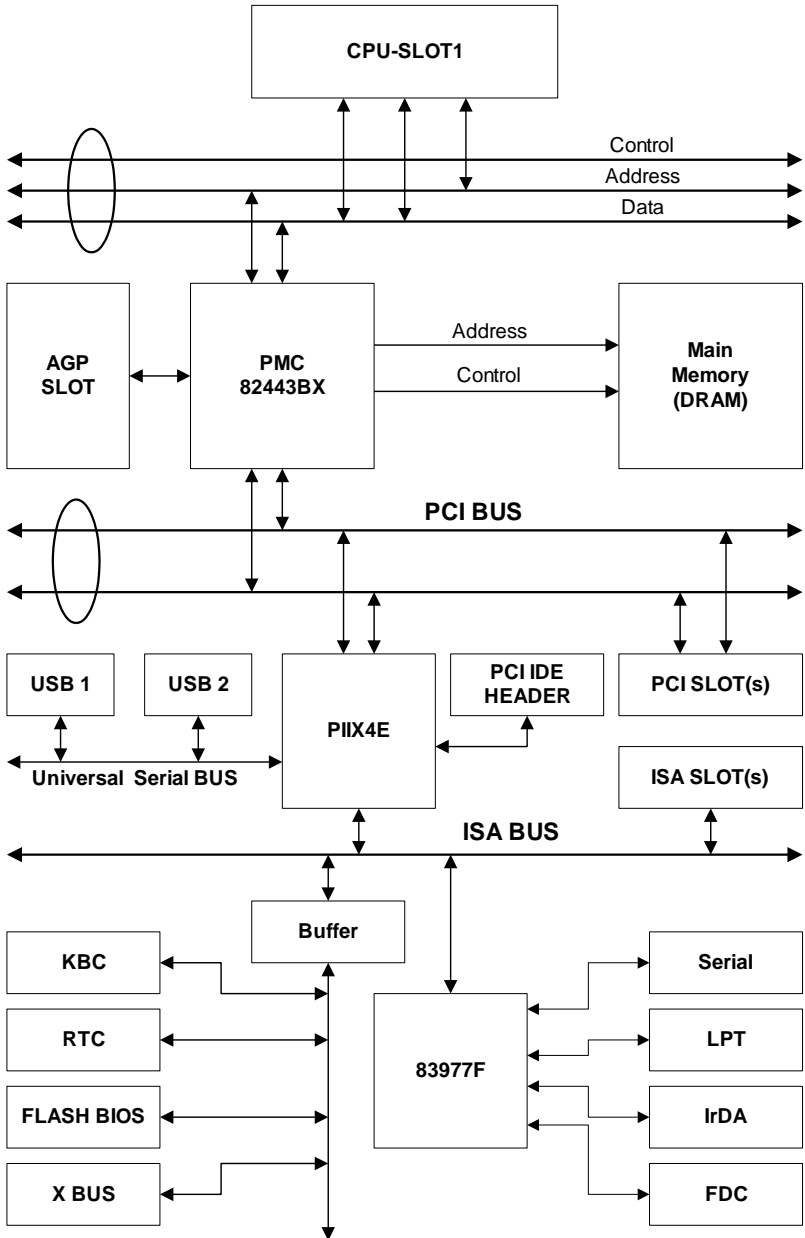
Pentium®II CPU Installation

1. Mount the two black plastic pegs onto the mainboard. These pegs will be used to attach the fan heat sink supports. Notice that one hole and the base of one peg are larger than the other hole and peg base. Push each peg into its hole firmly to the end until you hear it " click " into place.

Retention mechanism

Large peg and hold
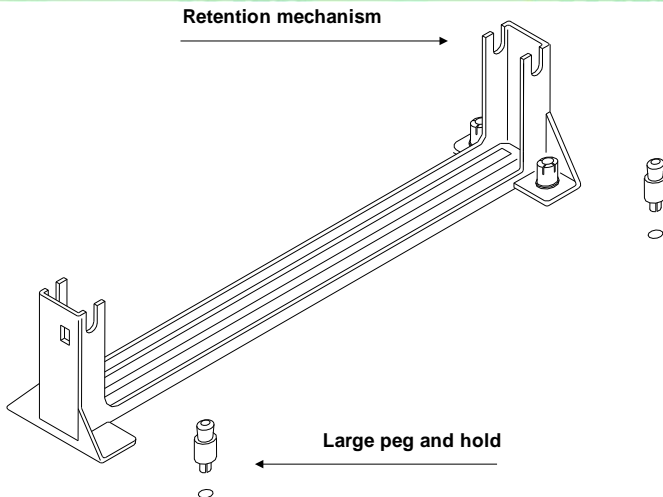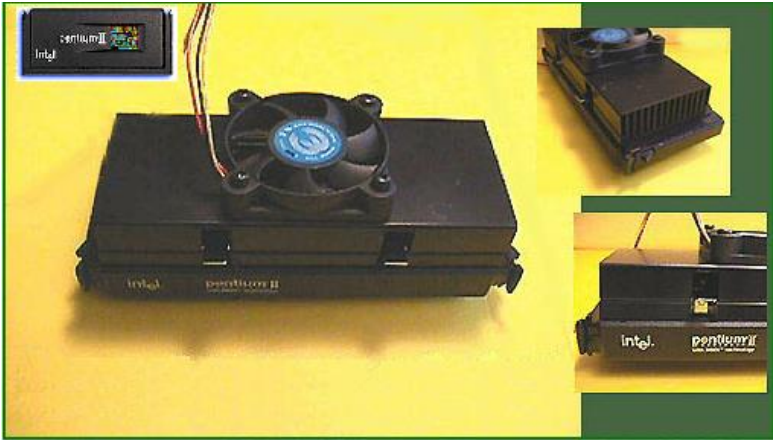
2. Slide a black plastic support onto each end of the fan heat

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sink , making sure that the
hole and clip are on the
outside edge of the support .
Slide each support toward the
center of the processor until
the support is secured to the
outside groove of the fan
housing.

Top of Processor

Groove in fan housing
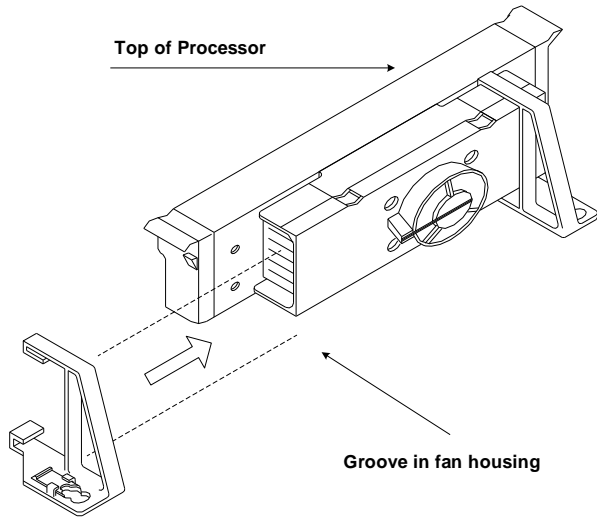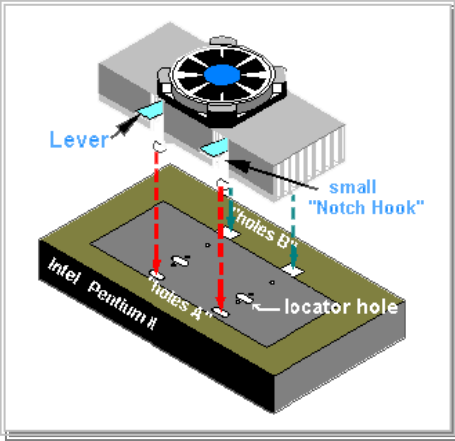
3. Slide the clip (A) on each support toward the processor , exposing the hole that will fit the peg on the mainboard . Push the latches (B) on the processor toward the center of the processor until they click into place.
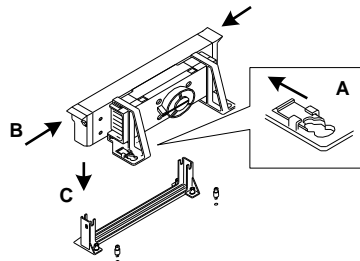
4. Hold the processor so that the fan shroud is facing toward the pegs on the mainboard. Slide the processor (Direction C) into the retention mechanism and press evenly and gently. Ensure that the pegs on the mainboard slide into the holes on the heat sink support and that the alignment notch in the processor fits over the plug in Slot 1 .

5. Slide the clips on the supports (D) forward until they click into place to hold the pegs securely. (Apply slight pressure on the peg and push the peg forward the clip while pushing the clip forward.) Push the latches on the processor (E) outward until they click into place in the retention mechanism. The latches must be secured for proper electrical connection of the processor.
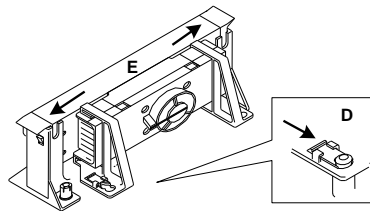
Note:

• Installing a heat sink and cooling fan is necessary for proper heat dissipation from your CPU. Failing to install these items may result in overheating and damage of your CPU.

• Please refer to your boxed Pentium $^{\circledR}$ II processor installation or other documentation attached with your CPU for detailed installing instructions.

System memory Installation

The mainboard provides four 168-pin DIMM sites for memory expansion..
The DIMM socket supports 1Mx64(8MB), 2Mx64(16MB), 4Mx64(32MB),
8Mx64(64MB),and16Mx64(128MB)or double sided DIMM modules. Minimum
memory size is 8MB and maximum memory size is 512 MB SDRAM. There
are four Memory module sockets on the system board.(Total eight banks) In
order to create a memory array, certain rules must be followed. The following
set of rules allows for optimum configurations.

- The memory array is 64 or 72 bits wide. (Without parity or with parity)
- Support single and double density DIMMs.

The following is the valid memory configuration:

Bank	Memory Module	Total Memory
Bank0 (DIMM1)	8MB,16MB, 32MB,64MB, 128MB	8MB~128MB
Bank1 (DIMM2)	8MB,16MB, 32MB,64MB, 128MB	8MB~128MB
Bank3 (DIMM3)	8MB,16MB, 32MB,64MB, 128MB	8MB~128MB
Bank4 (DIMM4)	8MB,16MB, 32MB,64MB, 128MB	8MB~128MB
Total System Memory		8MB~512MB

* * * This table depicts the addressing requirements for each of the
row/column organizations for each row size. The SDRAM components
used for the options shown in the table are as follows:

Option	SDRAM Component Type
1 (8MB)	1M x 16
2 (16MB)	2Mx8 or 2Mx32
3 (32MB)	4Mx16 or 4Mx4 (Registered DIMM only)
4 (64MB)	8Mx8
5 (128MB)	16Mx4 (Registered DIMM only)

Note: Both 4Mx4 and 16Mx4 SDRAM devices are supported in the form of
Registered DIMMs only. 2 Bank version of 2Mx32 is addressed like a
2Mx8 device, 12 row x 9 column.

Supported SDRAM Memory Configurations

DRAM	DRAM	DRAM	DRAM	DRAM DIMM		DRAM	MA			DRAM Size	
Type	Tech	Depth	Width	SS x64	DS x64	Addressing	Row	Col	Banks	Min (1 row)	Max (2 row)
SDRAM	**16M**	**1M**	16	1M	2M	Asymmetric	12	8	2	8MB	16MB
		2M	8	2M	4M	Asymmetric	12	9	2	16MB	32MB
		2M	8	2M	4M	Asymmetric	13	8	2	16MB	32MB
		4M	4	4M	8M	Asymmetric	12	10	2	32MB	64MB
		4M	4	4M	8M	Asymmetric	14	8	2	32MB	64MB
SDRAM	64M 2 Bank	2M	32	2M	4M	Asymmetric	12	9	2	16MB	32MB
		2M	32	2M	4M	Asymmetric	13	8	2	16MB	32MB
		4M	16	4M	8M	Asymmetric	12	10	2	32MB	64MB
		4M	16	4M	8M	Asymmetric	14	8	2	32MB	64MB
		8M	8	8M	16M	Asymmetric	14	9	2	64MB	128MB
		16M	4	16M	32M	Asymmetric	14	10	2	128MB	256MB
SDRAM	64M 4 Bank	2M	32	2M	4M	Asymmetric	13	8	4	16MB	32MB
		4M	16	4M	8M	Asymmetric	14	8	4	32MB	64MB
		8M	8	8M	16M	Asymmetric	14	9	4	64MB	128MB
		16M	4	16M	32M	Asymmetric	14	10	4	128MB	256MB

Mainboard Installation

This BX6 mainboard not only provides all standard equipment for classic personal computers, but also provides great flexibility for meeting future upgrade demands. This chapter will introduce step by step all the standard equipment and will also present, as completely as possible, future upgrade capabilities. This mainboard is able to support all Intel Pentium II processors now on the market.

> **!! WARNING !!**
> Discharge static electricity by touching the **GROUND** such as metal part of your case connected with good power ground before you handle the electronic circuit boards.
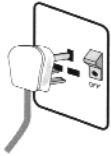
Before installing the mainboard please be sure to turn off or disconnect the power supply unit. Before making any modifications to the hardware configuration of the mainboard, the power supply to any areas of the mainboard you plan to modify should be turned off to avoid unnecessary damage to the hardware.

Installing the Mainboard

Our objective is to enable the novice computer user to perform the installation by themselves. We have attempted to write this document in a very clear, concise and descriptive manner to help overcome any obstacles you may face during installation. Please read our instructions carefully and follow them step-by-step.

Most computer cases will have a base on which there will be many mounting holes that allows the mainboard to be securely attached and at the same time, prevents short circuits.

There are two ways to attach the mainboard to the base.

- with spacers
- or with bolts

In principle, the best way to attach the motherboard is with bolts, and only if you are unable to do this should you attach the board with spacers. Take a careful look at the mainboard and you will see many mounting holes on it. Line these holes up with the mounting holes on the base. If the holes line up, and there are screw holes this means you can attach the mainboard with bolts. If the holes line up and there are only slots, this means you can only attach the mainboard with spacers. Take the tip of the spacers and insert it into the slots.

After doing this to all the slots, you can slide the mainboard into position aligned with the slots. After the mainboard has been positioned, check to make sure everything is OK before putting the casing back on.

Note: If the mainboard has mounting holes, but don't line up with the holes on the base and their are no slots to attach the spacers, don't worry, you can still attach the spacers to the mounting holes. Just cut the spacers (along the dotted line) (the spacer may be a little hard so be careful of our hands). In this way you can still attach the mainboard to the base without worrying about short circuits.

Standard External Connectors

Inside the case of any computer several cables and plugs have to be connected. These cables and plugs are usually connected one-by-one to connectors located on the mainboard. You need to carefully pay attention to any connection orientation the cables may have and, if any, notice the position of the first pin of the connector. In the explanations that follow, we will describe the significance of the first pin.

PN 1

SMI   POW-ON   HDD-LED   KEYLOCK

```
┌──────┬───┬──────┬───┬──────┬───┬─────────────┐
│ ● ●  │ ○ │ ● ●  │ ○ │ ● ●  │ ○ │ ● ● ● ● ● │  1
└──────┴───┴──────┴───┴──────┴───┴─────────────┘
```

                            +   POWERLED +

```
┌───────────┬───┬──────┬───┬─────────┬───┬──────┐
│ ○ ○ ○   │ ○ │ ● ●  │ ○ │ ● ● ● ● │ ○ │ ● ●  │  1
└───────────┴───┴──────┴───┴─────────┴───┴──────┘
```

              +

                 SP-LED   SPEAKER   RST
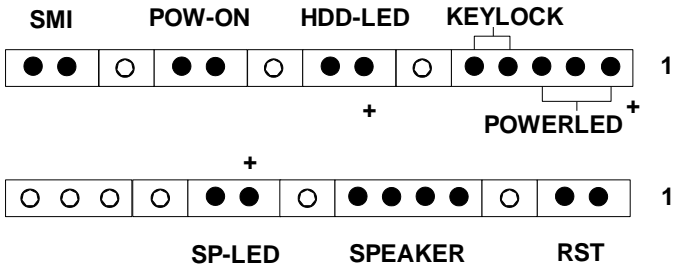
PN 2

PN 1 (1-2-3-4-5) keylock and Power LED Connector

Pin Number	Name or significance of signal
1	+5VDC
2	No connection
3	Ground
4	Keylock inhibit signal
5	Ground

Attach the case's keylock to the connector.

PN 1(7-8)   HDD LED Connector

Pin Number	Name or significance of signal
7	LED power
8	HDD active

Attach the cable from the case's HDD LED to this connector.

PN 1(10-11)   Power Switch

Pin Number	Name or significance of signal

10	Ground
11	Power Switch signal

PN 1(13-14)   Hardware Suspend Switch (SMI Switch)

Pin Number	Name or significance of signal
13	Ground
14	Suspend signal

Attach the cable from the case's suspend switch (if there is one) to this switch. Use this switch to enable/disable the power management function by hardware.

PN 2(1-2)   Hardware Reset Connector

Pin Number	Name or significance of signal
1	Ground
2	Reset input

Attach the cable from the case's Reset switch to this connector. Press and hold the reset button for at least one second to reset the system.

PN 2(4-5-6-7)   Speaker Connector

Pin Number	Name or significance of signal
4	+5VDC
5	Ground
6	Ground
7	Speaker data

Attach the system speaker to connector PN2.

PN 2(9-10)   Green LED

Pin Number	Name or significance of signal
9	LED Power
10	Green LED Active

MOUSE - PS/2   Mousse Connector

Pin Number	Name or significance of signal
1	Mouse data
2	No connection

3	Ground
4	+5VDC
5	Mouse clock
6	No connection

Attach a PS/2 mouse to this 6-pin Din-connector.

KB - PS/2   Keyboard Connector

Pin Number	Name or significance of signal
1	Keyboard data
2	No connection
3	Ground
4	+5VDC
5	Keyboard clock
6	No connection

Attach a keyboard to this 6-pin Din-connector.

MOUSE

USB

LPT

KEYBOARD   **COM 1**   **COM 2**
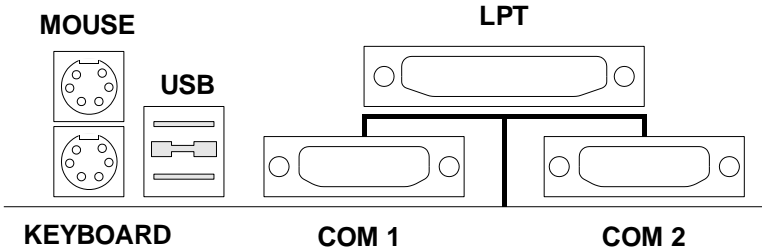
ATX PWR -   ATX Power input Connector

Pin Number	Name or significance of signal
1	+3.3V
2	+3.3V
3	Ground
4	+5V
5	Ground
6	+5V
7	Ground
8	Powergood
9	+5V
10	+12V
11	+3.3V
12	-12V
13	Ground
14	On/Off control signal
15	Ground
16	Ground

17	Ground
18	-15V
19	+5V
20	+5V

Attach the connectors from the power supply to ATX PWR.

Caution: If power supply connectors are not properly attached to ATX PWR, the power supply or add-on cards may be damaged.

I/O port connectors

Name	No. of pins	Description
IDE 1	40	IDE channel 1 connector
IDE 2	40	IDE channel 2 connector
FDC	34	Floppy disk connector
LPT	25	Parallel port
COM 1	9	Serial port COM 1 connector
COM 2	9	Serial port COM 2 connector
USB	8	Universal serial Bus

Notes: *IDE1, IDE2 are high performance PCI IDE connectors. Up to four IDE interface devices are supported.

IR - IR   connector(Infrared)

Pin Number	Name or significance of signal
1	+5Vcc
2	No connection
3	IR_RX
4	Ground
5	IR_TX

FAN 1, FAN 2, FAN 3:   DC-FAN Power Connector

Pin Number	Name or significance of signal
1	Ground
2	+12V
3	Sense

WOR: Wake On Ring

Pin Number	Name or significance of signal
1	5VSB

2	
3	- Ring
4	Ground
5	

SB -LINK™:   **Sound Blaster Connector**

Pin Number	Name or significance of signal
1	-GNTA
2	Ground
3	
4	-REQ A
5	Ground
6	SER IRQ

WOL: **Wake On LAN**

Pin Number	Name or significance of signal
1	5VSB
2	Ground
3	LID (LAN Indicator)

Jumper and Switches

You can set jumper switches on the mainboard to configure various hardware options. See Figure 1-1 for jumper locations.
Throughout this section, the following symbols are used to indicate jumper settings.

For 3-pin jumpers, the symbols below are used:

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Pin 1-2

Short Pins 1 and 2 with a jumper cap.

3   2   1
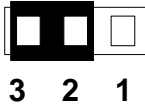
Pin 2-3

Short Pins 2 and 3 with a jumper cap.

3   2   1

For 2-pins jumpers, the following symbols are used:
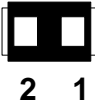
ON

Place the jumper cap over the two pins of the jumper to Short the circuitry.

2   1
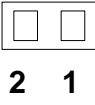
OFF

Remove the jumper cap to Open the circuitry.

2   1

Note: To avoid losing jumper caps, attach the removed jumper cap to one of the jumper pins.

CCMOS 1 - CCMOS   Discharge Jumper

Setting	CCMOS
Normal Operation (Default)	Jumper on 1-2.
Discharge CMOS	Jumper on 2-3.

Jumper CCMOS discharge CMOS memory. When you install the mainboard, make sure this jumper is set for Normal Operation(1-2).

Introduction of BIOS

The BIOS is a program located on a Read Only Memory chip on the mainboard. This program will not be lost when you turn the computer off. This program is also referred to as the boot program. It is the only channel for the hardware circuit to communicate with the operating system. Its main function is to manage the setup of the mainboard and interface cards parameters, including simple parameters such as time, date, hard disk drive, as well as more complex parameters such as hardware synchronization, device operating mode, **CPU SOFT MENU™ II** techniques, setup of CPU speed. The computer will operate
normally, or will operate at its best, only if all these parameters are correctly configured through the BIOS.

☺ **Don't change the parameters inside the BIOS unless you know what you are doing.**

The parameters inside the BIOS are used to setup the hardware synchronization or the device operating mode. If the parameters are not correct, they will produce errors, the computer will crash, and sometimes you will even not be able to boot the computer after it has crashed. We recommend that you do not change the parameters inside the BIOS unless you are familiar with them.

When you start the computer, it is controlled by the BIOS program. The BIOS first operates an auto-diagnostic for all the necessary hardware, configures the parameters of the hardware synchronization, and detects all the hardware. Only when these tasks are completed does it give up control of the computer to the program of the next level, which is the operating system. Since the BIOS is the only channel for hardware and software to communicate, it will be the key factor for system stability, and to ensure that your system performs at its best. After the BIOS has achieved the auto-diagnostic and auto-detection operations, it will display the following message:

PRESS DEL TO ENTER SETUP

Three to five seconds after the message is displayed, if you press the **Del** key, you will access the BIOS Setup menu. At that moment, the BIOS will display the following message:

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```
                    ROM PCI/ISA BIOS (2A69JA1A)
                        CMOS SETUP UTILITY
                       AWARD SOFTWARE, INC.

    !! CPU SOFT MENU !!              LOAD SETUP DEFAULTS

    STANDARD CMOS SETUP             LOAD BIOS DEFAULTS

    BIOS FEATURES SETUP             PASSWORD SETTING

    CHIPSET FEATURES SETUP          IDE HARD DISK DETECTION

    POWER MANAGEMENT SETUP          SAVE & EXIT SETUP

    PNP, PCI & ONBOARD I/O          EXIT WITHOUT SAVING

    Esc : Quit                      ↑ ↓ → ←  : Select Item
    F10 : Save & Exit Setup         <Shift>F2 : Change Color
```

In the BIOS Setup main menu of Figure 3, you can see several options. We will explain these options step by step in the following pages of this chapter, but let us first see a short description of the function keys you may use here:

- ❖ Press **Esc** to quit the BIOS Setup.
- ❖ Press ↑ ↓ ← → (up, down, left, right) to choose, in the main menu, the option you want to confirm or to modify.
- ❖ Press **F10** when you have completed the setup of BIOS parameters to save these parameters and to exit the BIOS Setup menu.
- ❖ Press Page Up/Page Down or +/- keys when you want to modify the BIOS parameters for the active option.

CMOS DATA

Computer
Knowledge

Maybe you have heard somebody saying that their CMOS DATA was lost. What is the CMOS? Is it important? The CMOS is the memory used to store the BIOS parameters that you have configured. This memory is passive. You can read its data, and you can also store data in it. But this memory has to be powered by a battery, in order to avoid any loss of its data when the computer is turned off. Since you may have to change the CMOS battery when it is out of power and indoing so, you will loose all CMOS data, therefore, we recommend that you write down all the parameters of your hardware.

CPU SOFT MANU™ II

The CPU can be setup through a programmable switch (**CPU SOFT MENU ™ II**), that replaces traditional manual hardware configuration. This feature allows the user to complete more easily the installation procedures. You can install the CPU without configuring any jumpers or switches. The CPU must be setup according its specifications.

In the first option, you can press <F1> at any time to display all the items that can be chosen for that option.

```
             ROM PCI/ISA BIOS (2A59IA1B)
                 !! CPU SOFT MENU !!
                AWARD SOFTWARE, INC.

CPU Name Is : Intel Pentium II MMX

CPU Operating Speed : User Define
 - Turbo Frequency   : Disabled
 - External Clock     : 66MHz
 - Multiplier Factor : x3.5
 - Speed Error Hold   : Disabled



                              ESC : Quit        ↑↓→← : Select Item
                              F1  : Help        PU/PD/+/- : Modify
                              F5  : Old Values  <Shift>F2 : Color
                              F6  : Load BIOS   Defaults
                              F7  : Load Setup Defaults
```
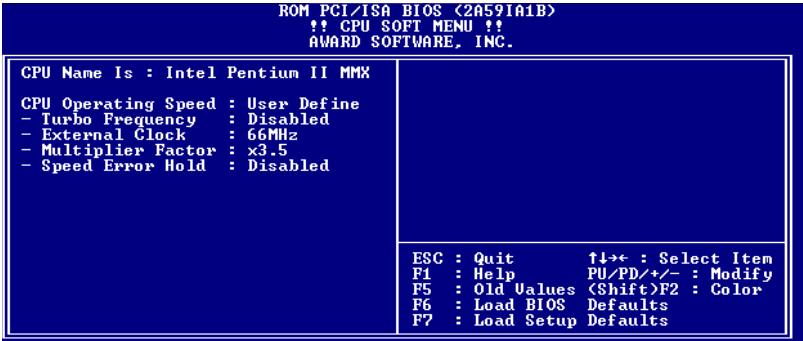
CPU Operating Speed:

This option sets the CPU speed.

In this field, the CPU speed is indicated like this: CPU speed (external clock rate x multiplier factor) Select the CPU speed according to the type and speed of your CPU.

Select the CPU speed according to the type and speed of your CPU.

For Intel Pentium $^®$ II MMX CPUs, you can choose the following settings:

CPU	Clock	CPU	Clock	CPU	Clock
233	(66x3.5)	266	(66x4)	300	(66x4.5)
333	(66x5)	350	(100x3.5)	400	(100x4)
450	(100x4.5)	…..	…..	…..	…..

User Define external clock and multiplier factor:

External Clock	User Define	Multiplier Factor	User define
	66		2.0
	75*		2.5
	83*		3.0

MHz	100	x	3.5
	112*		4.0
	133*		4.5
	…		5.0
	…		…

✻   Above 66/100 MHz bus speed supported but not guaranteed due to the CPU and chipset specs.

However, differences will exist because of the various types of Intel Pentium ® II CPUs available.

Normally, we do not recommend that you use the "User Define" option to setup CPU speed and multiplier factor. This option is for setup of future CPUs whose specifications are still unknown. The specifications of all present CPUs are included in the default settings. Unless you are very familiar with all CPU parameters, it is very easy to make mistakes when you define by yourself the external clock and the multiplier factor.

Turbo Frequency:

The Turbo mode allows you to speed up the external clock by approximately 2.5%. This feature is used to verify the design flexibility. It is a very important tool for test units to verify CPU stability.

Enable: CPU external clock is operating within the limits of the Turbo mode.

Disable: CPU external clock is operating within the normal limits.

Note : The increase by 2.5% of the CPU speed is not a standard feature of this product. It is only for use by our development department to verify that the CPU is able to work normally when CPU speed, operating temperature and power supply are 2.5% higher or lower than the standard values. This is to guarantee product stability. We require the manufacturer of the Clock Generator to meet the demands of our development department and to add a TURBO Frequency feature used for testing purposes by our R&D department. Of course, you can use this feature to test the stability of your own system, but after you have tested the product, we recommend that you set it back to its normal value in order to guarantee system stability.

Solution in case of initializing problem due to invalid CPU setup:

If the CPU parameters are not setup properly , it might be impossible to power on and initialize system. In such case:

      1. Turn the system on and off a few times(3~4 times). The system will automatically use its standard parameters to boot.

2. OR: Hold **INSERT** key and turn POWER ON. The system will automatically use its standard parameters to boot. You can then enter BIOS SETUP again and set up the new parameters.

When you change your CPU:

This mainboard has been designed in such a way that you can turn the system on after having inserted the CPU in the socket without having to configure any jumpers or DIP switches. But if you change your CPU, normally, you just have to turn off the power supply, change the CPU and then, set up the CPU parameters through CPU **SOFT MENU™ II** However, if the new CPU is slower than the old one, we offer you two methods to successfully complete the CPU change operation.

Method 1: Setup up the CPU for the lowest speed for its brand. Turn the power supply off and change the CPU. Then turn the system on again, and set up the CPU parameters through CPU SOFT MENU.

Method 2: Since you have to open the computer case when you change the CPU , it could be a good idea to use the CCMOS jumper to erase the parameters of the original CPU and to enter BIOS Setup to configure the CPU parameters again.

Attention: After you have set up the parameters and left the BIOS SETUP, and verified that the system can be booted, do not press the Reset button and turn off the power supply at the sometime.

Otherwise, the BIOS will not read correctly, the parameters will fail and you must enter CPU **SOFT MENU™ II** to set up the parameters all over again.

CPU Power Supply:

This option allows you to switch between CPU Default and user define voltage.

CPU Default: System will detect CPU type and select proper voltage automatically. When it is enabled ,the option "**Core Voltage**" will show the current voltage setting that is defined by the CPU and this will not be changeable. We recommend is using this CPU default setting and not changing it unless current CPU type and voltage setting can not be detected or not correct.

User define: This option lets the user select the voltage manually. You can change values of the "**Core Voltage**" option lists by using the Page Up and Page Down keys.

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Standard CMOS Setup Menu

This contains the basic configuration parameters of the BIOS. These parameters include the settings of date, hour, VGA card, FDD and HDD.

```
                      ROM PCI/ISA BIOS <2A59IA1B>
                          STANDARD CMOS SETUP
                          AWARD SOFTWARE, INC.

    Date (mm:dd:yy) : Fri, May 16 1997
    Time (hh:mm:ss) : 13 : 10 : 30

    IDEs (HDDs)       : TYPE    SIZE    CYLS HEAD PRECOMP LANDZ SECTOR   MODE

    Primary Master   : Auto     0       0    0    0       0     0      AUTO
    Primary Slave    : None     0       0    0    0       0     0      ------
    Secondary Master : None     0       0    0    0       0     0      ------
    Secondary Slave  : None     0       0    0    0       0     0      ------

    Drive A : 1.44M, 3.5 in.
    Drive B : None                              Base Memory:      0K
    Floppy 3 Mode Support : Disabled        Extended Memory:      0K
                                               Other Memory:    512K
    Video   : EGA/VGA
    Halt On : All,But Keyboard                  Total Memory:    512K

    ESC : Quit              ↑ ↓ → ←  : Select Item     PU/PD/+/- : Modify
    F1  : Help             <Shift>F2 : Change Color
```

Set up of HDD operating mode << NORMAL, LBA, LARGE>>

Since old operating systems were only able to support HDD whose capacity was not bigger than 528MB, any hard disk with more than 528MB was unusable. AWARD BIOS features a solution to this problem: you can, according to your operating system, choose three operating modes: **NORMAL, LBA or LARGE.**

The **HDD AUTODETECTION** option in the Main Menu will automatically detect the parameters of your hard disk and the mode supported.

Normal mode:	Standard normal mode supports hard disks of 528MB or less. This mode directly uses positions indicated by Cylinders (CYLS), Heads, and Sectors to access data.
LBA **(Logical Block addressing) mode:**	LBA mode supports hard disk drives up to 8.4Giga. This mode uses a different method to calculate the position of disk data to be accessed. It translates Cylinders (CYLS), Heads and Sectors into a logical address where data are located. The Cylinders, Heads, and Sectors displayed in this menu do not reflect the actual structure of the hard disk, they are just reference values used to calculate actual positions. Currently, all high capacity hard disks support this mode, that's why we recommend you use this mode.

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LARGE Mode: When the number of cylinders (CYLs) of the hard disk exceeds 1024 and DOS is not able to support it, or if your operating system does not support LBA mode, you should select this mode.
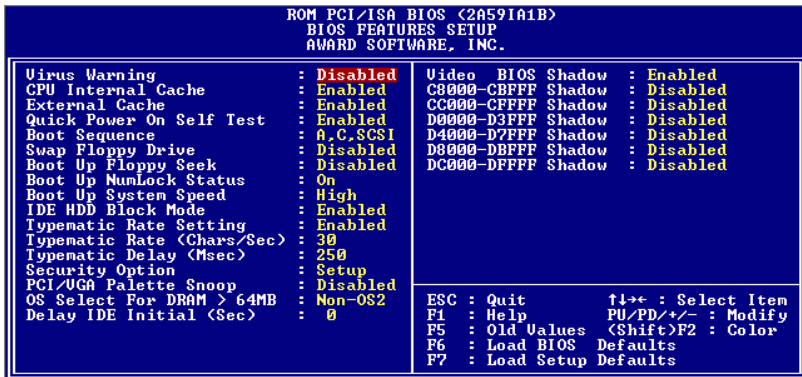
FDD supporting 3 Mode:

3 Mode floppy disk drives (FDD) are 3 1/2" drives used in Japanese computer systems. If you need to access data stored in this kind of floppy, you must select this mode, and of course you must have a 3 Mode floppy drive.

BIOS Features Setup Menu

BIOS Features Setup Menu has already been set for maximum operation. If you do not really understand each of the options in this menu, we recommend you use default values.

In each item, you can press <F1> at any time to display all the options for this item.

```
               ROM PCI/ISA BIOS (2A59IA1B)
                    BIOS FEATURES SETUP
                   AWARD SOFTWARE, INC.

Virus Warning            : Disabled    Video  BIOS Shadow   : Enabled
CPU Internal Cache       : Enabled     C8000-CBFFF Shadow   : Disabled
External Cache           : Enabled     CC000-CFFFF Shadow   : Disabled
Quick Power On Self Test : Enabled     D0000-D3FFF Shadow   : Disabled
Boot Sequence            : A,C,SCSI    D4000-D7FFF Shadow   : Disabled
Swap Floppy Drive        : Disabled    D8000-DBFFF Shadow   : Disabled
Boot Up Floppy Seek      : Disabled    DC000-DFFFF Shadow   : Disabled
Boot Up NumLock Status   : On
Boot Up System Speed     : High
IDE HDD Block Mode       : Enabled
Typematic Rate Setting   : Enabled
Typematic Rate (Chars/Sec) : 30
Typematic Delay (Msec)   : 250
Security Option          : Setup
PCI/VGA Palette Snoop    : Disabled
OS Select For DRAM > 64MB : Non-OS2    ESC : Quit          ↑↓→← : Select Item
Delay IDE Initial (Sec)  : 0           F1  : Help          PU/PD/+/- : Modify
                                       F5  : Old Values    (Shift)F2 : Color
                                       F6  : Load BIOS  Defaults
                                       F7  : Load Setup Defaults
```

Virus Warning:

This item can be set as Enable or Disable.

When this feature is enabled, if there is any attempt from a software or an application to access the boot sector or the partition table, the BIOS will warn you that a boot virus is attempting to access to the hard disk.

CPU Level 1 Cache:

This item is used to Enable or to Disable the CPU level 1 cache. When the cache is set at Disable, it is much slower, so the default setting for this item is Enable. Some old and very bad programs will make the computer malfunction or crash if the system speed is to high. In that case, you should Disable this feature.

CPU Level 2 Cache:

This item is used to enable or to disable the CPU level 2 cache. When the external cache is enabled, the system works faster. The default is Enable.

CPU Level 2 Cache ECC Checking:

This item is used to enable or to disable the CPU level 2 cache ECC checking function .

Quick power on self test:

After the computer has been powered on, the BIOS of the mainboard will run a series of tests in order to check the system and its peripherals. If the Quick power on self test feature is Enable, the BIOS will simplify the test procedures in order to speed up the boot process. The default is Enable.

Boot Sequence:

When the computer boots up, it can load the operating system from floppy drive A:, hard disk drive C:, SCSI disk drive or CD-ROM. There are many options for the boot sequence:

- A, C, SCSI

- C, A, SCSI

- C, CD-ROM, A

- CD-ROM, C, A

- D, A, SCSI (at least 2 IDE HDD can be used)

- E, A, SCSI (at least 3 IDE HDD can be used)

- F, A, SCSI (at least 4 IDE HDD can be used)

- SCSI, A, C

◀ SCSI, C, A

◀ A, SCSI, C

◀ LS/ZIP, C

Swap Floppy Drive:

This item can be set as Enable or Disable.

When this feature is enabled, you don't need to open the computer case to swap the position of floppy disk drive connectors. Drive A: can be set as drive B:, and drive B: can be set as drive A:.

Boot Up Floppy Seek:

When computer boots up, the BIOS detects if the system has FDD or not.

When this item is enabled, if the BIOS detects no floppy drive, it will display a floppy disk drive error message. If this item is disabled, the BIOS will skip this test.

Boot Up Num Lock Status:

On: At boot up, the Numeric Keypad is in numeric mode.

Off: At boot up, the Numeric Keypad is in cursor control mode.

IDE HDD Block Mode:

This item can be set as Enable or Disable.

Most of new hard disk drives (IDE drives) support multi-sector transfers. This feature speeds up hard disk drive access performance and reduces the time necessary to access data. When this item is enabled, the BIOS will automatically detect if your hard disk drive supports this feature or not, and will choose the right settings for you. (**The default is disable**)

Typematic Rate Setting:

This item allows you to adjust the keystroke repeat rate. When enabled, you can set the two keyboard typematic control that follow (Typematic Rate and Typematic Rate Delay). If this item is disabled, the BIOS will use the default setting.

Typematic Rate (Chars/Sec):

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When you press a key continuously, the keyboard will repeat the keystroke according to the rate you have set.

Typematic Rate Delay (Msec):

When you press a key continuously, if you exceed the delay you have set here, the keyboard will automatically repeat the keystroke according a certain rate. (Unit: milliseconds)

Security Option:

This option can be set to System or to Setup.

After you have created a password through PASSWORD SETTING, this option will deny access to your system (System) or modification of computer setup (BIOS Setup) by unauthorized users.

◄ SYSTEM: When you choose System, a password is required each time the computer boots up. If the correct password is not given, the system will not start.

◄ SETUP: When you choose Setup, a password is required only when accessing the BIOS Setup. If you have not set a password in the PASSWORD SETTING option, this option is not available.

Notice: *Don't forget your password. If you forget the password, you will have to open the computer case and clear all information in the CMOS before you can start up the system. But doing this, you have to reset all the options you had set up before.*

PCI /VGA Palette Snoop:

This option allows the BIOS to preview VGA Status, and to modify the information delivered from the Feature Connector of the VGA card to the MPEG Card. This option can solve the display inversion to black after you have used the MPEG card.

Delay IDE Initial:

This item is used to support some old or model or special type of hard disks or CD-ROMs , since the BIOS may not detect those kinds of devices during system booting .

OS Select For DRAM > 64MB:

When the system memory is bigger than 64MB, the communication method between the BIOS and the operating system will differ from one operating system to another. If you use OS/2, select OS2; if you choose another operating system, select Non-OS2.

Report No FDD For WIN 95 :

When using Windows 95 without floppy drive , please set this item to Yes.

Video BIOS Shadow:

This option is used to define whether the BIOS on the video card uses shadow feature or not. You should set this option to Enable, otherwise the display performance of the system will greatly decrease.

Shadowing address ranges (C8000-CBFFF Shadow):

This option allows you to decide if the memory block (BIOS) of an interface card at the address C8000-CBFFF uses the shadow feature or not. If you have no interface card using this memory block, don't enable this option.

Shadowing address ranges (CC000-CFFFF Shadow):

This option allows you to decide if the memory block (BIOS) of an interface card at the address CC000-CFFFF uses the shadow feature or not. If you have no interface card using this memory block, don't enable this option.

Shadowing address ranges (D0000-D3FFF Shadow):

This option allows you to decide if the memory block (BIOS) of an interface card at the address D0000-D3FFF uses the shadow feature or not. If you have no interface card using this memory block, don't enable this option.

Shadowing address ranges (D4000-D7FFF Shadow):

This option allows you to decide if the memory block (BIOS) of an interface card at the address D4000-D7FFF uses the shadow feature or not. If you have no interface card using this memory block, don't enable this option.

Shadowing address ranges (D8000-DBFFF Shadow):

This option allows you to decide if the memory block (BIOS) of an interface card at the address D8000-DBFFF uses the shadow feature or not. If you have no interface card using this memory block, don't enable this option.

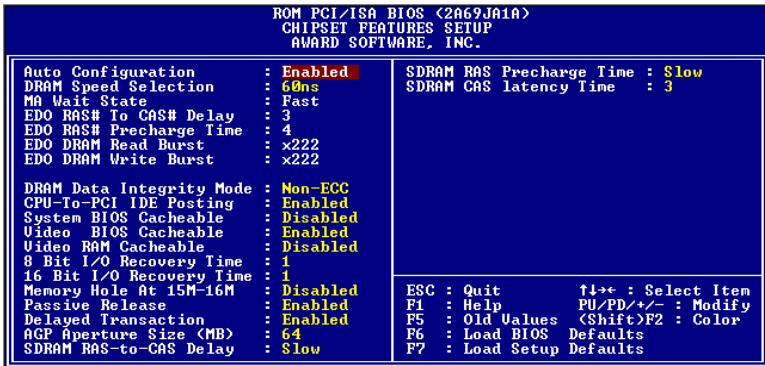**Shadowing address ranges (DC000-DFFFF Shadow):**

This option allows you to decide if the memory block (BIOS) of an interface card at the address DC000-DFFFF uses the shadow feature or not. If you have no interface card using this memory block, don't enable this option.

Computer	**SHADOW**
knowledge	What is the SHADOW? The BIOS of standard video or interface cards is stored in ROM, and it is often very slow. With the Shadow feature, the CPU reads the BIOS on the VGA card and copies it into RAM. When the CPU runs this BIOS, the operation is speeded up.

Chipset Features Setup Menu

The Chipset Features Setup Menu is used to modify the contents of the buffers in the chipset on the mainboard. Since the parameters of the buffers are closely related to hardware, if the setup is not correct or false, the mainboard will become unstable or you will not be able to boot up. If you don't know the hardware very well, use default values (i.e. use the LOAD SETUP DEFAULTS option).

```
                         ROM PCI/ISA BIOS (2A69JA1A)
                            CHIPSET FEATURES SETUP
                             AWARD SOFTWARE, INC.

   Auto Configuration       : Enabled     SDRAM RAS Precharge Time : Slow
   DRAM Speed Selection     : 60ns        SDRAM CAS latency Time   : 3
   MA Wait State            : Fast
   EDO RAS# To CAS# Delay   : 3
   EDO RAS# Precharge Time  : 4
   EDO DRAM Read Burst      : x222
   EDO DRAM Write Burst     : x222

   DRAM Data Integrity Mode : Non-ECC
   CPU-To-PCI IDE Posting   : Enabled
   System BIOS Cacheable    : Disabled
   Video  BIOS Cacheable    : Enabled
   Video RAM Cacheable      : Disabled
   8 Bit I/O Recovery Time  : 1
   16 Bit I/O Recovery Time : 1
   Memory Hole At 15M-16M    : Disabled    ESC : Quit         ↑↓→← : Select Item
   Passive Release          : Enabled     F1  : Help          PU/PD/+/- : Modify
   Delayed Transaction      : Enabled     F5  : Old Values   (Shift)F2 : Color
   AGP Aperture Size (MB)   : 64          F6  : Load BIOS  Defaults
   SDRAM RAS-to-CAS Delay   : Slow        F7  : Load Setup Defaults
```

NOTE: **Chipset Features Setup Menu** may display differently from above because variety version of BIOS.

You can use the arrow keys to move between the items. Use "PgUP", "PgDn", "+" and "-" to change the values. When you have finished setting up the chipset, press "ESC" to go back to the main menu.

Memory Hole At 15M-16M:

This option is used to free up the 15M-16M memory block. Some special peripherals need to use a memory bloc located between 15M and 16M, and this memory block has a size of 1M. We recommend that you disable this option.

Thermal & Fan Monitor:

These items list current states of system temperature and fan speed. It can not be changed by user.

Voltage Monitor:

This items lists the voltage states of the system power. Just like Thermal & Fan Monitor, it is unchangeable.

There are small differences in the chipset feature setup according to different mainboard models, but this has no influence upon performance. Our default setup should be the best one. That is the reason why we do not describe all the features of this menu.
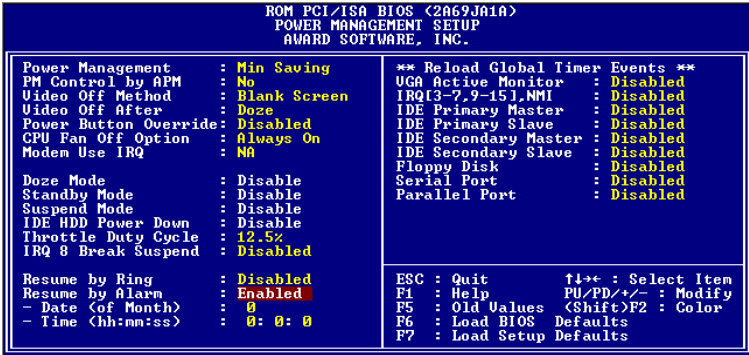
Power Management Setup Menu

The difference between Green PCs and traditional computers is that Green PCs have a power management feature. With this feature, when the computer is powered on but inactive, the power consumption is reduced in order to save energy. When the computer operates normally, it is in Normal mode. In this mode, the Power Management Program will control the access to video, parallel ports, serial ports and drives, and the operating status of the keyboard, mouse and other device. These are referred to as Power Management Events. In cases where none of these events occur, the system enters the power saving mode. When one of the controlled events occurs, the system immediately returns to normal mode and operates at its maximum speed. Power saving modes can be divided into three modes according to their power consumption: Doze Mode, Standby Mode , and Suspend Mode. The four modes proceed in the following sequence:

Normal Mode===> Doze Mode===> Standby Mode===> Suspend Mode
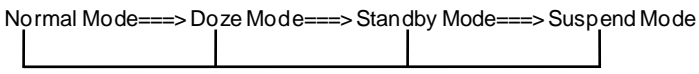
The system consumption is reduced according the following sequence:

Normal >   Doze   >   Standby   >   Suspend

1. In the Main Menu, select "Power Management Setup" and press "Enter".
    The following screen is displayed:

```
                    ROM PCI/ISA BIOS (2A69JA1A)
                      POWER MANAGEMENT SETUP
                        AWARD SOFTWARE, INC.

 Power Management    : Min Saving   ** Reload Global Timer Events **
 PM Control by APM   : No           VGA Active Monitor   : Disabled
 Video Off Method    : Blank Screen IRQ[3-7,9-15],NMI    : Disabled
 Video Off After     : Doze         IDE Primary Master   : Disabled
 Power Button Override: Disabled    IDE Primary Slave    : Disabled
 CPU Fan Off Option  : Always On    IDE Secondary Master : Disabled
 Modem Use IRQ       : NA           IDE Secondary Slave  : Disabled
                                    Floppy Disk          : Disabled
 Doze Mode           : Disable      Serial Port          : Disabled
 Standby Mode        : Disable      Parallel Port        : Disabled
 Suspend Mode        : Disable
 IDE HDD Power Down   : Disable
 Throttle Duty Cycle  : 12.5%
 IRQ 8 Break Suspend  : Disabled

 Resume by Ring      : Disabled     ESC : Quit        ↑↓→← : Select Item
 Resume by Alarm     : Enabled      F1  : Help        PU/PD/+/- : Modify
 - Date (of Month)   :  0           F5  : Old Values  (Shift)F2 : Color
 - Time (hh:mm:ss)   :  0: 0: 0     F6  : Load BIOS   Defaults
                                    F7  : Load Setup Defaults
```

2. Use arrow keys to go to the item you want to configure. To change the
    settings, use "PgUP", "PgDn", "+" and "-".

3. After you have configured the Power Management feature, press "Esc"
    to go back to the Main Menu.

We are now going to briefly explain the options in this menu:

Power Management:

Four options:

◄ User Define

◄ User Define defines the delay for accessing the power
   modes.

◄ Min Saving

   When the three saving modes are enabled, the system
   is set up for

   minimum power savings.

   Doze = 1 hour

   Standby = 1 hour

   Suspend = 1 hour

◄ Max Saving

   When the three saving modes are enabled, the system
   is set up for

   maximum power savings.

   Doze = 1 minute

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Standby = 1 minute

Suspend = 1 minute

PM Control by APM:

Power Management is completely controlled by the APM.

APM stands for Advanced Power Management, it is a power management standard set by Microsoft, Intel and other major manufacturers.

Video Off Method:

Three video off methods are available: "Blank", "V/H SYNC + Blank" and "DPMS". The default is "V/H SYNC + Blank".

If this setting does not shut off the screen, select "Blank". If your monitor and video card support DMPS standard, select "DPMS".

Video Off After:

Select the saving mode in which the video is switched off.

◄ NA

The video will never be switched off in no power saving mode.

◄ Doze

The video will be switched off in all power saving modes.

◄ Standby

The video will only be switched off in Standby or Suspend mode.

◄ Suspend

The video will only be switched off in Suspend mode.

IDE HDD Power Down:

If the system has not accessed data on the hard disk drive during the specified time period, the engine of the HDD will stop in order to save electricity.

You can set 1 to 15 minutes or select Disable according to your use of the HDD.

Doze Mode:

When the setting selected for "Power Management" is "User Define", you can define for this mode any delay from 1 minute to 1 hour. If no power management event occurs during this time period,

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meaning that computer is inactive during this period, the system will enter the **Doze** power saving mode.

If this mode is disabled, the system will enter the next mode in the sequence (Standby or Suspend mode).

Standby Mode:

When the setting selected for "Power Management" is "User Define", you can define for this mode any delay from 1 minute to 1 hour. If no power management event occurs during this time period, meaning the computer is inactive during this period, the system will enter the **Standby** power saving mode.

If this mode is disabled, the system will enter the next mode in the sequence (Suspend mode).

Suspend Mode:

When the setting selected for "Power Management" is "User Define", you can define for this mode any delay from 1 minute to 1 hour. If no power management event occurs during this time period, meaning the computer is inactive during this period, the system will enter the **Suspend** power saving mode. The CPU stops working completely.

If this mode is disabled, the system will not enter the Suspend mode.

Throttle Duty Cycle:

This is used to specify the CPU speed in power saving mode. Seven options are available: 12.5%, 25.0%, 37.5%, 50.0%, 62.5% or 75.0% .

CPU Fan Off In Option:

CPU fan can be turned off in suspend mode.

Power Button Override:

Support ACPI Power Button Over-ride. The user presses the power button for more then four seconds while the system is in the working state, then the system will transition to the soft-off(Power off by software). This is called the power button over-ride.

IRQ8 Break Suspend :

Support RTC alarm wake up from suspend function (via IRQ8).

Reload Global Timer Events

When one of the specific occurs, the count down made for entry in power saving mode goes back to zero.

Since the computer will enter a power saving mode only after an inactivity delay specified (time specific for Doze, Standby and Suspend modes) and after it has no activity, during this time period, any event will cause the computer to re-count the time elapsed. Resume events are operations or signals that cause the computer to resume time counting.
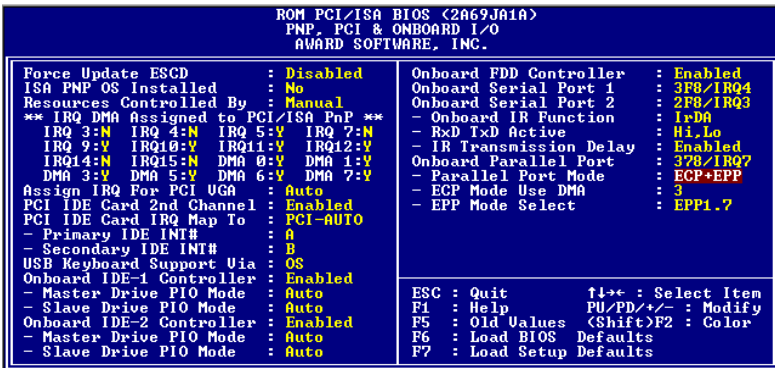
Resume by Ring:

If you connect an external modem to the onboard serial port, the system will be turned on when a telephone ring-up occurs.

Resume by Alarm :

RTC alarm can turn on the system . You can set date (of month) and time (hour , minute , second) .

PCI & Onboard I/O Setup

In this menu, you can change the INT# and IRQ of the PCI bus and the onboard I/O device, I/O port address and other hardware settings.

```
              ROM PCI/ISA BIOS (2A69JA1A)
                PNP, PCI & ONBOARD I/O
                 AWARD SOFTWARE, INC.

Force Update ESCD      : Disabled   Onboard FDD Controller   : Enabled
ISA PNP OS Installed   : No         Onboard Serial Port 1    : 3F8/IRQ4
Resources Controlled By : Manual    Onboard Serial Port 2    : 2F8/IRQ3
** IRQ DMA Assigned to PCI/ISA PnP **  - Onboard IR Function  : IrDA
  IRQ 3:N  IRQ 4:N  IRQ 5:Y  IRQ 7:N  - RxD TxD Active       : Hi.Lo
  IRQ 9:Y  IRQ10:Y  IRQ11:Y  IRQ12:Y  - IR Transmission Delay : Enabled
  IRQ14:N  IRQ15:N  DMA 0:Y  DMA 1:Y  Onboard Parallel Port  : 378/IRQ7
  DMA 3:Y  DMA 5:Y  DMA 6:Y  DMA 7:Y  - Parallel Port Mode    : ECP+EPP
Assign IRQ For PCI VGA : Auto        - ECP Mode Use DMA       : 3
PCI IDE Card 2nd Channel : Enabled   - EPP Mode Select        : EPP1.7
PCI IDE Card IRQ Map To : PCI-AUTO
 - Primary IDE INT#     : A
 - Secondary IDE INT#   : B
USB Keyboard Support Via : OS
Onboard IDE-1 Controller : Enabled
 - Master Drive PIO Mode : Auto     ESC : Quit        ↑↓→← : Select Item
 - Slave Drive PIO Mode  : Auto     F1  : Help        PU/PD/+/- : Modify
Onboard IDE-2 Controller : Enabled  F5  : Old Values  <Shift>F2 : Color
 - Master Drive PIO Mode : Auto     F6  : Load BIOS   Defaults
 - Slave Drive PIO Mode  : Auto     F7  : Load Setup Defaults
```

PnP OS Install :

Device resource assigned by PnP OS or BIOS.

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Force Update ESCD:

If you want to clear ESCD data next time you boot up, and ask the BIOS to reset the settings for the Plug & Play ISA Card and the PCI Card, select Enabled. But the next time you boot up, this option will automatically be set as Disabled.

Computer	ESCD (Extended System Configuration Data)
Knowledge	The ESCD contains the IRQ, DMA, I/O Port, Memory
	information of the system. This is a specification and a feature
	specific to the Plug & Play BIOS.

Resources Controlled By:

When you select Auto, the BIOS will automatically assign the IRQ and DMA to PCI / ISA PnP . When this option is Manual, you can choose which IRQ or DMA can assign to PCI / ISA PnP .

PCI IDE Card 2nd Channel:

This option can be enabled or disabled. BIOS default is Enable.

Since this channel uses IRQ15, if you want to use this channel, you have to enable this option to make the BIOS assign IRQ15 to this channel.

PCI IDE Card IRQ Map to:

Three options are available for this item: PCI Auto, PCI-slotX and ISA.

- ◄ PCI-Auto: The onboard BIOS auto-detects which PCI slot has an IDE card inserted in.

- ◄ PCI-slotX: Some old PCI IDE cards cannot be detected by the BIOS. If the onboard BIOS cannot detect a PCE IDE card, you have to specify on which PCI slot the IDE card is inserted, to make the BIOS assign IRQ14 for use by the interrupt number (INT#) of this PCI slot.

- ◄ ISA: If you select ISA, it means that your PCI IDE card features a "paddleboard" and a cable that can be connected to IRQ on the ISA slot, because the BIOS will not assign any IRQ to this PCI slot.

Attention: Primary Channel and Secondary Channel : The BIOS needs two independent interrupt number (INT#) lines to be allocated to the PCI IDE card. Be careful not to choose twice the same interrupt number (INT#).

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Assign IRQ for PCI VGA :

You can assign IRQ for PCI VGA or not .

On Board FDD Controller:

This is to Enable or Disable the Onboard FDD Controller.

On board Serial Port 1:

This is used to specify the I/O address and IRQ of Serial Port 1. Ten options are available: Disable, 3F8h/IRQ4, 2F8h/IRQ3, 3E8h/IRQ4 or 2E8h/IRQ3.3F8h/IRQ10, 2F8h/IRQ11, 3E8h/IRQ10, 2E8h/IRQ11, and AUTO.

On board Serial Port 2:

This is used to specify the I/O address and IRQ of Serial Port 2. Ten options are available: Disable, 3F8h/IRQ4, 2F8h/IRQ3, 3E8h/IRQ4 or 2E8h/IRQ3. 3F8/IRQ10, 2F8/IRQ11, 3E8/IRQ10, 2E8/IRQ11, and AUTO.

Onboard IR function:

Three options are available:

◀ IrDA (HPSIR)mode.

◀ ASK IR (Amplitude Shift Keyed IR)mode.

◀ Disabled.

RxD , TxD Active:

Set IR transmission/reception polarity as High or Low.

IR Transmission Delay:

Set IR transmission delays 4 character-time(40 bit-time) when SIR is changed form RX mode to TX mode.

On board Parallel Port:

Set the I/O address and IRQ of the onboard parallel port. Four options are available: Disable, 3BCh/IRQ7, 278h/IRQ5 and 378h/IRQ7. Default is 378h/IRQ7.

Parallel Port Mode:

Can be set as ECP, EPP , ECP+EPP, or Normal (SPP) mode. Default is Normal (SPP) mode.

ECP Mode Use DMA:

When the mode selected for the onboard parallel port is ECP, the DMA channel selected can be Channel 1 or Channel 3.

EPP Mode Select:

When the mode selected for the onboard parallel port is EPP, two EPP version options are available: EPP1.7 or EPP1.9 .

On board IDE-1 Controller:

Onboard PCI IDE 1 controller can be set as Enable or Disable.

Master drive PIO Mode:

◀ Auto: the BIOS can auto-detect the transfer mode of the HDD in order to set its data transfer rate. (Default)

◀ PIO 0~PIO 4: User can specify the PIO mode of the HDD in order to set its data transfer rate.

Slave drive PIO Mode:

◀ Auto: the BIOS can auto-detect the transfer mode of the HDD in order to set its data transfer rate. (Default)

◀ PIO 0~PIO 4: User can specify the PIO mode of the HDD in order to set its data transfer rate.

On board IDE-2 Controller:

The onboard IDE-2 controller can be set at Enable of Disable.

Master drive PIO Mode:

◀ Auto: the BIOS can auto-detect the transfer mode of the HDD installed in order to set its data transfer rate. (Default)

◀ PIO 0~PIO 4: User can specify the PIO mode of the HDD in order to set its data transfer rate.

Slave drive PIO Mode:

◀ Auto: the BIOS can auto-detect the transfer mode of the HDD installed in order to set its data transfer rate. (Default)

◀ PIO 0~PIO 4: User can specify the PIO mode of the HDD in order to set its data transfer rate.

PIO MODE 0~4 reflects the HDD data transfer rate. The higher

the MODE value is, the better is the HDD data transfer rate. But it does not mean that you can select the highest MODE value just as

you like, you first have to be sure that your HDD supports this
MODE, otherwise the hard disk will not be able to operate normally.

Load BIOS Defaults

BIOS defaults are the reference settings that allow your system to work at a
comparatively low performance. When you choose the option, the following
message is displayed:

"Load BIOS Defaults (Y/N)? N"

If you want to use BIOS default values, press "Y", than <Enter>.

Load Setup Defaults

Setup defaults are the settings that allow your system to operate at its highest
performance. When you choose this option, the following message is
displayed:

"Load Setup Defaults (Y/N)? N"

If you want to use BIOS Setup default values, press "Y", than <Enter> to
complete the loading of the settings for best performance.

You should first load the best settings, than enter the CPU Soft Menu to set
up CPU parameters, otherwise the BIOS will replace set parameters by
default parameters.

Password Setting

This option allows you to set a password required to start the system
(System) or to access to the BIOS (Setup).

After you have set a password through the PASSWORD SETTING option,
you can enter the Security Option in the "BIOS Features Setup Menu" to
select the security level in order to prevent any unauthorized access.

Password setting procedure:

When you choose the Password setting option, the following message is
displayed:

"Enter Password:"

Type your password. When complete, press <Enter>. The following message
is displayed:

"**Confirm Password:**"

Type your password again. When complete, press <Enter>. The password setting is completed.

Password clearing procedure:

When you select the Password setting option, the following message is displayed:

"**Enter Password:**"

Press <Enter>, the message "Password Disable" is displayed. Press a key. The password clearing procedure is completed.

Notice: Do not forget your password. If you forget it, you will have to open the computer case, clear the contents of the CMOS, and boot the system up again. By doing this, you must reset all your parameters.

IDE HDD Auto Detection

After you have installed the hard disk, in old systems, you had to know the hard disk specifications, such as the number of cylinders, heads and sectors, and to enter the relevant information into the hard disk information section. If the CMOS data was erased, and you had forgotten the hard disk specifications, it was a great problem. But now, you can use this option to auto detect the hard disk type and specifications, and the BIOS will automatically detect all the relevant information and place them in the Hard Disk data section of the Standard CMOS Setup Menu, in order to allow you to use your hard disk.

INSTALLATION

This instruction will *give you a simplified installation procedure,* in order to allow you to install your mainboard quickly and correctly.
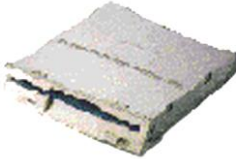
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Mount the retention mechanism onto Slot 1, then fix the screw on the four corners of the mechanism. Slightly and gently insert the Pentium® II processor into the retention base, make sure all the components are affixed securely.

Speed: According to your CPU speed, set up the CPU in the CPU **SOFT MENU**™ **II** of the BIOS SETUP.
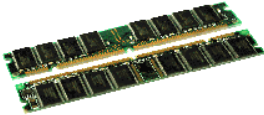
Fill-up modules from DIMM 1 ~ DIMM 4.

FDC- Connect one end of the 34-pin cable that comes with the drive to the FDD connector, and the other end of the cable to the FDC pin connector on the mainboard.
Note: Be sure that the red line on the cable connects to the first pin of the connectors.

IDE1- Connect one end of the 40-pin cable that comes with the drive to the HDD connector, and the other end to IDE1 pin connector on the mainboard.
IDE2- Connect one end of the 40-pin cable that comes with the drive to the CD-ROM connector, and the other end to the IDE2 pin connector on the mainboard.
Note: Be sure that the red line on the cable connects to the first pin of the connectors.

How to install the Ultra DMA/33 drive

This motherboard supports Ultra DMA/33 HDD. If your hard drive supports this function you need to install the Ultra DMA driver software from the CD-ROM which included with this motherboard purchasing.

Complete the installation process exactly as below;

In Windows® 95, place the Jaton's mainboard CD into the CD-ROM drive. The file 'Bmide_95' (compressed) will appear. Run this file. The file will automatically decompress the following files;

> README.TXT,
>
> _INST32I.EX_,
>
> _SETUT.DLL,
>
> _SETUP.LIB,
>
> PIIXDRV.Z,
>
> SETUP.EXE,
>
> SETUP.INS

Run SETUP.EXE and the following seven windows will appear

1. Welcome: Click on 'NEXT'
2. License: Close the view by click on up-right ⊠.
3. Agreement: Click on 'Yes'.
4. Select Components: Click on 'Install'.
5. Update system's files: Click on 'Yes'.
6. Intel PIIX Bus Master IDE driver: Click on 'Yes'.
7. Restart your system: Click on 'OK'.

After previous instructions have been followed, the driver will automatically install.

It will automatically restart the computer after it has finished installing.

Install PCI bridge driver for 440BX

Jaton's mainboard CD has attached Intel's 82371xB INF update drive version 3.0.

intel®

It can actually be used to update both 430TX and 440BX chipset, if your motherboard uses one of these Intel chipsets.

The following procedure will describe how to install and update the PCI bridge.

Step1. Check your Windows®95 *Device Manager*, and find the question mark showing the PCI Bridge.
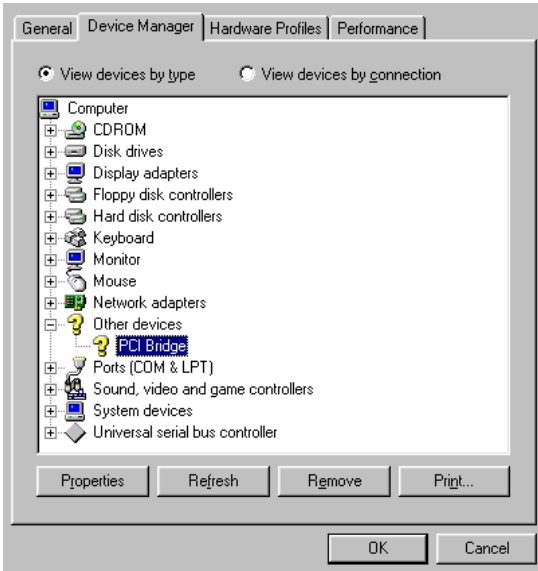
Step2.   Insert Jaton's mainboard CD into the CD-ROM drive, a "Welcome" screen pops-up by autorun from Windows®95. Click on **PCI Bridge** bottom on that screen menu:

Step 3. Click 'Next' to start.

Step 4. Click on 'Yes' on License agreement dialog screen.

Step 5. Click 'Next', then wait a while, until the installation complete screen pops-up.

Step 6. Restart your computer, then check the **Device Manager** again. First, you can check **Hard disk Controller**, make sure if the Bus Master driver is recognized.

Step 7. Also check **System Device**, to verify if three devices are identified them as well. If your screen just like one below, then the PCI bridge driver is installed appropriated.

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Technical Support

☐ **If you have a problem during operation...**

In order to help our technical support personnel to quickly find out what is the problem of your mainboard and to give you the answers you need, before filling in the technical support form*, eliminate any peripheral that is not related to the problem, and indicate on the form the key peripherals. Fax the technical support form to your dealer or to the company where you bought the hardware in order to benefit from our technical support. (You can refer to the examples given below.)

☐

> Example 1: With a system including: mainboard (with CPU, DRAM, COAST...) HDD, CD-ROM, FDD, VGA CARD, MPEG CARD, SCSI CARD, SOUND CARD..., after the system is assembled, if you cannot boot up, check the key components of the system using the procedure described below.

First remove all interface cards except the VGA card and try to reboot.

☐ If you still cannot boot up:

> Try installing another brand/model VGA card and see if the system will start. If it still does not start, note the VGA card model, mainboard model, BIOS identification number, CPU on the technical support form (refer to main instructions), and describe the problem in the problem description space provided.

☐ If you can boot up:

> Insert back the interface cards you have removed one by one and try to start the system each time you insert a card, until the system doesn't start anymore. Keep the VGA card and the interface card that causes the problem inserted on the mainboard, remove any other card or peripheral, and start again. If you still cannot start, note down the information related to both cards in the add-on Card space provided, and don't forget to indicate the mainboard model, version, BIOS identification number, CPU (refer to main instructions), and give a description of the problem.

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☐

Example 2: With a system including the mainboard (with CPU, DRAM, COAST...) HDD, CD-ROM, FDD, VGA CARD, LAN CARD, MPEG CARD, SCSI CARD, SOUND CARD, after assembly and after having installed the Sound Card Driver, when you restart the system, when it runs the Sound Card Driver, it resets automatically. This problem may be due to the Sound Card Driver. During the Starting DOS… procedure, press SHIFT (BY-PASS) key, to skip CONFIG.SYS and AUTOEXEC.BAT; edit CONFIG.SYS with a text editor, and in front on the line that loads the Sound Card Driver, add a remark REM, in order to disable the Sound Card Driver. See the example below.

> CONFIG.SYS:
>
> DEVICE=C:\DOS\HIMEM.SYS
>
> DEVICE=C:\DOS\EMM386.EXE HIGHSCAN
>
> DOS=HIGH,UMB
>
> FILES=40
>
> BUFFERS=36
>
> ***REM DEVICEHIGH=C:\PLUGPLAY\DWCFGMG.SYS***
>
> LASTDRIVE=Z

Restart the system. If the system starts and does not reset, you can be sure that the problem is due to the Sound Card Driver. Note down the Sound Card model, mainboard model, BIOS identification number on the technical support file (refer to main instructions), and describe the problem in the space provided.

* Technical Support Form provided by your dealer, or resale company.

If you have any questions regarding this product, please refer to this User's Manual and README files on the Software and Documentation CD-ROM

first. Updated drivers and utilities are available through Jaton BBS and Web site. To order accessories and upgrade chip, please use included order form.

Telephone:	(408) 934-9369, 9-5 PST Mon.-Fri.
Fax:	(408) 942-6699
24 hour BBS:	(408) 263-8529, 8-N-1.
Internet:	http://www.jaton.com
E-mail:	mbsupport@www.jaton.com

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Mar, 1998

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