P4BDA

Motherboard

Users Manual

Product Name: P4BDA

Manual Revision: English, 1.0

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Chapter 1. Introduction

1.1 Product Overview

Thanks for your purchasing the **P4BDA** motherboard. The new generation, 478-pin **FC-PGA2** Motherboard **P4BDA** supports a full range of the latest generation Intel Pentium 4 processors .The leading edge chipset **Intel 82C845 MHC and FW82801BA ICH2** was designed for working with **Pentium 4**(1.4GHz-2.0+GHz) and ***Northwood*** processor (min. 2GHz) in the 478-pin package based on the VRM 9.0 Spec. And up at 400 MHz system Data Bus. Built using the leading edge technology the Intel Pentium 4 processors provide a significant performance over previous Pentium III processors.

***** WARNING! P4BA support AGP 2.0 slot for external AGP 4X mode Graphics Card only.**

Two PC2100 DDR SDRAM sockets allow for up to 2.0GB memory capacity. We have conducted a motherboard compatibility test with a variety of hardware and software, such as CPUs, memory, display cards, CD ROMs, Novell, MS Office.... etc.

We have set high standards on our quality control, with absolute confidence; we believe this product is the wisest choice.

This manual is composed of four sections. The first section is the introduction of this motherboard, and the second section explains the proper procedure to setup the motherboard, the third section provides information on how to setup the CMOS. The last section is the installation of the device drivers & utilities.

Ordering Codes

P4BDA: Uses **Intel 845** and **FW82801BA** chipset. With 10/100Mbps Ethernet LAN and supports Socket 478 CPU.

P4BDAP: Uses **Intel 845** and **FW82801BA** chipset and supports Socket 478 CPU.

1.2 Features

- Wake up on LAN.
- Wake on Keyboard.
- Modem Remote Ring On.
- Support NCR SCSI BIOS.
- Support Suspend to RAM.
- Support Ultra DMA 33/66/100.
- Support Hardware Monitor function.
- Realtek ALC201A Audio CODEC on board.
- Support 400MHz FSB frequency.
- Allows CPU settings and easy over clocking of frequency.
- Support Advanced Configuration Power Interface (ACPI).
- Support Desktop Management Interface (DMI) through BIOS.
- Low-power sleep modes, and 2Mbits "Plug & Play" Flash ROM.
- RTC Wake up Alarm: Program the date/time to wake up your system.
- **Support AGP 2.0 slot for external AGP 4X Fast Write protocol graphics card upgrade. Note :(AGP 1.5V connector only, No support for 3.3V or Universal AGP connectors).**
- Both the BIOS and hardware levels of the motherboard meet PC '99 compliant.

1.3 Specifications

CPU :

- P4BDA support Intel Socket 478 FCPGA2 Pentium 4 ***Northwood*** CPU with 400MHz FSB frequency.

Chipset:

- Intel FW82C845 (MCH) and FW82801BA (ICH2)

DIMM:

- Supports 2.5V PC1600/2100 compliant DDR DRAM in 2 184-pin banks, each bank consists of 1x184-pin DIMM socket, which can support memory sizes of 64/128/256/512MB/1GB modules.
- Supports 4-banks up to 2.0GB DRAM for unbuffered DDR DRAM module.
- Operate bank-by-bank E.C.C. (single-bit error correction for DRAM integrity).

IDE:

- Dual channel PIO and PCI Bus Master IDE ports support up to 4 EIDE devices for HDD, CD-ROM or DVD-ROM.
- Supports PIO Mode 4 with data transfer rate up to 14 MB/Sec
- Supports Multiword DMA Mode 0, 1, 2.
- Supports Ultra DMA 33/66/100.

Expansion Slots:

- Five 32-bit PCI expansion slots (Rev. 2.2)
- One 32-bit AGP expansion slot (Rev. 2.0)
- One Communication and Networking Riser (CNR) slot

BIOS :

- Award BIOS v6.00PG with built-in Anti-Virus, DMI, ACPI support, and green function (Plug-and-Play BIOS)
- Supports CD-ROM/HD/SCSI/Floppy/LS120/ZIP and LAN boot up.
- Supports NCR SCSI BIOS.

USB Ports :

- Four Universal Serial Bus (USB) ports Rev.1.1, support up to 127 peripheral devices.

Sound :

- Realtek ALC201A Audio Codec
- AC '97 Rev 2.2 compliant
- 18-bit Stereo Full-Duplex Codex
- Full Duplex Variable Sample Rates from 7kHz to 48kHz with 1Hz Resolution
- Take advantage of CPU to implement audio synthesis and 3D effects processing
- Stereo Headphone Amplifier
- Three Analog Line-Level Stereo Inputs for LINE-IN, CD_IN and AUX

- Two Analog Line-Level Mono Inputs for Speakerphone and PC BEEP
- Inside Phat™ Stereo 3D sound enhancement technology
- Power Management support
- Meet performance requirements for audio on PC2001 systems
- MC' 97 Chained in allowed for multi-channel application

LAN : (***For P4BDA only***)

- IEEE 802.3 10BASE-T/100BASE-TX compliant physical layer interface.
- IEEE 802.3u Auto-Negotiation support and IEEE 802.3x Full Duplex Flow Control standard.
- Digital Adaptive Equalization control.
- Link status-interrupt capability.
- Baseline Wander correction.
- 10/100Mbps BASE-T auto-polarity correction.
- Automatic detection of "unplugged mode"
- Reduced power in "unplugged mode" (less than 50mW).

I/O Devices :

- One FDD control port supports two of the 5.25" or 3.5" floppy drives up to 2.88 MB.
- Two high-speed 16550 UART compatible serial ports
- One parallel ports with SDP/ECP/ EPP compatibility.
- One PS/2 mouse port
- One PS/2 Keyboard connector

IR Port :

- One IrDA/ASKIR compatible Infrared interface port. (Cable optional)

ATX Power :

- Supports Modem remote Ring-On function
- Supports software power off function
- Supports RTC Wake-Up.
- Supports Wake up on LAN.
- Supports Keyboard Wake-Up.

Others :

- Supports Creative Sound Blaster 16 compatibility for real-mode DOS games.

Operating System :

- Supports Windows 3.x/95/98/ME/2000/XP, Windows NT, MS-DOS V6.22, OS/2, Novell, Unix, SCO UNIX.....

Dimension :

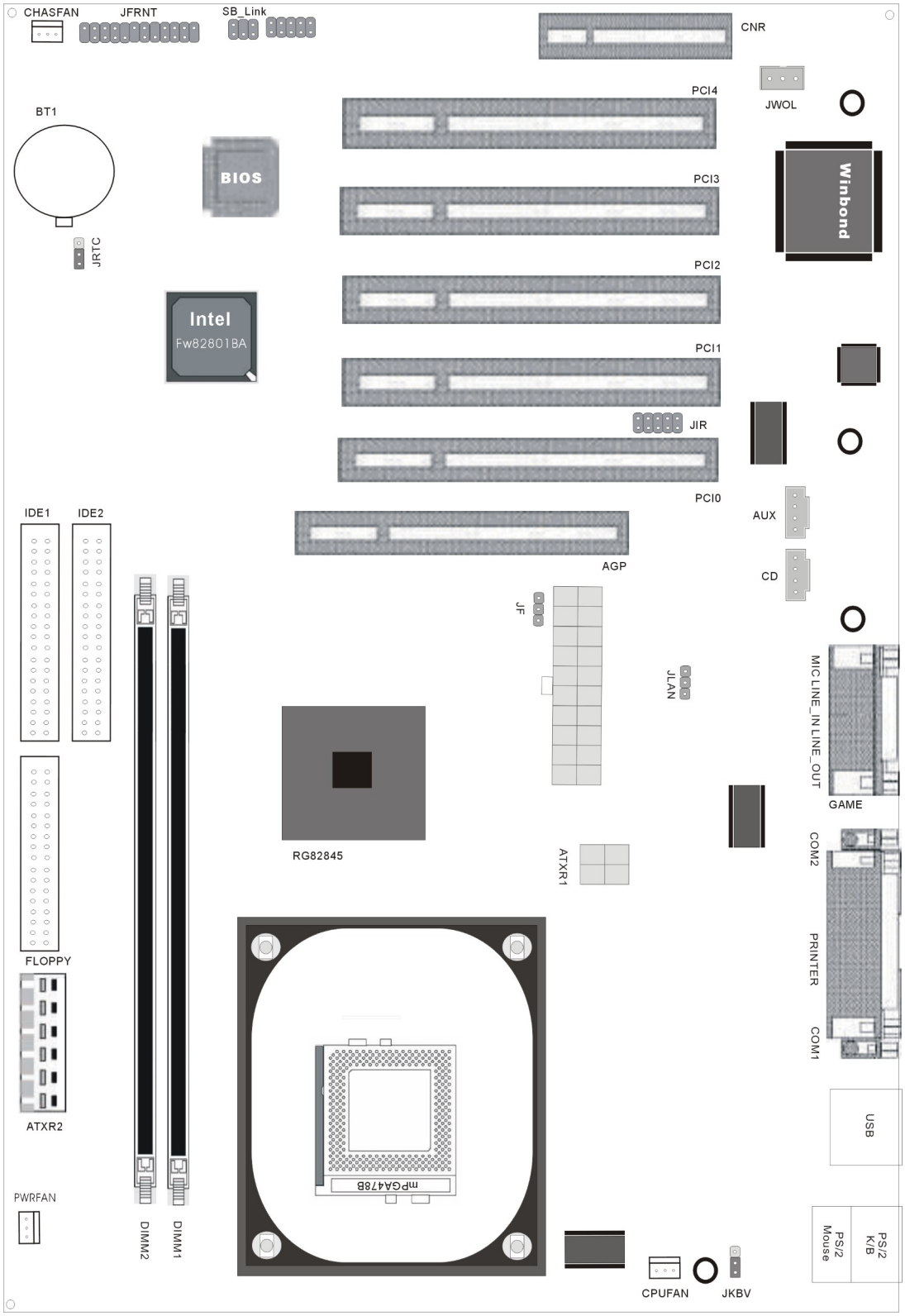
- 305 mm x 220 mm ATX Form Factor

1.4 Content

The motherboard box contains the following items:

- One Motherboard
- One 80-pin IDE Ribbon Cable
- One Floppy Ribbon Cable
- One Driver CD
- User's Manual

1.5 MotherBoard Layout



Chapter 2. Hardware Setup

2.1 Installation Procedure

1. **Jumper settings**
2. **Installation of CPU**
3. **Installation of Memory**
4. **I/O Connections & Panel Connections**

2.1.1 Jumper Settings

In this manual, **(1-2) represents the first and second pins of the jumper. (2-3) Represents the second and third pins of the jumper**. On the motherboard, you will see two sets of jumpers with different color jumper caps:

Yellow Jumper Caps: Sets the Function of Flash CMOS JRTC

Red Jumper Caps: Sets the FSB frequency of CPU JF

Sets the Keyboard Voltage JKBV

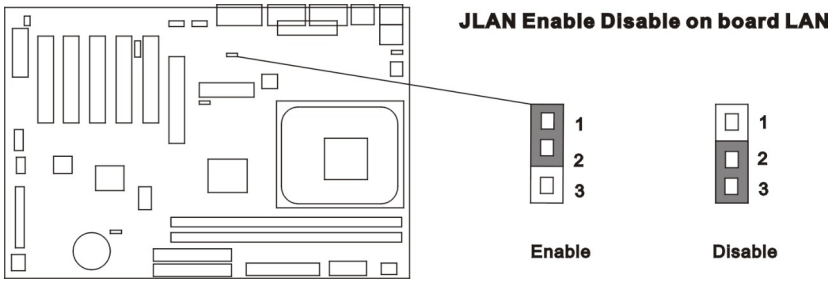
On Board LAN function JLAN

WARNING:

- Electronic parts are Static sensitive. To prevent damage to the computer and its parts please take the following measures.
- Work on a surface such as concrete, linoleum or hard wood floor.
- Ground your self with either a properly installed grounding strap or by touching a major electrical appliance long enough to discharge the static.

2.1.2 On Board LAN Setting (For P4BDA only)

Supports LAN function. You can set the LAN function with JLAN jumper.

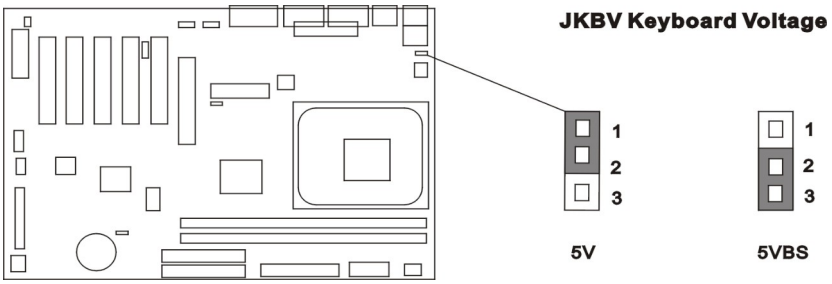


2.1.3 Keyboard Voltage Setting (Red Jumper Cap)

This motherboard supports wake on keyboard function. This feature requires that your system have an ATX power supply with at least 300mA +5V standby power and set this jumper to 2 & 3 pin short. Refer to session 3.5.10 for more information.

1-2: 5V (Default Setting)

2-3: 5V Stand By

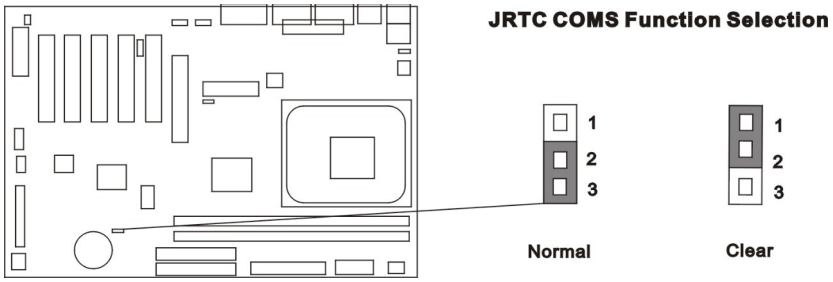


2.1.4 Clearing the CMOS (Yellow Jumper Cap)

JRTC: CMOS Function Selection

1-2：Clear data

2-3：Normal Operation (Default Setting)



How to Clear the CMOS Setting

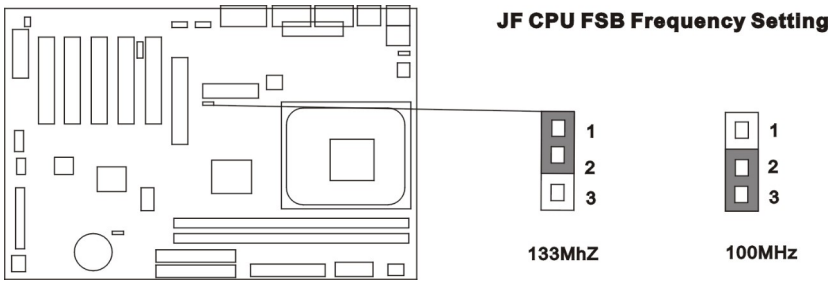
1. Turn off the power.
2. Remove ATX power cable from connector J1.
3. Remove Yellow Jumper Cap from JRTC (2-3) and put on JRTC (1-2) to remove the CMOS setting.
4. Remove Yellow Jumper Cap from JRTC (1-2) and put on
5. JRTC (2-3).
6. Connect ATX power cable back to connector J1.
7. Turn on the power.
8. While the system reboots, press <DEL> key to set the BIOS setup.

2.1.5 CPU Voltage Setting

The motherboard supports CPU VID function. It can automatically detect CPU VID signal and generates proper CPU core voltage.

2.1.6 CPU FSB Frequency Setting (Red Jumper Caps)

The JF jumper provides FSB frequency settings for the CPU. Auto Detect, 100MHz or 133MHz FSB frequency can be selected with this jumper. The over specification operation is not recommended. **Default setting in the 400MHz FSB Frequency.**



2.2 Installation of CPU

2.2.1 For Socket 478 CPU

Before installing CPU, make sure the power is off. Locate the level bar on the PGA478 ZIF socket. Push level bar away from the socket and pull upward 90 degrees. Insert the CPU into the socket. Be careful of CPU orientation. Make sure the notch of the CPU corresponds with the white dot on the ZIF socket (the corner without pin socket). Do not push in the CPU. Make sure all pins are aligned with the CPU socket. on the level bar.

2.3 Installation of Memory

This motherboard has 2x184-pin 64-bit Dual Inline Memory Module (DIMM) sockets divided into 4 banks. You can install 2.5V Unbuffered PC1600/2100-compliant Synchronous DRAM (DDR DRAM) memory.

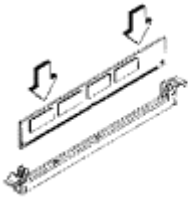
Some DIMM memory has SPD (Serial Presence Detect) 8-pin IC on module. It is not recommended the SPD (Serial Presence Detect) DIMM blends and non-SPD DIMM.

2.3.1 Installation of 184-pin DIMM (Dual Inline Memory Module)

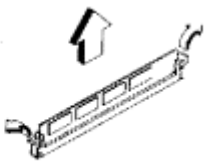
1. Before inserting the DIMM, make sure the pin1 of the DIMM matches with the pin1 on the DIMM socket.
2. Insert DIMM into the DIMM sockets at a 90-degree angle and press down.

2.3.2 Removal of 184-pin DIMM

1. Press the holding clips on both sides of the socket outward to release the DIMM.
2. Gently pull the DIMM out of the socket.



Install DIMM



Remove DIMM

2.3.3 Memory Configuration

There is no jumper setting required for the memory size or type. It is automatically detected by the system BIOS, and the total memory size is to add them together

DIMM Socket	*DIMM Modules*
DIMM1	PC1600/2100 DDR DRAM 64, 128, 256, 512MB,1GB
DIMM2	PC1600/2100 DDR DRAM 64, 128, 256, 512MB,1GB

2.4 I/O Connections/Panel Connections

I/O Connections

J1,ATX R1/2 ATX Power series Connector

CPU/PWAFAN CPU/PWA Fan connector

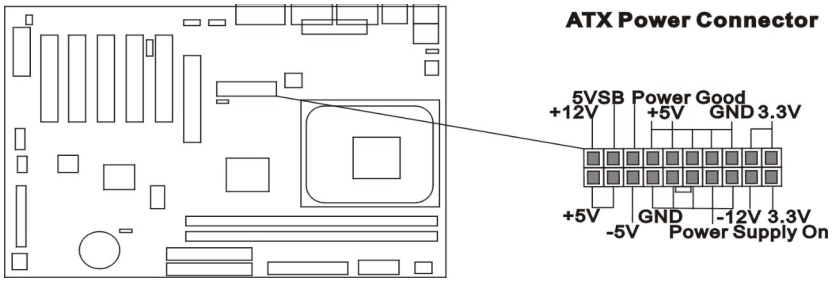
CHASFAN Chassis Fan connector

JIR Infrared Connector (Cable optional)

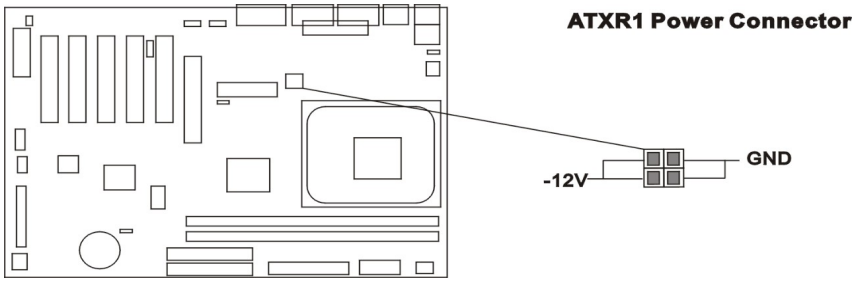
JWOL	Wake up on LAN connector
SB_LINK	For link with Creative Sound Blaster 16
FLOPPY	Floppy Disk Drive Connector
IDE1, 2	Primary/ Secondary IDE Connectors
MS	PS/2 Mouse Port
KB	PS/2 Keyboard Connector
COM1/COM2	Serial Ports 1 & 2
PRINTER	Printer Port
USB/B	USB/B Connector
LAN	LAN Connector
GAME	Game/MIDI Connectors
LINE_OUT	Line out Connector
LINE_IN	Line in Connector
MIC	Microphone in Connector
CD_IN	The Connector is for CD_IN audio cable
AUX	The Connector is for AUX audio cable

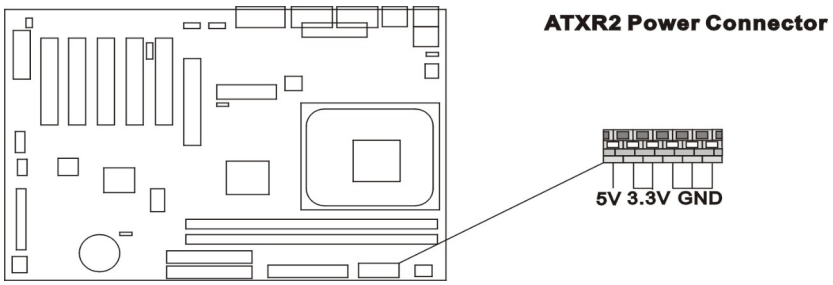
2.4.1 ATX Power Connector (20-pin J1/ATXR1/2)

Make sure that the power supply is off before connecting or disconnecting the power cable.



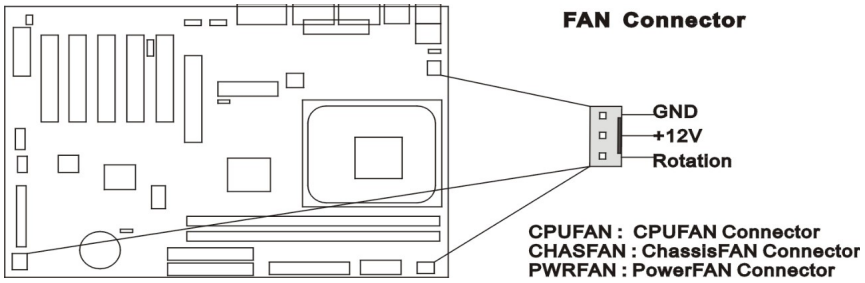
For Pentium 4 Power supply only, you must be insert below power connector in your motherboard.





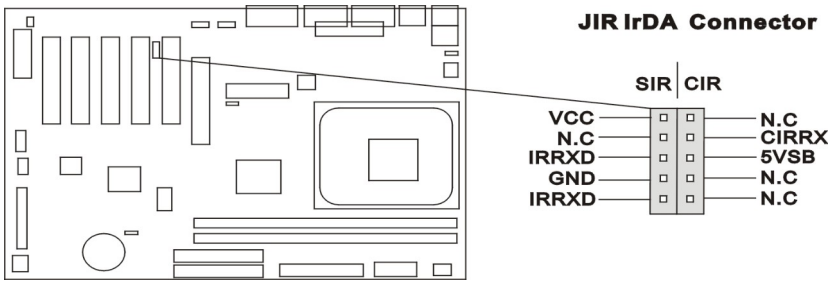
2.4.2 CPU, Chassis /PWA Fan Connector (3-pin CPUFAN,CHASFAN/PWAFAN)

Connect the fan's plug to the board taking into consideration the polarity of the connector.



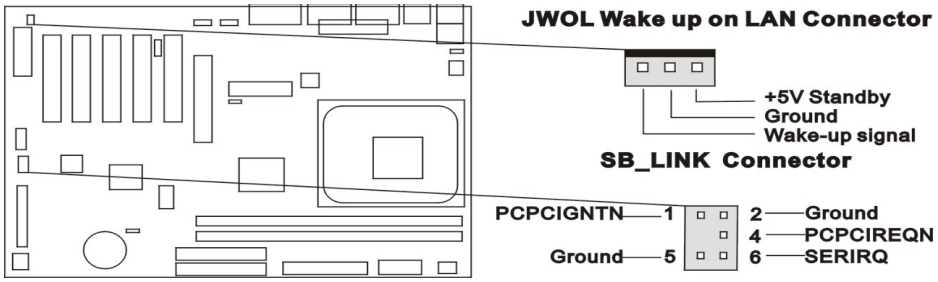
2.4.3 Infrared Connector (5*2-pin JIR)

This connector supports the optional wireless transmitting and receiving infrared module, with this module and application software such as Laplink or Win95 Direct Cable Connection, user can transfer files to or from their laptops, notebooks, PDA, PCs and printers. The connector supports IrDA (115.2Kbps, 2 meters) and ASK-IR (56Kbps). An optional consumer infrared (CIR) set connects to the CIR and SIR connectors simultaneously for both wireless transmitting and remote control functions through one external infrared module. Install infrared module onto Infrared connector and configure the setting through "UART Mode Select" in **Integrated Peripherals** to select whether UART is directed for use with COM2 or Infrared.



2.4.4 Creative SB_LINK Sound Connector (3*2-pin SB_LINK)

The SB_LINK serves as a bridge between the motherboard and Creative PCI sound card. This connector delivers Sound Blaster 16 compatibility for real-mode DOS games only.

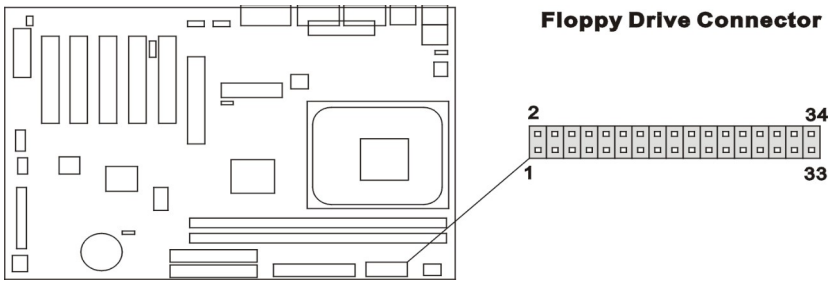


2.4.5 Wake on LAN Connector (3-pin JWOL)

The JWOL connector powers up the system when a wakeup packet or signal is received from the network. This feature requires the **Wake up on LAN** function in BIOS is set to Enabled and that your system has an ATX power supply with at least 720mA +5V standby power.

2.4.6 Floppy Disk Drive Connector (34-pin FLOPPY)

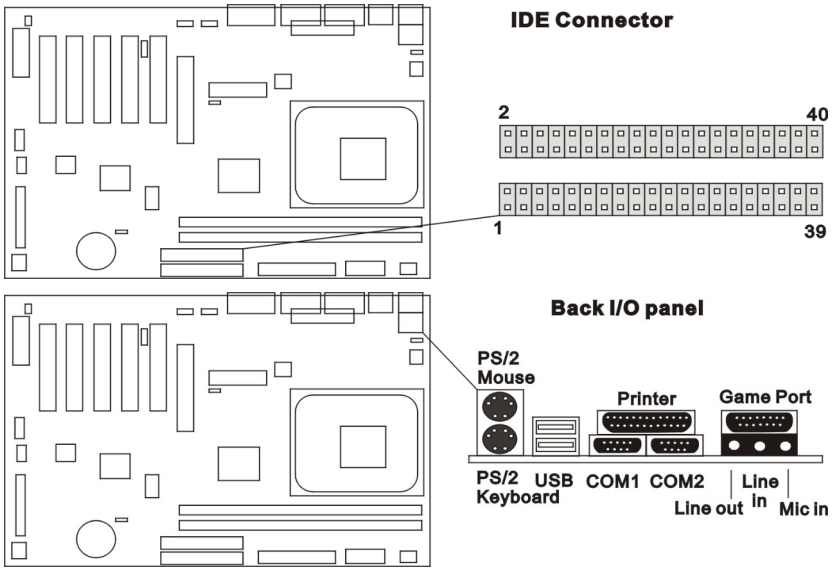
This connector supports the provided floppy disk drive ribbon cable. Orient the red stripe to pin 1



2.4.7 Primary/Secondary IDE Connector (Two 40-pin IDE)

These connectors support the provided IDE hard disk ribbon cable. Connect your first IDE hard disk to master mode of the primary channel. If you have second IDE device to install in your system, connect it as slave mode on the same channel, and the third and fourth device can be connected on secondary channel as master and slave mode respectively.

There are three connectors on the 80-pin IDE ribbon cable. **The blue connector must connect with motherboard's IDE connector** and the other connectors must connect with HDD. In order to get the better performance the Ultra DMA 66/100 HDD must connect with 80-pin IDE ribbon cable.



2.4.8 PS/2 Mouse Port (6-pin Mini-Din MS)

The system will direct IRQ12 to the PS/2 mouse.

2.4.9 PS/2 Keyboard Connector (6-pin Mini-Din KB)

This connection is for a standard keyboard using a PS/2 plug. You may use a Din to Mini-Din adapter on standard AT keyboards.

2.4.10 Serial Port (9-pin D-Sub. COM1/COM2)

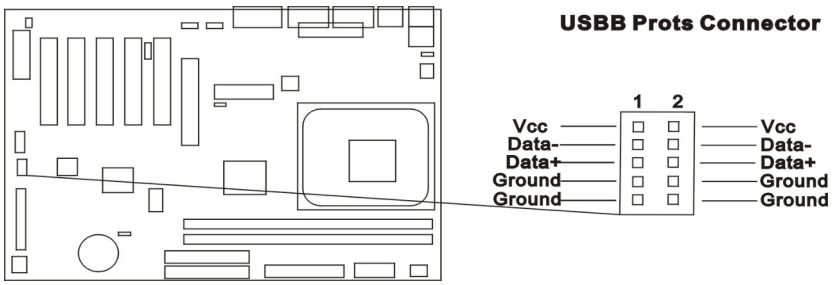
This connection is for standard serial ports COM1 and COM2 on board.

2.4.11 Printer Port (25-pin D- Sub. PRINTER)

You can enable the parallel port and choose the IRQ through the "Onboard Parallel Port" setting in Integrated Peripherals of the CMOS SETUP UTILITY.

2.4.12 USB Connectors (USB & USBB)

You can attach USB devices to the USB or USBB connector.



2.4.13 LAN Connector (For P4BDA only)

The LAN Connector is used to attach RJ-45 cable. For 100Base-TX, your network cable must be category 5, twisted-pair wiring with RJ-45 connectors. If you plan on running the adapter at 100Mbps, it must be connected to a 100Base-TX hub. For 10Base-T, use category 3, 4 or 5 twisted-pair wiring.

2.4.14 ACT/LNK LED (Green color)

This LED lights when there is network packets sent or received through the RJ45 port. It also lights to indicate a successful network connection and remains steady if the connection is stable. The rate of flashing is proportional to the amount of network traffic.

2.4.15 Speed LED (Orange color)

This LED lights when connection is made to a 100Base-TX or 10Base-T host.

2.4.16 Line Out Connector

The Line Out phone-jack provides the audio outputs for the left and right stereo channels.

2.4.17 Line In Connector

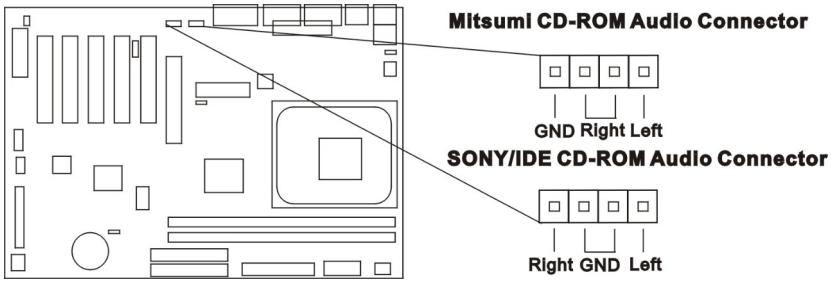
The Line In phone-jack is used to attach monaural or stereo devices such as a cassette, Digital Audio Tape, or Minidisc players for playback, mixing, or recording.

2.4.18 Microphone In Connector

The Microphone In phone-jack is used to attach a monaural microphone for live audio input for playback, mixing, or recording.

2.4.19 CD_IN Audio (4-pin Black color Connector)

The CD_ROM Audio connector is used to connect the audio cable from either an ATAPI IDE or Sony CD-ROM drive for playback, mixing, and recording.



2.4.20 AUX Audio (4-pin white color Connector)

The Mitsumi CD-ROM Audio connector is used to connect the audio cable from a Mitsumi CD-ROM drive for playback, mixing, or recording. Only one of the two CD-ROM audio connectors may be used at a time.

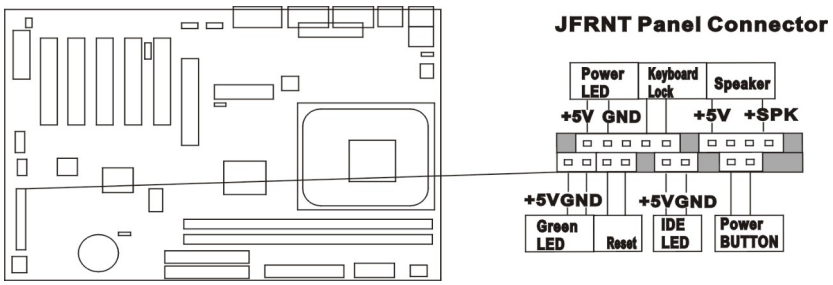
2.4.21 Game/MIDI Port

The Game/MIDI Port connector is used to attach a joystick for game interaction or to attach an external MIDI device for playback, mixing, or recording.

2.4.22 Panel Connection (24-pin JFRNT)

JFRNT Connector	**Function**
GREENLED	Suspend Mode LED
PWRLED	Power LED
KEYLK	Key-lock Switch
SPKR	Speaker
RESET	Reset Switch
IDELED	HDD LED
PWRBNT	ATX Power Button Connector

WARNING: To avoid the system from failing, turn off the power before connecting any devices to the system.



Chapter 3. BIOS Setup

3.1 CMOS Setup Utility

To activate CMOS Setup, press < DEL > key immediately after you turn on the system. The following message "Press DEL to enter SETUP" should appear in the lower left hand corner of your screen.
When you enter the CMOS Setup Utility, the Main Menu will be displayed (**Figure 3-1**). You can use arrow keys to select your function, press < Enter > key to accept the selection and enter the sub-menu.

Figure 3-1. CMOS Setup Utility Main Screen

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

>Standard CMOS Features	>Frequency/Voltage Control
>Advanced BIOS Features	Load Fail-Safe Defaults
>Advanced Chipset Features	Load Optimized Defaults

>Integrated Peripherals	Set Supervisor Password
>Power Management Setup	Set User Password
>PnP / PCI Configurations	Save & Exit Setup
>PC Health Status	Exit Without Saving
Esc : Quit	↓ → ← : Select Item
F10 : Save & Exit Setup	
Time, Date, Hard Disk Type...	

Sub-Menu

Note that a right pointer symbol appears to the left of certain fields. This pointer indicates that a sub-menu can be launched from this field. A sub-menu contains additional options for a field parameter. To call up a sub-menu, simple move the highlight to the field and press <Enter>. The sub-menu will then immediately appear. Use the legend keys to enter values and move from field within a sub-menu just as you would within a menu. Use the <Esc> key to return to the main menu.

3.2 Standard CMOS Features

With the sub-menu (**Figure 3-2**), you can setup the; system date, system time, hard and floppy drive type, and display adapter type. Please refer to your equipment specification when changing the setup. Use arrow keys to highlight items, and use < PageUp > , < PageDown > , < + > , or < - > keys to scroll through the available options.

Figure 3-2. Standard CMOS Features Screen

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

Standard CMOS Features

Date (mm : dd : yy)	Fri, Jan 1 1999	Item Help
Time (hh : mm: ss)	1 : 28 : 42	Menu Level >
		Change the day,
>IDE Primary Master	Press Enter 4403 MB	month,
>IDE Primary Slave	Press Enter None	year and century
>IDE Secondary Master	Press Enter None	
>IDE Secondary Slave	Press Enter None	
Drive A	1.44M, 3.5 in.	

Drive B	None	
Video	EGA/VGA	
Halt On	All Errors	
Base Memory	640K	
Extended Memory	14336K	
Total Memory	15360K	

↓ → ←: Move Enter : Select +/-/PU/PD : Value F10 : Save ESC : Exit F1 : General Help

F5 : Previous Value F6 : Fail-Safe Defaults F7 : Optimized Defaults

3.2.1 Date

To assign the system date, the format is "mm.dd.yy". The input range for the Month is 1-12. Range for Date is 1-31. Range for Year is 1994-2079. System BIOS will calculate the day of the week automatically.

3.2.2 Time

To assign the system time, the format is "hh:mm:ss". The setting is in military time. When entering 2:34pm enter "14:34:00".

3.2.3 Hard Disks Setting

The BIOS supports Dual-Channel PIO and PCI Bus Master IDE ports. Each port supports one master and one slave hard drive. You can use < Enter > or < PageUp > or < PageDown > key to change hard drive type. Incorrect setting may result in boot up error or system hang.
If your hard disk drive is not listed, you can select "Manual" mode to define your own drive manually. We recommend that you select Type "AUTO" for all drives. The BIOS will auto-detect the hard disk drive and CD-ROM drive at the POST stage.
If your hard disk drive is a SCSI device, please select "None" for your hard drive setting.

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IDE Primary Master

IDE HDD Auto-Detection	Press Enter	Item Help
IDE Primary Master	Auto	Menu Level >>
Access Mode	Auto	To auto-detect the
Capacity	4303 MB	HDD's size, head… on
Cylinder	8894	This channel

Head	15	
Precomp	0	
Landing Zone	8893	
Sector	63	

↓ → ←: Move Enter : Select +/-/PU/PD : Value F10 : Save ESC : Exit F1 : General Help

F5 : Previous Value F6 : Fail-Safe Defaults F7 : Optimized Defaults

3.2.4 Floppy Drives A&B Setting

Select your floppy disk drive type. Options are 360KB (5.25"), 720KB (3.5"), 1.2MB (5.25"), 1.44MB (3.5), 2.88MB (3.5").

3.2.5 Video Display Adapter Setting

Select the display adapter type for your system. Options are EGA/VGA, MONO, CGA40 and CGA80.

3.2.6 Halt On

This function allows the system to halt when an error is detected during Power-On Self-Test.

3.3 Advanced BIOS Features Setup

The sub-menu (**Figure 3-3**) includes all AWARD enhanced functions. The correct setting can enhance boot up efficiency. You can assign system speed, setup sequence, typematic and system password setting. You can enter < F1 > key for help on highlighted topics. If you want to restore values before the changes you just made, press < F5 > key. If you want to restore default value, press < F6 > or < F7 > key.

Figure 3-3. Advanced BIOS Features Screen

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Advanced BIOS Features

Virus Warning	Disabled	Item	Help
CPU L1& L2 Cache	Enabled	Menu	Level >
Quick Power On Self Test	Enabled		
First Boot Device	HDD-0		
Second Boot Device	Floppy		
Third Boot Device	SCSI		

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	
APIC Mode	Enabled	
MPS Version Control For OS	1.4	
OS Select For DRAM > 64MB	Non-os2	
Report No FDD For WIN 95	No	
Small Logo(EPA) Show	Enabled	

↓ → ←: Move Enter : Select +/-/PU/PD : Value F10 : Save ESC : Exit F1 : General Help

F5 : Previous Value F6 : Fail-Safe Defaults F7 : Optimized Defaults

(Scroll down to see more items , as shown here)

3.3.1 Virus Warning

When enabled, the BIOS will monitor the boot sector and the partition table on the hard drive for any attempt to modify. If an attempt is detected, the BIOS will halt the system and prompt the warning message. Select "Disabled" if you are installing a new operating system.

3.3.2 CPU L1 & L2 Cache

These options are to enable or disable CPU Internal (L1) Cache, or (L2) Cache.

3.3.3 Quick Power On Self Test

Select "Enabled" to speed up time required to complete Power-On Self-Test.

3.3.4 First/Second/Third Boot Device & Boot Other Device

This option allows user to assign boot sequence of the system. Available options are Floppy, HDD, CD-ROM, SCSI, LAN, LS120 and

ZIP100. Set " Boot Other Device" to Enabled if you wish to boot from another device.

3.3.5 Swap Floppy Drive

When enabled, physical drive A will be assigned to logical drive B, and physical drive B will be assigned to logical drive A.

3.3.6 Boot Up Floppy Seek

The system will detect and verify operation of the floppy drive type.

3.3.7 Boot Up Numlock Status

The option allows the < NumLock > key to be activated after system boot up.

3.3.8 Gate A20 Option

This entry allows you to select how the gate A20 is handled. The gate A20 is a device used to address memory above 1 Mbytes. Initially, the gate A20 was handled via a pin on the keyboard (Normal). Today, while keyboards still provide this support, it is more common, and much faster, for the system chipset (Fast; default) to provide support for gate A20.

3.3.9 Typematic Rate Setting

Select “Enabled” to configure “Typematic Rate” and “Typematic Delay” functions.

3.3.10 Typematic Rate

Use this option to set the rate at which a character keeps repeating while you hold down a key.

3.3.11 Typematic Delay

Select “Enabled” to set the length of delay before key strokes to repeat. Available options are “250”, “500”, “750”, and “1000”.

3.3.12 Security Option

You can select whether the password is required every time the system boots or only when you enter the Setup. You can assign “Supervisor Password” and "User Password" in the main CMOS Setup Utility Screen.

3.3.13 APIC Mode.

This is for Dual Processor architecture type. The default setting is "Disabled".

3.3.14 MPS Version Control For OS

If you have wanted "Enabled" the APIC Mode, should be select 1.1 or 1.4 can decide to CPU type then into your OS version.

3.3.15 OS Select for DRAM > 64MB

If you are using OS/2 operating system and installed memory is larger than 64MB. You need to have the setting in the enable mode.

3.3.16 Report No FDD For WIN 95

While the FDD in " STANDARD CMOS SETUP " is set to NONE, set this option to No to release IRQ6 for
passing Win95 logo. This option is irrelevant under normal operation.

3.3.17 Small Logo(EPA) Show

When you select " Enabled" the screen shows as ***"Energy Star"*** picture at the front side up right. "Disabled" is close this picture .

3.4 Advanced Chipset Features Setup

These settings are intended for the Advanced Chipset function on the motherboard. Fine-tuning these options enhances the performance of the system.

Figure 3.4-Advanced Chipset Features Screen

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Advanced Chipset Features

DRAM Timing Selectable	By SPD	Item Help
X CAS Latency Time	3	Menu Level
X Active to Precharge Delay	6	
X DRAM RAS# to CAS# Delay	3	
X DRAM RAS# Precharge	3	
DRAM Data Integrity Mode	Non-ECC	
Memory Frequency For	Auto	
Dram Read Thermal Mgmt	Disabled	
System BIOS Cacheable	Enabled	

Video BIOS Cacheable	Disabled	
Video RAM Cacheable	Disabled	
Memory Hole At 15M-16M	Disabled	
Delayed Transaction	Enabled	
AGP Aperture Size (MB)	64MB	
Delay Prior to Thermal	16 Min	

↓ → ←: Move Enter : Select +/-/PU/PD : Value F10 : Save ESC : Exit F1 : General Help

F5 : Previous Value F6 : Fail-Safe Defaults F7 : Optimized Defaults

3.4.1 DRAM Timing Selectable

If your DIMM memory has SPD (Serial Presence Detect) 8-pin IC on module, you can set this option to "By SPD". System will set your SDRAM clock and timing from the SPD IC. If the option set as "Manual", DRAM clock and timing must be set from items below:

3.4.2 SDRAM CAS Latency Time

This controls the latency between the SDRAM read command and the time that the data actually becomes available.

3.4.3 Active to Precharge Delay

When you select "Manual" mode, you can set active to Precharge SDRAM timing delay.

3.4.4 SDRAM RAS-to-CAS Delay

These are timing of SDRAM CAS Latency and RAS to CAS Delay, calculated by clocks. They are important parameters affects SDRAM performance.

3.4.5 SDRAM RAS Precharge Time

The RAS Recharge means the timing to inactive RAS and the timing for DRAM to do recharge before next RAS can be issued.

3.4.6 DRAM Data Integrity Mode

When you select "Manual" mode, you can set DRAM Data Integrity mode.

3.4.7 DRAM Read Thermal Mgmt.

When you select "Manual" mode, you can set DRAM Read Thermal Mgmt.

3.4.8 System BIOS Cacheable

Allows the system BIOS to be cached for faster system performance.

3.4.9 Video BIOS Cacheable

Allows the video BIOS to be cached for faster video performance.

3.4.10 Video RAM Cacheable

Allows the video RAM to be cached for faster video performance.

3.4.11 Memory Hole At 15M-16M

Enabling this feature reserves 15MB to 16MB memory address space to ISA expansion cards that specifically require this setting. This makes the memory from 15MB and up unavailable to the system. Expansion cards can only access memory up to 16MB.

3.4.12 Delayed Transaction

This function is used to meet the latency of PCI cycles to from ISA bus. Try to enable or disable it, if you have ISA card compatibility problem.

3.4.13 AGP Aperture Size (MB)

Choose 32, 64MB. Memory-mapped, graphics data structures can reside in the Graphics Aperture.

3.4.14 Delay Prior to Thermal

When you system temperature higher, you can set the DRAM access time slowdown between on 4 min – 32 min delay.

3.5 Integrated Peripherals

You can control Input and Output functions from this screen.

Figure 3-5 Integrated Peripherals

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Integrated Peripherals

On-Chip Primary PCI IDE	Enabled	Item Help
IDE Primary Master PIO	Auto	MenuLevel >
IDE Primary Slave PIO	Auto	
IDE Primary Master UDMA	Auto	
IDE Primary Slave UDMA	Auto	
On-Chip Secondary PCI IDE	Enabled	
IDE Secondary Master PIO	Auto	
IDE Secondary Slave PIO	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	
Onboard SoundChip control	Enabled	
IDE HDD Block Mode	Enabled	
POWER ON Function	Any Key	
X KB Power ON Password	Enter	
X Hot Key Power ON	Ctrl-F1	
Onboard FDC Controller	Enabled	
Onboard Serial Port 1	3F8 / IRQ4	
Onboard Serial Port 2	2F8 / IRQ3	
UART Mode Select	Normal	
X RxD , TxD Active	Hi , Lo	
X IR Transmission Delay	Enabled	
X UR2 Duplex Mode	Full	
X Use IR Pin	IR-Rx2Tx2	
Onboard Parallel Port	378 / IR7	
Parallel Port Mode	SPP	
X EPP Mode Select	Epp1.7	
X ECP Mode Use DMA	3	
PWRON After PWR-Fail	Off	
Game Port Address	201	
Midi Port Address	290	
Midi Port IRQ	5	

↓ → ←: Move Enter : Select +/-/PU/PD : Value F10 : Save ESC : Exit F1 : General Help

F5 : Previous Value F6 : Fail-Safe Defaults F7 : Optimized Defaults

(Scroll down to see more items , as shown here)

3.5.1 On-Chip primary/Secondary PCI IDE

Select "Enabled" to activate each on-board IDE channel separately,

Select "Disabled", if you install an add-on IDE Control card

3.5.2 IDE Primary & Secondary Master/Slave PIO

These four PIO fields let you set a PIO mode (0-4) for each of four IDE devices. When under "Auto" mode, the system automatically set the best mode for each device

3.5.3 IDE Primary & Secondary Master/Slave UDMA

When set to "Auto" mode, the system will detect if the hard drive supports Ultra DMA mode.

3.5.4 USB Controller

Select Enabled if your system contains a Universal Serial Bus (USB) controller.

3.5.5 USB Keyboard Support

This item lets you enable or disable the USB keyboard driver within the onboard BIOS.

3.5.6 Init Display First

Select "AGP" or "PCI Slot" for system to detect first when boot-up.

3.5.7 AC97 Audio

Allows the motherboard's BIOS to detect whether you are using any audio device. If a audio device is detected, the onboard audio Codec will be enabled; if no audio is detected, the onboard audio Codec will be disabled. If you want to use different audio controller cards, set these fields to Disabled.

3.5.8 Onboard Sound Chip Control

The CNR slot can work with Primary port or Secondary port. If the item is set as Enabled, the CNR slot work with Secondary port. If the item is set as Disabled, the on board audio Codec will be disabled and CNR slot can work with Primary port or Secondary port.

3.5.9 IDE HDD Block Mode

This feature enhances disk performance by allowing multi-sector data transfers and eliminates the interrupt handling time for each sector.

3.5.10 POWER ON Function

This field allows you to use the keyboard to power-on the system. To use this function, make sure JKBV jumper is set to 2-3 pin short,

please refer to " Keyboard Voltage Setting " in Chapter 2 for more information.

Any Key: Press any key to power-on the system.

Button Only: System can be power on with Power Button.

Keyboard 98: When this option is selected, press the "wake up" key of the Windows 98 compatible keyboard to power-on the system.

Password: When this option is selected, move the cursor to the "KB Power On Password" field and press <Enter>. Enter your password. You can enter up to 5 characters. Type in exactly the same password to confirm, then press <Enter>.

Hot Key: When this option is selected, move the cursor to the " Hot Key Power On " field to select a function key you would like to use to power-on the system. The options are from Ctrl-F1 to Ctrl-F12.

Mouse Left: When this option is selected, double-click the left button of the mouse to power-on the system.

Mouse Right: When this option is selected, double-click the right button of the mouse to power-on the system.

3.5.11 Onboard FDC Controller

Select “Enabled” to activate the on-board FDC

Select “Disabled” to activate an add-on FDC

3.5.12 Onboard Serial Port 1 & 2

Select an address and corresponding interrupt for the first/second serial port. The default value for the first serial port is “3F8/IRQ4” and the second serial port is “2F8/IRQ3”.

3.5.13 UART Mode Select

Select to activate the Infrared transfer function.

3.5.14 RxD , TxD Active

This option is Hi, Lo; Lo, Hi; Lo, Lo; Hi, Hi.

3.5.15 IR Transmission Delay

If this option is enabled, transmission of data will be slower. This is recommended when you encounter transmission problem with your device. .

3.5.16 UR2 Duplex Mode

Select to activate the Infrared transfer function. This default setting is "Normal".

3.5.17 Use IR Pin

When you select to IrDA or ASKIR mode, you can define use (TX,RX) pin.

3.5.18 Onboard Parallel Port

Select address and interrupt for the Parallel port.

3.5.19 Parallel Port Mode

Select an operating mode for the parallel port. Mode options are SPP, EPP, ECP and ECP+EPP.

3.5.20 EPP Mode Select

Set parallel port as EPP1.7 or EPP1.9.

3.5.21 ECP Mode Use DMA

Select a DMA channel if parallel port is set as ECP or ECP+EPP.

3.5.22 PWRON After PWR-Fail

Off: When power returns after an AC power failure, the system's power is off. You must press the Power button to power-on the system.

On: When power returns after an AC power failure, the system will automatically power-on.

Former-Sts: When power returns after an AC power failure, the system will return to the state where you left off before power failure occurs. If the system's power is off when AC power failure occurs, it will remain off when power returns. If the system's power is on when AC power failure occurs, the system will power-on when power returns.

3.5.23 Game Port Address

This field sets the address of the onboard game port connector.

3.5.24 Midi Port Address

This field is used to select the midi port's address. If you have selected the midi port's address, you may select its IRQ in the " Midi Port IRQ ".

3.5.25 Midi Port IRQ

This field is used to select the midi port's IRQ.

3.6 Power Management Setup

Power management decreases power usage under the pre-defined standby time range.

Figure 3-6. Power Management Setup Screen

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

Power Management Setup

ACPI function	Enabled	Item Help
ACPI Suspend Type	S1 (POS)	MenuLevel >
Power Management	User Define	
Video Off Method	DPMS	
Video Off In Suspend	Yes	
Suspend Type	Stop Grant	
MODEM Use IRQ	3	
Suspend Mode	Disabled	
HDD Power Down	Disabled	
Soft-Off by PWR-BTTN	Instant-off	
CPU Thermal-Throttling	50.0%	
Wake-up by PCI card	Enabled	
Power on by Ring	Disabled	
x 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 Value F6 : Fail-Safe Defaults F7 : Optimized Defaults

(Scroll dowe items , as shown here)

3.6.1 ACPI Function

This item allows you to enable or disable the function of Advanced Configuration and Power Interface which offers improved power management .

3.6.2 ACPI Suspend Type

This field is used to select the type of Suspend function.
S1 (POS): Enables the Power On Suspend function.
S3 (STR): Enables the Suspend to RAM function. Refer to Appendix A.

3.6.3 Power Management

Mini Saving	System starts power saving function when the inactivity period exceeds 1 hour.
Max Saving	System starts power saving function when the inactivity period exceeds 1 min.
User Defined	Allows user to define the inactivity period before power saving function activates,

3.6.4 Video Off Method

This field defines the video off features. The following options are available: DPMS OFF, DPMS Reduce ON, Blank Screen, V/H SYNC+Blank, DPMS Standby, and DPMS Suspend. The DPMS (Display Power Management System) features allow the BIOS to control the video display card if it supports the DPMS feature.

3.6.5 Video Off In Suspend

This option is used to activate the video off feature when the system enters the suspend mode.

3.6.6 MODEM Use IRQ

This item tells the Power Management BIOS which IRQ is assigned to the installed MODEM. Option is NA, 3, 4, 5, 7, 9, 10 and 11.

3.6.7 Suspend Mode

System further shuts down all devices except for CPU itself. This is the third level of Power Management.

3.6.8 HDD Power Down

This instructs hard drives to shut off while in the Power Management modes.

3.6.9 Soft-Off by PWR-BTTN

When set to "Delay 4 Sec.", the power button has a dual function where pressing less than 4 seconds will place the system in sleep mode and shut down the system when the button is held more than 4 seconds. "Instant-Off", the system will be shut down right away when the power button is pressed.

3.6.10 CPU Thermal-Throttling

Set the percent of power consumption when CPU over heat.

3.6.11 Wake-Up by PCI card

If your PCI card supports PME (Power Management Event) signal and this item is set as Enabled, PCI peripherals drive PME signal to wake the system from low-power states S1-S5.

3.6.12 Power On by Ring

The option lets you specify enable or disable external Modem Wake Up function. It powers up the computer when the modem receives a call while the computer is in Soft-off mode.
Note: The computer cannot receive or transmit data until the computer and application are fully running. After the item is set as Enabled system must enter to Operation System once before system is turned off.

3.6.13 USB KB Wake-up From S3

If your USB KB supports PME (Power Management Event) signal and this item is set as Enabled, USB KB peripherals drive PME signal to wake the system from low-power states S3.

3.6.14 Resume by Alarm

Set this option to enable or disable the RTC Alarm to Wake Up the system, which is set at soft off.

3.6.15 Date (of Month) Alarm, Time (hh:mm:ss) Alarm

Alarm time on Date / Hour / Minute / Second.Set these options to specify the RTC

3.6.16 Primary/Secondary IDE 0/1, FDD, COM, LPT Port & PCI PIRQ [A-D]

These items enable or disable the detection of IDE, floppy, serial, parallel port and PCI PIRQ [A-D] activities for power down state transition. Actually it detects the read/write to/from I/O port.

3.7 PNP/PCI Configurations Setup

Figure 3.7 PNP/PCI CONFIGURATIONS SETUP

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

PnP / PCI Configurations

Reset Configuration Data	Disabled	Item Help
Resources Controlled By	Auto (ESCD)	Menu level
x IRQ Resources	Press Enter	
PCI/VGA Palette Snoop	Disabled	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 system reconfiguration has caused such a serious conflict that the OS cannot boot. .

↓ → ←: Move Enter : Select +/-/PU/PD : Value F10 : Save ESC : Exit F1 : General Help

F5 : Previous Value F6 : Fail-Safe Defaults F7 : Optimized Defaults

3.7.1 Reset Configuration Data

In case a conflict occurs after you assign the IRQs or after you configure your system, you can enable this function to allow your system to automatically reset your configuration and reassign the IRQs, DMAs, and I/O address.

3.7.2 Resources Controlled By

Default setting is "Auto (ESCD)". This setting allows the BIOS to self detect setting and Plug-and-Play devices during start up. The user can select and configure IRQs under "Manual" mode.

3.7.3 IRQ Resources

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IRQ Resources

IRQ-3	assigned to	PCI Device	Item Help
IRQ-4	assigned to	PCI Devic	Menu Level >
IRQ-5	assigned to	PCI Device	
IRQ-7	assigned to	PCI Device	Legacy ISA for evices
IRQ-9	assigned to	PCI Device	compliant with the
IRQ-10	assigned to	PCI Device	original PC AT bus
IRQ-11	assigned to	PCI Device	Specification, PCI/ISA
IRQ-12	assigned to	PCI Device	PnP for devices
IRQ-14	assigned to	PCI Device	Compliant with the
IRQ-15	assigned to	PCI Device	Plug & Play standard
			Whether designed for
			PCI OR ISA bus
			architecture

↓ → ←: Move Enter : Select +/-/PU/PD : Value F10 : Save ESC : Exit F1 : General Help

F5 : Previous Value F6 : Fail-Safe Defaults F7 : Optimized Defaults

3.7.4 PCI/VGA Palette Snoop

Enable this option to correct screen color shifts, when there is a combination of VGA cards, accelerator cards, or MPEG cards present.

3.8 PC Health Status

Figure 3.8 PC Health Status

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

PC Health Status

CPU Warning Temperature	Disabled	Item Help
Current System Temp.	26°C/78°F	Menu Level
Current CPU Temperature	36°C/96°F	
Current CPUFAN Speed	4017 RPM	
Current CHASFAN Speed	0 RPM	
Current PWRFAN Speed	0 RPM	
Vcore(V)	1.69 V	
Vcc3 (V)	3.42 V	
+ 5 V	5.02 V	
+12V	11.73 V	
-12V	-11.78 V	
-5V	0 V	
VBAT (V)	3.15 V	
5VSB (V)	4.92 V	
Shutdown Temperature	Disabled	

↓ → ←: Move Enter : Select +/-/PU/PD : Value F10 : Save ESC : Exit F1 : General Help

F5 : Previous Value F6 : Fail-Safe Defaults F7 : Optimized Defaults

3.8.1 Current System & CPU Temperature (xx°C/xx°F)

The onboard hardware monitor is able to detect the temperatures of motherboard and CPU. These values refresh upon any key entry. The function is optional.

3.8.2 Current CPUFAN , CHASFAN & PWRFAN Speed (xxxxRPM)

The onboard hardware monitor is able to detect chassis fan speed, CPU fan and PWR fan speed in Rotations Per Minute (RPM). These values refresh upon any key entry in the BIOS setup screen. The function is optional.

3.8.3 Vcore, Vcc3, +5V, +12V, -12V,-5V, VBAT & 5VSB (xx.xxV)

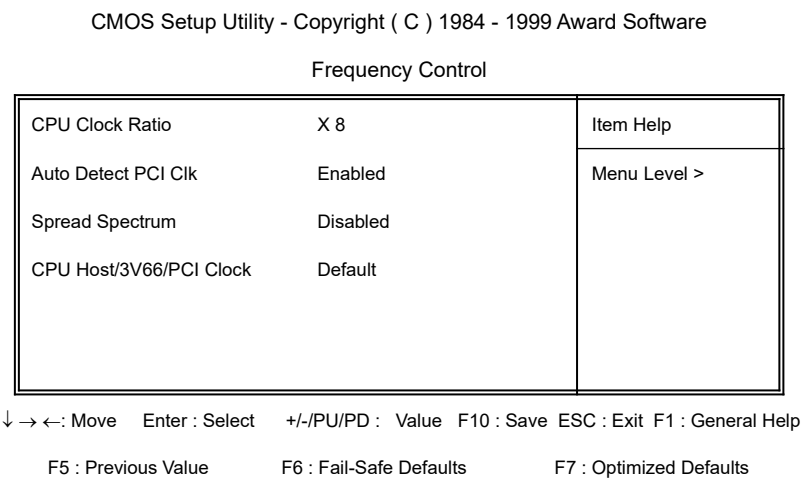
The onboard hardware monitor is able to detect the voltage output by the voltage regulators. These values refresh upon any key entry. The function is optional.

3.8.4 Shutdown Temperature

When you select " enable ", the CPU working temperature at over setting. Should be shutdown PC . " Disabled " is close this functions.

3.9 Frequency Control

Figure 3.9 Frequency Control



3.9.1 CPU Clock Ratio

The Ratio of some latest Intel Corporation fixes CPUs and VIA so the Ratio cannot be changed with the setting. If it did not fix by CPU manufacturer, it may be changed with the setting. Over specification operations are not recommended.

3.9.2 Auto Detect PCI CLK

If you have the EMI issue, set the option as Enabled, it keeps its interference under control.

3.9.3 Spread Spectrum

Using the setting " Enabled ", for EMI testing will increase the system stability. The default setting is " Disabled ".

3.9.2 CPU Host/3v66/PCI Clock

Choose Default, 100, 103, 105, 107,109,111, 114, 117,120, 127, 130 MHz for the external frequency of your CPU.

You can select Default, 66, 69,70,71,73,74,76,78,80,85,87MHz. if your CPU is 100Mhz FSB and select Default, 100, 103, 105, 107,109,111,114,117, 120, 127 or 130 MHz if the CPU is 100Mhz FSB. I**Warning:** Over specification operations are not recommended.

The frequency-mapping table of the elements:

CPU Host/3V66	PCI
100 / 66 MHz	33 MHz
103 / 69 MHz	34 MHz
105 / 70 MHz	35 MHz
107 / 71 MHz	36 MHz
109 / 73 MHz	36 MHz
111 / 74 MHz	37 MHz
114 / 76 MHz	38 MHz
117 / 78 MHz	39 MHz
120 / 80 MHz	40 MHz
127 / 85 MHz	42 MHz
130 / 87 MHz	43 MHz

3.10 Load Fail-Safe Defaults

This loads the troubleshooting default values permanently stored in the ROM chips. These settings are not optimal and turn off all high performance features. You should use these values only if you have hardware problems. Highlight this option in the main menu and press <Enter>. The message below will appear.

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

If you want to process, type <Y> and press <Enter>. The default settings will be loaded.

3.11 Load Optimized Defaults

This feature loads optimized setting from the BIOS ROM. Use the default values as standard values for your system. Highlight this option in the main menu and press <Enter>. The message below will appear.

Load Optimized Defaults (Y/N)? N

Type <Y> and press <Enter> to load the Setup default values.

3.12 Set Supervisor/User Password

You can assign, modify, or cancel password settings. To modify, highlight "Set Supervisor Password" or "Set User Password" and press the < Enter > key. The screen will prompt you ("Enter Password:"). Enter your password. The maximum size of the password is 8 characters. System will prompt you to reenter the password to verify. Remember the passwords are case sensitive.

If you want to remove the passwords, either delete passwords or press < Enter > when prompting for new password.

If you want it to require password upon initial system startup and upon entering the CMOS Setup Utility, you will need to change the selection of the (Security Option) under (Advanced BIOS Features) to "System".

If the setting is "Setup", the system will only require the password you activate CMOS Setup Utility.

3.13 Save & Exit Setup

When all the changes have been made, highlight "Save & Exit Setup" and press <Enter>. The message below will appear:

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

Type "Y" and press <Enter>. The modifications you have made will be written into the CMOS memory, and the system will reboot.

3.14 Exit Without Saving

When you do not want to save the changes you have made, highlight "Exit Without Saving" and press <Enter>, the message below will appear:

Quit Without Saving (Y/N)? N

Type "Y" and press <Enter>. The system will reboot.

Chapter 4. Driver installation

You can use the auto run menu of this CD Disc. The screen shows as you BIOS ID then please choose your preferred mode of this installation program:

- **Detect and select your motherboard type automatically.**
- **Select motherboard type on your own manually.**

The CD Driver Disk for P4BDA Motherboard Chipset Setup includes driver for:

Install Motherboard Software

Install Ultra ATA

Install Audio Device Software

Install Ethernet LAN

Link to < Web Site > Homepage

Browse this CD

4.1 Install Motherboard Software:

You can move your mouse choose " **INF update for Intel chipsets**" then push right button on your mouse. They can automatic detect your windows operating system version.

4.2 Install Ultra ATA Driver:

You can move your mouse choose " **Install ATA Driver** " then push right button on your mouse. They can automatic detect your windows operating system version.

4.3 Install Audio Device Software:

You can move your mouse choose " **Install ALC201A Audio Driver**" then push right button on your mouse. They can automatic detect your windows operating system version.

4.4 Install Ethernet LAN Driver:

You can move your mouse choose " **Install LAN Driver**" then push right button on your mouse. Please refer to the ***P4BDA-LAN-readme.txt*** in the screen.

4.5 Link to < *Website* > Homepage:

If above driver can't support your system or you need a technical support. You can move your mouse choose " **Link to <Website> Homepage** " then push right button on your mouse. You would link to our company Homepage.

4.6 Browse this CD:

If above driver can't support your system. You can move your mouse choose " **Browse this CD** " then push right button on your mouse. You can search you want product drivers.

Appendix A. Using the Suspend to RAM Function

1. Select "**Power Management Setup**" in the main menu screen and press <Enter>.
2. In the "**ACPI Function**" field, select "**Enabled**".
3. In the "**ACPI Suspend Type**" field, select "**S3 (STR)**".

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Power Management Setup

	ACPI function	Enabled	Item Help
	ACPI Suspend Type	S1 (POS)	Menu Level >
	Power Management	User Define	
	Video Off Method	DPMS	
	Video Off In Suspend	Yes	
	Suspend Type	Stop Grant	
	MODEM Use IRQ	3	
	Suspend Mode	Disabled	
	HDD Power Down	Disabled	
	Soft-Off by PWR-BTTN	Instant-off	
	CPU Thermal-Throttling	50.0%	
	Wake-up by PCI card	Enabled	
	Power on by Ring	Disabled	
x	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 Value F6 : Fail-Safe Defaults F7 : Optimized Defaults

(Scroll dowe items , as shown here)

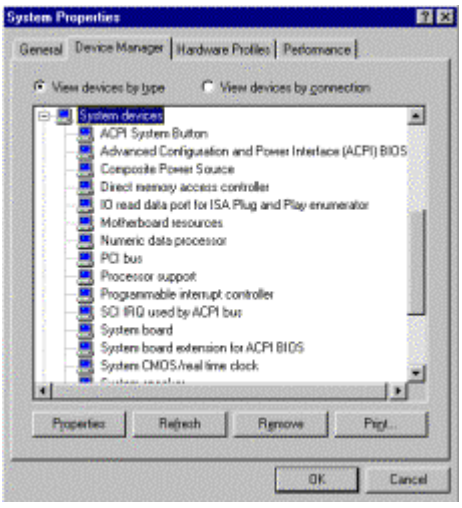
4. Select "**Save & Exit Setup**" and press <Enter>. Type <Y> and press <Enter>.

5. Install Windows 98 by typing the following parameter. This is to ensure that the ACPI function is supported. There is a space between the P and the J.

[drive]:>setup /p j

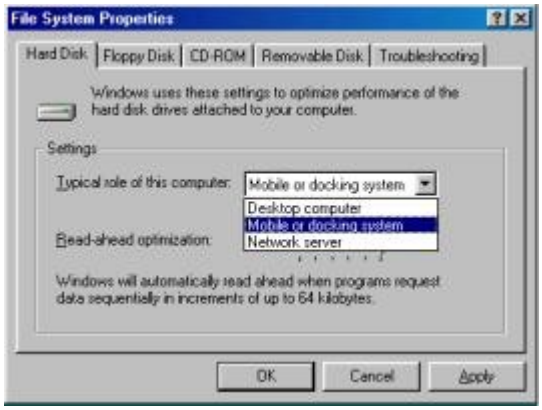
If you have previously installed Windows 98, you need to upgrade the system in order to support ACPI. Please contact Microsoft for upgrade information.

7. Boot Windows 98. In the Windows 98 desktop, click the Start button. Move the cursor to Setting, then click Control Panel. To check whether ACPI was properly installed, double-click the System icon. In the System Properties dialog box, click the "**Device Manager**" tab. In "**View devices by type**", click "**System devices**".



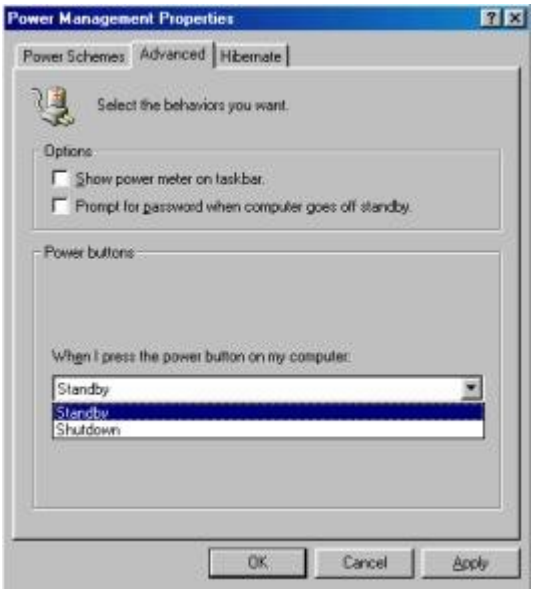
8. Double-click the System icon. In the System Properties dialog box, click the **Performance** tab.

9. Click File System. In the "**Typical role of this computer**" field, select "**Mobile or docking system**". Click **Apply**, then click **OK**. Restart the computer.



10. Repeat step 7 to open the **Control Panel** dialog box. Double-click the **Power Management icon**.

11. Click the **Advanced** tab. In the "**When I press the power button on my computer**" field, select "**Standby**".



12. After completing the steps above and you want to power-off the computer, you do not need to go through the process of closing files, applications and operation system. You can power off the computer at once by pressing the power button or selecting "**Standby**" when you shut down Windows 98.

To power-on the computer, just press the power button. The operating session where you left off when you power-off the computer will resume in not more than 8 seconds. However, the power button will not function if a keyboard password has been set in the "**KB Power ON Password**" field of the Integrated Peripherals submenu. You must type the password to power-on the computer.

If you have changed the color or resolution (in the Display Properties dialog box), do not apply the settings without restarting. You must restart the computer.