

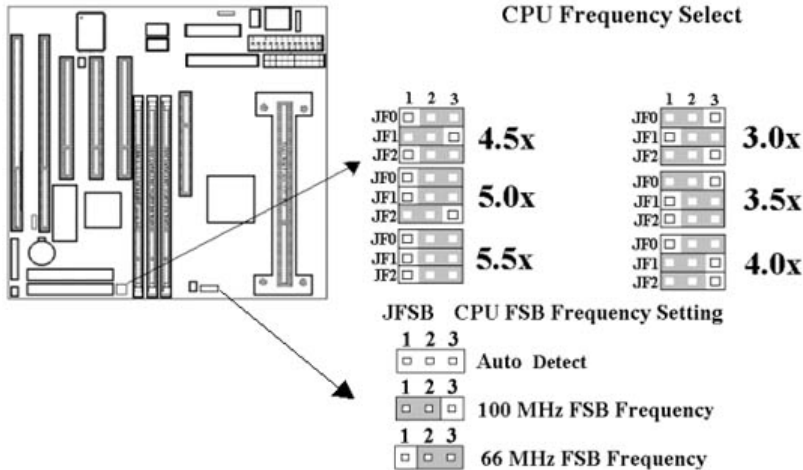
Quick Installation Char

For your convenience, this chart lists all the CPUs supported by P2BxB (P2ZXB) and their corresponding jumper setting.

CPU Model	Ratio	JF0	JF1	JF2
300/100	200/66	3.0x	1-2	2-3
350/100	233/66	3.5x	1-2	2-3
400/100	266/66	4.0x	2-3	1-2
450/100	300/66	4.5x	2-3	1-2
500/100	333/66	5.0x	2-3	2-3
550/100	366/66	5.5x	2-3	2-3

***The Ratio of some latest CPUs are fixed by Intel, such as Celeron/Pentium III 366, 400, 500... etc. You can ignore the three jumpers if you have this CPU on board and it will be auto detected by motherboard. Please check with the CPU manufacturer or vendor for the CPU Ratio information.

*** The CPU CLK over specification operation is optional, please see session 3.4.15 for more information.



Panel Connectors

JFRNT1 Connector	Function
GREEN_LED	Suspend Mode LED
PWR_LED	Power LED
KEYLOCK	Keylock Switch
SPKR	Speaker
RESET	Reset Switch
IDE_LED	HDD LED
PWR_BTN	ATX Power Button Connector
SMI S/W	Sleep Switch

P2BxB and P2ZXB

Motherboard User's Manual

Product Name: P2BxB or P2ZXB

Manual Revision: English, 1.4

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Chapter 1. Introduction

1.1 Product Overview

Thank you for purchasing the **P2BXB (P2ZXB)** motherboard. This motherboard utilizes **Intel's** latest technology, namely **440BX (440ZX) AGPset** chipset. 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 and has passed NSTL Year 2000 certification test program.

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 three 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.

1.2 Features:

- Support Accelerated Graphics Port (AGP) cards for high performance.
- Modem Remote Ring On.
- Wake up on LAN.
- RTC Wake Up Alarm: Program the date/time to wake up your system.
- CPU Thermal Protection: Warning when the CPU temperature is too high (optional).
- CPU & System Voltage Monitoring (optional).
- CPU & Chassis fan speed monitoring (optional).
- BIOS Green feature function, and Plug & Play Flash ROM.

1.3 Specifications

- CPU:** - Supports Intel Celeron, Pentium II, Pentium III with 66/100 FSB Processors.
- Chipset:** - Intel 440BX AGPset chipset for P2BXB.(Intel 440ZX AGPset chipset for P2ZXB)
- DIMM:**
 - Supports 3.3V EDO or SDRAM in 3 168-pin banks, each bank consists of 1x168-pin 64-bit DIMM socket, which can support memory sizes of 8/16/32/64/128/256 MB modules. (P2ZXB has 2x168-pin socket only).
 - Supports up to a maximum of 768 MB system memory (maximum system memory of P2ZXB is 512MB)
- IDE:**
 - Dual channel PIO and PCI Bus Master IDE ports support up to 4 EIDE devices for HDD or CD-ROM
 - Supports PIO Mode 4 with data transfer rate up to 14 MB/ Sec
 - Supports Ultra DMA 33 (UDMA) with data transfer rate up to 33 MB/Sec

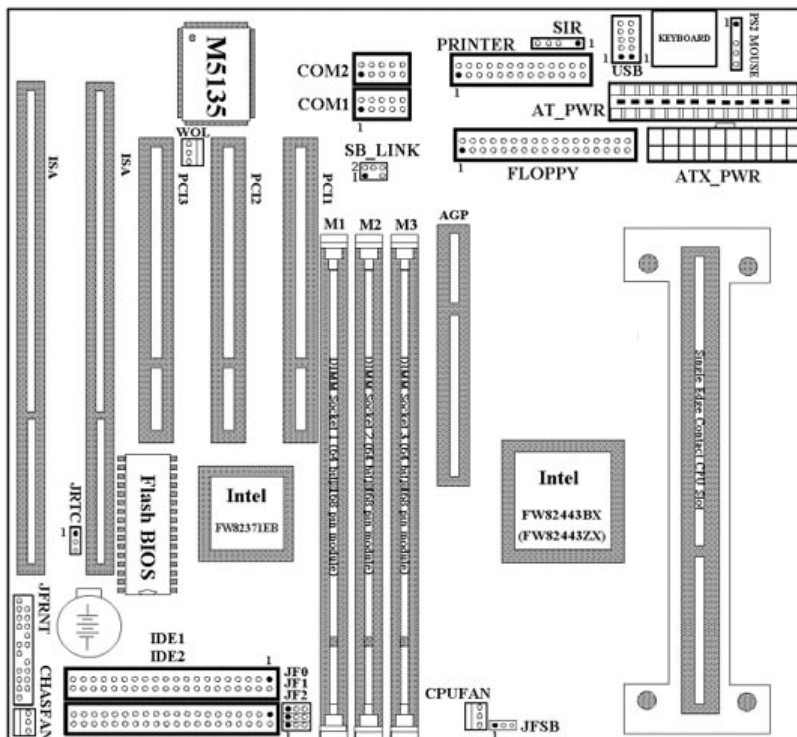
- BIOS:**
- Award BIOS V.4.51 with built-in Anti-Virus, and green function (Plug-and-Play BIOS)
 - Supports CD-ROM, SCSI, and LS120/ZIP boot up
- I/O Devices:**
- One FDD control port supports two of the 5.25" or 3.5" floppy drives up to 2.88 MB.
 - Two high-speed 16550 UART compatible serial ports
 - One parallel ports with ECP/ EPP compatibility.
 - One PS/2 mouse port
 - One AT Keyboard connector
- IR Port:**
- One IrDA/ASKIR compatible Infrared interface port. (Cable optional)
- USB Ports:**
- Two Universal Serial Bus (USB) ports support up to 127 peripheral devices.
- ATX Power:**
- Supports Modem remote Ring-On function
 - Supports software power off function
 - Supports RTC Wake-Up.
 - Supports Wake up on LAN.
- Expansion Slots:**
- Three 32-bit PCI expansion slots
 - Two 16-bit ISA expansion slots
 - One 32-bit AGP expansion slot
- Others :**
- Supports System Monitor function (optional).
 - Supports Creative's Sound Blaster 16 compatibility for real-mode DOS games.
- Operating System:**
- Supports Windows 95/98, Windows NT, MS-DOS V. 6.22, OS/2, Novell, Unix, SCO UNIX.....
- Dimension:**
- 220 mm x 210 mm Baby AT Form factor

1.4 Content

The motherboard box contains the following items:

- One Motherboard
- One IDE Ribbon Cable
- One Floppy Ribbon Cable
- A Set of Serial Ribbon Cable
- A Parallel Port and A PS/2 Mouse Port
- One Retention mechanism
- One CD Driver
- User's Manual & Quick Installation Chart

1.5 MotherBoard Layout



Notice:

If the product name is P2BxB, it has Intel FW82443BX chipset on board.

If the product name is P2ZXB, it has Intel FW82443ZX chipset on board and supports M1 & M2 DIMM socket only.

Chapter 2. Hardware Setup

2.1 Installation Procedure

1. Jumper settings (BIOS and CPU)
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
Green Jumper Caps:	Sets the type and speed of CPU JF0, JF1, JF2
Red Jumper Caps :	Sets the FSB frequency of CPU JFSB

WARNING: Electronic parts are Static sensitive. To prevent damage to the computer and its parts please take the following measures.

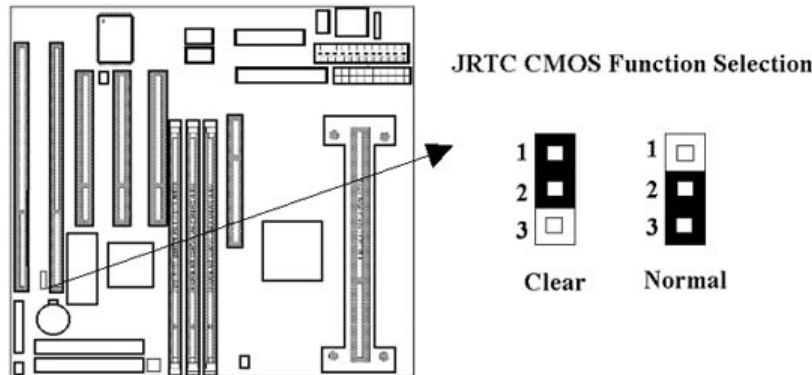
- Work on a surface such as concrete, linoleum or hard wood floor.
- Ground your self with either a properly installed grounding strap or by touching a major electrical appliance long enough to discharge the static.

2.1.2 Clearing the CMOS(Yellow Jumper Caps)

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 power cable from power connector.
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 JRTC(2-3).
5. Connect power cable back to power connector.
6. Turn on the power.
7. While the system reboots, press key to set the BIOS setup.

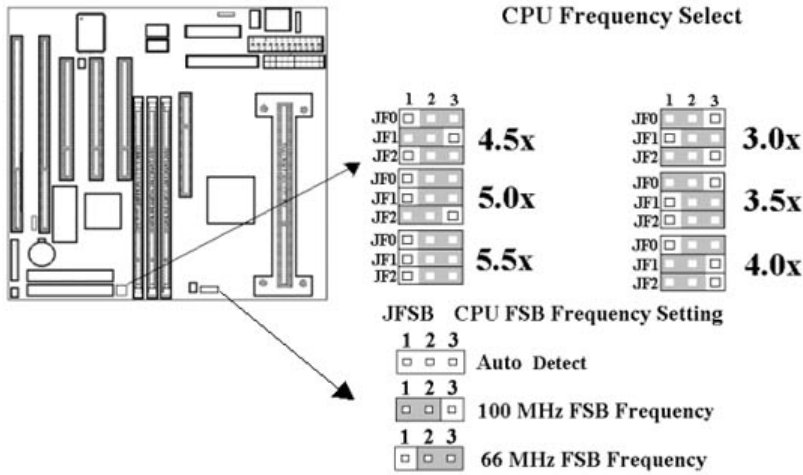
2.1.3 CPU Voltage Setting

The motherboard supports CPU VID function, the CPU core voltage is automatically detected, the range is from 1.3V to 3.5V.

2.1.4 CPU Frequency Selection (Green Jumper Caps)

CPU Model		Ratio	JF0	JF1	JF2
300/100	200/66	3.0x	1-2	2-3	1-2
350/100	233/66	3.5x	1-2	2-3	2-3
400/100	266/66	4.0x	2-3	1-2	1-2
450/100	300/66	4.5x	2-3	1-2	2-3
500/100	333/66	5.0x	2-3	2-3	1-2
550/100	366/66	5.5x	2-3	2-3	2-3

The Ratio of some latest CPUs are fixed by Intel, such as Celeron/Pentium III 366, 400, 500MHz etc. You can ignore the three jumpers, if you have this CPU on board and it will be auto detected by motherboard. Please check with the CPU manufacturer or vendor for the CPU Ratio information.



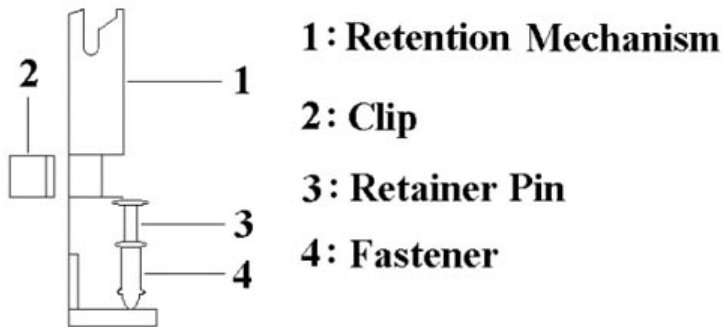
2.1.5 CPU FSB Frequency Setting (Red Jumper Caps)

The JFSB jumper provides FSB frequency setting for the CPU. Auto Detect, 66MHz or 100MHz FSB frequency can be selected with this jumper. The 100MHz FSB frequency setting is over specification operation for 66MHz FSB CPU. The over specification operation is not recommended. This jumper is supported from PCB REV:1.02.

2.2 Installation of CPU

The motherboard provides a Single Edge Contact(SEC)slot for a Pentium II/III processor packaged in an SEC cartridge. Follow these steps to install Pentium CPU:

Mount the Universal Retention Mechanism (URM) & Insert the Pentium II/III CPU: (The illustration is just for reference)



This URM was designed to accommodate 3 types of CPU Form Factor. (SECC, SECCII & SEPP). For Example : Pentium II & Celeron family.

Note : Please put a soft pad under M/B before the installation of URM.

Installation for SECC CPU :

1. Leave space below each mounting hole for the fastener to protrude through the hole.
2. Position URM on the M/B next to the slot1 connector.
3. Push down retainer pin into respective fastener to secure URM onto the M/B.
4. Push CPU into URM to contact with slot1.
5. Make sure latching portion of CPU engaged with windows ledge of URM.

Installation for SECC II or SEPP CPU :

1. Same as step (1) of SECC.
2. Same as step (2) of SECC.
3. Same as step (3) of SECC.
4. Same as step (4) of SECC.
5. Snap in 2 clips into side windows of URM to secure SEPP CPU.

If there is a fan on the CPU, Please plug in the fan cable to the three pin fan connector on the motherboard (CPUFAN).

2.3 Installation of Memory

P2BxB motherboard has 3x168-pin 64-bit Dual Inline Memory Module(DIMM)sockets divided into 3 banks (**P2ZXB** has 2x168-pin DIMM socket only). You can install 3.3V Extended Data Output(EDO)or Unbuffered Synchronous DRAM(SDRAM)memory. This will increase the system reliability.

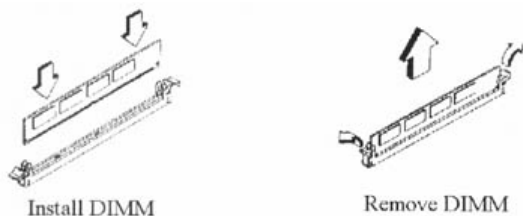
2.3.1 Installation of 168-pin DIMM (Dual Inline Memory Module)

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 168-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.



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. **Notice: The P2ZXB motherboard supports DIMM1 & DIMM2 socket only.**

DIMM Socket	DIMM Modules
DIMM1	EDO/SDRAM 8, 16, 32, 64, 128, 256MB
DIMM2	EDO/SDRAM 8, 16, 32, 64, 128, 256MB
DIMM3	EDO/SDRAM 8, 16, 32, 64, 128, 256MB

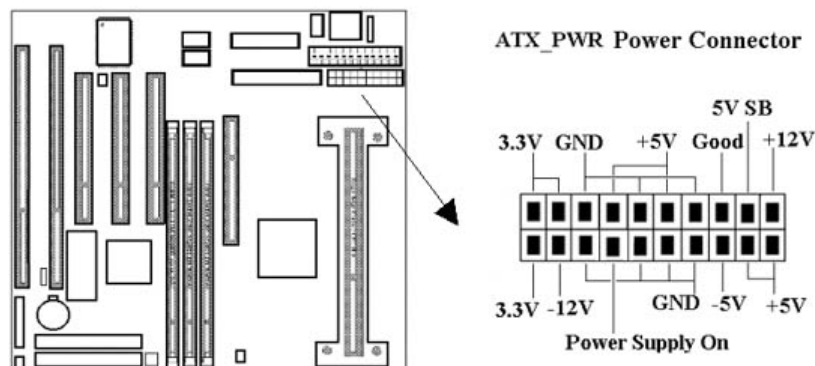
2.4 I/O Connections/Panel Connections

I/O Connections

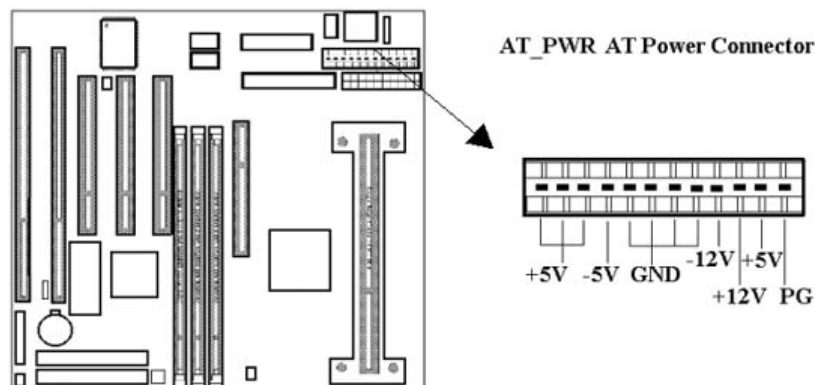
ATX_PWR	ATX Power Connector
AT_PWR	AT Power Connector
CHASFAN	Chassis fan connector
CPUFAN	CPU fan connector
SIR	Infrared Connector (Cable optional)
WOL	Wake up on LAN connector
SB_LINK	for link with Creative's Sound Blaster 16
FLOPPY	Floppy Disk Drive Connector
IDE1, 2	Primary/ Secondary IDE Connectors
PS2_MOUSE	PS/2 Mouse Port
KEYBOARD	AT Keyboard Connector
COM1, 2	Serial Ports 1 & 2
PRINTER	Printer Port
USB1, 2	USB Connector

2.4.1 ATX Power Connector (20-pin ATX_PWR)

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

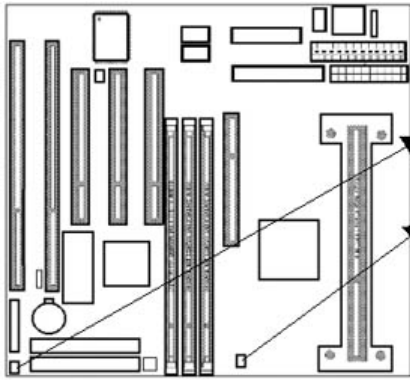


2.4.2 AT Power Connector (12-pin AT_PWR)

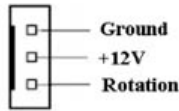


2.4.3 Chassis & CPU Fan Connectors (3-pin FAN)

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



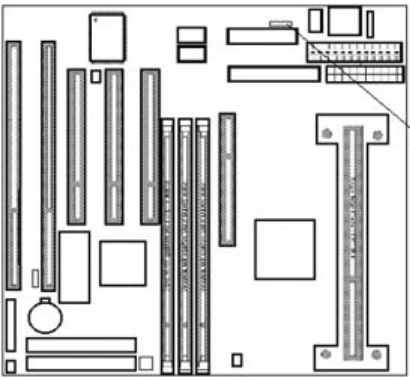
FAN Connectors



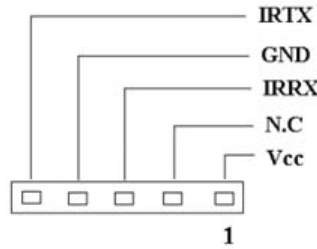
CPUFAN: CPU FAN Connector
 CHASFAN: Chassis FAN Connector

2.4.4 Infrared Connector (5-pin SIR)

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). Install infrared module onto Infrared connector and configure the setting through UR1 or 2 Mode in **Integrated Peripherals** to select whether UART is directed for use with COM1/2 or Infrared.

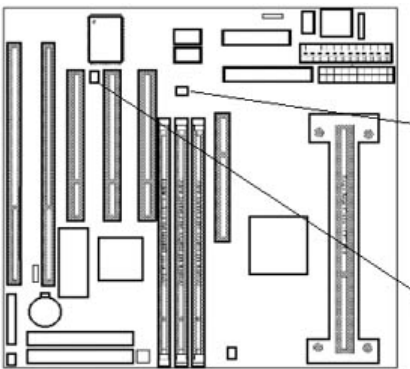


SIR Connector

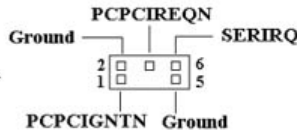


2.4.5 Wake-up on LAN Connector (3-pin WOL)

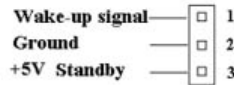
The connector powers up the system when a wakeup packet or signal is received from the network. This feature requires the **Wake up on LAN** function in BIOS is set to Enabled and that your system has an ATX power supply with at least 720mA +5V standby power.



SB_LINK for link with Creative's Sound Blaster 16



WOL Wake up on LAN Connector

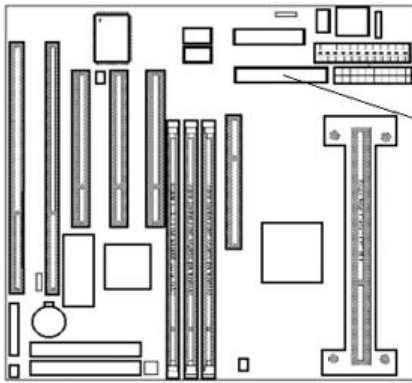


2.4.6 Creative's SB_LINK Sound Connector (6-pin SB_LINK)

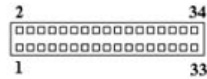
The SB_LINK serves as a bridge between the mainboard and Creative's PCI sound card. This connector delivers Sound Blaster 16 compatibility for real-mode DOS games.

2.4.7 Floppy Disk Drive Connector (34-pin JFLP1)

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

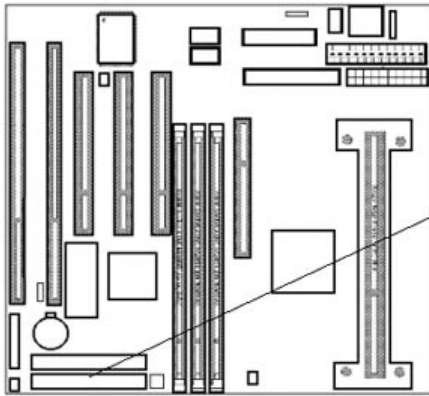


Floppy Drive Connector



2.4.8 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.



IDE Drive Connector

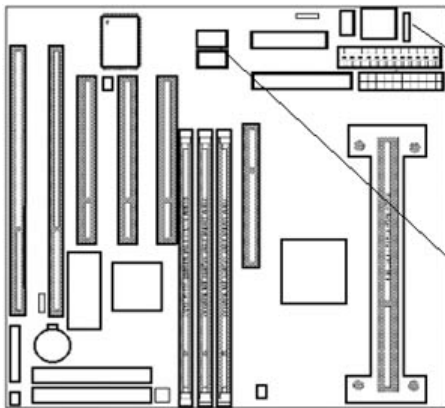
Primary IDE Connector



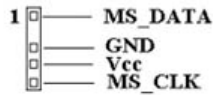
Secondary IDE Connector

2.4.9 PS/2 Mouse Port (5-pin PS2_MOUSE)

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



PS/2 Mouse Port



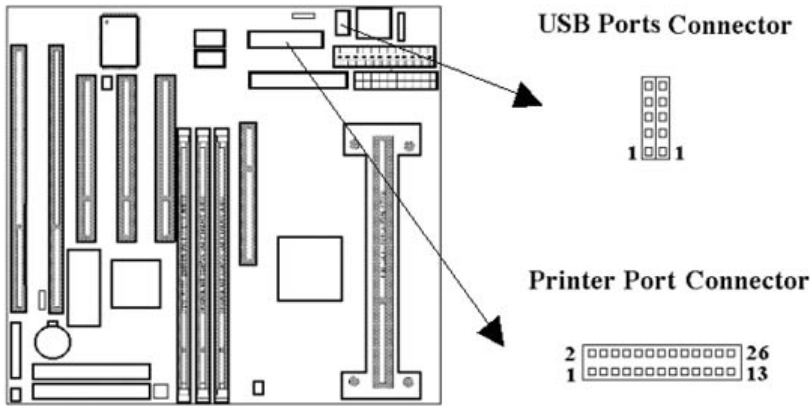
Serial Ports 1 & 2



2.4.10 Serial Port (Two 10-pin COM)

2.4.11 Printer Port (26-pin PRINTER)

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



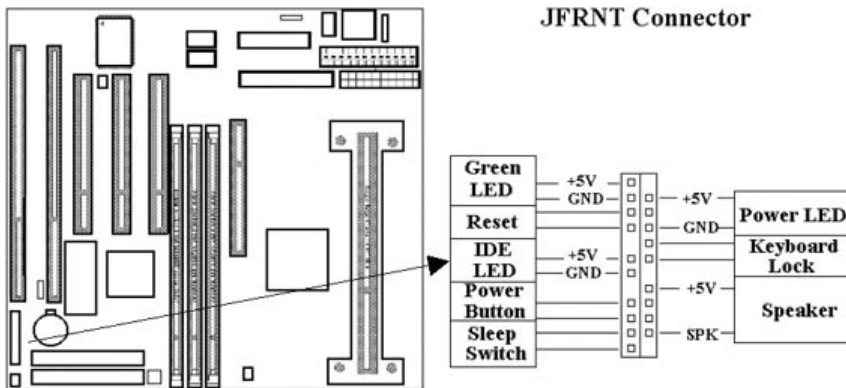
2.4.12 USB Connectors (Two 5-pin USB)

You can attach USB devices to the USB connector.

2.4.13 Panel Connection (24-pin JFRNT)

JFRNT1 Connector	Function
GREEN_LED	Suspend Mode LED
PWR_LED	Power LED
KEYLOCK	Keylock Switch
SPKR	Speaker
RESET	Reset Switch
IDE_LED	HDD LED
PWR_BTN	ATX Power Button Connector
SMI S/W	Sleep Switch

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



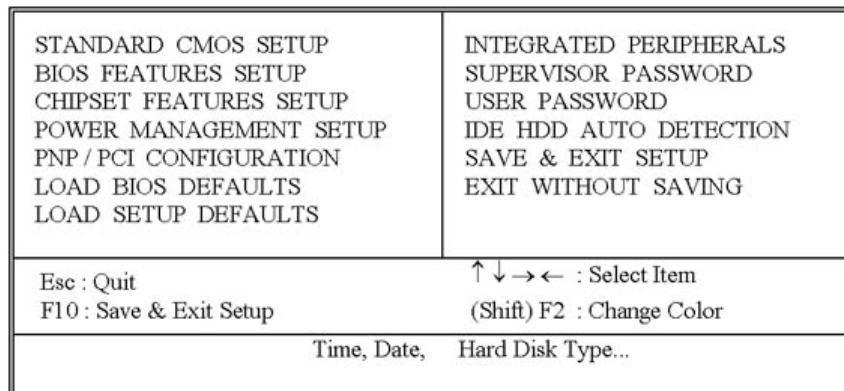
Chapter 3. BIOS Setup

3.1 CMOS Setup Utility

To activate CMOS Setup, press 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
ROM PCI/ISA BIOS (XXXXXXXX)
CMOS SETUP UTILITY
AWARD SOFTWARE, INC.



3.2 Standard CMOS Setup

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 Setup Screen
ROM PCI/ISA BIOS (XXXXXXXX)
STANDARD CMOS SETUP
AWARD SOFTWARE, INC.

Date (mm:dd:yy) : Wed, Dec 10 1997	
Time(hh:mm:ss) : 17 : 52 : 00	
HARD DISKS	TYPE SIZE CYLS HEAD PRECOMP LANDZ SECTOR MODE
Primary Master	: Auto 0 0 0 0 0 0 AUTO
Primary Slave	: Auto 0 0 0 0 0 0 AUTO
Secondary Master	: Auto 0 0 0 0 0 0 AUTO
Secondary Slave	: Auto 0 0 0 0 0 0 AUTO
Drive A	: 1.44M, 3.5in.
Drive B	: None
Floppy 3 Mode Support : Disabled	
Video	: EGA / VGA
Halt On	: All Errors
Base Memory : 640K Extended Memory : 31744K Other Memory : 384K <hr/> Total Memory : 32768K	
ESC : Quit	↑ ↓ → ← : Select Item
F1 : Help	(Shift) F2 : Change Color
	PU / PD / + / - : Modify

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 <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 Type "USER" 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.

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 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. BIOS FEATURES SETUP SCREEN
ROM PCI / ISA BIOS (XXXXXXXX)
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
CPU L2 Cache ECC Checking	: Enabled	D0000-D3FFF Shadow	: Disabled
Quick Power On Self Test	: Enabled	D4000-D7FFF Shadow	: Disabled
Boot Sequence	: C, A, SCSI	D8000-DBFFF Shadow	: Disabled
Swap Floppy Drive	: Disabled	DC000-DFFFF Shadow	: Disabled
Boot Up Floppy Seek	: Disabled		
Boot Up Numlock Status	: On		
Gate A20 Option	: Fast		
Typematic Rate Setting	: Disabled		
Typematic Rate (Chars/Sec)	: 6		
Typematic Delay (Msec)	: 250		
Security Option	: Setup	ESC : Quit	↑ ↓ → ← : Select Item
PCI/VGA Palette Snoop	: Disabled	F1 : Help	PU/PD/+/- : Modify
Assign IRQ For VGA	: Disabled	F5 : Old Values (Shift)	F2 : Color
OS Select For DRAM>64MB	: Non-OS2	F6 : Load BIOS Defaults	
Report No FDD For WIN 95	: Yes	F7 : Load Setup Defaults	

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 Internal/External Cache

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

3.3.3 CPU L2 Cache ECC Checking

Select "Enabled" to enable CPU L2 Cache ECC Checking.
Select "Disabled" to disable CPU L2 Cache ECC Checking.

3.3.4 Quick Power On Self Test

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

3.3.5 Boot Sequence

This option allows user to assign boot sequence of the system. Available options are A, C, D, E, F, CD-ROM, SCSI and LS120/ZIP.

3.3.6 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.

3.3.7 Boot Up Floppy Seek

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

3.3.8 Boot Up Numlock Status

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

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 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.

3.3.14 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.

3.3.15 Video BIOS Shadow

Video shadow copies BIOS code from slower ROM to faster RAM. BIOS can then execute from RAM.

3.3.16 C8000-CBFFF /DC000-DFFFF Shadow

Optional firmware will be copied from ROM to RAM. When this option is enabled.

3.4 Chipset Features Setup

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

Figure 3.4 CHIPSET FEATURES SETUP SCREEN

ROM PCI / ISA BIOS (XXXXXXXX)

CHIPSET FEATURES SETUP

AWARD SOFTWARE, INC.

Auto Configuration	: Enabled	CPU Host Clock	: AUTO
EDO DRAM Speed Selection	: 60ns	CPU Warning Temperature	: 50° C/122° F
EDO CAS# MA Wait State	: 2	Current CPU Temperature	: 36° C/96° F
EDO RAS# Wait State	: 1	Current System Temp.	: 26° C/78° F
SDRAM RAS-to-CAS Delay	: 3		
SDRAM RAS Precharge Time	: 3		
SDRAM CAS latency Time	: 3	Current CUFAN Speed	: 4017 RPM
SDRAM Precharge Control	: Enabled	Current ChassisFAN Speed	: 0 RPM
DRAM Data Integrity Mode	: Non-ECC	Current Vcc (V)	: 5.02 V
System BIOS Cacheable	: Enabled	Current Vio (V)	: 3.50 V
Video BIOS Cacheable	: Enabled	Current 12V	: 12.34 V
Video RAM Cacheable	: Enabled	Current Vcore(V)	: 2.83 V
8 Bit I/O Recovery Time	: 1		
16 Bit I/O Recovery Time	: 1	ESC : Quit	↑ ↓ → ← : Select Item
Memory Hole At 15M-16M	: Disabled	F1 : Help	PU/PD/+/- : Modify
Passive Release	: Enabled	F5 : Old Values	(Shift) F2 : Color
Delayed Transaction	: Disabled	F6 : Load BIOS Defaults	
AGP Aperture Size (MB)	: 64	F7 : Load Setup Defaults	

3.4.1 Auto Configuration

The optimum value for the chipset and CPU will be automatically loaded when enabled.

3.4.2 EDO DRAM Speed Selection

This option must match the EDO memory speed. If the installed memory is 60ns type, you should set it to "60".

3.4.3 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.

3.4.4 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.

3.4.5 DRAM Data Integrity Mode (This item is for P2BxB only)

The ECC algorithm has the ability to detect double bit error and automatically correct single bit error.

3.4.6 System BIOS Cacheable

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

3.4.7 Video BIOS Cacheable

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

3.4.8 Video RAM Cacheable

This item lets you cache Video RAM A000 and B000.

3.4.9 8 Bit I/O Recovery Time

This option specifies the length of a delay inserted between consecutive 8-bit I/O operations.

3.4.10 16 Bit I/O Recovery Time

This option specifies the length of a delay inserted between consecutive 16-bit I/O operations.

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 Passive Release

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

3.4.13 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.

3.4.14 AGP Aperture Size (MB)

Choose 4, 8, 16, 32, 64, 128, 256MB. Memory-mapped, graphics data structures can reside in the Graphics Aperture.

3.4.15 CPU Host Clock

Default is AUTO. Choose AUTO, 66, 75, 83, 100, 103,112 or 133Mhz for the external frequency of your CPU. You can select AUTO, 66, 75 or 83Mhz if your CPU is 66Mhz FSB and select AUTO, 100, 103, 112 or 133Mhz if the CPU is 100Mhz FSB.

The AUTO, 75, 83, 103, 112 and 133Mhz frequency are optional.

The frequency mapping table of the elements:

Ext. frequency	AGP	PCI	ISA	DIMM
66Mhz	66Mhz	33Mhz	8.33Mhz	66Mhz
75Mhz	75Mhz	37.5Mhz	8.33Mhz	75Mhz
83Mhz	83Mhz	41.6Mhz	8.33Mhz	83Mhz
100Mhz	66Mhz	33Mhz	8.33Mhz	100Mhz
103Mhz	68.6Mhz	34.3Mhz	8.33Mhz	103Mhz
112Mhz	74.6Mhz	37.3Mhz	8.33Mhz	112Mhz
133Mhz	88.67Mhz	44.33Mhz	8.33Mhz	133Mhz

Notice:

The 75, 83, 103, 112, 133Mhz frequency are over specification.

You must install 8ns or faster DIMM on board if you set 103 or 112Mhz as external frequency and must install 7ns or faster DIMM on board if you set 133Mhz as external frequency.

Warning: Over specification operations are not recommended.

3.4.16 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.

3.4.17 Current Chassis & CPU FAN Speed (xxxxRPM)

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

3.4.18 Vcc, Vio, 12V, Vcore (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.

3.5 Power Management Setup

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

Figure 3-5. POWER MANAGEMENT SETUP SCREEN
ROM PCI / ISA BIOS (XXXXXXXX)
POWER MANAGEMENT SETUP
AWARD SOFTWARE, INC.

Power Management	: Disabled	*** Reload Global Timer Events ***
PM Control by APM	: Yes	IRQ[3-7, 9-15], NMI
Video Off Method	: V/H	Primary IDE 0
	SYNC+Blank	Primary IDE 1
Video Off After	: Standby	Secondary IDE 0
MODEM Use IRQ	: 3	Secondary IDE 1
Doze Mode	: Disabled	Floppy Disk
Standby Mode	: Disabled	Serial Port
Suspend Mode	: Disabled	Parallel Port
HDD Power Down	: Disabled	
Throttle Duty Cycle	: 62.5%	
PCI/VGA Act-Monitor	: Enabled	
Soft-off by PWR-BTTN	: Instant-off	ESC : Quit
PowerOn by Ring	: Disabled	↑ ↓ → ← : Select Item
Resume by Alarm	: Disabled	F1 : Help
Wake up on LAN	: Disabled	PU/PD/+/- : Modify
IRQ 8 Break Suspend	: Disabled	F5 : Old Values (Shift) F2 : Color
		F6 : Load BIOS Defaults
		F7 : Load Setup Defaults

3.5.1 Power Management

Disable	Disable 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.

3.5.2 PM Control by APM

Select "Yes" if your system has Advanced Power Management (APM).

3.5.3 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.

3.5.4 Video Off After

This option allows your monitor to blank after your system went into Doze, Standby or Suspend mode. You can elect to not blank screen by select N/A. Default value is "Standby".

3.5.5 Doze Mode

When system is inactive after the predefined time limit, system performance will drop down. This is the first level of Power Management.

3.5.6 Standby Mode

System turns off the video signal and the fixed drives. This is the second level of Power Management.

3.5.7 Suspend Mode

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

3.5.8 HDD Power Down

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

3.5.9 PCI/VGA Act-Monitor

To enable or disable the detection of VGA activity for power down state transition.

3.5.10 Soft-off by PWR-BTTN (for ATX power supply)

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.

3.5.11 PowerOn by Ring (for ATX power supply)

This option lets you specify enable or disable external Modem Wake Up function. The function of power on through modem when system is off.

To select "Enabled" : To let the system to enter the environment of DOS or Windows 95/98 OS before system is power off. As long as there are any message through the Modem to enter the System during system is power off. The system will enable power on function.

3.5.12 Resume by Alarm (for ATX power supply)

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

3.5.13 Wake up on LAN (for ATX power supply)

This allows you to remotely power up your system through your network by sending a wake-up frame or signal. With this feature, you can remotely upload/download data to/from systems during off-peak hours. Set to Enabled to set this feature. Please refer to session 2.4.5 for more information.

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

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

3.5.15 IRQ 8 Break Suspend

To enable or disable the detection of IRQ 8 (RTC) event for power down state transition.

3.5.16 IRQ[3-7, 9-15], NMI

To enable or disable the detection of IRQ 3-7, IRQ 9-15 or NMI interrupt events for power down state transition.

3.5.17 Primary/Secondary IDE 0/1, Floppy Disk, Serial & Parallel Port

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

3.6 PNP/PCI Configuration Setup

Figure 3.6 PNP/PCI CONFIGURATION SETUP
ROM PCI / ISA BIOS (XXXXXXXX)
PNP/PCI CONFIGURATION
AWARD SOFTWARE, INC.

PNP OS Installed	: No	Used MEM base addr	:N/A
Resources Controlled By	: Manual	Used MEM Length	: 8K
Reset Configuration Data	: Disabled	Assign IRQ For USB	: Enabled
IRQ-3 assigned to	: PCI/ISA PnP		
IRQ-4 assigned to	: PCI/ISA PnP		
IRQ-5 assigned to	: PCI/ISA PnP		
IRQ-7 assigned to	: PCI/ISA PnP		
IRQ-9 assigned to	: PCI/ISA PnP		
IRQ-10 assigned to	: PCI/ISA PnP		
IRQ-11 assigned to	: PCI/ISA PnP		
IRQ-12 assigned to	: PCI/ISA PnP		
IRQ-14 assigned to	: PCI/ISA PnP		
IRQ-15 assigned to	: PCI/ISA PnP		
DMA-0 assigned to	: PCI/ISA PnP		
DMA-1 assigned to	: PCI/ISA PnP		
DMA-3 assigned to	: PCI/ISA PnP		
DMA-5 assigned to	: PCI/ISA PnP		
DMA-6 assigned to	: PCI/ISA PnP		
DMA-7 assigned to	: PCI/ISA PnP		
		ESC : Quit	↑ ↓ → ← : Select Item
		F1 : Help	PU/PD/+/- : Modify
		F5 : Old Values	(Shift) F2 : Color
		F6 : Load BIOS Defaults	
		F7 : Load Setup Defaults	

3.6.1 PNP OS Installed

This field allows you to use a Plug-and-Play (PnP) operating system.

Please set it as " No " if the operating system has no PnP function or to avoid reassigning the IRQs by the operating system.

3.6.2 Resources Controlled By

Default setting is "Auto". 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.

3.6.3 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.

3.6.4 IRQ-xx assigned to

If your ISA card is not PnP compatible and requires a special IRQ to support its function, set the selected IRQ-x assigned to "Legacy ISA". This setting informs the PnP BIOS to reserve the selected IRQ for the installed legacy ISA card.

3.6.5 DMA-x assigned to

If your ISA card is not PnP compatible and requires a special DMA channel to support its function, set the selected DMA channel to "Legacy ISA". This setting informs the PnP BIOS to reserve the selected DMA channel for the installed legacy ISA card.

3.6.6 Used MEM base addr

This item, in conjunction with the "Used MEM Length", lets you set a memory space for non-PnP compatible ISA card.

3.6.7 Assign IRQ For USB

Default is Enabled. You can disable this item when you do not attach any USB devices on board and need extra IRQ for other device. The yellow exclamation mark will be shown in System/Device Manager under Windows 95/98 if you disable this item. This is a normal status.

3.7 Integrated Peripherals

You can control Input and Output functions from this screen.

Figure 3-7 Integrated Peripherals
ROM PCI / ISA BIOS (XXXXXXXX)
INTEGRATED PERIPHERALS
AWARD SOFTWARE, INC.

IDE HDD Block Mode	: Enabled	UR2 Mode	: Normal
IDE Primary Master PIO	: Auto	Onboard Parallel Port	: 378/IRQ7
IDE Primary Slave PIO	: Auto	Parallel Port Mode	: ECP
IDE Secondary Master PIO	: Auto	ECP Mode Use DMA	: 3
IDE Secondary Slave PIO	: Auto		
IDE Primary Master UDMA	: Auto		
IDE Primary Slave UDMA	: Auto		
IDE Secondary Master UDMA	: Auto		
IDE Secondary Slave UDMA	: Auto		
On-Chip Primary PCI IDE	: Enabled		
On-Chip Secondary PCI IDE	: Enabled		
USB Keyboard Support	: Disabled		
Init Display First	: AGP		
Onboard FDC Controller	: Enabled		
Onboard Serial Port 1	: 3F8/IRQ4		
URI Mode	: Normal		
Onboard Serial Port 2	: 2F8/IRQ3		
		ESC : Quit	↑ ↓ → ← : Select Item
		F1 : Help	PU/PD/+/- : Modify
		F5 : Old Values	(Shift) F2 : Color
		F6 : Load BIOS Defaults	
		F7 : Load Setup Defaults	

3.7.1 IDE HDD Block Mode

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

3.7.2 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

3.7.3 IDE Primary & Secondary Master/Slave UDMA

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

3.7.4 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

3.7.5 USB Keyboard Support

This item lets you enable or disable the USB keyboard driver within the onboard BIOS. Please also enable "Assign IRQ For USB" item that in PNP/PCI Configuration menu when this item is enabled.

3.7.6 Init Display First

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

3.7.7 Onboard FDC Controller

Select "Enabled" to activate the on-board FDC
Select "Disabled" to activate an add-on FDC

3.7.8 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".

3.7.9 UR1 & 2 Mode Select

Select to activate the Infrared transfer function.

3.7.10 Onboard Parallel Port

Select address and interrupt for the Parallel port.

3.7.11 Parallel Port Mode

Select an operating mode for the parallel port. Mode options are SPP, EPP1.7, ECPEPP1.7, EPP1.9, ECP, and ECPEPP1.9.

3.7.12 ECP Mode Use DMA

Select a DMA channel if parallel port is set as "ECPEPP1.7", "ECP" or "ECPEPP1.9".

3.8 Load BIOS Defaults

This loads the standard BIOS default values. To select, highlight it and press the <Enter> key. Then press the <Y> and <Enter> keys to confirm. Otherwise, press the <N> key to cancel.

3.9 Load Setup Defaults

This feature loads the setup default values from BIOS default table. To select, highlight it and press the <Enter> key. Then press the <Y> and <Enter> keys to confirm. Otherwise, press the <N> key to cancel.

3.10 Supervisor/User Password

You can assign, modify, or cancel password settings. To modify, highlight "Supervisor Password" or "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 (BIOS FEATURES SETUP) to "System".

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

3.11 IDE HDD Auto Detection

If your system has an IDE hard drive, you can use this function to detect its parameters and enter them into the "Standard CMOS Setup" automatically.

This routine only detects one set of parameters. If your hard disk is formatted using different parameters than those detected, you have to enter the parameters manually. If the parameters listed do not match the ones used to format the disk, the information on that disk will not be accessible. If the auto-detected parameters displayed do not match those that are used for your drive, ignore them. Type N to reject the values and enter the correct ones manually from the Standard CMOS Setup screen.

3.12 Exit CMOS Setup Utility

Press the <F10> key to save the setup and exit. Press <ESC> key to exit without saving. Either saving or not saving modifications, screen will prompt user to confirm, and system will reboot on exit.



Declaration of Conformity

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

The following designated product

EQUIPMENT : MAIN BOARD

MODEL NO. : P2BXB

Which is the Class B digital device complies with 47 CFR Parts 2 and 15 of the FCC rules.

Operation is subject to the following two conditions : (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.



Declaration of Conformity

The following designated product

EQUIPMENT : MAIN BOARD

MODEL NO. : P2BXB

Complies with the essential protection requirements of Council Directive 89/336/EEC on the approximation of the laws of the Member States relating to electromagnetic compatibility. To the judgment of the product with regard to EMC according following regulations:

EMI TEST STANDARD

EMS TEST STANDARD



NSTL

NSTL Year 2000 Test Certification Letter

March 31, 1999

Testing Date : March 31, 1999

Certification Date : March 31, 1999

Certification Number : NCY2000-990331-010

P2B(Z)XB system has passed NSTL Year 2000 certification test program. The Year 2000 test program tests a personal computer for its ability to support the year 2000.

The Year 2000 certification test has been done under the following system configuration:

System Model Name :	P2B(Z)XB
Hardware Revision :	REV. 1.04
CPU Model :	Intel Pentium II 450/100MHz
On Board Memory / L2 Cache :	PC100 SDRAM DIMM 128MBx1 / 512KB
System BIOS :	Award Modular BIOS v4.51PG P2B(Z)XB VER:1.03 (1.0) 03/12/1999-i440BX-ALI513-2A69KTPBC-00