

# **P2BXA**

## **Motherboard**

### **User's Manual**

**Product Name: P2BXA**  
**Manual Revision: English, 1.3**



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## **Chapter 1. Introduction**

## 1.1 Product Overview

Thank you for purchasing the **P2BXA** motherboard. This motherboard utilizes **Intel's** latest technology, namely **440BX 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 & Power supply fan speed monitoring (optional).
- ⊙ BIOS Green feature function, and “Plug & Play” Flash ROM.

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## 1.3 Specifications

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**CPU** : -Supports Intel Celeron, Pentium II and Pentium III 66/100MHz Front Side Bus Processors.

**Chipset** : -Intel 440BX AGPset chipset

**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.  
-Supports up to a maximum of 768 MB system memory

**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, DMI support, 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 PS/2 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

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- 
- Supports RTC Wake-Up.
  - Supports Wake up on LAN.

**Expansion Slots** : -Four 32-bit PCI expansion slots  
-Three 16-bit ISA expansion slots  
-One 32-bit AGP expansion slot

**Others** : -Supports Hardware Doctor 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** : - 305 mm x 180 mm ATX Form factor

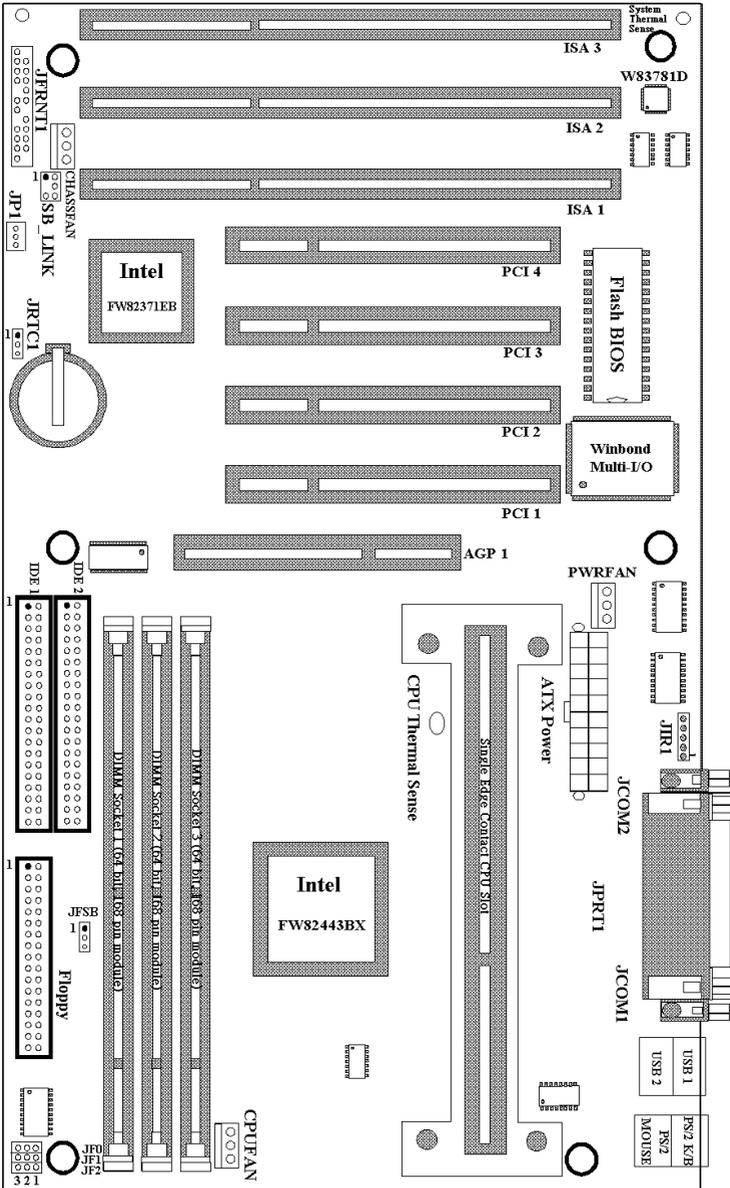
## 1.4 Content

The **P2BXA** motherboard box contains the following items:

- One P2BXA Motherboard
- One IDE Ribbon Cable
- One Floppy Ribbon Cable
- One Retention mechanism
- One Driver CD
- User's Manual & Quick Installation Chart

## 1.5 MotherBoard Layout

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# 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  
JRTC1

Green Jumper Caps : Sets the type and speed of CPU  
JF0, JF1, JF2

Red Jumper Caps : Sets the FSB frequency of CPU  
JFSB

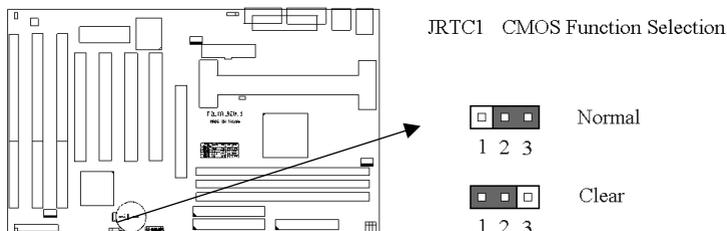
**WARNING:** Electronic parts are Static sensitive. To prevent damage to the computer and its parts please take the following measures.

- 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 )

JRTC1: 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 J3.
- ( 3 ) Remove Yellow Jumper Cap from JRTC1 ( 2-3 ) and put on JRTC1 ( 1-2 ) to remove the CMOS setting.
- ( 4 ) Remove Yellow Jumper Cap from JRTC1 ( 1-2 ) and put on JRTC1 ( 2-3 ) .
- ( 5 ) Connect ATX power cable back to connector J3.
- ( 6 ) Turn on the power.
- ( 7 ) While the system reboots, press <DEL> key to set the BIOS setup.

## 2.1.3 CPU Voltage Setting

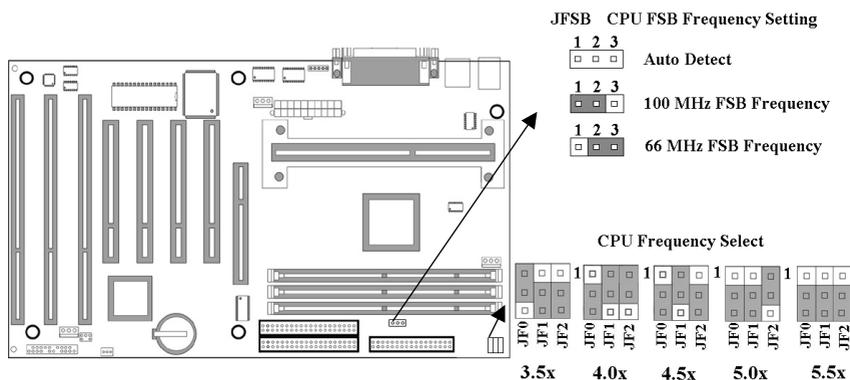
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The motherboard supports Pentium II VID function, the CPU core voltage is automatically detected, the range is from 1.3V to 3.5V.

## 2.1.4 CPU Frequency Selection ( Green Jumper Caps )

| <i>CPU Model</i> | <i>Ratio</i> | <i>JF0</i> | <i>JF1</i> | <i>JF2</i> |
|------------------|--------------|------------|------------|------------|
| 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        | 1-2        |
| 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, 566... etc. You can ignore the three jumpers, if you have this CPU on board. Please check with the CPU manufacturer or vendor for the CPU Ratio information.



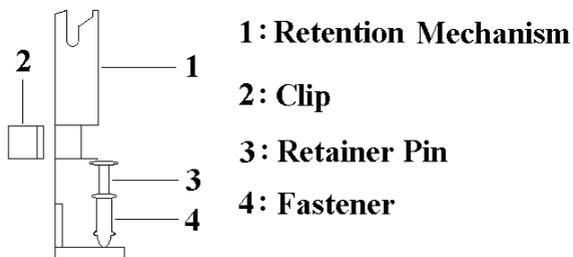
## 2.1.5 CPU FSB Frequency Setting ( Red Jumper Caps )

The JFSB jumper provides three FSB frequency settings 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:1.04 .

## 2.2 Installation of CPU

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

**Mount the Universal Retention Mechanism (URM) & Insert the Pentium II 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 :

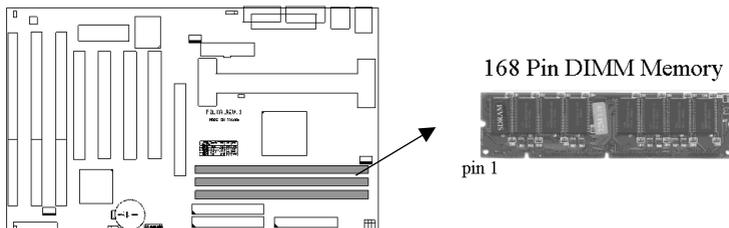
- (1) Same as step (1) of SECC.
- (2) Same as step (2) of SECC.
- (3) Same as step (3) of SECC.
- (4) Same as step (4) of SECC.
- (5) Snap in 2 clips into side windows of URM to secure SEPP CPU.

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

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**P2BXA** motherboard has 3x168-pin 64-bit Dual Inline Memory Module ( DIMM ) sockets divided into 3 banks. You can install 3.3V Extended Data Output ( EDO ) or Unbuffered Synchronous DRAM ( SDRAM ) memory. This will increase the system reliability.

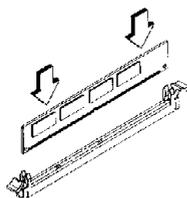


### 2.3.1 Installation of 168-pin DIMM ( Dual Inline Memory Module )

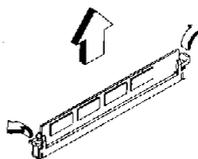
1. Before inserting the DIMM, make sure the pin1 of the DIMM matches with the pin1 on the DIMM socket.
2. Insert DIMM into the DIMM sockets at a 90-degree angle and press down.

### 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.



Install DIMM



Remove DIMM

### 2.3.3 Memory Configuration

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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.

| <i>DIMM Socket</i> | <i>DIMM Modules</i>                 |
|--------------------|-------------------------------------|
| <b>DIMM1</b>       | EDO/SDRAM 8, 16, 32, 64, 128, 256MB |
| <b>DIMM2</b>       | EDO/SDRAM 8, 16, 32, 64, 128, 256MB |
| <b>DIMM3</b>       | EDO/SDRAM 8, 16, 32, 64, 128, 256MB |

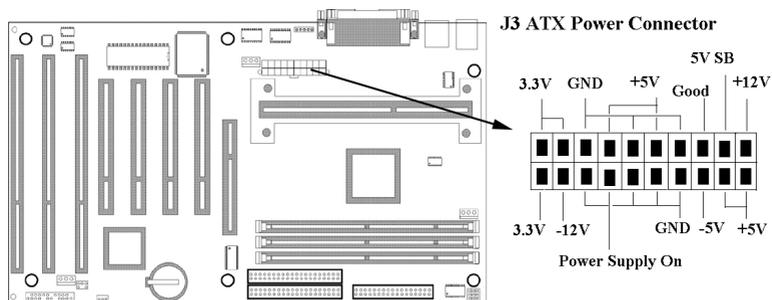
## 2.4 I/O Connections/Panel Connections

### I/O Connections

|          |                                           |
|----------|-------------------------------------------|
| J3       | ATX Power Connector                       |
| PWRFAN   | Power fan connector                       |
| CHASSFAN | Chassis fan connector                     |
| CPUFAN   | CPU fan connector                         |
| JIR1     | Infrared Connector ( Cable optional )     |
| JP1      | Wake up on LAN connector                  |
| SB_LINK  | for link with Creative's Sound Blaster 16 |
| JFLP1    | Floppy Disk Drive Connector               |
| IDE1, 2  | Primary/ Secondary IDE Connectors         |
| JMOUSE1  | PS/2 Mouse Port                           |
| JKB1     | PS/2 Keyboard Connector                   |
| JCOM1, 2 | Serial Ports 1 & 2                        |
| JPRT1    | Printer Port                              |
| USB1, 2  | USB Connector                             |

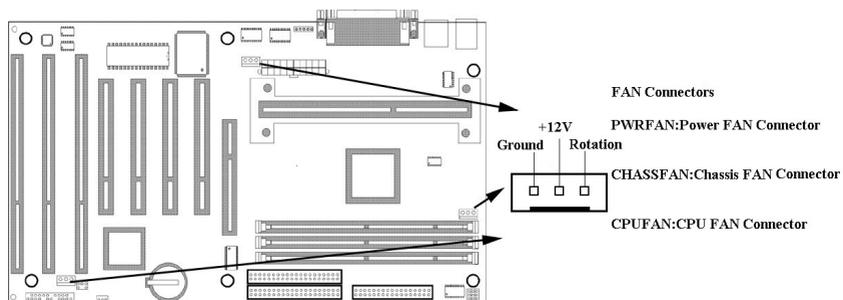
### 2.4.1 ATX Power Connector (20-pin J3)

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



## 2.4.2 Power, Chassis & CPU Fan Connectors (3-pin FAN)

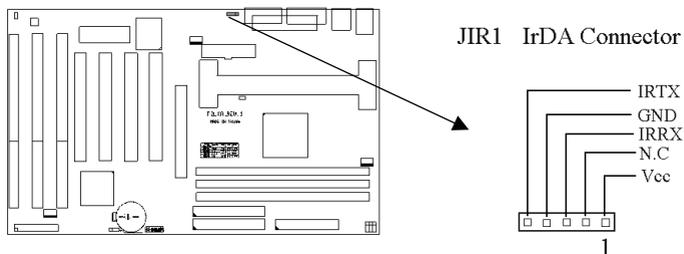
Connect the fan's plug to the board taking into consideration the polarity of the connector.



## 2.4.3 Infrared Connector (5-pin JIR1)

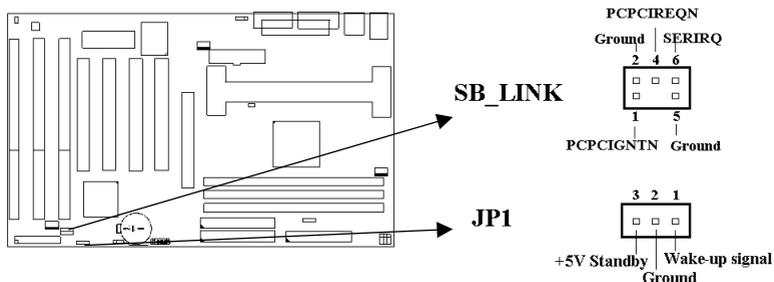
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This connector supports the optional wireless transmitting and receiving infrared module, with this module and application software such as Laplink or Win95 Direct Cable Connection, user can transfer files to or from their laptops, notebooks, PDA, 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 'UART Mode Select' in **Integrated Peripherals** to select whether UART is directed for use with COM2 or Infrared.



#### 2.4.4 Wake-up on LAN Connector (3-pin JP1)

The JP1 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.

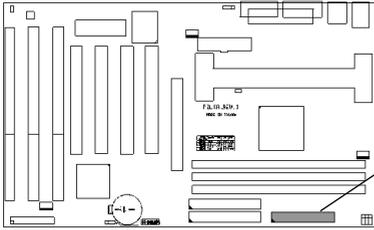


## 2.4.5 Creative's SB\_LINK Sound Connector (6-pin SB\_LINK)

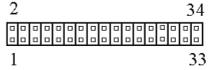
The SB\_LINK serves as a bridge between the mainboard and Creative's PCI sound card. This connector delivers Sound Blaster 16 compatibility for real-mode DOS games.

## 2.4.6 Floppy Disk Drive Connector (34-pin JFLP1)

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

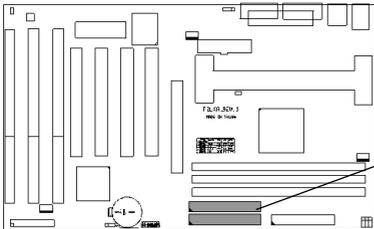


JFLP1 Floppy Drive Connector



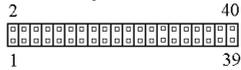
### 2.4.7 Primary/Secondary IDE Connector (Two 40-pin IDE)

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.



IDE Connectors

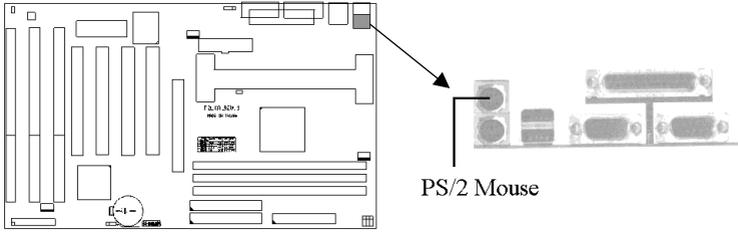
Secondary IDE Connector



Primary IDE Connector

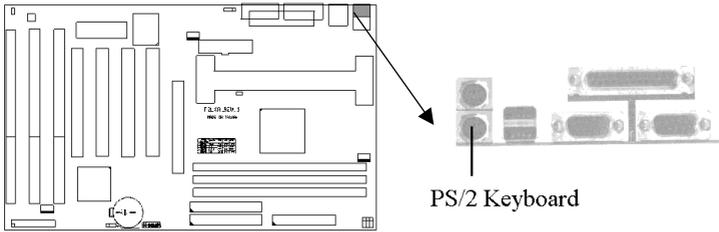
### 2.4.8 PS/2 Mouse Port (6-pin Mini-Din JMOUSE1)

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

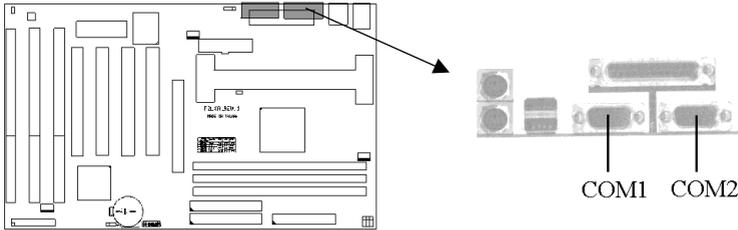


### 2.4.9 PS/2 Keyboard Connector (6-pin Mini-Din JKB1)

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.



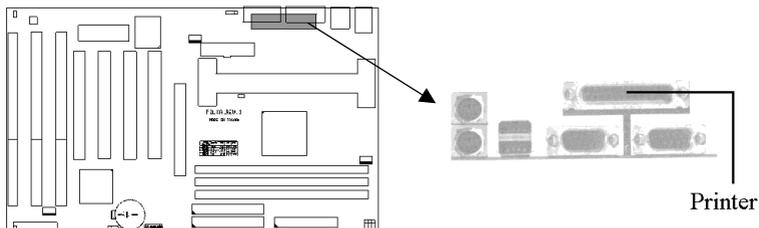
### 2.4.10 Serial Port (Two 9-pin D-type JCOM)



### 2.4.11 Printer Port (25-pin D-type JPRT1)

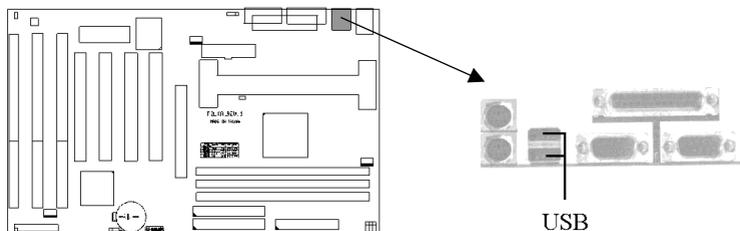
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You can enable the parallel port and choose the IRQ through the “Onboard Parallel Port” setting in Integrated Peripherals of the COMS SETUP UTILITY.



### 2.4.12 USB Connectors (Two 4-pin USB)

You can attach USB devices to the USB connector.

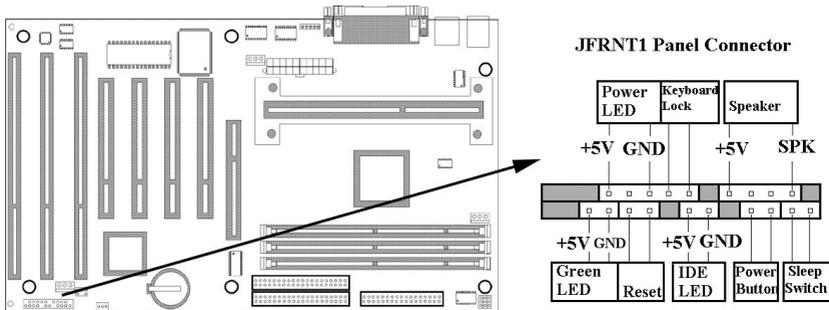


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### 2.4.13 Panel Connection (24-pin JERNT1)

| <b>JFRNT1 Connector</b> | <b>Function</b>            |
|-------------------------|----------------------------|
| GREENLED                | Suspend Mode LED           |
| PWRLED                  | Power LED                  |
| KEYLK                   | Keylock Switch             |
| SPKR                    | Speaker                    |
| RESET                   | Reset Switch               |
| IDELED                  | HDD LED                    |
| PWRBNT                  | ATX Power Button Connector |
| SMISW                   | 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 < 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

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

|                                                                                                                                                                        |                                                                                                                                      |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| STANDARD CMOS SETUP<br>BIOS FEATURES SETUP<br>CHIPSET FEATURES SETUP<br>POWER MANAGEMENT SETUP<br>PNP / PCI CONFIGURATION<br>LOAD BIOS DEFAULTS<br>LOAD SETUP DEFAULTS | INTEGRATED PERIPHERALS<br>SUPERVISOR PASSWORD<br>USER PASSWORD<br>IDE HDD AUTO DETECTION<br>SAVE & EXIT SETUP<br>EXIT WITHOUT SAVING |
| Esc : Quit<br>F10 : Save & Exit Setup                                                                                                                                  | ↑ ↓ → ← : Select Item<br>(Shift) F2 : Change Color                                                                                   |
| Time, Date, Hard Disk Type...                                                                                                                                          |                                                                                                                                      |

### 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

Video          : EGA / VGA
Halt On        : All Errors

Base Memory    : 640K
Extended Memory : 31744K
Other Memory   : 384K
Total Memory   : 32768K

ESC : Quit
F1  : Help
↑↓→← : Select Item
(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 <~~

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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              | : Enabled    | D0000-D3FFF Shadow                 | : Disabled            |
| Checking                      |              |                                    |                       |
| 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         |                                    |                       |
| Boot Up System Speed          | : High       |                                    |                       |
| 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    |
| OS Select For DRAM>64MB       | : Non-OS2    | F5 : Old Values (Shift) F2 : Color |                       |
| Report No FDD For WIN 95      | : Yes        | F6 : Load BIOS Defaults            |                       |
|                               |              | 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 Boot Up System Speed**

This option selects system boot up speed.

### **3.3.10 Typematic Rate Setting**

Select "Enabled" to configure "Typematic Rate" and "Typematic Delay" functions.

### **3.3.11 Typematic Rate**

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

### **3.3.12 Typematic Delay**

---

---

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

### **3.3.13 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.

### **3.3.14 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.

### **3.3.15 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 Video BIOS Shadow**

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

### **3.3.17 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 (XXXXXXXXXX)  
 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 CASx# MA Wait State  | : 2        | Current CPU Temperature  | : 36°C/96°F           |
| EDO RASx# Wait State     | : 2        | Current System Temp.     | : 26°C/78°F           |
| SDRAM RAS-to-CAS Delay   | : 3        |                          |                       |
| SDRAM RAS Precharge Time | : 3        |                          |                       |
| SDRAM CAS latency Time   | : 3        | Current PowerFAN Speed   | : 0 RPM               |
| SDRAM Precharge Control  | : Enabled  | Current ChassisFAN Speed | : 0 RPM               |
| DRAM Data Integrity Mode | : Non-ECC  | Current CPUFAN Speed     | : 4017 RPM            |
| System BIOS Cacheable    | : Enabled  | Vcore(V): 2.73V          | Vtt : 1.47V           |
| Video BIOS Cacheable     | : Enabled  | (V)                      |                       |
| Video RAM Cacheable      | : Enabled  | Vio(V) : 3.32V           | : 4.91V               |
| 8 Bit I/O Recovery Time  | : 1        | Vcc(V)                   |                       |
| 16 Bit I/O Recovery Time | : 1        | +12V : 12.09V            | - : -12.15V           |
| Memory Hole At 15M-16M   | : Disabled | 12V                      |                       |
| Passive Release          | : Enabled  | - 5V : - 5.09V           |                       |
| Delayed Transaction      | : Disabled | ESC : Quit               | ↑ ↓ → ← : Select Item |
| AGP Aperture Size (MB)   | : 64       | F1 : Help                | PU/PD/+/- : Modify    |
|                          |            | F5 : Old Values          | (Shift) F2 : Color    |
|                          |            | F6 : Load BIOS Defaults  |                       |
|                          |            | 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

---

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 or 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. The 133Mhz frequency is supported from PCB REV:1.04

**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 Power, 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 Vcore, Vtt, Vio, Vcc, +12V, -12V & -5V (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    |                                    |
| Video Off After       | : Standby     | Primary IDE 1                      |
| MODEM Use IRQ         | : 3           | Secondary IDE 0                    |
| Doze Mode             | : Disabled    | Secondary IDE 1                    |
| Standby Mode          | : Disabled    | Floppy Disk                        |
| Suspend Mode          | : Disabled    | Serial Port                        |
| HDD Power Down        | : Disabled    | Parallel Port                      |
| Throttle Duty Cycle   | : 62.5%       |                                    |
| VGA Active Monitor    | : Enabled     |                                    |
| Soft-off by PWR-BTTN  | : Instant-off |                                    |
| CPUFAN off In Suspend | : Enabled     |                                    |
| Resume by Ring        | : Disabled    | ESC : Quit                         |
|                       |               | ↑ ↓ → ← : Select Item              |
| Resume by Alarm       | : Disabled    | F1 : Help                          |
|                       |               | PU/PD/+/- : Modify                 |
| Wake up on LAN        | : Disabled    | F5 : Old Values (Shift) F2 : Color |
| IRQ 8 Break Suspend   | : Disabled    | 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 VGA Active Monitor**

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

### **3.5.10 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.

### **3.5.11 Resume by Ring**

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**

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**

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.

---

### **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     | ESC : Quit                   ↑↓→←: Select Item |
| DMA-5 assigned to : PCI/ISA PnP     | F1 : Help                   PU/PD/+/- : Modify |
| DMA-6 assigned to : PCI/ISA PnP     | F5 : Old Values       (Shift) F2 : Color       |
| DMA-7 assigned to : PCI/ISA PnP     | 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  | Onboard Parallel Port    | : 378/IRQ7         |
| IDE Primary Master PIO    | : Auto     | Parallel Port Mode       | : ECP + EPP        |
| IDE Primary Slave PIO     | : Auto     | ECP Mode Use DMA         | : 3                |
| IDE Secondary Master PIO  | : Auto     | EPP Mode Select          | : EPP1.9           |
| 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      | ESC : Quit               | ↑↓→←: Select Item  |
| KBC input Clock           | : 8MHz     | F1 : Help                | PU/PD/+/- : Modify |
| Onboard FDC Controller    | : Enabled  | F5 : Old Values (Shift)  | F2 : Color         |
| Onboard Serial Port 1     | : 3F8/IRQ4 | F6 : Load BIOS Defaults  |                    |
| Onboard Serial Port 2     | : 2F8/IRQ3 | F7 : Load Setup Defaults |                    |
| UART Mode Select          | : Normal   |                          |                    |

### 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.

### **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 UART 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, EPP, ECP and ECP+EPP.

### **3.7.12 ECP Mode Use DMA**

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

## **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**

**Declaration No. : D850504**

**MAR. 12, 1998**

**The following designated product**

**EQUIPMENT : MAIN BOARD**

**MODEL NO. : P2BXA**

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. : P2BXA**

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

November 3, 1998

Testing Date : November 3, 1998

Certification Date : November 3, 1998

Certification Number : NCY2000-981103-001

P2BXA 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          | : P2BXA                                                                                     |
| Hardware Revision          | : 102                                                                                       |
| CPU Model                  | : Intel Pentium II 233 MHz                                                                  |
| On Board Memory / L2 Cache | : SDRAM DIMM 32MBx1 / 512KB                                                                 |
| System BIOS                | : Award Modular BIOS v4.51PG P2BXA<br>VER:1.05<br>10/20/1998-i440BX-W977TF-<br>2A69KTPAC-00 |

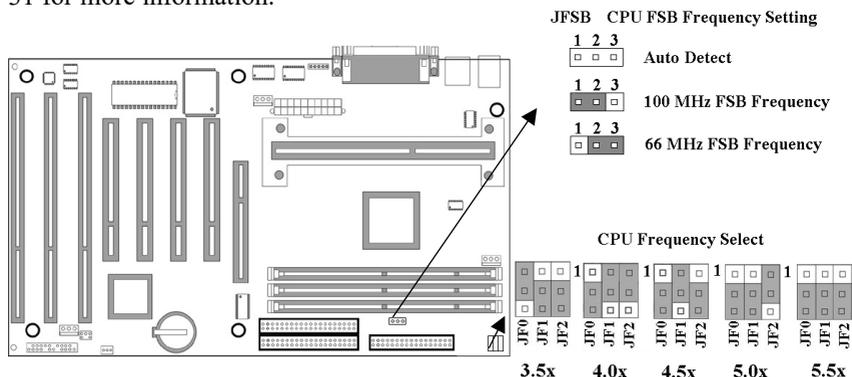
# Quick Installation Chart

For your convenience, this chart lists all the CPUs supported by P2BXA and their corresponding jumper setting.

| <i><b>CPU Model</b></i> | <i><b>Ratio</b></i> | <i><b>JF0</b></i> | <i><b>JF1</b></i> | <i><b>JF2</b></i> |
|-------------------------|---------------------|-------------------|-------------------|-------------------|
| 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               | 1-2               |
| 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, 566... etc. You can ignore the three jumpers, if you have this CPU on board. Please check with the CPU manufacturer or vendor for the CPU Ratio information.

\*\*\* The CPU CLK over specification operation is optional, please see page 31 for more information.



## Panel Connectors

| <b>JFRNT1 Connector</b> | <b>Function</b>            |
|-------------------------|----------------------------|
| GREENLED                | Suspend Mode LED           |
| PWRLED                  | Power LED                  |
| KEYLK                   | Keylock Switch             |
| SPKR                    | Speaker                    |
| RESET                   | Reset Switch               |
| IDELED                  | HDD LED                    |
| PWRBNT                  | ATX Power Button Connector |
| SMISW                   | Sleep Switch               |