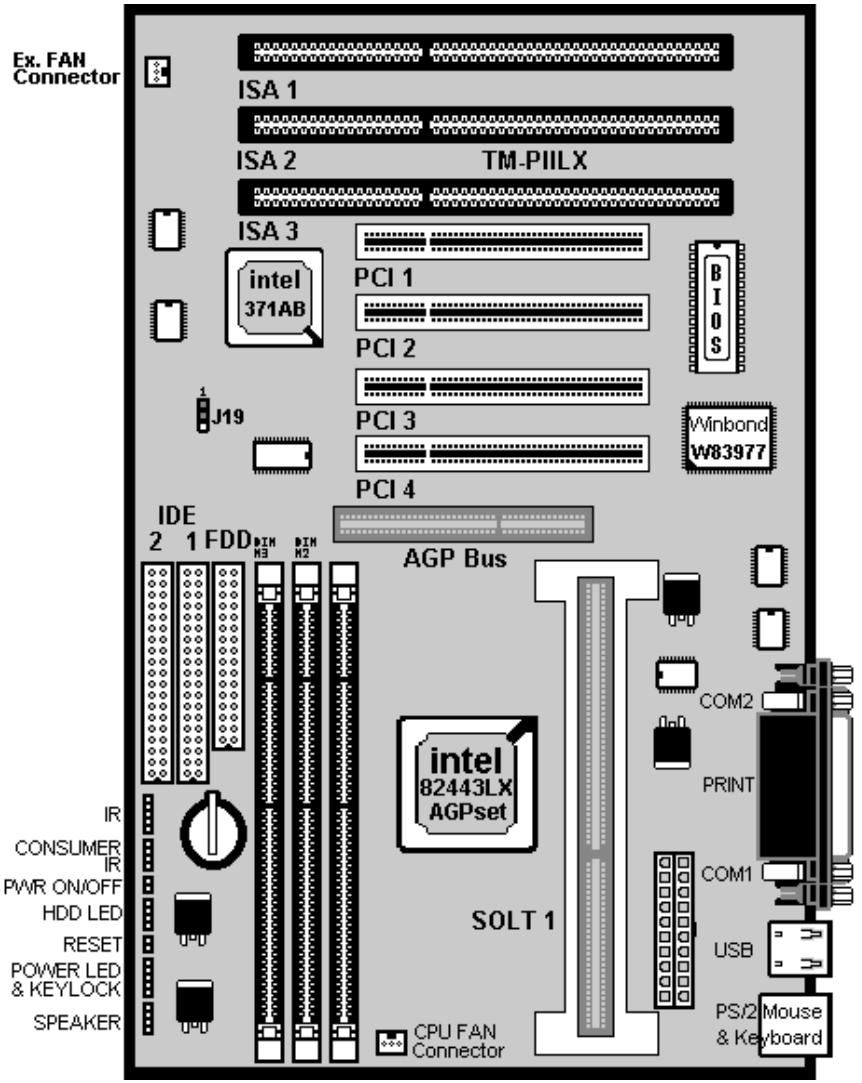
Introduction

A. Specifications

System Chipset	Intel 82440 LX chipset.
CPU	Intel Pentium II processors, support 233/266/300/333/366 MHz.
Memory	Expandable to 384MB (3 banks) with three 168-pin DIMM socket (support 3.3 V SDRAM RAM).
I/O	Winbond 83977, two high speed 16550 compatible serial ports, one Multi-Mode. Parallel Port support SPP/EPP/ECP standard mode. Two onboard PCI IDE Ports (32 bit data transfer). LS-120/ ZIP FDD, IrDA/ ASK IR/ Consumer IR. Dual USB ports Support two 360/720KB/1.2/1.44/2.88MB floppy disk devices. One PS/2 Mouse port.
BIOS	Award System BIOS installed in socket (Flash and PnP).
Expansion slots	One AGP slot, four PCI Master Slots and three 16-bit ISA Slots.
Voltage	Auto 1.8V-3.5V
Dimension	4-layer PCB, size (300mm x 190mm).
Others	Support BIOS setting CPU type (Jumper-less), CPU Auto Temperature Sensor & Music Alarm, voltage monitor and CPU Fan monitor , Bus Master/ Ultra DMA/33, ACPI, AGP Bus, Keyboard Power On, PS/2 Mouse Power On, Modem Ring On.

Setup Guide

A. Layout Diagram



B. Note to Installing the Mainboard

Touch the non-coated area on the computer case or use a grounded wire to release static electricity before you open the anti-static electricity bag and take out the mainboard. It's likely to damage the mainboard components while taking out the board without first releasing static electricity. During installation, avoid touching the components on the mainboard.

C. CPU Voltage and Frequencies

ROM PCI/ISA BIOS (2A69JTJ9)
CHIPSET FEATURE SETUP
AWARD SOFTWARE, INC

Auto Configuration	: Enabled	CPU Speed	: Manual
DRAM Speed Selection	: 60ns	CPU Ratio	: X 3.5
MA Wait State	: Slow	CPU Frequency	: 66 MHz
EDO RAS# To CAS# Delay	: 3	Auto Detect DIMM/ PCI Clk	: Enabled
EDO RAS# Precharge Time	: 3	Spread Spectrum	: Disabled
EDO DRAM Read Burst	: x333	CPU Warning Temperature	: Disabled
EDO Dram Write Burst	: x222	Current CPU Temperature	: 28℃/ 82℉
CPU-To-PCI IDE Posting	: Enabled	Current SYSFAN Speed	:4285 RPM
System BIOS Cacheable	: Enabled	Current CPUFAN Speed	:4000 RPM
Video BIOS Cacheable	: Enabled	Current Vin3 (V)	: 2.88V
Video RAM Cacheable	: Disabled		
8 Bit I/O Recovery Time	: 1		
16 Bit I/O Recovery Time	: 1		
Memory Hole At 15M-16M	: Disabled		
Passive Release	: Enabled	Esc : Quit ↑↓→← Selection : Item	
Delayed Transaction	: Disabled	F1 : Help PU/PD/+/- : Modify	
AGP Aperture Size (MB)	: 64	F5 : Old Values (Shift) F2 : Color	
SDRAM RAS-to CAS Delay	: Fast	F6 : Load BIOS Default	
SDRAM RAS Precharge Time	: Fast	F7 : Load Setup Default	
SDRAM CAS latency Time	: 3		

Dear Customers:
Thank you for your patronage of our products. The board you bought is a **jumper-less** mainboard. The ratio and frequency of the CPU shall be set in BIOS and the working voltage for the CPU shall be automatically detected. Please read carefully the following instructions:

1. Power on the installed system and press the "DEL" key to enter BIOS Setup. Select "Chipset Features Setup" and press <Enter>.

2. Select "CPU Speed" and press "PgUp" or "PgDn" to set the CPU ratio and frequency. The available options are: Intel PII 233MHz (66X3.5), 266MHz (66X4), 300MHz (66X4.5), 333MHz (66X5), 366MHz (66X5.5) and "Manual".

To set the CPU manually, please note the following:

CPU Speed: "Manual" (you can manually set the CPU ratio and frequency)
CPU Ratios: x3.5, x4, x4.5, x5, x5.5
CPU Frequency: 50MHz, 60MHz, 66MHz, 68MHz, 75MHz, 83MHz

Several options are provided for the CPU external clock. You are recommended to restore to the default setting in case of instability when the external clock exceeds 66MHz.

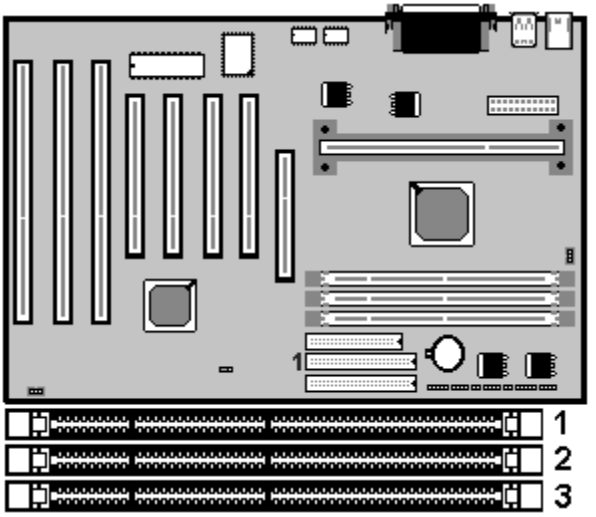
NOTE: System failure may occur if the CPU frequency is set incorrectly. To solve this problem. Press the "Insert" key on the keyboard to clear the previously set frequency (i. c., restore the default frequency), and then reboot the system.

- Switch voltage is applied, making the temperature lower and voltage steadier.
- You don't need to adjust Voltage in Pentium II mainboard. It will automatically send out one VID (Voltage Identification) to the mainboard power supply to ask for the voltage it needs.
- The CPU type default setting is Intel Pentium II 266MHz=66 MHz * 4.

Intel Pentium II CPU family

CPU	Ext. clk	Ratio	L1 cache	L2 cache	Package
Intel Pentium II – 450MHz	100MHz	X4.5	32KB	512KB	SECC 1
Intel Pentium II – 400MHz	100MHz	X4	32KB	512KB	SECC 1
Intel Pentium II – 350MHz	100MHz	X3.5	32KB	512KB	SECC 1/ 2
Intel Pentium II – 300MHz	100MHz	X3	32KB	512KB	SECC 1
Intel Pentium II – 333MHz	66MHz	X5	32KB	512KB	SECC 1
Intel Pentium II – 300MHz	66MHz	X4.5	32KB	512KB	SECC 1
Intel Pentium II – 266MHz	66MHz	X4	32KB	512KB	SECC 1
Intel Pentium II – 233MHz	66MHz	X3.5	32KB	512KB	SECC 1

D. EDO/ SDRAM Installation Procedures:

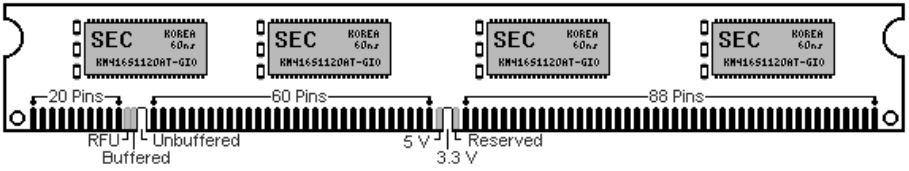


- A 168-pin DIMM can support up to 384MB 3.3V EDO/ SDRAM.
- Default setting: 3.3V. (Only)
- To avoid compatibility and reliability problems, you are recommended to test the 168-pin SDRAMs before buying them since the PCB specifications differ.
- First, verify the working voltage of the EDO/ SDRAM module in either DIMM socket.
- P2LX only supports 3.3V EDO/ SDRAM module. The following illustration shows you the difference between 3.3V and 5V to ensure your correct selection of 3.3V DIMM module for using.
- You can set up the BIOS "Chipset Feature Setup" to the best working condition basing on the type of EDO/ SDRAM you are using.
- The BIOS DRAM default setting is 60 ns. Change the BIOS "Chipset Feature Setup" default setting to 50ns for better performance, if the chipset is marked 50ns.

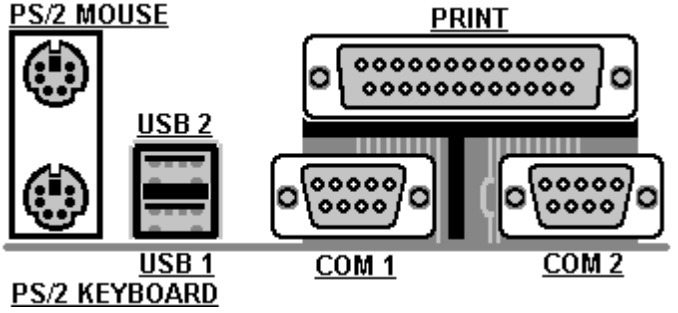
- Change nothing if EDO RAM is used. BIOS automatically detects the RAM type.

- MEMO for Installing System:
  ⊕ Concerning memory setup, you can find how to from **"Chipset Feature Setup"** under BIOS setup. However, to avoid system unstable or system hang, user without engineering background is not suggested to change BIOS set up.
  ⊕ If system boot failure, please clean DIMM socket **(with clean oil)** or polish **Gold-Finger** of DRAM with **soft eraser**, and try again.

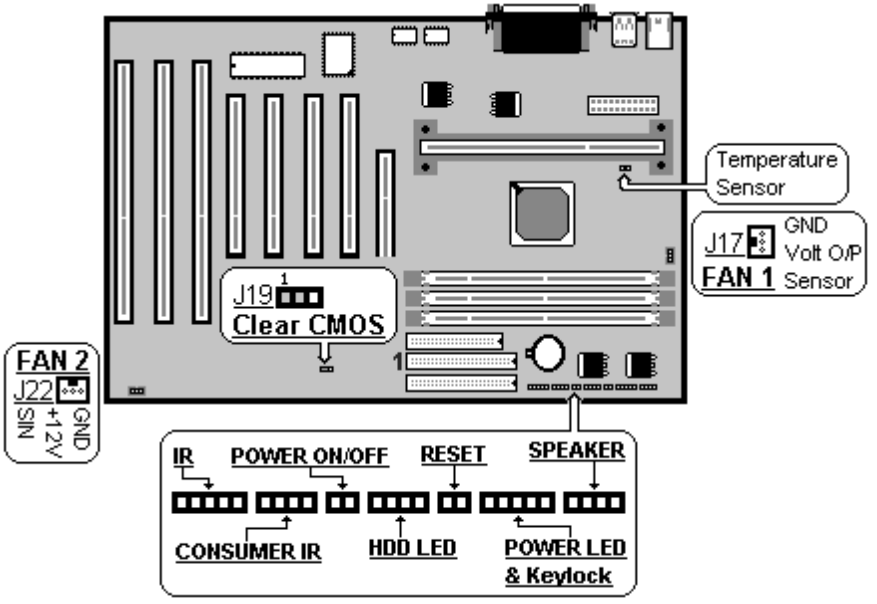
- The Dual Inline Memory Module (DIMM) must be 3.3 Volt and Unbuffered Synchronous DRAM (SDRAM) 8MB, 16MB, 32MB or 64MB. The following illustration shows the type of DIMM Module.



168-PIN SDRAM DIMM Notch Key Definitions



E. Other Jumper Settings



- **Speaker:**
  Connect to the system's speaker for beeping.
- **Keylock:**
  Keyboard lock switch and Power LED connector.
- **Reset:**
  Short to restart system.
- **HDD LED:**
  LED ON when on board PCI IDE hard disk activates.

- **POWER SW (FOR ATX POWER SUPPLY):**
  The button should be a momentary switch that is normally open. Pushing the ATX Power Switch will immediately change the system status. Before or during "POST", you need to hold the button for four seconds in order to turn off the system.
- **J19: Clear CMOS**

Turn off the system and short pins 2-3 to clear CMOS. Then short pins 1-2 before turning it on.

J19	
1-2	Normal operation(Default).
2-3	for clearing CMOS Data.

- **CPU Cooler Fan connector**
  This is the connector for CPU cooler. Never use the jumper to short the connector. Serious damages caused this way will not be warrantied.

F. Note to BIOS Update

Do not update the BIOS if no abnormalities occur. However, if BIOS update is needed, consult your dealer first. Prior to updating your BIOS, you are recommended to save the original BIOS values.

1. Download the AWARD BIOS Flash Utility file (**Awdflash.exe**)

2. Download the BIOS file used by your mainboard (**e.g., LXV110N.BIN**)

3. **Reboot** your system (but do not run **Himem.sys** and **Emm386.exe**) to
   execute the new BIOS program.

4. Execute these commands: **Awdflash LXV110N.BIN**

5. When this message displays: "**Do you want to save BIOS (Y/N)?**"
   Type "**N**"

6. When this message displays: "**Are you sure to program (Y/N)?**"
   Type "**Y**"

7. **Turn off** power to your system to clear the CMOS data.

8. Turn on the power to test if your system is running normal.

G. Keyboard/ PS/2 Mouse Power On and MODEM Ring on

- **To make sure the 5VSB signal nearly to 750mA (Amperage) from ATX Power Supply, or if your keyboard consuming power than 300mA, it's better to upgrade your ATX Power Supply to 1A for working perfectly.**
- If you are going to use the function of keyboard and PS/2 mouse power on, then, the power-switch will be becoming useless automatically (unable to be used).

ROM PC/ISA BIOS
INTEGRATED PERIPHERALS
AWARD SOFTWARE, INC.

IDE HDD Block Mode	: Enabled	Onboard Serial Port 2	: 2F8H / IRQ3
IDE Primary Master PIO	: AUTO	UART Mode Select	: Normal
IDE Primary Slave PIO	: AUTO		
IDE Secondary Master PIO	: AUTO	Onboard Parallel Port	: 378H/IRQ 7
IDE Secondary Slave PIO	: AUTO	Parallel Port Mode	: ECP+EPP
IDE Primary Master UDMA	: AUTO	ECP Mode Use DMA	: 3
IDE Primary Slave UDMA	: AUTO	EPP Mode Select	: EPP 1.9
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 AGP Display First	: Enabled		
POWER ON Function	**: Hot KEY**		
		Esc : Quit	↑↓→← Selection : Item
Hot Key Power ON	**: Ctrl-F12**	F1 : Help	PU/PD/+/- : Modify
KBC input clock	: 8MHz	F5 : Old Values	(Shift)F2 : Color
Onboard FDC Controller	: Enabled	F6 : Load BIOS Default	
Onboard Serial Port 1	: 3F8H / IRQ4	F7 : Load Setup Default	

Hot KEY	When user select this option, it will show another line lines as Hot Key Power ON: **Ctrl-F(1/2/3/4/5/6/7/8/9/10/11/12)** select any you like. After power off, if user key in the "Ctrl-F?", it will power on the system.
PS/2 Mouse Left	It will power on the system by PS/2 mouse left.

PS/2 Mouse Right	It will power on the system by PS/2 mouse Right.
Button Only	Only the power button can power on the system.

- **Modem Ring On Function Operation:**

ROM PCI / ISA BIOS (2A69JTJ9)
POWER MANAGEMENT SETUP
AWARD SOFTWARE, INC

Power Management	: Disabled
PM Control by APM	: No
Video Off Method	: V/H SYNC+Blank
Video Off After	: Standby
MODEM Use IRQ	: 3
Doze Mode	: Disabled
Standby Mode	: Disabled
Suspend Mode	: Disabled
HDD Power Down	: Disabled
Throttle Duty Cycle	: 62.5%
ZZ Active in Suspend	: Disabled
VGA Active Monitor	: Enabled
Soft-Off by PWR-BTTN	: Instant-Off
CPUFAN Off In Suspend	: Enabled
Resume by Ring	**: Enabled**
IRQ 8 Clock Event	: Disabled

** Reload Global Timer Events **

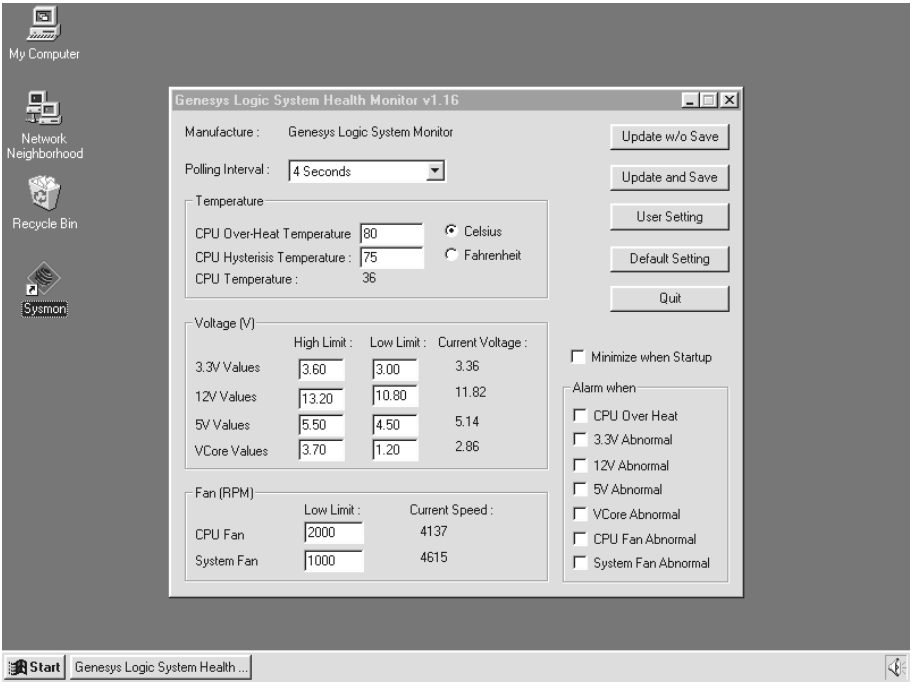
IRQ[3-7, 9-15], NMI	: Enabled
Primary IDE 0	: Disabled
Primary IDE 1	: Disabled
Secondary IDE 0	: Disabled
Secondary IDE 1	: Disabled
Floppy Disk	: Disabled
Serial Port	: Enabled
Parallel Port	: Disabled

Esc : Quit ↑↓→←Selection Item
F1 : Help PU/PD/+/- : Modify
F5 : Old Values (Shift) F2 : Color
F6 : Load BIOS Default
F7 : Load Setup Default

1. Have an external MODEM connected to COM 1 or COM 2.
2. Enter BIOS setup.
3. Select Power Management Setup.
4. **This number of MODEM use IRQ has to be set as same as the IRQ of Serial Port which you are connecting in. Please set in N/A if you are not going to use the function of MODEM ring on.**
5. **Resume by Ring: Enable.**
6. Save BIOS setup and Reboot.
7. Booting from DOS, Windows, or Windows 95.
8. Turn off the system by:
   a. ATX-Power Switch
   b. Windows 95 Software Power Off
9. System Waiting for Modem Ring On

When Modem Ringing Signal Active, System will wake-up.

H. System Health Monitor



- **Fan Monitoring:**
  There are two fan connectors, one is for CPU, the other can be a housing fan. When the fans speed is working abnormal, there will be warning **(Speaker Alarm)** through application software such as SM10(Small Icon for System Monitoring) to notify user. The fan monitoring function is implemented by connecting fan to 3-pin fan connector FAN1/ FAN2 and installing SM10. Referring to Page 11 (System Health Monitor).

- **CPU Thermal Protection:**

TM-P2LX implements special thermal protection circuits. When **temperature** is higher than a predefined value, there will be warning (Speaker Alarm) through application software such as SM10 (Small Icon for System Monitor) to notify user. It's automatically implemented by BIOS or SMD10, no hardware installation is needed. Referring to Page11 (System Health Monitor).
This mainboard also reserves an option to use special CPU cooling Fan. With **Thermal Sensor** on it. The CPU thermal sensor should be connected to **J16**.

- **System Voltage Monitoring:**
  TM-P2LX is featured with a voltage monitoring system. When you turn on your system, this smart design will keep on monitoring your system working voltage. If any of voltage is over the component's standard, there will be Speaker Alarm though application software SM10 (Small Icon for System Monitor) for a warning to user. System voltage monitoring function monitors 5V, 12V, 3.3V and CPU voltage. It's automatically implemented by BIOS and SM10, no hardware installation is needed. Referring to Page 11 (System Health Monitor).