

PLE01

USER'S MANUAL

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PLE01

USER'S MANUAL

M/B For VIA C3

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Manual Revision Information

Reversion	Revision History	Date
5.0	5th Edition	March 2002

Item Checklist

- PLE01 Motherboard
- Cable for IDE/Floppy
- CD for motherboard utilities
- PLE01 User's Manual

Chapter 1

Introduction of PLE01 Motherboard

1-1 Feature of motherboard

The PLE01 motherboard is design for use VIA's processors, which utilize the Socket 370 design and the memory size expandable to 1GB (using 256Mb technology). This motherboard integrated VGA, Audio, and PC Health Function with Micro ATX form factor to support total solution for today's computer market.

This motherboard using VIA Apollo PLE133 VT8601A and VT82C686B chipset, whose 133MHz front side bus delivers a clear upgrade path to the future generation of 133MHz processors and PC-100/PC-133 SDRAM. The PLE01 motherboard offers ULTRA DMA 66/100 (ATA 100) to provide speedier HDD throughout that boosts overall system performance.

The PLE01 also has an integrated AC'97 2.1 CODEC on board which is fully compatible with Sound Blaster Pro[®] that gives you the best sound quality and compatibility. VIA VT8601A chipset also includes integrated 3D Graphic Acceleration to provide a lower cost video display solution.

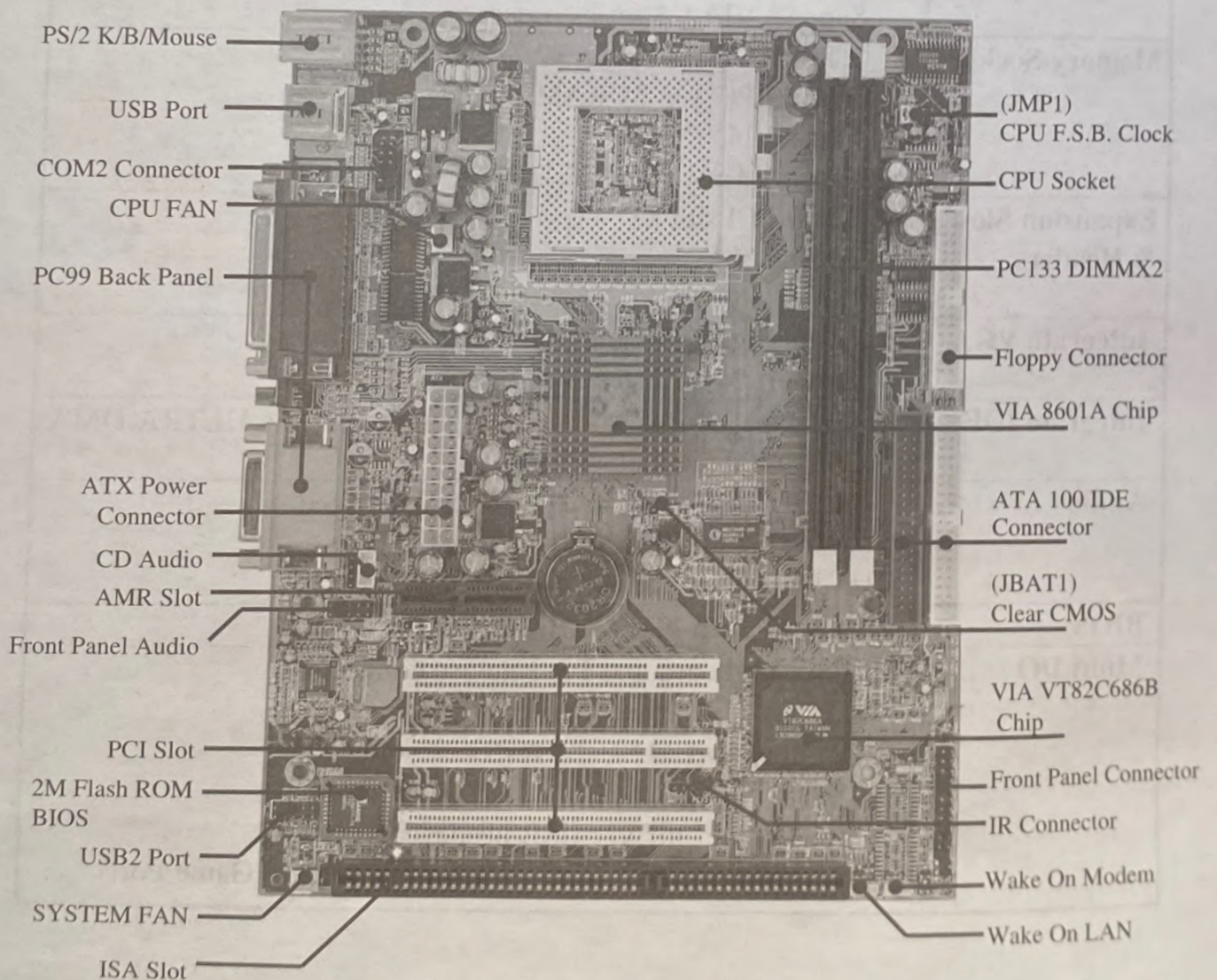
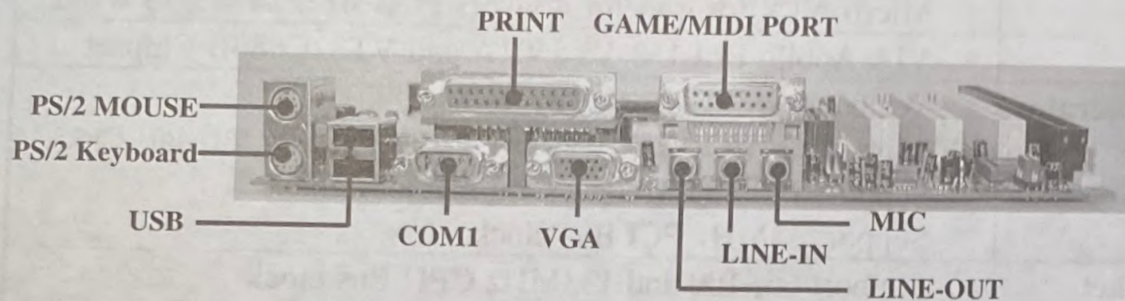
With USB control as well as capability of expanding to 4 USB connectors support four USB devices, the PLE01 meet future USB demand. Moreover, it has built-in hardware monitor function to monitor and protect your computer.

This motherboard provides high performance & meets future specification demand. It is really wise choice for your computer.

1-2 Specification

Spec	Description
Design	* Micro ATX form factor 4 layers PCB size: 24.4 x 19.0 cm
Chipset	* VIA Apollo PLE133 VT8601A and VT82C686B Chipset
Clock Generator	* Winbond W83194BR-39B Support 66/100/133MHz system Bus Clock (CPU Bus Clock) Support 100/133 MHz system memory clock Support 33MHz PCI Bus clock
CPU Socket	* Support 66, 100 and 133MHz CPU Bus clock * Support VIA C3 series processors
Memory Socket	* 168-pin DIMM socket x2 * PC-100/PC-133 SDRAM * Expandable to 1GB * Support 3.3V SDRAM DIMM
Expansion Slot & Headers	* 32-bit PCI slot x3 * AMR slot x1 * ISA slot x1
Integrate VGA	* 64-bit Signal Cycle 2D/3D Graphic Engine * Support 2 to 8 Mbytes of Frame Buffer
Integrate IDE	* 2 channel of Bus Master IDE port supporting ULTRA DMA 33/66/100 mode devices
Audio	* AC'97 Digital Audio controller integrated * AC'97 Audio CODEC on board * Audio driver and utility included
BIOS	* Award 2Mb Flash ROM
Multi I/O	* PS/2 keyboard and PS/2 mouse connectors * Floppy disk drive connector x1 * Parallel port x1 * Serial port x2 * USB connector x2, USB header x2 * Audio connector (Line-in, Line-out/MIC & Game Port)

1-3 Layout Diagram & Jumper Setting



Jumpers

Jumper	Name	Description	Page
JMP1	CPU Front Side Bus Frequency Setting	2x4-pin Block	p.6
JBAT1	CMOS RAM Clear	3-pin Block	p.7

Connectors

Connector	Name	Description	Page
ATX	ATX Power Connector	20-pin Block	p.12
PS1	PS/2 Mouse & PS/2 Keyboard Connector	6-pin Female	p.12
USB1	USB Port Connector	4-pin Connector	p.12
PRINT	Parallel Port Connector	25-pin Female	p.12
VGA1	VGA Port Connector	15-pin Female	p.12
AGC	Audio/Game Connector	3 phone jack + 15-pin Connector	p.12
COM1	Serial Port COM1 Connector	9-pin Connector	p.13
FDD	Floppy Driver Connector	34-pin Block	p.13
IDE1	Primary IDE Connector	40-pin Block	p.13
IDE2	Secondary IDE Connector	40-pin Block	p.14

Headers

Header	Name	Description	Page
COM2	COM2 Headers	9-pin Block	p.14
USB2	USB Port Headers	9-pin Block	p.14
HDLED	IDE activity LED	2-pin Block	p.15
TRBLED	Turbo LED switch	2-pin Block	p.15
RESET	Reset switch lead	2-pin Block	p.15
SPKE	Speaker connector	4-pin Block	p.15
PWLED	Power LED	2-pin Block	p.15
PWRIN	Power switch	2-pin Block	p.15
JFAN1, FAN2	FAN Speed Headers	3-pin Block	p.16
J1	IR infrared module Headers	5-pin Block	p.16
CDIN, CDIN-2	CD Audio-In Headers	4-pin Block	p.16
WOL1	Wake On LAN Connector	3-pin Block	p.17
WOM1	Wake On Modem Connector	3-pin Block	p.17

Expansion Sockets

Socket/Slot	Name	Description	Page
ZIF Socket 370	CPU Socket	370-pin FC-PGA/PPGA CPU Socket	p.8
DIMM1, DIMM2	DIMM Module Socket	168-pin DIMM Module Socket	p.9
PCI1, PCI2, PCI3	PCI Slot	32-bit PCI Local Bus Expansion slots	p.10
AMR1	AMR Slot	Support Audio Modem Riser Card	

Chapter 2

Hardware installation

2-1 Hardware installation Steps

Before using your computer, you had better complete the following steps:

1. Check motherboard jumper setting
2. Install CPU and Fan
3. Install System Memory (DIMM)
4. Install Expansion cards
5. Connect IDE and Floppy cables, Front Panel /Back Panel cable
6. Connect ATX Power cable
7. Power-On and Load Standard Default
8. Reboot
9. Install Operating System
10. Install Driver and Utility

2-2 Checking Motherboard's Jumper Setting

(1) CPU F.S.B. Clock setting: JMP1

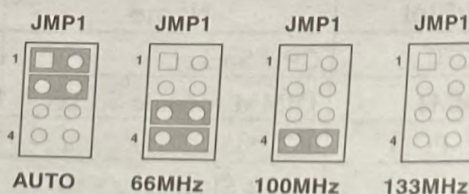
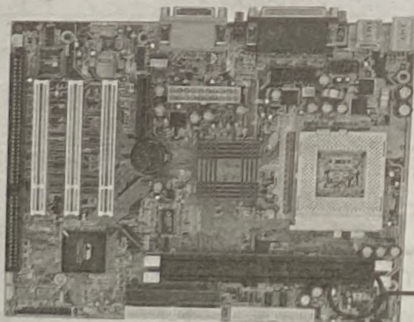
The motherboard's CPU Front Side Bus clock adjusted through jumper JPM1. This motherboard is jumper-less design. When you set JMP1 to AUTO, no jumper or switch are needed, you can then set CPU Frequency through the BIOS setup.

BIOS Setup > Miscellaneous Control > Host clock at Next Boot is

Table as below:

CPU (MHz)	1-2	3-4	5-6	7-8
AUTO	ON	ON	OFF	OFF
66 MHz	OFF	OFF	ON	ON
100 MHz	OFF	OFF	OFF	ON
133 MHz	OFF	OFF	OFF	OFF

* Default



CPU F.S.B. Clock Setting

(2) CMOS RAM Clear (3-pin): JBAT1

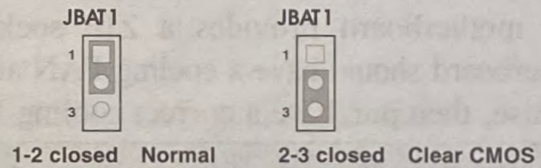
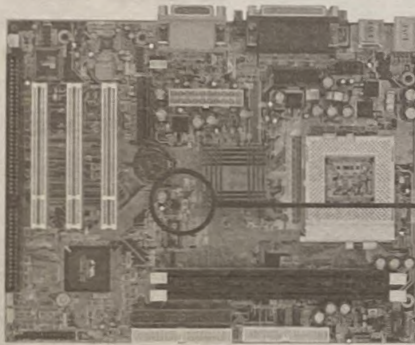
A battery must be used to retain the motherboard configuration in CMOS RAM short 1-2 pins of JBAT1 to store the CMOS data.

To clear the CMOS, follow the procedure below:

1. Turn off the system and unplug the AC power
2. Remove ATX power cable from ATX power connector
3. Locate JBAT1 and short pins 2-3 for a few seconds
4. Return JBAT1 to its normal setting by shorting pins 1-2
5. Connect ATX power cable back to ATX power connector

Note: When should clear CMOS

1. Troubleshooting
2. Forget password
3. After over clocking system boot fail



CMOS RAM Clear Setting

2-3 Install CPU

2-3-1 About C3 CPU

This motherboard supports VIA C3 CPU.



2-3-2 Setting CPU Bus Clock Jumper

Setting the CPU Front Side Bus Frequency

The motherboard uses jumper JMP1 for the front side bus frequency setting as shown from the table below:

CPU (MHz)	1-2	3-4	5-6	7-8	
AUTO	ON	ON	OFF	OFF	* Default
66 MHz	OFF	OFF	ON	ON	
100 MHz	OFF	OFF	OFF	ON	
133 MHz	OFF	OFF	OFF	OFF	

Example: Using a C3 CPU with front side bus frequency of 133MHz and PC-133 SDRAM module, the setting of JPM1 will be all OFF. Will form CPU BUS CLOCK be 133MHz.

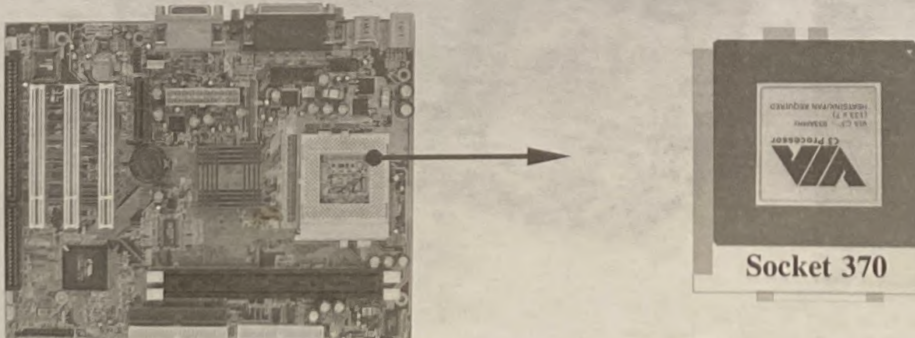
For experience user looking for over clocking, please refer to sec 2-3-4

2-3-3 Install CPU

This motherboard provides a ZIF socket 370. The CPU that comes with the motherboard should have a cooling FAN attached to prevent overheating. If this is not the case, then purchase a correct cooling FAN before you turn on your system.

WARNING! Be sure that there is sufficient air circulation across the processor's heatsink and CPU cooling FAN is working correctly, otherwise it may cause the processor and motherboard overheat and damage, you may install an auxiliary cooling FAN, if necessary.

To install a CPU, first turn off your system and remove its cover. Locate the ZIF socket and open it by first pulling the level sideways away from the socket then upward to a 90-degree angle. Insert the CPU with the correct orientation as shown below. The notched corner should point toward the end of the level. Because the CPU has a corner pin for two of the four corners, the CPU will only fit in the orientation as shown.



When you put the CPU into the ZIF socket. No forces require to insert of the CPU, then press the level to locate position slightly without any extra force.

2-3-4 Over clock Running

WARNING! This section is for experienced motherboard installer only. Over clocking can result in system instability or even shortening life of the processor.

After setting the Jumper JMP1 you can choose over clock running by BIOS CMOS SETUP UTILITY. When you entered CMOS SETUP UTILITY, choose "Miscellaneous Control" you will see the screen as below then.

You can choose the situation you want to try.

CMOS Setup Utility - Copyright(C) 1984-2001 Award Software
Miscellaneous Control

CyrixIII Clock Ratio	Default	Item Help
Auto Detect DIMM/PCI Clock	Enabled	
Spread Spectrum	Disabled	Menu Level >
** Current Host Clock is 66MHz **		
Host Clock at Next Boot is [66MHz/33MHz]		
** Current DRAM Clock is 66Mhz **		
DRAM Clock at Next Boot is [66]MHz		
↑ ↓ → ← : Move Enter : Select + / - / PU / PD : Value F10 : Save ESC : Exit F1 : General Help F5 : Previous Values F6 : Optimized Defaults F7 : Standard Defaults		

In "Host Clock at Next Boot is" item you can step by step change CPU Host Clock to approach over clocking.

2-4 Install Memory

This motherboard provides two 168-pin DUAL INLINE MEMORY MODULES (DIMM) sites for memory expansion available from minimum memory size over 32MB to maximum memory size of 1GB SDRAM.

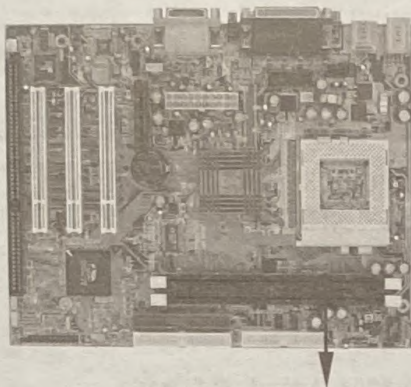
Valid Memory Configurations

DIMM1	DIMM2	System Accept or Not	Total Memory
			Min. ~ Max.
DS/SS		Accept	32MB~512MB
	DS/SS	Accept	32MB~512MB
DS/SS	DS/SS	Accept	32MB~1GB

DS : Double Sided DIMM SS : Single Sided DIMM

NOTE! Make sure the total installed memory does not exceeds 1GB, otherwise the system may hang during startup.

Generally, installing SDRAM modules to your motherboard is very easy, you can refer to figure 2-4 to see what a 168-Pin PC100 & PC133 SDRAM module looks like.



DIMM1 (BANK0+BANK1)
DIMM2 (BANK2+BANK3)

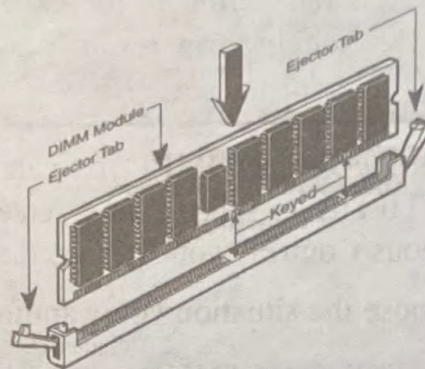


Figure 2-4

NOTE! When you install DIMM module fully into the DIMM socket the eject tab should be locked into the DIMM module very firmly and fit into its indentation on both sides.

WARNING! If the SDRAM CLOCK is set at 133MHz, you must use only PC133-compliant DIMMs. When this motherboard operate at 133Mhz, most system will not even boot if non-compliant SDRAM modules are used because of the strict timing issues, if your DIMM are not PC133-compliant, set the SDRAM clock to 100MHz to ensure system's stability.

2-5 Expansion Cards

WARNING! Turn off your power when adding or removing expansion cards or other system components. Failure to do so may cause severe damage to both your motherboard and expansion cards.

2-5-1 Procedure For Expansion Card Installation

1. Read the documentation for your expansion card and make any necessary hardware or software setting for your expansion card such as jumpers.
2. Remove your computer's cover and the bracket plate on the slot you intend to use.
3. Align the card's connectors and press firmly.
4. Secure the card on the slot with the screen you remove above.
5. Replace the computer system's cover.
6. Set up the BIOS if necessary.
7. Install the necessary software driver for your expansion card.

2-5-2 Assigning IRQs For Expansion Card

Some expansion cards need an IRQ to operate. Generally, an IRQ must exclusively assign to one use. In a standard design, there are 16 IRQs available but most of them are already in use.

Standard Interrupt Assignments

IRQ	Priority	Standard function
0	1	System Timer
1	2	Keyboard Controller
2	N/A	Programmable Interrupt
3 *	11	Communications Port (COM2)
4 *	12	Communications Port (COM1)
5 *	13	Sound Card (sometimes LPT2)
6	14	Floppy Disk Controller
7 *	15	Printer Port (LPT1)
8	3	System CMOS/Real Time Clock
9 *	4	ACPI Mode when enabled
10 *	5	IRQ Holder for PCI Steering
11 *	6	IRQ Holder for PCI Steering
12 *	7	PS/2 Compatible Mouse Port
13	8	Numeric Data Processor
14 *	9	Primary IDE Channel
15 *	10	Secondary IDE Channel

* These IRQs are usually available for ISA or PCI devices.

2-5-3 Interrupt Request Table For This Motherboard

Interrupt request are shared as shown the table below:

	INT A	INT B	INT C	INT D
PCI slot1	Not Shared	—	—	—
PCI slot2	—	—	—	Shared
PCI slot3	—	—	Not Shared	—
Onboard LAN	—	Shared	—	—
Onboard VGA	—	—	—	—
AC97/MC97	—	Shared	—	—
Onboard USB	—	—	—	Shared

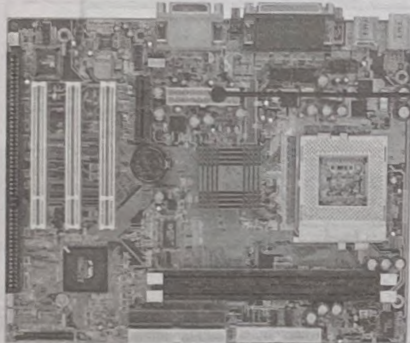
IMPORTANT! If using PCI cards on shared slots, make sure that the drivers support "Shared IRQ" or that the cards don't need IRQ assignments. Conflicts will arise between the two PCI groups that will make the system unstable or cards inoperable.

2-6 Connectors, Headers

2-6-1 Connectors

(1) **Power Connector (20-pin block) : ATX**

ATX Power Supply connector. This is a new defined 20-pins connector that usually comes with ATX case. The ATX Power Supply allows to use soft power on momentary switch that connect from the front panel switch to 2-pins Power On jumper pole on the motherboard. When the power switch on the back of the ATX power supply turned on, the full power will not come into the system board until the front panel switch is momentarily pressed. Press this switch again will turn off the power to the system board.



PIN	ROW2	ROW1
1	3.3V	3.3V
2	-12V	3.3V
3	GND	GND
4	Soft Power On	5V
5	GND	GND
6	GND	5V
7	GND	GND
8	-5V	Power OK
9	+5V	+5V (for Soft Logic)
10	+5V	+12V

(2) **PS/2 Mouse & PS/2 Keyboard Connector: PS1**

If you are using a PS/2 mouse, you must purchase an optional PS/2 mouse set which connects to the 5-pins block and mounts to an open slot on your computer's case.

(3) **USB Port connector: USB1**

The connectors are 4-pins connector that connect USB devices to the system board.

(4) **Parallel Port Connector (25-pin female): PRINT**

Parallel Port connector is a 25-pin D-Subminiature Receptacle connector. The On-board Parallel Port can be disabled through the BIOS SETUP. Please refer to Chapter 3 "INTEGRATED PERIPHERALS SETUP" section for more detail information.

(5) **VGA Connector (15-pin female): VGA**

This connector is for on board VGA display connection only. If you insert any external VGA card in PCI slot, you should have the connection to your VGA card's connector. And you have to set "Init Display First" to PCI under Integrated Peripherals option in BIOS Setup Utility to get display from PCI VGA card.

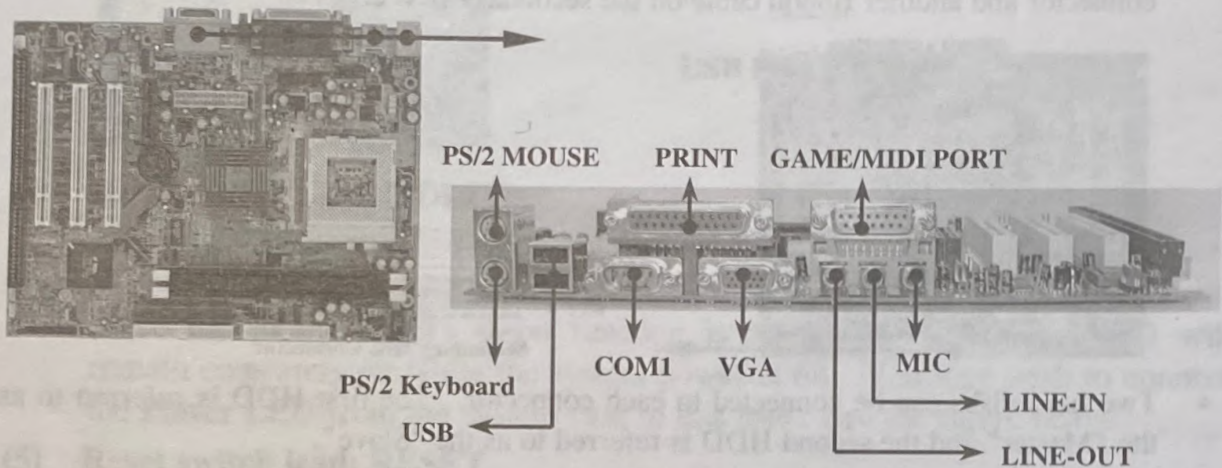
(6) **Audio and Game Connector: AGC**

This Connector are 3 phone Jack for LINE-OUT, LINE-IN, MIC and a 15-pin D-Subminiature Receptacle Connector for joystick/MIDI Device.

- Line-out :** Audio output to speaker
Line-in : Audio input to sound chip
MIC : Microphone Connector
Game/MIDI : For joystick or MIDI Device

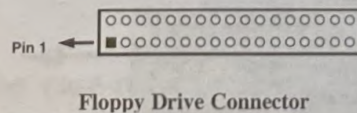
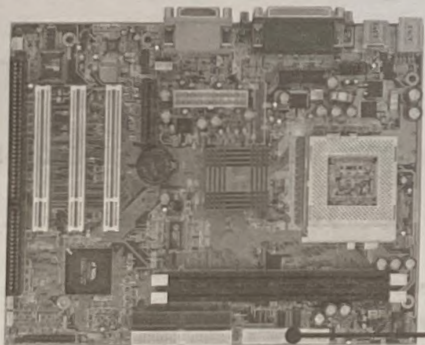
(7) **Serial Port COM1: COM1**

COM1 is the 9-pin D-Subminiature mail connector. The On-board serial port can be disabled through BIOS SETUP. Please refer to Chapter 3 "INTEGRATED PERIPHERALS SETUP" section for more detail information.



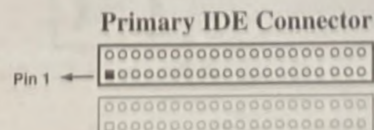
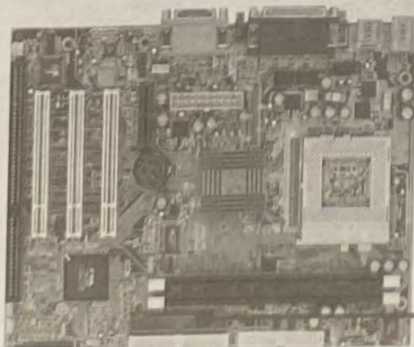
(8) **Floppy Drive Connector (34-pin block): FDD**

This connector supports the provided floppy drive ribbon cable. After connecting the single plug end to motherboard, connect the two plugs at other end to the floppy drives.



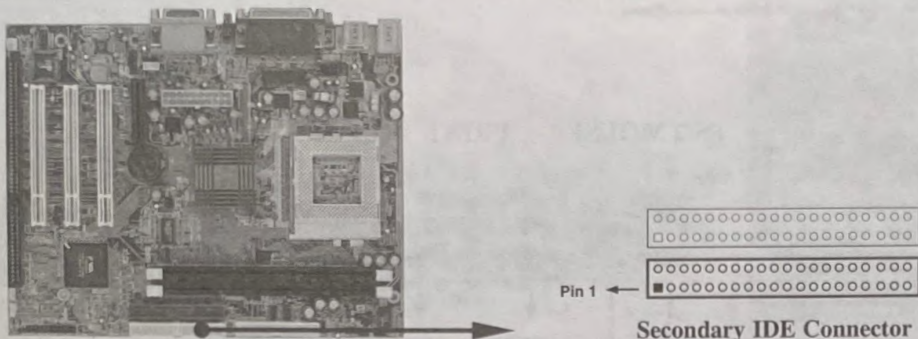
(9) **Primary IDE Connector (40-pin block): IDE1**

This connector supports the provided IDE hard disk ribbon cable. After connecting the single plug end to motherboard, connect the two plugs at other end to your hard disk(s). If you install two hard disks, you must configure the second drive to Slave mode by setting its jumpers accordingly. Please refer to the documentation of your hard disk for the jumper settings.



(10) Secondary IDE Connector (40-pin block): IDE2

This connector connects to the next set of Master and Slave hard disks. Follow the same procedure described for the primary IDE connector. You may also configure two hard disks to be both Masters using one ribbon cable on the primary IDE connector and another ribbon cable on the secondary IDE connector.

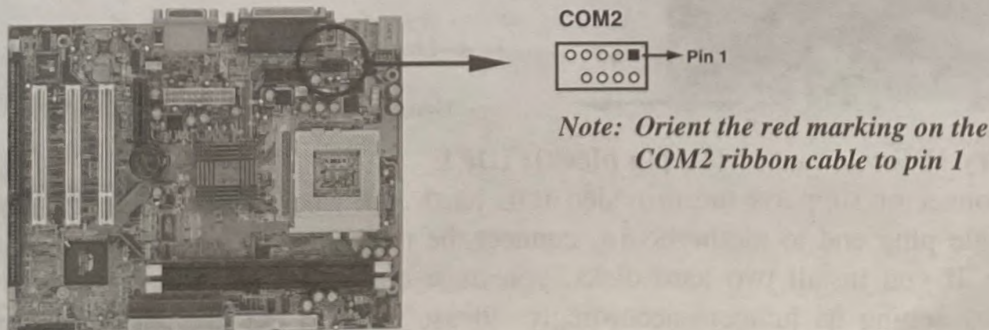


- Two hard disks can be connected to each connector. The first HDD is referred to as the “Master” and the second HDD is referred to as the “Slave”.
- For performance issues, we strongly suggest you don’t install a CD-ROM or DVD-ROM drive on the same IDE channel as a hard disk. Otherwise, the system performance on this channel may drop.

2-6-2 Headers

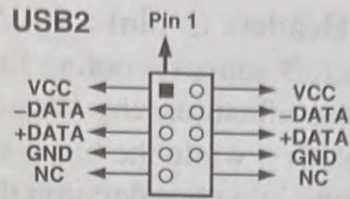
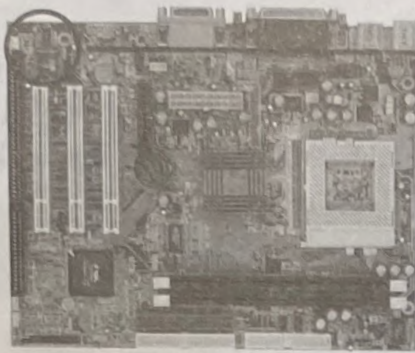
(1) COM2 Headers (9-pin header) : COM2

This board has another serial port COM2, it come with cable providing serial port COM2.



(2) USB Port Headers (9-pin header): USB2

These headers are used for connecting the additional USB port plug. By attaching an option USB cable, your can be provided with two additional USB plugs affixed to the back panel.



USB Port Headers

(3) **IDE Activity LED: HDLED**

This connector connects to the hard disk activity indicator light on the case.

(4) **Turbo LED switch: TRBLED**

Since the motherboard's turbo function is always on. The turbo LED will remain constantly on while the system power is on. You may wish to connect the Power LED from the system case to this lead. See the figure below.

(5) **Reset switch lead: RESET**

This 2-pin connector connects to the case-mounted reset switch for rebooting your computer without having to turn off your power switch. This is a preferred method of rebooting in order to prolong the life of the system's power supply. See the figure below.

(6) **Speaker connector: SPKE**

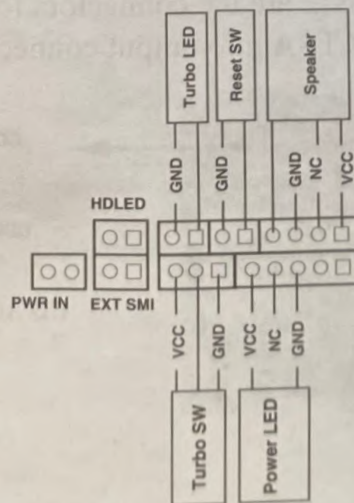
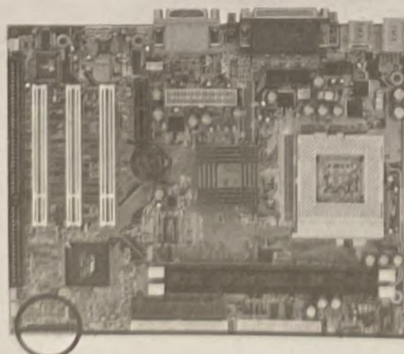
This 4-pin connector connects to the case-mounted speaker. See the figure below.

(7) **Power LED: PW LED**

The Power LED is light on while the system power is on. Connect the Power LED from the system case to this pin.

(8) **Power switch: PWR IN**

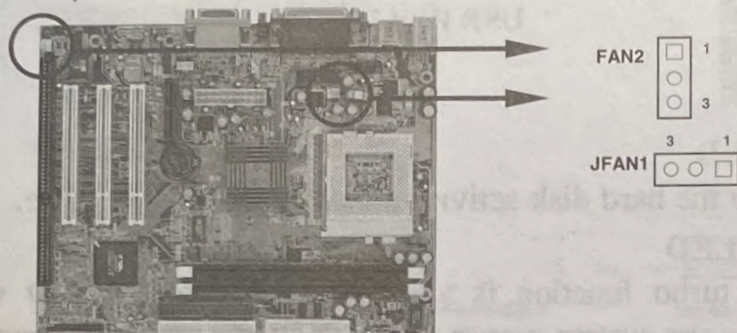
This 2-pin connector connects to the case-mounted power switch to power ON/OFF the system.



System Case Connections

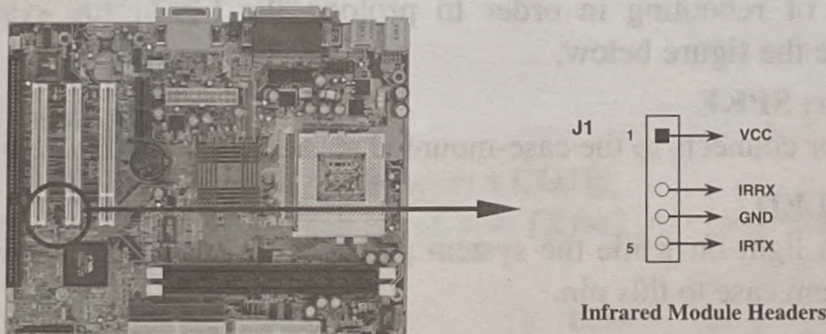
(9) FAN Speed Headers (3-pin) : JFAN1, FAN2

These connectors support cooling fans of 350mA (4.2 Watts) or less, depending on the fan manufacturer, the wire and plug may be different. The red wire should be positive, while the black should be ground. Connect the fan's plug to the board taking into consideration the polarity of connector.



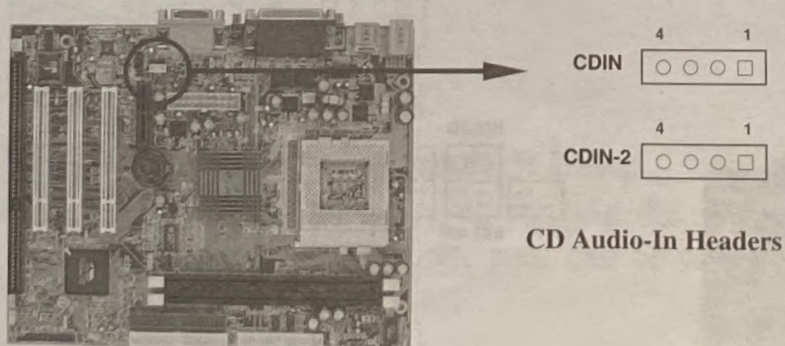
(10) IR infrared module Headers (10-pin) : J1

This connector supports the optional wireless transmitting and receiving infrared module. You must configure the setting through the BIOS setup to use the IR function.



(11) CD Audio-In Headers (4-pin) : CDIN, CDIN-2

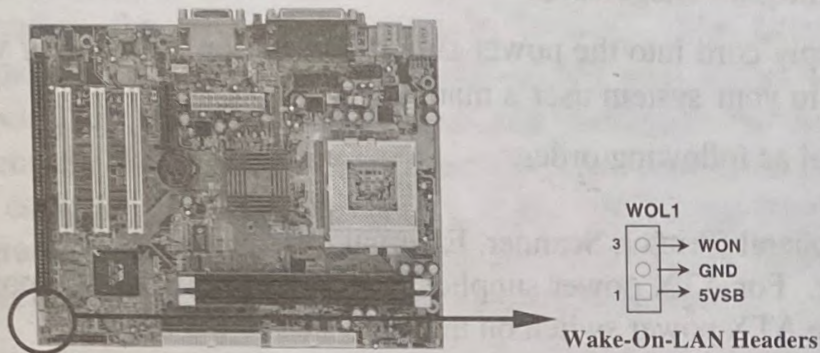
CDIN and CDIN-2 are the connectors for CD-Audio Input signal. Please connect it to CD-ROM CD-Audio output connector.



(12) Wake On-LAN Headers (3-pin) : WOL1

This connector connects to a LAN card with a WAKE ON-LAN output. This connector power up the system when a wake up signal is received through the LAN card.

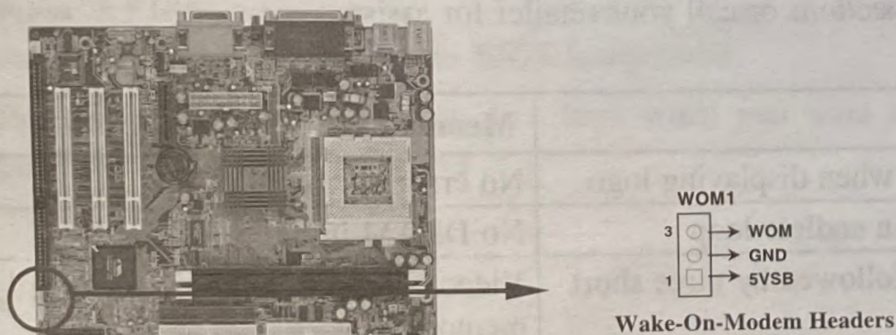
NOTE: This feature requires that BIOS Wake-Up by PCI Card is enabled.



(13) Wake On-Modem Headers (3-pin) : WOM1

This connector connects to a Modem card with a WAKE ON-MODEM output. This connector power up the system when a wake up signal is received through the Modem card.

NOTE: This feature requires that Wake On Modem or Ring In Wake up is enabled.



2-7 Starting Up Your Computer

1. After all connections are made, close your computer case cover.
2. Be sure all the switch are off, and check that the power supply input voltage is set to proper position, usually in-put voltage is 220V~240V or 110V~120V depending on your country's voltage used.
3. Connect the power supply cord into the power supply located on the back of your system case according to your system user's manual.
4. Turn on your peripheral as following order:
 - a. Your monitor.
 - b. Other external peripheral (Printer, Scanner, External Modem etc...)
 - c. Your system power. For ATX power supplies, you need to turn on the power supply and press the ATX power switch on the front side of the case.
5. The power LED on the front panel of the system case will light. The LED on the monitor may light up or switch between orange and green after the system is on. If it complies with green standards or if it is has a power standby feature. The system will then run power-on test. While the tests are running, the BIOS will alarm beeps or additional message will appear on the screen.

If you do not see any thing within 30 seconds from the time you turn on the power. The system may have failed on power-on test. Recheck your jumper settings and connections or call your retailer for assistance.

Beep	Meaning
One short beep when displaying logo	No error during POST
Long beeps in an endless loop	No DRAM install or detected
One long beep followed by three short beeps	Video card not found or video card memory bad
High frequency beeps when system is working	CPU overheated System running at a lower frequency

6. During power-on, press <Delete> key to enter BIOS setup. Follow the instructions in BIOS SETUP.
7. **Power off your computer:** You must first exit or shut down your operating system before switch off the power switch. For ATX power supply, you can press ATX power switching after exiting or shutting down your operating system. If you use Windows 9X, click "Start" button, click "Shut down" and then click "Shut down the computer?" The power supply should turn off after windows shut down.

ANTI-CRUSH DESIGN MAIN BOARD



Recovery Genius

User's Manual

Overview

Recovery Genius is a software program, which protects your Hard Disk Drive from virus intrusion, accidental deletions and from other systems corruption.

When Recovery Genius is installed it dynamically allocates space on the HD during normal operation, called the Dynamic Reserved Area. Thus avoiding the need for fixed reserve area and making more space available on the hard disk for the user. It uses this area to host the Recovery Genius program and to hold swap files, which are used to restore the Protected Area of the HD. Because Recovery Genius operates at a level before any operating system, it does not distinguish between systems and data files. It monitors any changes to the Protected Area of the HD, and in the event of a system corruption or accidental deletion, it will restore the Protected Area to its original status, using either the swap files or backup copies of protected partitions. Restoration takes place during start up, before any operating system is booted.

Features

- Recovery Genius works with following operating systems:
MS-DOS / Windows 3.1 / Windows 3.11 (Workgroups)
Windows 95 – all versions / Windows 98 – all versions
Windows me / Windows NT / Windows 2000
- If you want to change how the PC is set up, you can do so at any time. All of Recovery Genius' settings can be changed at any time with no data loss.
- Writing to all or part of the hard drives can even be turned off completely, ideal for use at public exhibitions.
- Intelligent installation design is provided in installation settings.
- Protects entire hard disk.
- Concurrently monitors the contents of hard disk and CMOS.
- Supports FAT16, BIGDOS, FAT32 and NTFS file formats.

Recovery Genius is a quick and easy way to protect operating systems, applications and other files which rarely, if ever, need to be changed or updated, while allowing the user to decide on when and how permanent changes should be saved. If you do technical support, these features mean that you can deal confidently and quickly with all systems corruption to HD drives and protect yourself from the expensive & time consuming consequences of operator malpractice. Recovery Genius will keep a computer HD intact, with near instantaneous recovery of all protected data on entire hard disk. It performs the functions of Install, Setup timer, Restore, Save data, Uninstall, Set password, and Quit.

Power on the computer and by pressing <Ctrl + R> immediately allows you to enter Recovery Genius. (Please refer to diagram below).

**For more information and user manual, please refer to
X : \ Recovery \ Manual.doc on CD pack.**