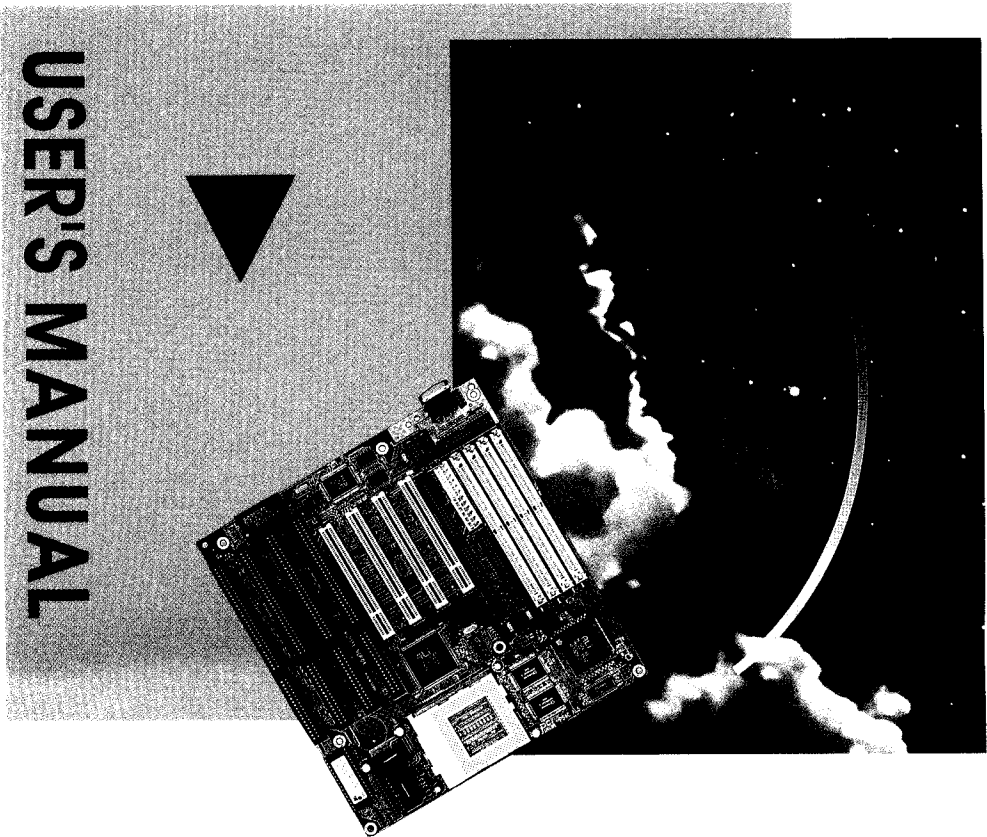


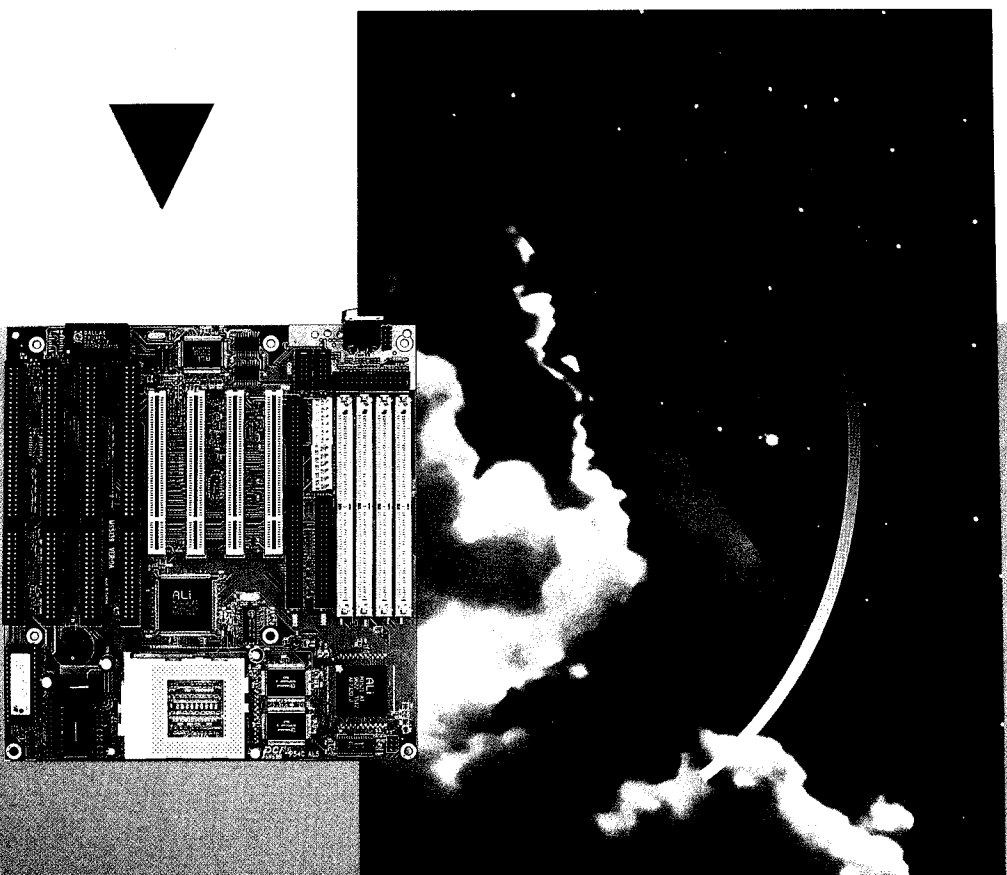
PCI PENTIUM® AL5 MAINBOARD



**USER'S MANUAL**

PART NO. YM5139  
MODEL NO. MS-5139  
PRINTED IN TAIWAN

**PCI**  
PENTIUM® AL5  
MAINBOARD



**USER'S MANUAL**

## Chapter 1

### INTRODUCTION

The **PCI Pentium™** AL5 system board is a high-performance personal computer system board based on the Pentium microprocessor. The system board supports the Peripheral Component Interconnect (PCI) Local Bus standard and provides four 32-bit PCI bus master slots. It uses the ALi® M1521 and M1523 Chipset to provide maximum compatibility and flexibility for DRAM bus operations.

### System Board Specifications

#### Micro-Processor (CPU):

- Socket 7 supports Intel® Pentium™ family--P54C and P55C 75/90/100/120/133/150/166/200MHz.
- The Cytix® 6x86 and AMD® K5 are also supported.

#### Chip Set:

- ALi® M1521/1523

#### Main Memory:

- Supports two memory banks using four 72-pin SIMM sockets.
- Up to 512 Mbytes main memory.
- Supports EDO Hyper Page Mode DRAM or Standard Fast Page mode DRAM.
- Supports flexible SIMM bank slot population with both 32-bit and 64-bit operations.
- Supports Error Checking & Correction (ECC) for DRAM.
- Supports 12MB operations (the most cost efficient environment for Windows 95™).

**Cache Memory:**

- On-board 512K/256K cache memory

**Slots:**

- Four 32-bit Master PCI Bus slots and four 16-bit ISA bus slots.

**On-Board Peripherals:**

- On-Board peripherals include:
  - 1 floppy port supports 2 FDD
  - 2 serial ports (COM1+ COM2)
  - 1 Parallel port supports ECP or EPP mode
  - 2 PCI Bus Master IDE channels (up to four IDE HDD)
  - 1 IR port which supports IrDa 1.0

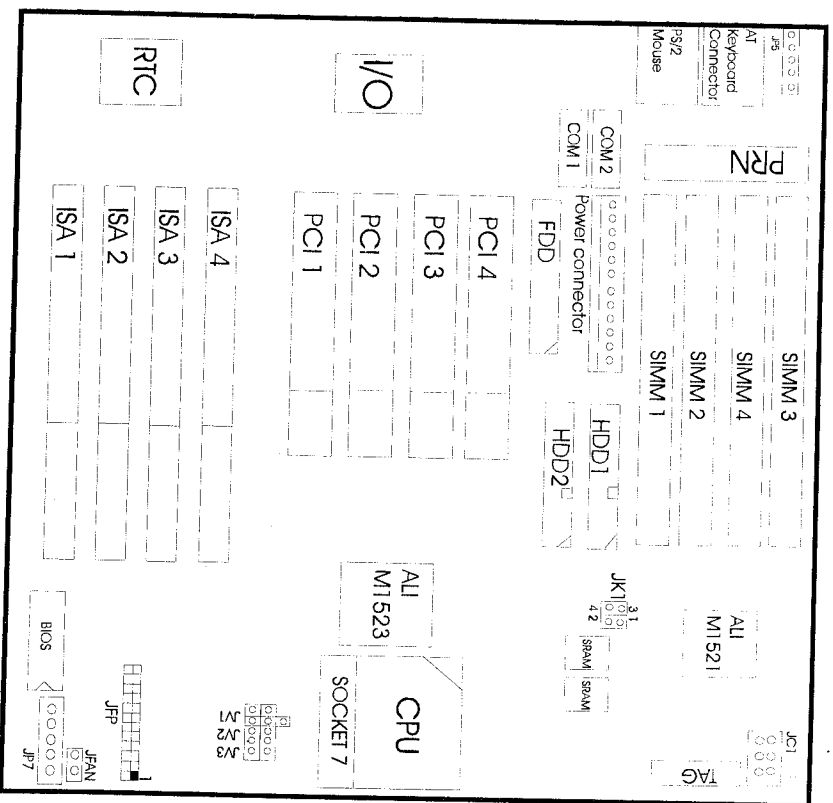
**Dimensions:**

- 22 cm(L) × 23 cm(W) × 4 layer PCB

**Mounting:**

- 6 mounting holes

**System Board Layout**



CPU Speed Setting (JK1/JC1)

Adjust jumper (JK1/JC1) to set CPU speed. Figure 2-1 shows the location of (JK1/JC1).

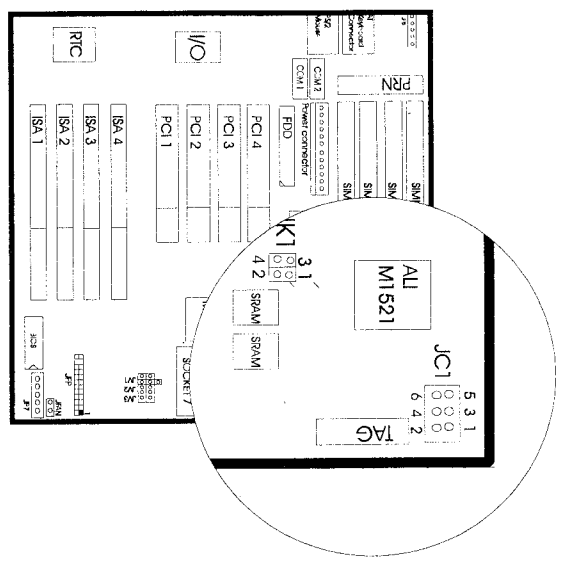
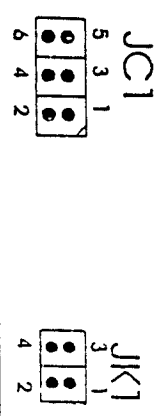


Figure 2-1

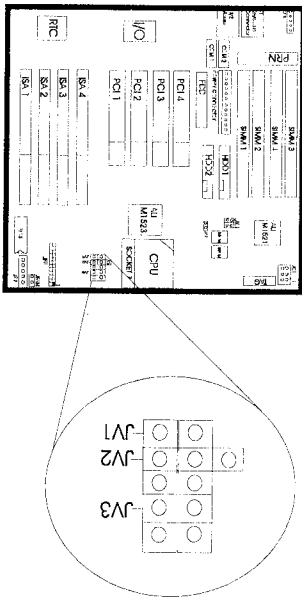
CPU SPEED SETTING



CPU Internal Clock	JC1	Ratio Ext/Int	JK1 External Clock
75 MHz		1.5	
90 MHz		1.5	
100 MHz		1.5	
120 MHz		2	
133 MHz		2	
150 MHz		2.5	
166 MHz		2.5	
200 MHz (FS4C)		3	

**CPU Voltage Setting: JV1, JV2, JV3**

Use Jumpers JV1, JV2, and JV3 to select either a 3.38, 3.52, 3.8V, or 2.8V CPU power setting for P54C, P55, Cyrix 6x86 and AMD K5 CPUs.

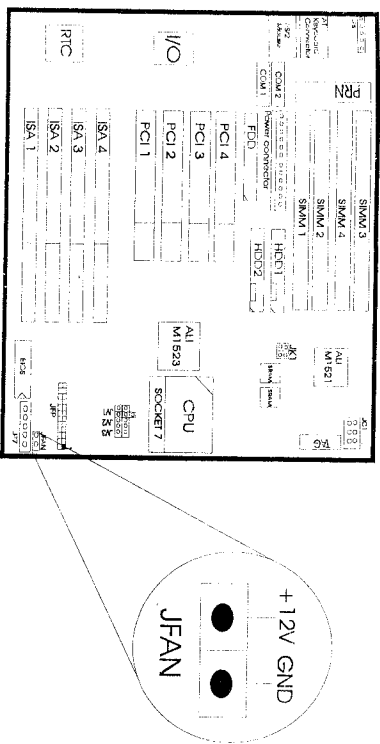


**JV1, JV2, JV3 Settings**

CPU Voltage	JV1	JV2	JV3
3.38V Intel STD	1 2	1 2 3	5 3 4 1 2
3.52V (Default) AMD K5, Intel (STD/VRE), Cyrix 6x86	1 2	1 2 3	5 3 4 1 2
2.8V P55C	1 2	1 2 3	5 3 4 1 2
2.9V (Reserved)	1 2	1 2 3	5 3 4 1 2

**CPU Fan Power Connector (JFAN)**

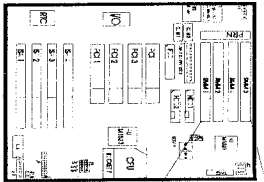
JFAN connector supports +12V voltage for CPU fan use. Check the voltage range and polarity of your cooling fan before connecting it.



**Memory Installation**

**Memory Bank Configuration**

The system board supports four memory banks and provides four single in-line memory modules (SIMM) sockets, numbered SIMM1-SIMM4.



Each socket accepts single density (S) or double density (D) SIMM in the following sizes: 4M(S), 8M(D), 8M(S), 16M(S), 32M(D), 64M(S), 64M (D).

See the following table for allowable SIMM type configurations.

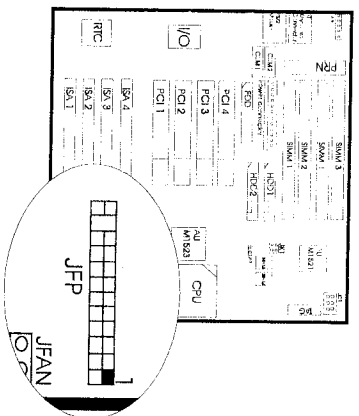
**S=Single D=Double X=Not Installed**

SIMM1	SIMM2	SIMM3	SIMM4
S*	X	X	X
S	S	X	X
S	S	S	X
S	S	S	S
D*	X	X	X
D	D	X	X
D	D	S	X
D	D	S	S
D	D	D	D

\*Note: The ALi 1521/1523 Chipset supports 32-bit and 64-bit DRAM Bus operations. The system board can function with only one SIMM slot filled.

**Front Panel Connector: JFP**

The Turbo LED, Turbo Switch, Reset Switch, Key lock, Power LED, Speaker, and HDD LED all connect to the JFP Connector Block as shown below. The items will connect with the chassis front panel.



The **Reset Switch** is the same as power on/off. After pushing the button the system will re-initialize.

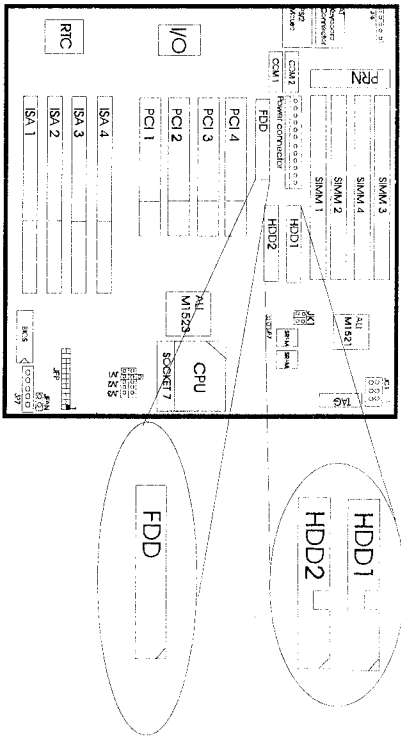
The **Turbo LED** indicates if the system is using high speed operation mode.

The **HDD LED** indicates when the system is accessing HDD1 or HDD2 devices.

The **Power LED** indicates if the power is on or off.

The **Key Lock** is a security item that keeps the keyboard from being used as an input device.

**Onboard Peripheral Connector: FDD, HDD1 and HDD2**



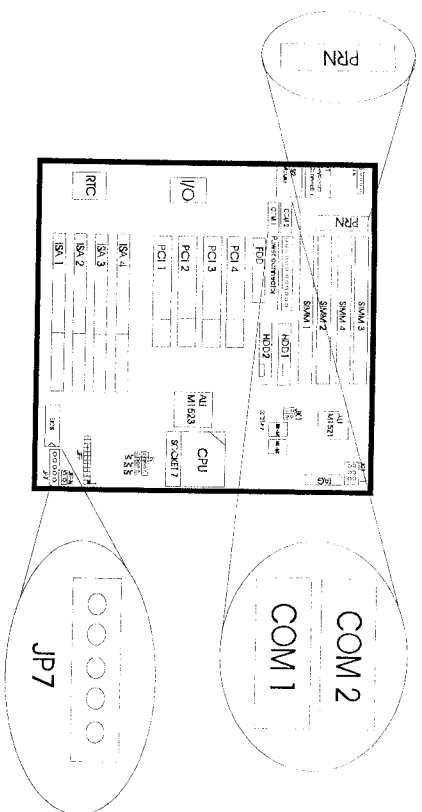
The **FDD** connector is for the floppy drive. It can connect to 1.2, 1.44, or 2.88 FDD types.

**HDD1** connector is for primary IDE channel. Can connect to either IDE HDD or CD-ROM.

**HDD2** connector is for secondary IDE channel. Can connect to either IDE HDD or CD-ROM

*Note: When connecting cable, be sure to align the connecting key/slot on the cable with the opening on the connector.*

**Onboard Peripheral Connector: COM1, COM2, PRN and JP7**



**COM1** connector is for serial port COMA, and **COM2** is for serial port COMB. They can be used as a RS-232 interface for uses including modem and mouse. COM1 or COM2 can be re-assigned to jumper J7, by using a bios setting, for use with the IrDa function.

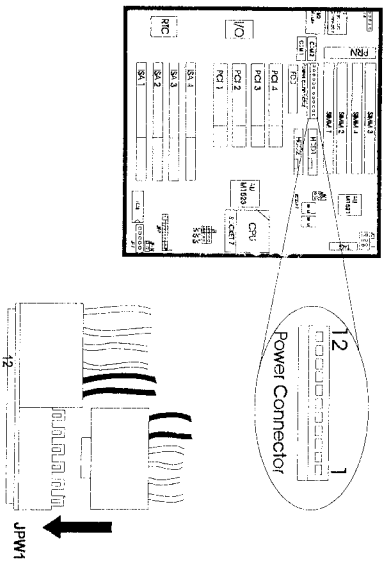
**PRN** connector is for parallel port LPT1, LPT2 or LPT3.

**IR Connector: JP7**

When using infrared functions, this connector connects with the module of the IR modulator.

**Power Supply Connector: JPW1**

JPW1 is a standard 12-pin AT-type connector. Be sure to attach the connectors with the two black wires at the center, as shown below.



Pin	Description	Pin	Description
1	Power Good	7	Ground
2	+5V DC	8	Ground
3	+12V DC	9	-5V DC
4	-12V DC	10	+5V DC
5	Ground	11	+5V DC
6	Ground	12	+5V DC

**AT Keyboard and PS/2 Mouse Connector:**

This system board provides a standard five-pin female DIN connector AT keyboard connector, for attaching the keyboard. An optional six-pin female mini-DIN connector for plugging in a PS/2 style mouse is available. The board also provides a 5-pin jumper block for plugging in an optional PS/2 connector cable.

