

Cache memory:

- Supports normal mode (asynchronous) SRAM 256K, 512K, or 1M cache memory.
- Supports pipeline burst (synchronous) SRAM 256K only.

Main memory:

- Supports Burst EDO DRAM, EDO (Extended Data Out) DRAM, or Fast Page DRAM.
- Supports four memory banks using four 72-pin SIMM modules with 1M, 2M, 4M, 8M, 16M, and 32M DRAM balanced or unbalanced.
- Accepts one 72-pin SIMM 32-bit or two same type of 72-pin SIMMs 64-bit in the same block.
- Up to 512 Mbyte on-board memory.

Keyboard Connector:

- Standard AT keyboard and 5 pins PS2 mouse connector.
- PS2 keyboard interface and PS2 mouse interface (reserved).

On-board I/O:

- Provides 32-bit enhanced dual channel bus Master PCI IDE, supports fast-ATA2 PIO Mode 0-4, DMA Mode 2, floppy disk controller, two serial ports, and one parallel port.
- Parallel port supports standard printer port, EPP, or ECP.
- Provide IRDA function (reserved).

Slots:

- Three 32-bit PCI Bus slots and four 16-bit ISA bus slots in maximum combinations of four 16-bit ISA and three 32-bit PCI slots.
- Supports three Master/Slave PCI bus slots.

Battery:

- 3.6V/60 mA Ni-MH battery or 3.6V/480 mA Li battery.

Dimensions:

- 28 x 22 cm x 4 layers PCB

System Board Layout

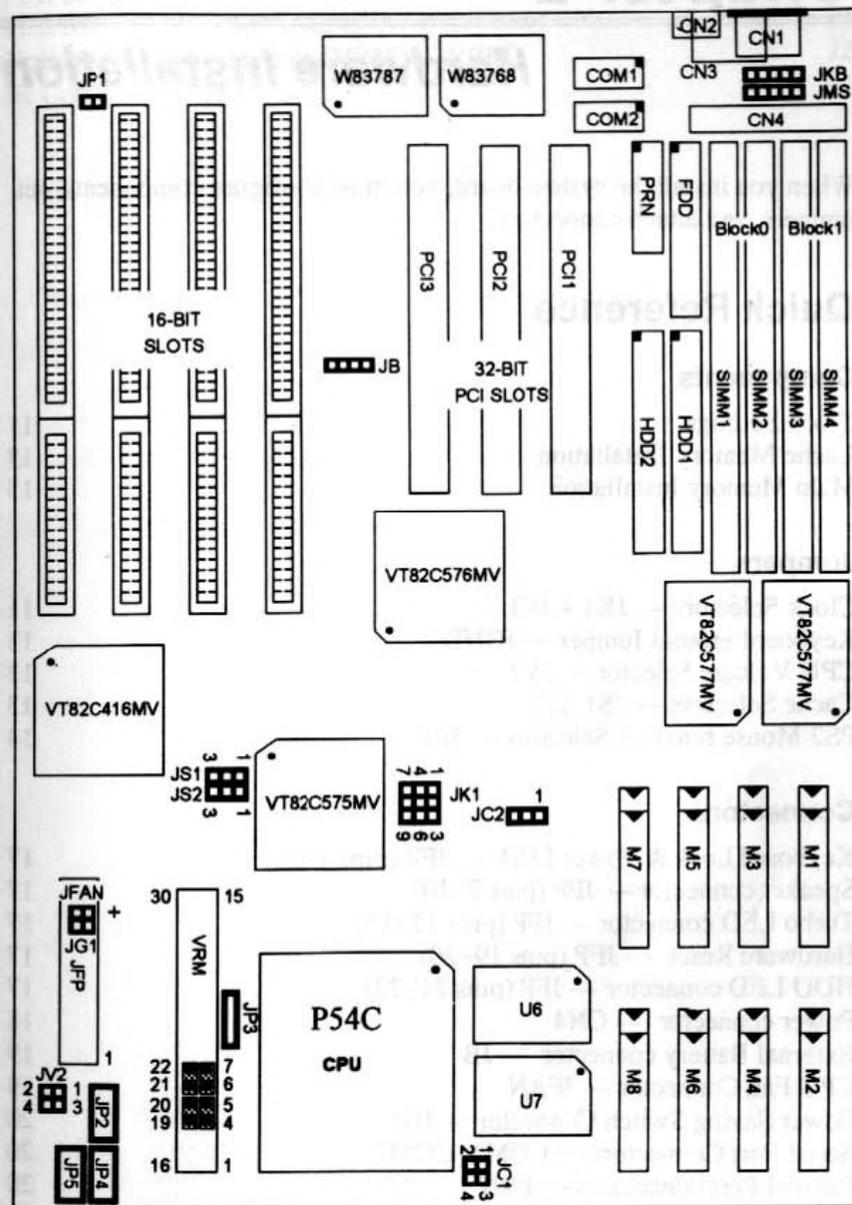


Figure 1-1. System board Layout

Jumpers and Connectors

Refer to Figure 1-1 for jumper and connector locations.

Jumpers Jumpers on the system board provide information to your operating system about installed options and system settings. You need to configure jumpers when you install the CPU, select cache size, or clear CMOS memory.

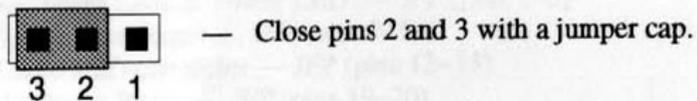
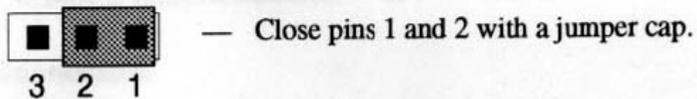
Connectors Connectors attach control panel switches and indicators, as well as the speaker, external battery, keyboard and power supply.

Setting Jumpers Configure system board options by setting jumper switches. Use your fingers to position a jumper cap over the desired pin setting and gently press down.

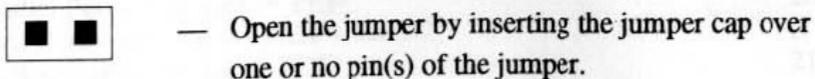
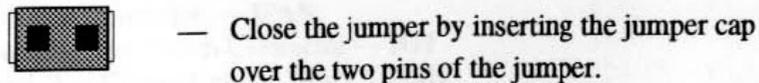
Note: When you open a jumper, leave the plastic jumper cap attached to one of the pins so you don't lose it.

Symbols:

For 3-pin jumpers, the following symbols are used:



For 2-pin jumpers, the following symbols are used:



Clock Speed Selection: JK1 and JC1

Set jumper JK1 according to the CPU external clock and JC1 for the Internal/External Ratio. See Figure 1-1 for the location of the jumpers.

Intel CPU Clock	JK1	JC1
75 MHz	7 4 1 9 6 3	2 1 (1.5x) 4 3
90 MHz	7 4 1 9 6 3	2 1 (1.5x) 4 3
100 MHz	7 4 1 9 6 3	2 1 (1.5x) 4 3
120 MHz	7 4 1 9 6 3	2 1 (2x) 4 3
133 MHz	7 4 1 9 6 3	2 1 (2x) 4 3
150 MHz	7 4 1 9 6 3	2 1 (2.5x) 4 3

166 MHz		
180 MHz		
200 MHz		

Cyrix CPU Clock	JK1	JC1
80 MHz		
100 MHzx		
120 MHz		
133 MHz		

Keyboard Ground Jumper: JGND

When this jumper is closed, the ground of the keyboard connector (GND pin) is connected to the PCB's ground. When it is opened, the ground of the keyboard connector (GND pin) is connected to the system case through the PCB's right upper mounting hole. The purpose of this jumper is to prevent potential keyboard frequency interference.

Ground	JGND
Keyboard Connector	
Case	

CPU Voltage Selector: JV2

Jumper JV2 lets you set 3.38V or 3.52V for the CPU voltage.

CPU	Voltage	JV2
STD/VR	3.38V	
VRE/MD	3.52V	

Cache Selection: JS1, JS2

The system board supports either normal mode (asynchronous) SRAM or pipeline burst (synchronous) SRAM. You can choose one or the other. If using the pipeline burst (synchronous) SRAM, you don't need to set the JS1 and JS2, and there is only 256K cache memory.

Pipeline Burst SRAM Location

Cache size	Tag RAM (M9)	Data RAM (U6, U7)
256K	8K8, 16K8, 32K8	32K32

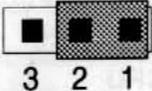
The normal mode (asynchronous) SRAM supports 256K, 512K, or 1M of cache memory. You configure cache memory by first installing 32K8,

64K8, or 128K8 SRAM chip in Data RAM sockets M1~M8 and a 8K8, 16K8, or 32K8 SRAM chip in Tag Socket M9. You then setting jumpers JS1 and JS2 as below. Note that the speed required for SRAM chips is 15ns.

Normal Mode SRAM Locations

Cache size	Tag RAM (M9)	Data RAM (M1~M8)
256K	8K8, 16K8, 32K8	32K8
512K	16K8 or 32K8	64K8
1 M	32K8	128K8

Normal Mode SRAM Settings

Cache size	JS1	JS2
256K	 3 2 1	 3 2 1
512K	 3 2 1	 3 2 1
1 M	 3 2 1	 3 2 1

PS/2 Mouse Function Selection: JP1

When this jumper is opened, it is PS/2 mouse function. When it is closed, the Interrupt IRQ12 signal of the Interface card can be used.

Function	JP1
IRQ12	
PS/2 Mouse	

Note: You need to change the "PS/2 Mouse Function Control" in the BIOS according to this jumper setting.

Memory Bank Configuration

The system board supports Burst EDO DRAM, EDO DRAM, and Fast Page DRAM and provides four memory banks and provides four 72-pin Single In-line Memory Module (SIMM) sockets on-board, numbered from SIMM1 to SIMM4. Each socket accepts single bank (s) or double bank (d) SIMM.

The four SIMM sockets are divided into 2 blocks. Each block can support 32-bit or 64-bit memory as explained on the next page.

Note When use Burst EDO DRAM, the system supports only 64 bit and the L2 Cache cannot be used.

32-bit Memory

You may install either one type of 72-pin SIMM or two different types of 72-pin SIMMs in SIMM1 and SIMM4. The table below describes module type, (s) or (d), you must follow the restrictions when installing SIMM in all two blocks.

Block 0 SIMM 1	Block 1 SIMM 4
(s) or (d) type	—
—	(s) or (d) type
(s) or (d) type	(s) or (d) type

Note: Using 32-bit memory affects the system performance.

64-bit Memory

You must use two of the same type of SIMMs in block 0 (SIMM 1 and SIMM 2) or block 1 (SIMM 3 and SIMM 4). The table below describes module type, (s) or (d), you must follow the restrictions when installing SIMM in all two blocks.

Block 0		Block 1	
SIMM 1	SIMM 2	SIMM 3	SIMM 4
(s) type	(s) type	—	—
—	—	(s) type	(s) type
(d) type	(d) type	—	—
—	—	(d) type	(d) type
(s) type	(s) type	(d) type	(d) type
(d) type	(d) type	(s) type	(s) type
(s) type	(s) type	(s) type	(s) type
(d) type	(d) type	(d) type	(d) type

Note You need to put in two same types of Burst EDO, EDO or FP in Block 0 or Block 1 when you mix the Burst EDO DRAM (BEDO) and EDO DRAM and Fast Page DRAM (FP), for example:

SIMM1	SIMM2	SIMM3	SIMM4
EDO	EDO	FP	FP
FP	FP	EDO	EDO
BEDO	BEDO	FP	FP
FP	FP	BEDO	BEDO
BEDO	BEDO	EDO	EDO
EDO	EDO	BEDO	BEDO

The maximum memory configuration is 128 Mbyte = SIMM1 (32M) + SIMM2 (32M) + SIMM3 (32M) + SIMM4 (32M).

Case Connector Block: JFP

The Turbo LED, Turbo Switch, Hardware Reset, Keylock, Power LED, Speaker, and HDD LED all connect to the JFP Connector Block as shown below. See Figure 1-1 for JFP's location.

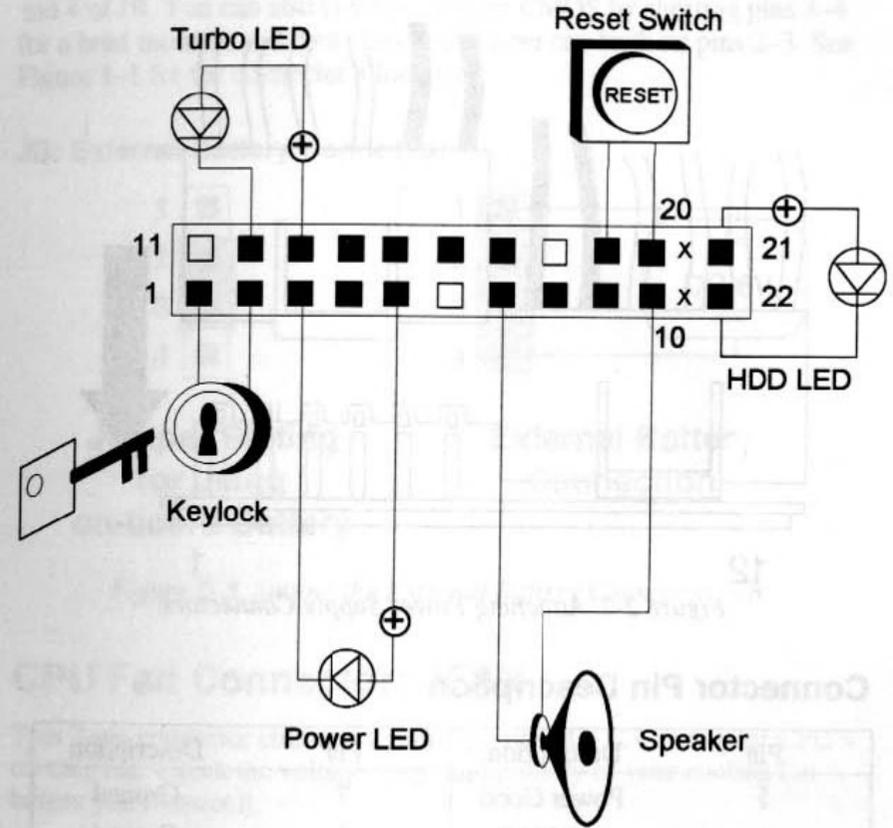


Figure 2-1. Case Connector Block - JFP

Power Supply Connector: CN4

The power supply connector is a twelve-pin male connector. Dual connectors from the power supply can fit in only one direction. Make sure to attach the connectors with the two black wires at the center, as show in the diagram below. See Figure 1-1 for the connector's location.

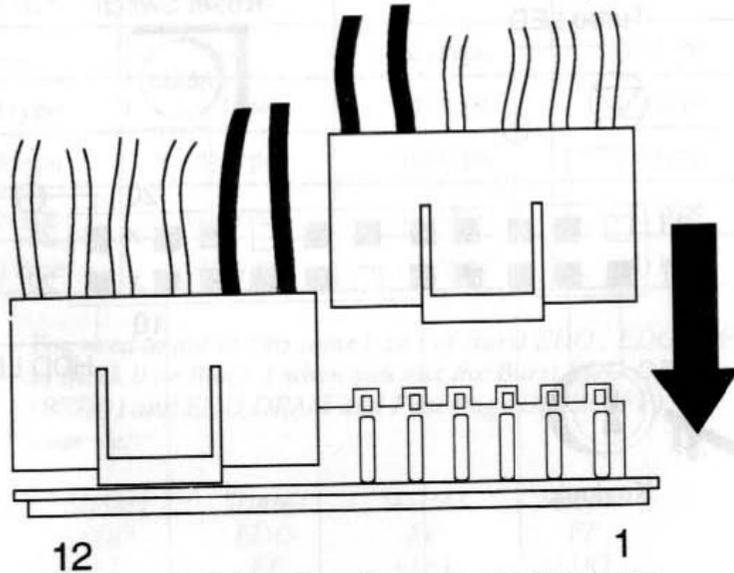


Figure 2-2. Attaching Power Supply Connectors

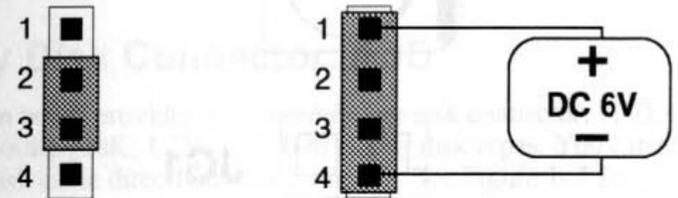
Connector Pin Description

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

External Battery Connector: JB

A battery must be used to retain the system board configuration in CMOS RAM. You can use either the on-board battery or an external battery. If you use the on-board battery you must short pins 2-3 of JB. For an external battery, the battery's cable connector attaches to pins 1 and 4 of JB. You can also clear the system CMOS by shorting pins 3-4 for a brief moment and then place the jumper cap back on pins 2-3. See Figure 1-1 for the connector's location.

JB: External Battery Connector



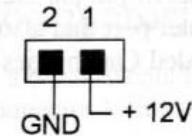
Jumper Setting
for using
on-board Battery

External Battery
Connection

Figure 2-3. Setting the External Battery Connector - JB

CPU Fan Connector: JFAN

This 2-pin connector connects a power source of +12V with your CPU's cooling fan. Check the voltage range and polarity of your cooling fan before you connect it.



Power Saving Switch Connector: JG1

Attach a power saving switch to this connector. When the switch is pressed, the system goes immediately into sleep mode.

Note: Do not press this button during a copy operation or you could lose data.

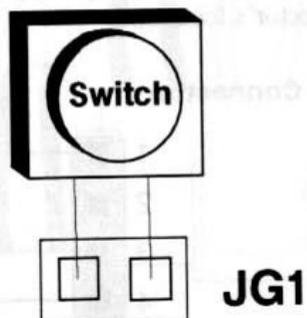


Figure 2-4. Power Saving Switch Connector

Serial Port Connectors: COM1, COM2

The system board has two 2x5-pin serial port connectors, COM1 and COM2. The two ports are 16550 high speed communication ports that send/receive 16 byte FIFOs. You can attach a mouse or a modem cable directly to these connectors. COM1 and COM2 converter plugs are provided with the system board. See Figure 1-1 for connector locations.

Parallel Port Connectors: PRN

The system board provides a 2x13-pin parallel port connector, PRN. The parallel port is a standard printer port that also supports Enhanced Parallel Port (EPP) and Extended Capabilities Port (ECP). See Figure 1-1 for connector location.

Hard Disk Connectors: HDD1, HDD2

The system board has a 32-bit Enhanced PCI IDE Controller that provides for two HDD connectors, HDD1 (primary) and HDD2 (secondary). You can connect up to four hard disk drives to HDD1 and HDD2. See Figure 1-1 for connector location.

HDD1 (primary)

If you only use one hard disk you must connect to HDD1. You can also connect two hard disks, a Master drive and a Slave drive, to HDD1.

HDD2 (secondary)

If you use two hard disks, you can connect one to HDD1 and the other to HDD2. However, you must use a driver program for the hard disk connected to HDD2 (see Chapter 4). You can also connect two hard disks to HDD2, a Master drive and a Slave drive.

Floppy Disk Connector: FDD

The system board provides a standard floppy disk connector, FDD, that supports 360K, 720K, 1.2M, or 1.44M floppy disk types. You can attach a floppy disk cable directly to this connector. See Figure 1-1 for connector location.

Keyboard Connector: CN2

The system board provides a standard five-pin female DIN connector, CN2, for attaching a keyboard. You can plug a keyboard cable directly into this connector. See Figure 1-1 for connector location.

PSII Mouse Male Connector: JMS

The system board provides a 1x5 male pin connector, JKB. See Figure 1-1 for connector location.

PSII Keyboard Connector: CN1 (reserved)

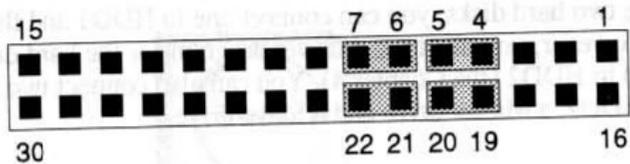
The system board provides a 6-pin female DIN PSII keyboard connector, CN1. See Figure 1-1 for connector location.

PSII Mouse Connector: CN3 (reserved)

The system board provides a 6-pin female DIN PSII mouse connector, J2. See Figure 1-1 for connector location.

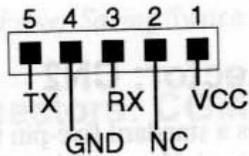
Voltage Regulator Module (VRM): VRM (reserved)

The system board provides an Intel released Voltage Regulator Module connector for future CPU, VRM. The default jumper setting is shown as below:



IRDA Connector: JP2 (Reserved)

The system board provides a 5-pin IR connector—JP2 and is shown as below:



Chapter 3

BIOS Setup

The system contains system configuration and chipset internal register information in the CMOS RAM. This information is retained by a battery when the power is off.

You can modify this system information with the system's BIOS setup program. The system board comes with the AMI BIOS from American Megatrends Inc.

Power Management

The BIOS program comes with power management, or Green PC, features.

Important!

If you want to use Green PC features, you must have a Green monitor equipment.

