

- Three 16-bit ISA expansion slot and four 32-bit PCI Bus master slots.
- Up to 132MB/sec PCI burst transfer rate.
- Dallas DS12887A/DS12887 real time clock/calendar.
- Onboard CMD PCI640B or VIA VT83C561 PCI IDE Controller supports four IDE drives and fastest I/O performance.
- Onboard NS 87311/312/332 I/O chipset supports two serial ports, one parallel port and FDC.

→ **NOTE : When plugging your CPU into the ZIF socket, make sure that pin 1 matches the CPU socket.**

## Mainboard Layout

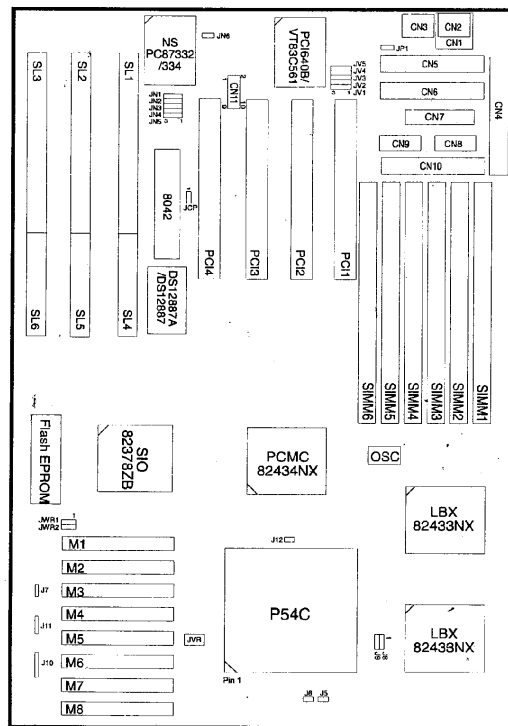


Figure 1-1. Mainboard Layout

JUMPER	PIN DEFINITION
J5	CPU Pipeline Mode Short Enable (default) Open Disable
J6	Internal Write-Back/Through Cache Short Write-Through Open Write-Back (default)
J12	Bus to CPU Frequency Ratio Short 1-2 Open 2-3 (default)
JVR	CPU Voltage Select 1-2 3.3V 3-4 3.45V 5-6 3.6V
JCP	Password Clear Short Enable Open Disable (default)

Table 2-1. Jumper Definitions

## Connectors

The connectors allow the mainboard to connect electronically with other parts of the system. Some connectors have two pins, others have four or five pins. Some malfunction problems encountered with your system may be caused by loose or improper connections. Ensure that all connections are in place and firmly attached.

CONNECTOR	PIN-OUTS	SIGNAL NAME
JP1 HDD_LED Connector	1	LED +
	2	LED -
J7 Hardware Reset	1	Ground
J10 Power LED and Keylock	2	Reset signal
	1, 2	Pull high
	3, 5	Ground
J11 Speaker Connector	4	Keylock signal
	1	Speaker signal
	2	NC
	3	Ground
CN1 Keyboard Connector	4	VCC
	5	Keyboard clock
	1	Keyboard data
	2, 6	NC
	3	Ground
CN2 PS/2 Keyboard Connector	4	VCC
	5	Keyboard clock
	1	Keyboard data
	2, 6	NC
	3	Ground
CN3 PS/2 Mouse Connector	4	VCC
	5	Mouse clock
	1	Mouse data
	2, 6	NC
	3	Ground
CN4 Power Connector	4	VCC
	5-8	Ground
	9	-5V
	1	Power good
	2, 10, 11, 12	+5V
	3	+12V
	4	-12V
CN11 SIR Connector	5-6	Ground
	3	-DSR2
	7	-DTR2
	1, 2, 10	+5V
	4, 8, 9	NC

Table 2-2. Connector Pin Definitions (Continued)

CONNECTOR	PIN-OUTS	SIGNAL NAME
CN7 Parallel Port Connector	1	LPT strobe
	2	Date bit 0
	3	Date bit 1
	4	Date bit 2
	5	Date bit 3
	6	Date bit 4
	7	Date bit 5
	8	Date bit 6
	9	Date bit 7
	10	LPT acknowledge
	11	LPT busy
	12	Paper end
	13	Selected status
	14	Auto line feed
	15	LPT error
	16	Initiate printer
	17	Select printer
18-25	Ground	
CN8 Serial Port 1 Connector	1	Data carrier detect
	2	Receive data
	3	Transmit data
	4	Data transmit ready
	5	Signal ground
CN9 Serial Port 2 Connector	6	Ready to receive data
	7	Request to send data
	8	Clear to send
	9	Ring indicator
CN10 FDD Connector	2	Density selection
	4, 6	NC
	8	Index detection
	10	Select motor A
	12	Select drive A
	14	Select drive B
	16	Select motor B
	18	Direction control
	20	Step pulse
	22	Write data
	24	Write enable
	26	Track 0
	28	Write protect
	30	Read data
	32	Head select
	34	Disk change
	1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31, 33	Ground

Table 2-2. Connector Pin Definitions

CONNECTOR	PIN-OUTS	SIGNAL NAME
CN5 Primary PCI IDE Connector	1	Reset hard disk
	2, 19, 22 24, 26, 30	Ground
	40	
	3	HDD7
	4	HDD8
	5	HDD6
	6	HDD9
	7	HDD5
	8	HDD10
	9	HDD4
	10	HDD11
	11	HDD3
	12	HDD12
	13	HDD2
	14	HDD13
	15	HDD1
	16	HDD14
	17	HDD0
	18	HDD15
	20, 21, 34	NC
23	HDD I/O write	
25	HDD I/O read	
27	IOCHRDY	
28, 29	NC	
31	IRQ14	
32	IOCS16	
33	HDD A1	
35	HDD A0	
36	HDD A2	
37	HDD chip select 0	
38	HDD chip select 1	
39	HDD active	
CN6 Secondary PCI IDE Connector	31	IRQ 15 (The rest are the same as CN5's, besides Pin 31).

Table 2-3. Onboard PCI IDE Connector Pin Assignments

## Installing DRAM

### SIMM Banks

The PN-2000 can accommodate on-board memory from 2MB to 192MB using SIMMs (Single-In-Line Memory Modules). The mainboard has three memory banks — Bank 0, Bank 1 and Bank 2. Each bank has two SIMM sockets which can accept either a 1MB, 4MB, 16MB or 32MB SIMM in each socket.

### DRAM Configuration

Memory can be installed in a variety of configurations, as shown in the following table:

TOTAL MEMORY	BANK 0 (72-PIN x 2)	BANK 1 (72-PIN x 2)	BANK 2 (72-PIN x 2)
2MB	1MB & 1MB		
4MB	1MB & 1MB	1MB & 1MB	
6MB	1MB & 1MB	1MB & 1MB	1MB & 1MB
8MB	4MB & 4MB		
10MB	4MB & 4MB	1MB & 1MB	
12MB	4MB & 4MB	1MB & 1MB	1MB & 1MB
16MB	4MB & 4MB	4MB & 4MB	
18MB	4MB & 4MB	4MB & 4MB	1MB & 1MB
24MB	4MB & 4MB	4MB & 4MB	4MB & 4MB
32MB	16MB & 16MB		
34MB	16MB & 16MB	1MB & 1MB	
36MB	16MB & 16MB	1MB & 1MB	1MB & 1MB
40MB	16MB & 16MB	4MB & 4MB	
42MB	16MB & 16MB	4MB & 4MB	1MB & 1MB
48MB	16MB & 16MB	4MB & 4MB	4MB & 4MB

Table 3-1. Memory Configurations (Continued)

TOTAL MEMORY	BANK 0 (72-PIN x 2)	BANK 1 (72-PIN x 2)	BANK 2 (72-PIN x 2)
64MB	16MB & 16MB 32MB & 32MB	16MB & 16MB	
66MB	16MB & 16MB 32MB & 32MB	16MB & 16MB 1MB & 1MB	1MB & 1MB
68MB	32MB & 32MB	1MB & 1MB	1MB & 1MB
72MB	16MB & 16MB 32MB & 32MB	16MB & 16MB 4MB & 4MB	4MB & 4MB
74MB	32MB & 32MB	4MB & 4MB	1MB & 1MB
80MB	32MB & 32MB	4MB & 4MB	4MB & 4MB
96MB	16MB & 16MB 32MB & 32MB	16MB & 16MB 16MB & 16MB	16MB & 16MB
98MB	32MB & 32MB	16MB & 16MB	1MB & 1MB
104MB	32MB & 32MB	16MB & 16MB	4MB & 4MB
128MB	32MB & 32MB 32MB & 32MB	16MB & 16MB 32MB & 32MB	16MB & 16MB
130MB	32MB & 32MB	32MB & 32MB	1MB & 1MB
136MB	32MB & 32MB	32MB & 32MB	4MB & 4MB
160MB	32MB & 32MB	32MB & 32MB	16MB & 16MB
192MB	32MB & 32MB	32MB & 32MB	32MB & 32MB

Table 3-1. Memory Configurations

→ NOTE : All memory banks use 72-pin memory modules.

### Installation Instructions

→ NOTE : Always observe static electricity precautions. See "Handling Precautions" at the start of this manual.

1. Locate the SIMM banks on the mainboard. Determine your desired configuration to be installed.

2. Insert the SIMM edge connector at a 90-degree angle onto the socket.

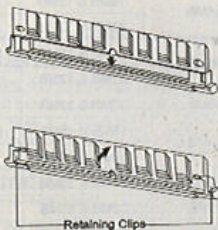


Figure 3-2. Installing SIMMs

3. Carefully push the SIMM down and back into the socket until the retaining clips of the socket snap, holding the SIMM in place. The holes in the SIMM should match the pins on the socket's retaining clips.

To remove the SIMM(s), pull the retaining latch on both ends of the socket and reverse the procedure above.

## Cache Memory

The PN-2000 has two types of cache SRAM for 256KB/512KB in DIP packages: one is standard 3.3V SRAM and the other is mix voltage 5V SRAM.

→ **NOTE : Use the correct chips for the amount of cache memory you want to add.**

## Installing Cache Memory

→ **NOTE : Always observe static electricity precautions. See "Handling Precautions" at the beginning of this manual.**

If you do not have the confidence to make the installation, better consult a service technician for assistance.

1. Locate the cache memory on the mainboard.  
See Figure 3-1 again.
2. Be guided by the Cache SRAM settings depending on your desired SRAM configuration.

Correct orientation of the chips is necessary for the cache to operate properly. Normally, the chips have either a curved notch or a dot. This marker on the chip must be matched to the marker on the socket for correct alignment.

Install the chips individually as follows:

3. Align the chip with the marker on the socket. Press the chip onto the socket, ensuring that the pins on the chip are aligned with the corresponding connections on the socket.
4. Carefully apply enough pressure to partially seat the chip into the socket.

Ensure that all pins are properly aligned with the connectors and that there are no bent pins. If there are any bent pins remove the chip, straighten the pin and repeat the process.

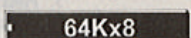
5. Press the chip completely into the socket so that the pins are properly seated.

## Cache SRAM Specifications and Settings

### 256KB



### 512KB



The cache size is jumper selectable. Below lists the jumper settings according to onboard cache size.

JUMPER	PIN DEFINITION
JWR1, JWR2	SRAM Type Select 1-2 Standard 3.3V 2-3 Mix Voltage 5V

JUMPER		CACHE SIZE
J8	J9	
1-2	1-2	Not installed
1-2	2-3	Reserved
2-3	1-2	256KB
2-3	2-3	512KB

Table 3-2. SRAM Configuration Jumpers

