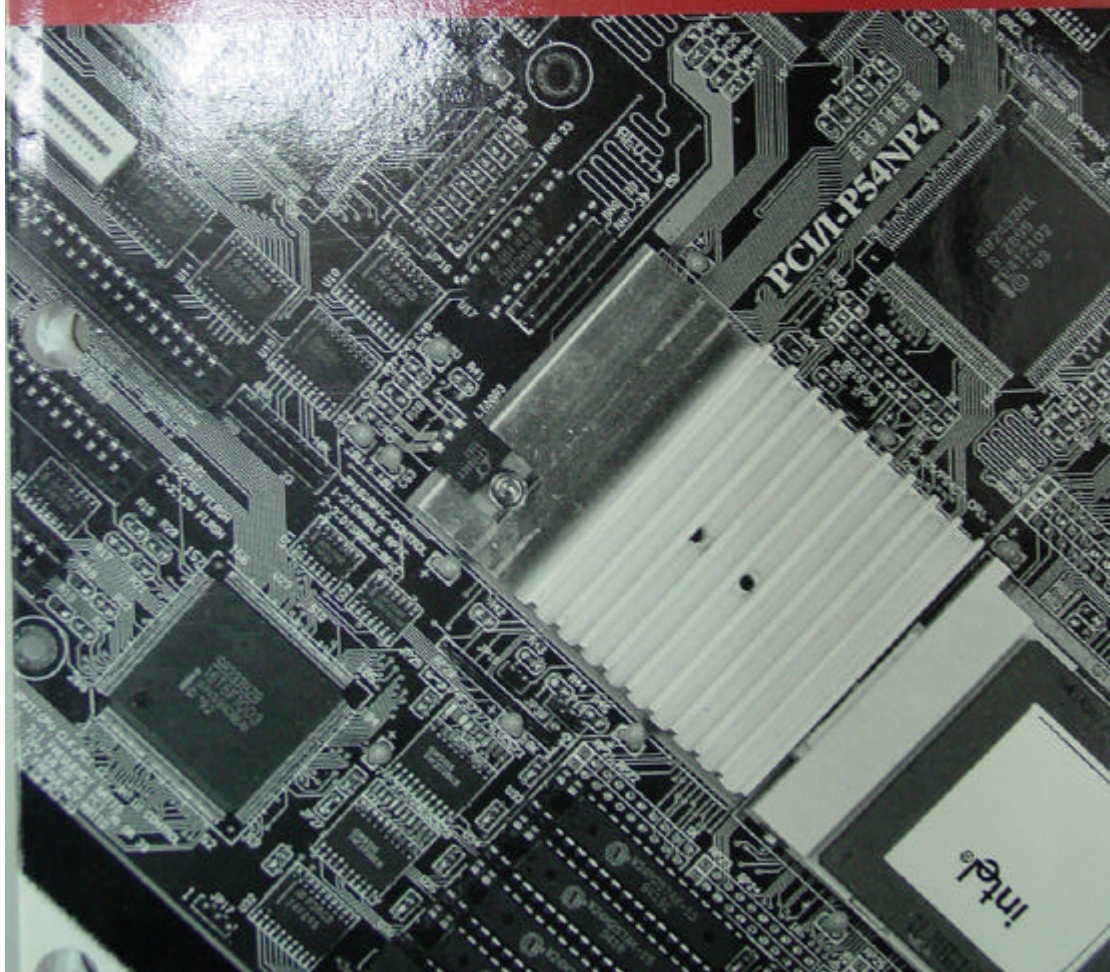


PCI/I-P54NP4

*PCI Bus, 90/100MHz Pentium™ Mainboard
With Super Multi-I/O Chip*



Technical Summary

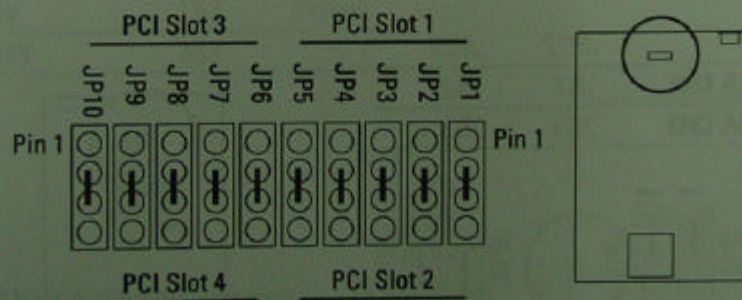
The first part of this section summarizes the mainboard's specifications and explains L2 external cache. The second part explains how to set up the optional PCI-SC200 SCSI Interface card.

Jumper Setting Summary

ISA/PCI IRQ Assignments: JP1 – 10

These assign IRQs to either the ISA slots (default) or to PCI slots with edge-triggered cards installed. Don't use these for level-triggered cards. Use the PCI Slot Configuration section in the BIOS Setup program for level-triggered cards.

	PCI Slot 1	PCI Slot 2	PCI Slot 3	PCI Slot 4
IRQ5	JP2, 1&2	JP2, 3&4	JP9, 1&2	JP9, 3&4
IRQ9	JP1, 1&2	JP1, 3&4	JP10, 1&2	JP10, 3&4
IRQ11	JP3, 1&2	JP3, 3&4	JP8, 1&2	JP8, 3&4
IRQ14	JP4, 1&2	JP4, 3&4	JP7, 1&2	JP7, 3&4
IRQ15	JP5, 1&2	JP5, 3&4	JP6, 1&2	JP6, 3&4



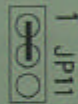
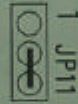
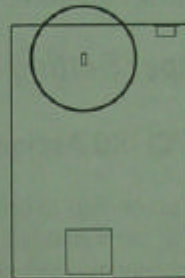
The default settings, all jumpers in the block Pins 2&3 shorted, leave the IRQs listed available for level-triggered or EISA bus expansion cards.

PS/2 Mouse Port Selector: JP11

This jumper controls the on-board PS/2 Mouse lead connector. When set to Enable, the port is active and uses IRQ12.

JP11

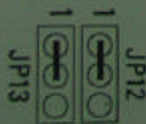
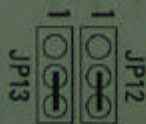
Enable	1&2	Default
Disable	2&3	

**Enable****Disable****DMA Channel Selection for ECP: JP12 – JP13**

These set the DMA channel for use with the Parallel port's ECP capability. Refer to the manual for the ECP-capable device you want to connect for instructions on which DMA channel to use.

JP12 JP13

DMA CH1	1&2	1&2
DMA CH3	2&3	2&3

**DMA CH1****DMA CH3**

On-board I/O Selector: JP16

This jumper controls the on-board Super Multi I/O chip. When set to Enable, the I/O ports on the board are active.

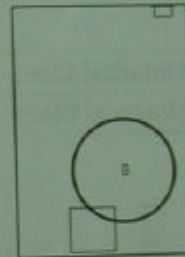
JP16		
Enable	1&2	Default
Disable	2&3	



Enable
On-board I/O



Disable
On-board I/O



BIOS Flash Memory Voltage Selector: JP17

This is factory-set to the 5V setting. See the FMW section in Chapter 3 for more information on this.

JP17		
5V	1&2	Default
12V	2&3	



5 Volt flash programming
& 12 Volt write-protection
(default setting)



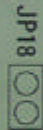
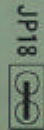
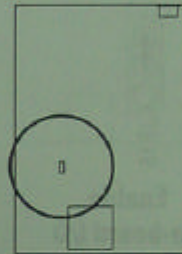
12 Volt flash programming



Host Bus Frequency Selector: JP18

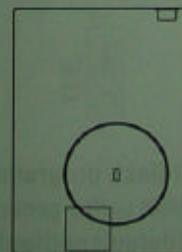
This jumper sets what fraction of the CPU's internal clock and the external clock speed will be. The default setting for the 90MHz Pentium CPUs is for a 60MHz external clock. Later Pentium CPUs will support the 1/2 feature, which will allow a 100MHz Pentium to run with an external clock speed of either 50 or 66MHz.

<i>JP18</i>	
2/3 of Internal Clock	Open
1/2 of Internal Clock	Short

**2/3 Internal Clock****1/2 Internal Clock****Level 1 Cache Type Selector: JP20**

This sets the cache type for the CPU's internal cache.

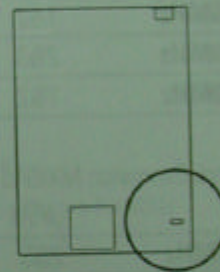
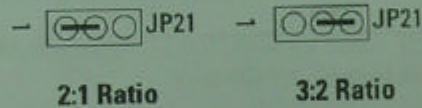
<i>JP20</i>		
Write-Back	Open	Default
Write-Through	Short	

**Write-Back****Write-Through**

CPU to PCI Bus Clock Ratio Control Selector: JP21

This sets the ratio between the CPU's external clock speed and the speed of the PCI Bus.

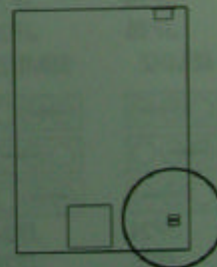
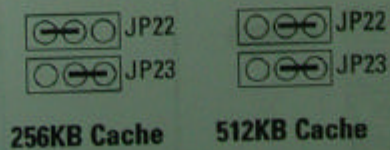
	JP21	
2:1 (CPU=60 or 66MHZ, PCI=30 or 33MHZ)	1&2	Default
3:2 (CPU=50MHZ, PCI=33MHZ)	2&3	



Level 2 Cache Size: JP22 – JP23

These are set based on the size of the installed cache.

	JP22	JP23
256K	1&2	2&3
512K	2&3	2&3



Clock Frequency Selector: JP24 – JP26

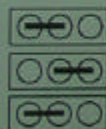
The three jumpers set the Bus Clock speed. There are two groups of settings, one for the two clock generator chip options. If you need to change this from the current setting, check the required 60MHz setting for to define which chip your board has.

Clock Generator: AV9154A-27

	JP24	JP25	JP26	
66MHz	1&2	2&3	1&2	
60MHz	2&3	1&2	2&3	Default
50MHz	1&2	2&3	2&3	

Clock Generator: MX8315

	JP24	JP25	JP26	
66MHz	2&3	1&2	2&3	
60MHz	1&2	2&3	1&2	Default
50MHz	2&3	1&2	1&2	

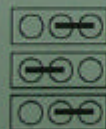


JP24

JP25

JP26

66MHZ

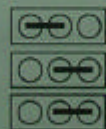


JP24

JP25

JP26

60MHZ

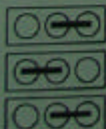


JP24

JP25

JP26

50MHZ

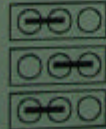
AV9154A-27

JP24

JP25

JP26

66MHZ

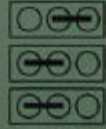


JP24

JP25

JP26

60MHZ

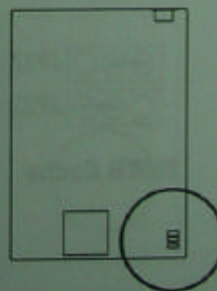


JP24

JP25

JP26

50MHZ

MX8315

Memory Subsystem

Memory Specifications:

See pages 2-9.

Memory Configurations

See pages 2-10 and 2-12 for chart.

Level 2 Cache Options

SRAM speed: 66MHz external clock – 12ns
50 or 60MHz external clock – 15ns

Cache Size: See jumper section for settings and next page for other specifications.

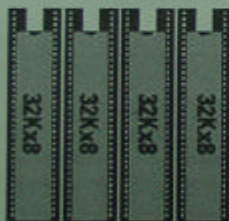
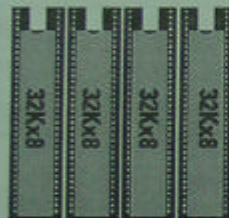
CPU Options

Types: Socket5 – Pentium P54C or CT

Internal Clock Speeds: 90MHz or 100MHz

Level 2 Cache Configurations

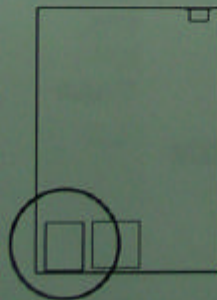
SRAM Cache Size	Number & Size	Pin Configuration
256KB	Eight 32Kx8	28 pins/chip
512KB	Eight 64Kx8	32 pins/chip



256KB cache



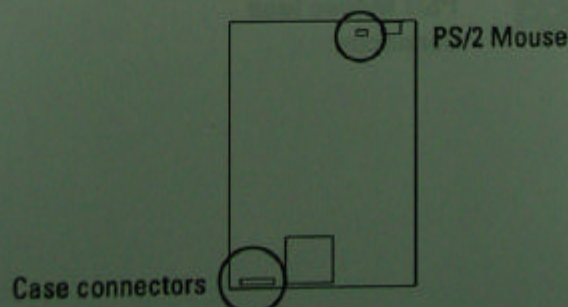
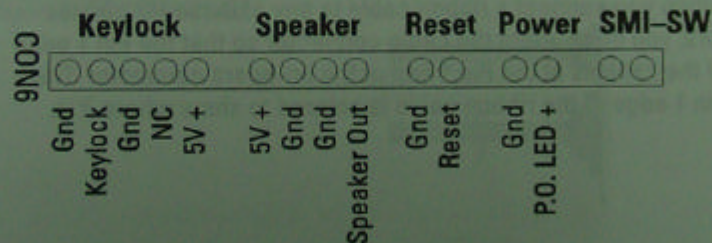
512KB cache



Connectors

There are several connectors on the board for switches and indicator lights from the system case. The connectors are made of the same components as the jumper switches. There are also connectors for the on-board I/O ports and the leads from a 5-volt system power supply.

KeyLock	Connector for both a case-mounted keyboard lock. Pin 1 is live, pins 3 & 5 are grounds.
Speaker	Connector for the lead from a speaker mounted inside the system case.
Reset Switch	Connector for the lead from a Reset switch mounted on the system case.
Power LED	Connector for the lead from a case-mounted Power-On LED indicator light.
SMI Switch	Connector for the lead from a Case-mounted Suspend switch.
PS/2 Mouse	Connector for a lead from a case-mounted PS/2 mouse port.



I/O Port Connectors

Pin1 is the upper left-hand pin on each port connector

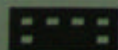
**Parallel Port
cable connector**

**Serial Ports
cable connectors**

**Floppy Disk Drive
cable connector**

**IDE Hard Disk Drive
cable connector**

When you connect a ribbon cable to any of these I/O connectors, you must orient the cable connector so that the Pin 1 edge of the cable is at the Pin 1 end of the on-board connector. The Pin 1 edge of the ribbon cable is colored to show where it is.



**PS/2 Mouse lead
connector**

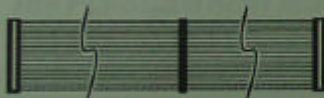
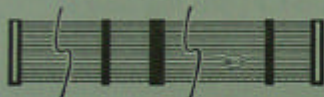
Port & Controller Cables

The mainboard comes with the following cables:

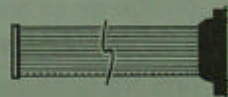
- 2 serial port ribbon cables attached to one mounting bracket
- 1 parallel port ribbon cable with mounting bracket
- 1 IDE ribbon connector cable
- 1 floppy disk drive ribbon connector cable

Connector and Port Cables

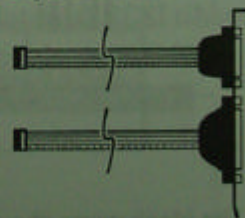
IDE ribbon cable



Parallel ribbon cable



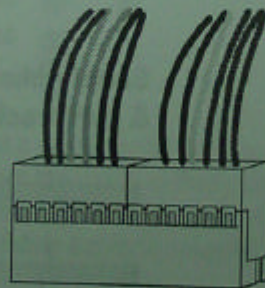
Serial ribbon cables & port bracket



Connecting The Power Supply

The system power supply connector is for a 5-volt power supply. To connect the leads from the power supply, you should first make sure the power supply is unplugged. Most power supplies have two leads. Each lead has six wires, two of which are black. Orient the connectors so the black wires are in the middle.

Align the plastic guide pins on lead to their receptacles on the connector. You may need to hold the lead at an angle to line it up. Once you have the guide pins aligned, press the lead onto the connector so that the plastic clips on the lead snap into place and secure the lead to the connector.

Connecting Power Supply Leads

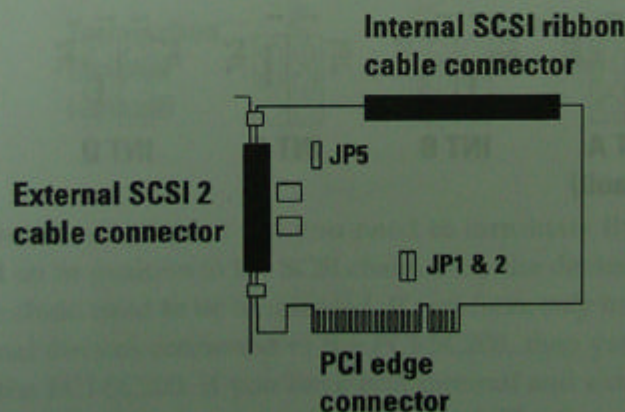
The black wires should be in the middle.

The PCI-SC200 SCSI Interface Card

Your mainboard may have come with an optional SCSI (Small Computer System Interface) controller card, the PCI-SC200. The card is also available separately. This card works with the SCSI BIOS on the mainboard. Together, they provide a complete PCI Fast SCSI-2 interface. With the card installed in your system you can connect SCSI devices installed in your system case to the internal connector on the card. You also have the additional option of connecting external SCSI devices to the external SCSI-2 connector on the card.

If you get the PCI-SC200 later on as an option, you will need to install it yourself. The setup procedure is explained here. The basic card installation procedure is explained at the end of Chapter 2.

The PCI-SC200 SCSI Interface Card



Setting Up the PCI-SC200

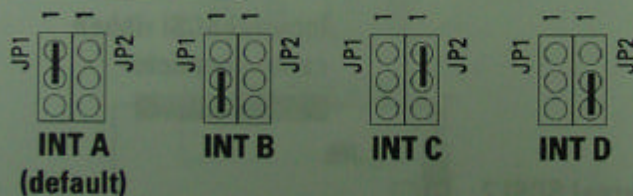
There are two jumper settings you may need to make on the card to set it up. One setting assigns the PCI INT interrupt, the other sets the card's termination.

Setting the INT Assignment

As explained in Chapter 2, any PCI card you install must use PCI INT A. On the PCI-SC200, you assign the INT by setting jumper JP1 or JP2. The default setting for the card already is INT A, so you do not need to change the setting to use the SC-200 with this mainboard.

The INT assignment jumper settings are illustrated below. The settings are printed on the card for your convenience.

JP1 & 2: Interrupt settings



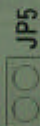
Terminator Settings

SCSI devices are connected together in a "chain" by cables. Internal devices connect to the PCI-SC200 with a fifty-pin flat ribbon cable. External devices connect to the external port with a SCSI-2 cable. If there is more than one internal or external device, additional devices are connected with cables to form a "daisy chain". The SCSI chain must be "terminated" at both ends, or the devices in the chain will not work properly.

Many SCSI devices use a set of terminating resistors to terminate the device. The PCI-SC200 has "active" termination that you set using jumper JP5. If you need to terminate the PCI-SC200, you do it by setting the jumper. There are two settings, terminated and unterminated, as shown below.

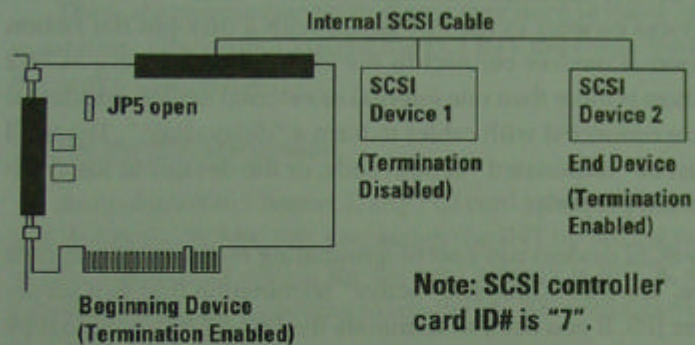
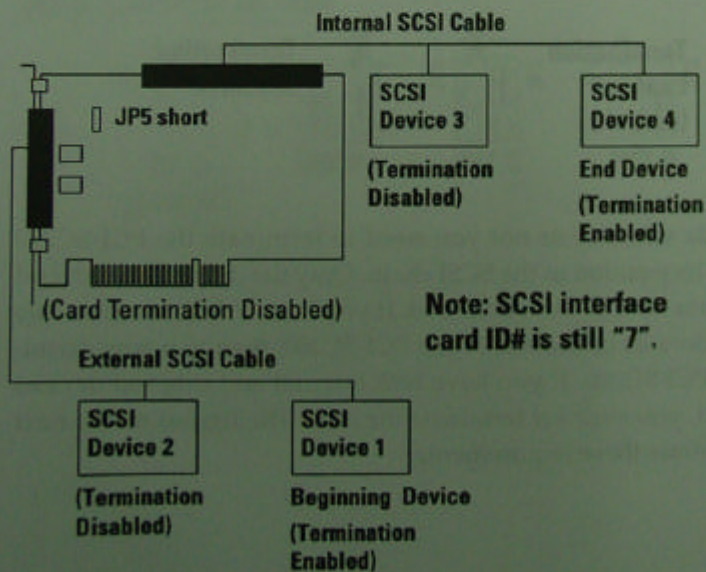
JP5: Terminator setting

Termination
Enabled
(default)



Termination
Disabled

Decide whether or not you need to terminate the PCI-SC200 based on its position in the SCSI chain. Only the devices at each end of the chain need to be terminated. If you have *only* internal or *only* external devices connected to the PCI-SC200, then you *must* terminate the PCI-SC200. If you have *both* internal and external devices connected, you *must not* terminate the card. The figures on the next page illustrate these requirements.

Example 1: Only internal or only external devices connected***Example 2: Both internal and external devices connected***

SCSI ID Numbers

All SCSI devices, including the PCI-SC200 interface card must have a SCSI identification number that is not in use by any other SCSI device. There are eight possible ID numbers, 0 through 7. The PCI-SC200 has a fixed SCSI ID of 7.

You can connect up to seven SCSI devices to the interface card. You must set a SCSI ID number for each device. SCSI devices vary in how they set the ID number. Some use jumpers, others have some kind of selector switch. Refer to the manual for any device you install for details on how to set its ID number.