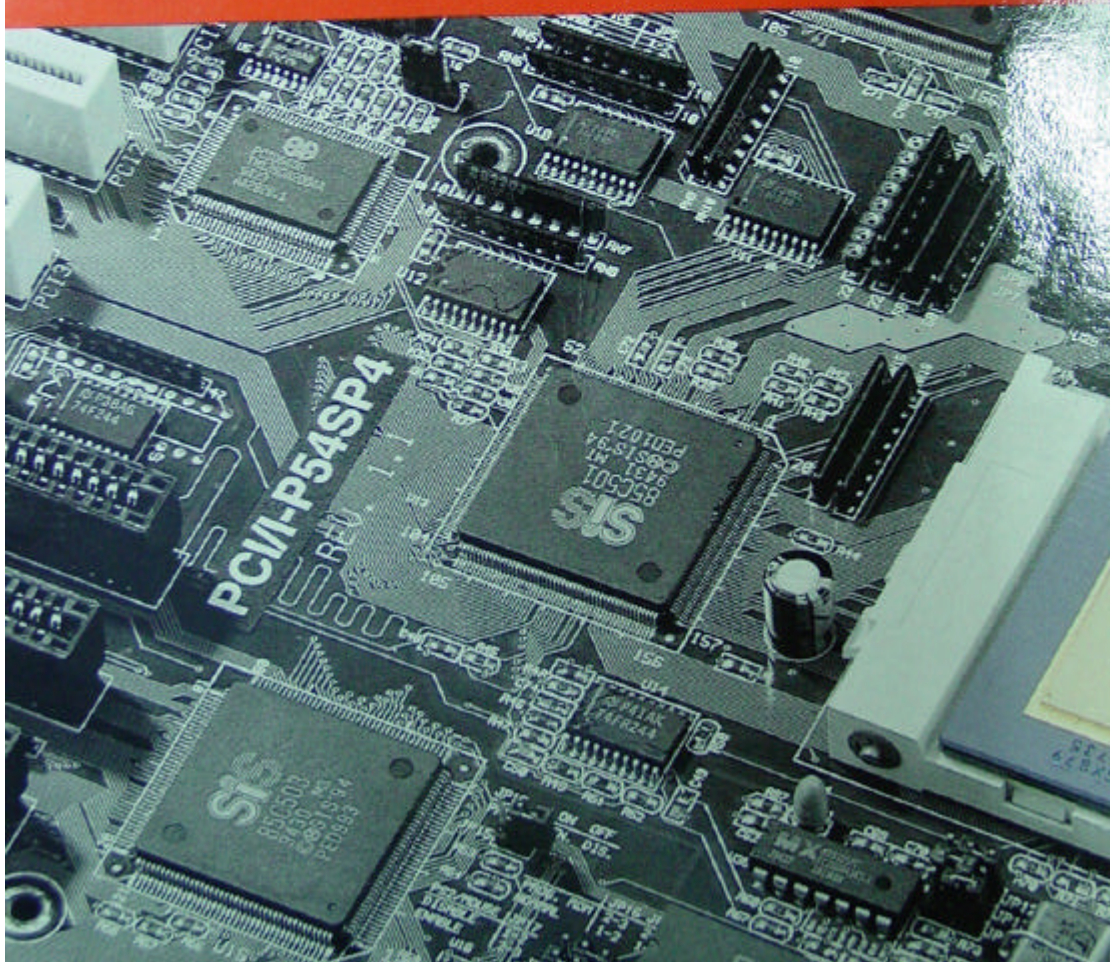


# PCI/I-P54SP4

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



## Technical Summary

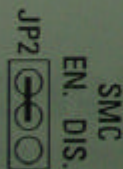
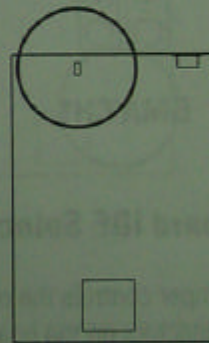
The first part of this section summarizes the mainboard's specifications and explains L2 external cache. The second part explains how to set up the optional PCI-SC200 SCSI Interface card.

### Jumper Setting Summary

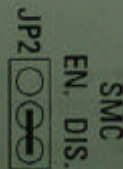
#### On-board Multi I/O Selector: JP2

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

	JP2	
<b>Enable</b>	1&2	Default
<b>Disable</b>	2&3	



**Enable**  
On-board I/O



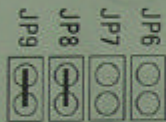
**Disable**  
On-board I/O



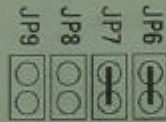
## SRAM Type Selector: JP6, JP7, JP8 & JP9

Set these according to the type of SRAM used. 3.3-Volt is 3.3V in and out. Mixed Mode is 5V in and 3.3V out.

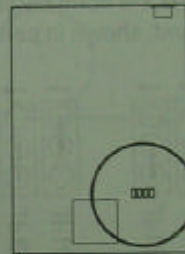
	JP6	JP7	JP8	JP9
<b>3.3-Volt</b>	Off	Off	On	On
<b>Mixed Mode</b>	On	On	Off	Off



**3.3-Volt SRAM**



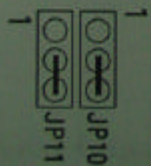
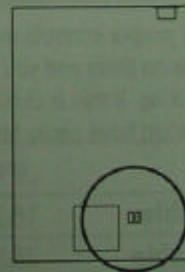
**Mixed Mode SRAM**



## Level 2 Cache Size: JP10 – JP11

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

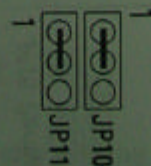
	JP10	JP11
<b>256K</b>	2&3	2&3
<b>512K</b>	1&2	2&3
<b>1MB</b>	1&2	1&2



**256KB Cache**



**512KB Cache**



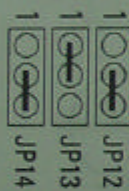
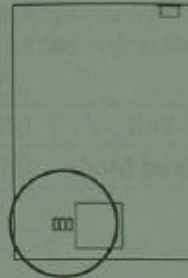
**1MB Cache**

**CPU Clock Speed Selector: JP12, JP13 & JP14**

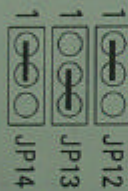
Set these according to the CPU's external clock speed.

	JP12	JP13	JP14
<b>66MHz</b> (100)	2&3	1&2	2&3
<b>60MHz</b> (90)	1&2	2&3	1&2
<b>50MHz</b> (75)	2&3	1&2	1&2
<b>40MHz</b>	1&2	2&3	2&3

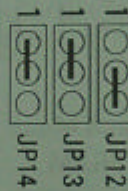
Note: CPUs are normally listed by their *internal* clock speed, shown in parentheses above.



66MHz



60MHz



50MHz

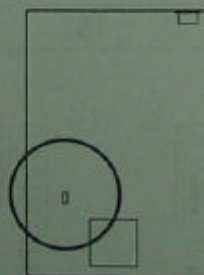


40MHz

**Parity Checking Selector: JP15**

This jumper controls memory parity checking. If you install SIMMs with parity bit chips on them and you enable this, the system will perform memory parity checking. If this is disabled, no parity checking will occur even if the SIMMs installed have parity bit chips.

	JP15
<b>Enable</b>	1&2
<b>Disable</b>	2&3



Enable Parity



Disable Parity

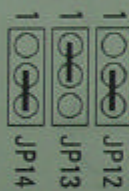
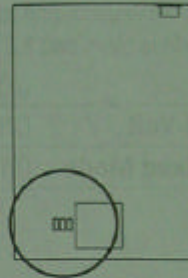


**CPU Clock Speed Selector: JP12, JP13 & JP14**

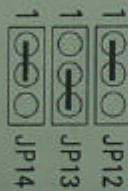
Set these according to the CPU's external clock speed.

	JP12	JP13	JP14
<b>66MHz</b> (100)	2&3	1&2	2&3
<b>60MHz</b> (90)	1&2	2&3	1&2
<b>50MHz</b> (75)	2&3	1&2	1&2
<b>40MHz</b>	1&2	2&3	2&3

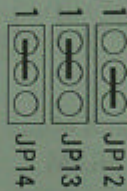
Note: CPUs are normally listed by their *internal* clock speed, shown in parentheses above.



66MHz



60MHz



50MHz

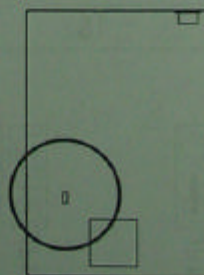


40MHz

**Parity Checking Selector: JP15**

This jumper controls memory parity checking. If you install SIMMs with parity bit chips on them and you enable this, the system will perform memory parity checking. If this is disabled, no parity checking will occur even if the SIMMs installed have parity bit chips.

	JP15
<b>Enable</b>	1&2
<b>Disable</b>	2&3



Enable Parity

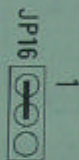


Disable Parity

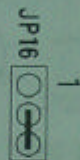
**PS/2 Mouse Port Selector: JP16**

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

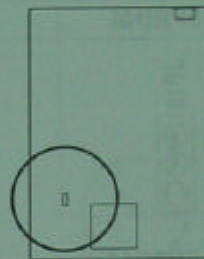
JP16		
<b>Disable</b>	1&2	Default
<b>Enable</b>	2&3	



**Disable  
PS/2 Mouse**



**Enable  
PS/2 Mouse**



**Flash Eprom Read/Write Selector: JP17**

This jumper selects between Normal Read/Programming Disabled mode and Programming Enabled mode for the BIOS flash EPROM.

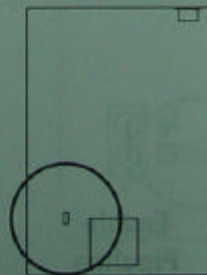
JP17		
<b>Read/ Prog. Disabled</b>	1&2	Default
<b>Programming Enabled</b>	2&3	



**Disable Programming &  
Normal Read**



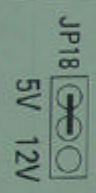
**Enable Programming**



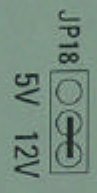
**5-Volt/12-Volt EPROM Selector: JP18**

This indicates which type of flash EPROM is installed on the board.

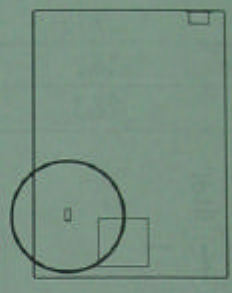
	<i>JP18</i>
<b>5-Volt EPROM</b>	1&2
<b>12-Volt EPROM</b>	2&3



**5V EPROM**



**12V EPROM**



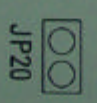
**Pipelined Address Selector: JP20**

This controls the pipelined address feature. Don't change the default unless you know what you are doing.

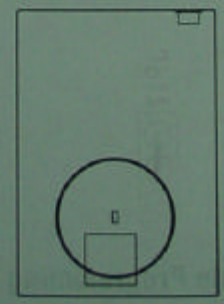
	<i>JP20</i>
<b>Enable Pipelined Address (NA#)</b> (Def.)	Short
<b>Disabled Pipelined Address (NA#)</b>	Open



**Enable Pipeline**



**Disable Pipeline**





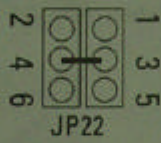
## CPU Voltage Selector: JP22

This jumper sets the voltage supplied to the CPU based on which CPU is installed.

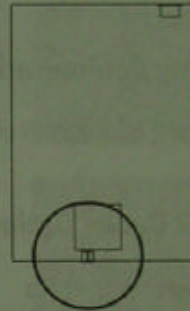
	JP22
P54C & P54C-VR	1&2
P54C-VRE	3&4



P54C & P54C-VR



P54C-VRE



## Single/Double-sided SIMM Selector: RN11 & RN12

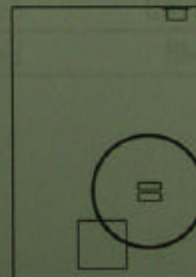
RN11 and 12 are resistor array sockets that are used to set which type of SIMM can be installed in SIMM Sockets 1 & 2. You insert the resistor array in the appropriate socket for the type of SIMMs installed in SIMM Sockets 1 & 2.

	RN11	RN12
Single-sided	Installed	Empty
Double-sided	Empty	Installed

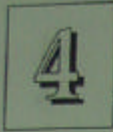
1-sided SIMMs  
in Sockets 1/2



2-sided SIMMs  
in Sockets 1/2







## PCI/I-P54SP4 User's Manual

### Memory Subsystem

#### Memory Specifications:

See pages 2-7.

#### Memory Configurations

See page 2-8 for a chart of the configuration options.

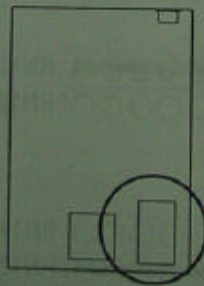
#### Level 2 Cache Options

**SRAM speed:** 15ns

**Cache Size:** See jumper section for settings and below for other specifications.

#### Level 2 Cache Configurations

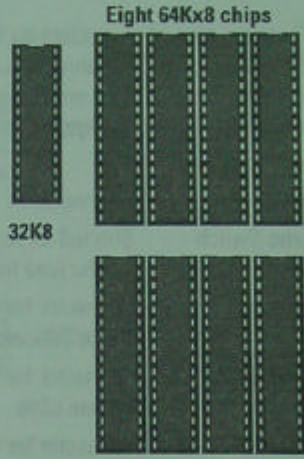
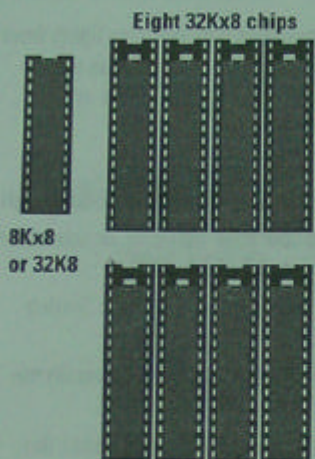
<i>Cache Size</i>	<i>Cache Chips</i>	<i>Pin Configuration</i>	<i>Tag Chip</i>
256KB	Eight 32K8	28 pins/chip	8K8 or 32K8
512KB	Eight 64K8	32 pins/chip	32K8
1MB	Eight 128K8	32 pins/chip	32K8



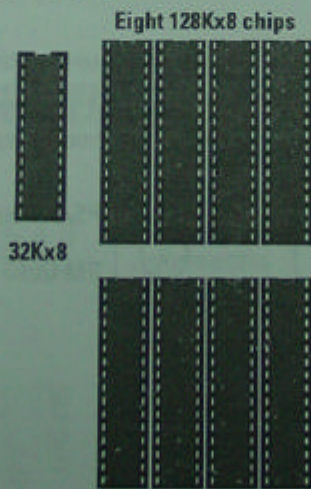


256KB cache

512KB cache



1MB cache



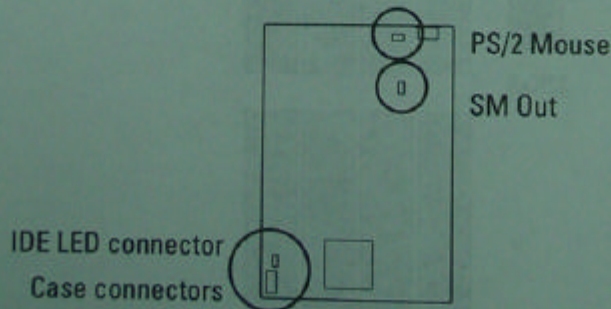


**External Connections**

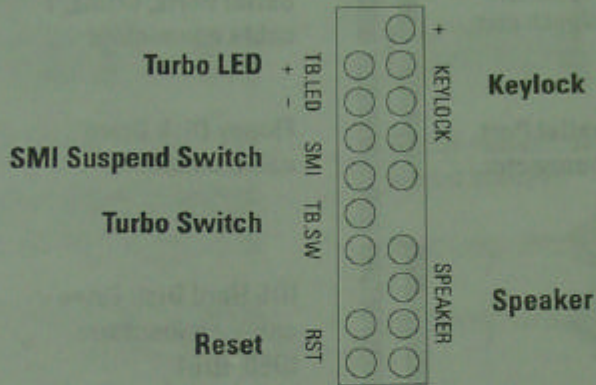
There are several connectors on the board for switches and indicator lights from the system case. The connectors are made of the same components as the jumper switches. There are also connectors for the on-board I/O ports and the leads from a 5-volt system power supply.

Connector Block:

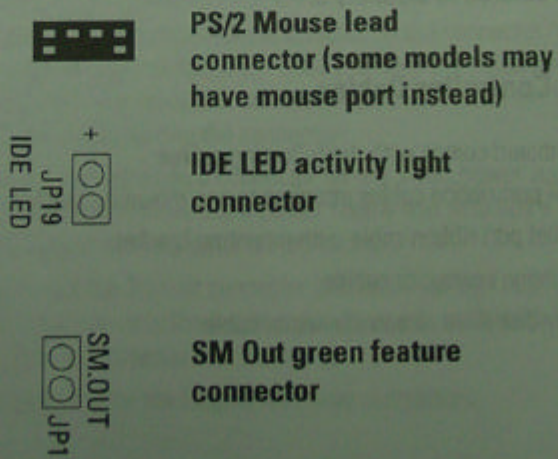
- SMI Switch            Connector for the lead from a case-mounted Suspend switch.
- Turbo Switch        Shorted for maximum speed operation (default), or connector for the lead from a case-mounted Turbo Switch.
- Turbo LED            Connector for the lead from a case-mounted Turbo Switch status indicator LED.
- Reset Switch        Connector for the lead from a Reset switch mounted on the system case.
- Speaker             Connector for the lead from a speaker mounted inside the system case.
- KeyLock             Connector for both a case-mounted keyboard lock and a Power-On LED.
- PS/2 Mouse         Connector for a lead from a case-mounted PS/2 mouse port.
- IDE LED             Connector for IDE activity LED.
- SM Out              Connector for a power management lead from a green device.



## Case Feature Connectors



## Other Feature Connectors





### I/O Port Connectors

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

**Parallel Port  
cable connector**



**Serial Ports, COM2, 1  
cable connectors**

**Floppy Disk Drive  
cable connector**

**IDE Hard Disk Drive  
cable connectors,  
IDE0, IDE1**



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 identify it.

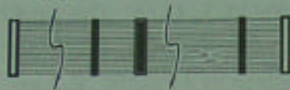
### **Port & Controller Cables**

The mainboard comes with the following cables:

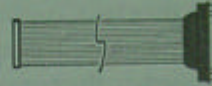
- 2 serial port ribbon cables attached to one mounting bracket
- 1 parallel port ribbon cable with mounting bracket
- 2 IDE ribbon connector cables
- 1 floppy disk drive ribbon connector cable

## Connector and Port Cables

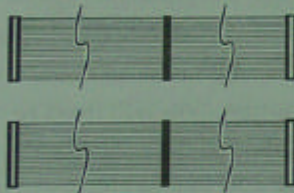
### Floppy Drive ribbon cable



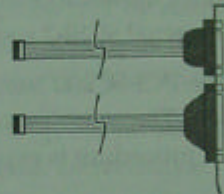
### Parallel ribbon cable



### IDE ribbon cables



### Serial ribbon cables & port bracket



## Connecting A 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.

One model of this mainboard also has a connector for a 3.3-volt power supply lead. If you have this model, you must use a power supply that also has a 3.3-volt lead and connect the lead to the connector on the board.

The other model leaves off the 3.3-volt connector and has a voltage regulator/heatsink combination that converts the 5-volt power from the main leads to 3.3-volts for use by the parts of the board that require it.

See the diagram on page 1-5 for the location of these connectors.

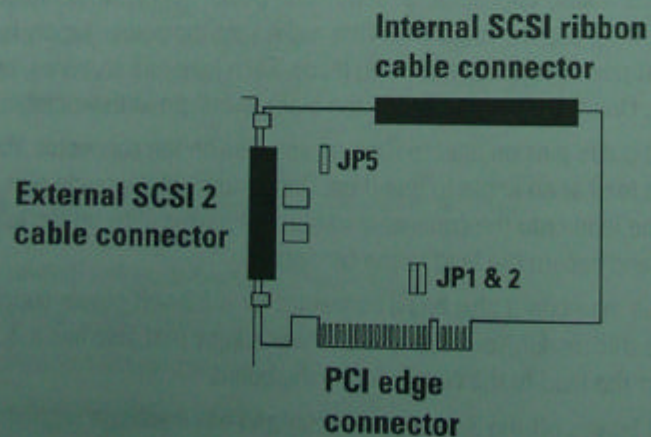


### ***The PCI-SC200 SCSI Interface Card***

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**

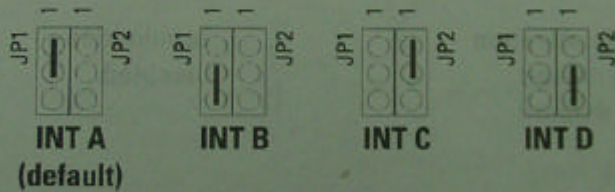
There are two jumper settings you may need to make on the card to set it up. One setting assigns the PCI INT interrupt, the other sets the card's termination.

**Setting the INT Assignment**

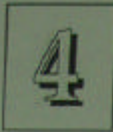
As explained in Chapter 2, any PCI card you install must use PCI INT A. On the PCI-SC200, you assign the INT by setting jumper JP1 or JP2. The default setting for the card already is INT A, so you do not need to change the setting to use the SC-200 with this mainboard.

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

**JP1 & 2: Interrupt settings**







## PCI/I-P54SP4 User's Manual

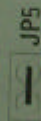
### ***Terminator Settings***

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***

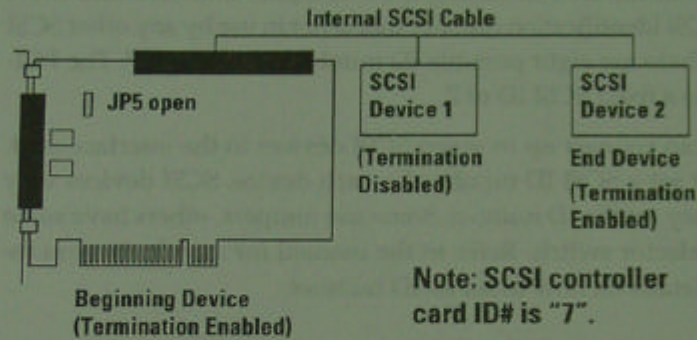
**Termination  
Enabled  
(default)**



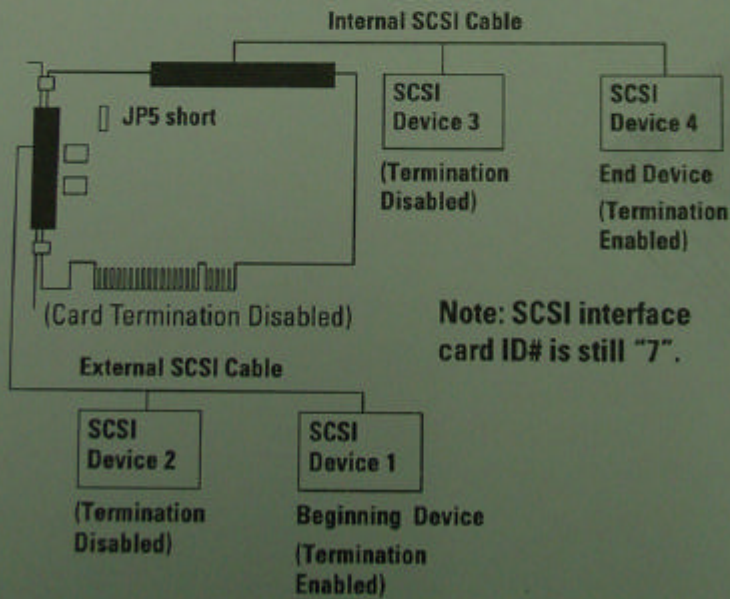
**Termination  
Disabled**

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.

