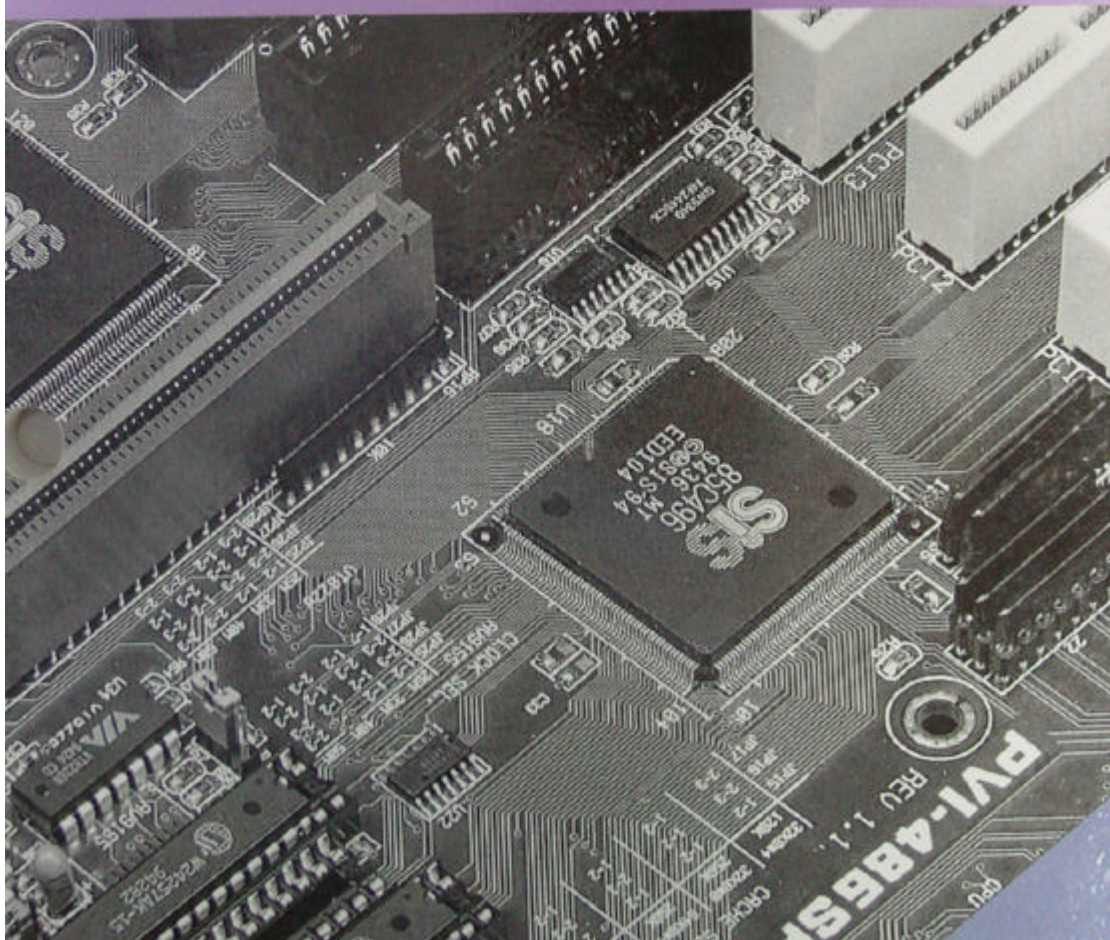


# PVI-486SP3

*PCI-Bus, VL Bus & ISA Bus Mainboard  
With 32-bit Local Bus IDE Controller*



## Technical Summary

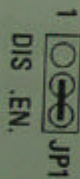
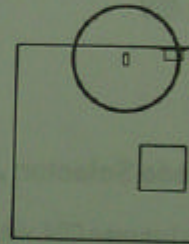
The first part of this section summarizes the mainboard's specifications and explains L2 external cache. The second part explains how to set up the optional PCI-SC200 SCSI Interface card.

### Jumper Setting Summary

#### On-board Multi I/O Selector: JP1

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

	JP1	
<b>Enable</b>	2&3	Default
<b>Disable</b>	1&2	



**Enable  
On-board I/O**



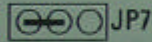
**Disable  
On-board I/O**



**CPU Voltage Selector: JP7**

This jumper selects the voltage setting for low-voltage CPUs from Intel and Cyrix.

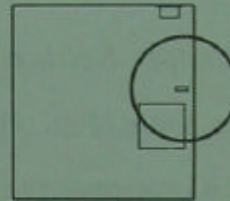
	<i>JP7</i>
<b>All Other CPUs</b>	1&2
<b>Cyrix DX2-V</b>	2&3



**All Other CPUs**  
3.45V



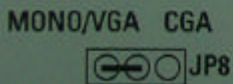
**Cyrix DX2-V**  
3.6V



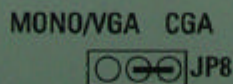
**Video Mode Selector: JP8**

JP8 selects between CGA video and all other video modes (Mono/VGA). The settings are based on the video card installed. The default is Mono/VGA and you should normally not need to change it.

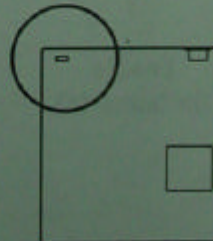
	<i>JP8</i>
<b>Mono/VGA</b>	1&2
<b>CGA</b>	2&3



**Mono/VGA**



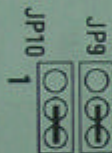
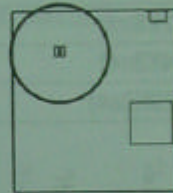
**CGA**



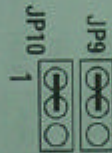
## DMA Channel Selection for ECP: JP9 – JP10

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.

	JP9	JP10
<b>DMA CH1</b>	2&3	2&3
<b>DMA CH3</b>	1&2	1&2



**DMA CH1**

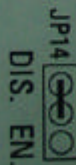
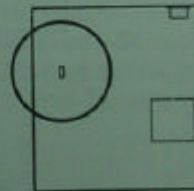


**DMA CH3**

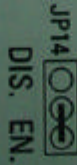
## PS/2 Mouse Port Selector: JP14

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

	JP14	
<b>Disable</b>	1&2	Default
<b>Enable</b>	2&3	



**Disable  
PS/2 Mouse**

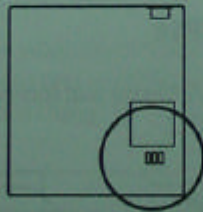


**Enable  
PS/2 Mouse**

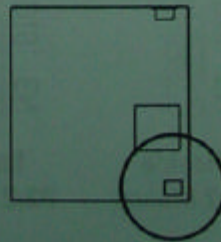
**Level 2 Cache Size: JP15 – JP17**

Set these according to the size of the installed cache.

	<i>JP15</i>	<i>JP16</i>	<i>JP17</i>
<b>128KB (32K8x4)</b>	1&2	2&3	2&3
<b>256KB (32K8x8)</b>	1&2	1&2	1&2
<b>256KB (64K8x4)</b>	1&2	2&3	1&2
<b>512KB (128K8x4)</b>	2&3	2&3	1&2



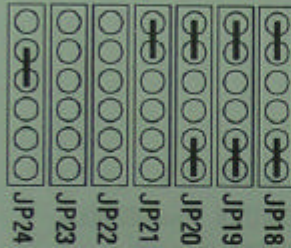
**Location of CPU type jumper block JP18-24**



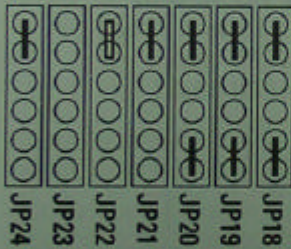


## CPU Type Selector: JP18-24

Set jumpers JP18 through 24 according to the CPU installed in the mainboard. The following diagrams indicate the settings for the supported CPUs.

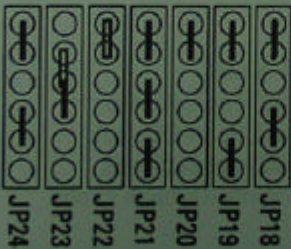


**Intel i486SX, i486SX2**



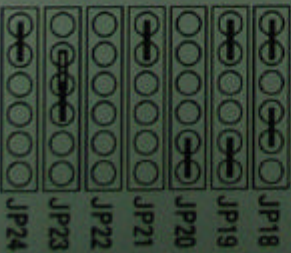
**Intel i486DX, DX2-&E; i486DX4, DX40DP-&E; OverDrive/i487SX**

JP22 pins 1&2 (cap outlined):  
Short for 2X CPU clock  
Open for 3X CPU clock



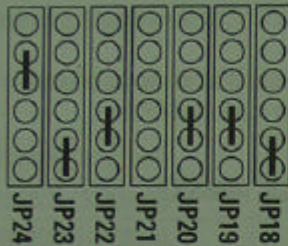
**i486DX2-&EW (P24D)  
i486DX4-&EW**

JP22 pins 1&2 (cap outlined):  
Short-2X clock, Open-3X clock  
JP23 pins 2&3 (cap outlined):  
Short for L1 Write-Through cache

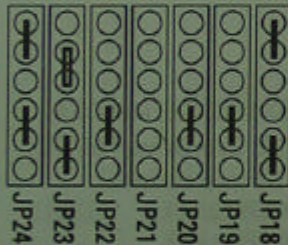


**Intel P24T  
(Pentium Overdrive)**

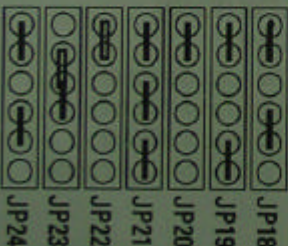
JP23 pins 2&3 (cap outlined):  
Short for L1 Write-Through cache



**UMC-U5S; AMD Am486SX**



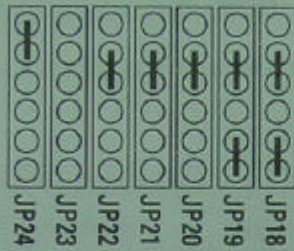
**AMD Am486DX4, Am486DXL4,  
Am486DX2 V8T (3-volt)**  
JP23 pins 2&3 (cap outlined):  
Short for 2X CPU clock  
Open for 3X CPU clock



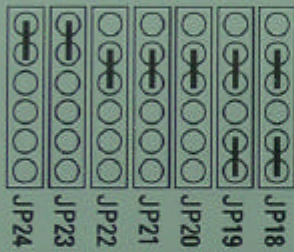
**AM486DX4-SV8B**  
JP22 pins 1&2 (cap outlined):  
Short-2X clock, Open-3X clock  
JP23 pins 2&3 (cap outlined):  
Short for L1 Write-Through cache



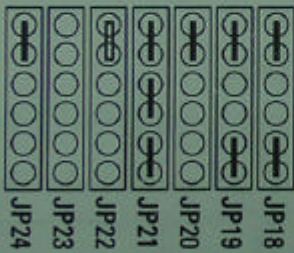
# Technical Summary



Cyrix Cx486DX,  
Cx486DX2



Cyrix Cx486DX2-V (3.6V/4V)  
Cx486DX4 (3.45V)  
Ti486DX2-G (3.45V)



Cyrix Cx486DX4-P/O  
Cx5x86 (M1sc)  
JP22 pins 1&2 (cap outlined):  
Short for 2X CPU clock



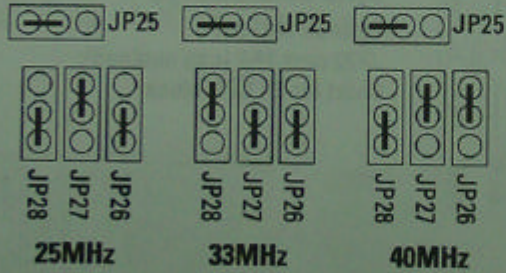
**CPU External Clock Speed Selector: JP25 - 28**

Set these by the CPU's external clock speed for the installed clock generator.

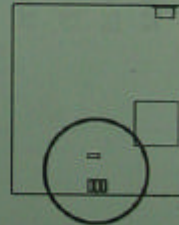
VT8228	JP25	JP26	JP27	JP28
25Mhz	1&2	2&3	1&2	2&3
33MHz	1&2	2&3	2&3	1&2
40MHz	1&2	1&2	1&2	2&3

AV9155	JP25	JP26	JP27	JP28
25Mhz	1&2	2&3	2&3	1&2
33MHz	1&2	1&2	2&3	1&2
40MHz	1&2	2&3	1&2	1&2

**VT8228**



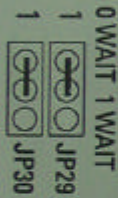
**AV9155**



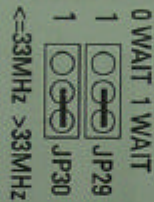
## VESA ID Selector: JP29 & JP30

These set up the VL-Bus slot. Default is for CPU with 33MHz or lower external clock speed. If CPU external clock is greater than 33MHz, use the other setting.

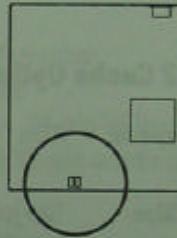
	JP29	JP30
<b>0 WS/≤33MHz (Def.)</b>	1&2	1&2
<b>1 WS/&gt;33MHz</b>	2&3	2&3



**0 Wait State**



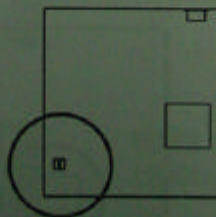
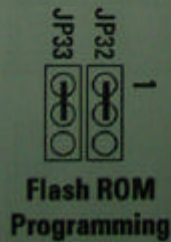
**1 Wait State**



## Flash ROM Programming Selector: JP32 & JP33

These enable programming for a 5- or 12-volt Flash ROM chip for the PNP BIOS. This setting is required. Do not change it.

	JP32	JP33
<b>Program F. ROM (default)</b>	1&2	1&2





## ***Memory Subsystem***

### **Memory Specifications:**

See pages 2-7.

### **Memory Configurations**

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

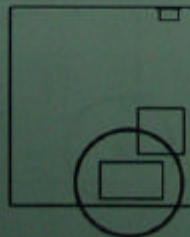
### **Level 2 Cache Options**

**SRAM speed:** 15ns

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

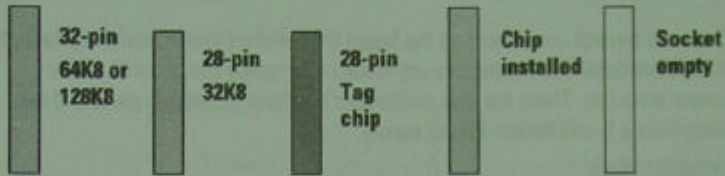
### **Level 2 Cache Configurations**

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



# Technical Summary

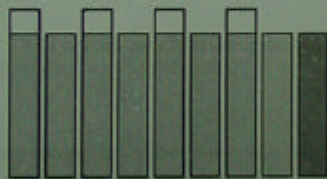
4



Note: 28-pin chips can use the 32-in sockets



128KB cache  
32K8x4  
Note - 28-pin chips  
in the 32-pin sockets



256KB cache  
32K8x8  
Four 28-pin chips in  
the 32-pin sockets



256KB cache  
64K8x4



512KB cache  
128K8x4

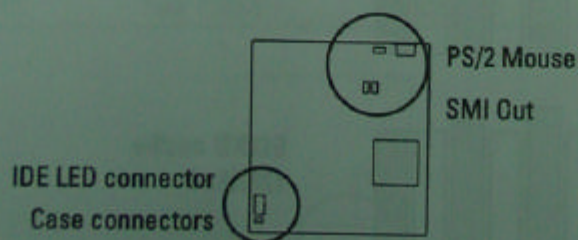


### External Connections

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:

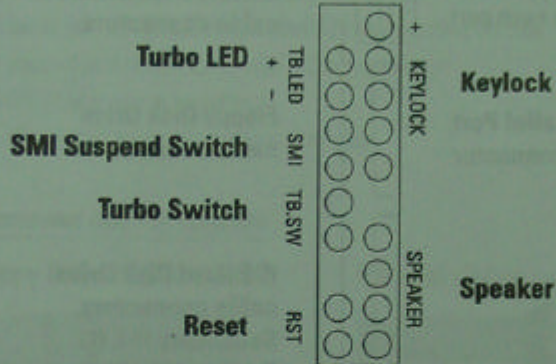
SMI Switch	Connector for the lead from a case-mounted Suspend switch.
Turbo Switch	Shorted for maximum speed operation (default), or connector for the lead from a case-mounted Turbo Switch.
Turbo LED	Connector for the lead from a case-mounted Turbo Switch status indicator LED.
Reset Switch	Connector 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 lead.
SMI Out	Two 2-pin jumpers, JP2 & JP3 for a power management control signal cable from a "green" power supply or other green devices.



# Technical Summary

4

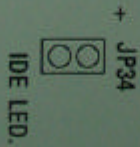
## Case Feature Connectors



## Other Feature Connectors



PS/2 Mouse lead connector (some models may have mouse port instead)



IDE LED activity light connector



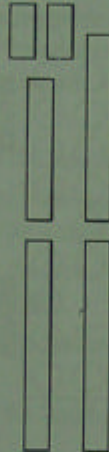
SMI Out connectors



**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,  
Secondary IDE (L)  
Primary IDE (R)**

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.

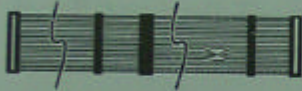
## Port & Controller Cables

The mainboard comes with the following cables:

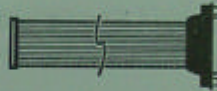
- 2 serial port ribbon cables attached to one mounting bracket
- 1 parallel port ribbon cable with mounting bracket
- 2 IDE ribbon connector cables
- 1 floppy disk drive ribbon connector cable

### Connector and Port Cables

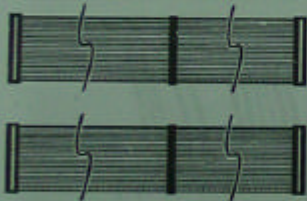
#### Floppy Drive ribbon cable



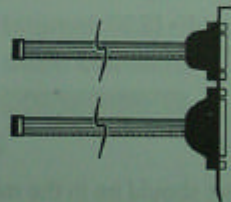
#### Parallel ribbon cable



#### 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.

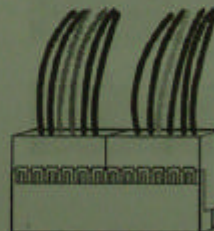
Align the plastic guide pins on lead to their receptacles on the connector. You may need to hold the lead at an angle to line it up. Once you have the guide pins aligned, press the lead onto the connector so that the plastic clips on the lead snap into place and secure the lead to the connector.

This mainboard has a voltage regulator 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.

### **Connecting Power Supply Leads**

The black wires should be in the middle.

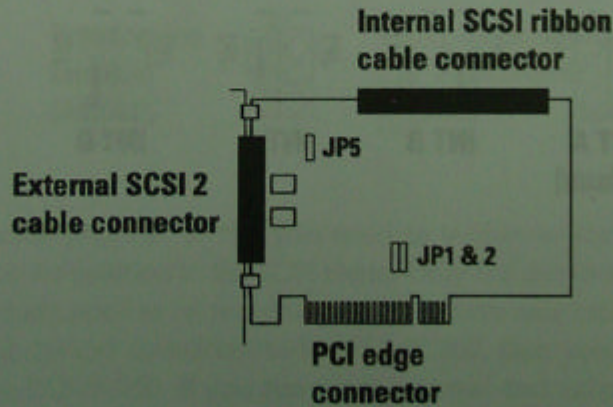


## ***The PCI-SC200 SCSI Interface Card***

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

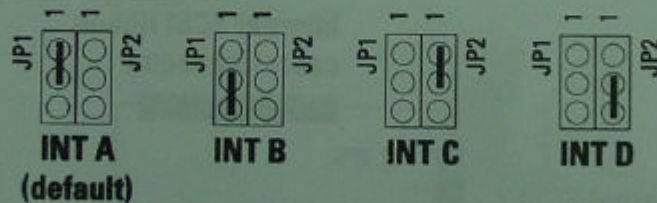
There are two jumper settings you may need to make on the card to set it up. One setting assigns the PCI INT interrupt, the other sets the card's termination.

#### 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)

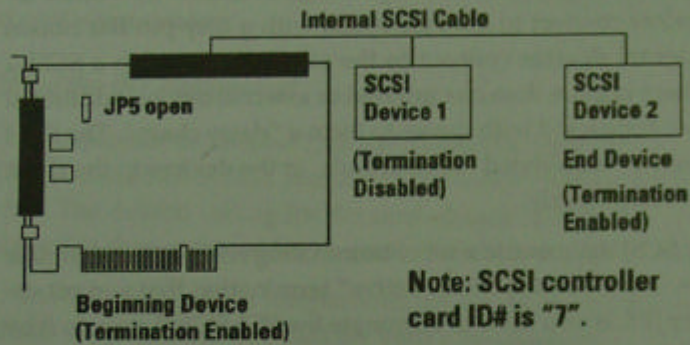


Termination  
Disabled

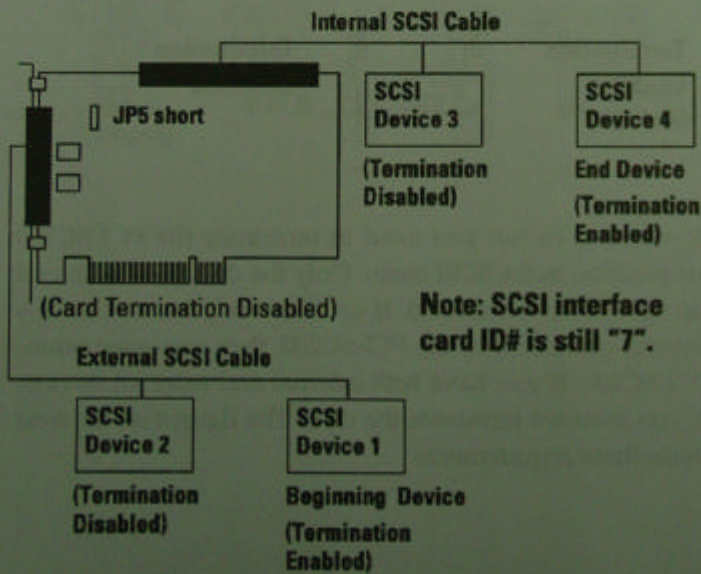
Decide whether or not you need to terminate the PCI-SC200 based on its position in the SCSI chain. Only the devices at each end of the chain need to be terminated. If you have *only* internal or *only* external devices connected to the PCI-SC200, then you *must* terminate the PCI-SC200. If you have *both*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

