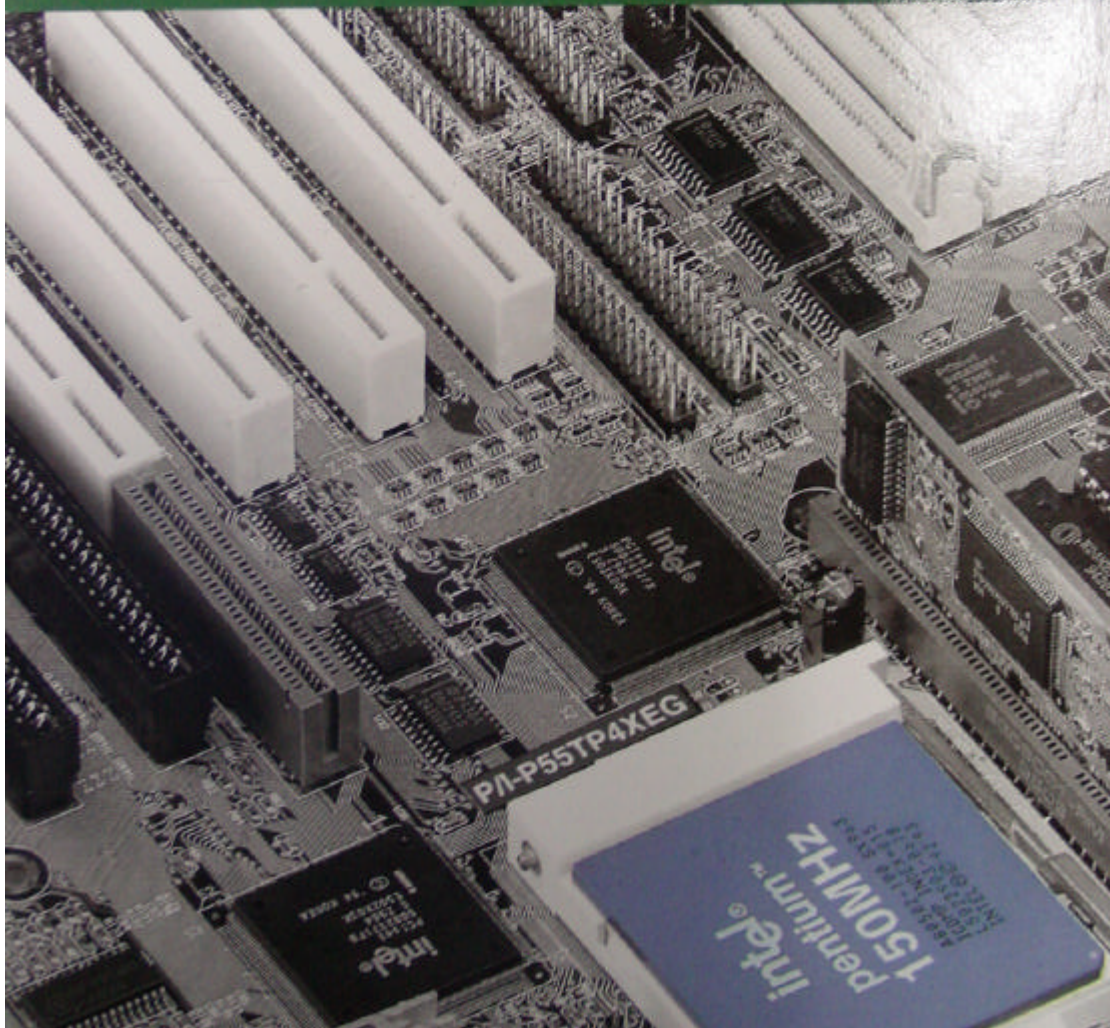


# P/I-P55TP4XEG

*PCI, ISA & MediaBus, Pentium®-75MHz~200MHz Mainboard  
With On Board PCI Bus Master IDE and Super Multi-I/O*



## Technical Summary

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

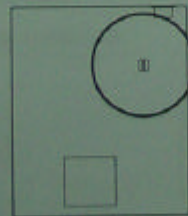
### Jumper Setting Summary

This section lists the setting options for all User-selectable jumper settings on this mainboard. The settings are for both Rev. 2.1 and Rev. 2.4 of this mainboard. Where they differ, revision-specific settings are shown.

#### Rev. 2.4 On-board COM2 Selector: JP1 & JP2

These jumpers set the function of the second on-board UART. In the default setting, UART2 supports the COM2 serial port. The other setting is for an optional infrared port module, which connects to the JP31 connector. If an infrared port is installed, you must enable infrared in the "Chipset Features Setup" section of the BIOS Setup utility by setting the "UART2 Use Infrared" line to "Enabled".

	JP1	JP2	
COM2	1&2	1&2	Default

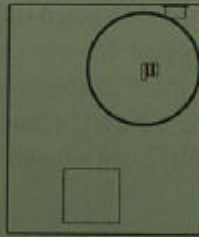


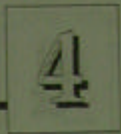
**Note:** The JP31 IR connector is on revision 2.4 of this mainboard. Revision 2.1 uses the COM2 connector for both the second serial port and as an infrared module connector. The jumper settings are on the next page.

**Rev. 2.1 On-board COM2 Selector: JP1, JP2 & JP3**

These jumpers set the function of the second on-board serial port ("COM2"). The default setting is for the port to function as the COM2 serial port. The other setting is for an optional infra-red port, which connects to the "COM2" connector. If an infrared port is installed, you must enable infrared in the "Chipset Features Setup" section of the the BIOS Setup program by setting the "Uart IR" line to the "Enabled" setting.

	<i>JP1</i>	<i>JP2</i>	<i>JP3</i>	
<b>COM2</b>	1&2	1&2	1&2, 3&4	Default





## On-board Multi I/O Selector: JP4

This jumper controls the on-board SMC 37C665IR Super I/O chip. When set to Enable, the I/O ports on the board are functional.

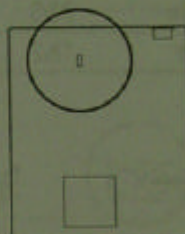
	JP4	
<b>Enable</b>	1&2	Default
<b>Disable</b>	2&3	



**Enable**  
On-board I/O



**Disable**  
On-board I/O



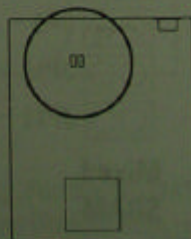
## Flash EPROM Read/Write Selector: JP5 & JP6

These jumpers select between Boot Block Protected mode and Programming Enabled mode for the BIOS Flash EPROM.

	JP5	JP6	
<b>Normal Operation</b>	1&2	2&3	Default
<b>Programming Enabled</b>	2&3	2&3	



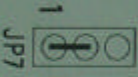
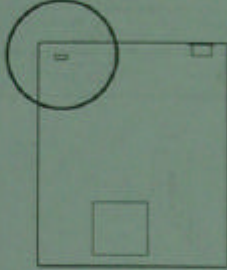
**Boot Block Protected**    **Enable Flash Programming**



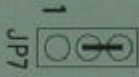
**PS/2 Mouse Port Selector: JP7**

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

JP7		
<b>Disable</b>	2&3	Default
<b>Enable</b>	1&2	



**Enable PS/2 Mouse**

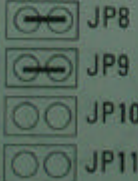


**Disable PS/2 Mouse**

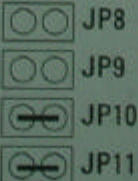
**Cache Voltage Selector: JP8, JP9, JP10 & JP11**

These jumpers set the voltage of the installed cache SRAM.

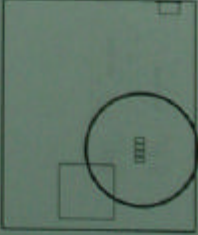
	JP8	JP9	JP10	JP11
<b>Mixed Voltage</b>	Short	Short	Open	Open
<b>3.3 Volt</b>	Open	Open	Short	Short



**Mixed SRAM**



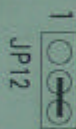
**3.3V SRAM**



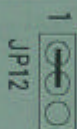
**Level 2 Cache Size: JP12**

Set according to the size of the on-board Asynchronous SRAM cache, if installed. This jumper has no effect if a cache module is installed instead.

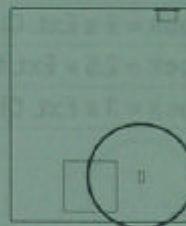
	<i>JP12</i>
<b>256KB</b>	2&3
<b>512KB</b>	1&2



**256KB Cache**



**512KB Cache**



**Clear CMOS: JP13**

Shorting this jumper clears the CMOS memory, erasing the system configuration information stored there by BIOS Setup utility. Only use this if you know what you are doing. To clear the CMOS, short the jumper for a moment then remove the cap. DO NOT leave this jumper shorted. After clearing the CMOS, you must run BIOS Setup to create a new system configuration record.

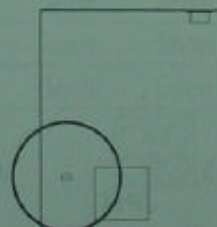
	<i>JP13</i>
<b>Normal</b>	Open
<b>Clear CMOS</b>	Short (briefly)



**Normal**



**Clear CMOS  
(then remove)**

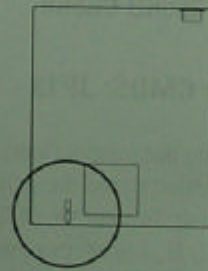
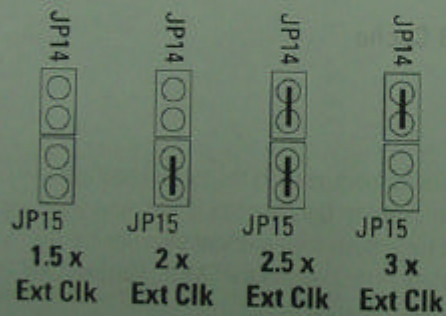
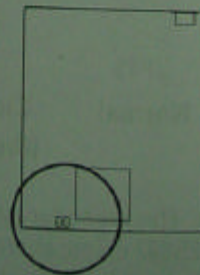
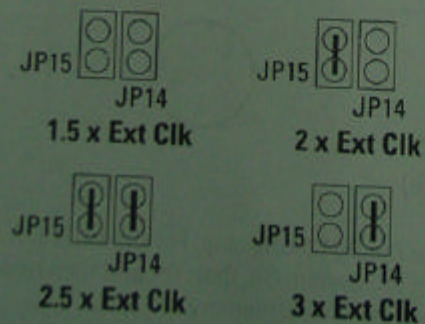


Note: The procedure above is for the DS12887A chip. For the BQ3287A or DS12B887 chips, short JP13, turn the system On, then Off and then remove the jumper cap from JP13 to clear the CMOS memory.

**CPU Internal Clock External Multiple Selector: JP14 & JP15**

Use the default setting for 75MHz, 90MHz and 100MHz Pentium CPUs.

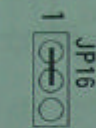
CPU Internal Clock	JP14	JP15	
<b>Int. Clock = 1.5 x Ext. Clock</b>	Open	Open	Default
<b>Int. Clock = 2 x Ext. Clock</b>	Open	Short	
<b>Int. Clock = 2.5 x Ext. Clock</b>	Short	Short	
<b>Int. Clock = 3 x Ext. Clock</b>	Short	Open	

**Rev 2.4****Rev 2.1**

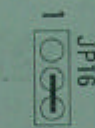
## Asynchronous SRAM Selector: JP16

If the L2 cache is Asynchronous SRAM installed in the sockets on the mainboard, you must enable the onboard sockets with this jumper. If the L2 cache is a cache module, disable this jumper.

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



**Enable**



**Disable**



Note: This jumper is for Revision 2.4 only.

## Voltage Regulator Module Selector: JP18, JP19, JP20, JP21

These jumpers set whether a Voltage Regulator Module (VRM) is installed in the VRM header socket below the CPU. Remove the jumper caps in the socket to install a VRM.

	JP18	JP19	JP20	JP21
<b>No VRM</b>	Short	Short	Short	Short
<b>VRM Installed</b>	Open	Open	Open	Open

JP20 JP18



JP21 JP19

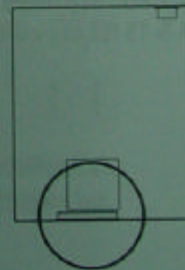
**No VRM**

JP20 JP18



JP21 JP19

**VRM Installed**





**Voltage Regulator Output Selector: JP22, JP23 & JP24**

This jumper sets the voltage supplied to the CPU.

	JP22	JP23	JP24
<b>STD/VR</b>	Short	Open	Open
<b>VRE</b>	Open	Short	Open



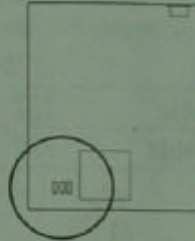
3.3V+5%  
STD/VR

JP22  
JP23  
JP24



3.45V - 3.6V  
VRE

JP22  
JP23  
JP24

**Rev 2.4 CPU Ext. Clock Speed Selector: JP26, JP27 & JP28**

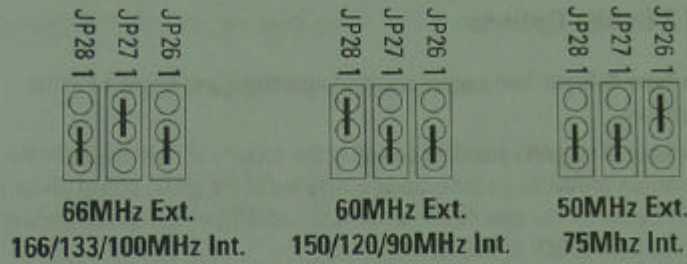
Set these as shown, according to the CPU's internal clock speed.

Int. Clk	External Clock	JP26	JP27	JP28	Int. Multiple
166MHz	<b>66Mhz</b>	2&3	1&2	2&3	2.5 x Ext.
150MHz	<b>60Mhz</b>	2&3	2&3	1&2	2.5 x Ext.
133MHz	<b>66Mhz</b>	2&3	1&2	2&3	2 x Ext.
120MHz	<b>60Mhz</b>	2&3	2&3	1&2	2 x Ext.
100MHz	<b>66Mhz</b>	2&3	1&2	2&3	1.5 x Ext.
90MHz	<b>60Mhz</b>	2&3	2&3	1&2	1.5 x Ext.
75MHz	<b>50Mhz</b>	1&2	2&3	2&3	1.5 x Ext.

Note: CPUs are listed by their *internal* clock speed. You **MUST** also set JP14 & 15 for the correct multiple of the external clock speed.



**Rev 2.4 & 2.1  
jumper positions**



## Rev 2.1 CPU Ext. Clock Speed Selector: JP26, JP27 & JP28

Set these as shown, according to the CPU's internal clock speed.

Int. Clk	External Clock	JP26	JP27	JP28	Int. Multiple
166MHz	<b>66Mhz</b>	2&3	1&2	2&3	2.5 x Ext.
150MHz	<b>60Mhz</b>	1&2	2&3	2&3	2.5 x Ext.
133MHz	<b>66Mhz</b>	2&3	1&2	2&3	2.0 x Ext.
120MHz	<b>60Mhz</b>	1&2	2&3	2&3	2.0 x Ext.
100MHz	<b>66Mhz</b>	2&3	1&2	2&3	1.5 x Ext.
90MHz	<b>60Mhz</b>	1&2	2&3	2&3	1.5 x Ext.
75MHz	<b>50Mhz</b>	2&3	1&2	1&2	1.5 x Ext.

Note: CPUs are normally listed by their *internal* clock speed, as shown above. You **MUST** also set JP14 & 15 for the correct multiple of the external clock speed of the installed CPU.



## Level 2 Cache Options

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

This mainboard supports standard SRAM in the sockets or Pipeline Burst, Burst or Asynchronous SRAM on a cache module installed in the cache socket. Refer to the chart below for the specifications for your cache type. You can upgrade either cache type from 256KB to 512KB.

### Cache Chip Specifications

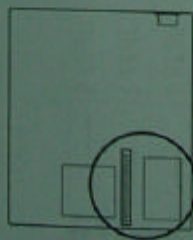
Cache Type	Size	Data Chip Size	Tag Chip Size
SRAM Sockets	256KB	32K8x8pcs	8K8, 16K8 or 32K8x1pc
	512KB	64K8x8pcs	16K8 or 32K8x1pc
Cache Module	256KB		
	512KB		

### Important:

**Data SRAM** *must* be either **Mixed Mode** or **3.3-Volt**.

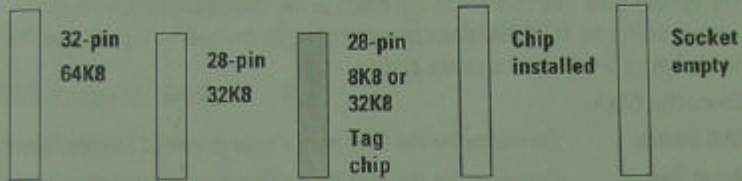
**Tag SRAM** *must* be either **Mixed Mode** or **Asynchronous**.

**Note** that jumper JP12 selects the cache size for both types of cache, so you must set it for the size of the installed cache.

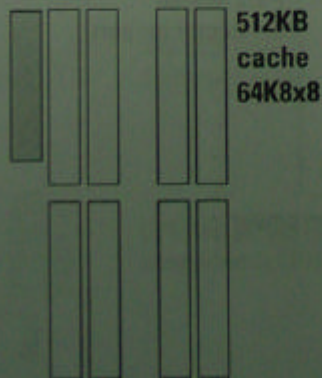
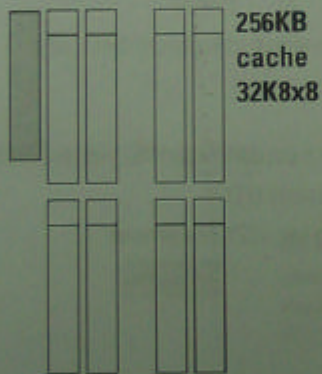


## P/I-P55TP4XE L2 Cache Options

### Socketed SRAM cache options



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



### Cache module installation



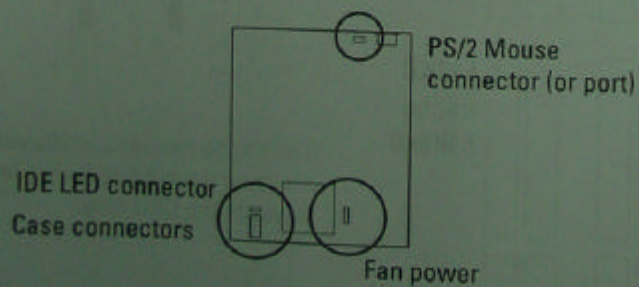
The cache module installs with the chips on the module facing left towards the CPU chip.

### External Connections

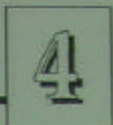
There are several connectors on the board for switches and indicator lights from the system case. The connectors are made of the same components as the jumper switches. There are also connectors for the on-board I/O ports and the leads from a 5-volt system power supply.

#### Connector Block:

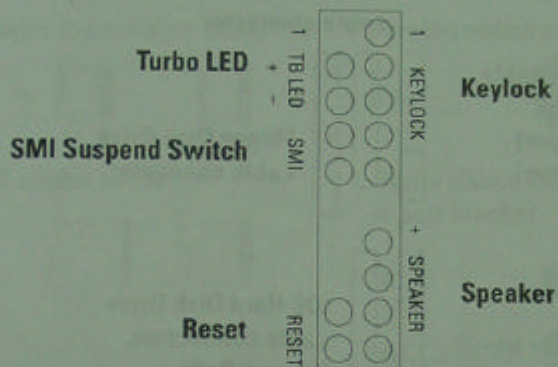
SMI Switch	Connector for the lead from a case-mounted Suspend switch.
Reset Switch	Connector for the lead from a Reset switch mounted on the system case.
Speaker	Connector for the lead from a speaker mounted inside the system case.
KeyLock	Connector for both a case-mounted keyboard lock and a Power-On LED.
PS/2 Mouse	Connector for a lead from a case-mounted PS/2 mouse port.
JP17 IDE LED	Connector for JP17 IDE activity LED.
JP30 Fan Power	Connector for CPU cooling fan +12V power lead.



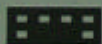
# Technical Summary



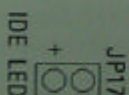
## Case Feature Connectors



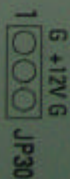
## Other Feature Connectors



Off-board PS/2 Mouse port lead connector (some models have an on-board PS/2 mouse port instead)



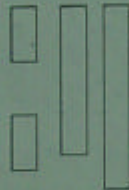
IDE LED activity light connector



CPU fan power lead connector (+12V)

### I/O Port Connectors

Serial Port cable connectors,  
COM1 (upper),  
COM2 (lower)



Parallel Port  
cable connector

Floppy Disk Drive  
cable connector

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



IDE Hard Disk Drive  
cable connectors,  
Primary (left),  
Secondary (right)

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
- 1 IDE ribbon connector cable
- 1 floppy disk drive ribbon connector cable

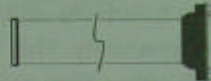
Important Note: IDE ribbon cable must be  $\leq$  18 in. (46cm), with second drive connector no more than 6 in. (15cm) from the first connector.

## Connector and Port Cables

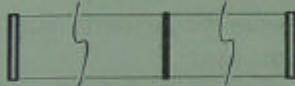
### Floppy Drive ribbon cable



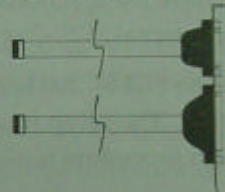
### Parallel ribbon cable



### IDE ribbon cable



### 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.

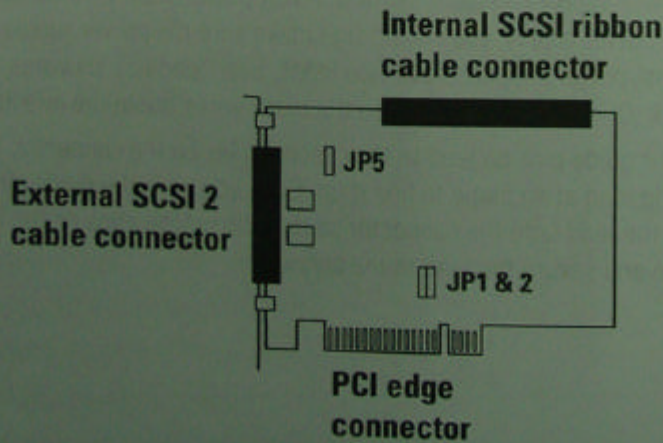


***The PCI-SC200 SCSI Interface Card***

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**

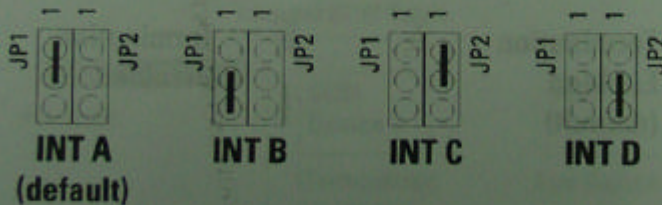
There are two jumper settings you may need to make on the card to set it up. One setting assigns the PCI INT interrupt, the other sets the card's termination.

**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.

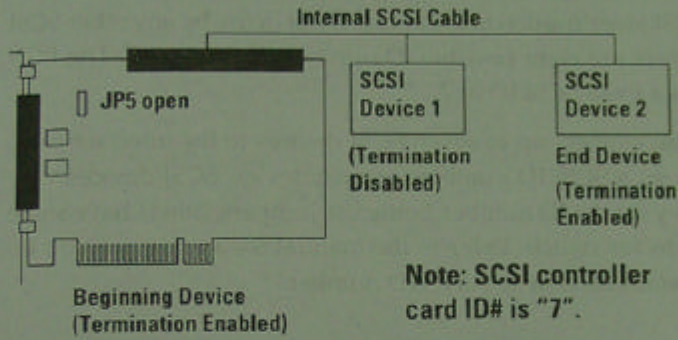
Many SCSI devices use a set of terminating resistors to terminate the device. The PCI-SC200 has "active" termination that you set using jumper JP5. If you need to terminate the PCI-SC200, you do it by setting the jumper. There are two settings, terminated and unterminated, as shown below.

#### ***JP5: Terminator setting***

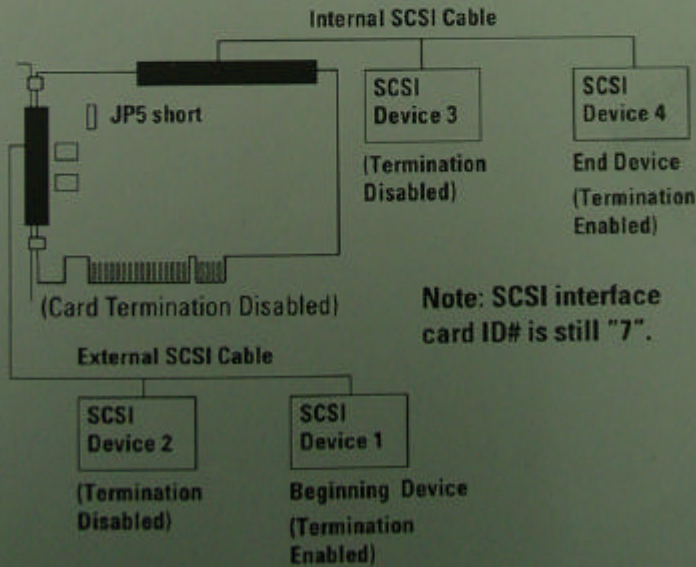
<b>Termination Enabled (default)</b>	JP5	JP5	<b>Termination Disabled</b>
		—	

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.

