



P/I-P65UP5 Baseboard

USER'S MANUAL

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FCC & DOC COMPLIANCE

Federal Communications Commission Statement

This device complies with FCC Rules Part 15. Operation is subject to the following two conditions:

- This device may not cause harmful interference, and
- This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with manufacturer's instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Re-orient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

WARNING: The use of shielded cables for connection of the monitor to the graphics card is required to assure compliance with FCC regulations. Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

Canadian Department of Communications Statement

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

I. INTRODUCTION

How this manual is organized

This manual is divided into the following sections:

- I. Introduction:** Manual information and checklist
- II. Features:** Information and specifications concerning this product
- III. Installation:** Instructions on setting up the baseboard.
- IV. PCI-SC200:** Installation of an optional SCSI card.

Item Checklist

Please check that your package is complete. If you discover damaged or missing items, please contact your retailer.

- The P/I-P65UP5 baseboard
- 2 serial port ribbon cables attached to a mounting bracket
- 1 parallel ribbon cable with mounting bracket
- 1 IDE ribbon cable
- 1 floppy ribbon cable
- This user's manual
- C-P6ND or C-P55T2D CPU card
- Optional infrared module
- Optional PCI-SC200 SCSI card

II. FEATURES

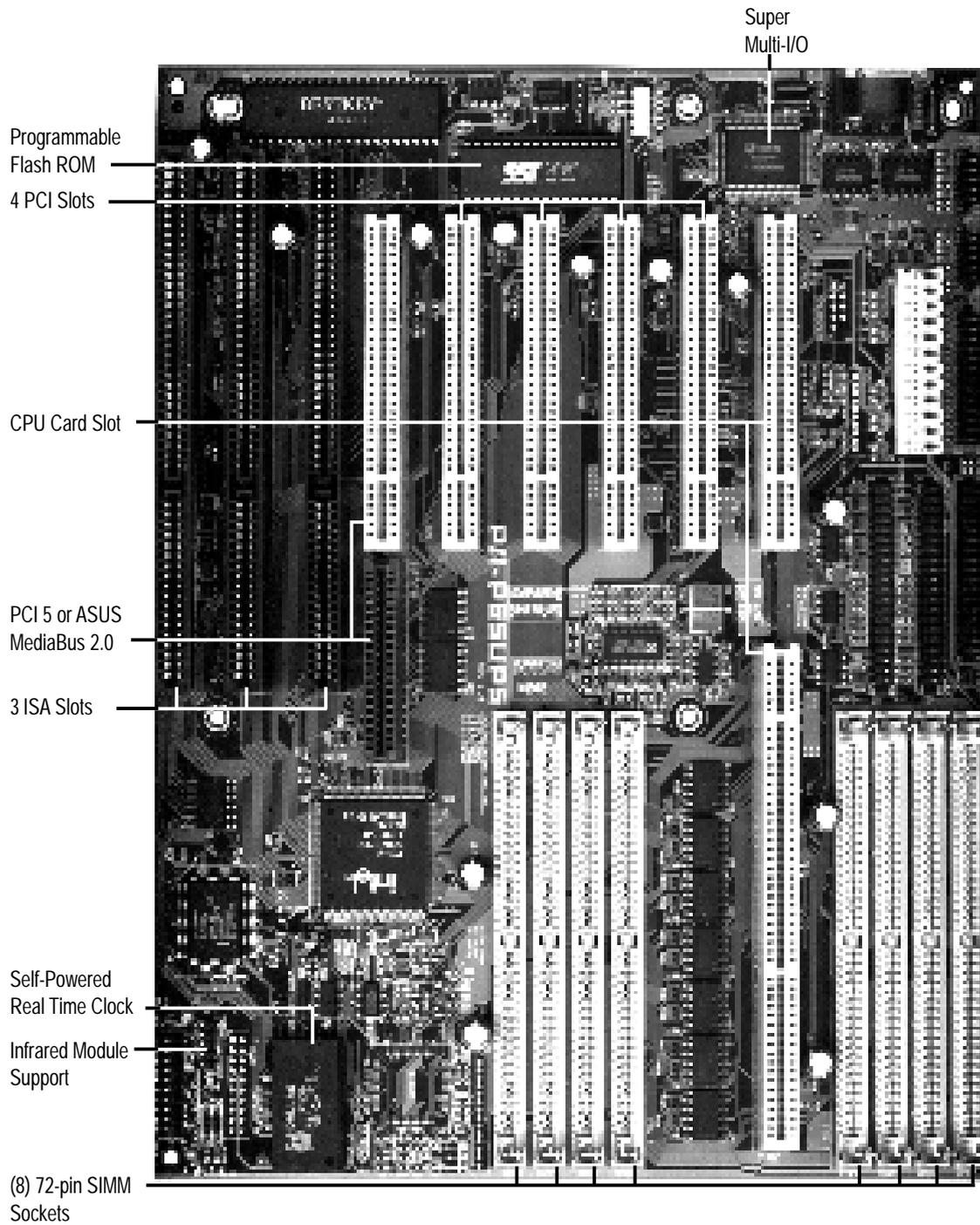
Features of This Baseboard

The P/I-P65UP5 is carefully designed for the demanding PC user who wants great versatility in the assembly of a computer system. This baseboard:

- **Easy Installation:** Is equipped with BIOS that supports auto detection of hard drives and Plug and Play to make setup of hard drives and expansion cards virtually automatic.
- **Desktop Management Interface (DMI):** Supports DMI through BIOS which allows hardware to communicate within a standard protocol creating a higher level of compatibility. (Requires DMI-enabled components.)
- **Versatile Processor Support:** Supports dual 75-200MHz Pentium or dual 150-200MHz Pentium Pro CPU card.
- **Versatile DRAM Memory Support:** Supports eight 72-pin SIMMs of 4MB, 8MB, 16MB, 32MB, 64MB to form a memory size between 8MB to 512MB. Supports both Fast Page Mode (FPM), and Extended Data Output (EDO) SIMMs. Burst Extended Data Output (BEDO) supported with the C-P6ND CPU card.
- **ISA and PCI Expansion Slots:** Provides three 16-bit ISA slots, four 32-bit PCI slots, and one PCI/MediaBus 2.0 which allows the use of either a standard PCI card or the ASUS MediaBus Card.
- **ASUS MediaBus Rev 2.0:** Features an expansion slot extension shared with PCI Slot 5 for an optional high-performance expansion card which includes two functions in one easy-to-install card. **(For revision compatibility information, please refer to page 16.)**
- **Super Multi-I/O:** Provides two high-speed UART compatible serial ports and one parallel port with EPP and ECP capabilities. UART2 can also be directed from COM2 to the Infrared Module for wireless connections. Two floppy drives of either 5.25" or 3.5" (1.44MB or 2.88MB) are also supported without an external card. **The Japanese "Floppy 3 mode" (3.5" 1.2MB) floppy standard is also supported.**
- **PCI Bus Master IDE Controller:** Comes with an onboard PCI Bus Master IDE controller with two connectors that supports four IDE devices in two channels, provides faster data transfer rates, and supports Enhanced IDE devices such as Tape Backup and CD-ROM drives. This controller supports PIO Modes 3 and 4 and Bus Master IDE DMA Mode 2. **BIOS supports IDE CD-ROM boot-up.**
- **Optional IrDA Module:** This baseboard supports an optional infrared port module for wireless file transfers and communication.
- **NCR SCSI BIOS:** This baseboard has firmware that supports the optional ASUS PCI-SC200 SCSI controller cards.

II. FEATURES

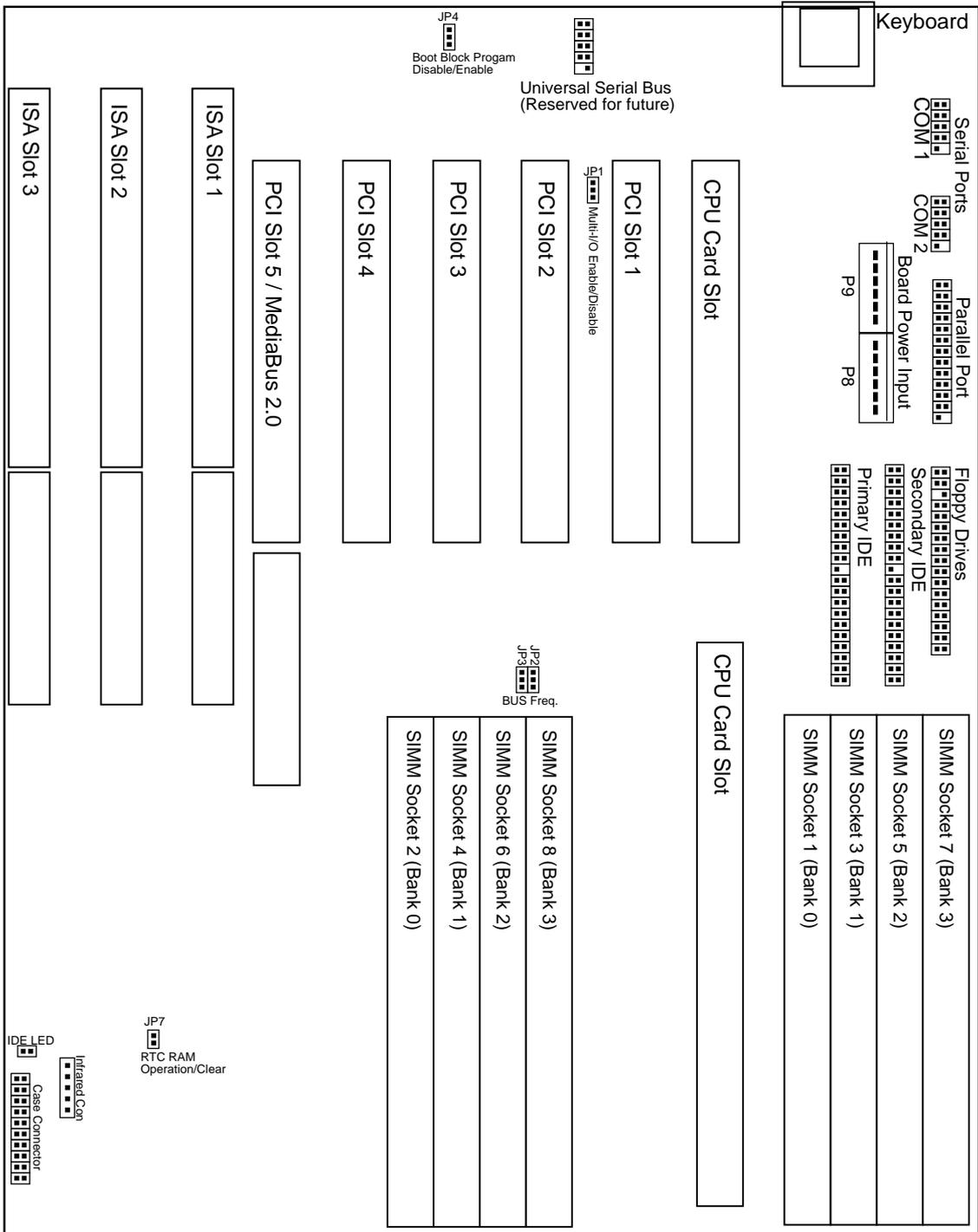
Parts of the Baseboard



II. FEATURES
(Parts of Board)

III. INSTALLATION

Map of the Baseboard



III. INSTALLATION
(Map of Board)

III. INSTALLATION

Jumpers

- | | | |
|-----------|------|--|
| 1) JP1 | p. 7 | Multi-I/O Selection (Enable/Disable) |
| 2) JP4 | p. 7 | Flash ROM Boot Block Program (Enable/Dis) |
| 3) JP2, 3 | p. 8 | CPU External Clock (BUS) Frequency Select |
| 4) JP7 | p. 9 | Real Time Clock RAM (Operation/Clear Data) |

Expansion Slots

- | | | |
|-------------------------|-------|----------------------------------|
| 1) SIMM Sockets | p. 10 | DRAM Memory Expansion slots |
| 3) ISA Slots 1, 2, 3 | p. 14 | 16-bit ISA Bus Expansion slots |
| 4) PCI Slots 1, 2, 3, 4 | p. 14 | 32-bit PCI Bus Expansion slots |
| 5) PCI 5 / MediaBus | p. 16 | 32-bit PCI Bus Slot and MediaBus |

Connectors

- | | | |
|-------------------------|-------|---|
| 1) Keyboard | p. 17 | Keyboard connector (5-pin Female) |
| 7) Floppy Drive | p. 17 | Floppy Drive connector (34-pin Block) |
| 3) Parallel Port | p. 18 | Parallel Port connector (26-pin Block) |
| 4) Serial Port | p. 18 | Serial Port COM1 & COM2 (10-pin Blocks) |
| 5) Primary/Second. IDE | p. 19 | Primary/Secondary IDE connectors (40-pin) |
| 6) Power Input | p. 19 | Baseboard Power connector (12-pin Block) |
| 7) IDE LED | p. 20 | IDE LED activity light |
| 8) IrDA | p. 20 | Infrared Port Module connector |
| 9) Turbo/Power (CON1) | p. 21 | Turbo LED/Power LED (2-pins) |
| 10) SMI Switch (CON1) | p. 21 | SMI Switch lead (2-pins) |
| 11) Reset Switch (CON1) | p. 21 | Reset Switch lead (2-pins) |
| 12) Key Lock (CON1) | p. 21 | Keyboard Lock Switch lead (5-pins) |
| 13) Speaker (CON1) | p. 21 | Speaker connector (4-pins) |

III. INSTALLATION

Installation Steps

Before using your computer, you must complete the following steps:

1. Set Jumpers on the Baseboard
2. Install DRAM Memory Modules
3. Install the Central Processing Unit (CPU) Card
4. Install Expansion Cards
5. Connect Ribbon Cables, Cabinet Wires, and Power Supply
6. Setup the BIOS Software (see the CPU Card BIOS section)

1. Jumpers

Several hardware settings are made through the use of jumper caps to connect jumper pins (JP) on the baseboard. See "Map of the Baseboard" on page 4 for locations of jumpers. The jumper settings will be described numerically such as [----], [1-2], [2-3] for no connection, connect pins 1&2, and connect pins 2&3 respectively. Pin 1 for our baseboards is always on top  or on the left  when holding the baseboard with the keyboard connector away from yourself. A "1" is written besides pin 1 on jumpers with three pins. The jumpers will also be shown graphically such as  to connect pins 1&2 and  to connect pins 2&3. Jumpers with two pins will be shown as  for short (On) and  for open (Off). For manufacturing simplicity, the jumpers may be sharing pins from other groups. Use the diagrams in this manual instead of following the pin layout on the board. Settings with two jumper numbers require that both jumpers be moved together. To connect the pins, simply place a plastic jumper cap over the two pins as diagramed.

WARNING: Computer motherboards and components contain very delicate Integrated Circuit (IC) chips. To protect the motherboard and other components against damage from static electricity, you should follow some precautions whenever you work on your computer.

1. Unplug your computer when working on the inside.
2. Hold components by the edges and try not to touch the IC chips, leads, or circuitry.
3. Use a grounded wrist strap before handling computer components.
4. Place components on a grounded antistatic pad or on the bag that came with the component whenever the components are separated from the system.

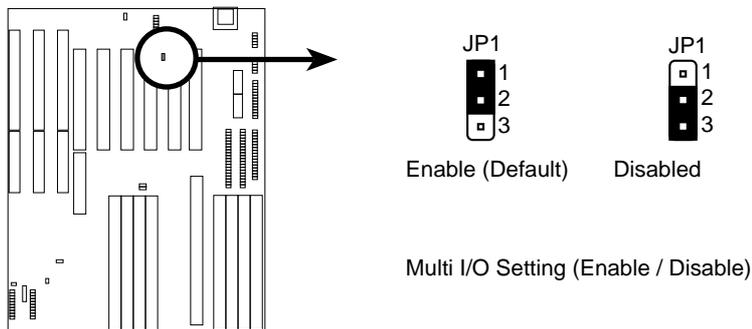
III. INSTALLATION

Jumper Settings

1. On-Board Multi-I/O Selection (JP1)

You can disable the onboard Multi-I/O (floppy, serial, parallel, and IrDA) individually through BIOS *or* entirely with the following jumper in order to use your own Multi-I/O card.

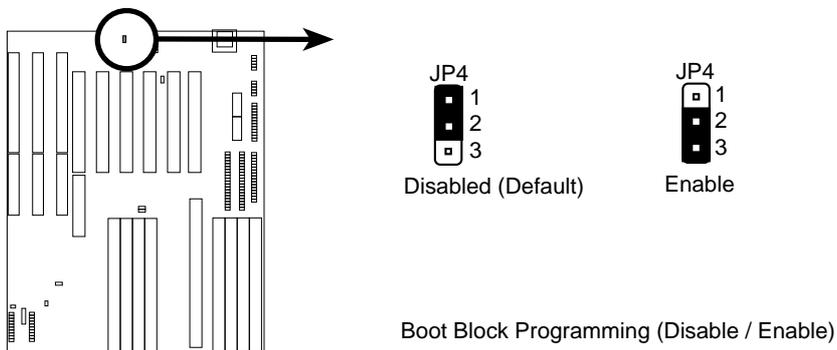
<u>Multi-I/O</u>	<u>JP1</u>
Enable	[1-2] (Default)
Disable	[2-3]



2. Flash ROM Boot Block Programming (JP4)

This sets the operation mode of the boot block area of the BIOS Flash ROM to allow programming in the *Enabled* position.

<u>Programming</u>	<u>JP4</u>
Disabled (Protect)	[1-2] (Default)
Enabled (Program)	[2-3]

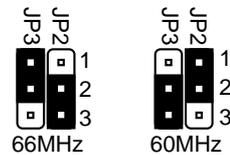
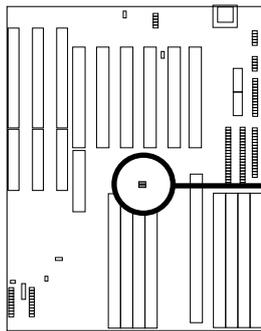


III. INSTALLATION

3. CPU External (BUS) Frequency Selection (JP2, JP3)

These jumpers tell the clock generator what frequency to send to the CPU. These allow the selection of the CPU's *External* frequency (or *BUS Clock*). The BUS Clock times the BUS Ratio equals the CPU's *Internal* frequency (the advertised CPU speed).

BUS Freq.	JP3	JP2
66MHz	[1-2]	[2-3]
60MHz	[2-3]	[1-2]



CPU External Clock (BUS) Frequency Selection

Intel Pentium Pro (P6) Processor:

CPU <u>Internal</u>	BUS <u>Ratio</u>	(CPU Card BUS Ratio)				Ext. <u>Freq.</u>	(Chipset Freq on CPU Card)		(CPU Ext. Freq on Baseboard)	
		<u>JP13</u>	<u>JP14</u>	<u>JP15</u>	<u>JP16</u>		<u>JP6</u>	<u>JP7</u>	<u>JP3</u>	<u>JP2</u>
200MHz	3.0x	[ON]	[ON]	[OFF]	[ON]	66MHz	[ON]	[OFF]	[1-2]	[2-3]
180MHz	3.0x	[ON]	[ON]	[OFF]	[ON]	60MHz	[OFF]	[ON]	[2-3]	[1-2]
166MHz	2.5x	[ON]	[OFF]	[ON]	[ON]	66MHz	[ON]	[OFF]	[1-2]	[2-3]
150MHz	2.5x	[ON]	[OFF]	[ON]	[ON]	60MHz	[OFF]	[ON]	[2-3]	[1-2]

Intel Pentium (P5) Processor:

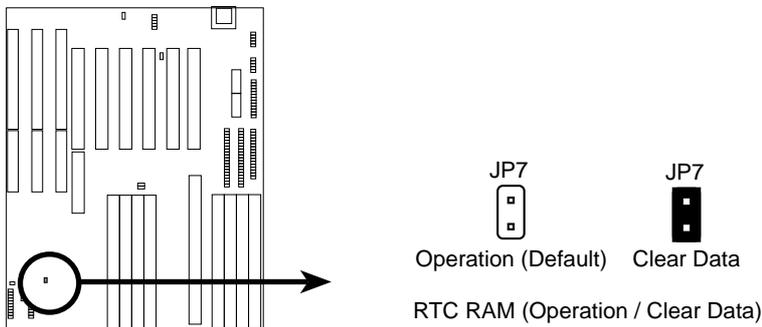
CPU <u>Internal</u>	BUS <u>Ratio</u>	(CPU Card BUS Ratio)		Ext. <u>Freq.</u>	(CPU Ext. Freq on Baseboard)	
		<u>JP15</u>	<u>JP16</u>		<u>JP3</u>	<u>JP2</u>
200MHz	3.0x	[ON]	[OFF]	66MHz	[1-2]	[2-3]
166MHz	2.5x	[ON]	[ON]	66MHz	[1-2]	[2-3]
150MHz	2.5x	[ON]	[ON]	60MHz	[2-3]	[1-2]
133MHz	2.0x	[OFF]	[ON]	66MHz	[1-2]	[2-3]
120MHz	2.0x	[OFF]	[ON]	60MHz	[2-3]	[1-2]
100MHz	1.5x	[OFF]	[OFF]	66MHz	[1-2]	[2-3]
90MHz	1.5x	[OFF]	[OFF]	60MHz	[2-3]	[1-2]
75MHz	1.5x	[OFF]	[OFF]	50MHz	[1-2]	[1-2]

III. INSTALLATION

4. Real Time Clock (RTC) RAM (JP7)

This clears the user-entered information stored in the CMOS RAM of the Real Time Clock such as hard disk information and passwords. To clear the RTC data: (1) Turn off the PC, (2) Short this jumper, (3) Power on the PC, (4) Turn off the PC, (5) Remove this jumper, (6) Power on the PC, (7) Hold down <Delete> during bootup and enter BIOS setup to re-enter user preferences.

<u>Selections</u>	<u>JP7</u>
Operation	[open] (Default)
Clear Data	[short] (momentarily)



III. INSTALLATION

2. System Memory (DRAM/SDRAM & SRAM)

This baseboard supports eight 72-pin SIMMs (Single Inline Memory Modules) of 4MB, 8MB, 16MB, 32MB, 64MB to form a memory size between 8MB to 512MB. The DRAM can be either 60ns or 70ns Fast Page Mode (Asymmetric or Symmetric), Extended Data Output (EDO), or Burst Extended Data Output (BEDO) (with C-P6ND only). SIMMs must be installed in pairs so that each bank contains two of the same size memory modules. To support ECC, you must use *true* (opposed to phantom parity generated by TTL chips) 36-bit parity-type SIMM (e.g. 8 chips + 4 parity chips) in pairs for all modules. Mixing 32-bit non-parity SIMM (e.g. 8 chips) and 36-bit SIMM (e.g. 12 chips) will work minus the ECC feature.

IMPORTANT: Memory setup is required in "Auto Configuration" in the CHIPSET FEATURES SETUP of Section IV BIOS software. Each bank must have the same size memory installed in pairs.

Install memory in any or all of the banks in any combination as follows:

Bank	Memory Module		Total Memory
Bank 0 SIMM Slots 1&2	4MB, 8MB, 16MB, 32MB, 64MB 72-pin FPM, EDO, BEDO SIMM	x2	
Bank 1 SIMM Slots 3&4	4MB, 8MB, 16MB, 32MB, 64MB 72-pin FPM, EDO, BEDO SIMM	x2	
Bank 2 SIMM Slots 5&6	4MB, 8MB, 16MB, 32MB, 64MB 72-pin FPM, EDO, BEDO SIMM	x2	
Bank 3 SIMM Slots 7&8	4MB, 8MB, 16MB, 32MB, 64MB 72-pin FPM, EDO, BEDO SIMM	x2	
	Total System Memory	=	

NOTE: Memory on socket 1 has a clearance of 5.0 cm when the C-P6ND CPU card is installed and 5.5 cm when the C-P55T2D CPU card is installed.

NOTE: SIMM numbers are not in sequence, (2, 4, 6, 8, 1, 3, 5, 7 from left to right.)

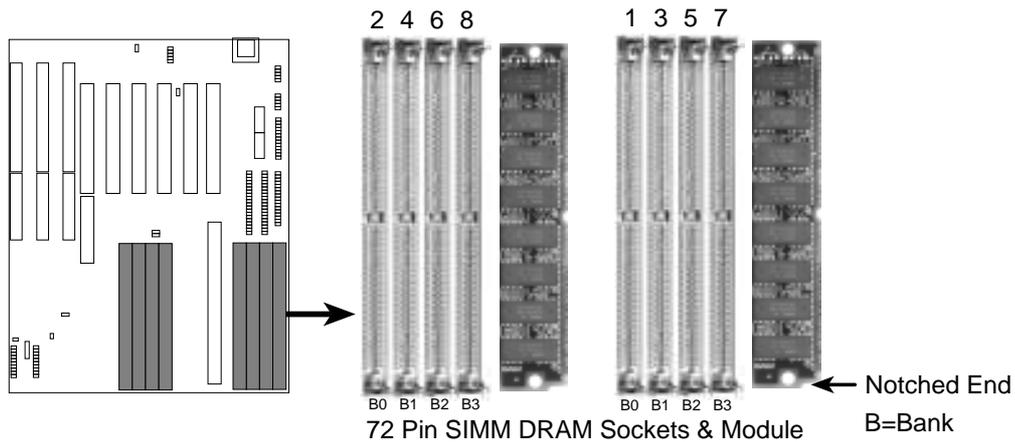
IMPORTANT: Each bank must have the same size memory installed in pairs. Do not use memory modules with more than 24 chips per module. Modules with more than 24 chips exceed the design specifications of the memory subsystem and will be unstable.

III. INSTALLATION

DRAM Memory Installation Procedures:

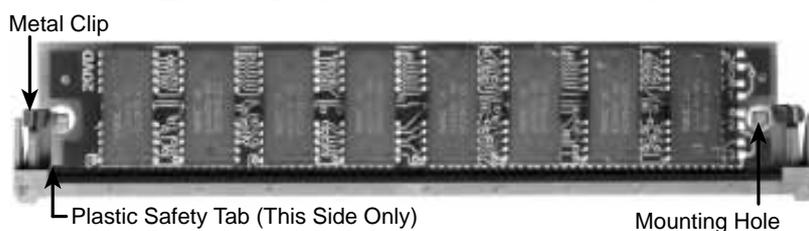
IMPORTANT: Install memory modules in symmetric pairs.

1. The SIMM memory modules will only fit in one orientation as shown because of a "Plastic Safety Tab" on one end of the SIMM slots which requires the "Notched End" of the SIMM memory modules.



2. Press the memory module firmly into place starting from a 45 degree angle making sure that all the contacts are aligned with the slot.
3. With your finger tips, rock the memory module into a vertical position so that it clicks into place.

72 Pin DRAM in SIMM Socket



4. The plastic guides should go through the two "Mounting Holes" on the sides and the "Metal Clips" should snap on the other side.
5. To release the memory module, squeeze both "Metal Clips" outwards and rock the module out of the "Metal Clips".

III. INSTALLATION

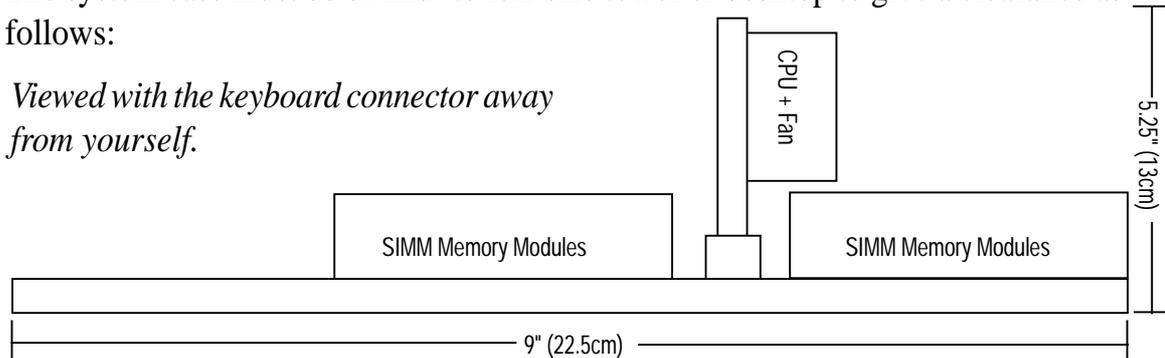
3. Central Processing Unit

The Central Processing Unit for this baseboard uses an external CPU card. You must purchase an ASUS proprietary CPU card as shown on the next page to complete the system's board.

System Case

The system case must be of mid- to full-size tower or desktop to give a clearance as follows:

Viewed with the keyboard connector away from yourself.



This baseboard is of a standard 3/4 baby AT size 11" x 8.75" and will fit almost all system cases, but the CPU card will require that floppy drives and CD-ROM not be hanging over the baseboard. Depending on the height of the SIMM memory modules and the CPU fan, the area above the SIMM memory modules may not be available. Be sure that the case you use has a minimum area clearance of 11" x 9" x 5.25."

One end of the CPU card has a bracket which should slide into the system case front panel. Make sure that the system case can support a long PCI card on the first slot and that a groove is available for the bracket.

Installation procedures for the ASUS proprietary CPU card:

1. Remove the CPU card from its packaging without touching the integrated circuit (IC) chips and place it onto the antistatic bag.
2. Follow instructions in the CPU card manual on installing the processor(s), support bracket, and setting jumpers.
3. Remove the expansion slot cover for the first slot.
4. Carefully align the CPU card over CPU SLOT A and CPU SLOT B.
5. Make sure that the card is perpendicular to the baseboard. Firmly press one end of the card half-way in; then the other end half-way in; then the first end completely in; and then the second end completely in. Make sure that all the connectors are evenly inserted into the slots.
6. Screw in the metal bracket to the system case.

WARNING: Move the system carefully and only with the power off because the CPU card is heavy as well as delicate.

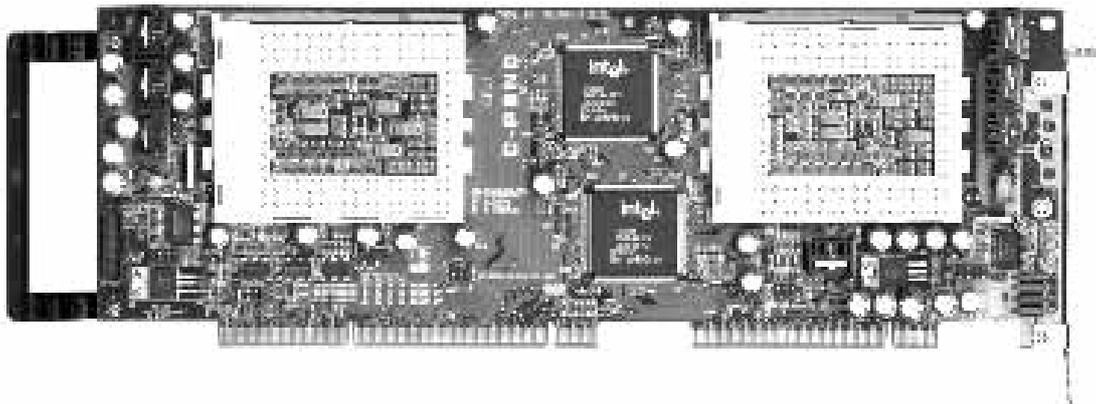
III. INSTALLATION

CPU Cards

The following CPU Cards are currently available for this baseboard:

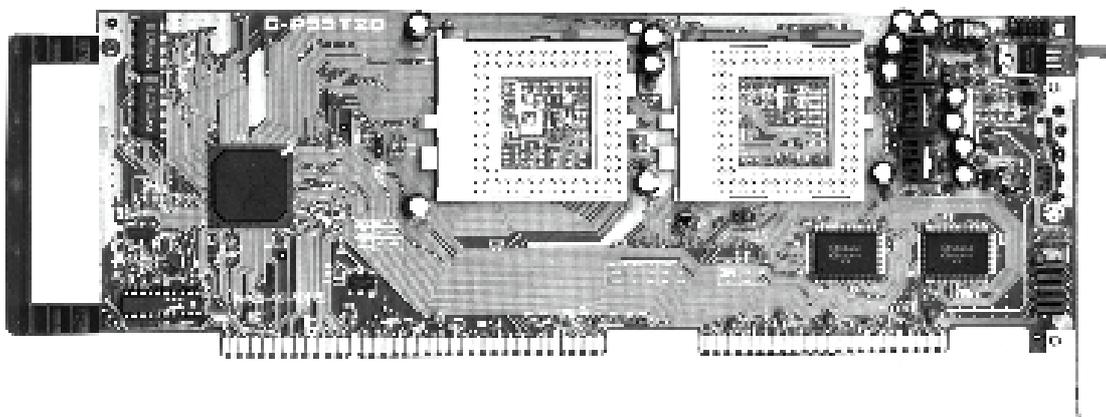
C-P6ND

Dual 150-200MHz Pentium Pro Processor with Intel 440FX PCIset.



C-P55T2D

Dual 75-200MHz Pentium Processor with Intel 430HX PCIset.



III. INSTALLATION
(CPU Card)

NOTE: The BIOS on the two CPU cards are different. When adding a CPU card, find the BIOS chip that came with the CPU card and replace it with the one on the baseboard if one is present.

III. INSTALLATION

4. Expansion Cards

First read your expansion card documentation on any hardware and software settings that may be required to setup your specific card.

NOTE: PCI Slot 5 has a MediaBus extension 2.0 (see page 16) which allows the installation of a PCI card or a MediaBus card (optional multifunctional card) but not both.

WARNING: Make sure that you unplug your power supply when adding or removing expansion cards. Failure to do so may cause severe damage to both your motherboard and expansion cards.

Expansion Card Installation Procedure:

1. Read the documentation for your expansion card.
2. Set any necessary jumpers on your expansion card.
3. Remove your computer system's cover.
4. Remove the screw and bracket on the slot you intend to use.
5. Carefully align the card's connectors and press firmly.
6. Secure the card on the slot using the same screw from the bracket.
7. Replace the computer system's cover.
8. Setup the BIOS if necessary (such as "IRQ xx Used By ISA: Yes" in PNP AND PCI SETUP)
9. Install the necessary software drivers for your expansion card.

Assigning IRQs for Expansion Cards

IMPORTANT: PCI Slots 4 & 5 share the same IRQ. If using PCI cards on both slots 4 & 5, make sure that the drivers support "Share IRQ" or that one card does not need an IRQ assignment. Conflicts will arise on PCI Slots 4 & 5 that will make the system unstable.

Some expansion cards need to use an IRQ to operate. Generally an IRQ must be exclusively assigned to one use. In a standard design there are 16 IRQs available but most of them are already in use by parts of the system which leaves 6 free for expansion cards.

Both ISA and PCI expansion cards may need to use IRQs. System IRQs are available to cards installed in the ISA expansion bus first, and any remaining IRQs are then used by PCI cards. Currently, there are two types of ISA cards. The original

III. INSTALLATION

ISA expansion card design, now referred to as “Legacy” ISA cards, requires that you configure the card’s jumpers manually and then install it in any available slot on the ISA bus. You may use Microsoft's Diagnostic (MSD.EXE) utility included in the Windows directory to see a map of your used and free IRQs. For Windows 95 users, the "Control Panel" icon in "My Computer," contains a "System" icon which gives you a "Device Manager" tab. Double clicking on a specific device give you "Resources" tab which shows the Interrupt number and address. Make sure that no two devices use the same IRQs or your computer will experience problems when those two devices are in use at the same time.

To simplify this process this baseboard has complied with the Plug and Play (PNP) specification which was developed to allow automatic system configuration whenever a PNP-compliant card is added to the system. For PNP cards, IRQs are assigned automatically from those available.

If the system has both Legacy and PNP ISA cards installed, IRQs are assigned to PNP cards from those not used by Legacy cards. The PCI and PNP configuration of the BIOS setup utility can be used to indicate which IRQs are being used by Legacy cards. For older Legacy cards that does not work with the BIOS, you can contact your vendor for an ISA Configuration Utility.

An IRQ number is automatically assigned to PCI expansion cards after those used by Legacy and PNP ISA cards. In the PCI bus design, the BIOS automatically assigns an IRQ to a PCI slot that has a card in it that requires an IRQ. To install a PCI card, you need to set something called the INT (interrupt) assignment. Since all the PCI slots on this baseboard use an INTA #, be sure that the jumpers on your PCI cards are set to INT A.

Assigning DMA Channels for ISA Cards

Some ISA cards, both Legacy and PNP may also need to use a DMA (Direct Memory Access) channel. DMA assignments for this baseboard are handled the same way as the IRQ assignment process described above. You can select a DMA channel in the PCI and PNP configuration section of the BIOS Setup utility.

IMPORTANT: In BIOS setup (see your CPU card manual), you should choose "Yes" for those IRQ's and DMA's you wish to reserve for Legacy (Non-PnP) ISA cards, otherwise conflicts may occur.

III. INSTALLATION

ASUS MediaBus Card

MediaBus allows a cost-efficient solution to a complete multimedia system. The advantages of using one add-on card is to reduce the slot requirements and compatibility problems in order to maximize the Plug and Play advantages. The add-on card inserts into the shared PCI 5 / MediaBus 2.0 Slot.

IMPORTANT: PCI Slots 4 & 5 share the same IRQ. If using PCI cards on both slots 4 & 5, make sure that the drivers support "Share IRQ" or that one card does not need an IRQ assignment. Conflicts will arise on PCI Slots 4 & 5 that will make the system unstable.

NOTE: This baseboard uses MediaBus Rev. 2.0. The previous MediaBus cards designed for MediaBus Rev. 1.2 will not fit into the MediaBus Rev 2.0 that is on this baseboard.

The difference between Rev. 1.2 and Rev. 2.0 is that the later revision has 72 pins instead of 68 pins so it does not have to use any PCI slot signals reserved for PCI cards, therefore the baseboard's PCI Slot 5 can meet standard specifications. The gap between the MediaBus extension and the PCI Slot 5 has been increased from 0.32" to 0.40" in order to prevent Rev. 1.2 MediaBus cards from being installed into the new baseboards and vice versa.

The following are MediaBus cards designed for **MediaBus 2.0** that *can* be used on this baseboard:

- PCI-AS2940UW Ultra Fast/Wide SCSI & Audio MediaBus Card
- PCI-AV264CT-N PCI Audio & Video MediaBus Card
- PCI-AV264VT PCI Audio & Video MediaBus Card
- PCI-AV264GT PCI Audio & Video MediaBus Card
- PCI-AV264GT/Plus PCI Audio & Video MediaBus Card

The following are MediaBus cards designed for **MediaBus 1.2** and therefore *cannot* be used on this baseboard:

- PCI-AS7870 Fast/Wide SCSI & Audio MediaBus Card
- PCI-AV264CT PCI Audio & Video MediaBus Card
- PCI-AV868 PCI Audio & Video MediaBus Card

* All the above Audio features Creative Technology, Ltd.

* All the above Video features ATI, Inc. (AV868 Video features S3, Inc.)

* All the above SCSI features Adaptec, Inc.

III. INSTALLATION

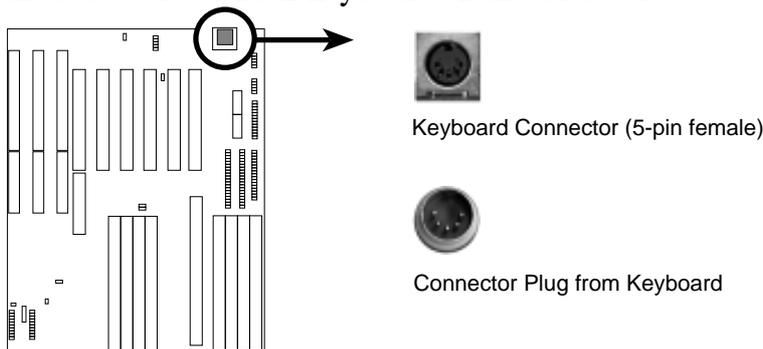
5. External Connectors

WARNING: Some pins are used for connectors or power sources. These are clearly separated from jumpers in "Map of the Baseboard" on page 4. Placing jumper caps over these will cause damage to your baseboard.

IMPORTANT: Ribbon cables should always be connected with the red stripe on the Pin 1 side of the connector. The four corners of the connectors are labeled on the baseboard. Pin 1 is the side closest to the power connector on hard drives and floppy drives. IDE ribbon cable must be less than 18in. (46cm), with the second drive connector no more than 6in. (15cm) from the first connector.

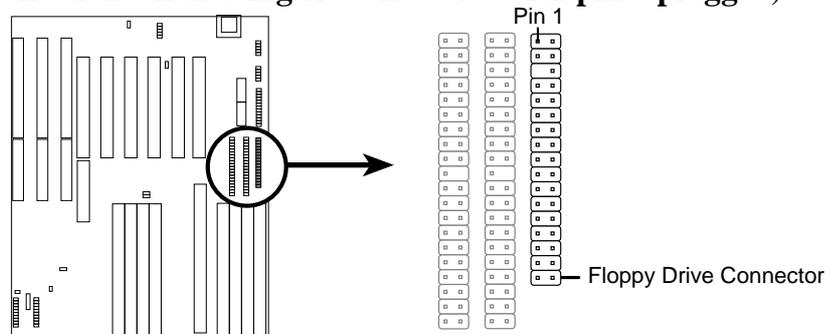
1. Keyboard Connector (5-pin female)

This connection is for a standard IBM-compatible keyboard. May also be known as a 101 enhanced keyboard. Use either the AT keyboard connector on the baseboard or PS/2 keyboard on the CPU card.



2. Floppy drive connector (34-pin block)

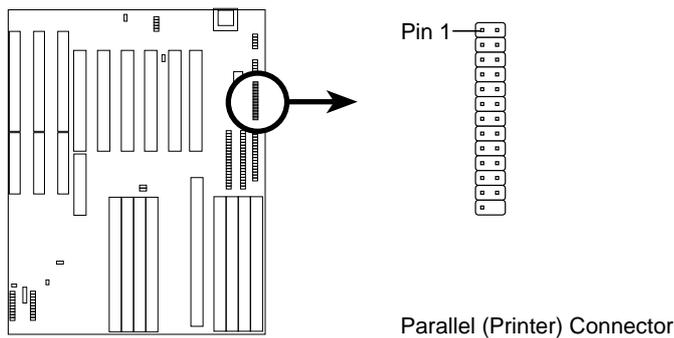
This connector supports the provided floppy drive ribbon cable. After connecting the single end to the board, connect the two plugs on the other end to the floppy drives. (Pin 5 is removed to prevent inserting in the wrong orientation when using ribbon cables with pin 5 plugged).



III. INSTALLATION

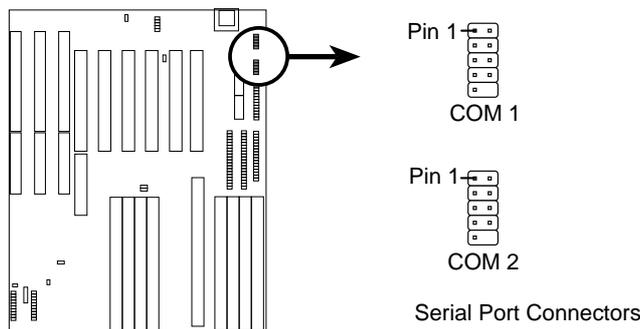
3. Parallel Printer Connector (26 Pin Block)

Connection for the included parallel port ribbon cable with mounting bracket. Connect the ribbon cable to this connection and mount the bracket to the case on an open slot. It will then be available for a parallel printer cable. **Note:** Serial printers must be connected to the serial port. You can enable the parallel port and choose the IRQ through BIOS Setup **Chipset Features** "Onboard Parallel Port." **(Pin 26 is removed to prevent inserting in the wrong orientation when using ribbon cables with pin 26 plugged)**



4. Serial port COM1 and COM2 connectors (Two 10-pin blocks)

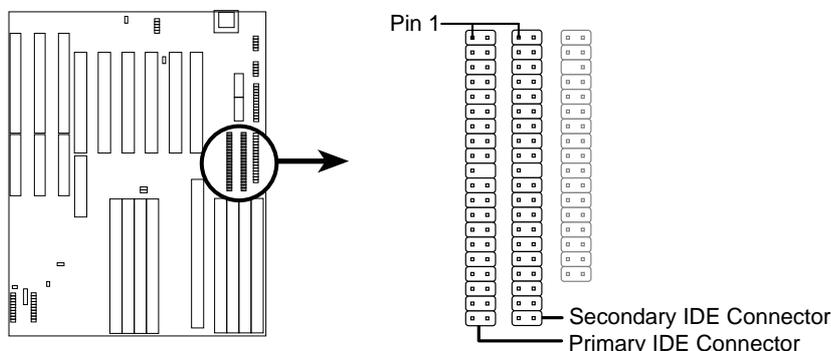
These connectors support the provided serial port ribbon cables with mounting bracket. Connect the ribbon cables to these connectors and mount the bracket to the case on an open slot. The two serial ports on the mounting bracket will then be used for pointing devices or other serial devices. See **Chipset Features** for BIOS configuration of "Onboard Serial Port." **(Pin 10 is removed to prevent inserting in the wrong orientation when using ribbon cables with pin 10 plugged)**



III. INSTALLATION

5. Primary / Secondary IDE connectors (Two 40-pin Block)

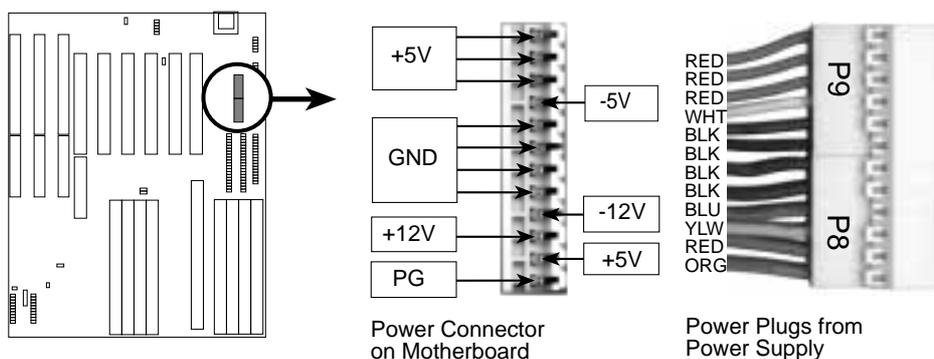
These connectors support the provided IDE hard disk ribbon cable. After connecting the single end to the board, connect the two plugs at the other end to your hard disk(s). If you install two hard disks on one connector (channel), then you must configure a second drive as Slave mode by setting its jumper according to your hard disk jumper diagram. You may also configure two hard disks to be both Masters using one ribbon cable on the primary IDE connector and another on the secondary IDE connector. A new BIOS feature allows SCSI hard drive bootup (see "HDD Sequence SCSI/IDE First" in the BIOS FEATURES SETUP of the BIOS software). **(Pin 20 is removed to prevent inserting in the wrong orientation when using ribbon cables with pin 20 plugged).**



6. Power connector (12-pin block)

This connector connects to a standard 5 Volt power supply. To connect the leads from the power supply, ensure first that the power supply is not plugged. Most power supplies provide two plugs (P8 and P9), each containing six wires, two of which are black. Orient the connectors so that the black wires are located in the middle.

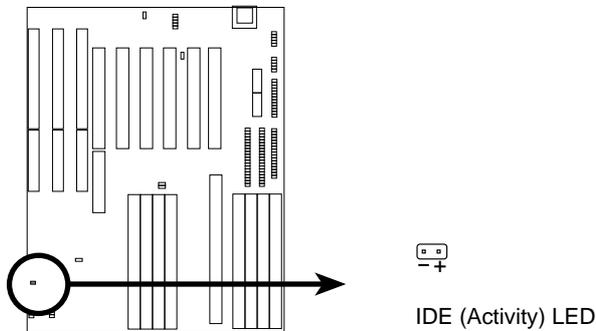
Using a slight angle, align the plastic guide pins on the lead to their receptacles on the connector. Once aligned, press the lead onto the connector until the lead locks into place.



III. INSTALLATION

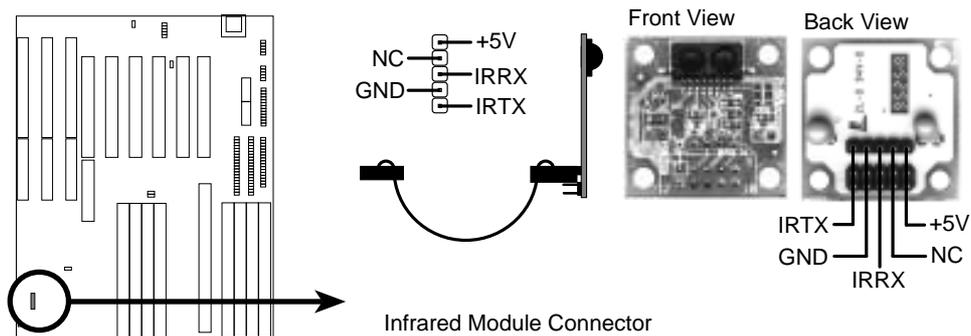
7. IDE activity LED (IDE LED)

This connector connects to the hard disk activity indicator light on the system cabinet.



8. IrDA-compliant infrared module connector (IR)

This connector supports the optional wireless transmitting and receiving infrared module. This module mounts to a small opening on system cases that support this feature. You must also configure the setting through BIOS setup in **Chipset Features** to select whether UART2 is directed for use with COM2 or IrDA. Use the five pins (as defined by Intel) as shown on the Back View and connect a ribbon cable from the module to the baseboard according to the pin definitions. The ribbon cable that may be supplied may either have five or ten pins (for other standards). If using a ten-pin ribbon cable, use only the top five row of the ribbon cable plug.



III. INSTALLATION

9. Turbo LED switch (CON1)

The baseboard's turbo function is always on. The turbo LED connection is labeled here but the LED will remain constantly lit while the system power is on. You may wish to connect the Power LED from the system case to this lead. (See the figure on the next page)

10. SMI suspend switch lead (CON1)

This allows the user to manually place the system into a suspend mode or "Green" mode where system activity will be instantly decreased to save electricity and expand the life of certain components when the system is not in use. This 2-pin connector (See the figure on the next page) connects to the case-mounted suspend switch. If you do not have a switch for the connector, you may use the "Turbo Switch" since it does not have a function. SMI is activated when it detects a *short to open* moment and therefore leaving it shorted will not cause any problems. May require one or two pushes depending on the position of the switch. Wake-up can be controlled by settings in the BIOS but the keyboard will always allow wake-up (the SMI lead cannot wake-up the system). If you want to use this connector, "Suspend Switch" in the POWER MANAGEMENT SETUP of the BIOS software should be on the default setting of *Enable* (see BIOS Power Management).

11. Reset switch lead (CON1)

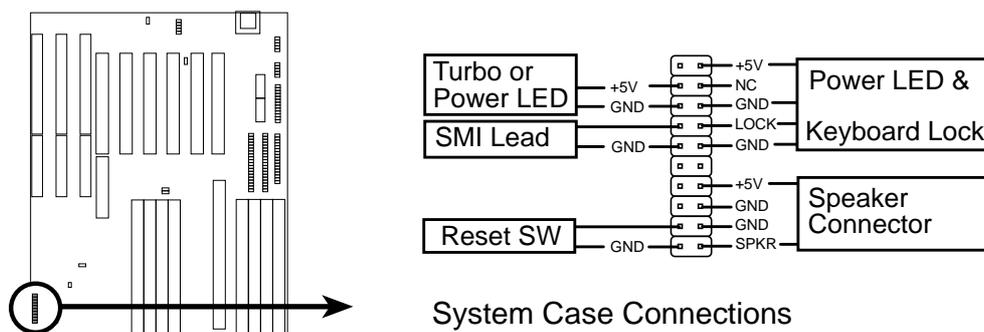
This 2-pin connector connects to the case-mounted reset switch for rebooting your computer without having to turn off your power switch. This is a preferred method of rebooting in order to prolong the life of the system's power supply. See the figure below.

12. Keyboard lock switch lead (CON1)

This 5-pin connector connects to the case-mounted key switch for locking the keyboard for security purposes. See the figure below.

13. Speaker connector (CON1)

This 4-pin connector connects to the case-mounted speaker.



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IV. PCI-SC200 SCSI Card

NCR SCSI BIOS and Drivers

Aside from the system BIOS, the Flash memory chip on the motherboard also contains the NCR SCSI BIOS. This SCSI BIOS works in conjunction with the optional PCI-SC200 SCSI controller card to provide a complete PCI Fast SCSI-2 interface.

All SCSI devices you install to your system require driver software to function. The NCR SCSI BIOS directly supports SCSI hard disks under the DOS, Windows and OS/2 environments. It also uses device drivers from the DOS floppy disk included in the PCI-SC200 controller card package to support hard disks and other SCSI devices working under DOS, Windows, Windows NT, Novell NetWare and OS/2. These drivers provide higher performance than the direct BIOS support. To use these drivers, you must install them into your system and add them to your system configuration files. Driver support for SCSI devices used with SCO UNIX is also provided. These drivers are included in the second SCO UNIX floppy disk. Windows 95 support is also available using the device drivers included within the Windows software. The PCI-SC200 adapter is auto detected as PCI NCRC810 SCSI HOST ADAPTER and uses the NCRC810.MPD driver.

For information about these drivers and their usage, see the Readme files included in the driver packages. You can print out the contents of these files using any text editor program.

The next few pages will instruct you on the installation of the PCI-SC200 Fast SCSI Card.

IV. PCI-SC200 SCSI Card

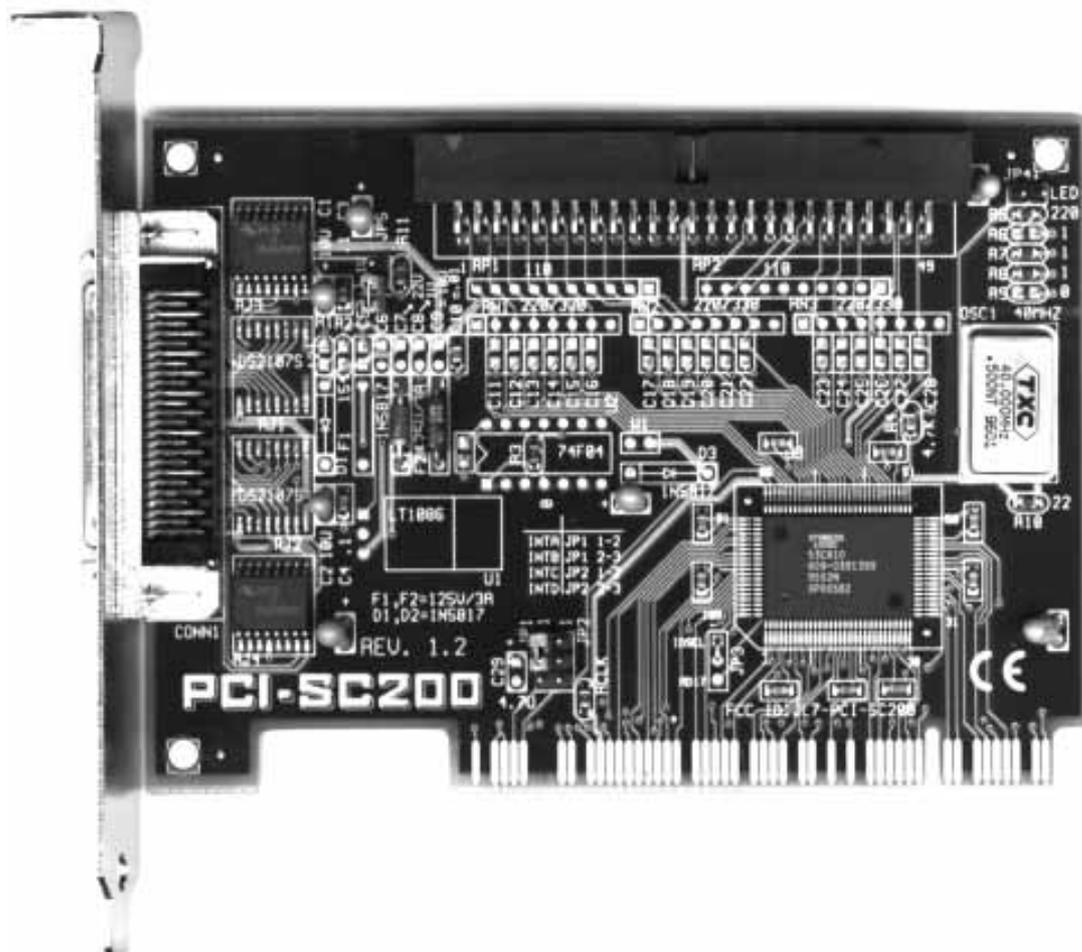
The PCI-SC200 SCSI Interface Card

Your motherboard 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 motherboard. 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.

Setting Up the PCI-SC200

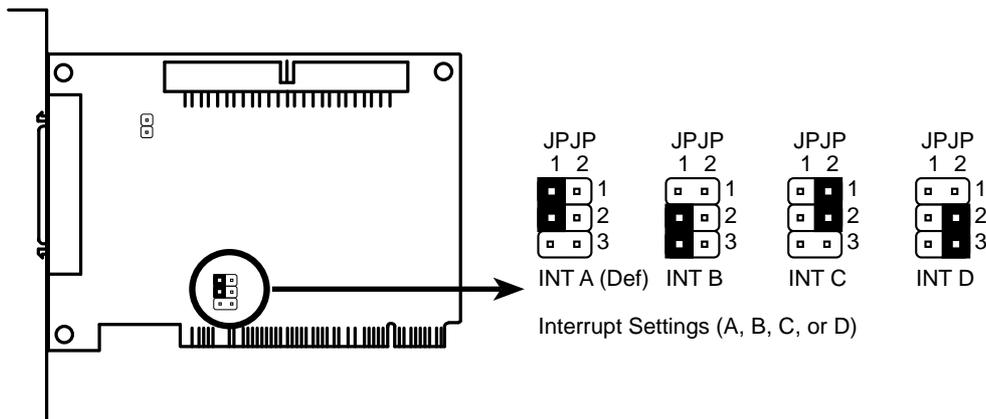
There are two jumper settings you may need to make on the card to set it up. One setting assigns the PCI INT interrupt, the other sets the card's termination.



IV. PCI-SC200 SCSI Card

Setting the INT Assignment

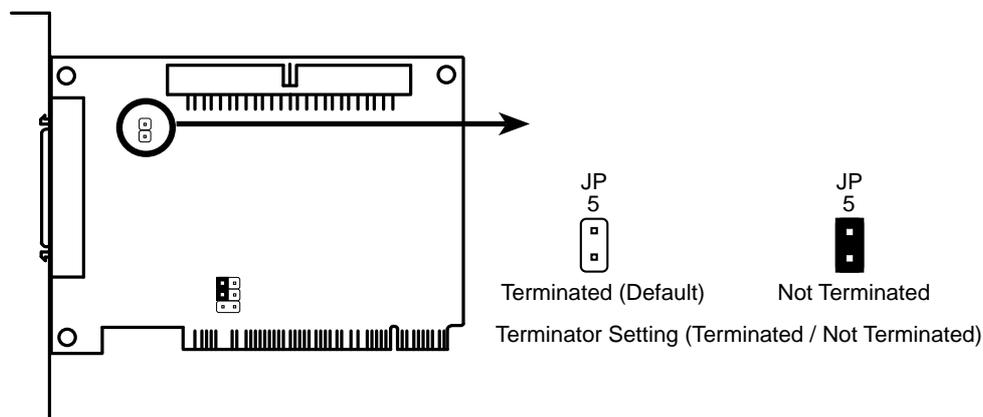
You must use PCI INT A setting in order to properly assign the card's interrupt. On the PCI-SC200, you assign the INT by setting jumper JP1 or JP2. The default setting for the card already is INT A, so you do not need to change the setting to use the PCI-SC200 with this motherboard.



Terminator Settings

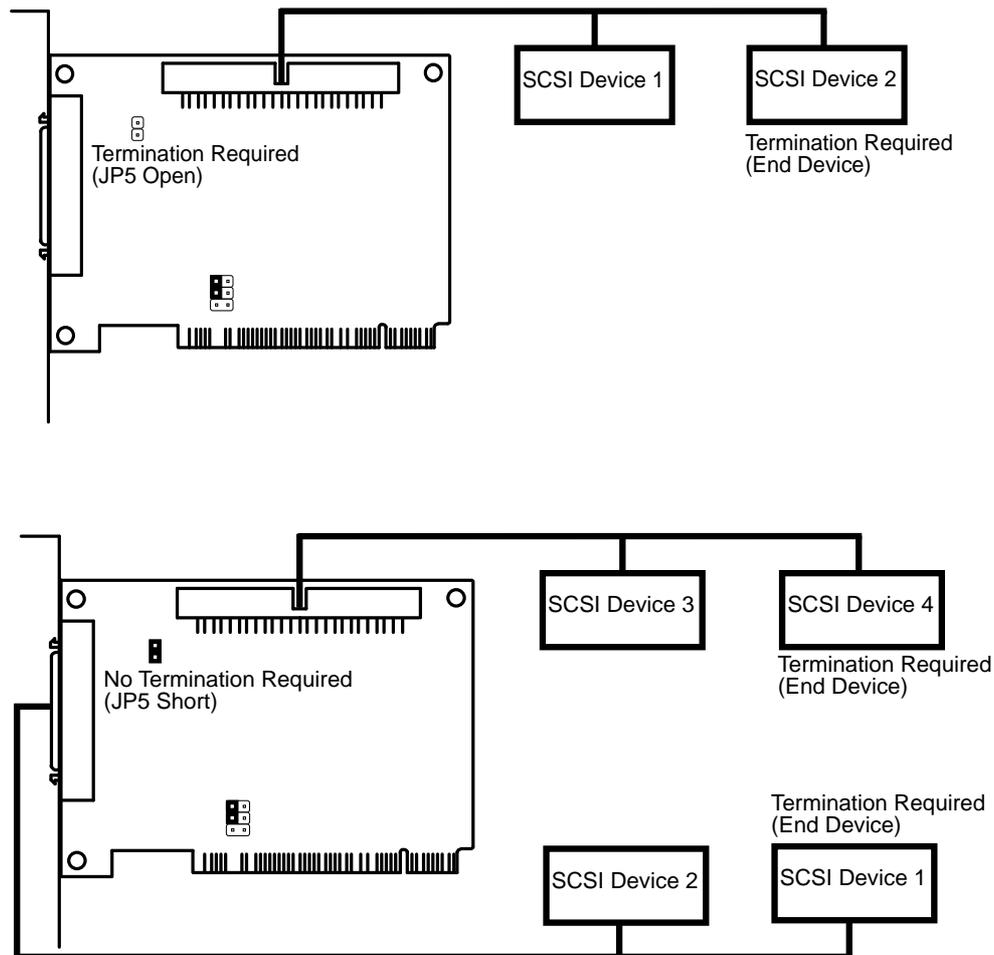
SCSI devices are connected together in a "chain" by cables. Internal devices connect to the PCI-SC200 with a fifty-pin flat ribbon cable. External devices connect to the external port with a SCSI-2 cable. If there are more than one internal or external devices, additional devices are connected with cables 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 "not terminated," as shown below.



IV. PCI-SC200 SCSI Card

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. See the following example which illustrates this concept.



IV. PCI-SC200
(SCSI ID Numbers)

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.