

P2 PowerStation PC/104 Installation

Introduction

The PowerStation supports PC/104 expansion modules. These modules perform a variety of functions that are typically done by traditional plug-in expansion cards. However, the advantage of using PC/104 modules is that you can stack several modules together, saving valuable space. When adding modules to the PowerStation, keep the following information in mind:

- The total combination of modules may not exceed the current limits specified for PC/104 modules in the PowerStation. See *Electrical Specifications* in chapter two of the P2 PowerStation User Guide for more information about the voltage and current available for expansion cards.
- The PowerStation does not support Plug-n-Play features. When selecting PC/104 modules you must either select those with Plug-n-Play features that can be disabled or those without Plug-n-Play features. PC/104 modules with Plug-n-Play enabled may not perform correctly and may adversely affect PowerStation operation.

Address Considerations

As in most ISA-bus computers, port addresses 300 through 31F are available for PC/104 module functions. Addresses 310 through 317 are reserved for use by the PowerStation. Make sure that any PC/104 modules you install do not conflict with these addresses.

IRQ Considerations

IRQs 5, 7, 9, 10, 11, and 15 are available to adapter devices connected to the ISA-bus. See *Table 1: PowerStation IRQ Configurations*.

IRQ	Usage	IRQ	Usage
0	Interval timer	8	Real-time clock
1	Keyboard	9	Available**
2	Interrupt from controller 2 (cascade)	10	Ethernet* (software configured)
3	COM2*	11	Touchscreen* Note Available** on the 586.
4	COM1	12	PS/2 mouse (non-releasable)
5	Available**	13	INT from co-processor
6	Diskette Controller (FDC)	14	Fixed disk controller (Primary)
7	Available**	15	Available** Note Touchscreen* on the 586

Table 1: PowerStation IRQ Configurations

- * You can reconfigure those marked with an asterisk (*) by changing the jumper settings on the PowerStation's Power Supply board or the CPU card. Changing jumpers requires you to also change the operating software. You should only make these changes after consulting the CTC Technical Support department.
- ** The IRQs marked Available in Table 1 are available for use by any adapter card.

Electrostatic Discharge Precautions

Modern integrated electronic devices, especially CPUs and memory chips, are extremely sensitive to electrostatic discharges (ESD) and fields. Before you install a PC/104 module, be sure to follow these simple precautions to protect you and the PowerStation from harm resulting from ESD.



1. To avoid electric shock, always disconnect the power from the PowerStation before you remove the back cover or separate the back cover from the front panel. Do not touch any components of the CPU card or other cards while the PowerStation is on.
2. Disconnect power before making any hardware configuration changes. The sudden rush of power as you connect a jumper or install a card may damage sensitive electronic components.
3. Only handle internal components in an ESD-safe location using appropriate grounding methods.
 - Always ground yourself to remove any static charge before you touch the CPU card.
 - Be particularly careful not to touch the chip connectors.
 - Keep the PC/104 module in its anti-static packaging when it is not installed in the PowerStation, and place it on a static-dissipative mat when you are working on it.
 - Wear a grounding wrist strap for continuous protection.

Disassembling the PowerStation

If you have read and understand the ESD safety precautions, you are ready to disassemble the PowerStation. Follow these steps to disassemble the unit:

Important As you begin to disassemble the unit, you will encounter several different screw sizes. When you reassemble the PowerStation, be sure to replace the same size screw in the same location as the one that was removed. Failure to do so could result in damage to the unit.

1. Turn off the power to the unit.
2. Disconnect the unit from the power source.

3. Remove the unit from its enclosure, if installed.

Caution Before you complete the next step, you must wear an ESD wrist strap connected to a good, known, earth ground to avoid damaging the unit.

4. Place the unit face down, on a static dissipative mat, in a location free from dirt and moisture and protected against static discharge.
5. Remove the screws securing the back cover.
6. Remove the back cover from the unit.
7. Loosen the screw securing the metal slot cover and remove it. The metal slot cover is located just above the COM1 and VGA connectors.

Note If you purchased an additional PC/104 module and the optional extension cover that accommodates multiple PC/104 modules, continue with step 8. Otherwise, skip to *Installing the PC/104 Module*.

8. Copy the PowerStation's serial number from the original back cover to the new back cover.

Installing the PC/104 Module

When you finish disassembling the PowerStation, you are ready to install the PC/104 module(s). You can install up to two modules, one on top of the other, provided that the modules do not exceed the electrical requirements of the PowerStation (1.5A@5V, 0.2A@12V; 75mA@-5V, 75mA@-12V).

Note The images displayed in these instructions illustrate the 586 model. However, the PC 104 module and other components are located in the same place on the Pentium 166 model.

1. Carefully align the PC/104 module connector over the PC/104

connector on the CPU card. See *Figure 1*.

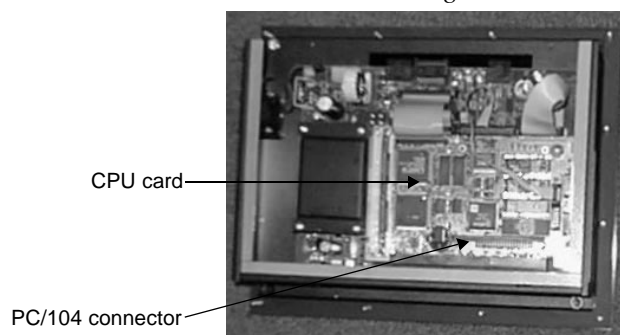


Figure 1 PC/104 Connector

Important Be careful not to bend any of the pins on the PC/104 module as you complete the following step.

2. Press down firmly on the PC/104 module until the module is completely seated in the connector. See *Figure 2*.

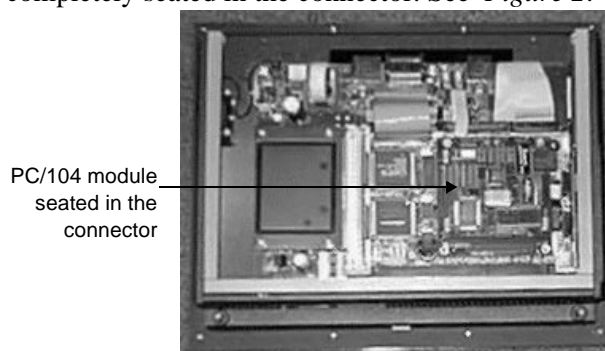


Figure 2 Seated PC/104 Module

Note To complete the next step, use screws if you are installing one module; use stand-offs if you are installing an additional module.

3. Secure the PC/104 module to the CPU card using the hardware that was supplied with the module. See *Figure 3*.

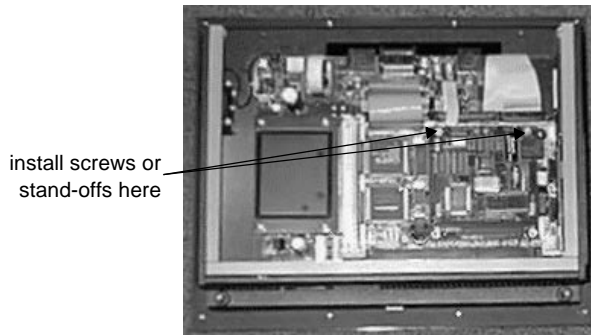


Figure 3 Securing the PC/104 Module

4. If you are installing an additional PC/104 module, press the second module's pins into the connector of the first module.
5. Connect any necessary cabling to the PC/104 module(s), and route it through the slot in the side of the unit.

Note If you installed a second PC/104 module, you can create an opening in the side of the PC/104 bump-out located on the optional extension cover. Use a small hammer to loosen the knock-off on either side of the bump-out. See *Figure 4*.

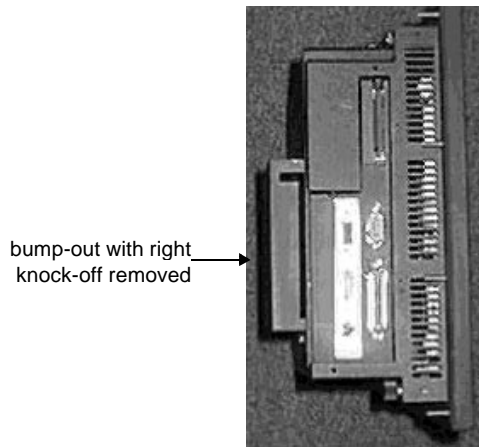


Figure 4 PC 104 Bump-out

6. Install the back cover.
7. Restore power to the unit.

Configuring the PC/104 Module

The manufacturer of the PC/104 module typically provides an additional installation program on a floppy disk. However, you will need to configure the PowerStation to accept the floppy disk before you can run the installation program. To configure the PowerStation, select the option that applies to your situation from the list in *Table 2: PowerStation Configuration Options*.

If you are using an/a	Then
external floppy drive	<ol style="list-style-type: none"> 1 Connect the external floppy drive from the parallel port interface to the parallel port of the PowerStation. 2 Run the Installation program according to the PC/104 manufacturer's instructions.
LAN	<ol style="list-style-type: none"> 1 Connect the PowerStation to a local area network (LAN). Note The installation program must allow you to specify the source drive letter. 2 Run the installation program remotely by sharing the floppy drive of a PC that is also connected to a LAN.
computer equipped with a floppy drive and a PCMCIA drive	<p>Note The installation program must allow you to specify the source drive letter.</p> <ol style="list-style-type: none"> 1 Run the installation program on a computer equipped with a floppy drive and a PCMCIA drive. Important Always make sure power to the PowerStation is turned OFF when inserting or removing the CF card. 2 Copy the files to the PowerStation's compact flash (CF) drive using a CF-to-PCMCIA adapter (available from CTC).

Table 2: PowerStation Configuration Options

