

# 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 the *Electrical Specifications* section 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.

## IRQ Considerations

IRQs 5, 7, 9, 10, 11, and 15 are available to adapter devices connected to the ISA-bus. The PowerStation's IRQs are configured as shown below.

IRQ	Usage	Jumper Location
3	COM2	CPU card
4	COM1	CPU card
5		
7		
9		
10	Ethernet*	Power Supply board
11		
15	Touch Screen*	Power Supply board

The IRQs in this table that are blank are available for use by any adapter card. Those marked with an asterisk (\*) may be reconfig-

ured by changing the jumper settings on the PowerStation's Ethernet/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 Product Technical Support department.

## 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.

## 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 backshell cover or separate the backshell 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:

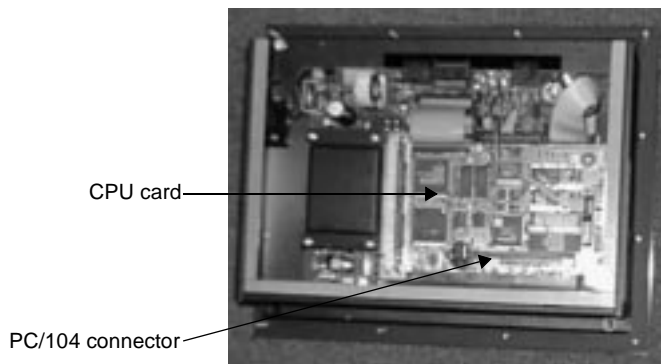
**Important** As you begin to disassemble the unit, you will encounter several different screw sizes. When you reassemble the PowerStation, be sure to replace the same size screw in the same location as the one that was removed. Failure to do so could result in damage to the unit.

1. Turn off power to the unit.
2. Disconnect the unit from the power source.
3. Remove the unit from its enclosure, if installed.
4. Place the unit on a static-dissipative mat in a location free from dirt and moisture and protected against static discharge. You must also wear an ESD wrist strap connected to a good known earth ground.
5. Place the unit face down, and remove the screws securing the back cover.
6. Remove the back cover from the unit.
7. If you are installing one PC/104 module and you have cabling that must be connected to the module from outside the unit, complete step a. If you are installing two PC/104 cards and you have purchased the optional extension cover to accommodate multiple PC/104 modules, complete steps a and b:
  - a. Remove the metal slot cover located just above the COM1 and VGA connectors. The slot cover is secured by a screw located inside the unit.
  - b. Copy the PowerStation's serial number from the old back cover onto the new back cover.

## Installing the PC/104 Module

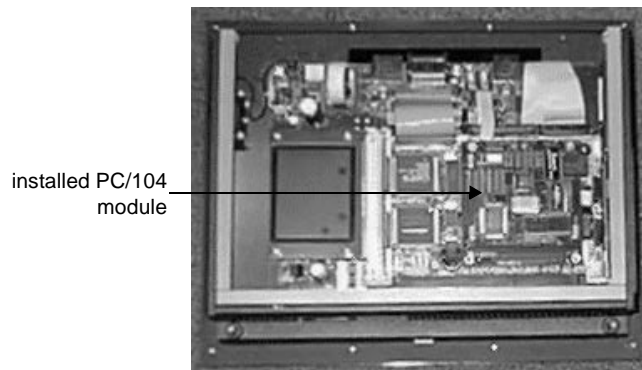
When you finish disassembling the PowerStation, you are ready to install the PC/104 module(s). You can install up to two modules, one on top of the other, provided that the modules do not exceed the electrical requirements of the PowerStation (1.5A@5V, 0.2A@12V; 75mA@-5V, 75mA@-12V).

1. Carefully align the PC/104 module connector over the PC/104 connector on the CPU card.

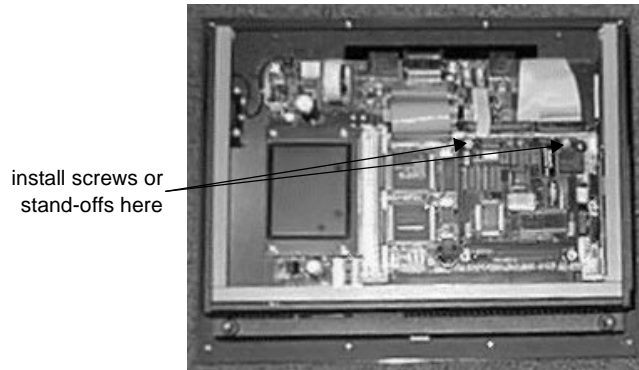


2. Press down firmly on the PC/104 module until the module is completely seated in the connector.

**Important** Be careful not to bend any of the pins on the PC/104 module as you press the module into place.

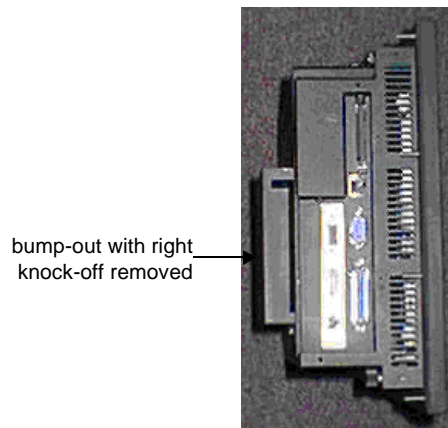


3. Secure the PC/104 module to the CPU card using the hardware that was supplied with the module. Use screws if you are only installing one module; use stand-offs if you are planning to install an additional module.



4. If you are installing a second PC/104 module, connect the second module to the first one, by pressing the second modules' 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 have installed two PC/104 modules, 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.



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

## Configuring the PC/104 Module

When you finish installing a PC/104 module, you will usually need to configure the PowerStation before you can use the module. The manufacturer of the PC/104 module typically provides an installation program on a floppy disk. If this is true of your module, you will need to do one of three things:

- Connect an external floppy drive to the parallel port of the PowerStation. Run the installation program following the instructions outlined in the PC/104 manufacturer's documentation. You may need to configure the floppy drive using one of the methods below before running the PC/104 installation.
- Connect the PowerStation to a local area network (LAN), and run the installation program remotely by sharing the floppy drive of a PC that is also connected to LAN. The installation program must allow you to specify the source drive letter.
- Run the installation program on a computer equipped with a floppy drive and a PCMCIA drive, and copy the files to the PowerStation's compact flash (CF) drive using a CF-to-PCMCIA adapter (available from CTC). The installation program must allow you to specify the destination drive letter.

**Important** Always make sure power to the PowerStation is turned OFF when inserting or removing the CF card.