NATIONAL INSTRUMENTS™

PXI™-8220

The PXI-8220 is a two-slot PC Card (PCMCIA) carrier for the PXI/CompactPCI bus.

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Hardware Overview

The PXI-8220 integrates two PC Card slots in a single PXI module and uses a single-chip PC Card host adapter to control up to two fully independent PC Card sockets.

PXI-8220 Features

- Two-slot PC Card adapter in one PXI/CompactPCI slot

- Supports two Type I/II cards or one Type III card

- Supports 5 V and 3.3 V PC Cards

- Serialized IRQ in PXI supports legacy ISA-style interrupts

- Compliant with PC Card standard and JEIDA 4.1

- Compliant with PXI and CompactPCI specifications

PC Card/PCMCIA Specification

The PC Card standard defines three form factors–Type I, Type II and Type III–with a 68-pin interface between the peripheral card and socket. All PC Cards have the same length and width, differing only in thickness. Smaller cards can fit in larger sockets. In addition to electrical and physical specifications, the PC Card standard defines a software architecture to provide plug-and-play capability across the widest range of products. This software includes Socket Services and Card Services, which make PC Cards interoperable.

The PC Card/PCMCIA specification includes:

- 16-bit data and 26-bit addressing capabilities
- Up to 20 Mbytes/s peak bandwidth at 100 ns cycle rate
- Compatibility with PCMCIA 2.1/JEIDA 4.1 and earlier releases

Connectivity

The PXI-8220 can support two Type I/II cards or one Type III card using the two standard 68-pin interface connectors.

Software

Windows 95/NT includes native support for the PXI-8220.

☞ **Note** *You cannot hot-swap PC Cards under Windows NT. Install PC Cards before booting the system.*

What You Need to Get Started

Make sure you have the following items before attempting to install the PXI-8220 hardware and software:

❑ Windows 95 or Windows NT installed on your system

❑ PXI-8220 interface board

Installing the PXI-8220

This section describes how to install your PXI-8220.

⚠ **Caution** *Electrostatic discharge can damage several components on the PXI-8220. To avoid such damage in handling the board, touch the antistatic plastic package to a metal part of your system chassis before removing the board from the package.*

1. Make sure your system is turned off, but keep the system plugged in so that it remains grounded while you install the PXI-8220.

2. Choose an unused PXI/CompactPCI slot in your system.

3. Remove the slot cover for the slot you have chosen.

4. Make sure the injector/ejector handle is in its downward position. Align the PXI-8220 with the card guides on the top and bottom of the slot.

⚠ **Caution** *Do not raise the injector/ejector handle as you insert the PXI-8220. The module will not insert properly unless the handle is in its downward position so that it does not interfere with the injector rail on the mainframe.*

5. Hold the handle as you slowly slide the module into the mainframe until the handle catches on the injector/ejector rail.

6. Raise the injector/ejector handle until the module firmly seats into the backplane receptacle connectors. The front panel of the PXI-8220 should be even with the front panel of the mainframe.

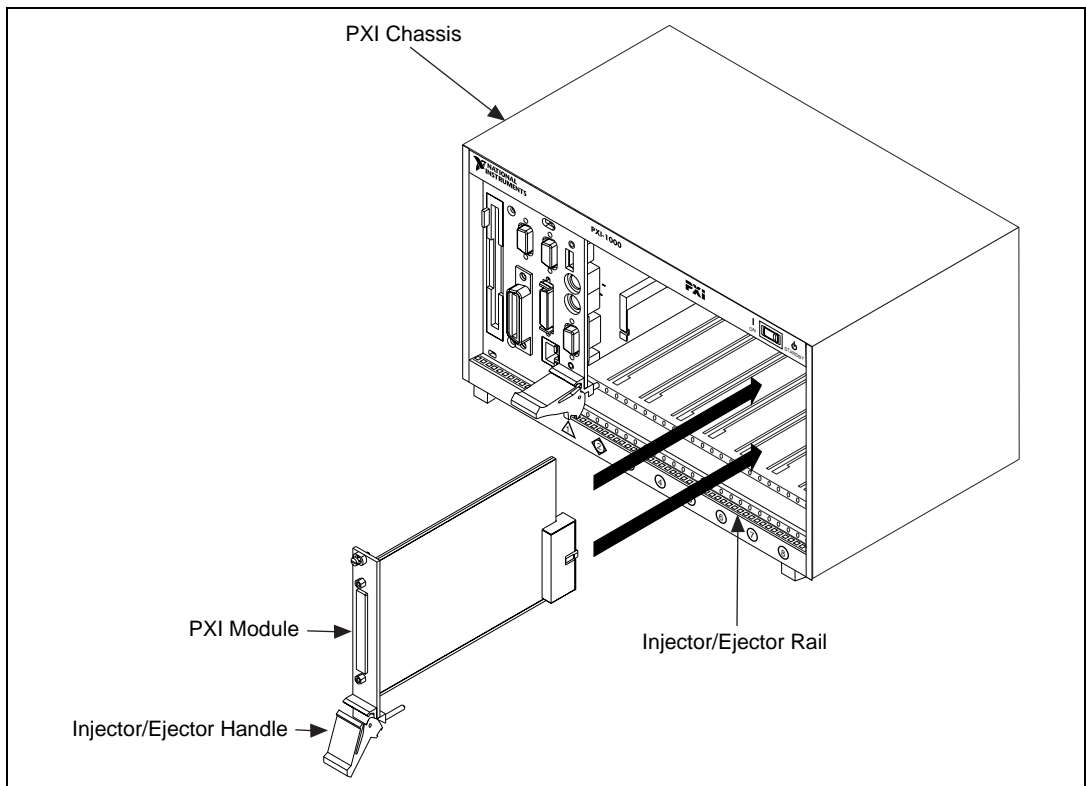Figure 1 shows how to install the PXI-8220 in a PXI/CompactPCI chassis.

Figure 1. Installing the PXI-8220 into a PXI/CompactPCI Chassis

7. Screw the front panel of the PXI-8220 to the front panel-mounting rail.

8. Turn on your system and start Windows 95/NT.

☞ **Notes** *If you are using a PXI-815x controller, reboot the PXI-815x. When the message* `Hit <DEL> if you want to run SETUP` *appears, press the <DEL> key to enter the BIOS setup program. Select* **BIOS Configuration***, then* **Advanced CMOS Setup***. Set all* **Shadow Memory** *settings to* **Disabled.**

You may have to free up some ISA resources for the PXI-8220. You can do this by disabling some devices on the **Start»Settings»Control Panel»System Device Manager** *tab (in Windows 95), or by reconfiguring the BIOS to disable or remap some of the ISA interrupts or devices (serial ports, parallel ports, and so on).*

Installation Steps Specific to Windows 95

Windows 95 should automatically detect all new devices—a PCI to PCMCIA bridge and a Cirrus Logic device—and automatically determine the right driver. A **New Hardware Found** dialog box appears, then goes away on its own.

Go to the Control Panel, double-click the PC Card icon, and follow any remaining Windows 95 steps. Your PXI-8220 installation for Windows 95 is now complete.

Installation Steps Specific to Windows NT

Windows NT does not automatically detect the PXI-8220 when you install the module. You must enable the PCMCIA device driver to enable PCMCIA support, as shown in the following steps:

1. Select **Start»Settings»Control Panel**.

2. Double-click on the **Devices** icon.

3. Select **PCMCIA Device** from the menu list and click on **Startup**.

4. Set **Startup Type** to **Boot** and then click **OK**.

5. Restart the computer.

Your PXI-8220 installation for Windows NT is now complete.

☞ **Note** *You cannot hot-swap PC Cards under Windows NT. Install PC Cards before booting the system.*

The PCMCIA services should start on the next boot. To check if the services are running, select **Start»Settings»Control Panel**, double-click on the **Devices** icon, and check the **PCMCIA Device**. **Status** should be **Started**.

Common Questions

Can I use more than one PXI-8220 at a time?

No. The PXI-8220 requires non-shareable Serialized Interrupt
Implementations.

How do I enable resources for PC Cards?

You may have to free up some ISA resources for the PXI-8220. You can do
this by disabling some devices on the **Start»Settings»Control Panel»
System Device Manager** tab (in Windows 95), or by reconfiguring the
BIOS to disable or remap some of the ISA interrupts or devices (serial
ports, parallel ports, and so on).

**What do I do if my PXI hardware is listed in the Windows 95 Device
Manager with a circled X or exclamation point (!) overlaid on it?**

Repeat the steps in the *Installing the PXI-8220* section. If the problem
persists, contact National Instruments.

**What do I do if the NT PCMCIA services are started, but the PC Card
is not visible in the PC Card Applet, or there is a circled X overlaid
on it?**

Windows NT uses the upper 1 MB of memory (c0000-fffff) to map the
PCMCIA Card Services. Your controller may be set up to activate Shadow
Memory for this region in the controller BIOS. Disable all Shadow
Memory in the upper 1 MB region.

If you are using a PXI-815*x* controller, reboot the PXI-815*x*. When the
message Hit <DEL> if you want to run SETUP appears, press the
<DEL> key to enter the BIOS setup program. Select **BIOS Configuration**,
then **Advanced CMOS Setup**. Set all **Shadow Memory** settings to
Disabled.

Can I use the PXI-8220 with other vendors' CPCI controllers?

Yes, but only if the CPCI controller supports Serialized Interrupt
Implementations and the PC Card uses Serialized Interrupts; or if your
PC Card does not require interrupts.