

NI 8221

The NI 8221 is a two-slot CardBus PC Card carrier for the PXI/CompactPCI bus.

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Hardware Overview

The NI 8221 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.

NI 8221 Features

- Two-slot PC Card adapter in one PXI/CompactPCI slot
- Compatible with both 16-bit and CardBus (32-bit) PC Cards
- Supports two Type I/II or one Type III PC Card
- Supports 5 V and 3.3 V PC Cards
- Serialized Interrupts in PXI supports legacy ISA-style interrupts for 16-bit PC Cards (with NI 8171 series controllers only)
- Compliant with PC Card Standard Release 7.0
- Compliant with PXI and CompactPCI specifications

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PC Card 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 specification includes:

- 16-bit PC Card
 - 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 4.2
- CardBus PC Card
 - 32-bit data and addressing capabilities
 - Up to 132 Mbytes/s Burst transfer rate
 - Support for Bus Masters on PC Cards
 - Synchronous interface
 - 3.3 V and lower voltage operation

Connectivity

The NI 8221 can support two 16-bit or CardBus (32-bit) Type I/II cards or one Type III PC card using the two standard 68-pin interface connectors.

Software

Windows 2000 includes native support for the NI 8221.

Older Windows versions are not fully supported.

What You Need to Get Started

Make sure you have the following items before attempting to install the NI 8221 hardware and software:

- Windows 2000 installed on your NI 8171 series controller
- BIOS version 1.16 or later on your NI 8171 series controller. For the latest BIOS, see ftp://ftp.ni.com/support/pxi/pxi-8171/BIOS_update/.

Installing the NI 8221

This section describes how to install your NI 8221.



Caution Electrostatic discharge can damage several components on the NI 8221. 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 PXI/CompactPCI system is turned off, but keep it plugged in so that it remains grounded while you install the NI 8221.
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 on the NI 8221 is in its downward position. Align the NI 8221 with the card guides on the top and bottom of the slot.



Caution Do *not* raise the injector/ejector handle as you insert the NI 8221. 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 NI 8221 front panel should be even with the mainframe front panel.

Figure 1 shows how to install the NI 8221 in a PXI/CompactPCI chassis.

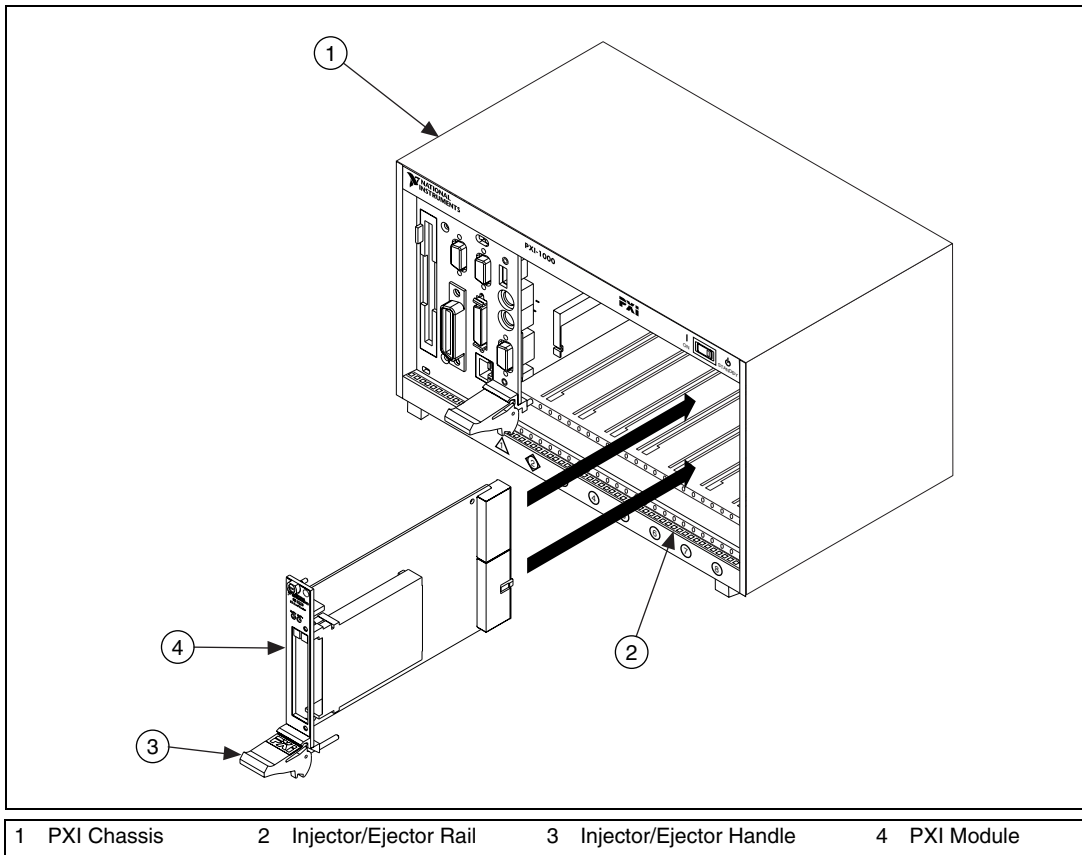


Figure 1. Installing the NI 8221 into a PXI/CompactPCI Chassis

7. Screw the front panel of the NI 8221 to the front panel-mounting rail.
8. Turn on your system.

Installation Steps Specific to Windows 2000

Windows 2000 should automatically detect all new devices—two PCI-CardBus bridge devices—and automatically determine the right driver. A **New Hardware Found** dialog box appears and then disappears on its own. Go to the Control Panel, double-click the PC Card icon, and follow any remaining Windows 2000 steps. Your NI 8221 installation for Windows 2000 is now complete.



Note You may need to free ISA resources for the NI 8221. You can do this by disabling devices on the **Start»Settings»Control Panel»System»Hardware»Device Manager** tab or by reconfiguring the BIOS to disable ISA interrupts or devices (serial ports, parallel ports, and so on).

Common Questions

How do I enable resources for PC Cards?

You may need to free ISA resources for the NI 8221. You can do this by disabling devices on the **Start»Settings»Control Panel»System»Hardware»Device Manager** tab or by reconfiguring the BIOS to disable ISA interrupts or devices (serial ports, parallel ports, and so on).

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

Repeat the steps in the *Installing the NI 8221* section. If the problem persists, contact National Instruments.

Can I use the NI 8221 with other vendors' CPCI controllers?

Yes, but only if the CPCI controller supports Serialized Interrupt Implementations and the PC Card uses Serialized Interrupts.

Specifications

Environmental

Temperature

Operating0 to 55 °C
Storage-20 to 70 °C

Relative humidity

Operating 10% to 90% noncondensing
Storage 5% to 95% noncondensing

Functional shock 30 g peak, half-sine, 11 ms pulse

Random vibration..... 5 to 500 Hz, 0.31 g_{rms}, operating
10 to 500 Hz, 2.46 g_{rms},
nonoperating

Power Requirements

+3.3 V

Typical50 mA
Maximum100 mA

+5 V

Typical50 mA
Maximum100 mA