

Set Up Your NI ExpressCard MXI System

This document explains how to set up your NI ExpressCard MXI system.

What You Need to Get Started

To set up and use your NI ExpressCard MXI boards, you need the following:

- One NI ExpressCard-8360 and one NI PXI-8360
- A MXI-Express x1 cable
- A laptop PC or other host with an available ExpressCard™ slot
- An expansion chassis—the PXI/CompactPCI chassis that you control with NI ExpressCard MXI



Note Your PXI NI ExpressCard MXI board will work in any standard CompactPCI chassis adhering to the *PICMG CompactPCI 2.0 R3.0* specification, or in PXI chassis that are compatible with the *PXI Hardware Specification*, Revision 1.0 or later. Your NI ExpressCard MXI board will work in many systems compliant with the *PCMCIA ExpressCard™ Standard*, Revision 1.0 or later.



Note Some laptops do not expect bridges behind an ExpressCard™ module, and they will not configure the PXI/CompactPCI system correctly. Refer to the NI ExpressCard MXI model page at ni.com/pxi for a list of compatible laptops.

Unpacking

Your NI ExpressCard MXI boards are shipped in antistatic packages to prevent electrostatic damage (ESD) to the devices. ESD can damage several components on the device.



Caution *Never* touch the exposed pins of connectors. Doing so may damage the device.

To avoid such damage in handling the device, take the following precautions:

- Ground yourself using a grounding strap or by holding a grounded object.
- Touch the antistatic package to a metal part of the computer chassis before removing the device from the package.

Remove the device from the package and inspect the device for loose components or any sign of damage. Notify NI if the device appears damaged in any way. Do *not* install a damaged device into the computer or PXI/CompactPCI chassis.

Store the device in the antistatic envelope when not in use.

Hardware Installation

The following are general instructions for installing the NI ExpressCard MXI boards. Consult your computer user manual or technical reference manual for specific instructions and warnings.



Note The software for your NI ExpressCard MXI kit is included with the current NI driver CD, and is installed with the PXI platform software included as part of NI-VISA and other NI driver software products.

Installing an NI PXI-8360

Complete the following steps to install the NI PXI-8360 in your PXI or CompactPCI chassis.

1. Power off your PXI or CompactPCI chassis, but leave it plugged in while installing the NI PXI-8360. The power cord grounds the chassis and protects it from electrical damage while you install the module.



Caution To protect both yourself and the chassis from electrical hazards, leave the chassis off until you finish installing the NI PXI-8360.



Note The NI PXI-8360 must be installed in the controller slot (slot 1 in PXI).

2. Remove or open any doors or covers blocking access to the controller slot in which you intend to install the NI PXI-8360.
3. Touch the metal part of the case to discharge any static electricity that might be on your clothes or body.
4. Make sure the injector/ejector handle is in its downward position. Be sure to remove all connector packaging and protective caps from

retaining screws on the module. Align the NI PXI-8360 with the card guides on the top and bottom of the system controller slot.



Caution Do *not* raise the injector/ejector handle as you insert the NI PXI-8360. It will not insert properly unless the handle is in its downward position so that it does not interfere with the injector/ejector rail on the chassis, as shown in Figure 1.

5. Hold the handle as you slowly slide the module into the chassis 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 NI PXI-8360 should be even with the front panel of the chassis.
7. Tighten the bracket-retaining screws on the top and bottom of the front panel to secure the NI PXI-8360 to the chassis.
8. Replace or close any doors or covers to the chassis.

Figure 1 shows an NI PXI-8360 just before installation in the system controller slot of a National Instruments chassis.

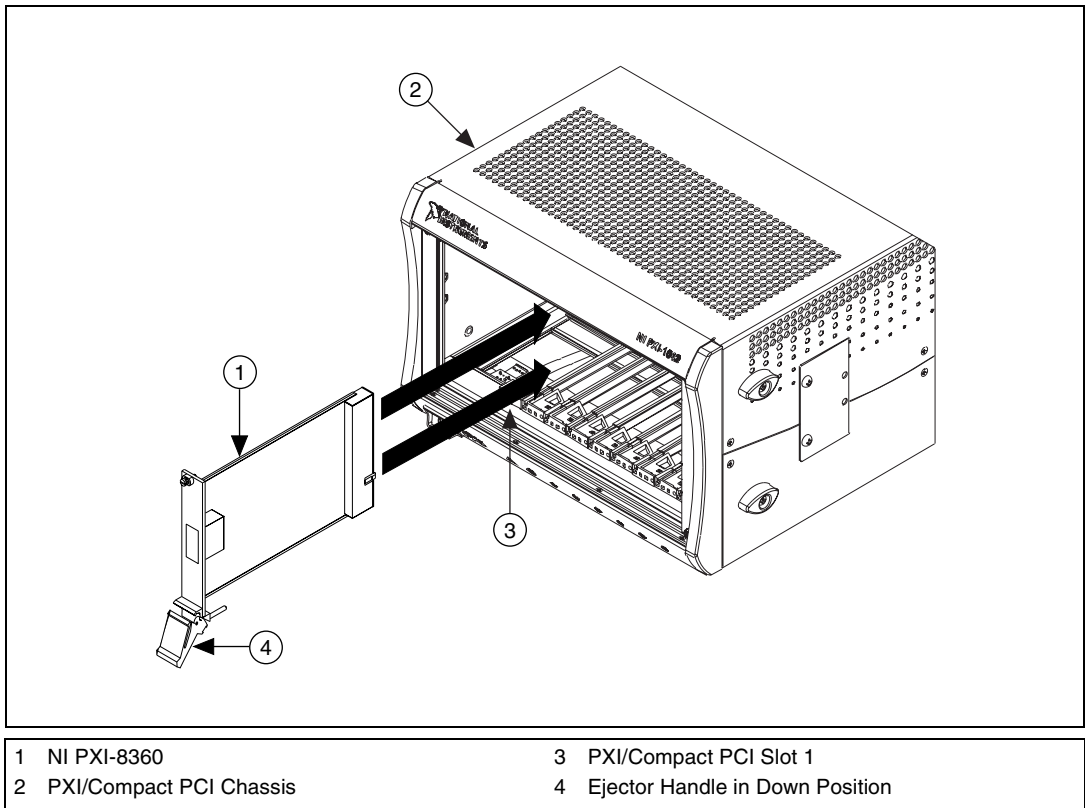


Figure 1. NI PXI-8360 Board Before Installation

Installing an NI ExpressCard-8360

Because a laptop is not grounded, follow this procedure to safely connect it to your PXI system:

1. Install the NI PXI-8360 as directed in the previous section.
2. Touch the NI ExpressCard-8360 and a metal part of the PXI chassis simultaneously.
3. Connect the cable to the NI PXI-8360 and NI ExpressCard-8360.
4. Plug the NI ExpressCard-8360 into an available ExpressCard™ slot.

If your computer is already running (or hibernating, etc.) when you install NI ExpressCard MXI, you must reboot to detect the PXI system.

Otherwise, the PXI system is detected when you start your computer.

Figure 2 shows how to insert the NI ExpressCard-8360 and connect the cable.

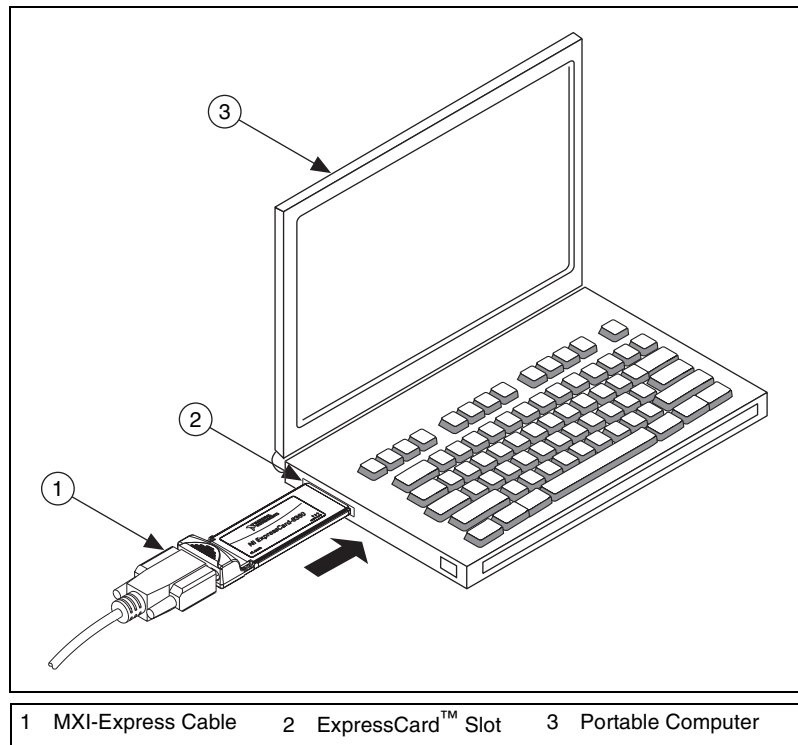


Figure 2. Installing the NI ExpressCard-8360

Cabling

The NI ExpressCard MXI interface uses the same cable as MXI-Express. The cables have no polarity, so either end may be connected to either board.



Caution Do *not* remove the cable after the system is powered on. Doing so can hang or cause errors in applications communicating with devices behind NI ExpressCard MXI. If a cable becomes unplugged, plug it back into the system.



Note For more information about cables, refer to the *NI ExpressCard MXI Cable Options* section of Chapter 3, *Hardware Overview*, in the *NI ExpressCard MXI Series User Manual*.



Note You cannot use two PXI-8360 boards for chassis expansion as with MXI-4. You can connect only an NI PCIe-8361/8362 or an NI ExpressCard-8360 to an NI PXI-8360.

Powering Up the NI ExpressCard MXI System

To power up the NI ExpressCard MXI system, follow these steps:

1. Power on the expansion chassis.
2. Power on the host.

Typical PCI-PCI bridges are used to add PCI devices to a PCI hierarchy in which all the bridges and devices are contained within a single chassis. Because of this, BIOSes and operating systems make the assumption that all PCI devices in the entire hierarchy will be available as soon as code execution begins at power-up time. This assumption means that all of the expansion chassis must be turned on before the host PC for the BIOS and OS to correctly configure an NI ExpressCard MXI system.



Note You may add additional chassis using MXI-3 or MXI-4. When using MXI-4, there are no restrictions on chassis power-on order, except that the host must be powered on last. When using MXI-3, you must power up the chassis in order, beginning furthest from the host and ending with the host. Refer to the MXI-3 or MXI-4 documentation for further details.

Powering Down the NI ExpressCard MXI System

Because operating systems and drivers commonly make the assumption that PCI devices will be present in the system from power-up to power-down, it is important not to power off the expansion chassis until after the host PC is powered off. Powering off the expansion chassis while the host is still on can cause crashes or hangs. The order in which expansion chassis are powered off, relative to each other, is not important.

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