

# PCI Express Control of PXI (MXI-Express)

## NI PXI-PCIe8361, NI PXI-PCIe8362, NI PCIe-8361, NI PCIe-8362, NI PXI-8360

- PCI Express control of PXI/CompactPCI
- Control of two PXI/CompactPCI chassis from a single PCI Express board (NI PCIe-8362)
- Sustained throughput
  - 160 MB/s (2 chassis)
  - 110 MB/s (1 chassis)
- Rugged connectivity



## Overview

With NI MXI-Express interface kits, PC users with PCI Express slots can exercise direct control of PXI systems using cabled PCI Express technology. MXI-Express, a high-bandwidth serial link transparent to software applications and drivers, provides the ability to use high-performance desktop computers, servers, and workstations to control PXI systems.

## PCI Express Control of PXI

With a MXI-Express link, you can transparently control a PXI system from any PCI Express slot, so you can use desktop computers, servers, and workstations to control PXI systems. MXI-Express features a transparent link where all PXI modules appear as PCI boards within the computer itself. However, you benefit from the increased number of slots, power and cooling per slot, module selection, and synchronization features provided by PXI.

The MXI-Express link consists of an NI PCIe-8361 or PCIe-8362 board in the PC that is connected via a MXI-Express cable to a PXI-8360 module in slot 1 of a PXI chassis. The NI PCIe-8361 board provides one PCI Express link, which you can cable to a PXI-8360 module in a PXI chassis. The NI PCIe-8362 board provides two PCI Express links, each of which you can cable to individual PXI-8360 modules in separate PXI chassis. Thus, you can use a single NI PCIe-8362 board to simultaneously control two PXI systems. For your convenience, you can purchase either a complete MXI-Express kit with all necessary components or the PCI Express board, PXI module, and cable separately.

## Cabled PCI Express Technology

The NI PCIe-8361 and PCIe-8362 boards provide one or two cabled PCI Express links, respectively. The links have x1 (“by one”) lane widths. The PXI-8360 module includes a bridge that converts the PCI Express link to the PCI bus used in PXI. Thus, all PXI modules appear as PCI boards within the computer itself.

## PCI Software Compatibility

PCI Express features software compatibility with PCI. Without making any modifications to your software, you can use MXI-Express with an application written for a PXI system controlled via a PCI remote controller, such as MXI-3 or MXI-4.

## Multichassis PXI Systems

You can use a single NI PCIe-8362 board to simultaneously control two PXI systems. You also can incorporate multiple NI PCIe-8361 or PCIe-8362 boards in a PC with multiple PCI Express slots to add PXI chassis to a system. You cannot use a PXI-8360 module to connect multiple PXI chassis. However, using MXI-4, you can connect multiple PXI chassis in a star or daisy-chain configuration within a single system. To connect two PXI chassis together with MXI-4, install an NI PXI-8331 (copper) or PXI-8336 (fiber-optic) module into any peripheral slot of the master chassis, and connect with the appropriate cable to a second PXI-8331 or PXI-8336 in slot 1 of the slave chassis.

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## Ordering Information

For online configuration of a complete PXI system, including chassis, modules, and all accessories, visit [ni.com/pxiadvisor](http://ni.com/pxiadvisor).

### MXI-Express Kit for PXI/CompactPCI

NI PXI-PCIe8362 ..... 779503-03  
Kit includes one PCI Express board (NI PCIe-8362), one PXI module (PXI-8360), and one 3 m cable.

NI PXI-PCIe8361 ..... 779505-03  
Kit includes one PCI Express board (NI PCIe-8361), one PXI module (PXI-8360), and one 3 m cable.

### PXI MXI-Express Interface Module

NI PXI-8360 ..... 779501-01

### PCI Express MXI-Express Interface Board

NI PCIe-8362 ..... 779502-01

NI PCIe-8361 ..... 779504-01

### MXI-Express Cable

3 m ..... 779500-03

7 m ..... 779500-07

## BUY NOW

For complete product specifications, pricing, and accessory information, call 800 813 3693 (U.S.) or go to [ni.com/pxiadvisor](http://ni.com/pxiadvisor).

# PCI Express Control of PXI (MXI-Express)

## Specifications

Specifications are subject to change without notice.

## Bus Interface

Form factor ..... x1 PCI Express  
 Slot compatibility ..... x1, x4, x8, and x16<sup>1</sup>  
 PCI Express slots

<sup>1</sup>Some motherboard manufacturers intend the x16 slot for graphics use and preinstall a graphics board. Check with the motherboard manufacturer for alternative graphics solutions if using the x16 slot for a nongraphics board.

## Power Requirements

	Power Rail	Typical Current	Maximum Current
<b>NI PXI-8360</b>	+3.3 V	1.500 A	1.750 A
	+5 V	5 mA	20 mA
	+12 V	5 mA	20 mA
	-12 V	0 mA	0 mA
<b>NI PCIe-8361</b>	+3.3 V	1.800 A	2.000 A
	+3.3 V <sub>AUX</sub>	0 A	0 A
	+12 V	0 A	0 A
<b>NI PCIe-8362</b>	+3.3 V	580 mA	1.040 A
	+3.3 V <sub>AUX</sub>	10 mA	50 mA
	+12 V	0 A	0 A

## Physical

### Dimensions

NI PXI-8360 ..... 10.0 by 16.0 cm (3.9 by 6.3 in.)  
 NI PCIe-8361 ..... 10.7 by 17.5 cm (4.4 by 6.9 in.)  
 NI PCIe-8362 ..... 9.93 by 7.11 cm (3.91 by 2.8 in.)

### Slot requirements

NI PXI-8360 ..... One 3U PXI system controller slot  
 NI PCIe-8361 and PCIe-8362 ..... One PCI Express slot

Maximum cable length ..... 7 m

Compatibility ..... Fully compatible with the PXI Hardware Specification, Revision 2.1, and the PCI Express Specification, Revision 1.0a

## Operating Environment

NI PXI-8360, PCIe-8361, PCIe-8362

Ambient temperature range ..... 0 to 55 °C  
 (tested in accordance with IEC-60068-2-1 and IEC-60068-2-2; meets MIL-PRF-28800F Class 3 low temperature limit and MIL-PRF-28800F Class 2 high temperature limit)  
 Relative humidity range ..... 10 to 90%, noncondensing  
 (tested in accordance with IEC-60068-2-56)

Maximum altitude ..... 2,000 m  
 Pollution Degree ..... 2  
 Indoor use only.

## Storage Environment

NI PXI-8360

Ambient temperature range ..... -20 to 70 °C  
 (tested in accordance with IEC-60068-2-1 and IEC-60068-2-2; meets MIL-PRF-28800F Class 3 limits)  
 Relative humidity range ..... 5 to 95%, noncondensing  
 (tested in accordance with IEC-60068-2-56)

NI PCIe-8361

Ambient temperature range ..... -20 to 70 °C  
 (tested in accordance with IEC-60068-2-1 and IEC-60068-2-2)  
 Relative humidity range ..... 5 to 95%, noncondensing  
 (tested in accordance with IEC-60068-2-56)

NI PCIe-8362

Ambient temperature range ..... -40 to 70 °C  
 (tested in accordance with IEC-60068-2-1 and IEC-60068-2-2)  
 Relative humidity range ..... 5 to 95%, noncondensing  
 (tested in accordance with IEC-60068-2-56)

## Shock and Vibration

NI PXI-8360

Operating ..... 30 g peak, half-sine, 11 ms pulse  
 (tested in accordance with IEC-60068-2-27; test profile developed in accordance with MIL-PRF-28800F)

Random Vibration

Operating ..... 5 to 500 Hz, 0.3 g<sub>rms</sub>  
 Nonoperating ..... 5 to 500 Hz, 2.4 g<sub>rms</sub>  
 (tested in accordance with IEC-60068-2-64; nonoperating test profile exceeds the requirements of MIL-PRF-28800F, Class 3)

**Note:** For full EMC compliance, operate this device with shielded cabling. In addition, all covers and filler panels must be installed. Refer to the Declaration of Conformity (DoC) for this product for any additional regulatory compliance information. To obtain the DoC for this product, visit [ni.com/certification](http://ni.com/certification), search by model number or product line, and click the appropriate link in the Certification column.

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## Hardware Services

### System Assurance Programs

NI system assurance programs are designed to make it even easier for you to own an NI system. These programs include configuration and deployment services for your NI PXI, CompactRIO, or Compact FieldPoint system. The NI Basic System Assurance Program provides a simple integration test and ensures that your system is delivered completely assembled in one box. When you configure your system with the NI Standard System Assurance Program, you can select from available NI system driver sets and application development environments to create customized, reorderable software configurations. Your system arrives fully assembled and tested in one box with your software preinstalled. When you order your system with the standard program, you also receive system-specific documentation including a bill of materials, an integration test report, a recommended maintenance plan, and frequently asked question documents. Finally, the standard program reduces the total cost of owning an NI system by providing three years of warranty coverage and calibration service. Use the online product advisors at [ni.com/advisor](http://ni.com/advisor) to find a system assurance program to meet your needs.

### Calibration Services

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