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.
### 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
1Some 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 non-graphics board.

Power Requirements

<table>
<thead>
<tr>
<th>Power Rail</th>
<th>Typical Current</th>
<th>Maximum Current</th>
</tr>
</thead>
<tbody>
<tr>
<td>+3.3 V</td>
<td>1.500 A</td>
<td>1.750 A</td>
</tr>
<tr>
<td>+5 V</td>
<td>5 mA</td>
<td>20 mA</td>
</tr>
<tr>
<td>+12 V</td>
<td>5 mA</td>
<td>20 mA</td>
</tr>
<tr>
<td>-12 V</td>
<td>0 mA</td>
<td>0 mA</td>
</tr>
</tbody>
</table>

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 non-graphics board.

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-60068-2-1 and test profile developed in accordance with MIL-PRF-28800F)

Random Vibration
Operating.............................................. 5 to 500 Hz, 0.3 gms
(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, search by model number or product line, and click the appropriate link in the Certification column.
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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 to find a system assurance program to meet your needs.

Calibration Services
NI recognizes the need to maintain properly calibrated devices for high-accuracy measurements. We provide manual calibration procedures, services to recalibrate your products, and automated calibration software specifically designed for use by metrology laboratories. Visit ni.com/calibration.

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