

Fiber-Optic MXI-Express x4 for PXI Express (Compatible with NI, Dell, and Hewlett-Packard PCs)

NI PXIe-PCle8375, NI PXIe-8375, NI PCIe-8375 **NEW!**

- PCI Express control of PXI Express/ CompactPCI Express
- Compatible with NI rack-mount controllers and Dell and Hewlett-Packard computers
- Fiber-optic cabling with electrical isolation
- Multichassis configurations for PXI Express
- Sustained throughput up to 838 MB/s
- Lightweight, flexible cabling up to 100 m
- Software-transparent link that requires no programming
- Low-profile PCI Express interface, ships with low-profile and standard size brackets



Overview

With National Instruments MXI-Express x4 (“by four”) for PXI Express interface kits, PC users with x4 or higher PCI Express slots can achieve direct control of PXI Express systems using cabled PCI Express technology. NI MXI-Express x4 for PXI 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 Express systems.

Computer Compatibility

The NI PXIe-PCle8375 is compatible with National Instruments rack-mount controllers and Dell, and Hewlett-Packard computers. If you cannot use a PC from one of these vendors, please contact National Instruments.

PCI Express Control of PXI Express

A MXI-Express x4 for PXI Express link helps you transparently control a PXI Express system from a x4 or higher PCI Express slot, so you can use a National Instruments, Dell or Hewlett-Packard desktop computer, server, or workstation to control PXI Express systems. MXI-Express x4 for PXI Express features a fully transparent, high-bandwidth, cabled PCI Express link where all PXI and PXI Express 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 Express. The MXI-Express x4 for PXI Express link consists of an NI PCIe-8375 board in the PC that is connected via a x4 MXI-Express fiber-optic cable to an NI PXIe-8375 module in slot 1 of a PXI Express chassis. With the fiber-optic NI PXIe-PCle8375 kit, you can electrically isolate your PXI Express measurement hardware from the PC with extended length cabling up to 100 m. For your convenience, you can purchase a complete MXI-Express x4 for PXI Express kit with all necessary components or the PCI Express board, PXI Express module, and cable separately.

Cabled PCI Express Technology

The NI PCIe-8375 board provides one cabled PCI Express link. The link width is x4 (a link comprises four x1 PCI Express lanes). The NI PXIe-8375 module connects this PCI Express link to the PCI Express bus used in the PXI Express chassis backplane. Thus, all PXI and PXI Express 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 a MXI-Express x4 for PXI Express link with an application written for a PXI system controlled via a PCI or PCI Express remote controller, such as MXI-3, MXI-4, or MXI-Express.

Multichassis PXI Systems

You can use the NI PXIe-PCle8375 to connect multiple PXI Express chassis in a star or daisy-chain configuration within a single system. The star topology requires the host PC to have a PCI Express x4 slot available for each PXI Express chassis you want to control. Each PXI Express chassis is connected directly to an NI PCIe-8375 installed in the host computer. This topology has the highest throughput; however, it requires one PCI Express x4 slot and one NI PCIe-8375 for each PXI Express chassis.

The NI PXIe-8375 has two fiber-optic ports on its front panel: an upstream port (for connecting toward the host) and a downstream port (which allows for daisy chaining). In the daisy-chain configuration, only a single PCI Express x4 slot is required in the host, but the data throughput might be lower, especially for devices further down the chain. The figure on page 2 shows an example of a multichassis system in a daisy-chain configuration.

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Daisy-Chain Configuration

Ordering Information

Fiber-Optic MXI-Express x4 for PXI Express/CompactPCI Express Kit

NI PXIe-PCIe8375 781039-01
Kit includes one PCI Express board (NI PCIe-8375), one PXI Express
module (NI PXIe-8375), and one 10 m fiber-optic cable.

PXI Express Interface Module

NI PXIe-8375 781040-01

PCI Express MXI-Express Interface Board

NI PCIe-8375 781041-01

x4 MXI-Express Fiber-Optic Cable

10 m 781042-10
30 m 781042-30
100 m..... 781042-100

BUY NOW

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

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Specifications

Specifications are subject to change without notice.

NI PCIe-8375

Bus Interface

Form factor x4 PCI Express (ships with full-size bracket installed and a low-profile bracket that can be installed for use in low-profile computers)

Slot compatibility x4, x8, and x16¹ PCI Express slots
¹Some motherboard manufacturers intend the x16 slot for graphics use. They may preinstall a graphics board or limit the link to x1. Check with the motherboard manufacturer if using the x16 slot for a nongraphics board.

NI PCIe-8375

Power Requirements

Power Rail	Typical Current	Maximum Current
+3.3 V	550 mA	720 mA
+3.3 V _{AUX}	0 A	0 A
+12 V	200 mA	320 mA

Physical

Board dimensions 8.9 by 6.9 cm (3.5 by 2.72 in.)
 Slot requirement One PCI Express x4 slot
 Maximum cable length 100 m
 Compatibility Fully compatible with the *PCI Express Specification 1.0a, 1.1*

Operating Environment

Ambient temperature range 0 to 55 °C
 (tested in accordance with IEC-60068-2-1 and IEC-60068-2-2)
 Operating relative humidity 10 to 90%, noncondensing
 (tested in accordance with IEC-60068-2-56)

Storage Environment

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 PXIe-8375

Power Requirements

Power Rail	Typical Current	Maximum Current
+3.3 V	1.25 A	2 A
+5 V	0 A	0 A
+12 V	285 mA	450 mA
+5 V _{AUX}	1 mA	2.5 mA

Physical

Board dimensions 10.0 by 16.0 cm (3.9 by 6.3 in.)
 Slot requirements One 3U PXI Express system controller slot
 Maximum cable length 100 m
 Compatibility Fully compatible with the *PXI Express Hardware Specification, Revision 1.0* and the *PICMG CompactPCI Express EXP.0R1.0 Specification*

Environment

Maximum altitude 2,000 m (800 mbar)
 (at 25 °C ambient temperature)
 Pollution degree 2
 Indoor use only

Operating Environment

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)

Storage Environment

Ambient temperature range -40 to 71 °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)

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Shock

Operating shock	30 g peak, half-sine, 11 ms pulse (tested in accordance with IEC-60068-2-27; meets MIL-PRF-28800F Class 2 limits)
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Vibration

Random Vibration	
Operating	5 to 500 Hz, 0.3 g _{rms}
Nonoperating	5 to 500 Hz, 2.4 g _{rms} (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, 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.

Safety and Compliance

Safety

This product is designed to meet the requirements of the following standards of safety for electrical equipment for measurement, control, and laboratory use:

- IEC 61010-1, EN 61010-1
- UL 61010-1, CSA 61010-1

Note: For UL and other safety certifications, refer to the product label or visit ni.com/certification, search by model number or product line, and click the appropriate link in the Certification column.

Electromagnetic Compatibility

This product is designed to meet the requirements of the following standards of EMC for electrical equipment for measurement, control, and laboratory use:

- EN 61326 (IEC 61326): Class A emissions; Basic immunity
- EN 55011 (CISPR 11): Group 1, Class A emissions
- AS/NZS CISPR 11: Group 1, Class A emissions
- FCC 47 CFR Part 15B: Class A emissions
- ICES-001: Class A emissions

Note: For the standards applied to assess the EMC of this product, visit ni.com/certification.

CE Compliance

This product meets the essential requirements of applicable European Directives, as amended for CE marking, as follows:

- 2006/95/EC; Low-Voltage Directive (safety)
- 2004/108/EC; Electromagnetic Compatibility Directive (EMC)

Note: 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.

Waste Electrical and Electronic Equipment (WEEE)

EU Customers: At the end of their life cycle, all products must be sent to a WEEE recycling center. For more information about WEEE recycling centers and National Instruments WEEE initiatives, visit ni.com/environment/weee.htm.

NI Services and Support



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start-up assistance to turnkey system integration. Visit ni.com/alliance.

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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 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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