

Dual Gigabit Ethernet Interface for PXI Express/CompactPCI Express

NI 8234 **NEW!**

- Two gigabit Ethernet interfaces with up to 1000 Mb/s (1000BASE-T) transfers per port
- x4 PXI Express/CompactPCI Express module with up to 1 GB/s bandwidth
- Automatic cable polarity detection
- Compatibility with 10BASE-T and 100BASE-TX
- RoHS compliance

Operating Systems

- Windows Vista/XP/2000/Me/98/NT

Recommended Software

- LabVIEW
- LabWindows™/CVI
- Measurement Studio for Microsoft Visual Studio



Overview

The National Instruments 8234 is a high-performance dual gigabit Ethernet interface for PXI Express/CompactPCI Express based on the Intel 82571EB gigabit Ethernet controller. The NI 8234 includes two gigabit ports within the single-slot PXI Express module, saving a slot in your PXI/CompactPCI system. By using 1000 Mb/s gigabit Ethernet, you gain a substantial performance increase over 100 Mb/s Fast Ethernet while your system remains completely compatible with 10BASE-T and 100BASE-TX Fast Ethernet networks.

Real Performance Gains

Gigabit Ethernet theoretically provides a 1000 Mb/s transmission speed that approaches the limit of PCI bus bandwidth. Because the NI 8234 offers a x4 ("by four") PCI Express interconnect supporting up to 1 GB/s bandwidth, you can simultaneously use the two gigabit ports and not be limited by bus bandwidth. However, variables, such as your CPU speed, and Ethernet network configuration determine performance, and, as a practical guideline, you might attain transmission speeds of 500 Mb/s and receive speeds of 800 Mb/s. This is five to eight times the performance of 100BASE-TX Fast Ethernet.

Compatibility and Cabling

The NI 8234 is fully compatible with Ethernet standards and cabling. You can continue to use standard CAT5 Ethernet cables and achieve gigabit Ethernet performance, provided all the conductor pairs in the cable are connected (four pairs x 250 Mb/s per pair = 1000 Mb/s). Additionally, the gigabit Ethernet modules automatically detect cable polarity, so there is no need to swap between crossover and straight-through cabling for different network configurations. The gigabit Ethernet port also automatically switches between 10, 100, and 1000 Mb/s modes, depending on your network capability, as determined by your server speed, switch/router capacity, and wiring capacity.

Ordering Information

NI 8234780244-01

BUY NOW!

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



Dual Gigabit Ethernet Interface for PXI Express/CompactPCI Express

Specifications

The following specifications apply to the NI 8234 interface. These specifications are typical at 25 °C, unless otherwise stated.

Power Requirements

- 0.375 A at 3.3 V
- 0.36 A at 5 V
- 1.19 A at 1.8 V
- 5.2 W maximum

Physical Characteristics

Dimensions.....	10.0 by 16.0 cm (3.9 by 6.3 in.)
Ethernet interface	2 10P10C modular jack connectors
Slot requirements	1 peripheral slot supporting a x4 PCI Express connection (either PXI Express/CompactPCI Express slot or PXI Express hybrid slot)
CompactPCI Express compliance.....	Version 1.0a
Compatibility	PXI Express Specification 1.0 CompactPCI Express Specification 1.0
Weight.....	160 g (5.6 oz)
Native link width.....	x4

Signaling

Ethernet.....	1000BASE-T compliance on four pairs of CAT5 cable
---------------	---

Environment

The NI 8234 is intended for indoor use only.

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)
Pollution degree	2

Caution: Do not use the NI 8234 for connection to signals within Measurement Categories II, III, or IV.

Maximum altitude.....	2000 m
-----------------------	--------

Storage Environment

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

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 EMC requirements; Minimum Immunity
- EN 55011 Emissions; Group 1, Class A
- CE, C-Tick, ICES, and FCC Part 15 Emissions; Class A

Note: For EMC compliance, operate this device according to product documentation.

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.

Environmental Management

NI is committed to designing and manufacturing products in an environmentally responsible manner. NI recognizes that eliminating certain hazardous substances from our products is beneficial not only to the environment but also to NI customers.

For additional environmental information, refer to the NI and the Environment Web page at ni.com/environment. This page contains the environmental regulations and directives with which NI complies, as well as other environmental information not included in this document.

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



NI has the services and support to meet your needs around the globe and through the application life cycle – from planning and development through deployment and ongoing maintenance. We offer services and service levels to meet customer requirements in research, design, validation, and manufacturing. Visit ni.com/services.

Training and Certification

NI training is the fastest, most certain route to productivity with our products. NI training can shorten your learning curve, save development time, and reduce maintenance costs over the application life cycle. We schedule instructor-led courses in cities worldwide, or we can hold a course at your facility. We also offer a professional certification program that identifies individuals who have high levels of skill and knowledge on using NI products. Visit ni.com/training.

Professional Services

Our NI Professional Services team is composed of NI applications and systems engineers and a worldwide National Instruments Alliance Partner program of more than 600 independent consultants and

integrators. Services range from start-up assistance to turnkey system integration. Visit ni.com/alliance.



OEM Support

We offer design-in consulting and product integration assistance if you want to use our products for OEM applications. For information about special pricing and services for OEM customers, visit ni.com/oem.

Local Sales and Technical Support

In offices worldwide, our staff is local to the country, giving you access to engineers who speak your language. NI delivers industry-leading technical support through online knowledge bases, our applications engineers, and access to 14,000 measurement and automation professionals within NI Developer Exchange forums. Find immediate answers to your questions at ni.com/support.

We also offer service programs that provide automatic upgrades to your application development environment and higher levels of technical support. Visit ni.com/ssp.

Hardware Services

NI Factory Installation Services

NI Factory Installation Services (FIS) is the fastest and easiest way to use your PXI or PXI/SCXI combination systems right out of the box. Trained NI technicians install the software and hardware and configure the system to your specifications. NI extends the standard warranty by one year on hardware components (controllers, chassis, modules) purchased with FIS. To use FIS, simply configure your system online with ni.com/pxiadvisor.

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.

Repair and Extended Warranty

NI provides complete repair services for our products. Express repair and advance replacement services are also available. We offer extended warranties to help you meet project life-cycle requirements. Visit ni.com/services.



ni.com • 800 813 3693

National Instruments • info@ni.com

