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## Image Acquisition From GigE Vision Cameras

### NI PCIe-8231, NI PCIe-8235, NI PXIe-8234



- Gigabit Ethernet controllers
- Up to 100 MB/s transfer rates per port

- Optimized for low CPU load

### Overview

Get the most performance from your GigE Vision camera with National Instruments GigE Vision interfaces, including the NI PCIe-8231 one-port interface, the NI PCIe-8235 four-port interface, and the NI PXIe-8234 two-port interface. NI Vision Acquisition software is highly optimized for these controllers, and the resulting CPU usage for acquiring images from them is extremely low. With their PCI Express-based interfaces, these devices provide full GigE Vision bandwidth at every port, giving you the bandwidth you need for your most demanding vision applications.

[Back to Top](#)

### Requirements and Compatibility

#### OS Information

- Real-Time OS
- Windows 7
- Windows Vista
- Windows XP

#### Driver Information

- NI Vision Acquisition Software

#### Software Compatibility

- LabVIEW
- LabVIEW Vision Development Module
- NI Vision Builder for Automated Inspection
- NI Vision Builder for Automated Inspection Development Kit

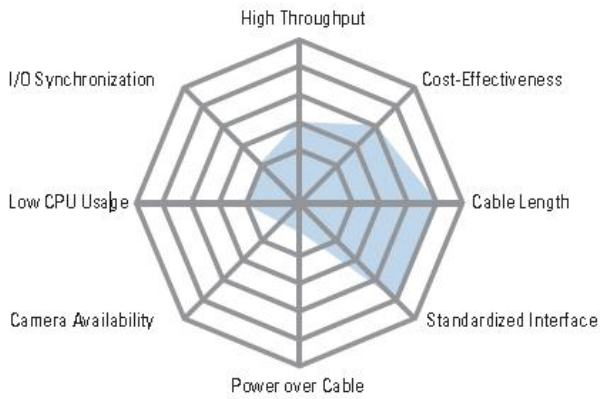
[Back to Top](#)

### Application and Technology



GigE Vision is a new interface standard for cameras that transmit images over Gigabit Ethernet. It provides an alternative for vision applications requiring long cable distances or lower cost cabling. The cabling is simpler, but you need a separate cable to supply power to the camera. NI Vision Acquisition software works with any Gigabit Ethernet camera.

# GigE Vision



[Back to Top](#)

## Ordering Information

For a complete list of accessories, visit the product page on ni.com.

Products	Part Number	Recommended Accessories	Part Number
<b>GigE Vision</b>			
NI PCIe-8231 (1-port PCI Express board)	779813-01	No accessories required.	
NI PXIe-8234 (2-port PXI Express module) - Includes Vision Acquisition software	780263-01	No accessories required.	
NI PCIe-8235 (4-port PCI Express board)	780400-01	No accessories required.	

[Back to Top](#)

## Software Recommendations

### NI LabVIEW Full Development System for Windows



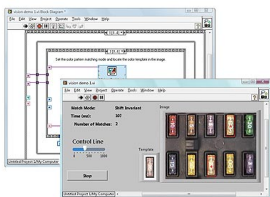
- Fully integrated graphical system design software
- Support for a wide range of measurement hardware, I/O, and buses
- Custom, event-driven user interfaces for measurement and control
- Extensive signal processing, analysis, and math functionality
- Advanced compiler to ensure high-performance execution and code optimization

### NI Vision Builder for Automated Inspection



- Configure machine vision applications with an easy-to-use, interactive, menu-driven environment
- Locate, count, measure, identify, and classify objects without programming
- Make complex decisions based on inspection results
- Communicate with industrial devices such as PLCs and HMIs with built-in industrial protocols
- Use NI Vision Acquisition Software for acquiring from GigE Vision, IEEE 1394, USB cameras, and so on

### NI Vision Development Module



- Comprehensive suite of software tools to locate, count, measure, identify, and classify objects
- Native support for LabVIEW, C, C++, C#, and Visual Basic .NET
- Ability to create interactive HMI displays and make complex decisions based on results
- Perform I/O and interface with devices using protocols like Modbus, EtherNet/IP, serial, and so on
- NI Vision Assistant for application prototyping and code generation
- NI Vision Acquisition Software for acquiring from GigE Vision, IEEE 1394, USB cameras, and so on

[Back to Top](#)

## Support and 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

NI measurement hardware is calibrated to ensure measurement accuracy and verify that the device meets its published specifications. NI offers a number of calibration services to help maintain the ongoing accuracy of your measurement hardware. These services allow you to be completely confident in your measurements, and help you maintain compliance to standards like ISO 9001, ANSI/NCSL Z540-1 and ISO/IEC 17025. To learn more about NI calibration services or to locate a qualified service center near you, contact your local sales office or visit [ni.com/calibration](http://ni.com/calibration).

### Technical Support

Get answers to your technical questions using the following National Instruments resources.

- **Support** - Visit [ni.com/support](http://ni.com/support) to access the NI KnowledgeBase, example programs, and tutorials or to contact our applications engineers who are located in NI sales offices around the world and speak the local language.
- **Discussion Forums** - Visit [forums.ni.com](http://forums.ni.com) for a diverse set of discussion boards on topics you care about.
- **Online Community** - Visit [community.ni.com](http://community.ni.com) to find, contribute, or collaborate on customer-contributed technical content with users like you.

### Repair

While you may never need your hardware repaired, NI understands that unexpected events may lead to necessary repairs. NI offers repair services performed by highly trained technicians who quickly return your device with the guarantee that it will perform to factory specifications. For more information, visit [ni.com/repair](http://ni.com/repair).

### Training and Certifications

The NI training and certification program delivers the fastest, most certain route to increased proficiency and productivity using NI software and hardware. Training builds the skills to more efficiently develop robust, maintainable applications, while certification validates your knowledge and ability.

- **Classroom training in cities worldwide** - the most comprehensive hands-on training taught by engineers.
- **On-site training at your facility** - an excellent option to train multiple employees at the same time.
- **Online instructor-led training** - lower-cost, remote training if classroom or on-site courses are not possible.
- **Course kits** - lowest-cost, self-paced training that you can use as reference guides.
- **Training memberships** and training credits - to buy now and schedule training later.

Visit [ni.com/training](http://ni.com/training) for more information.

### Extended Warranty

NI offers options for extending the standard product warranty to meet the life-cycle requirements of your project. In addition, because NI understands that your requirements may change, the extended warranty is flexible in length and easily renewed. For more information, visit [ni.com/warranty](http://ni.com/warranty).

### OEM

NI offers design-in consulting and product integration assistance if you need NI products for OEM applications. For information about special pricing and services for OEM customers, visit [ni.com/oem](http://ni.com/oem).

### Alliance

Our Professional Services Team is comprised of NI applications engineers, NI Consulting Services, 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](http://ni.com/alliance).

[Back to Top](#)

## Detailed Specifications

These specifications are typical at 25 °C unless otherwise stated.

### General

Number of ports	1
IEEE Standard 802.3z network topology	1000Base-T

### Cabling

Connector	RJ45
Wiring	CAT 5 UTP, 4 pair
Length	up to 100 m

## Ethernet

Controller processor Intel 82572EI

Data rates 1 Gb/s

## Power Requirement

3.3 VDC 1.0 A, 3.3 W

## Physical

Dimensions

NI PCIe-8231 12.9 by 12.0 cm (5.1 by 4.73 in.)

NI PCIe-8235 12.9 by 12.0 cm (5.1 by 4.725 in.)

NI PXIe-8234 10.0 by 16.0 cm (3.9 by 6.3 in.)

## Environment

Operating temperature 0 to 55 °C

[Back to Top](#)

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