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**PXIe-8246**

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# PXle-8246

# Getting Started

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2023-04-03



# Contents

Getting Started Guide.....	3
Verifying the System Requirements.....	3
Unpacking the Kit.....	3
PXIe-8246 Kit Contents.....	4
Preparing the Environment.....	4
Installing Application Software and Driver.....	5
Installing Vision Builder AI.....	5
Installing the Vision Development Module.....	6
Installing the PXIe-8246.....	6
Confirming the Device is Recognized.....	8
Front Panel.....	8
Configuring the PXIe-8246 in MAX.....	10
Troubleshooting.....	10
What Should I Do if the PXIe-8246 Does Not Appear in MAX?.....	10
Where to Go Next.....	11
NI Services.....	11

# Getting Started Guide

This document describes how to install and configure the necessary hardware and software components to begin using the PXIe-8246.

You need the following items to set up and use the PXIe-8246.

- PXIe-8246 GigE interface device
- GigE Vision Camera
- Ethernet cable
- PXIe computer running Microsoft Windows 10 with at least one available slot
- NI-IMAQdx 20.5 or later driver software, included with NI Vision Acquisition Software (VAS)
- LabVIEW 2020
- Optional software for developing applications:
  - NI Vision Builder for Automated Inspection
  - NI Vision Development Module (VDM)



**Note** Before you begin, install and configure your chassis and controller.

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## Verifying the System Requirements

To use the PXIe-8246, your system must meet certain requirements. For more information about minimum system requirements, recommended system, and supported application development environments (ADEs), refer to the readme, which is installed or available at [ni.com/manuals](http://ni.com/manuals).

## Unpacking the Kit



**Notice** To prevent electrostatic discharge (ESD) from damaging the device, ground yourself using a grounding strap or by holding a grounded object, such as your computer chassis.

1. Touch the antistatic package to a metal part of the computer chassis.
2. Remove the device from the package and inspect the device for loose components or any other sign of damage.



**Notice** Never touch the exposed pins of connectors.



**Note** Do not install a device if it appears damaged in any way.

3. Unpack any other items and documentation from the kit.

Store the device in the antistatic package when the device is not in use.

## PXIe-8246 Kit Contents

The following items are included in the device kit:

- PXIe-8246
- Documentation:
  - **PXIe-8246 Getting Started Guide** (this document)
  - **PXIe-8246 Safety, Environmental, and Regulatory Information**

## Preparing the Environment

Ensure the environment in which you are using the PXIe-8246 meets the following specifications.

<b>Operating environment</b>	
Ambient temperature range	0 °C to 55 °C
Relative humidity range	10% to 90%, noncondensing

Maximum altitude	2,000 m (800 mbar) (at 25 °C ambient temperature)
Pollution Degree	2

Indoor use only.



**Note** For complete specifications, refer to the specifications document for your device at [ni.com/manuals](http://ni.com/manuals).

## Installing Application Software and Driver

Before installing the PXIe-8246, you must install the application software and device driver. National Instruments provides two options for developing machine vision applications.

- NI Vision Builder for Automated Inspection (Vision Builder AI)—Interactive, menu-driven configuration software for developing, benchmarking, and deploying machine vision applications. You must also install NI-IMAQdx.
- NI Vision Development Module—Programming library for developing machine vision and scientific imaging applications. The NI Vision Development Module requires an application development environment—LabVIEW and NI-IMAQdx.

## Installing Vision Builder AI

Install the following software to use Vision Builder AI to develop applications.

1. NI-IMAQdx—Refer to the **NI Vision Acquisition Software Release Notes** on the NI Vision Acquisition Software installation media for system requirements and installation instructions for the NI-IMAQdx driver. Documentation for the NI-IMAQdx driver software is available by selecting **Start » All Programs » National Instruments » Vision » Documentation » NI-IMAQdx**.
2. Vision Builder AI—Refer to the **NI Vision Builder for Automated Inspection Readme** for installation instructions.

Documentation for Vision Builder AI is available by selecting **Start » All Programs » National Instruments » Vision Builder AI » Documentation**.

## Installing the Vision Development Module

Install the following software to use Installing the Vision Development Module to develop applications.

1. LabVIEW—Refer to the **LabVIEW Release Notes** for installation instructions and system requirements for the LabVIEW software. Refer to the **LabVIEW Upgrade Notes** for additional information about upgrading to the most recent version of LabVIEW.

Documentation for LabVIEW is available by selecting **Start » All Programs » National Instruments » LabVIEW » LabVIEW Manuals**.

2. NI-IMAQdx—Refer to the **NI Vision Acquisition Software Release Notes** on the NI Vision Acquisition Software installation media for system requirements and installation instructions for the NI-IMAQdx driver.

Documentation for the NI-IMAQdx driver software is available by selecting **Start » All Programs » National Instruments » Vision » Documentation » NI-IMAQdx**.

3. NI Vision Development Module—Refer to the **NI Vision Development Module Readme** on the NI Vision Development Module installation media for system requirements and installation instructions.

Documentation for Vision Development Module is available by selecting **Start » All Programs » National Instruments » Vision » Documentation » NI Vision**.

## Installing the PXIe-8246



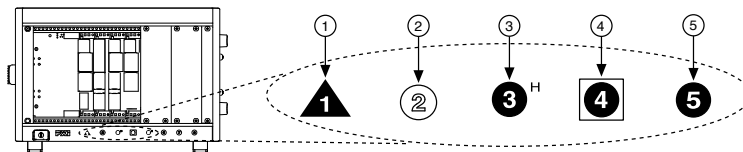
**Notice** To prevent damage to the PXIe-8246 caused by ESD or contamination, handle the module using the edges or the metal bracket.

1. Ensure the AC power source is connected to the chassis before installing the module.

The AC power cord grounds the chassis and protects it from electrical damage while you install the module.

2. Power off the chassis.
3. Inspect the slot pins on the chassis backplane for any bends or damage prior to installation. Do not install a module if the backplane is damaged.
4. Remove the black plastic covers from all the captive screws on the module front panel.
5. Identify a supported slot in the chassis. The following figure shows the symbols that indicate the slot types.

**Figure 1.** Chassis Compatibility Symbols



1. PXI Express System Controller Slot
  2. PXI Peripheral Slot
  3. PXI Express Hybrid Peripheral Slot
  4. PXI Express System Timing Slot
  5. PXI Express Peripheral Slot
6. Touch any metal part of the chassis to discharge static electricity.
  7. Place the module edges into the module guides at the top and bottom of the chassis. Slide the module into the slot until it is fully inserted.
  8. Secure the module front panel to the chassis using the front-panel mounting screws.



**Note** Tightening the top and bottom mounting screws increases mechanical stability and also electrically connects the front panel to the chassis, which can improve the signal quality and electromagnetic performance.

9. Cover all empty slots using EMC filler panels or fill using slot blockers to maximize cooling air flow, depending on your application.



10. Connect an Ethernet cable to a GigE Vision camera, then connect the camera to the PXIe-8246 front panel.
11. Power on the chassis.



**Note** The first time you start the development computer after installing the hardware, allow several seconds for the drivers to load.

## Confirming the Device is Recognized

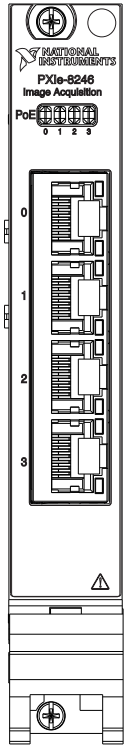
To confirm that the device is properly installed and the hardware is recognized, complete the following steps:

1. Select **Start » All Programs » National Instruments » Measurement & Automation Explorer** to open Measurement & Automation Explorer (MAX).
2. Verify that the camera connected to the PXIe-8246 appears under **My System » Devices and Interfaces » NI-IMAQdx Devices**.

## Front Panel

The following figure shows the PXIe-8246 front panel.

Figure 1. PXIe-8246 Front Panel



The PXIe-8246 provides four standard Gigabit Ethernet ports (Port 0 to Port 3) to acquire images from GigE Vision cameras. When the PXIe-8246 is providing PoE, the LED that corresponds to the port will be lit.

Table 1. PoE LED Status Definitions

LED Status	Definition
Red	PoE protection is triggered <sup>[1]</sup>
Green	PoE is operational
Unlit	PoE is off

Table 2. Ethernet LED Status Definitions

LED	Status	Definition
Activity/Link	Unlit	No link has been established
	Solid	A link has been negotiated
	Blinking	Activity on the link
Speed	Unlit	No link, or 10 Mbps link
	Green	100 Mbps link

LED	Status	Definition
	Amber	1,000 Mbps link

<sup>1</sup> PoE has exceeded the absolute maximum power. To reset the LED, power cycle the system after the camera/load is removed.

## Configuring the PXIe-8246 in MAX

Use Measurement & Automation Explorer (MAX) to configure your NI hardware. MAX informs other programs about which NI hardware products are in the system and how they are configured. MAX is automatically installed with NI Vision Acquisition Software (VAS).

1. Launch MAX.
2. In the configuration tree, expand **Devices and Interfaces** to see the list of installed NI hardware.  
Installed modules appear under the name of their associated chassis.
3. Expand your **Chassis** tree item.  
MAX lists all modules installed in the chassis. Your default names may vary.



**Note** If you do not see your module listed, press <F5> to refresh the list of installed modules. If the module is still not listed, power off the system, ensure the module is correctly installed, and restart.

4. Record the identifier MAX assigns to the hardware. Use this identifier when programming the PXIe-8246.

## Troubleshooting

If an issue persists after you complete a troubleshooting procedure, search our KnowledgeBase for additional information our technical support engineers create as they answer common user questions and resolve unexpected issues.

### What Should I Do if the PXIe-8246 Does Not Appear in MAX?

1. In the MAX configuration tree, expand **Devices and Interfaces**.
2. Expand the **Chassis** tree to see the list of installed hardware, and press <F5> to refresh the list.

3. If the module is still not listed, power off the system, ensure that all hardware is correctly installed, and restart the system.
4. Navigate to the Device Manager. Right-click the Start button, and select **Device Manager**
5. Verify the PXIe-8246 appears in the Device Manager.
  1. Under an NI entry, confirm that a PXIe-8246 entry appears.

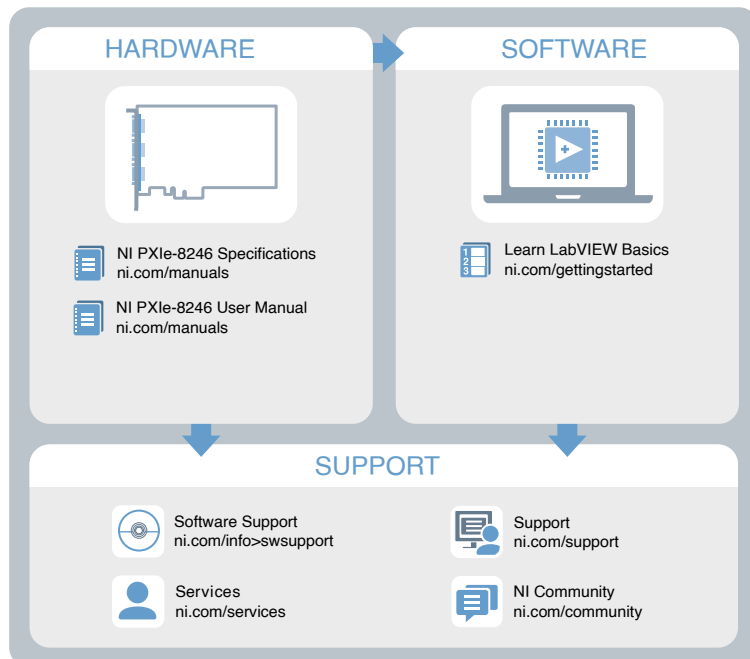


**Note** If you are using a PC with a device for PXI remote control system, under **System Devices**, also confirm that no error conditions appear for the **PCI-to-PCI Bridge**.

2. If error conditions appear, reinstall the NI Vision Acquisition Software (VAS) driver.

## Where to Go Next

Refer to the following figure for information about other product tasks and associated resources for those tasks.



## NI Services

Visit [ni.com/support](https://ni.com/support) to find support resources including documentation, downloads, and troubleshooting and application development self-help such as tutorials and examples.

Visit [ni.com/services](https://ni.com/services) to learn about NI service offerings such as calibration options, repair, and replacement.

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