

# GETTING STARTED GUIDE

# NI PXIe-4464

## DSA Analog Input

Français    Deutsch    日本語    한국어    简体中文

[ni.com/manuals](http://ni.com/manuals)

This document explains how to install, configure, and set up the NI PXIe-4464 Dynamic Signal Acquisition (DSA) analog input module. Driver support for the NI PXIe-4464 was first available in NI-DAQmx 9.9.1. For the list of devices supported by a specific release, refer to the NI-DAQmx Readme, available on the version-specific download page or installation media. To download NI-DAQmx 9.9.1, visit [ni.com/info](http://ni.com/info) and enter the Info Code PXIE4464. The NI PXIe-4464 is available with BNC connectors or Mini-XLR connectors.

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## Electromagnetic Compatibility Guidelines

This product was tested and complies with the regulatory requirements and limits for electromagnetic compatibility (EMC) stated in the product specifications. These requirements and limits provide reasonable protection against harmful interference when the product is operated in the intended operational electromagnetic environment.

This product is intended for use in industrial locations. However, harmful interference may occur in some installations, when the product is connected to a peripheral device or test object, or if the product is used in residential or commercial areas. To minimize interference with radio and television reception and prevent unacceptable performance degradation, install and use this product in strict accordance with the instructions in the product documentation.

Furthermore, any modifications to the product not expressly approved by National Instruments could void your authority to operate it under your local regulatory rules.



**Caution** To ensure the specified EMC performance, operate this product only with shielded cables and accessories.



**Caution** Mini-XLR version only—To ensure the specified EMC performance, the length of all I/O cables must be no longer than 3 m (10 ft).



**Caution** BNC version only—Electromagnetic interference can adversely affect the measurement accuracy of this product. The construction of a BNC coaxial cable is inherently unbalanced in that the outer conductor (LO) is used as a shield for the inner conductor (HI). However, for functional reasons, there is no input configuration of the NI PXIe-4464 that directly connects the LO terminal to the chassis ground. Without a direct connection to chassis ground, the outer conductor does not act as a shield for unwanted noise and may act as an antenna for coupling noise into the module inputs. For single-ended measurements, the noise immunity for the system can be improved by directly connecting the outer conductor to the chassis or earth ground at the load end of the cable. For differential measurements, where such a connection is inherently not possible, the BNC cable can alternatively be wrapped in a separate grounded shield. In addition, you might need to use snap-on ferrite beads or other remedial measures to improve electromagnetic compatibility.

## Unpacking

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The NI PXIe-4464 module ships in an antistatic package to prevent electrostatic discharge from damaging module components. To prevent such damage when handling the module, ground yourself using a grounding strap or by holding a grounded object and complete the following steps:

1. Touch the antistatic package to a metal part of the grounded object before removing the module from package.
2. Remove the module from the package and inspect the module for loose components or any other sign of damage.

Notify NI if the module appears damaged in any way. Do not install a damaged module into your system. Store the module in the antistatic package when not in use.

## Preparing the Environment

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Ensure that the environment you are using the NI PXIe-4464 in meets the following specifications.

Operating ambient temperature ..... 0 °C to 55 °C  
(IEC 60068-2-1, IEC 60068-2-2)

Operating relative humidity ..... 10% to 90%, noncondensing  
(IEC 60068-2-56)

Altitude ..... 2,000 m (800 mbar)  
(at 25 °C ambient temperature)

Pollution Degree ..... 2

Indoor use only.



**Caution** Clean the hardware with a soft, nonmetallic brush. Make sure that the hardware is completely dry and free from contaminants before returning it to service.



**Note** Refer to the *NI PXIe-4464 Specifications* at [ni.com/manuals](http://ni.com/manuals) for complete specifications.

## Verify the Kit Contents

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The following items are necessary to set up and use the NI PXIe-4464:

- NI PXIe-4464 analog input module
- NI-DAQmx installation media
- *NI PXIe-4464 Getting Started Guide*



**Note** You can download any needed documents from [ni.com/manuals](http://ni.com/manuals).

## Other Equipment

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The following additional items, not included in the module kit, are necessary to operate the NI PXIe-4464:

- PXI Express chassis with
  - controller, or
  - MXI-Express (card or built-in)
- (optional) NI LabVIEW



**Note** For the list of LabVIEW versions supported by a specific version of NI-DAQmx, refer to the NI-DAQmx Readme, available on the version-specific download page at [ni.com/downloads](http://ni.com/downloads) or on the installation media.

## Install the Software

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Software support for the NI PXIe-4464 is provided by NI-DAQmx. The *DAQ Getting Started Guide*, which you can download at [ni.com/manuals](http://ni.com/manuals), offers step-by-step NI-DAQmx instructions for installing software and hardware, configuring channels and tasks, and getting started developing an application. For detailed NI software version support, refer to the NI-DAQmx Readme.

You must install the software before using the hardware.

1. Optional: If you are developing an NI-DAQmx application, install an ADE, such as LabVIEW or LabWindows™/CVI™.
2. Install the latest service packs for your operating system.
3. Install a compatible version of NI-DAQmx. To download the NI-DAQmx driver, visit [ni.com/info](http://ni.com/info) and enter the Info Code `daqmx`.
4. Follow the instructions in the installation prompts.



**Note** Windows 7/Vista/8 users may see access and security messages during installation. Accept the prompts to complete the installation. For troubleshooting information, refer to the [Worldwide Support and Services](#) section.

5. When installation completes, select **Restart** in the dialog box that asks if you want to restart, shut down, or restart later.

## Install the Hardware

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**Note** To maintain forced air cooling in the PXIe system, refer to the *Maintain Forced-Air Cooling* document.

1. Plug in your chassis before installing the NI PXIe-4464. The power cord grounds the chassis and protects it from electrical damage while you install the module.
2. Make sure the chassis is powered off.



**Caution** To protect yourself, the chassis, and the NI PXIe-4464 from electrical hazards, leave the chassis powered off until you finish installing the NI PXIe-4464 module.

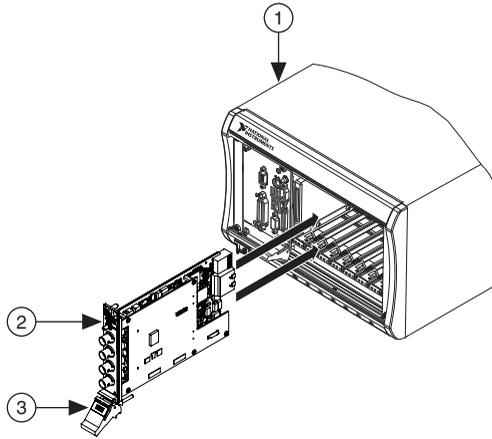
3. Touch a metal part on the chassis to discharge any accumulated static electricity.
4. Remove the protective plastic covers from the two front panel mounting screws on the module.
5. Remove the filler panels covering the selected slots.
6. Make sure the NI PXIe-4464 injector/ejector handle is in its downward position as shown in Figure 1.



**Caution** When installing the module, make sure both edges are positioned inside the guides and that the module components do not come into contact with adjacent modules.

7. Align the NI PXIe-4464 with the card guides on the top and bottom of the selected slots.
8. Hold the injector/ejector handle down as you slowly slide the module into the chassis until the handle catches on the injector/ejector rail, as shown in Figure 1.

**Figure 1.** Sliding the NI PXIe-4464 into the Chassis



- |   |                                       |   |  |
|---|---------------------------------------|---|--|
| 1 | PXI Express Chassis                   | 3 | Injector/Ejector Handle in Down Position |
| 2 | NI PXIe-4464 Module (BNC model shown) |   |  |

9. Raise the injector/ejector handle to latch the module into the chassis. The front panel of the NI PXIe-4464 should be even with the front panel of the chassis.
10. Tighten the top and bottom module mounting screws, shown in Figure 2, to 0.31 N · m (2.7 lb · in.) on the top and bottom of the module front panel to secure the NI PXIe-4464 to the chassis.



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

11. Power on the chassis.

## Configure the Hardware in MAX

Use Measurement & Automation Explorer (MAX) to configure your National Instruments hardware. MAX informs other programs about which devices reside in the system and how they are configured. MAX is automatically installed with NI-DAQmx.

1. Launch MAX.
2. In the Configuration pane, expand **Devices and Interfaces** to see a list of installed devices. Installed devices appear under the name of their associated chassis.
3. Expand your **Chassis** tree item.



**Note** MAX lists all devices installed in the chassis. Your default device names may vary.

4. Record the device identifier MAX uses to identify the hardware. Use this identifier when programming the NI PXIe-4464.

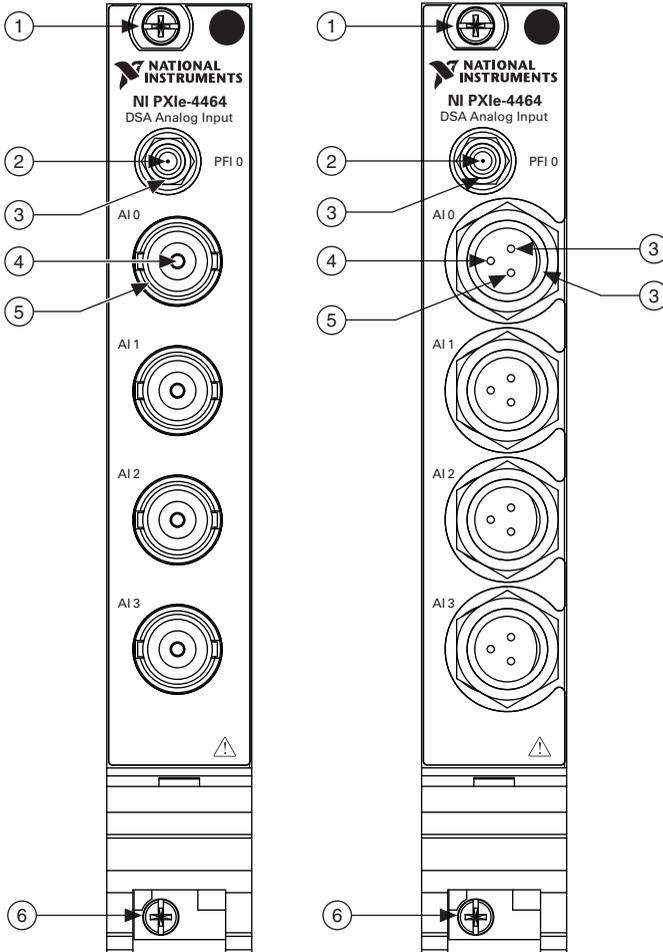
# Connect a Signal Source to the NI PXIe-4464

Figure 2 shows the front panel connections of the NI PXIe-4464 with BNC connectors and the NI PXIe-4464 with Mini-XLR connectors.



**Note** Refer to the *NI PXIe-4464 Specifications* for information about the operating input range and overvoltage protection.

**Figure 2.** NI PXIe-4464 BNC and Mini-XLR Connector Front Panel



1	Top Module Mounting Screw	2	PFI 0	4	AI+	6	Bottom Module Mounting Screw
		3	Chassis Ground	5	AI-		

# Environmental Management

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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 to the environment and to NI customers.

For additional environmental information, refer to the *Minimize Our Environmental Impact* web page at [ni.com/environment](http://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 the product life cycle, all products *must* be sent to a WEEE recycling center. For more information about WEEE recycling centers, National Instruments WEEE initiatives, and compliance with WEEE Directive 2002/96/EC on Waste and Electronic Equipment, visit [ni.com/environment/weee](http://ni.com/environment/weee).

## 电子信息产品污染控制管理办法（中国 RoHS）



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## Worldwide Support and Services

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The National Instruments website is your complete resource for technical support. At [ni.com/support](http://ni.com/support) you have access to everything from troubleshooting and application development self-help resources to email and phone assistance from NI Application Engineers.

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