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PXIe-7866

PXle-7866

Getting Started

2023-03-31

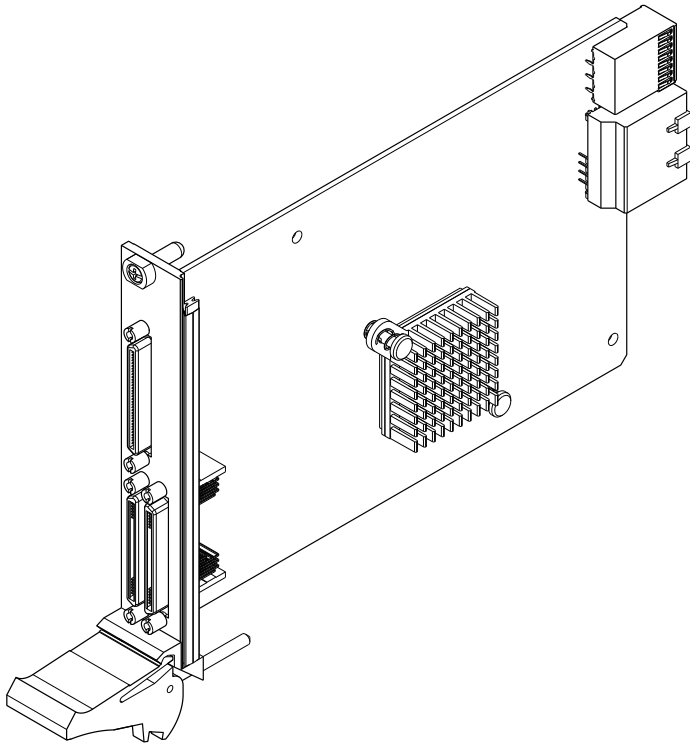


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Getting Started

This document describes how to begin using the NI PXIe-7866.



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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.

- 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.

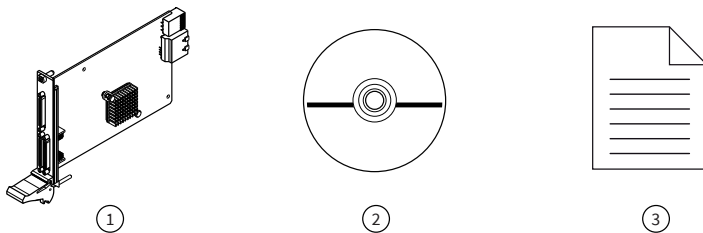
- Unpack any other items and documentation from the kit.

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

Verifying the Kit Contents

Verify that the following items are included in the NI PXIe-7866 kit.

Figure 1. NI PXIe-7866 Kit Contents



- Hardware
- NI-RIO Media
- Getting Started Guide

Installing Software on the Host Computer

Before using the NI PXIe-7866, you must install the following application software and device drivers on the host computer.

- LabVIEW 2019 SP1 or later
- LabVIEW Real-Time Module 2019 or later^[1]
- LabVIEW FPGA Module 2019 or later
- NI R Series Multifunction RIO Device Drivers January 2020 or later

Visit ni.com/info and enter the Info Code softwareversion for minimum software support information.

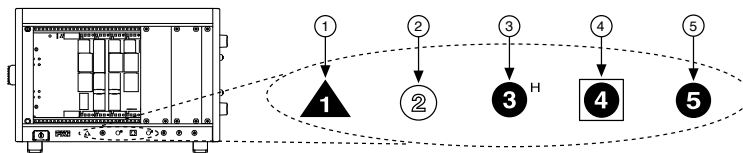
¹ LabVIEW Real Time Module is only required when the R Series board is used in a chassis where the PXIe Controller is running a real-time operating system.

Installing the NI PXIe-7866

! **Notice** To prevent damage to the NI PXIe-7866 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 2. 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

NI PXIe-7866 modules can be placed in PXI Express peripheral slots, PXI Express hybrid peripheral slots, or PXI Express system timing slots.

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 either filler panels (standard or EMC) or slot blockers with filler panels, depending on your application.



Note For more information about installing slot blockers and filler panels, go to ni.com/r/pxiblocker.

10. Power on the chassis.

Verifying Hardware Installation for Host Targets

You can verify that the system recognizes the NI PXIe-7866 by using Measurement & Automation Explorer (MAX).

1. Launch MAX by navigating to **Start » All Programs » National Instruments » MAX** or by clicking the MAX desktop icon.
2. Expand **Devices and Interfaces**.
3. Verify that the device appears under **Devices and Interfaces**.
If the device does not appear, press <F5> to refresh the view in MAX. If the device does not appear after refreshing the view, visit ni.com/support for troubleshooting information.

Verifying Hardware Installation for Remote Systems

You can verify that the system recognizes the NI PXIe-7866 by using Measurement & Automation Explorer (MAX).

1. Launch MAX on the host computer.

2. Expand **Remote Systems** in the configuration tree and locate your system.
3. Install LabVIEW Real-Time Module 2019 and NI R Series Multifunction RIO Device Drivers January 2020 or later on your **Remote System**.
 1. Refer to the **Installing Software on the Host Computer** section for information about installing software on the host.
 2. Refer to the **PXI Express Controllers User Manual** at ni.com/manuals for information on installing software on the target.
4. Under **Remote Systems**, find and expand **Devices and Interfaces**. If the device does not appear, press <F5> to refresh the view in MAX. If the device does not appear after refreshing the view, visit ni.com/support for troubleshooting information.

Connecting the NI PXIe-7866

NI recommends using the following cables and accessories with the NI PXIe-7866:

Table 1. Recommended Cables and Accessories

Connector Type	Connector Block	Cables
Analog I/O Connector 0 (RAIO) Analog Output Connector 2 (RAO)	SCB-68A Noise Rejecting, Shielded I/O Connector Block (782536-01)	<ul style="list-style-type: none"> ▪ SHC68-68-RMIO Shielded Cable for the Reconfigurable MIO Connector, 68-pin D-Type to 68-pin VHDCI, 1 m (189588-01) ▪ SHC68-68-RMIO Shielded Cable for the Reconfigurable MIO Connector, 68-pin D-Type to 68-pin VHDCI, 2 m (189588-02)
Digital Connector 1 (RDIO)	SCB-68 HSDIO Shielded 68-Pin Connector Block for Reconfigurable DIO & HSDIO Products (782914-01)	<ul style="list-style-type: none"> ▪ SHC68-C68-RDIO2 Shielded High Speed Digital Cable for the Reconfigurable DIO Connector, 1 m (156166-01)

Connector Type	Connector Block	Cables
		<ul style="list-style-type: none"> ■ SHC68-C68-RDIO2 Shielded High Speed Digital Cable for the Reconfigurable DIO Connector, 2 m(156166-02)



Note The SCB-68A DIP switches must be set for Direct Feedthrough mode for use with R Series devices. Visit ni.com/info and enter the Info Code scb68acables for more information on the SCB-68A accessory.



Note NI is not liable for connections that exceed any of the maximum ratings of input or output signals on the NI PXIe-7866 and on the computer chassis. Refer to the **NI PXIe-7866 Specifications**, available at ni.com/info for the maximum input and output ratings for each signal.

Pinout

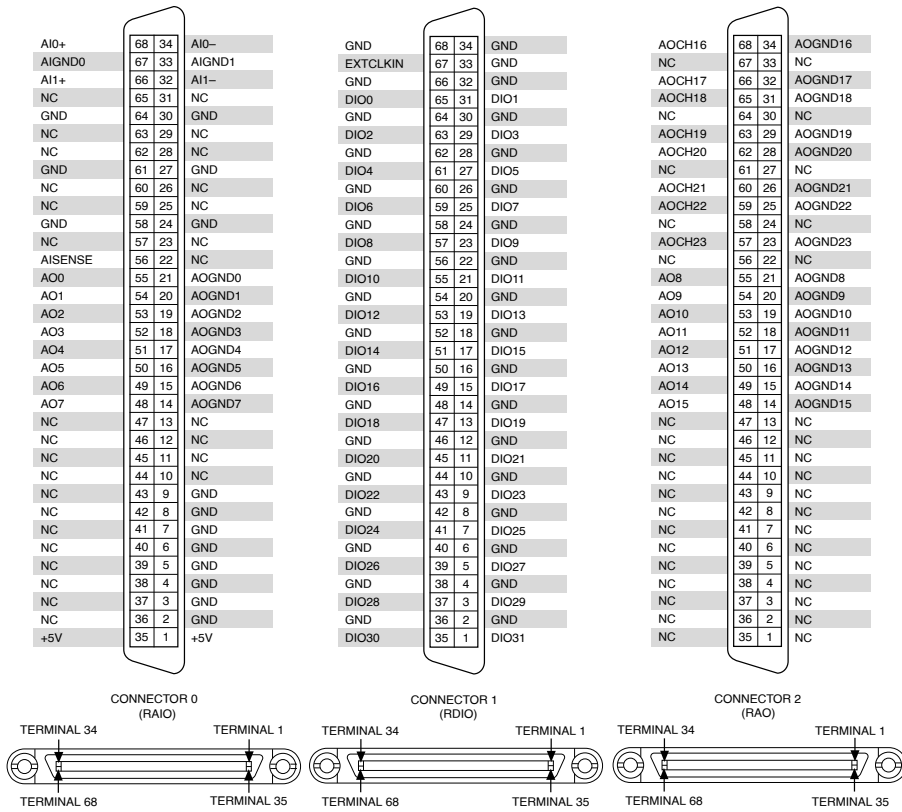


Table 2. NI PXIe-7866 Signal Descriptions

Signal	Description
AI+	Positive analog input signal connection
AI-	Negative analog input signal connection
AISENSE	Reference connection for NRSE measurements
AIGND	Ground reference for the analog input signal
AO	Analog output signal connection
AOGND	Ground reference for the analog output signal
DIO	Digital input/output signal connection
EXTCLKIN	External clock input source that can be used for source synchronous acquisitions. The provided clock source must be stable and glitch-free.
GND	Ground connection
Supply (+5 V _{out})	5 V power output connection for external devices

Signal	Description
NC	No connection

The NI PXIe-7866 is protected from overvoltage and overcurrent conditions.

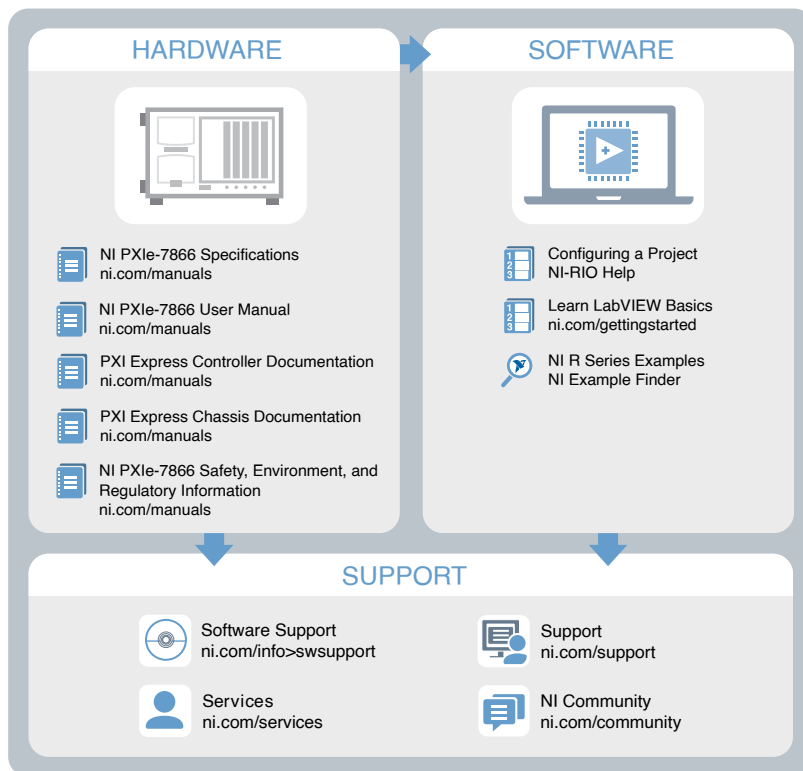


Note Refer to the **NI PXIe-7866 Specifications**, available at ni.com/manuals for more information.



Note The pinout label on the lid of the SCB-68A accessory is incompatible with the NI PXIe-7866. Refer to the **NI 78xxR Pinout Labels for the SCB-68A**, available at ni.com/manuals for the compatible pinout labels.

Where to Go Next



NI Services

Visit 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 to learn about NI service offerings such as calibration options, repair, and replacement.

Visit ni.com/register to register your NI product. Product registration facilitates technical support and ensures that you receive important information updates from NI.

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