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**cRIO-9101**

## INSTALLATION GUIDE

# NI-XNET Hardware and Software

This installation guide contains instructions to help you install your National Instruments hardware and software. Complete documentation is in the *NI-XNET Hardware and Software Help* on your NI-XNET installation media. Refer to the **NI-XNET Manual.chm** file on the installation media or select **National Instruments»NI-XNET»NI-XNET Documentation»NI-XNET Manual.chm** from the Windows **Start** menu or NI Launcher.

The NI-XNET software on this installation media supports Microsoft Windows operating systems.

This installation guide covers National Instruments 851x hardware products for CAN, LIN, and FlexRay on the PCI/PCI Express and PXI/PXI Express buses, as well as NI 986x C Series hardware products and 850x USB hardware products for CAN and LIN. It is written for users already familiar with Windows.



# Install the NI-XNET Software

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Before installing the NI-XNET software, users must first log on as a user with Administrator privileges. The NI-XNET setup program must have Administrator privileges, because the program modifies the configuration registry of your system.

Complete the following steps to install the NI-XNET software.

1. Insert the NI-XNET installation media into your computer. The installer launches if your CD/DVD-ROM drive plays data disks automatically.

If the installer does not launch automatically, navigate to the installation media using Windows Explorer and launch the `autorun` file from your NI-XNET installation media.

2. The Installation Wizard guides you through the necessary steps to install the NI-XNET software. You can go back and change values where appropriate by clicking **Back**. You can exit the setup where appropriate by clicking **Cancel**.
3. Power down your computer when the setup is complete.
4. Proceed to the *Install the Hardware* section.



**Note** If you are using LabVIEW Real-Time (RT), refer to the *LabVIEW Real-Time (RT) Configuration* section of *Installation and Configuration* in the *NI-XNET Hardware and Software Help* for more information about installing the NI-XNET software on your RT system and verifying the installation.

## Install the Hardware

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This section describes how to install your hardware on the PCI/PCI Express, PXI/PXI Express, and USB buses, as well as how to install XNET C Series modules.

### Install Your PCI/PCI Express Hardware



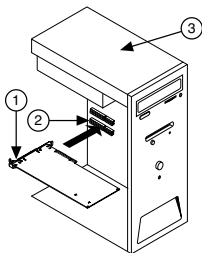
**Caution** Before you remove the card from the package, touch the antistatic plastic package to a metal part of your system chassis to discharge electrostatic energy, which can damage components on your CAN, LIN, or FlexRay card.

1. Make sure that your computer is powered off and unplugged.

2. Remove the top cover (or other access panels) for access to the computer expansion slots.

**Figure 1.** Installing a PCI/PCI Express Device

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1. PCI/PCI Express Device
  2. PCI/PCI Express System Slot
  3. PC with PCI/PCI Express Slot
- 

3. Find an unused PCI/PCI Express slot in your computer.



**Note** Some motherboards reserve the x16 slot for graphics use. For PCI Express guidelines, refer to [ni.com/pciexpress](http://ni.com/pciexpress).

4. Remove the corresponding slot cover on the back panel of the computer.
5. Insert the CAN, LIN, or FlexRay card into the slot with the bus connector(s) sticking out of the opening on the back panel. It might be a tight fit, but do not force the interface into place.
6. Screw the mounting bracket of the CAN, LIN, or FlexRay card to the back panel rail of the computer.
7. You can use a RTSI cable to connect your CAN, LIN, or FlexRay card RTSI interface to other National Instruments RTSI-equipped hardware. Refer to the *Synchronization* section of *NI-XNET Hardware Overview* in the *NI-XNET Hardware and Software Help* for more information about the RTSI interface on your CAN, LIN, or FlexRay card.
8. Replace the top cover (or the access panel to the expansion slot).
9. Proceed to the *Verify Your Installation* section.

## Install Your PXI/PXI Express Hardware

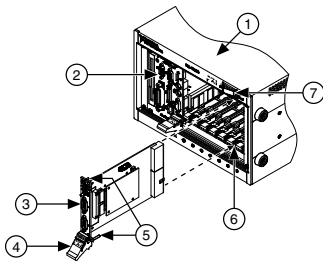


**Caution** Before you remove the card from the package, touch the antistatic plastic package to a metal

part of your system chassis to discharge electrostatic energy, which can damage components on your CAN, LIN, or FlexRay card.

**Figure 2.** Installing a PXI/PXI Express Device in the Chassis

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- |                                      |                                |
|--------------------------------------|--------------------------------|
| 1. PXI/PXI Express Chassis           | 5. Front-Panel Mounting Screws |
| 2. PXI/PXI Express System Controller | 6. Module Guides               |
| 3. PXI/PXI Express Module            | 7. Power Switch                |
| 4. Injector/Ejector Handle           |                                |
- 

1. Make sure your PXI, PXI Express, or CompactPCI chassis is powered off, and unplug the chassis.

2. Choose an unused PXI, PXI Express, or CompactPCI peripheral slot.
3. Remove the filler panel for the peripheral slot you have chosen.
4. Touch a metal part on your chassis to discharge any static electricity that might be on your clothes or body.
5. Insert the PXI/PXI Express card into the selected slot. Use the injector/ejector handle to fully inject the card into place.
6. Screw the front panel of the PXI/PXI Express card to the front panel mounting rail of the PXI, PXI Express, or CompactPCI chassis.
7. Proceed to the *Verify Your Installation* section.

## Install Your USB Hardware

1. Find an unused High-Speed USB 2.0 port in your computer.
2. Insert the USB cable of your USB-850x CAN or LIN module into the USB port.
3. You can use a synchronization cable to connect your USB-850x 2-port CAN or LIN module to other National Instruments synchronization port-equipped hardware. Refer to the *Synchronization* section of *NI-XNET Hardware*



Overview in the *NI-XNET Hardware and Software Help* for more information.

4. Proceed to the *Verify Your Installation* section.

## Install Your C Series Hardware



**Caution** Before you remove the module from the package, touch the antistatic plastic package to a metal part of your system chassis to discharge electrostatic energy, which can damage components on your module.

Complete the following steps to install a C Series I/O module:

1. When using your C Series hardware with a CompactDAQ chassis, refer to the chassis user manual for detailed installation instructions.
2. When using your C Series hardware with a CompactRIO chassis, refer to the *Installing C Series I/O Modules in the Chassis* section of the *NI cRIO-9101/9102/9103/9104 User Manual and Specifications* document for detailed installation instructions.
3. Connect the power source to the NI 986x C Series module. The NI 986x module requires an external power supply that

meets the specifications listed in the respective operating instructions document.

4. Proceed to the *Verify Your Installation* section.

## Verify Your Installation

1. Power on your computer and start Windows.

A New Hardware Found dialog box may appear. If a dialog box appears and does not go away on its own, choose the default option, **Install the Software Automatically (Recommended)**, and let the operating system install the driver files.

2. Launch Measurement & Automation Explorer (MAX) and refresh (press <F5> or choose **View»Refresh** from the menu). Your CAN, LIN, and FlexRay hardware should be listed now under **Devices and Interfaces**. To test all detected CAN, LIN, and FlexRay hardware, right-click each NI-XNET device and select **Self Test**. If you are using an NI 986x C Series module with CompactRIO, refer to the *Getting Started with CompactRIO* section in the *NI-XNET Hardware and Software Help*.
3. Proceed to the *Connect the Cables* section.

## Troubleshooting

If you have problems installing your software, go to [ni.com/xnet](http://ni.com/xnet). For hardware troubleshooting, go to [ni.com/support](http://ni.com/support) and enter your device name, or go to [ni.com/kb](http://ni.com/kb).

If you think you have damaged your device and need to return your National Instruments hardware for repair or device calibration, go to [ni.com/info](http://ni.com/info) and enter the Info Code `rdseenn` for information about the Return Merchandise Authorization (RMA) process.

## Connect the Cables

After you have installed the hardware, connect your cables to the hardware. Refer to the *Cabling Requirements* section for your CAN, LIN, or FlexRay hardware in *NI-XNET Hardware Overview* in the *NI-XNET Hardware and Software Help* for information about the cabling requirements of the CAN, LIN, and FlexRay hardware.

## Uninstalling the NI-XNET Software

Complete the following steps to uninstall the NI-XNET software.

1. Navigate to the location where the Windows operating system allows you to uninstall software.
2. Find and select **National Instruments Software**. Click the **Change** or **Uninstall/Change** button.
3. Select **NI-XNET** in the list of products and click **Remove**.

The uninstall program removes all folders, utilities, device drivers, DLLs, and registry entries associated with the NI-XNET software. The uninstall program removes only items that the installation program installed.

If you have added anything to a directory created by the installation program, the uninstall program cannot delete that directory because it is not empty after the uninstallation. Remove any remaining components manually.

After the uninstall program completes, restart your computer.

## Additional Documentation

Complete documentation is in the *NI-XNET Hardware and Software Help* on your NI-XNET installation media. The help includes a *Troubleshooting and Common Questions* section with more detailed information about installation and configuration of

your NI-XNET software and hardware. Refer to the *NI-XNET Manual.chm* file on the installation media or select **National Instruments»NI-XNET»NI-XNET Documentation»NI-XNET Manual.chm** from the Windows **Start** menu or NI Launcher.

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