

ARTISAN®
TECHNOLOGY GROUP

Your **definitive** source for quality pre-owned equipment.

Artisan Technology Group
(217) 352-9330 | sales@artisantg.com | artisantg.com

Full-service, independent repair center
with experienced engineers and technicians on staff.

We buy your excess, underutilized, and idle equipment
along with credit for buybacks and trade-ins.

Custom engineering
so your equipment works exactly as you specify.

- Critical and expedited services
- In stock / Ready-to-ship
- Leasing / Rentals / Demos
- ITAR-certified secure asset solutions

Expert team | Trust guarantee | 100% satisfaction

All trademarks, brand names, and brands appearing herein are the property of their respective owners.

Find the *National Instruments PXIe-8880* at our website: ***Click HERE***

GETTING STARTED GUIDE

NI PXIe-8880

This document includes instructions for installing and configuring your NI PXIe-8880 embedded controller.

Contents

Getting Started 2
- Unpacking 2
- Electrical 2
- Preparing the Environment 2
- Shock and Vibration 3
- Installing an OS 3
- Installing the NI PXIe-8880 into a PXI Express Chassis 3
- LabVIEW RT 5
- Drivers and Software 8
- Data Storage 8
- NI PXIe-8880 Front Panel 9
- PXI Express Chassis Configuration 11
- Removing the NI PXIe-8880 from a PXI Express Chassis 12
- Cleaning 12

Common Configuration Questions 12
- General Questions 12
- Boot Options 13
- Cables and Connections 14
- Software Driver Installation 14
- Upgrade Information 15
- PXI Express Configuration 17

Troubleshooting 17
- What if the Controller Does Not Boot? 17
- What If I Can't See The Video? 18
- My system boots fine as long as a particular module is not in my chassis. How do I boot the chassis with the module installed? 18
- My chassis or controller does not appear in MAX. How do I use MAX to identify and configure my PXI system? 18
- My CMOS is corrupted. How do I set it back to default? 18

Worldwide Support and Services 19

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Getting Started

Unpacking

The NI PXIe-8880 ships in an antistatic package to prevent electrostatic discharge from damaging device components. To prevent such damage when handling the device, ground yourself using a grounding strap or by holding a grounded object, such as your computer chassis, and complete the following steps:

1. Touch the antistatic package to a metal part of the chassis before removing the device from the package.

   Caution Never touch the exposed pins of connectors.

2. Remove the device from the package and inspect the device for loose components or any other sign of damage.
3. Notify National Instruments if the device appears damaged in any way. Do *not* install a damaged device into your chassis.

Electrical

Voltage (V)	Current (Amps) Typical	Current (Amps) Maximum
+3.3 V	2.24 A	2.96 A
+5 V	2.44 A	3.11 A
+12 V	6.5 A	8.7 A
5 V_{AUX}	0.19 A	0.23 A

Preparing the Environment

Ensure the environment you are using the NI PXIe-8880 in meets the following specifications.

Ambient temperature range

Standard.....0 to 50 °C [1,2] (Tested in accordance with IEC-60068-2-1 and IEC-60068-2-2. Meets MIL-PRF-28800F Class 3 temperature limits, except as noted.)

[1] Processor should not throttle CPU frequency under reasonable, worst case processor work loads at high operating temperatures. If you experience CPU frequency variation, turn your chassis fans on **High**, using the fan speed selector switch on the rear of the chassis.

[2] 0 to 45 °C when used with the NI PXIe-1071, NI PXIe-1078 (with kit part number 158034A-01), or NI PXIe-1086 chassis.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Relative humidity range.....10% to 90%, noncondensing (Tested in accordance with IEC-60068-2-56.)

Maximum altitude.....2,000 m (800 mbar) (at 25 °C ambient temperature) with chassis fans on high.

Pollution Degree.....2

Indoor use only.

Note Refer to the *NI PXIe-8880 User Manual and Specifications* for full NI PXIe-8880 specifications.

Shock and Vibration

Operating Shock.....30 g peak, half-sine, 11 ms pulse in the Y and Z axes. 20 g peak, half-sine, 11 ms pulse in the X axis. (Tested in accordance with IEC-60068-2-27. Meets MIL-PRF-28800F Class 2 limits in Y and Z axes.)

Random Vibration

- Operating.....5 to 500 Hz, 0.3 g_{rms}
- Nonoperating.....5 to 500 Hz, 2.4 g_{rms} (Tested in accordance with IEC-60068-2-64. Nonoperating test profile exceeds the requirements of MIL-PRF-28800F, Class 3.)

Installing an OS

NI PXIe-8880 controllers include a preinstalled OS. In some cases, you may want to install a different OS. When doing so, consider the following guidelines.

Installing from a USB CD/DVD-ROM

The NI PXIe-8880 supports the installation of Windows 7 from a USB CD/DVD-ROM. As an alternative to a USB CD/DVD-ROM drive, you can use an external SCSI CD-ROM with a PXI-SCSI adapter.

Note For additional assistance with installing or changing an operating system, refer to KnowledgeBase 2ZKC02OK, *Hard Drive Recovery and OS Installation for PXI, VXI, cRIO-908x, and cDAQ-913x Controllers*, at `ni.com/support`.

Installing the NI PXIe-8880 into a PXI Express Chassis

To install the NI PXIe-8880 into a PXI Express chassis, complete the following steps.

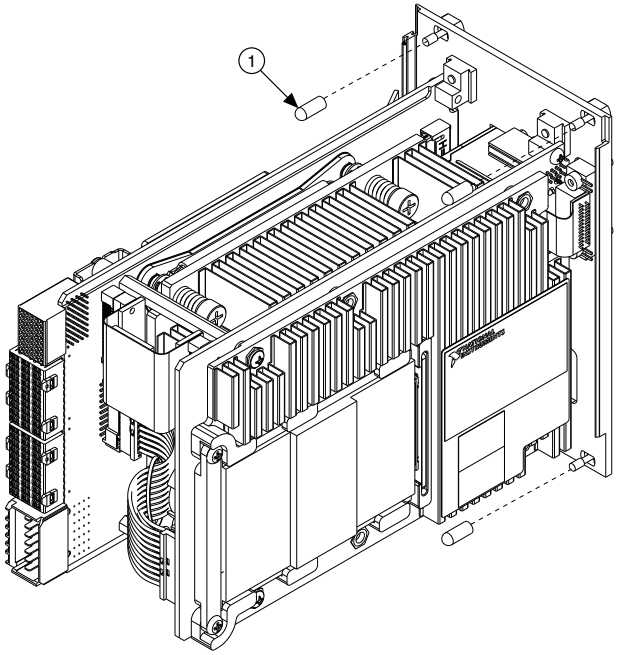
1. Plug in your chassis before installing the NI PXIe-8880. The power cord grounds the chassis and protects it from electrical damage while you install the module.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Caution To protect both yourself and the chassis from electrical hazards, leave the chassis powered off until you finish installing the NI PXIe-8880 module.

2. Remove any filler panels blocking access to the system controller slot (Slot 1) in the chassis.
3. Touch the metal part of the chassis case to discharge any static electricity that might be on your clothes or body.
4. Remove the protective plastic covers from the four bracket-retaining screws as shown in the following figure.

Figure 1. Removing Protective Screw Caps



1. Protective Screw Cap (4X)

5. Make sure the injector/ejector handle is in its downward position. Align the NI PXIe-8880 with the card guides on the top and bottom of the system controller slot.

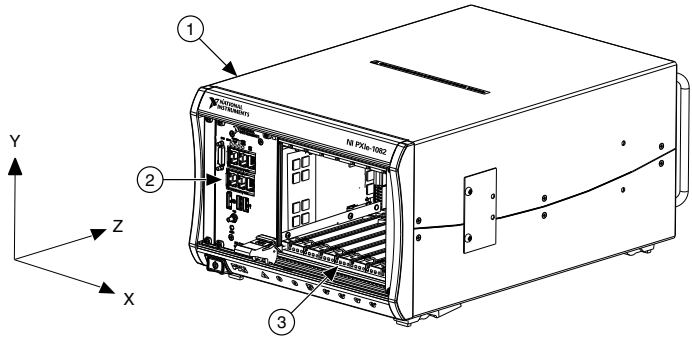
Caution Do *not* raise the injector/ejector handle as you insert the NI PXIe-8880. The module will not insert properly unless the handle is in its downward position so that it does not interfere with the injector rail on the chassis.

6. Hold the handle as you slowly slide the module into the chassis until the handle catches on the injector/ejector rail.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

7. Raise the injector/ejector handle until the module firmly seats into the backplane receptacle connectors. The front panel of the NI PXIe-8880 should be even with the front panel of the chassis.
8. Tighten the four bracket-retaining screws on the top and bottom of the front panel to secure the NI PXIe-8880 to the chassis.
9. Check the installation.
10. Connect the keyboard and mouse to the USB connectors. If you are using a PS/2 keyboard and a PS/2 mouse, a Y-splitter adapter is available to connect both to a single USB connector. National Instruments offers a Y-splitter adapter cable, part number 778713-02, available through the online catalog at `ni.com/products`.
11. Connect the DisplayPort monitor video cable to the DisplayPort connector, or use the DisplayPort-to-VGA adapter included with your controller to connect a VGA monitor to the DisplayPort connector.
12. Connect devices to ports as required by your system configuration. Refer to the *NI PXIe-8880 Front Panel Connectors* figure for front panel connector locations.
13. Power on the chassis.
14. Verify that the controller boots. If it does not boot, refer to the *Troubleshooting* section.

Figure 2. NI PXIe-8880 Installed in a PXI Express Chassis



1. PXI Express Chassis
2. PXI Express Controller
3. Injector/Ejector Rail

LabVIEW RT

This section explains software installation and switch configuration for LabVIEW RT on your PXI Express controller.

LabVIEW RT Software Installation

The following section describes the necessary steps to get your PXI Express embedded controller setup to run LabVIEW Real-Time. In this section you will configure the boot mode of the controller, verify or change IP settings, and install LabVIEW Real-Time software.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Complete the following steps to install the LabVIEW RT software.

1. Boot the NI PXI Express embedded controller into the real-time operating system. Refer to the *LabVIEW RT Configuration Switches* section to configure the controller for booting into LabVIEW RT.
   The PXI Express controller will automatically boot into LabVIEW RT Safe Mode when no software is installed. LabVIEW RT Safe Mode loads with the basic real-time operating system and will automatically attempt to connect to the network using DHCP. If DHCP is not available, it will then connect to the network with a link-local IP address.

   Tip You can connect a monitor to the controller to display startup messages such as the IP address and MAC address.

2. Open Measurement & Automation Explorer (MAX) on another computer in the same subnet and expand the **Remote Systems** branch. MAX lists the PXI Express controller as the model name of the controller followed by the MAC address (for example, **NI-PXIe-8880 00802f108562**).

   Note The other computer must have LabVIEW, LabVIEW RT, and any desired drivers installed.

   Tip Record the PXI Express controller MAC address, located on the side of the controller, for use in identifying the controller. The label also can be removed and placed on the front of the controller for easier access.

3. Click on the appropriate PXI Express controller entry to access the **Network Settings** tab in the right pane view.
4. (Optional) Enter a name for the RT target in the **Name** text box.
5. (Optional) Set the network configuration options of the RT target in the **IP Settings** section and click the **Apply** button.
   For information about configuring network settings, refer to the Configuring Network Settings book, accessible by browsing to **MAX Remote Systems Help»LabVIEW Real-Time Target Configuration»Configuring Network Settings** from the **Contents** tab of *MAX Help*.

   Note When any IP or identification settings are changed, you will be prompted to reboot the controller for the changes to take effect. Click **Yes** to automatically reboot the RT target. You may also reboot the controller by right-clicking on the target name under **Remote Systems** and selecting **Reboot**.

   After rebooting the PXI Express controller it will appear in the **Remote Systems** category with the assigned name.
6. Expand the PXI Express controller view in the **Remote Systems** branch and select **Software**.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

7. Click the **Add/Remove Software** button in the toolbar to launch the LabVIEW Real-Time Software Wizard.
8. Install the LabVIEW Real-Time software and device drivers that you require on the RT target. Refer to the NI Web site at `ni.com/info` and enter the Info Code `etspc` for the latest information about supported software.

After installation of the software the controller will automatically reboot and you will now be able to program it using LabVIEW Real-Time.

Note Refer to *Getting Started with the LabVIEW Real-Time Module* available on your host computer for more information about setting up your RT target.

LabVIEW RT Configuration Switches

Use the LabVIEW RT configuration switches to configure LabVIEW RT if it is installed on the controller. If you are not using LabVIEW RT, these switches should remain in the OFF position. The controller reads these switches only after a system reset.

The NI PXIe-8880 controller includes the following LabVIEW RT configuration switches:

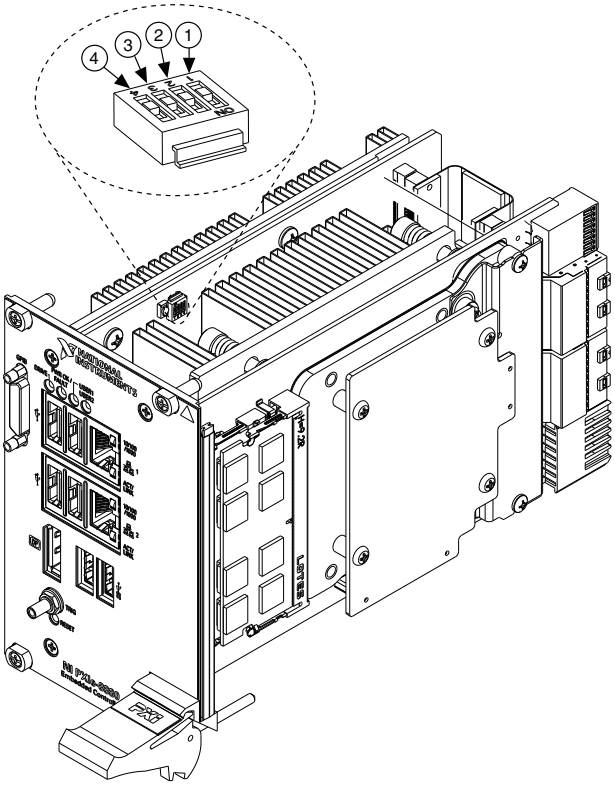
- Switch 1—**Boot LabVIEW RT**: Set this switch to ON to boot LabVIEW RT.
- Switch 2—**Boot Safe Mode**: Set this switch to ON to boot LabVIEW RT into safe mode to reconfigure TCP/IP settings and to download or update software from a host computer. This switch overrides the behavior of Switch 1. Booting the controller into safe mode does not start the embedded LabVIEW RT engine. After changing the settings or software, reboot the controller with this switch OFF to resume normal operation.
- Switch 3—**Disable Startup VI**: Set this switch to ON to prevent VIs from automatically running at startup if the controller becomes inaccessible because of a startup VI.
- Switch 4—**Reset IP Address**: Set this switch to ON to reset the IP address and other TCP/IP settings to their factory defaults. Use this switch if moving the controller to a different subnet or if the current TCP/IP settings are valid.

Note By default, the target will automatically attempt to connect to the network using DHCP. If the target is unable to initiate a DHCP connection, the target connects to the network with a link-local IP address or `169.254.x.x`.

The following figure shows the location of the LabVIEW RT configuration switches. The switches are shown in the OFF position.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Figure 3. LabVIEW RT Configuration Switches



1. Switch 1—Boot LabVIEW RT
2. Switch 2—Boot Safe Mode
3. Switch 3—Disable Startup VI
4. Switch 4—Reset IP Address

Drivers and Software

If you purchased a system preinstalled with Windows, your hard drive includes a directory called `images` in its root that contains software and soft copies of manuals for the peripherals. The directory structure under the `images` directory is logically organized into several levels.

In the `images` directory are `drivers` and `NIDRIVERS` directories. The `drivers` directory contains driver installers for the system peripherals. These files and directories are copied exactly from the manufacturer distribution disks, so the naming conventions vary from peripheral to peripheral. The `NIDRIVERS` directory contains the GPIB and PXI Platform Services drivers preinstalled on the controller.

Data Storage

The NI PXIe-8880 has the following data storage features:

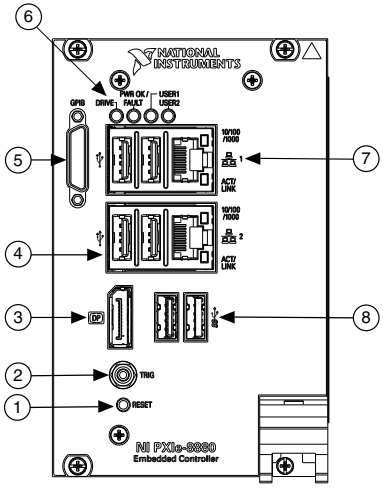
Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

- Internal Serial ATA solid-state drive
  - 240 GB or larger 1.8 in. solid-state drive
  - Supports Native Command Queuing
  - Supports transfer rates up to 500 MB/s
- USB storage support
  - USB CD/DVD-ROM, mass storage device, or floppy drive

NI PXIe-8880 Front Panel

The following figure shows the front panel layout of the NI PXIe-8880.

Figure 4. NI PXIe-8880 Front Panel Connectors



1. Reset Button
2. Trigger
3. Display Port
4. USB 2.0
5. GPIB Connector
6. LED Indicators
7. Ethernet Connectors
8. USB 3.0

Front Panel Connectors

The following table lists various peripherals and their corresponding NI PXIe-8880 external connectors, bus interfaces, and functions.

Peripheral	External Connector	Description
Video	DisplayPort	ATI Radeon E6460 Embedded GPU
Ethernet Port 1	LAN (RJ45, dual stacked)	10/100/1000 Ethernet Intel I217 WOL capable

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Peripheral	External Connector	Description
Ethernet Port 2	LAN (RJ45, dual stacked)	10/100/1000 Ethernet Intel I210 Not WOL capable
USB 2.0	USB 4-pin Series A stacked receptacle (4 ports)	USB 2.0 capable
USB 3.0	USB 9-pin Series A stacked receptacle (2 ports)	USB 3.0 and USB 2.0 capable
PXI Express trigger	Trigger (SMB)	Routing PXI Express triggers to or from the backplane trigger bus
GPIB device	GPIB (25-pin Micro D)	General-Purpose Interface Bus, IEEE 488.2

PXI Express Trigger Connectivity

The SMB connector on the NI PXIe-8880 front panel can connect to or from any PXI Express backplane trigger line. A trigger allocation process is needed to prevent two resources from connecting to the same trigger line, resulting in the trigger being double-driven and possibly damaging the hardware. At the time of this manual's publication, this software is not yet available for Windows. Contact National Instruments for more information.

Front Panel Features

The NI PXIe-8880 has the following front-panel features:

- A system reset pushbutton (press the button to reset the controller)
- Two front panel LEDs that show PC status:
  - *PWR OK/FAULT*—Indicates the status of the controller. The LED indicates one of the following states:
    - Green ON steady—PXI Express and onboard power is on and within regulation limits.
    - Green BLINKING—The controller has entered the soft off state and is safe to power down.

      Note This status is only applicable when chassis is set to **Manual**.

    - Green FADING—The controller has entered the stand by (S3) state.
    - OFF—The controller is powered off.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

    - Red BLINKING—The controller detected a power rail fault when trying to boot.
    - Red Solid—The controller detected a thermal fault and has shut down to protect the system.
  - *DRIVE*—Indicates when an access to the internal hard disk is occurring.
- *USER*—Two bi-color green/yellow LEDs (*USER1* and *USER2*) that you can define to meet the needs of your LabVIEW application.

PXI Express Chassis Configuration

The PXI Express Platform Services software installed on your controller and available on the *National Instruments Driver DVD* or *PXI Platform Services CD* included with your kit automatically identifies your PXI Express system components to generate a `pxiesys.ini` and `pxisys.ini` file. You can configure your entire PXI Express system through Measurement & Automation Explorer (MAX), included with your controller. MAX creates the `pxiesys.ini` and `pxisys.ini` file, which define your PXI Express system parameters. MAX also provides an interface to route and reserve triggers so dynamic routing, through drivers such as DAQmx, avoids double-driving and potentially damaging trigger lines. For more information about routing and reserving PXI Express triggers, refer to KnowledgeBase 3TJDOND8, *Using PXI Timing and Triggering Functionality*, at `ni.com/support`.

The configuration steps for single or multiple-chassis systems are the same.

PXI Express System Configuration

1. Launch Measurement & Automation Explorer (MAX).
2. In the **Configuration** tree, expand **Devices and Interfaces**.
3. In the **Devices and Interfaces** tree, expand **PXI System**. Your PXI Express chassis is already identified and appears in the **PXI System** tree.
4. For each unidentified PXI Express chassis in the **PXI System** tree, right-click on the chassis and select the appropriate chassis model through the **Identify As** submenu. Further expanding the **PXI System** branch shows all devices in the system that NI-VISA can recognize.

The PXI Express specification allows for many combinations of PXI Express chassis and system modules. To assist system integrators, PXI Express chassis and system module manufacturers must document their products' capabilities. PXI Express devices must provide a driver and/or `.ini` file for identification. For NI PXI Express chassis and controllers, these files are provided as part of the NI PXI Platform Services software included with your controller. System integrators, configuration utilities, and device drivers can use these `.ini` files.

The NI PXI Platform Services software uses the system module driver, chassis driver, and `chassis.ini` files to generate the PXI/PXI Express system description files (`pxisys.ini` and `pxiesys.ini`). Device drivers and other utility software read the `pxiesys.ini` and

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

`pxisys.ini` files to obtain system information. For detailed information about initialization files, refer to the PXI Express specification at `www.pxisa.org`.

Removing the NI PXIe-8880 from a PXI Express Chassis

To remove the NI PXIe-8880 from a PXI Express chassis, complete the following steps.

1. Power off the chassis.
2. Remove any cables that may be attached to the controller front panel.
3. Unscrew the 4 bracket-retaining screws in the front panel.
4. Press the injector/ejector handle down.
5. Slide the unit out of the chassis.

Cleaning

Use a dry, low-velocity stream of air to clean the NI PXIe-8880 controller. If needed, use a soft, nonmetallic brush for cleaning around components.

Make sure that the device is completely dry and free from contaminants before returning it to service.

Common Configuration Questions

This section answers common configuration questions you may have when using an NI PXIe-8880 embedded controller.

General Questions

What do the LEDs on the front panel mean?

Refer to the LED status descriptions in the *Front Panel Features* section.

After shutting down my NI PXIe-8880 controller, the Port 1 Ethernet LEDs continue to blink. Is it safe to remove my controller or disconnect power?

The NI PXIe-8880 port 1 Intel I217 Ethernet device remains powered even after shutdown. It is safe to remove your controller or disconnect power.

How do I check the configuration of the memory, hard drive, time/date, and so on?

You can view these parameters in the BIOS setup. Complete the following steps to enter the BIOS setup:

1. Reboot the NI PXIe-8880.
2. Press <Delete> during the memory tests.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Refer to the *Accessing BIOS Setup Utility* section of the *NI PXIe-8880 User Manual* for more information.

Can I use the internal Serial ATA drive and an external hard drive at the same time?

Yes. Refer to the *BIOS Setup Utility* section of the NI PXIe-8880 User Manual for more information.

Boot Options

What devices can I boot from?

The NI PXIe-8880 can boot from the following devices:

- The internal Serial ATA solid-state drive.
- An external SCSI hard drive or SCSI CD/DVD-ROM if a SCSI adapter, such as the PXI-8214, is used.
- A network PXE server on the same subnet.
- An external USB mass storage device such as a USB hard drive, USB CD/DVD-ROM, or USB flash drive.
- An external USB floppy drive.
- Most PCI or PCI Express-based devices that provide an Option ROM.

Note There are limitations when booting from a USB device. You can install Windows 7 and later from a USB CD/DVD-ROM, but not earlier versions of Windows. The NI PXIe-8880 BIOS configures the USB devices so that they work in a DOS environment.

How do I configure the controller to boot from these devices?

You can configure the controller to permanently or temporarily change the boot order.

1. Permanently Change the Boot Order
   a) Enter the BIOS setup by rebooting the controller and pressing <Delete> during the memory tests.
   b) Select the Boot menu. You will see a list of all bootable devices, ordered by device type.
   c) Set the boot order by altering **Boot Option #1**, **Boot Option #2**, and **Boot Option #3** settings.
2. Temporarily Change the Boot Order
   a) Press <F10> during POST to display the Boot menu.
   b) Select the device type you want to boot from.

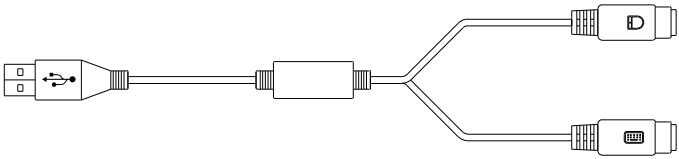
Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Cables and Connections

How do I plug both a PS/2 mouse and PS/2 keyboard into the controller?

The NI PXIe-8880 has no PS/2 connector, and you need to use a USB Y-splitter cable as shown below, or a similar device, to connect both a PS/2 mouse and PS/2 keyboard. National Instruments part number 778713-01 is such a cable and is available through the online catalog at *ni.com/products*.

Figure 5. Y-Splitter Cable



What if I don't have a Y-splitter cable? Can I still use a mouse and keyboard?

If you do not have a Y-splitter cable, plug a USB keyboard into any USB connector. You can also plug a USB mouse into any USB connector.

Software Driver Installation

How do I install or reinstall the video driver?

Refer to KnowledgeBase 3H3COSD8, *What Peripheral Drivers Should I Use with My PXI or VXI Controller?*, at *ni.com/support*.

How do I install or reinstall the Ethernet driver?

Refer to KnowledgeBase 3H3COSD8, *What Peripheral Drivers Should I Use with My PXI or VXI Controller?*, at *ni.com/support*.

How do I install or reinstall the GPIB driver?

The NI-488.2 driver for your GPIB port is installed by default when your controller is first shipped from the factory. To change the default installed driver, complete the following steps:

1. Download the latest GPIB driver from *ni.com/downloads*.
2. Install the driver and verify that the driver has properly detected the GPIB driver in the Device Manager. If you need more assistance, refer to *ni.com/support/install*.

How do I install software from a CD?

The compact size of the NI PXIe-8880 does not allow for an integrated USB CD/DVD-ROM drive. If you are using Windows 7, you have the following options:

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

USB CD/DVD-ROM	Windows 7 supports installing from a USB CD/DVD-ROM.
SCSI CD-ROM	Windows 7 supports installing from a SCSI CD-ROM.
Mapped network drive	You can use the Ethernet to connect to another computer. If you share the USB CD/DVD-ROM drive on the other computer, you can map the shared USB CD/DVD-ROM drive to a drive letter on the NI PXIe-8880.

A USB CD/DVD-ROM drive is available from National Instruments, part number 778492-01.

Upgrade Information

How do I upgrade system memory?

You can change the amount of installed RAM on the NI PXIe-8880 by upgrading the DDR4 SO-DIMMs. Complete the following steps to upgrade the RAM.

1. Remove the NI PXIe-8880 from the PXI Express chassis.
2. Locate the DDR4 SO-DIMM modules on the side of the controller, as shown in the following figure.
3. Remove the installed DDR4 SO-DIMM module, if necessary.
4. Install the new DDR4 SO-DIMM module(s) into the slot(s).

NI PXIe-8880 System Memory Information

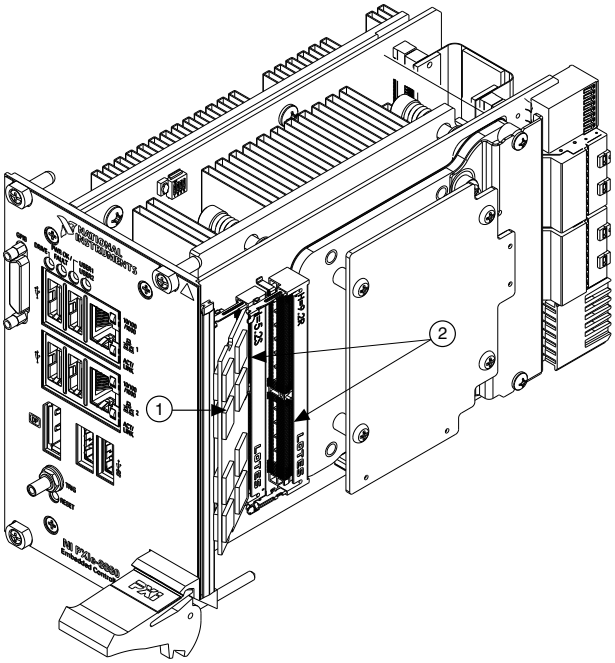
- To optimize memory capacity and system performance, use the same size and speed memory modules. The use of different size modules in each slot is supported, but system performance will be slower than using three matched modules. However, three mismatched modules will result in better performance than using a single module.
- National Instruments offers the following types of SO-DIMMs for use with the NI PXIe-8880 controller.

  Note National Instruments has tested and verified that the DDR4 SO-DIMMs we sell work with the NI PXIe-8880 controller. We recommend you purchase your DDR4 SO-DIMM modules from National Instruments. Other off-the-shelf DDR4 SO-DIMM modules are not guaranteed to work properly.

  – PC4-1866 (DDR4 2133) 8 GB, 1 GB × 72, CL 15, 1.18 in. max (NI part number 783813-01)

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Figure 6. Installing a DDR4 SO-DIMM in an NI PXIe-8880 Controller



1. DDR4 SO-DIMM Module in Lower Socket
2. DDR4 SO-DIMM Sockets

How do I flash a new BIOS?

You can download the new BIOS from *ftp.ni.com/support/pxi*. For more information, refer to KnowledgeBase 2GIGKD0Z, *Determining and Upgrading PXI and VXI Embedded Controller BIOS Versions*.

Where do I get the latest software drivers?

The latest National Instruments software is available from *ni.com/downloads*. For peripheral drivers, refer to KnowledgeBase 3H3COSD8, *What Peripheral Drivers Should I Use with My PXI or VXI Controller?*, at *ni.com/support*.

My NI PXIe-8880 does not have an internal floppy drive. Is there a way to use an external drive?

Yes. The NI PXIe-8880 controller supports and can boot from USB floppy drives. Refer to the *Boot Options* section for more information. A USB floppy drive is available from National Instruments, part number 778492-02.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

PXI Express Configuration

How do I use the SMB trigger on the front panel?

Refer to the *PXI Express Trigger Connectivity* section for details on using the SMB trigger.

Troubleshooting

This section answers common troubleshooting questions you may have when using the NI PXIe-8880 embedded controller.

What if the Controller Does Not Boot?

Several problems can cause a controller not to boot. Here are some things to look for and possible solutions.

Things to Notice:

- Which LEDs come on? The **PWROK/FAULT** LED should stay lit green. The **Drive** LED should blink during boot as the disk is accessed.
- What appears on the display? Does it hang at some particular point (BIOS, Operating System, and so on)? If nothing appears on the screen, try a different monitor. Does your monitor work with a different PC? If it hangs, note the last screen output that you saw for reference when consulting National Instruments technical support.
- What has changed about the system? Did you recently move the system? Was there electrical storm activity? Did you recently add a new module, memory chip, or piece of software?
- Refer to your chassis documentation for additional troubleshooting steps.

Things to Try:

- Make sure the chassis is plugged in to a working power source.
- Check any fuses or circuit breakers in the chassis or other power supply (possibly a UPS).
- Make sure the controller module is firmly seated in the chassis.
- Remove all other modules from the chassis.
- Remove any nonessential cables or devices.
- Try the controller in a different chassis.
- Try a similar controller in the same chassis.
- Clear the CMOS.
- Recover the hard drive on the controller.
- Make sure the RAM is properly seated.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

What If I Can't See The Video?

This problem usually results from having the video card output set past the limits of the monitor. You will need to boot Windows in Safe Mode. To do this, reboot the controller. As Windows begins to boot, hold down <F8>. You should now be able to reset the video driver to lower settings. Try setting the resolution to 800 × 600 and the refresh rate to 60 Hz. Once you reboot, you can raise these values again, using the test option in Windows. These settings are accessible by clicking **Adjust screen resolution** in the **Appearance and Personalization** category of the **Control Panel**. Alternately, you can try a different monitor, preferably a newer and larger one.

My system boots fine as long as a particular module is not in my chassis. How do I boot the chassis with the module installed?

The most common cause of this problem is a damaged module. Try the module in a different chassis or with a different controller. Also, remove any external cables or terminal blocks connected to the system. If the module does not work in these cases, it is likely damaged. Contact the module manufacturer for further troubleshooting.

My chassis or controller does not appear in MAX. How do I use MAX to identify and configure my PXI system?

If you are using MAX to configure your PXI system, you must install the PXI Platform Services software on your controller to identify NI PXI and PXI Express chassis and modules in MAX. You can install PXI Platform Services from the software CD included with your controller or from *ni.com/downloads*.

My CMOS is corrupted. How do I set it back to default?

There are two methods that you can use to reset the CMOS.

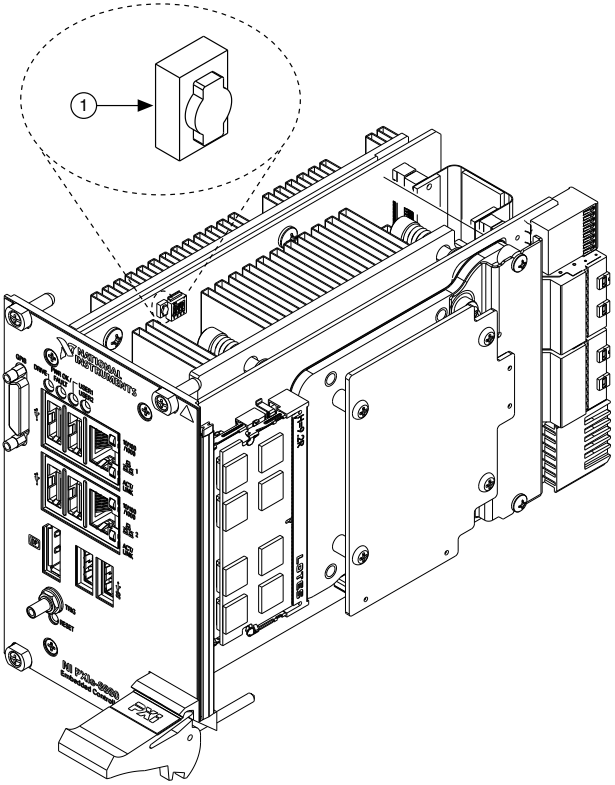
1. First Method
   a) Enter the BIOS setup program as described in the *Accessing BIOS Setup Utility* section of the *NI PXIe-8880 User Manual* for more information.
   b) Press <F9> to load BIOS defaults.
   c) Answer **Y** (Yes) to the verification prompt.
   d) Select **Save and Exit Setup**.
2. Second Method
   a) Power off the chassis.
   b) Remove the controller from the chassis.
   c) Press the Clear CMOS button (SW1) as shown in the figure.

Note Time and date cannot be reset by this switch.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

d) Reinstall the controller in the chassis.

Figure 7. Clearing the CMOS Contents



1. Push-Button Switch SW1

Worldwide Support and Services

The National Instruments website is your complete resource for technical support. At *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.

Visit *ni.com/services* for NI Factory Installation Services, repairs, extended warranty, and other services.

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

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

A Declaration of Conformity (DoC) is our claim of compliance with the Council of the European Communities using the manufacturer's declaration of conformity. This system affords the user protection for electromagnetic compatibility (EMC) and product safety. You can obtain the DoC for your product by visiting *ni.com/certification*. If your product supports calibration, you can obtain the calibration certificate for your product at *ni.com/calibration*.

National Instruments corporate headquarters is located at 11500 North Mopac Expressway, Austin, Texas, 78759-3504. National Instruments also has offices located around the world. For telephone support in the United States, create your service request at *ni.com/support* or dial 1 866 ASK MYNI (275 6964). For telephone support outside the United States, visit the *Worldwide Offices* section of *ni.com/niglobal* to access the branch office websites, which provide up-to-date contact information, support phone numbers, email addresses, and current events.

Refer to the *NI Trademarks and Logo Guidelines* at `ni.com/trademarks` for information on National Instruments trademarks. Other product and company names mentioned herein are trademarks or trade names of their respective companies. For patents covering National Instruments products/technology, refer to the appropriate location: **Help**»**Patents** in your software, the `patents.txt` file on your media, or the *National Instruments Patent Notice* at `ni.com/patents`. You can find information about end-user license agreements (EULAs) and third-party legal notices in the readme file for your NI product. Refer to the *Export Compliance Information* at `ni.com/legal/export-compliance` for the National Instruments global trade compliance policy and how to obtain relevant HTS codes, ECCNs, and other import/export data. NI MAKES NO EXPRESS OR IMPLIED WARRANTIES AS TO THE ACCURACY OF THE INFORMATION CONTAINED HEREIN AND SHALL NOT BE LIABLE FOR ANY ERRORS. U.S. Government Customers: The data contained in this manual was developed at private expense and is subject to the applicable limited rights and restricted data rights as set forth in FAR 52.227-14, DFAR 252.227-7014, and DFAR 252.227-7015.

© 2014 National Instruments. All rights reserved.

374778B-01 Nov14

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Artisan Technology Group is an independent supplier of quality pre-owned equipment

Gold-standard solutions

Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

Learn more!

Visit us at **artisantg.com** for more info on price quotes, drivers, technical specifications, manuals, and documentation.

Artisan Scientific Corporation dba Artisan Technology Group is not an affiliate, representative, or authorized distributor for any manufacturer listed herein.

We're here to make your life easier. How can we help you today?

(217) 352-9330 | sales@artisantg.com | artisantg.com

ARTISAN® TECHNOLOGY GROUP