

Getting Started with NI-IMAQ™ for IEEE 1394 Cameras

Version 2.0

NI-IMAQ for IEEE 1394 Cameras provides driver support for Windows 2000/XP, as well as LabVIEW Real-Time (RT) targets. The following sections describe how to start using NI-IMAQ for IEEE 1394 Cameras with your IEEE 1394 adapter card.

Installing the IEEE 1394 Hardware

Begin by installing the IEEE 1394 adapter card. If you are using a third-party adapter, follow the installation instructions provided by the manufacturer. Then, refer to the [Installing and Configuring Your Camera Driver Software](#) section of this document. If you are using an NI PCI/PXI-8252 device, refer to the following instructions.

What You Need to Get Started

To set up and use the NI PCI/PXI-8252, you need the following items:

- NI PCI/PXI-8252 device
- ATX power supply (for PCI-8252 devices only)
- Number 1 Phillips screwdriver

Installing the PCI-8252

Complete the following steps to install the PCI-8252:

1. Power off and unplug the computer.
2. Seat the PCI-8252 firmly in any 3.3 or 5 V PCI expansion slot of the computer.
3. Secure the PCI-8252 according to the PC manufacturer instructions. If possible, tighten the screw that secures the PCI-8252 using the screwdriver.

4. Connect one end of the power cable to the PCI-8252. Connect the other end to an unused power connector from the ATX power supply.
5. Plug in and power on the computer.

Installing the PXI-8252

Complete the following steps to install the PXI-8252:

1. Shut down the operating system, and power off the computer.
2. Seat the PXI-8252 firmly in any slot of the PXI chassis, other than Slot 1.
3. Secure the PXI-8252 in place by tightening the top and bottom screws with the screwdriver.
4. Power on the computer.

Installing the OHCI 1394 Host Driver

Windows 2000/XP automatically detects the new hardware and installs the OHCI drivers. You may be prompted for the original Windows 2000/XP installation CD.

When installing software on a LabVIEW RT target, Measurement & Automation Explorer (MAX) installs the OHCI driver with the NI-IMAQ for IEEE 1394 Cameras driver.

Installing and Configuring Your Camera Driver Software

Windows 2000/XP

If you are using Windows 2000/XP, complete the following steps to install and configure NI-IMAQ for IEEE 1394 Cameras:

1. Disconnect all IEEE 1394 cameras.
2. Install the NI-IMAQ for IEEE 1394 Cameras software.
3. Reboot the computer when prompted.
4. Connect the IEEE 1394 camera.
5. Double-click the MAX icon on your desktop. You can use MAX to modify camera attributes. Once you have saved these attributes, they become the default settings for all NI-IMAQ for IEEE 1394 Cameras or IMAQ Vision applications.
6. Expand **Devices and Interfaces»NI-IMAQ IEEE 1394 Devices** in the configuration tree to display the cameras installed on your computer.



7. If your camera does not show up as an NI-IMAQ IEEE 1394 digital camera, change the associated driver by right-clicking the camera and selecting **Driver»NI-IMAQ IEEE 1394 IIDC Digital Camera**, as shown in Figure 1.

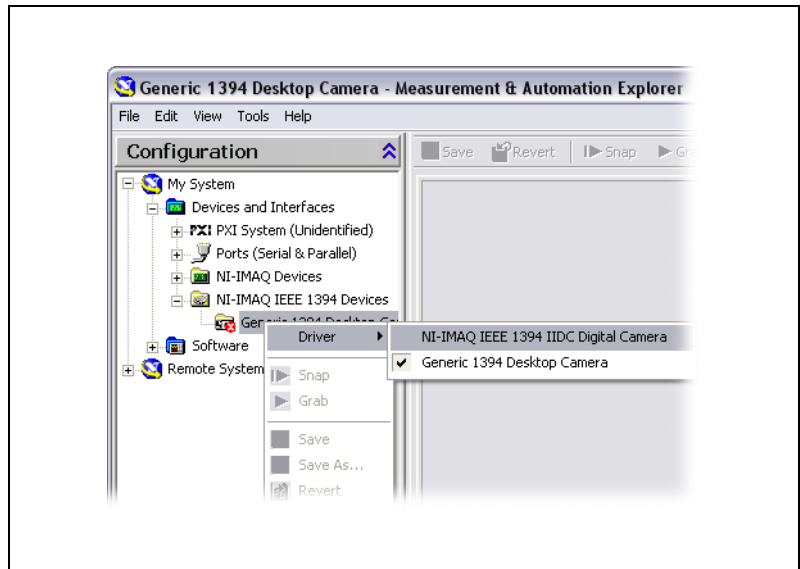


Figure 1. Switching the Camera Driver

8. Select the camera from the list. You then can view or modify the camera attributes from the **Properties Panel** located below the image viewer, as shown in Figure 2.

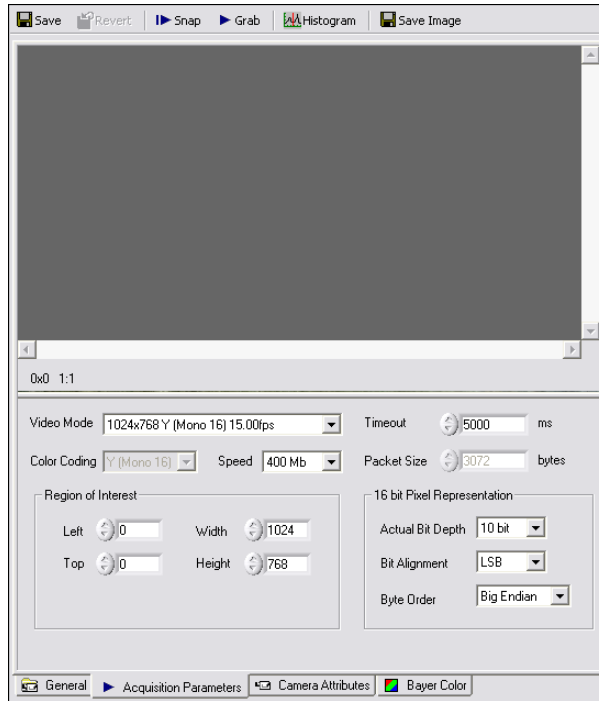


Figure 2. Setting Camera Attributes



Tip Click **Show Help** to display the help window on the right side of the image viewer. Move your mouse over the properties to view context-sensitive help in the bottom half of the help window.

LabVIEW Real-Time Module

If you are using a Windows development machine and a LabVIEW RT target, complete the following steps to install and configure NI-IMAQ for IEEE 1394 Cameras:

1. Install the NI-IMAQ for IEEE 1394 Cameras software on your Windows development machine.
2. Make sure your LabVIEW RT target is connected to the same subnet as the Windows development machine.
3. Double-click the MAX icon on your desktop. You can use MAX to modify camera attributes. After you have saved these attributes, they become your default settings for all NI-IMAQ for IEEE 1394 Cameras or IMAQ Vision applications.
4. Expand the **Remote Systems** list in the configuration tree.
5. Select your LabVIEW RT target in the list.



6. Configure your network settings. Refer to the *Remote Systems Help* section of the *Measurement & Automation Explorer Help* (**Help»MAX Help**) for instructions about configuring network settings.
7. Install NI-IMAQ for IEEE 1394 Cameras on the LabVIEW RT target.
 - a. Click the **Software** item below your LabVIEW RT target in the configuration tree.
 - b. Click **Install Software** on the MAX toolbar to launch the LabVIEW Real-Time Install Software Wizard.
 - c. Select **NI-IMAQ for IEEE 1394 RT**, as well as any additional software you would like to install on the target machine, as shown in Figure 3.

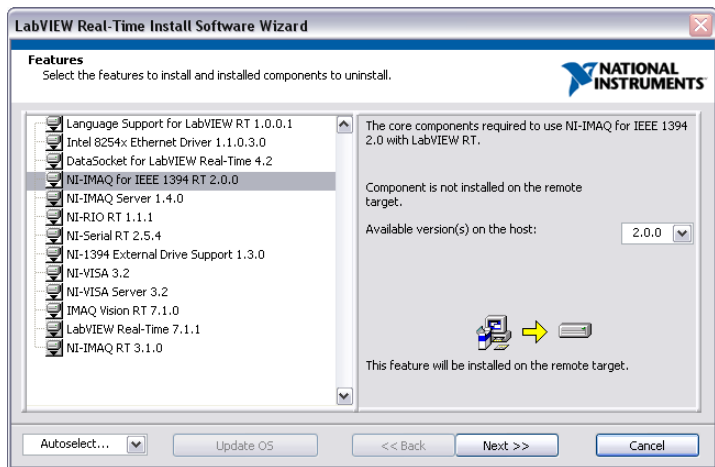


Figure 3. Selecting Software for the Target Machine

- d. Click **Next**. Review the list of software you selected to install.
 - e. Click **Next** to begin downloading the software to the target machine. When MAX has finished downloading the software, it restarts the remote device.
 - f. Click **Finish**.
8. Connect your camera to your remote system.
 9. Press the <F5> key to refresh the MAX configuration tree. Your IEEE 1394 camera should be listed in the **Remote Systems** list, as shown in Figure 4.



Tip Press <F5> to refresh the configuration tree whenever you connect a new device to a LabVIEW RT target.

10. Expand **Devices and Interfaces»NI-IMAQ IEEE 1394 Devices** in the configuration tree to display the cameras installed on your computer.
11. Select the camera from the list. You then can view or modify the camera attributes from the Properties panel located below the image viewer.

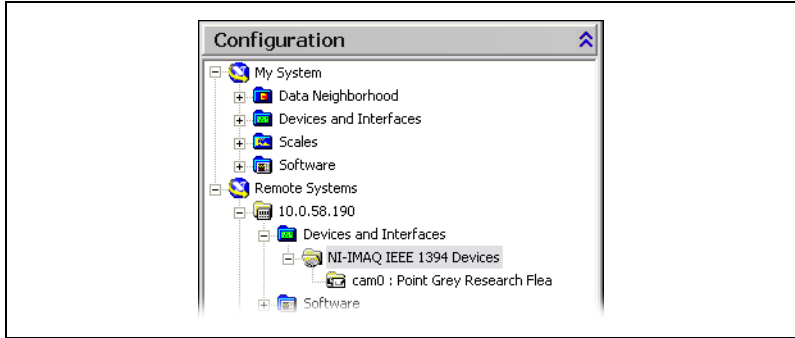
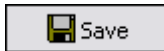


Figure 4. Viewing the Camera on the Remote System

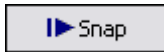
Using the MAX Toolbar



Save



Revert



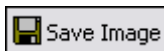
Snap



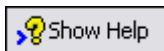
Grab



Histogram



Save Image



Show Help

The following list describes the functions of the toolbar buttons in MAX.

- Click **Save** to save the current acquisition configuration.
- Click **Revert** to reset the configuration values to those of the last saved configuration.
- Click **Snap** to acquire and display a single image.
- Click **Grab** to acquire and display a continuous set of images, which is useful, for example, when you need to focus the camera.
- Click **Histogram** to view a quantitative distribution of the pixels in an image per gray-level value.
- Click **Save Image** to save the image.
- Click **Show/Hide Help** to display/hide the topic and context-sensitive help to the right of the image viewer.

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