

WHERE TO START WITH YOUR NI 5431 PXI™/PCI-BASED VIDEO WAVEFORM GENERATOR

This document explains how to set up, test, and begin using your NI 5431.

You can control the NI 5431 interactively with the Video Generator Wizard Soft Front Panel. You can also control the NI 5431 programmatically with LabVIEW, an Application Development Environment (ADE). LabVIEW uses the NI-FGEN Interchangeable Virtual Instrument (IVI) driver and the LabVIEW toolkit for the video generator to create and generate video waveforms.

Install the Hardware Driver Software

There are two CDs to install for this product. The first CD installs the hardware driver software common to both the NI 5411 and NI 5431. The second CD, which you install later, installs the video software toolkit that runs the video applications.

Use the following procedure to install the hardware driver software:

1. If you are using LabVIEW, make sure that it is installed.
2. Insert your NI Signal Sources Driver Software CD.
3. Click the **Install** option in the installation window that appears.
4. To install the instrument driver, ADE examples, and soft front panel, choose the **Programmatic and Interactive Support** option. To install only the soft front panel, choose the **Interactive Support Only** option.

The software installation for the hardware driver software CD is complete.

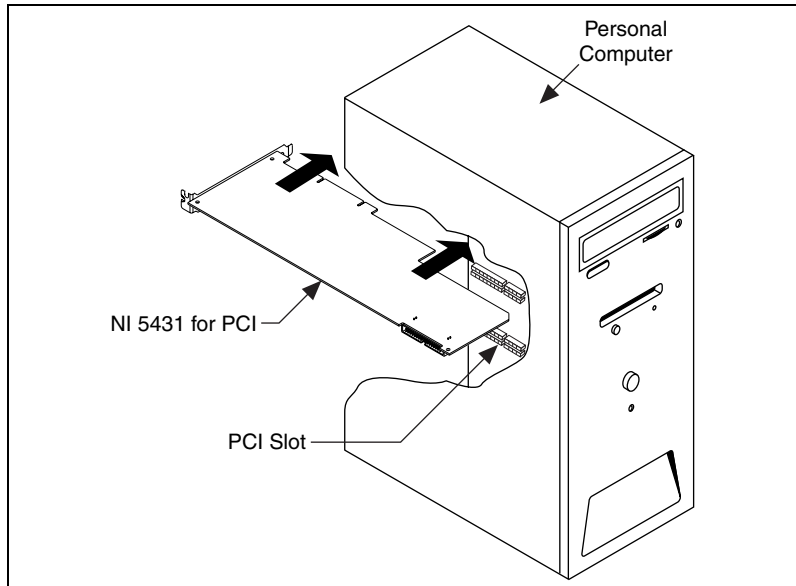
Install Your Hardware

Install your NI 5431 hardware as shown in the following illustrations.

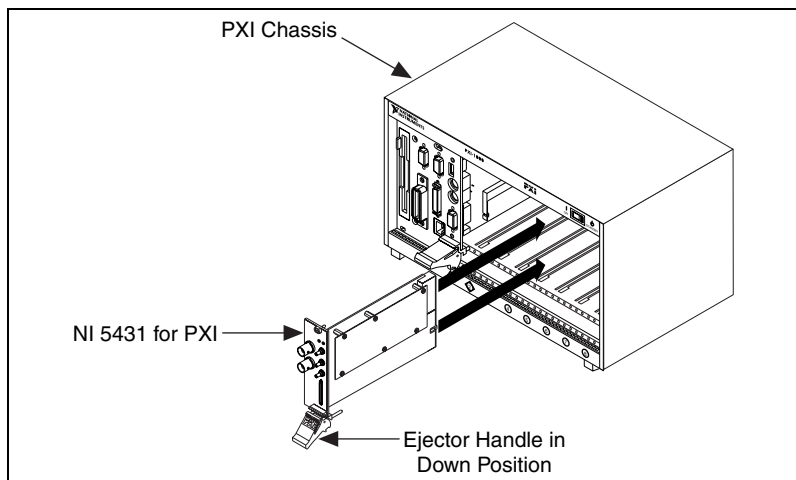


Caution You *must* turn off your PC or chassis before installing your NI 5431. To prevent damage due to electrostatic discharge or contamination, handle the board using the edges or the metal bracket.

◆ NI 5431 (PCI)



◆ NI 5431 (PXI)



Configure and Test Your NI 5431

To configure and test your NI 5431, double-click the **Measurement & Automation** icon on your computer desktop and follow these steps:

1. Double-click the **Devices and Interfaces** icon to open a list of recognized devices.
2. Find the device in the list that corresponds to your NI 5431. Note the number assigned to your device. You will need to use this number when you program your device in the *Generating a Video Signal* section of the *NI 5431 Composite Video Generator Software User Manual*.
3. Right-click the device name and select **Properties** from the pop-up menu.
4. From the Properties window, click **Test Resources**. A dialog box appears and indicates if the device has passed.
 - If the device passes, click **OK**.
 - If the device does not pass, verify that the board is plugged in properly. If the device still fails, contact NI for support.
5. Click **Run Test Panels** and begin using your NI 5431. The Test Panel dialog box appears.
6. Connect an oscilloscope to your NI 5431. In the Test Panel dialog box, select the appropriate Output Type for the waveform, Output Frequency (Hz), and Output Attenuation (mdB).
7. Click **Apply Changes** if necessary.



Note At this point in the installation process, the NI 5431 will not generate a video waveform. It can only generate test signals such as sine, square, or triangle signals.



Caution Do *not* set the output voltage level for your NI 5431 to more than $\pm 1 V_{pk-pk}$ into 75Ω , as this may damage your video display device or your device under test (DUT). Always check the output levels before connecting a DUT to your NI 5431. NI is not responsible for any damage caused to your DUT.

8. Click **Close** when you finish testing your NI 5431.
9. Click **OK** in the Properties window.

You have successfully installed and configured the necessary software and hardware to use your NI 5431 as an arbitrary waveform generator.

Install the Video Software Toolkit

Use the following procedure to install the Video Software Toolkit:

1. Insert your NI 5431 Composite Video Generation Toolkit installation CD. Click the **Install** option in the installation window that appears.
2. To install the LabVIEW examples and Video Generator Wizard Soft Front Panel, follow the instructions on your screen.

You have successfully installed and configured the necessary software and hardware to use your NI 5431 with the Video Software Toolkit.

Program Your NI 5431

You can use your NI 5431 as a video signal generator or an arbitrary function generator.

Use Your NI 5431 as a Video Signal Generator

You are now ready to use the Video Generator Wizard Soft Front Panel to control your NI 5431. Double-click the **Video Generator Wizard** icon on your desktop or select **Start»Programs»National Instruments»ni-video»Generator»Video Generator Wizard**. Refer to the *NI 5431 Composite Video Generator Software User Manual* for how to control your NI 5431 using the Video Generator Wizard Soft Front Panel or using the supplied LabVIEW driver tools and examples.

Use Your NI 5431 as an Arbitrary Function Generator

To program your NI 5431, open the Sources Soft Front Panel from the **Start»Programs»National Instruments»NI-FGEN** menu. Refer to your *NI 5411/5431 User Manual* for more information on using this soft front panel to control your NI 5411.

Begin programming your NI 5411 in your ADE. Refer to the *NI-FGEN Instrument Driver Quick Reference Guide* and the *NI-FGEN Online Function Reference Help* in the **Start»Programs»National Instruments»NI-FGEN»Documents** menu for more information on programming your NI 5411 with the instrument driver.



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