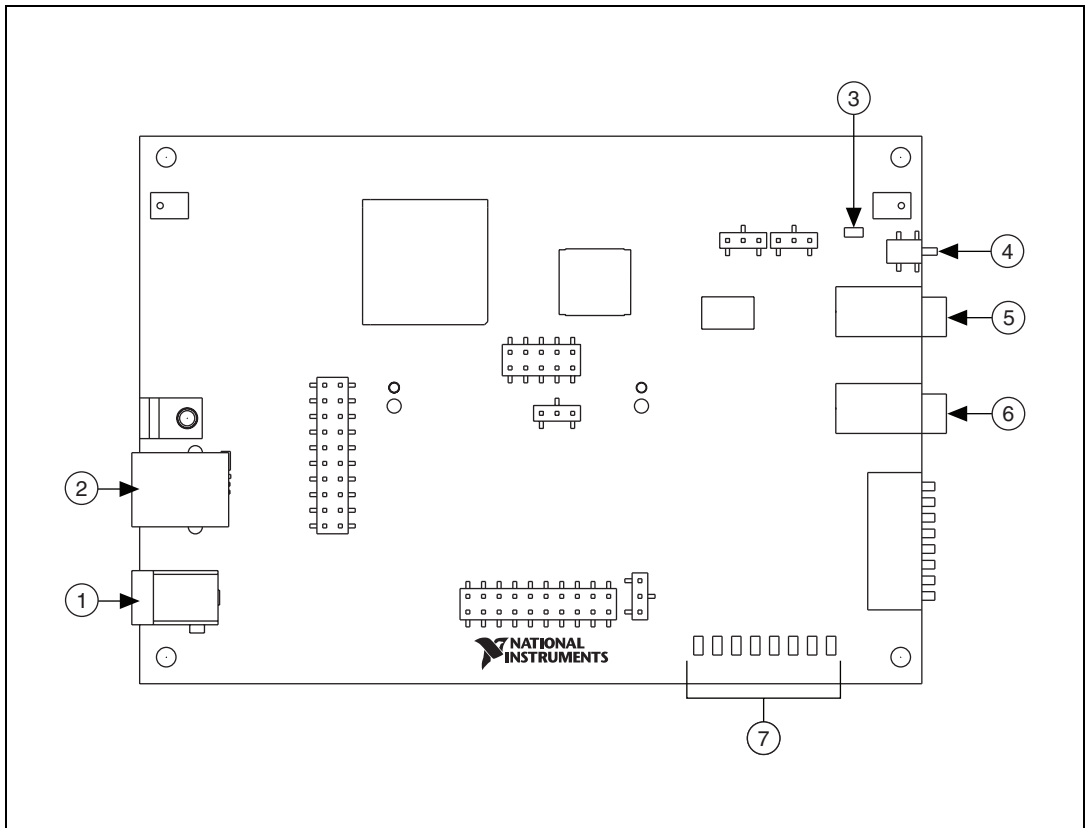


INSTALLATION GUIDE

NI SPEEDY-33

This installation guide describes how to install and configure the NI SPEEDY-33 DSP device for use with a PC. Figure 1 depicts the NI SPEEDY-33.



- 1 Power Port for Standalone Mode
- 2 PC USB Port
- 3 Power LED
- 4 Reset Button

- 5 Audio Stereo Input Port
- 6 Audio Stereo Output Port
- 7 Switch Input Port
- 8 Digital Output Port LEDs

Figure 1. NI SPEEDY-33 DSP Device

NI SPEEDY-33 System Requirements

The NI SPEEDY-33 connects to a standard PC through a minimum USB 1.1 port. For additional information, refer to the system requirements for LabVIEW Development Systems and LabVIEW modules.

Step 1. Install the Software and Driver

Refer to the *LabVIEW DSP Module Release and Upgrade Notes* for software and driver installation instructions.



Note You must install the LabVIEW DSP module and the device driver before installing the NI SPEEDY-33.

Step 2. Unpack the Device, Cable, and Accessories

Your device is shipped in an antistatic package to prevent electrostatic discharge from damaging device components. To prevent such damage when handling the device, take the following precautions:

- Ground yourself using a grounding strap or by holding a grounded object, such as your computer chassis.
- Touch the antistatic package to a metal part of the computer chassis before removing the devices from the package.



Caution *Never* touch the exposed pins of connectors.

Remove the device from the package and inspect the device for loose components or any other sign of damage. Notify NI if the device appears damaged in any way. Do *not* install a damaged device into the computer.

Store the device in the antistatic envelope when it is not in use.

Step 3. Connect the Hardware

Refer to Figures 1 and 2 as you complete the following steps to connect the NI SPEEDY-33 to a PC.

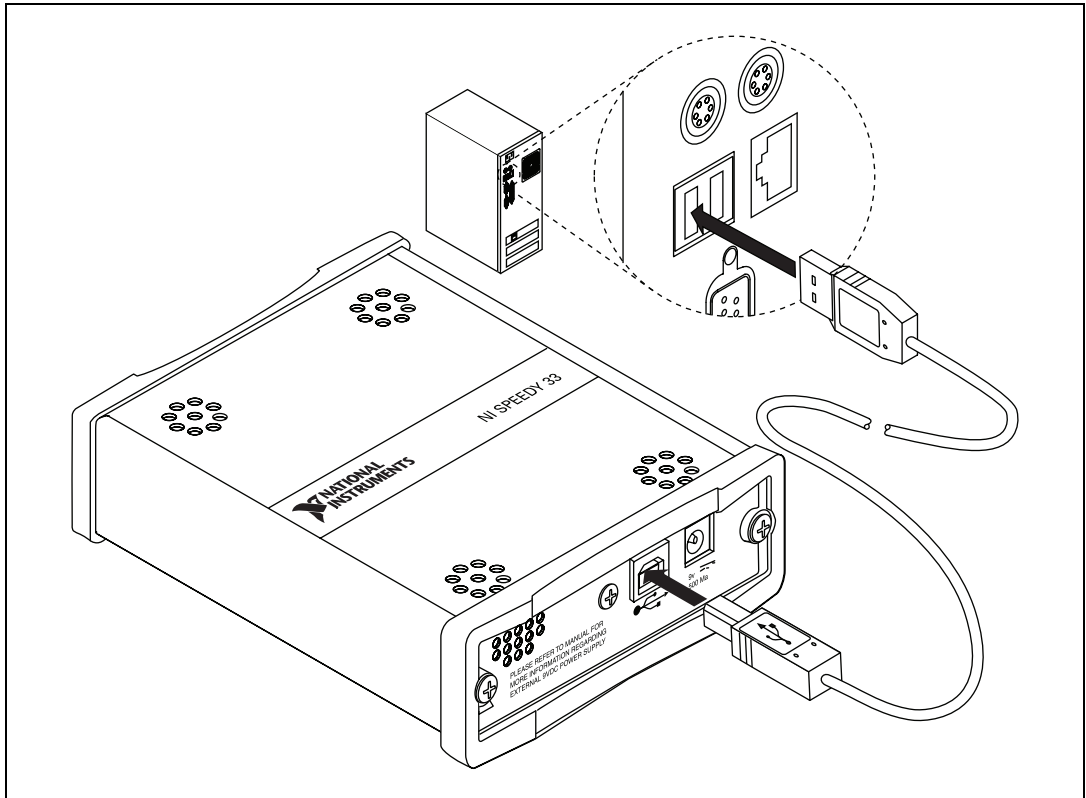


Figure 2. NI SPEEDY-33 Installation

1. Power on your computer. Log on as an administrator or as a user with administrator privileges.
2. Connect one end of the USB cable to the PC USB port on the NI SPEEDY-33.
The cable connectors are different on each end. Only one end fits into the PC USB port.
3. Connect the other end of the USB cable to a USB port on the PC.
The USB cable also serves as the NI SPEEDY-33 power supply. The green power LED on the device lights.

If Windows recognizes a new hardware device, continue the hardware connection process by proceeding to the *Windows 2000* section, the *Windows XP Service Pack 2 or Later* section, or the *Windows Vista* section. If Windows fails to recognize new hardware, proceed to the *Confirming Hardware Installation in Windows XP* section or *Confirming Hardware Installation in Windows Vista* section to confirm the proper installation of the NI SPEEDY-33.

Windows 2000

Windows recognizes any newly installed device and opens the Found New Hardware window. Because the NI SPEEDY-33 driver was installed in *Step 1. Install the Software and Driver*, Windows 2000 finds the driver automatically.

Your computer is now set up so that the software can communicate with the NI SPEEDY-33.

Windows XP Service Pack 2 or Later

Windows recognizes any newly installed device and opens the Found New Hardware Wizard. Complete the following steps to connect the NI SPEEDY-33 with the NI SPEEDY-33 driver. If Windows fails to recognize new hardware, proceed to the *Confirming Hardware Installation in Windows XP* section to confirm the proper installation of the NI SPEEDY-33.

1. Select **Install the software automatically (Recommended)**.



2. Click **Next**.

Windows begins scanning the hard drive for the files it needs.



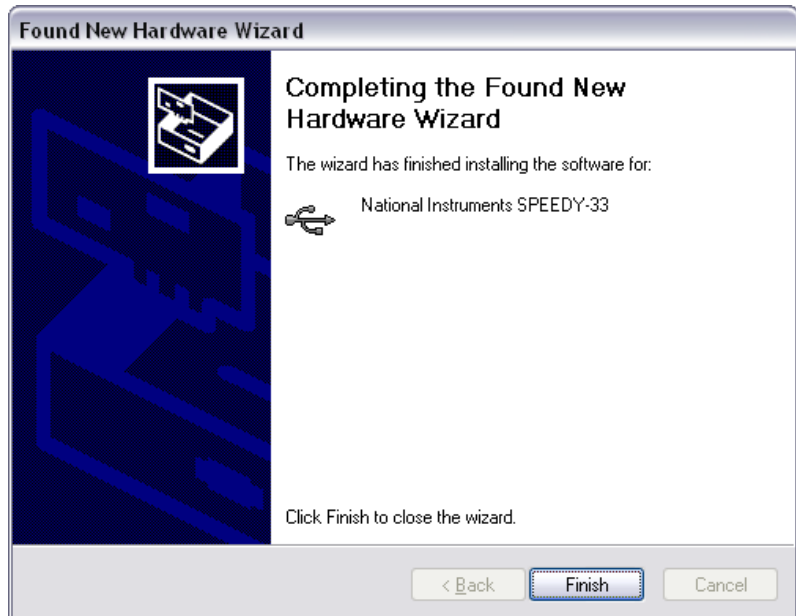
Note On non-English Windows operating systems, it can take up to five minutes for the Hardware Wizard to locate the necessary files.



Note A Hardware Installation alert might appear during the hardware scan. Click **Continue Anyway**.



When Windows finishes detecting the required files, the following window opens.



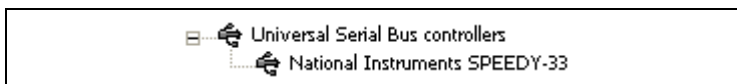
3. Click **Finish**.

Your computer is now set up so that the software can communicate with the NI SPEEDY-33.

Confirming Hardware Installation in Windows XP

If Windows fails to recognize a new hardware device, complete the following steps:

1. Right-click **My Computer** in a **Windows Explorer** window and select **Properties** from the shortcut menu.
2. Click the **Hardware** tab in the **System Properties** dialog box.
3. Click the **Device Manager** button.
4. Expand the **Universal Serial Bus controllers** section of the tree.
5. Verify that the NI SPEEDY-33 icon is listed with no Windows alert symbols displayed, as shown in the following figure. If an alert symbol is displayed on top of the device icon, proceed to step 6.



6. (Optional) If the device icon has an alert symbol, you must update the NI SPEEDY-33 driver. Complete the following steps to update the driver.
 - a. Right-click the driver and select **Update Driver** from the shortcut menu.
 - b. Follow the instructions from the Hardware Update Wizard.

Windows Vista

Windows recognizes any newly installed device and a device driver installation dialog appears. Because the NI SPEEDY-33 driver was installed in [Step 1. Install the Software and Driver](#), Windows Vista finds and installs the driver automatically. Your computer is now set up so that the software can communicate with the NI SPEEDY-33.

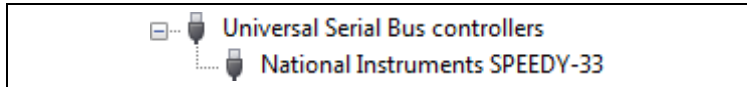
If Windows fails to recognize new hardware, proceed to the *Confirming Hardware Installation in Windows Vista* section to confirm the proper installation of the NI SPEEDY-33.

Confirming Hardware Installation in Windows Vista

If Windows fails to recognize a new hardware device and no device driver installation dialog appears, complete the following steps:

1. Click the Start icon and select **Control Panel**.
2. In the **Control Panel** window, double-click **Device Manager**.
3. In the Device Manager window, expand the **Universal Serial Bus controllers** section of the tree.

4. Verify that the NI SPEEDY-33 icon is listed with no Windows alert symbols displayed, as shown in the following figure. If an alert symbol is displayed on top of the device icon, proceed to step 5.



5. (Optional) If the device icon has an alert symbol, you must update the NI SPEEDY-33 driver. Complete the following steps to update the driver.
 - a. Right-click the driver and select **Update Driver Software** from the shortcut menu.
 - b. Follow the instructions from the Update Driver Software dialog.

Step 4. Launch the Software

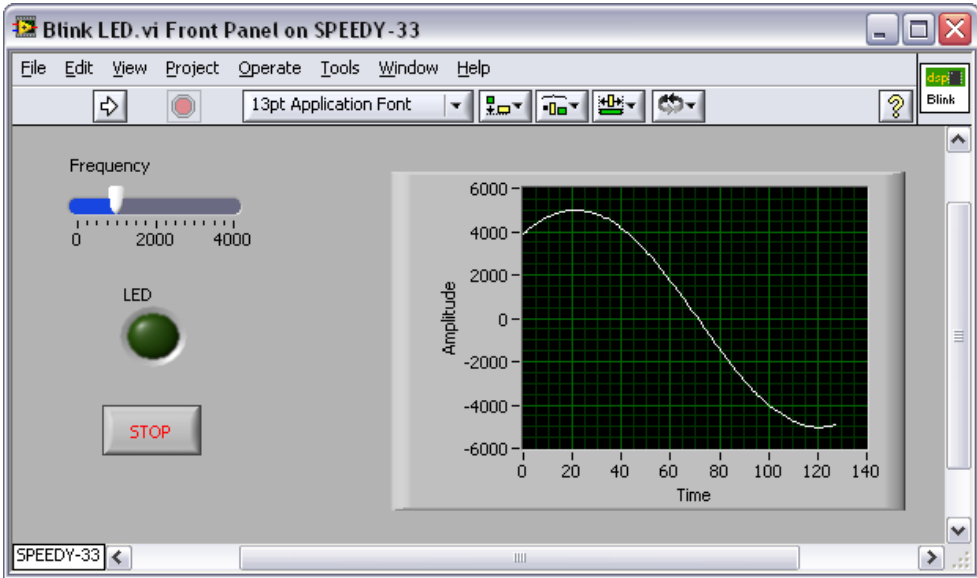
Launch LabVIEW by selecting **Start»All Programs»National Instruments»LabVIEW»LabVIEW**.

Step 5. Test the NI SPEEDY-33

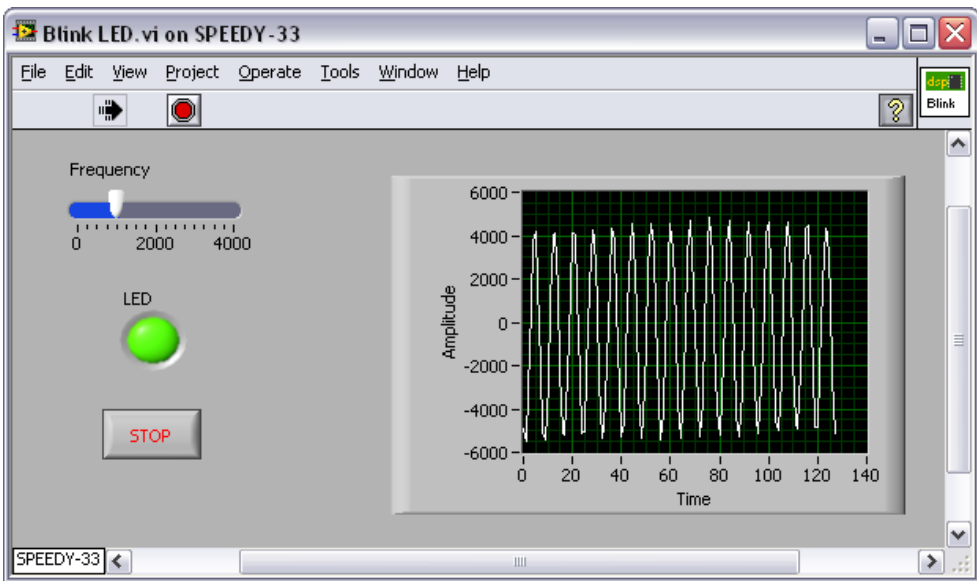
Test the hardware connection and software configuration with the Blink LED VI in the LabVIEW DSP Module by completing the following steps.

1. Launch LabVIEW.
2. Select **File»Open Project** from the **Getting Started** window.
3. Open the Blink LED project by browsing to **National Instruments»LabVIEW»examples»EmbeddedDSP** and selecting **Blink LED.lvproj**.
4. In the **Project Explorer** window, expand the **SPEEDY-33** target.

5. Double-click **Blink LED.vi** in the **Project Explorer** window.
The Blink LED VI front panel opens.



6. Run the VI by clicking the **Run** button, shown at left, on the LabVIEW front panel menu bar.



The VI front panel displays a blinking LED and a waveform. The NI SPEEDY-33 digital output port LED #1 blinks in time with the

LED on the front panel. The NI SPEEDY-33 digital output port LED #3 stays lit the entire time.

If the NI SPEEDY-33 is not set up properly, you receive an error message. If this occurs, check your connections and verify that the power LED on the NI SPEEDY-33 is lit. If your connections are good, unplug the NI SPEEDY-33 and repeat *Step 1. Install the Software and Driver*.

7. Click the **STOP** button on the front panel to stop the VI.



Tip You can also test the NI SPEEDY-33 by right-clicking the **SPEEDY-33** target in the **Project Explorer** window and selecting **Basic Test** from the shortcut menu. Click the **Start** button in the **Basic Test** dialog box and read the information on the screen. The basic test establishes communication with the NI SPEEDY-33, checks the memory, blinks all the LEDs, and then generates a frequency sweep through the analog output channel. Click the **Close** button when the test finishes.

8. Close LabVIEW. You do not need to save changes to the VI or project.

Connecting Accessories to the NI SPEEDY-33

Refer to Figure 1 to connect accessories to the NI SPEEDY-33 as described in Table 1.



Caution Do *not* connect the power source to the power port while the NI SPEEDY-33 device is connected to the PC.

Table 1. NI SPEEDY-33 Accessories

Accessory	NI SPEEDY-33 Port
Microphone, CD player, MP3 player, PDA, cell phone, or any peripheral with mini jack connector output	Audio stereo input port
Audio speakers (included with Infinity Technology Kit) or any audio speakers or headphones with mini jack connector input	Audio stereo output port
Any 9 VDC at 500 mA power port with appropriate safety and EMC Certification marks, which are acceptable in the country in which the product is to be installed	Power port for standalone mode

Where to Go from Here

The *Getting Started with the LabVIEW DSP Module* document has a tutorial to familiarize you with the LabVIEW DSP Module. You can find this document by selecting **Start»All Programs»National Instruments»LabVIEW»LabVIEW Manuals»DSP_Getting_Started.pdf**.

The *NI SPEEDY-33 User Manual* contains information about the features and functions of the digital signal processor, components, and interface of the NI SPEEDY-33 DSP device. You can find this document on the NI SPEEDY-33 User Documentation CD.

All NI user documentation is available on the National Instruments Web site at ni.com/manuals.

Where to Go for Support

The National Instruments Web site 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.

National Instruments corporate headquarters is located at 11500 North Mopac Expressway, Austin, Texas, 78759-3504. National Instruments also has offices located around the world to help address your support needs. For telephone support in the United States, create your service request at ni.com/support and follow the calling instructions or dial 512 795 8248. For telephone support outside the United States, contact your local branch office:

Australia 1800 300 800, Austria 43 662 457990-0,
Belgium 32 (0) 2 757 0020, Brazil 55 11 3262 3599,
Canada 800 433 3488, China 86 21 5050 9800,
Czech Republic 420 224 235 774, Denmark 45 45 76 26 00,
Finland 358 (0) 9 725 72511, France 01 57 66 24 24,
Germany 49 89 7413130, India 91 80 41190000, Israel 972 3 6393737,
Italy 39 02 41309277, Japan 0120-527196, Korea 82 02 3451 3400,
Lebanon 961 (0) 1 33 28 28, Malaysia 1800 887710,
Mexico 01 800 010 0793, Netherlands 31 (0) 348 433 466,
New Zealand 0800 553 322, Norway 47 (0) 66 90 76 60,
Poland 48 22 3390150, Portugal 351 210 311 210, Russia 7 495 783 6851,
Singapore 1800 226 5886, Slovenia 386 3 425 42 00,
South Africa 27 0 11 805 8197, Spain 34 91 640 0085,
Sweden 46 (0) 8 587 895 00, Switzerland 41 56 2005151,
Taiwan 886 02 2377 2222, Thailand 662 278 6777,
Turkey 90 212 279 3031, United Kingdom 44 (0) 1635 523545

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