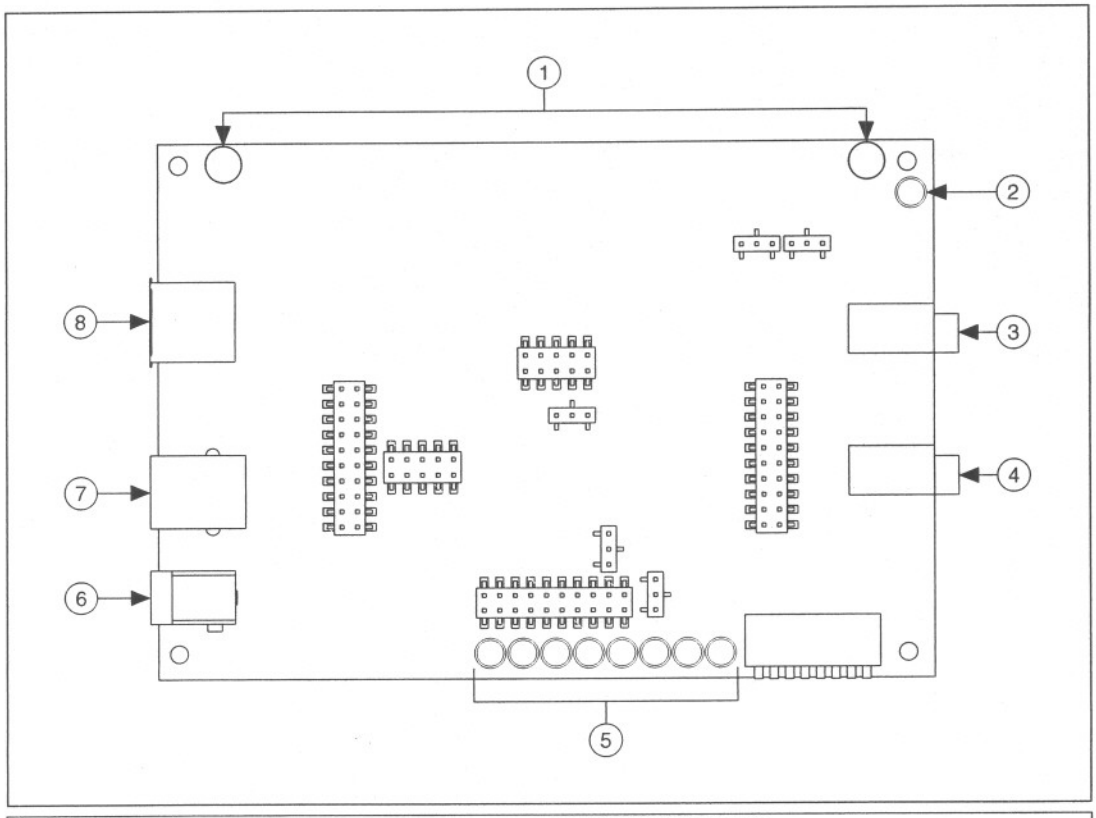
7/22/2003

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	Microphones	5	DIO Out Port LEDs
2	Power LED	6	Power Port
3	Audio Stereo Input Port	7	PC USB Port
4	Audio Stereo Output Port	8	Peripheral USB Port

Figure 1. NI SPEEDY-33 DSP Device

NATIONAL INSTRUMENTS

Step 1. Install the Software and Drivers

LabVIEW DSP Module

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

Visual Application Builder for Infinity Project (VAB)

Complete the following steps to install the VAB software and drivers.

1. Log on as an administrator or as a user with administrator privileges.
2. Insert the Visual Application Builder installation CD in the CD drive.
3. Click **Step 1: Install VAB Software** and follow the instructions that appear on the screen.
4. After installing the software and drivers, click **Finish**.
5. Close the Infinity Kit Installation Tutorial and exit the VAB installer.

Step 2. Unpack the Device, Cable, and Accessories

Your device is shipped in an antistatic package to prevent electrostatic damage (ESD) to the device and its components.

Caution Never touch the exposed pins of connectors.

To avoid such damage, take the following precautions:

- Ground yourself using a grounding strap or by touching a grounded object.
- Touch the antistatic package to a metal part of the computer chassis before removing the device from the package.

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

Store the device in the antistatic package when the device 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.

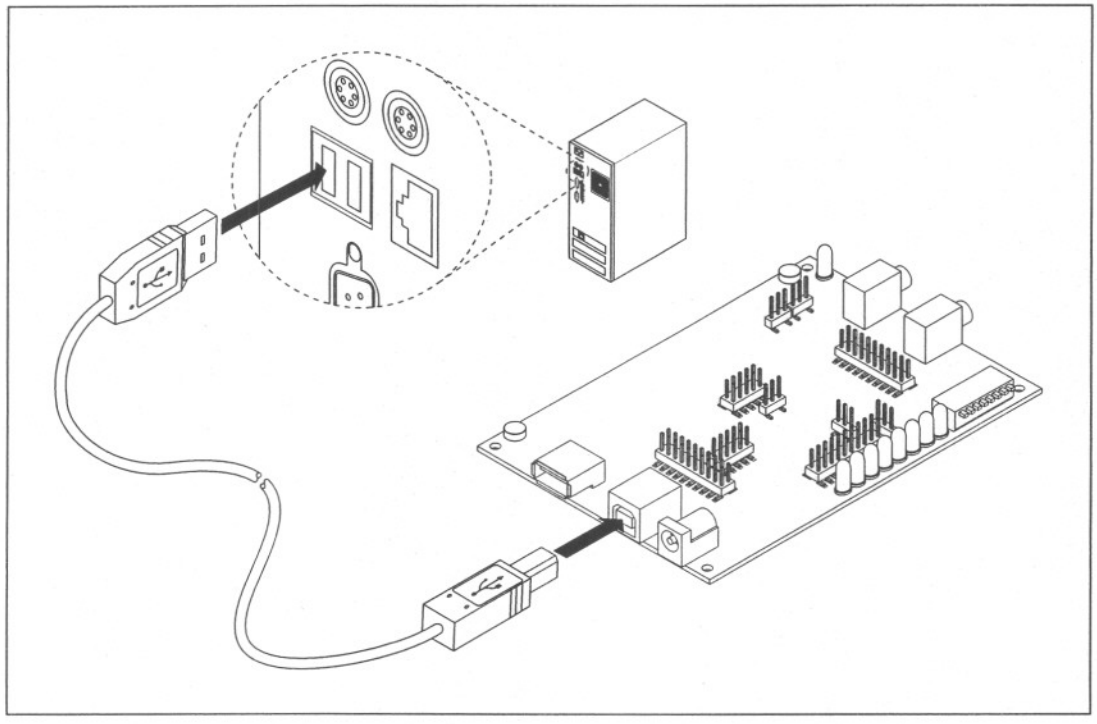


Figure 2. NI SPEEDY-33 Installation

1. Power up 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.

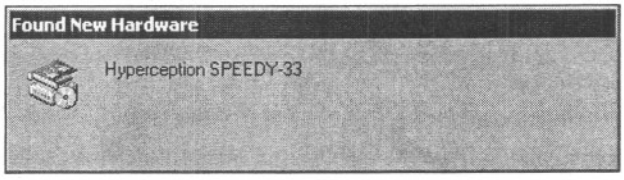
   The cable connectors are different on each end. Only one end fits into the PC USB port.
3. Connect the other end of the USB cable to a USB port on the PC.

   The USB cable also serves as the NI SPEEDY-33 power supply. The green power LED on the device lights.

Continue the hardware connection process by proceeding to the *Windows 2000* section or the *Windows XP* section.

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 Drivers*, Windows 2000 finds the driver automatically.



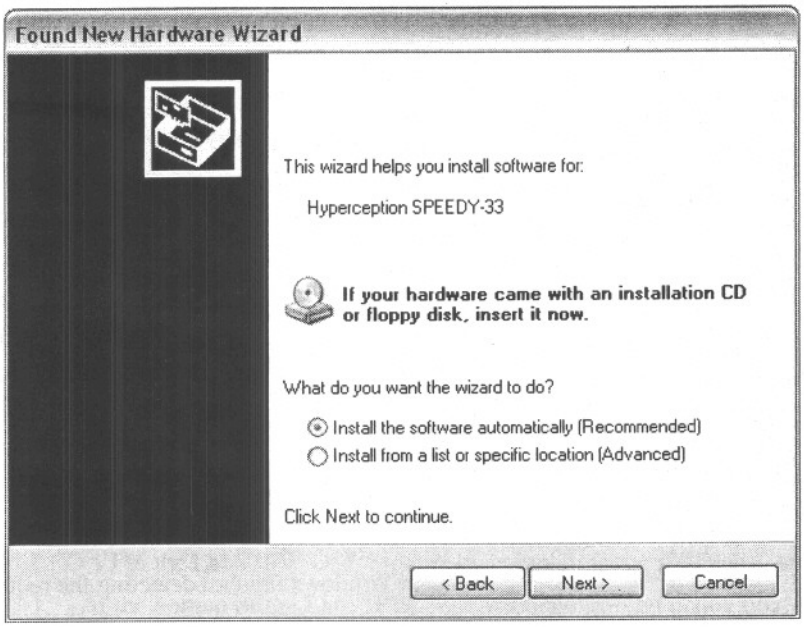
Your computer is now set up so that the software can communicate with the NI SPEEDY-33.

Windows XP

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.

1. Select **No, not this time**. Click **Next**.

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



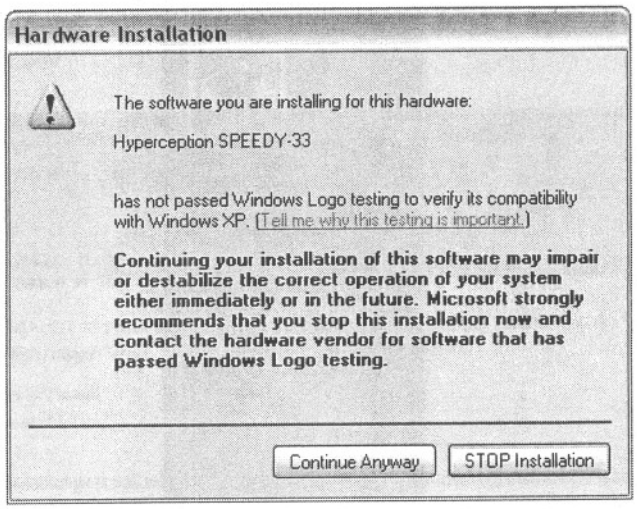
Infinity Kit (VAB) users must insert the Visual Application Builder installation CD.

LabVIEW DSP Module users do not need to insert an installation CD because the driver was installed in *Step 1. Install the Software and Drivers*.

3. Click **Next**.

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

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.

4. Click **Finish**.

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

Step 4. Launch the Software

LabVIEW DSP Module

Launch the LabVIEW DSP Module by selecting **Start»All Programs» National Instruments»LabVIEW 7.1 Embedded Edition»LabVIEW**. Click **Continue**.

VAB

Launch VAB by selecting **Start»All Programs»VAB for INFINITY» VAB** or clicking the VAB icon on the desktop. Click **OK**.

Step 5. Test the NI SPEEDY-33

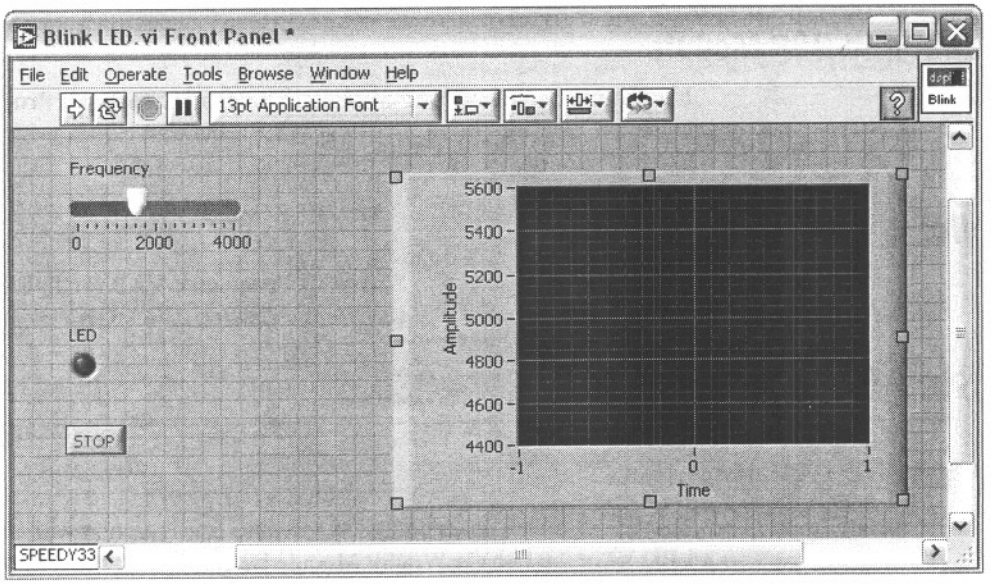
LabVIEW DSP Module

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

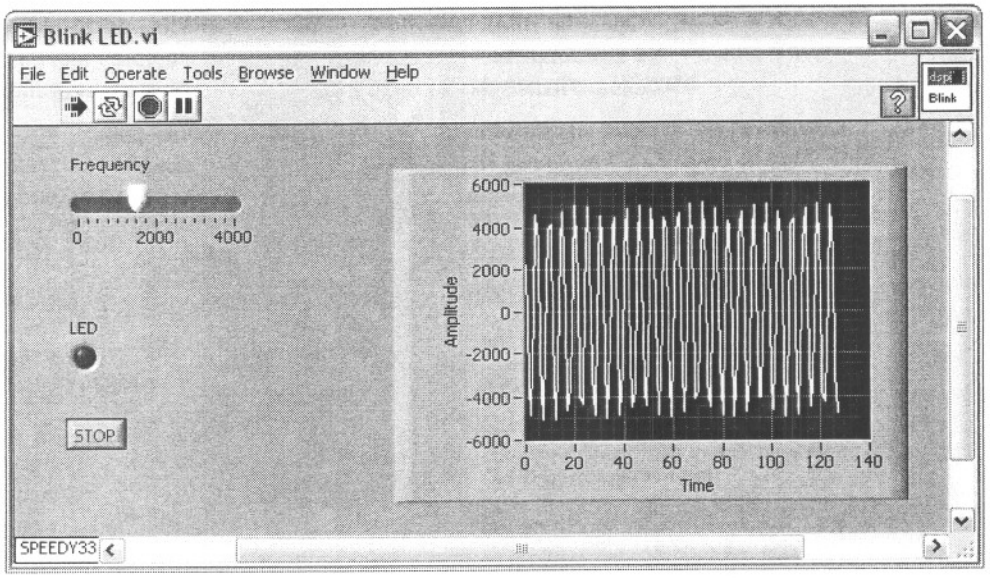
1. At the bottom of the LabVIEW 7.1 Embedded Edition dialog box, select **SPEEDY33** as the execution target.
2. Click the arrow button on the **Open** button. Select **Examples**.
3. Open the Blink LED VI by selecting **Toolkits and Modules»DSP» Fundamentals»Blink LED.vi** in the NI Example Finder. If you cannot locate the VI, verify that you are browsing according to task.

   You also can find the VI through the directory path, `C:\Program Files\National Instruments\LabVIEW 7.1 Embedded\examples\EmbeddedDSP\Blink LED.vi`.

The Blink LED VI front panel opens.



4. 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 DIO out port LED #1 blinks in time with the LED on the front panel. The NI SPEEDY-33 DIO out port LED #3 stays lit the entire time.

If the NI SPEEDY-33 is not set up properly, the LabVIEW DSP Module Status Monitor window displays the following message: **`ERROR: Make sure target is communicating properly, and no other software is attempting to use the DSP hardware`**. 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 Drivers*.

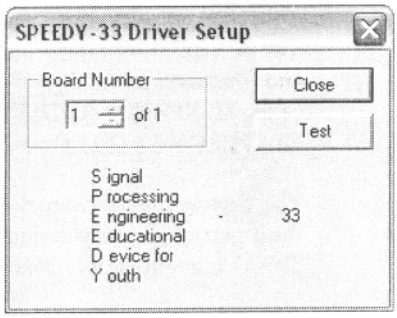
5. After you have established that the NI SPEEDY-33 is configured properly, click the **STOP** button on the front panel.
6. Close LabVIEW. Do not save changes to the VI.

VAB

Test the hardware connection and software configuration with the Memory Test in VAB by completing the following steps.

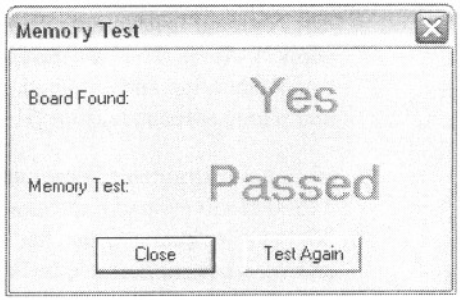
1. Select **DSP Target»Driver Setup**.

   The following window opens.



2. Click the **Test** button.

   A successful test will show that the device was found and the memory test passed.



If your device does not pass the VAB Memory Test, 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 Drivers.*

3. After you have established that the NI SPEEDY-33 is configured properly, click the **Close** button.
4. Close the Memory Test and exit VAB.

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 7.1 Embedded Edition»LabVIEW Manuals» DSP_Getting_Started.pdf**.

The *VAB Starter's Guide* has a tutorial to familiarize you with VAB. You can find this document by selecting **Start»All Programs» VAB for INFINITY»VAB User Manual**.

The *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.

The *Connecting Accessories to the NI SPEEDY-33* document describes third-party accessory connections for the NI SPEEDY-33 and Infinity Kit. This document is only available on `ni.com/manuals`.

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 0 662 45 79 90 0,
Belgium 32 0 2 757 00 20, Brazil 55 11 3262 3599,
Canada 800 433 3488, China 86 21 6555 7838,
Czech Republic 420 224 235 774, Denmark 45 45 76 26 00,
Finland 385 0 9 725 725 11, France 33 0 1 48 14 24 24,
Germany 49 0 89 741 31 30, India 91 80 51190000,
Israel 972 0 3 6393737, Italy 39 02 413091, Japan 81 3 5472 2970,
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 7 095 783 68 51,
Singapore 1800 226 5886, Slovenia 386 3 425 4200,
South Africa 27 0 11 805 8197, Spain 34 91 640 0085,
Sweden 46 0 8 587 895 00, Switzerland 41 56 200 51 51,
Taiwan 886 02 2377 2222, Thailand 662 278 6777,
United Kingdom 44 0 1635 523545