Sound and Vibration Toolset for LabVIEW™ Release Notes

Version 3.0

These release notes contain installation instructions for Sound and Vibration Toolset, system requirements for the Sound and Vibration Toolset software, and known issues with Sound and Vibration Toolset 3.0.

Contents

System Requirements

Your system needs the following minimum requirements to run Sound and Vibration Toolset 3.0:

- Windows 2000/NT/XP/Me/98

- 65 MB of free hard disk space

- 32 MB of RAM

- LabVIEW 6.1 or later Full Development System or Professional Development System

Note Refer to the *LabVIEW Release Notes* for the required system configuration for LabVIEW.

NATIONAL INSTRUMENTS™

Installation

> **Note** You must uninstall any beta versions of Sound and Vibration Toolset and close any open applications on your computer before installing Sound and Vibration Toolset 3.0.

Windows

> **Note** Some virus detection programs interfere with the installer. Disable any automatic virus detection programs before you install. After installation, check your hard disk for viruses and enable any virus detection programs you disabled.

(Windows 2000/NT/XP) Complete the following steps to install Sound and Vibration Toolset.

1. Log on as an administrator or as a user with administrator privileges.

2. Insert the Sound and Vibration Toolset 3.0 installation CD into the CD-ROM drive and follow the instructions that appear on the screen. If the startup screen does not appear, select **Start»Run**, navigate to the SETUP folder on the Sound and Vibration Toolset 3.0 installation CD, and double-click SETUP.exe.

(Windows Me/98) Insert the Sound and Vibration Toolset 3.0 installation CD and follow the instructions that appear on the screen. If the startup screen does not appear, select **Start»Run**, navigate to the SETUP folder on the Sound and Vibration Toolset 3.0 installation CD, and double-click SETUP.exe.

New Functionality

This section briefly summarizes the new functionality found in version 3.0 of Sound and Vibration Toolset for LabVIEW. Refer to the *Sound and Vibration Toolset Help* for information about individual VIs.

Limit Testing Palette

Use the SVT Limit Testing VI to perform limit testing on the output of any measurement analysis VI in the Sound and Vibration Toolset. The SVT Limit Testing VI enables you to perform limit/mask testing on waveform data, FFT spectra, octave spectra, swept-sine spectra, generic XY data, identified peaks, and scalar measurements. You can specify the mask by wiring upper and/or lower limits to the VI. You can wire scalar values to the upper and/or lower limit inputs to perform overload and clearance tests. You also can view the input signal, failures, upper limit, and lower limit on

an appropriate graph by creating an indicator from the **output values** terminal.

Figure 1 shows the sound and vibration VIs and the different types of data you can use with the SVT Limit Testing VI.
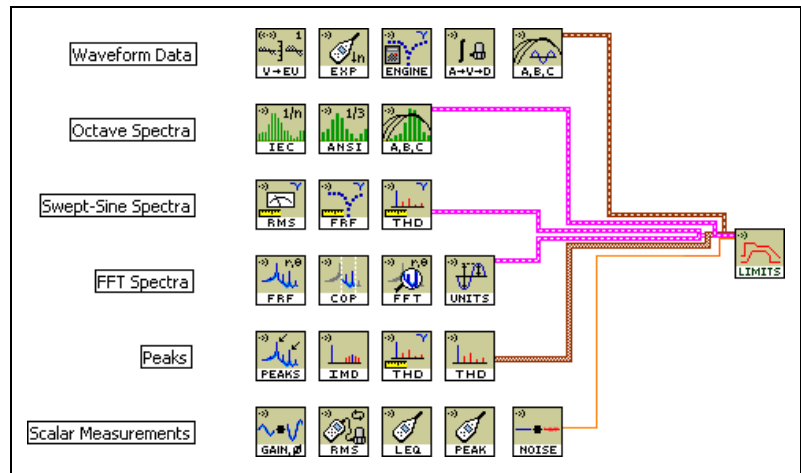

Figure 1. Sound and Vibration Limit Testing

Distortion Palette

The VIs on the **Distortion** palette provide the most common distortion measurements, including SINAD, THD+N, THD, IMD, and phase linearity. The SINAD, THD+N, and THD measurements can accept waveform data or a complex spectrum as the input. You can wire the Distortion VIs in series with each other or in series with the Single Tone Measurements VIs to perform multiple measurements without performing redundant operations, such as computing the complex spectrum.

Single Tone Measurements Palette

The VIs on the **Single Tone Measurements** palette provide common measurements such as gain, phase, crosstalk, idle-channel noise, dynamic range, and spurious-free dynamic range. The SVT Gain and Phase VI measures the interchannel gain and phase. The SVT Crosstalk VI measures the crosstalk between channels. You can wire the Single Tone Measurements VIs in series with each other or in series with the Distortion VIs to perform multiple measurements without performing redundant operations.

Swept Sine Palette

You can develop swept-sine applications for design validation and production testing using a DSA or multifunction DAQ device. The **Swept Sine** palette contains all the VIs required to build a swept-sine measurement application. With the Swept Sine VIs, you can initialize a hardware device, configure the output and input channels on a hardware device, start the acquisition, perform measurements, and close the acquisition. You can use the Swept Sine VIs to perform the following measurements:

- Level on stimulus input channel
- Level on response input channel
- Frequency response—magnitude and phase, as well as imaginary versus real (Nyquist plot)
- Total harmonic distortion (THD)
- Individual harmonic distortion

The Swept Sine VIs internally handle measurement details, such as synchronization between the output and the input, smooth transitions between frequencies at zero crossings, settling and integration times, and propagation delays.

You can use one of the swept-sine examples supplied with Sound and Vibration Toolset 3.0 to perform simple or advanced swept-sine measurements.

Known Issues with Sound and Vibration Toolset 3.0

Refer to the README.txt file on the Sound and Vibration Toolset installation CD for information about known issues with Sound and Vibration Toolset 3.0.