

## Software Install Basics

### Upgrading From an Earlier Version

If you are upgrading from an earlier version of SoundCheck 12.0 (or Beta version) you should copy the old installation folder and name it "SoundCheck 12.0 OLD" before installing the new version. This is a precautionary measure to keep you from overwriting sequences that you have customized.

Please see [Upgrading From an Earlier Version in the SoundCheck Manual](#).

The Setup Wizard guides you through the process of setting up a new system as well as converting from previous versions of SoundCheck. [See Setup Wizard on page 3](#).

### Computer Setup

Please refer to [Appendix A: Hardware Compatibility List in the SoundCheck Manual](#) for specific information on setting up hardware with SoundCheck on Windows operating systems.

### Software Installation

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**Important!** Make sure the SoundCheck USB hardware key is not connected to the computer. If it is connected while SoundCheck is installed, the hardware key could be destroyed. The software install reminds the user to remove the key before continuing with the SoundCheck installation.

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**Important!** Do not unplug the hardware key while SoundCheck is running. Doing so could destroy the hardware key.

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1. Place the SoundCheck installation disc in the DVD-ROM drive of your computer.
  - If your computer is setup to Auto Run, you will be prompted to install the software
  - Or, start the software installation by running **Setup.exe** in the root of the Listen DVD-Rom
2. Follow the instructions on the screen. Click **Next** to proceed.
3. During installation, you will be prompted for the location of the *status.dat* file, which is unique to the hardware key.

For example, the file **status SC99999.dat** is automatically renamed to **status.dat** and then copied to the *SoundCheck 12.x\System* folder. The *status.dat* file is normally sent by email from Listen, Inc.

If the unique *status.dat* is lost, a new one can be sent by email.

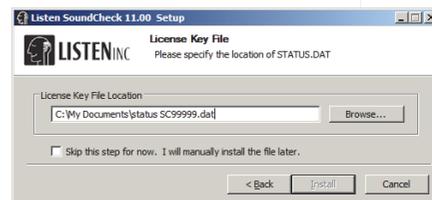


Figure 1: Status.dat File

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**Important!** The file path for the Status file is part of the **Edit - Folders** setup. [See Status.dat file path in the SoundCheck Manual](#).

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## Hardware Key

In order to make real measurements the hardware key must be installed. Without the hardware key, SoundCheck will run in demo mode. You can save, print and recall data. However, you cannot save sequences or sequence settings. All data generated in demo mode is randomly adjusted in level and is therefore not valid.

### Hardware Key Installation

1. Insert the included hardware key into the USB port of the computer *AFTER* SoundCheck is installed. The computer will recognize the new hardware.

The hardware key should have a solid green light. (A flashing hardware key indicates that the driver has not yet been installed.)



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**Note:** If the USB key is moved from one USB port to another, the driver will need to re-install for the new USB port.

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**Important!** Do not lose the hardware key for the SoundCheck system. It unlocks the functionality of your SoundCheck software. For insurance purposes, this key represents the full value of your system and should be noted in your company's list of assets. We recommend that it be securely attached to the computer to avoid loss or theft.

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## Windows 7 & ASIO Devices

When using an audio interface with ASIO drivers, you must set the sample rate for the system in the audio interface control panel. This over-rides the value set in the SoundCheck Hardware Editor. See [Appendix A: Hardware Compatibility List in the SoundCheck Manual](#).

## CardDeluxe Installation

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**Important!** Please install SoundCheck BEFORE installing the CardDeluxe drivers. The SoundCheck installation process sets the customized configuration of the CardDeluxe for use with SoundCheck. If the CardDeluxe driver is already installed, you will need to configure the driver manually (See [Appendix C: CardDeluxe Installation in the SoundCheck Manual](#)). For information on MME, WDM or ASIO driver compatibility in Windows 7 and Windows XP, refer to [Appendix A: Hardware Compatibility List in the SoundCheck Manual](#).

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For more information on CardDeluxe settings refer to [Appendix C: CardDeluxe Installation in the SoundCheck Manual](#).

See [Audio Device System Settings in the SoundCheck Manual](#) for information on Windows settings important for use with audio devices.

If configuring a different sound card for use with SoundCheck [see Appendix A: Hardware Compatibility List in the SoundCheck Manual](#).

# Upgrading to SoundCheck 12

As of SoundCheck 11, hardware and calibration are now system-level setups rather than individual steps in a sequence. This means that you set them up once in SoundCheck, and your hardware and calibration settings will be used for all sequences.

This tutorial explains the best way to upgrade from a previous version of SoundCheck.

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**Important!** BEFORE you open any of your old sequences in SoundCheck 12.0, please do the following.

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## Setup Wizard

The Setup Wizard runs the first time SoundCheck runs. The wizard can also be run by clicking **File** on the SoundCheck Main Screen and selecting **Setup Wizard** (Ctrl+Z).

- Assists in setting up new hardware, including auto-detection of sound card
  - Includes an option to enter Vp values from a calibration sheet provided by Listen
- Allows you to transfer over sequences as well as hardware and calibration settings from previous versions of SoundCheck

## Order of Prompts

1. “Welcome to the SoundCheck Setup Wizard. This utility will help you quickly configure your system. Would you like to continue?” Click **Yes** to continue.
2. “Validating Hardware Key and Status.dat file”.
  - If prompted, browse to the status.dat file for your system and click **OK**.
3. “Looking for previous version of SoundCheck on you system.”
4. “Previous version(s) of SoundCheck have been detected. Select the version from which you would like to import settings...”
  - Selection a SoundCheck installation from the list. Click **Next** and proceed to Step 5
  - Click **Skip** and go to **Step A** under **Audio Interface Detected on page 5**

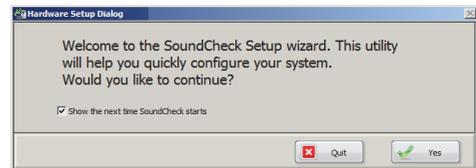


Figure 2: Setup Wizard Greeting

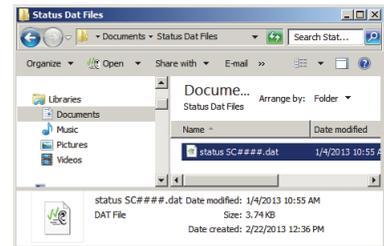


Figure 3: Select Status.dat File

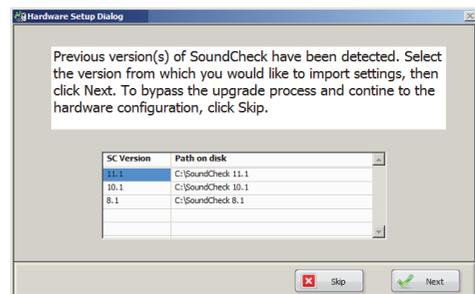
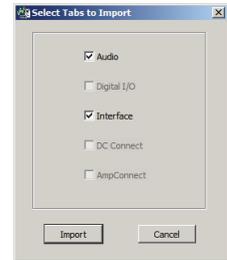


Figure 4: Previous Version Detected

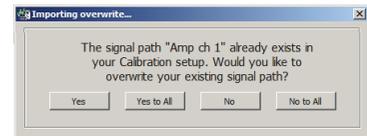
5. Would you like to import the system Hardware and Calibration configuration from SoundCheck xx.x?"
  - Select **Next** and proceed to Step 6
  - Select **No** and go to **Step A** under *Audio Interface Detected on page 5*

6. Select Tabs to Import

- Tabs not in use in the imported hardware configuration are greyed out
- For more information on Hardware Tabs please refer to *Hardware Configuration in the SoundCheck Manual*.



7. When prompted to overwrite signal paths, select “**Yes to All**” if you wish to overwrite the current channel settings with those from the previous version.



8. When prompted to import the calibrated device files select “**Yes**”. This will copy the required .dat files for the devices used in the previous System Calibration.

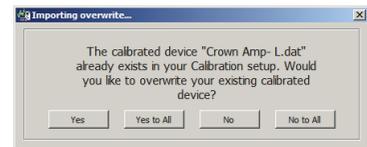



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**Note:** *Calibration .dat files from devices not in use in System Calibration will not be copied into the new version of SoundCheck. These files will need to be manually imported later.*

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9. When prompted to overwrite the existing calibrated device, select “**Yes to All**”. This replaces the default calibration values with the actual values from your previous System Calibration.



10. “Do you want to copy and convert sequences from SoundCheck xx.x to SoundCheck 12.0?”
  - Select the sequence(s) from the SoundCheck version you are importing. This allows you to select a single file or group of files from a folder.
  - When selecting sequences from a previous SoundCheck installation, the wizard will use the sequence steps from the folder selected in **Step 4**.
  - When selecting sequences from exported folders, the wizard will use the steps in the exported folder.

Go to **Step 11** - End of Setup Wizard

## Audio Interface Detected

### Step A

“The following audio interface has been detected. Click **Next** to configure SoundCheck to use this device.”

- If multiple devices are detected you will be able to select which device to use for setup
- Simply run the Setup Wizard again to add another device



Figure 5: Audio Interface Detected

In this example, the CardDeluxe was detected. For the CardDeluxe, selecting **Next** will prompt you to choose between Balanced or UNBalanced (single-ended) connection. This selects the proper default Output Vp values used in **Step B**.

### Step B

“Would you like to enter the hardware calibration numbers from a reference sheet provided by Listen or use the default values?”

- Select **Manual Entry** to enter the values in a table as shown in [Figure 6](#)
- Select **Default Values** to recall default “estimated” values for that device

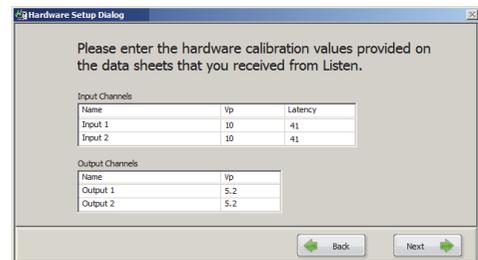


Figure 6: Manual Entry

### Step C

“Displayed are the default values that will be used in the system hardware configuration. You can run the wizard from the Help menu or open the system hardware editor to make changes.”

- This screen allows you to verify the default values used. No editing is allowed. The values can be edited in the Hardware Editor.

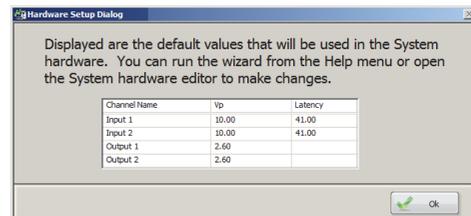


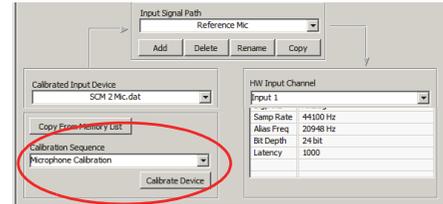
Figure 7: Default Values

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11. Once the wizard has finished, you can open the Hardware Editor to review or edit values. You can also open the Self Test Sequence in order to test the imported settings.

# Microphone Calibration Procedure

This procedure will allow you to check your measured microphone’s sensitivity against the microphone manufacturer’s specifications.

1. Open the *Calibration Editor* and select the Input tab. Select Reference Mic under Input Signal Path.
2. The **Calibration Sequence** should be set to **Microphone Calibration**.
3. Click **Calibrate Device**.



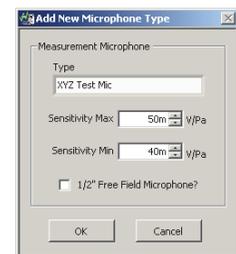
4. Select your calibrator model # from the drop down menu or select **Other Calibrator** and enter the acoustic calibrator’s reference level and frequency.
  - The microphone calibrator's reference level should be indicated in its specifications as a given dB SPL value (relative to 20µPa) at a reference frequency.
  - e.g., for the Brüel & Kjær Type 4231 Acoustic Calibrator:
    - Sound Pressure Level: 94.00 dB ± 0.20 dB
    - Frequency: 1000 Hz ± 0.1%
    - (When calibrating an artificial ear mic, you may need to select “B&K 4231 and UA1546”).
5. Enter the gain or attenuation in dB that corresponds to the settings on your microphone power supply or measuring amplifier in the **Pre-Gain** numeric field.
6. Select your measurement microphone model number from the drop down menu. If your microphone is not listed in the drop down menu, choose **Add New Mic**.
7. Place your acoustic calibrator on your reference microphone and click **Calibrate** to measure its sensitivity.
  - The measured sensitivity of your reference microphone is displayed under **Measured Sensitivity** in mV/Pa after clicking **Calibrate**. If the measured sensitivity is outside the manufacturer’s specifications, a flashing FAILED message will appear. Check first to see if your connections are correct or if the calibrator is turned on before assuming something is wrong with the microphone.
  - The FAILED message can also appear if the Calibrator’s frequency is not correct. If a Reference Frequency of 1000Hz is entered, but the Calibrator’s actual frequency is 1008Hz, the Calibration may Fail. To verify the Calibrator’s frequency, use the *Spectrum Analyzer* under the **Operate** menu.
  - The meter on the right side indicates the corresponding dB level relative to 1 Volt per Pascal. If it varies by a few tenths of a dB from your last calibration measurement, do not be alarmed, this is normal. If it varies by more than 1 dB or failed the sensitivity test, you may want to have your microphone checked by a qualified calibration lab.

## Add New Mic

This allows the user to enter a different microphone into the list. The sensitivity limits can be entered for each new mic so that calibrations are made according to the microphone’s specifications.

- The check box for **1/2” Free Field Microphone** should be checked only when using this type of microphone

The calibration level is set to 93.85 dB SPL @ 1kHz when measured in a pressure field, (such as a B&K 4231 Acoustical Calibrator).



**Figure 8: New Mic**

## Amplifier Calibration Procedure

A general wiring diagram and outline of the steps for amp calibration can be found in [Appendix E: Connection Procedures in the SoundCheck Manual](#).

1. In SoundCheck, open the System Calibration Editor from the **Setup** drop down menu on the SoundCheck Main Screen.

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**Important!** Do not open the Amplifier Calibration sequence. Run the calibration from the System Calibration Editor.

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2. Select the Output Tab and select the Output Signal Path to calibrate. In the example in [Figure 9](#), “**Amp ch 1**” is selected.

3. Select the proper Calibrated Device: “**Crown Amp-L.dat**”

If a new device is used with the system, click **Add** and enter a name. Calibration values will be stored for this new device when the calibration process is complete.

4. Select the Output Hardware Channel that provides signal to the Amplifier Input: “**Output 1**”

5. Calibration Sequence should be set to “**Amplifier Calibration**”

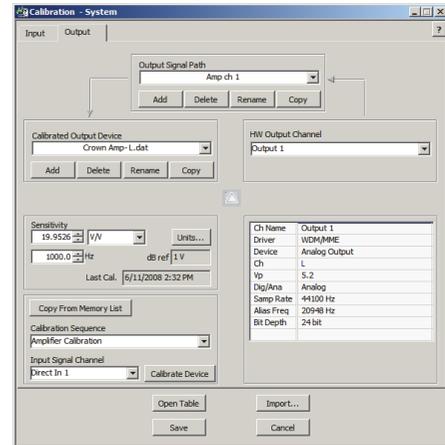
6. The Input Signal Path should be set to a Direct Input that is set for Unity Gain. The sensitivity of this channel must be unity gain in order to get an accurate calibration.

7. **Turn the power amplifier off.**

8. Connect SoundCheck **Output 1** to the input of the Amplifier.

9. Connect the corresponding output of the amplifier to SoundCheck **Direct In 1**. The amplifier output should not have an added Load.

10. Turn the power amplifier on. If it has a gain control, set it to maximum. This is the most stable position for a gain control.



**Figure 9: Amp Calibration**

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**Note:** Some applications may require a lower gain amp. In that case, setting the volume control to a lower level is acceptable, but less stable. If anyone bumps the control, the calibration will be off.

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11. Click **Calibrate** to measure the amplifier’s sensitivity (gain) and frequency response.

The measured sensitivity of your amplifier is automatically entered in the output sensitivity field. If the measured sensitivity fails, check your wiring and connections and try calibrating again.

If the measured response margin fails, check to see that the amplifier is not connected to anything other than the sound card and that it is properly grounded. If there is a bump around 120 Hz (or 100 Hz if line frequency is 50 Hz), you might be picking up hum due to poor grounding or bad cabling.

For more troubleshooting information, go to [www.listeninc.com](http://www.listeninc.com) and click **Support**.

Users with High Gain amplifiers should refer to [Amplifier Calibration in the SoundCheck Manual](#).

## Amp Calibration - CardDeluxe Connections

1. Make sure amplifier is OFF.
2. to 3. Connect the Left output of the sound card to the input of the amplifier. (amp channel 1)
4. to 5. Connect the output of the amplifier (amp channel 1) to the **Right** input of the sound card.

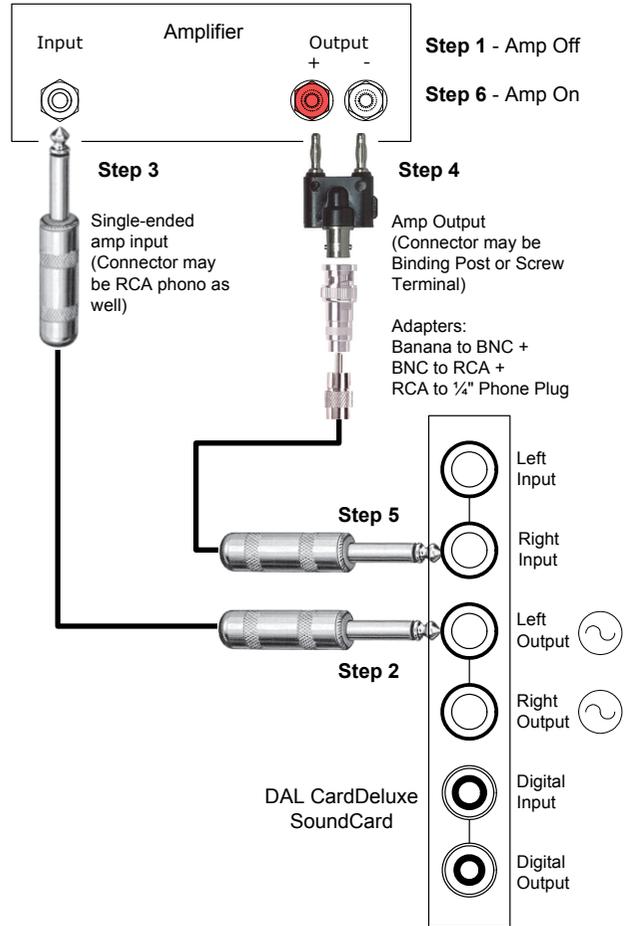
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**Note:** The ground of the banana adapter must be connected to the amplifier minus (-) connection or a "loop" condition will occur that could result in damage to the amp and sound card.

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6. Turn the amplifier **ON**.

Follow the procedure outlined in [Amplifier Calibration Procedure on page 7](#).



**Figure 10: Amplifier Calibration Connections**

## Contact Information

Contact the Listen office at 617-556-4104, Monday through Friday, between 9 AM and 5 PM EST.

or email:

Sales - [sales@listeninc.com](mailto:sales@listeninc.com)

Technical Support - [support@listeninc.com](mailto:support@listeninc.com)

580 Harrison Ave, Suite 3W • Boston, MA 02118 • 617-556-4104 • Fax 617-556-4145 • [www.listeninc.com](http://www.listeninc.com)

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