

Listen AudioConnect 4x4™ Installation

Before installing the drivers, make sure AudioConnect 4x4 is connected to your computer via USB.

Always use the approved driver from the SoundCheck DVD or from our website:

<https://support.listeninc.com/hc/en-us/sections/200370694-Drivers>

Driver signing error in Windows 10

AudioConnect 4x4 drivers are signed with an SHA-2 certificate and counter-signed by Microsoft which should allow easy installation on Windows 10. On some installations of Windows 10, Secure Boot must be disabled to allow third-party drivers to be installed. This is done in the UEFI BIOS on your computer.

- To disable Secure Boot: From within Windows 10, hold the Shift key while selecting Restart. Go to Troubleshoot > Advanced Options: UEFI Firmware Settings.
- Find the Secure Boot setting, and if possible, set it to Disabled. This option is usually in either the Security tab, the Boot tab, or the Authentication tab.
- Save changes and exit.
- When the computer restarts you should be able to install the driver.

Windows 7

Early versions of Windows 7 do not support SHA-2 digital certificates, so Windows 7 requires a specific patch to support SHA-2 digital certificates. Please see [Microsoft Security Advisory 3033929](https://technet.microsoft.com/en-us/library/security/3033929) for more information. <https://technet.microsoft.com/en-us/library/security/3033929>

Windows Driver Installation

Refer to our **Hardware Compatibility List** for installation and operation issues related to operating systems and computer components. Available at www.listeninc.com.

1. AudioConnect 4x4 must be connected to the system via USB, plugged in and powered on.
2. Insert the Installation CD into your computer's disk drive. Locate the AudioConnect Driver folder on the CD. Double-click the **AudioConnect 4x4 Driver Setup v###.exe** file
3. Follow the prompts, accepting the default location for the driver files.
4. You may receive a warning that the driver has not been digitally signed by Microsoft. It is safe to disregard this warning and select **"Continue Anyway."**
5. Click Finish to close the driver installation. Open SoundCheck and proceed to [Hardware Setup in SoundCheck on page 2](#).



Mac Installation

AudioConnect 4x4 uses the native Core Audio drivers. The setup file, available on the SoundCheck Install DVD and on the Listen website, contains general setup instructions along with the default HAR file for Core Audio use. Proceed to [SoundCheck Hardware Editor - macOS® on page 5](#).

Hardware Setup in SoundCheck

SoundCheck Hardware Editor

- **Automatic Startup Configuration** - Allows SoundCheck to automatically detect the presence of AudioConnect 4x4 and load the default interface settings for the four analog input and output channels. Please refer **Automatic Startup Configuration** in the SoundCheck Manual. (Auto Mode is not supported in macOS® prior to SoundCheck 16)
 - When changing the sample rate the Latency value must be updated. See [Latency Changes on page 4](#).
 - Auto Mode does not update Digital Hardware Channels for AudioConnect 4x4. Those should be entered manually.
- **Channel Name** - Default naming is Input 1 to 4, Output 1 to 4 as shown in [Figure 1-1](#)
- **Driver** - ASIO
- **Device Name** - ASIO AudioConnect 4x4
- **Select Ch** - Analog 1-4 or Digital 1-4 (Digital Channels routed to the back panel AES I/O channels)
- **Sampling Rate**: Only one rate can be selected for all Input and Output channels of an interface
- **Latency**:

The default buffer size of the AudioConnect 4x4 driver at 44.1 kHz and corresponding Hardware Editor Latency is shown in [Figure 1-5](#). Use this chart as a guide when changing to other sample rates. Changing USB Streaming and ASIO buffer values will require changes to latency. You can verify that the latency is correct by following the steps in [Latency Changes on page 4](#).

A default AudioConnect 4x4 hardware file is included with the SoundCheck installation. This file can be imported into your Hardware Editor. Select Import in the Hardware Editor and navigate to: **C:\SoundCheck x.x\Steps\Hardware\Windows 7 (or 10)** and select **AudioConnect 4x4.Har**.

- AudioConnect 4x4 does not appear in the Listen Hardware Tab since there are no functions to control

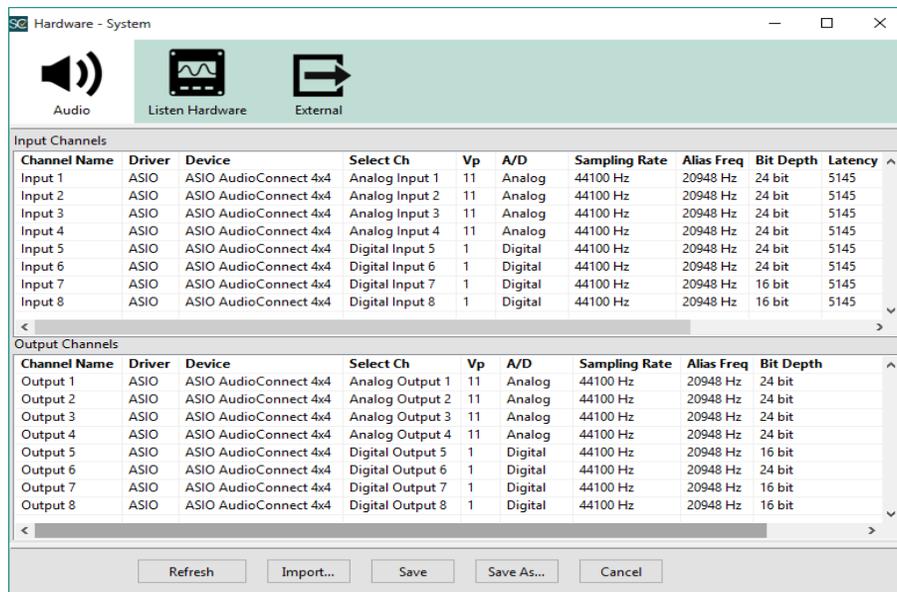


Figure 1-1: Windows Hardware Editor

Important! Do not use different input and output driver types for an audio interface, e.g.: ASIO for Inputs and WASAPI for outputs. Doing so will result in an Acquisition Step error.

The Hardware Editor in [Figure 1-1](#) shows the general settings for the Input and Output Vp values. ASIO buffer and USB Streaming mode are set in the ASIO Control Panel which is launched by Right Clicking on an AudioConnect 4x4 channel name and selecting **ASIO Control Panel**.

ASIO Control Panel

(does not apply to Core Audio)

Buffer Settings

The following settings must be used:

- **USB Streaming Mode** - Safe
- **ASIO Buffer Size** - 2048 samples

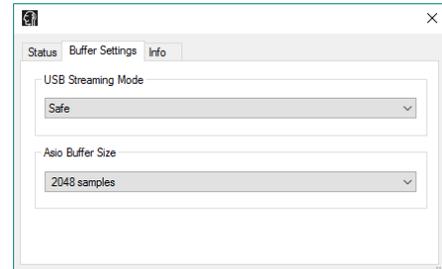


Figure 1-2: ASIO Control Panel

The default ASIO buffer allows 4 simultaneous channels of acquisition in SoundCheck at sample rates up to 192 kHz. The number of channels can be dependent on computer performance. Low performance computers may not support high sample rate, multichannel acquisition. Please refer to the Hardware Compatibility List in the SoundCheck manual or on our website for more information on computer selection issues.

Status

- Confirms the connected device and serial number
- Shows the Current Sample Rate

The sample rate of AudioConnect 4x4 will automatically update to the rate set in the SoundCheck Hardware Editor (see [Figure 1-1](#)).

Info

Device Info

- Manufacturer
- Product Name
- VID/PID
- *Revision: Firmware rev number
- *Serial No

Driver Info

- *Version Number
- *Release Build Number

* indicates required when requesting service

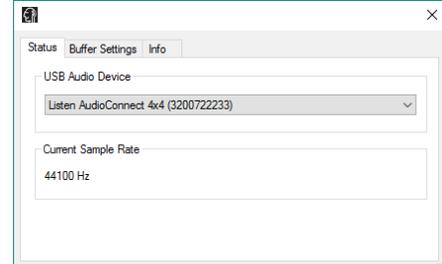


Figure 1-3: ASIO Status

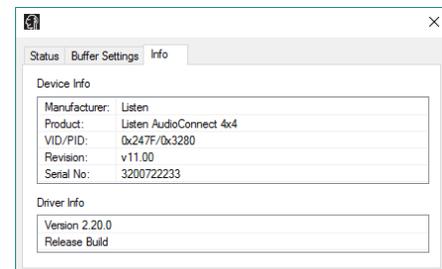


Figure 1-4: ASIO Info

Latency Changes

When you change the **ASIO Buffer Size** or **USB Streaming Mode** of an audio interface or the **Sampling Rate** of the SoundCheck **Hardware Editor** you will need to change the **Latency Value** in the **Hardware Editor**.

1. Change the ASIO Buffer/USB Streaming mode for the Audio Interface and/or change the Sample Rate in the SoundCheck Hardware Editor.
2. Set the Hardware Latency to 0 (zero) and run the Self Test sequence from the Calibration folder in SoundCheck. This will give you the Latency for the new Buffer size or Sample Rate.
3. Enter this value in the Latency fields of the Hardware Editor. All channels, analog or digital, must have the same latency value for that audio interface if they are used simultaneously in a sequence.
4. You can click Save As in the Hardware Editor to save different hardware configurations so that they can easily be recalled.

Hardware Editor Sample Rate Reference Chart for Windows

Note that the Hardware Editor must be updated when changing any of the buffer settings or sample rate as noted above. You can use the chart in [Figure 1-5](#) to create new Hardware Editor settings for the sample rates you typically use.

Note: ASIO buffer settings do not apply when using WASAPI.

Latency in Samples for Typical Sample Rate and Buffer Values						
USB Connection	44.1 kHz	48 kHz	88.2 kHz	96 kHz	176.4 kHz	192 kHz
ASIO/USB Buffer	2048 / Safe					
ASIO Samples	5141	5212	6006	6150	7740	8056
WASAPI Samples	1044	1111	1897	2053	3641	3962
Enter the Samples value in the Hardware Editor Latency field for the selected Sample Rate.						
Figure 1-5: Latency in Samples						

You can use the procedure in [Latency Changes on page 4](#) to verify the Latency settings after making changes to the Hardware Editor.

(Some computers may require that you lower the ASIO buffer size due to performance issues.)

SoundCheck Hardware Editor - macOS®

The default AudioConnect 4x4 Core Audio.Har file is included with the SoundCheck installation. This file can be imported into your Hardware Editor.

Figure 1-7 shows the default hardware values for use with a Mac.

- **Mac Driver** - Core Audio
- **Device Name** - Listen AudioConnect 4x4
- **Select Ch** - Analog 1-4 or Digital 1-4

Digital Channels are routed to the AES I/O channels 1-4 (See back panel)

Latency

Latency in Samples for Typical Sample Rate and Buffer Values				
USB Connection	44.1 kHz	48 kHz	96 kHz	192 kHz
Samples	1208	1282	2395	4646

Enter the **Samples** value in the Hardware Editor Latency field for the selected Sample Rate.

Figure 1-6: Latency in Samples

You can use the procedure in [Latency Changes on page 4](#) to verify the Latency settings after making changes to the Hardware Editor.

Note that the default Calibration Configuration (.CAL) file in SoundCheck has only 2 signal paths of direct input and output. New signal paths will need to be created in Calibration if you plan to use the additional hardware channels.

- AudioConnect 4x4 does not appear in the Listen Hardware Tab since there are no functions to control

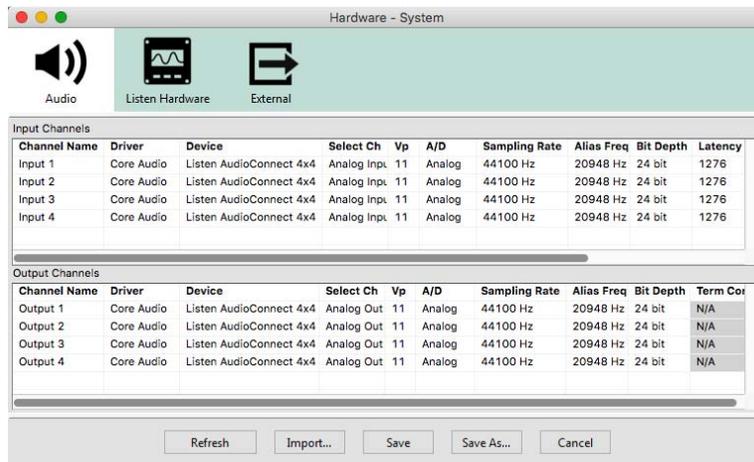


Figure 1-7: Mac Hardware Editor

Sample Rate

The sample rate of the **AudioConnect 4x4** must be changed in the Audio Midi Application:

Applications > Utilities > Audio MIDI Setup app > Audio Device Input and Output.

Set the sample rate in the SoundCheck Hardware Editor (see [Figure 1-7](#)) after setting the sample rate in Audio Midi Settings.

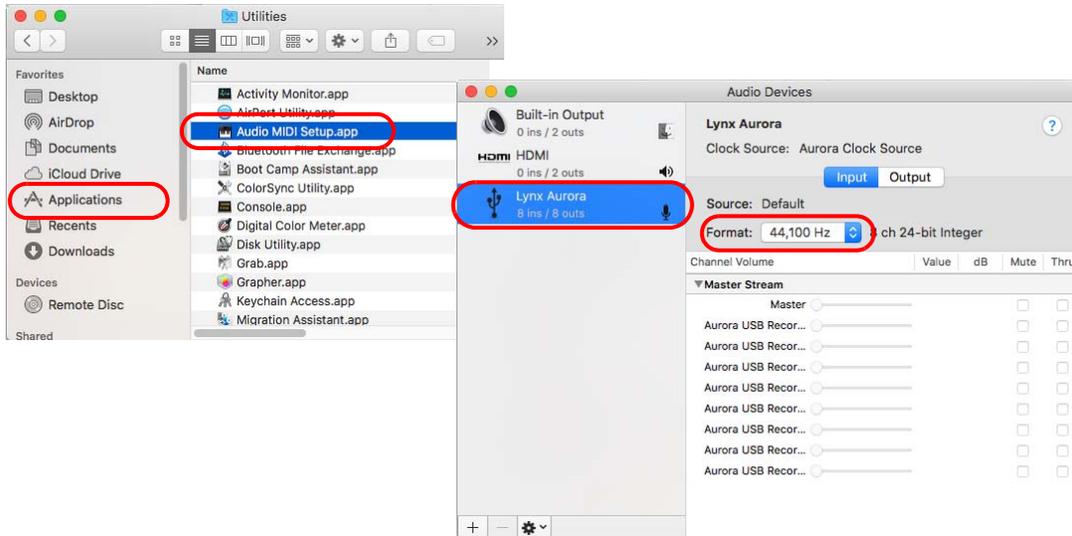


Figure 1-8: Audio MIDI Settings