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Five Sound Installations

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Instructions

The *Five Sound Installations* DVD contains five computer-generated musical pieces plus a main control application from which to choose a piece to listen to, set up audio, etc. There are two procedures for computer installation: one for PC and one for Mac. **Note: this is a double-sided DVD!** Please make sure the side with your OS is facing up!

Minimum System Requirements

PC: Windows XP, Vista, 1 gigahertz processor speed, and at least 5 gigabytes free disc space.

Mac: OS 10.3 or higher, 1 gigahertz processor speed, and at least 5 gigabytes free disc space. These pieces will run on Intel-based Macs.

PC installation

1. Insert the *Five Sound Installations* DVD into your DVD drive, Windows side up.
2. The installer Setup window will appear. Click the "Install" button to begin installation. If you want to change the destination folder (the default is your Program Files folder), use the Browse button.
3. Installation will take about half an hour. After installation, close the Setup window and double click the *Five Sound Installations* shortcut located on the desktop.
4. When installing on Window Vista, a window will appear from which to run the program "Install5SoundInstallations.exe", After clicking Run, you will then be informed that "An unidentified program wants access to your computer". Click Allow.

Note: If the installer window does not appear, or you want to do the installation later, click on the DVD drive icon in Windows, and open the "Install5SoundInstallations" program.

Mac installation

1. Insert the *Five Sound Installations* DVD into your DVD drive, Mac OS side up.
2. If the associated window does not automatically appear, double-click on the DVD icon on the desktop.
3. Drag the *Five Sound Installations* icon over the Applications folder icon. Copying the program will take about 30 minutes. You can also copy the program to another location, such as an external hard drive. Do this by dragging the icon to the preferred location.
4. Open the Applications folder or other location and double-click the new *Five Sound Installations* icon to start the program.

Setting up and playing

1. Upon opening the program, a window called "Setup Audio" will appear.
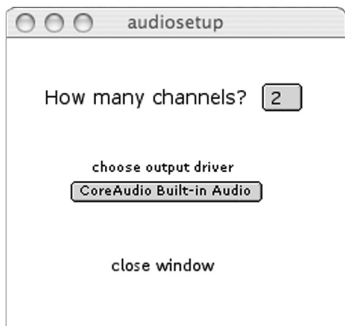
1a. Set the number of channels in your sound system. Using the pop-up menu, you can choose a number between two and eight.

1b. Choose an output driver. Use the pop-up window. *Five Sound Installations* should automatically locate the available drivers on your computer. The most common are:
• for Mac, "Core Audio Built-in Audio"
• for PC, ad_mme (Note: ad_mme only supports stereo)

1c. Close the "Setup Audio" window.
1d. You can always open the "Setup Audio" window by clicking on the "Preferences" in the menu bar.

Note: There may be a difference between the number of channels and the number of speakers in your system. Channels are discrete destinations, basically the number of audio outputs on your computer system. Normally there will be two. If you have purchased and installed an audio interface there may be more. Several multi-channel audio interfaces are available. See my website for more information and links.

2. Under Preferences, open the window "Advanced". This contains a number of important settings that will enable you to troubleshoot problems and maximize performance.

2a. Audio: This pop-up menu indicates whether or not the digital-to-analog convertor has turned on. If you have loaded a piece and this menu is set to "Off," simply click on it and choose "On."

2b. Driver: This pop-up menu duplicates the function "Choose Audio Driver" in the "Setup Audio" window (see #1 above).

2c. CPU Utilization: This gives you an indication of how much of your computer's CPU is being used in the generation of the piece.

2d. Sampling Rate: This should be set to 44100.

2e. Output Channels: These channels tell you how many discrete channels are available for the chosen output driver.

2f. I/O Vector Size: This menu relates to the functioning of your output driver and will have an important effect on performance. It should be set to at least 512.
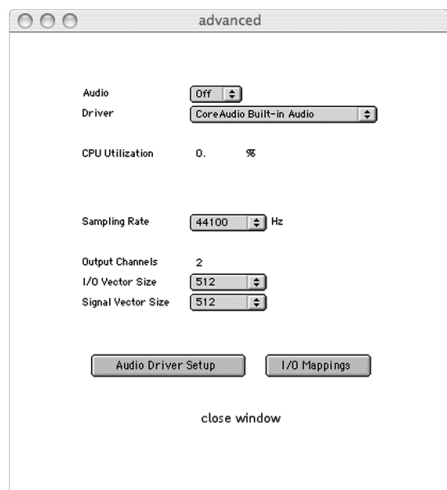

2g. Signal Vector Size: The Signal Vector Size will effect performance. As a general rule, set this to the same value as I/O Vector Size but feel free to experiment with different settings to see which setting yields the best performance.

2h. Click on Audio Driver Setup to open the output driver's setup window. This may be useful in setting overall volumes, etc.

2i. Click on I/O Mappings to open a window that allows you to choose the output destinations for each discrete channel. This window is potentially useful in routing to multi-channel systems, for example, 5.1 systems, where a separate channel is used for the subwoofer. *Five Sound Installations* will not automatically configure the output to accommodate a separate subwoofer channel (see note on 5.1 setup below).

3. Once you have set up your audio driver, simply click on a title to start a piece.
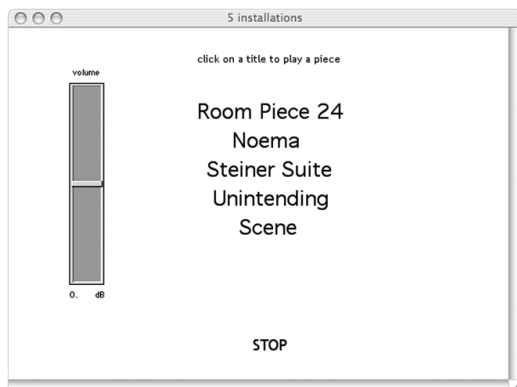
4. Adjust the volume using the graphical slider on the left side of the *Five Sound Installations* window. The intended volume settings for the individual pieces are correct, relative to each other. The volume control works like a mixer fader, ranging from –infinity (silence) to +6dB.

5. To stop a piece, click "STOP" at the bottom of the window, click on a different piece's title, or Exit (Quit) the program.

6. In the lower left hand corner of the main window is a pop-up menu that you can use to turn the audio processing on and off. This also serves as a monitor to let you know whether the DAC (digital-to-analog converter) has turned on when a piece loads. If the clock for the piece is active and no sound is heard, check here first. If it's set to OFF, click on the pop-up window and set to ON.

7. Set up your computer to not go to sleep.

Notes on Spatialization

Five Sound Installations is unique in that, although the pieces are designed for multi-channel play, they are easily configured for almost any sound system, even stereo, without the need for acoustic room treatments or the creation of a "sweet spot." The basic method is to distribute the sounds in an imaginary 360-degree arc surrounding the listener, panning sounds between any two contiguous speakers in this imaginary circle. This works in stereo by folding the arc back onto itself.
In setting up your sound system, you should endeavor to distribute the sound in as wide an area as possible, given the number of available channels. Speakers do not have to be symmetrically placed; they don't even all have to face in towards where the listener might sit. Speakers can point in different directions and be at different heights and they can be angled to point up or down. Even if you are using a 5.1 or 7.1 system, you can experiment with radical speaker positioning.

Playback in Stereo Using the Computer's Built-In Audio

This simple method involves directing the sound to the appropriate driver. The sound is then sent via the headphone jack to the sound system using the appropriate cable (usually stereo mini to 2 RCA). Place the speakers as far apart as possible for maximum saturation.

Surround Sound Systems

Computers often have 5.1 sound built in; however, you must be able to access the driver within *Five Sound Installations*. Often the six channels are unavailable as discrete channels, since movies released with 5.1 sound use Dolby or DTS encoding. However, with ASIO or Directx drivers, it is possible to access the individual channels and set up your system accordingly.

The outputs of 5.1 systems are normally organized in the following way:

1: Left
2: Right
3: Center
4: Low Frequency Effects (LFE)
5: Left Surround
6: Right Surround

The LFE channel sends a separate signal to the subwoofer. Since the subwoofer is limited in terms of frequency range, it is best to avoid using it as an independent channel for *Five Sound Installations*. Instead, you should configure the output (using the I/O Mappings window described in #2i above) to send the signals to channels 1, 2, 3, 5, and 6, and set the number of channels to 5.

For a 7.1 system, the same logic applies, only there are two extra channels available.

Speaker Placement

Setting up the speakers is simple and requires no "sweet spot." The speakers may be placed in a circle surrounding the listener or placed in a line in front of the listener. They may be placed asymmetrically around the room. Part of the enjoyment of *Five Sound Installations* is experimenting with multi-speaker setups.

Reverb

Five Sound Installations, being designed for multi-channel speaker configurations, is not "mastered" in the usual way. Most stereo CDs are mastered to include reverb to add fullness and warmth to the sound, since most home listening environments lack the acoustical properties of performing venues. However, the computing power required for adding reverb to multi-channel systems, and the flexibility required to adapt the reverb to radically different playback environments, prohibits its use for *Five Sound Installations*. The result may be, depending on the specific listening environment, an unusually "dry" sound. This is mitigated to a large degree when the pieces are played over four or more loudspeakers.

Headphones are NOT recommended!