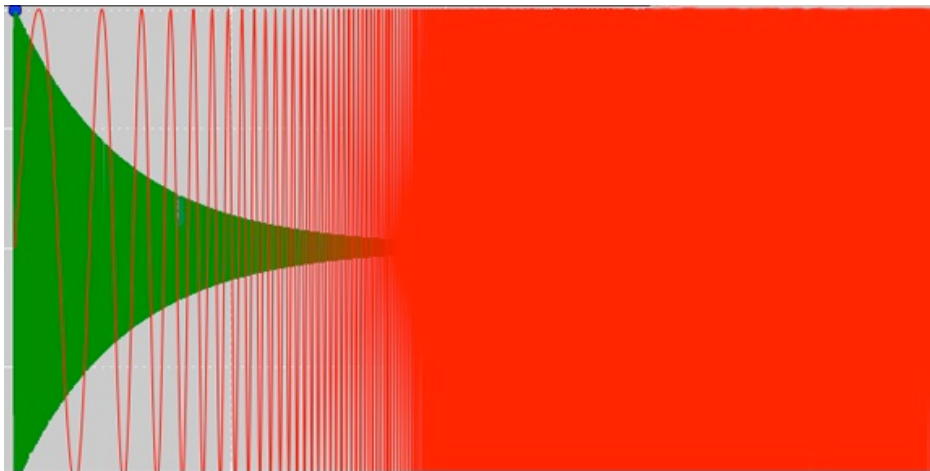


# Axe-O-Matic DSP User Guide



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<sup>1</sup> **Axe-O-Matic DSP** and the Convolved Exponentials Logo are the property of Lynn Oliver DBA Ryegrass Software

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## Installation

**Axe-O-Matic DSP** works on Windows (WinXP and newer) and OS X (10.6 and newer). On Windows, some non-US character sets may prevent the program from running, so if it doesn't work for you that may be the cause. If possible this will be addressed in a future release.

### Installation on Windows

**Axe-O-Matic DSP** will run on both 64-bit and 32-bit versions of Windows. Once you have downloaded the installation file, double-click on it to start the install process.

For Windows, **Axe-O-Matic DSP** is supplied as a Windows installer package named `aomDSP.msi`. When you double-click on this file the installer will run and preset this dialog window.

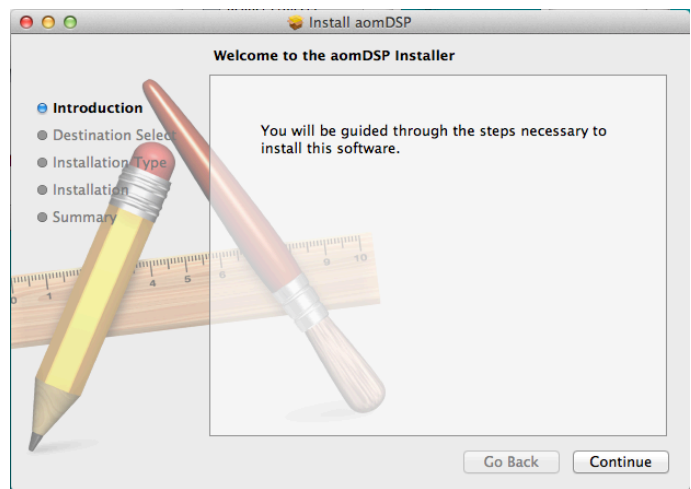
Once you have completed the installation you can delete the installation file.



see a Finder window that looks something like this. Double-click on the file `aomDSP.pkg` to run the installation program. When the installer completes, you may eject the disk image.

### Installation on OS X

For OS X, **Axe-O-Matic DSP** is supplied as a disk image named `aomDSP_Setup.dmg`. When you double-click on this file a disk image named `aomDSP` will be mounted and the following you will



## A Quick Tour

**Axe-O-Matic DSP** uses system settings to adjust the colors and fonts, so it may appear slightly different on your system. The illustrations in the User Guide are taken from three of the supported platforms using the default themes.

### Tabbed Notebook

The various functions are divided up among four different tabs. Click on any tab to change to that set of functions:

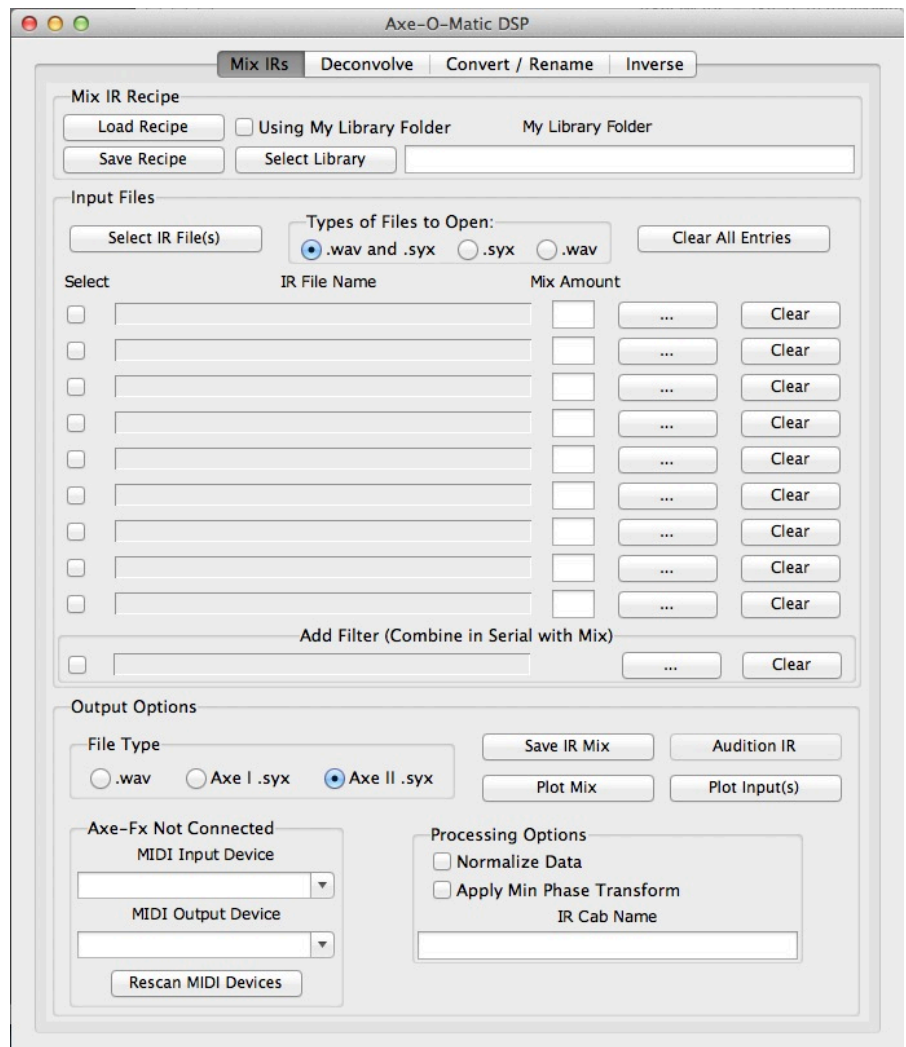
- **Mix IRs** is used to blend IRs together and can audition mixes directly to an Axe-Fx<sup>2</sup>. It also will create plots of the mix as well as any selected input file or files.
- **Deconvolve** is used to remove the sweep from sample data to create an impulse response. It also will generate different types of sweep (test) files.
- **Convert/Rename** is used to convert between wav and syx formats and to edit the user cab name stored in Axe-Fx II formatted user cabs.
- **Inverse** implements an algorithm to approximate the inverse of an impulse response.

### A Quick Word about Some Words

Some of the terms used here may be unfamiliar or confusing, so here are some very brief definitions:

- *User Cab* - data used by an Axe-Fx CAB block to model a physical speaker cab.
- *User Cab Slot* - one of the locations available to store a *User Cab* in an Axe-Fx. The Ultra and Standard models have 10 slots, and the Axe-Fx II has 50 slots.
- *Impulse Response* (IR) - a linear measurement of how a physical device transforms signals from input to output.
- *Sweep File* - usually a sine wave pattern that is swept within the audible range, such as 20 Hz to 20 kHz.
- *Sample Data* - in this context, it is the data captured from a speaker when playing a sweep file through the speaker.
- *Deconvolution* - the process of removing the sweep file from sample data. After removing the sweep file, what is left is the impulse response.
- *File Format* - the way data is organized in a file. Wave (.wav) files use one type of formatting, while User Cabs (.syx) use one of two formats (depending on Axe-Fx model). The Axe-Fx formats are based on the MIDI System Exclusive (SysEx) Message format.
- *MIDI* - the interface and message format used to communicate with the Axe-Fx. The Axe-Fx II offers the choice of a standard MIDI Interface or MIDI over USB, which uses a USB connection to send and receive MIDI commands.

The bottom line: a *User Cab* is an *Impulse Response* that is formatted for the Axe-Fx.



<sup>2</sup> The names Axe-Fx Standard, Axe-Fx Ultra, and Axe-Fx II are the property of FRACTAL Audio Systems.

## How To...

### Convert a wav file so it can be downloaded to an Axe-Fx.

IRs (IR is short for Impulse Response) are measurements of how a device, often a speaker cabinet, responds to inputs. They are usually stored in the .wav audio format, but they are not meant to be played as an audio file (play one through iTunes and all you'll hear is a brief click). If you have an IR that is formatted as a wav file, you will need to convert it to the format understood by an Axe-Fx before it can be downloaded. There are currently two such formats, one used by the Axe-Fx Standard/Ultra and another used by the Axe-Fx II.

#### Step One: Select Tab

Select the *Convert/Rename* tab as shown here.

#### Step Two: Select Input and Output Types

Under *Input File Type* click on **.wav**.

Under *Output File Type* select **Axe I .syx** if you have a Standard or Ultra. If you have an Axe-Fx II select **Axe II .syx**.

#### Step Three: Process Files

Click on the big button that is labeled **Open File(s) and Convert Input to Output**. You will now be prompted for the input file name or names (you can select as many files as you want).

If you selected a single file, you will be prompted for the name to use for the output file; if you selected more than one input file, you will be prompted for the folder to use for the output files, which will then have the same names as the input files but with the file extension changed from .wav to .syx.

As you might have guessed, the input file(s) should have a file extension of .wav, and the output file(s) will have an extension of .syx.

That's it.

#### Batch Mode

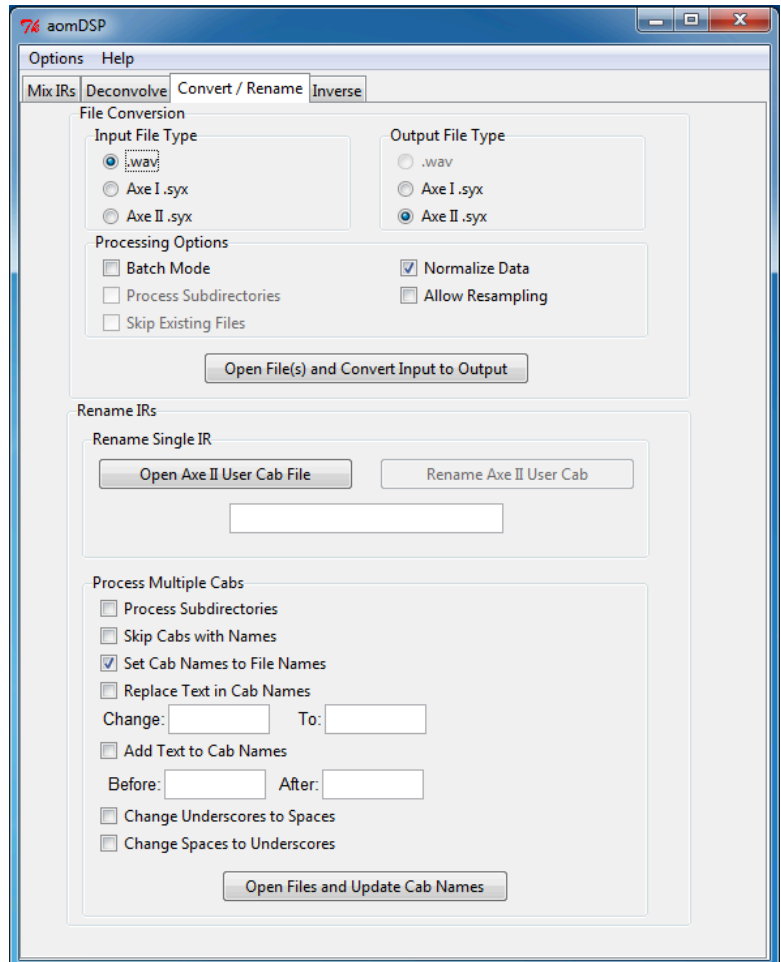
If you want to convert all the files in a directory you can manually select them all as explained above, or you can use Batch Mode. When you select **Batch Mode** you will be prompted for an input directory and an output directory.

Selecting **Process Subdirectories** will walk the tree from the directory you specify. Otherwise only the selected directory will be processed.

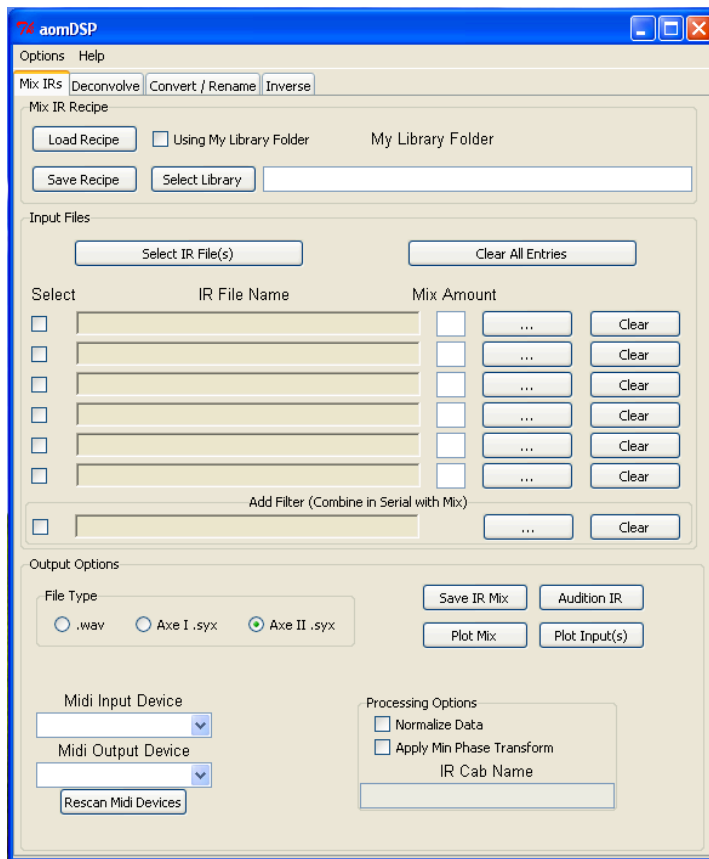
Selecting **Skip Existing Files** will only convert files that do not already exist in the output directory.

**Normalize Data** will apply adjust the level of the data based on an energy algorithm. The same algorithm is used for the Factory Cabs (built-in cabs) and for most commercial IR libraries.

The Axe-Fx requires data that is sampled at 48 kHz. If you select **Allow Resampling**, **Axe-O-Matic DSP** will resample the input data to the required sample rate if needed. Without this option data that is at the wrong sample rate will not be processed.



### Mix two IRs Together to Create a Single User Cab.<sup>3</sup>



#### Step One: Select Tab

Select the *Mix IRs* tab as shown here.

#### Step Two: Select IRs

Click on *Select IR File(s)* and select the IRs you want to blend together. The input files can be in any mix of *.wav*, *Axe I .syx* and *Axe II .syx* formats.

Wav files can be at any common audio sample rate (common means 44.1, 48.0, 88.2, 96.0, 176.4, or 192 kHz). Since the Axe-Fx uses the 48 kHz sample rate it's best to start with that format if you have it available.

#### Step Three: Set Mix Amount

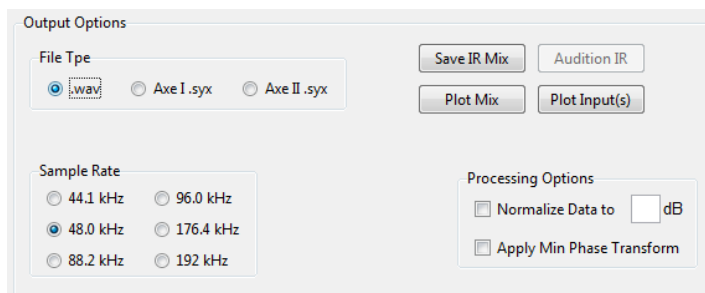
Click the *Select* box in front of each file name that you want to try in the blend, and enter a value into the *Mix Amount* box that follows each of those file names.

The mix amounts are all relative, so if you want equal amounts of each file enter the same number into each box. If you want twice as much of one file as of another file enter a number that is twice as big, such as 2 and 1 or 10 and 5.

All that matters is the relative sizes of the different numbers, so don't get too stressed out over it, OK?

Just between us, leaving the *Mix Amount* blank for all selected IRs is the same as entering the same number into all of them, and will cause the files to be mixed in equal proportions.

#### Step Four: Output Type



Select the output *File Type* you want, which will cause the Processing Options to change to the ones for that file type. In the picture above I have *Axe II .syx* selected, but if you select *.wav* instead, you will see options for *Sample Rate* and *Normalize Data* shown at left.

#### Step Five: Process Mix

Click on *Save IR Mix* and you will be prompted for the name of the output file. All done.

#### Normalization

Under *Processing Options* there is an option to **Normalize Data** if you select *Axe I .syx* or *Axe II .syx*, or an option to **Normalize Data to \_\_\_ dB** if you select *.wav* as the output file type.

See [Normalize Data](#) for an explanation of the option for Axe-Fx formats. *Normalize Data to \_\_\_ dB* adjusts the gain of the *.wav* data to the maximum of 0 dB or to any lower value you specify. Only values of 0 and lower (negative numbers) are accepted.

<sup>3</sup> Does this color make me look fat? Ah, good old Windows XP...

## Mix IRs Tab

### Overview

Mixing allows you to combine several IRs into one, creating a custom blend. Mixing IRs is similar to having different speakers sitting next to each other with the sound blending together. Sometimes you may want to use an additional IR as a filter for the mix, such as when you have a “corrective” IR that compensates for the performance space, or that compensates for the physical amplifier and speaker system you are using.

This tab is divided into three sections:

#### Mix IR Recipe...

allows you to save the IR mix settings to a file and to load settings from a previously saved recipe file. To make it easier to share recipe files, the paths to the files are optionally split into two parts: the common path or library folder, and the remaining path to the IR.

A recipe is a text file that contains the name of the library folder followed by the IR file names and mix amounts for files that are selected. Files that do not have a check mark in their respective “Use” boxes are not saved in the recipe.

You do not need to use the library folder setting unless you want to share recipe files with someone who has the same IR files organized under a common folder name. For example, if you both have the same OwnHammer files, you can set the Library to the “OwnHammer Impulse Responses” folder and save the recipe. When someone else wants to load that recipe, he or she clicks on *Select Library* and browse to the “OwnHammer Impulse Responses” folder on their system. Next he or she would check the *Using My Library Folder* box and then load the recipe (using the *Load Recipe* button).

#### Input Files...

provides a couple of ways to browse for and select IR files. You can select multiple files which will be inserted into empty slots, or you can select a single file for a specific slot. You then select which of those files are included in the mix, and the relative mix amount. The input files can be in any combination of wave or Axe-Fx syx formats. For wave files multiple sample rates are supported, but only the left channel of stereo wave files is used.

*Select IR File(s)* allows you to select one or more files, which are placed into unused slots in the list of IR File Names. The “...” control next to each IR file name allows you to select a single file

that will replace the file name in that slot.

At the bottom of the list of IR File Names is an addition file entry that is labelled “Add Filter (Combine in Serial with Mix.)” When you mix IRs together, normally you are trying to blend the properties of the different IRs, which is analogous to using different speakers in parallel. The first six are files are mixed in this way.

Sometimes you want to add an IR that is used more as a filter, such as when you have an IR that compensates for the characteristics of the monitor you are using. In that case, the IR needs to be blended in serial, and the last entry is used for that.

### Output Options...

allows you to save the IR mix to a file, audition it on your Axe-Fx, or plot the waveforms for the individual input files or as a mix in any combination. Normalization and Minimum Phase transform can be applied to the mix, and for wave files you can specify the sample rate for the output file.

The options available change depending on which file type you choose to output, so you want to make that selection first, and then select any processing options you want to use.

For .wav files, you can choose the sample rate for the output file. Since the Axe-Fx requires a 48 kHz sample rate, generally you will leave this option set to that value. However, if you are processing .wav files at a different sample rate, for example 96 kHz, that are not going directly to the Axe-Fx, then you may want to keep the sample rate the same.

For .syx files, you can select the Midi Input and Output devices to use for Auditioning an IR mix directly to your Axe-Fx. If you have an Axe-Fx II connected via USB that was not turned on when you started AOM, you can click on *Rescan Midi Devices* to find the Axe-Fx Midi ports.

Two of the processing options are similar for both types of output files: *Normalize Data* and *Apply Min Phase Transform*. The same minimum phase transform algorithm is used for .wav and for .syx formats, but the normalization process is different for each. For .wav files, the data is normalized so that the peak value(s) fall at the dB value you specify. 0 dB represents the largest value that the data format can hold, so only values of 0 and less are accepted here.

For .syx files, the normalization is the same algorithm used to create all of the Axe-Fx User Cabs and is based on energy content. For Axe-Fx II format User Cabs, there is an internal name that is displayed by the Axe-Fx for that speaker model; by default that name will be set to the first 32 characters of the file name, but you can enter a specific IR Cab Name in the text box.

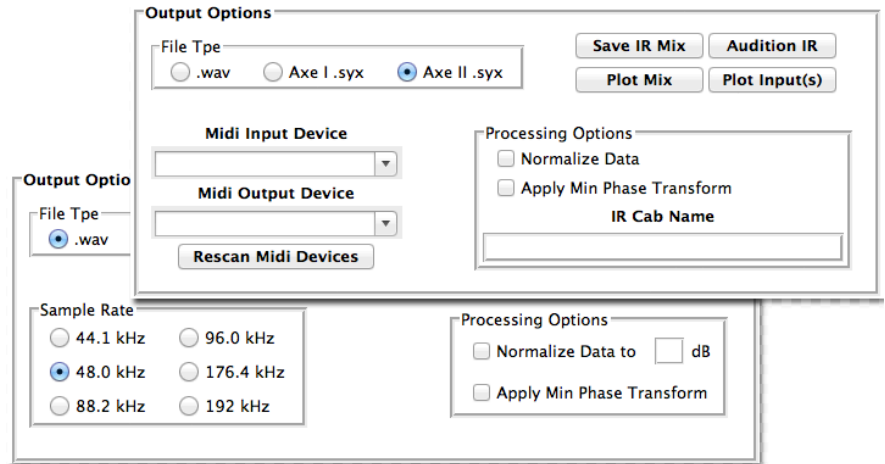
### Audition IR...

tells **Axe-O-Matic DSP** to create an IR Mix, format it based on the selected File Type, and download it to a user cab slot in the AxeFx. Exactly which user cab slot is used depends on whether the target device is an Axe-Fx Standard or Ultra, or an Axe-Fx II. For the Standard and Ultra models, the download always goes to User Cab Slot 1.

For the Axe-Fx II model, the current preset is examined to see what CAB blocks are present and what factory or user cabs are selected for those blocks. First, the CAB1 block is checked, and if it exists and is using a user cab, the download goes to that user cab slot. If not, the CAB2 block is checked in the same way. If no user cabs are being used, any CAB blocks in the preset are set to use user cab 1, and the download goes user cab slot 1.

### Plot Mix...

uses the mix settings to create a mix, and then displays it in three charts. The first is a display of the IR waveform in the time domain (magnitude versus time). The second chart shows the frequency response of the IR, and the third shows the phase response. Controls at the bottom of the plot window allow you to pan and zoom each plot or zoom to rectangle (details can be found on the web [here](#) ).



### Plot Inputs...

plots any of the input files that are selected, without any processing. When the plot window is open you can add additional lines to the plot by selecting different files (you can also plot a mix and the inputs on the same plot). You will want to uncheck any files that are already on the plot before adding new ones.

### Plotting Window

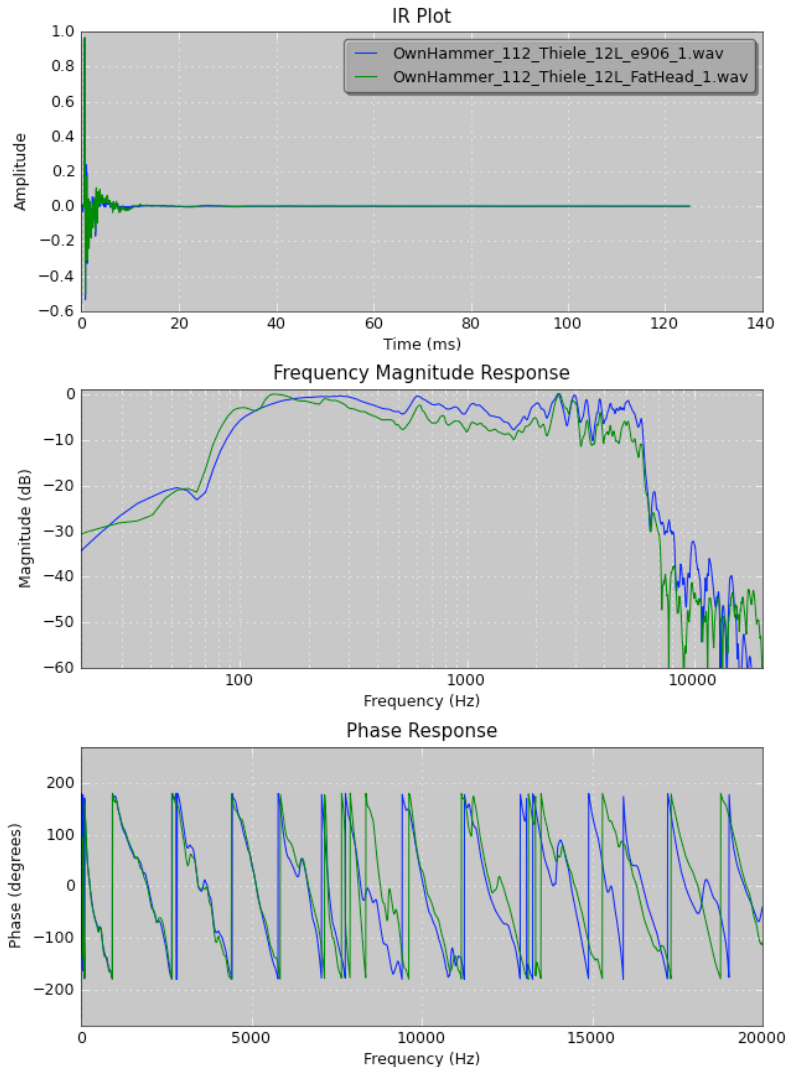
When you click on a Plot button, a new window opens to show the plotted data. If there is already a plot window open, then additional lines will be added to the existing plots.

If the plot gets too busy with too many lines plotted, just close the plot window and a new one will be created the next time you click on a Plot button.

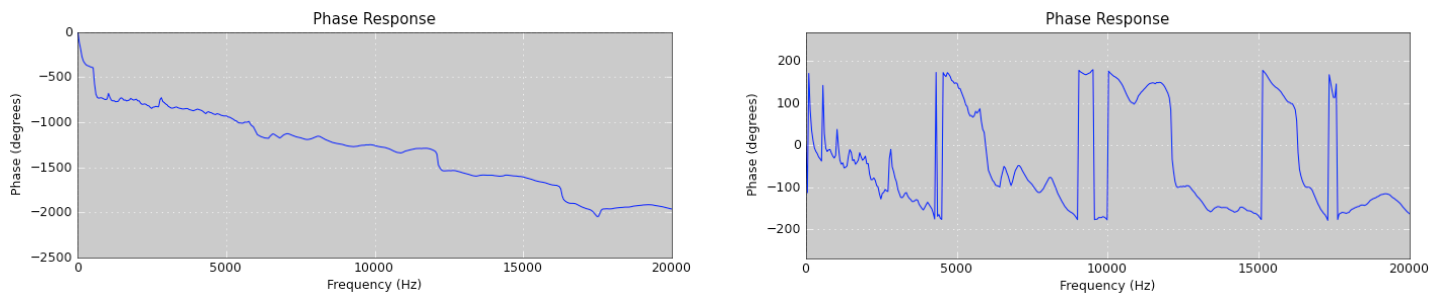
In the upper plot, the signals are plotted against time, starting from the beginning of the signal at time 0 and proceeding to the end of the signal.

The length of this plot depends on the sample rate of the data and the number of samples. For example, an Axe-Fx II .syx formatted IR contains 2040 samples taken at 48 kHz, which results in a signal length of 42.5 msec. The .wav files used in the example contain many more samples, so the length extends past 120 msec.

The lower two plots use frequency instead of time, and the upper frequency available in the data is determined by the sample rate. Because we generally only care about the audible spectrum<sup>4</sup>, the Frequency Magnitude Response is plotted from 20 Hz to 20 kHz. The Phase Response is plotted from 0 Hz to 20 kHz.



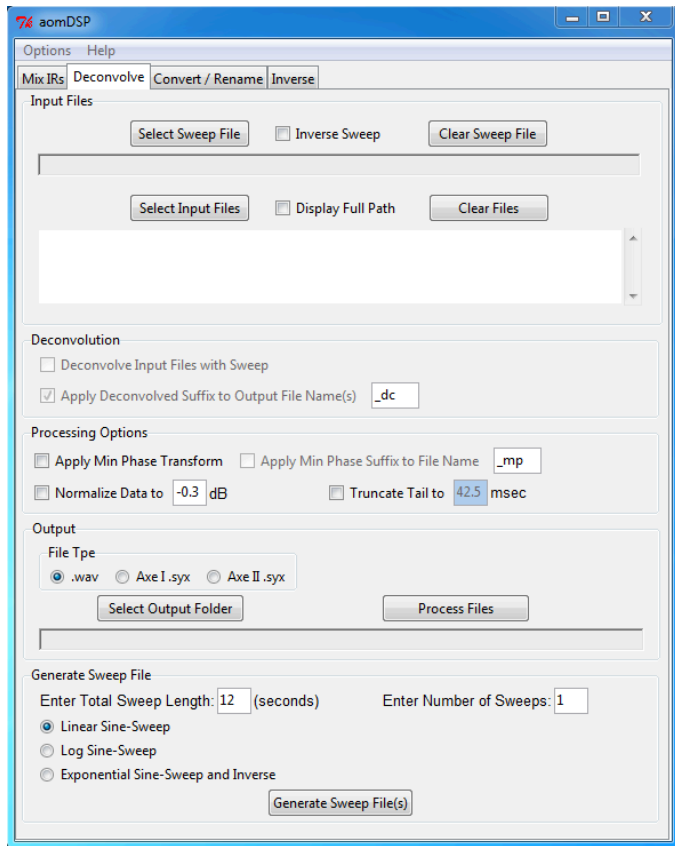
Phase is sometimes plotted by wrapping the data so it fits within  $2\pi$  radians (360 degrees). Here is a comparison of the data in



unwrapped form on the left, and the same data wrapped to fit within +180 to -180 degrees, on the right. You can select the option to unwrap or wrap plots in Preferences (for OS X) or Options/Settings (for Windows).

<sup>4</sup> Typically we use 20 Hz to 20 kHz as the audible spectrum, but the actual range of audible frequencies varies by age, sex, and individual. Above the age of 8 years, most people progressively lose the ability to hear higher frequencies.

## Deconvolve Tab



The Deconvolve Tab has two independent functions. The top section handles deconvolution, and the bottom section, labeled Generate Sweep File, creates swept sine wave files that can be used as test tones for capturing an IR.

### Creating an IR

In order to understand what Deconvolution can do for you, we need to take a quick look at one way to go about creating an IR of a particular speaker cabinet.

First you create a test tone, which can be almost anything that covers the frequency range you want to measure. Generally the best results are obtained by using a swept sine wave, meaning a signal composed of a sine wave that varies the frequency from 20 Hz to 20 kHz.

Next you play the test tone through your speaker cabinet, and record the output of the speaker using a microphone. What you are actually measuring now is the response of the speaker cabinet and microphone, so different microphones and different placements of the mic will produce different results.

Finally you process the recorded output to remove the test tone using a process called deconvolution. The result of that process is an IR.

### Input Files

There are two different input files required: the test tone or **Sweep File**; and the recorded output which we'll call simply Input File(s). You may have a number of recordings that used the same sweep file as input, so you can specify more than one input file to process at a time. **Inverse Sweep** is used when you have the inverse of the sweep file available, which is explained [below](#).

### Deconvolution

To run the deconvolver you need to check the box next to *Deconvolve Input Files with Sweep*, which is not active until a sweep file has been selected above. The option to deselect deconvolution allows you to use any of the Processing Options with an existing IR. The program will also append a suffix to the file name if desired, which can be useful for keeping straight which files are recorded output data and which have been processed into IRs.

### Processing Options

Processing Options include a Minimum Phase Transform, Normalization (see [above](#)), and the ability to truncate the tail of the IR after a certain time. [More details needed]

### Output

You select the folder where you want to create the output files here, and then click on *Process Files* to start the processing. If you try to process the files without specifying an output folder, you will be prompted to enter one.

### Generate Sweep File

This section generates three different types of swept sine wave ("sweep") files, and allows you to specify the overall length of the sweep in seconds, as well as how many times the frequency sweep is repeated. In some cases using multiple sweeps can improve the signal to noise ratio of the output, but in other cases a single sweep may produce a better result.

### Linear Sine-Sweep

The Linear Sine-Sweep increases the frequency of the sweep linearly with time, meaning that the time to go from 100 Hz to 200 Hz is the same as the time it takes to go from 2000 Hz to 2100 Hz.

### Log Sine-Sweep

Not surprisingly, the Log Sine-Sweep increases the frequency of the sweep in an exponential fashion, so that the time it takes to go from 100 Hz to 1000 Hz is the same as the time it takes to go from 1000 Hz to 10,000 Hz. This is also known as an exponential sweep, but we'll stick with log sweep to avoid confusion with the third type.

### Exponential Sine-Sweep and Inverse

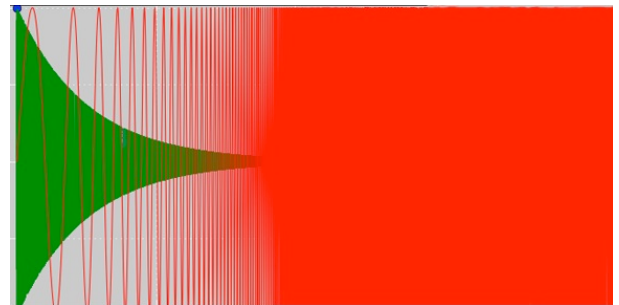
This option produces a specific type of exponential sweep that is based on experimental work by Angelo Farina<sup>5</sup> and refined by Antonin Novak, et al<sup>6</sup>. One of the properties of this sweep is that an inverse of the sweep can be created;. The original sweep is used to create the sample data and the inverse is used with a convolution process to create the IR itself. If you use this method you need to check **Inverse Sweep** in the *Input Files* section, which tells the program to substitute convolution instead of deconvolution.

One element of this method is that only a single sweep is used, so when this option is checked, the number of sweeps option is not active.

This method has some advantages in non-ideal environments where non-linear components distort the result. In other words, if you are taking response measurements in a space that allows reflections from the room to be included in the data, this method may give you a better result.

### Axe-O-Matic DSP Trivia

You may recall from math that any number multiplied by it's reciprocal equals one. That is also true of the Exponential and Inverse sweep files. The equivalent to multiplication here is convolution, and the equivalent to "one" is a single sample with a value of 1 at time equals zero (AKA an impulse.) The **Axe-O-Matic DSP** logo is a plot of the Exponential and Inverse sweeps and the convolution of the two. The exponential sweep is red, the inverse is green, and the combination is the blue dot in the upper left-hand corner. The plot was shifted to move zero to the right just enough that you can see the dot.



### Which Sweep?

It can be hard to predict which type of sweep is going to produce the best results in a given situation, so generally you will want to experiment with different ones. If you have a space that is large enough to eliminate<sup>7</sup> reflections from the walls and ceiling and you place the microphone at the floor boundary, then the Log Sine-Sweep is probably the best choice. Otherwise, experiment.

<sup>5</sup> Ref: *Simultaneous measurement of impulse response and distortion with a swept-sine technique* by Angelo Farina

<sup>6</sup> Ref: *Nonlinear System Identification Using Exponential Swept-Sine Signal* by Antonin Novak

<sup>7</sup> Remember the sample rate discussion? User Cabs are only large enough to hold 1024 (Standard/Ultra) or 2040 (Axe-Fx II) samples, which works out to 21.3 and 42.5 msec respectively. We only care about reflections that can reach the mic within those time periods.

## Convert / Rename Tab

This tab is the essence of AxeOMatic combined into one tab. Included are two independent functions, File Conversion and Rename IRs.

File Conversion works just like AxeOMatic but with a few exceptions:

- Single file mode now allows you to select multiple individual input files, while batch mode still works at the directory level.
- There is an option to allow resampling, which will convert to the required 48 kHz when needed.
- **Axe-O-Matic DSP** uses a scientific library for computations, so the high precision option has been removed.
- When the source or target is a .wav file, the option to apply a Minimum Phase Transform has been added.

### File Conversion

This function converts from one of three formats to one of the other formats. The three formats are:

1. Wave (.wav) in uncompressed PCM format.
2. Axe I User Cab (.syx) format for the Standard and Ultra Models
3. Axe II User Cab (.syx) format for the Axe-Fx II

### Input File Type / Output File Type

Supported input file types are Axe-Fx User Cab files (.syx) and standard .wav files with 24-bit samples and a sampling rate of 48000 kHz. If Allow Resampling is selected other sample rates will be converted (resampled) to 48000 kHz.

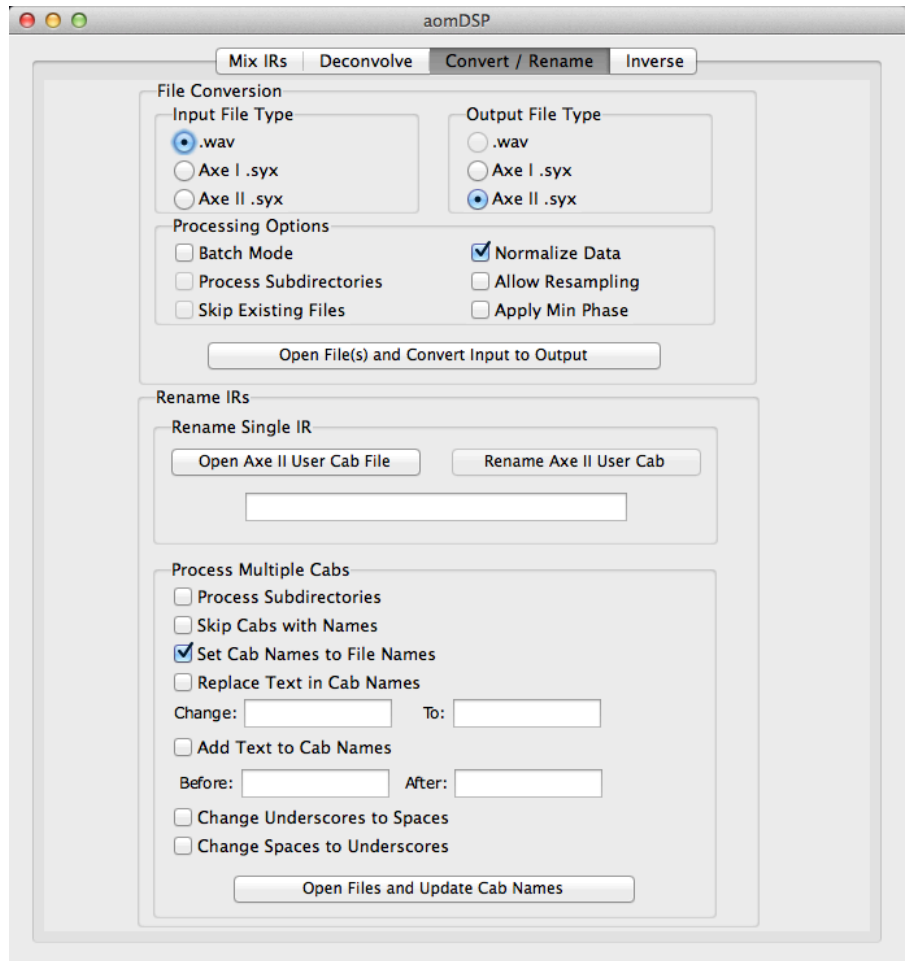
### Processing Options

Batch Mode process directories, and optionally subdirectories, instead of files.

Skip Existing Files will not process any input file if there is a matching output file already present in the target directory.

Normalize Data was discussed [above](#). This only applies when the output file type is .syx.

Apply Min Phase applies a Minimum Phase Transform to the output data. This is available only when either the input or the output is a .wav file.



## **Rename IRs**

Axe-Fx II format user cabs have a 32-character field in the data for the user cab name that is displayed when this user cab is selected. Although commercial IR libraries tend to set the IR Name to as much of the filename as will fit, you can set it to whatever you want as long as you stay within the ASCII character set.

### **Rename Single IR**

As with File Conversion, you have a choice of renaming a single IR or working with directories and subdirectories. For a single IR, the existing name is displayed after you open the IR. You can then edit the name, which will be truncated to 32 characters if necessary, and written back to the same file when you click on rename.

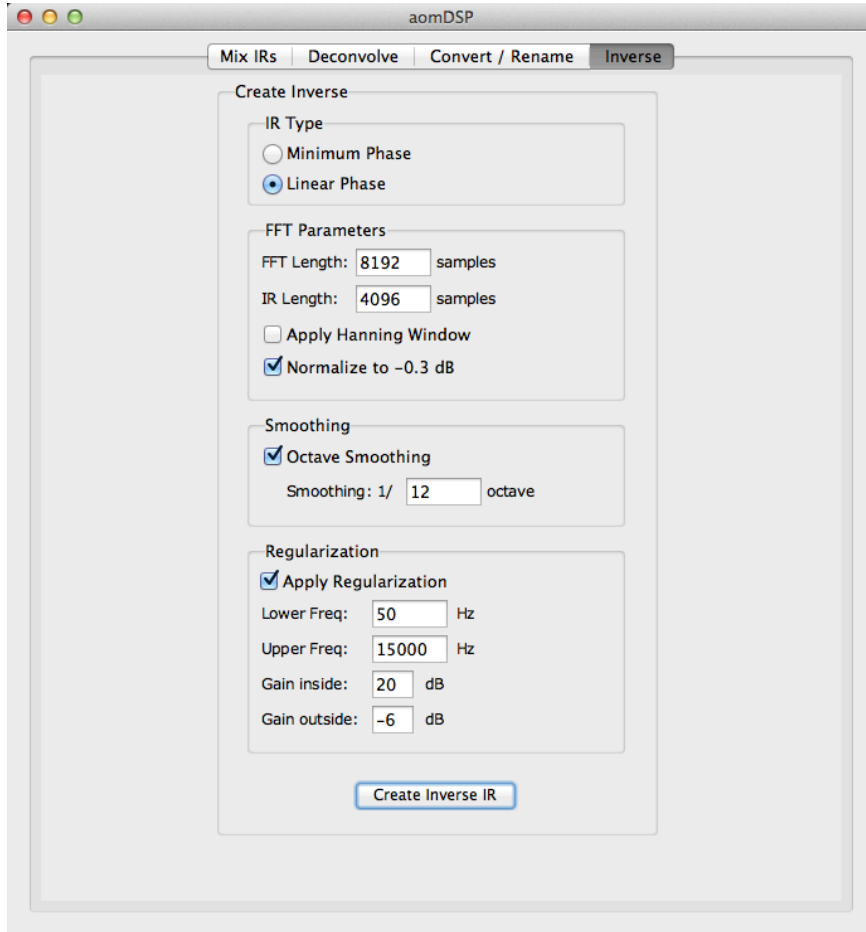
### **Process Multiple Cabs**

Processing by directories and subdirectories provides the option to set the IR names to the names of the respective files, doing a find and replace on the names, adding text at the front or back of the existing names, etc.. Skip cabs with names means that only cabs that have names consisting of spaces or nulls will be processed.

Keep in mind that all names will be truncated to 32 characters if necessary before writing them to the IR files.

## Inverse Tab

If you've read through the user guide from the beginning, you may recall that I have suggested experimenting with different techniques to find out what works best. This feature definitely fits into the experimental category; the results produced by approximating the inverse of an IR can vary widely.



There is not an exact solution to the problem of creating the inverse of an IR, but some useful algorithms have been designed that create an approximate solution. This function implements one of those solutions, outlined several published articles<sup>8</sup>. It is beyond the scope of this document to attempt to explain the theory behind this algorithm, but I will attempt to give you some idea of what the various parameters relate to.

### IR Type

This is essentially the same Minimum Phase transform as used elsewhere in **Axe-O-Matic DSP**. What it does is to reconstruct an IR from the existing data but with the assumption that it is minimum phase.

That is, the frequency response is unchanged, but the actual phase information is discarded and replaced by, well, minimum phase information.

### FFT Parameters

You probably won't want to change these parameters, but if you do, make sure the IR Length is as least as long as your target format requires (e.g. 2040 for Axe-Fx II) and the FFT Length is at least twice the IR Length. The

algorithm is more efficient if you choose values that are even powers of two (1024, 2048, 4096, 8192, etc.) Larger numbers will extend the processing time substantially.

### Smoothing

Smoothing uses an averaging algorithm to smooth the IR data. The higher the number, the greater the smoothing.

### Regularization

By choosing the frequency range of interest, for example 100 Hz to 5000 Hz for a speaker used to amplify guitar, the data inside that range can be boosted and the data outside that range can be attenuated, improving the result of the inversion algorithm.

<sup>8</sup> *Digital Equalization of Room Acoustics* by John N. Mourjopoulos; *Inverse Filter of Sound Reproduction Systems Using Regularization*, by Hironori Tokuno, Ole Kirkeby, Philip A. Nelson, and Hareo Hamada; *Inverse Numerical Filters for Linearisation of Loudspeaker's Response* by Angel Farina, Emanuele Ugolotti, et al.

## Program Settings

There are a few program settings that can be changed by the user. These are found under Options/Settings for Windows platforms and under **Axe-O-Matic DSP/Preferences** for OSX systems.

### MIDI Setting

MIDI is used by **Axe-O-Matic DSP** when using the Audition function, which creates an IR mix and downloads it to the Axe-Fx in a manner similar to using AxeManage, which is part of Axe-Edit<sup>9</sup>. IRs are sent to the Axe-Fx Standard/Ultra as a single MIDI SysEx message that is 8204 bytes long, which is quite large as such things go. If you are having problems with Audition failing to download the IR Mix properly, try increasing the Set Audition Timeout value.

### Updates

If this box is checked, **Axe-O-Matic DSP** will check to see if a newer version of the program is available each time it starts up. If a newer version is available, it will display a window that includes a link to the OwnHammer account page.



### MixIRs Input Files

This setting allows you to control the number of input “slots” displayed on the MixIRs window. The last slot is always reserved for a serial IR, so the minimum setting of three provides two parallel slots and one serial. The default has been changed to ten, so that there are nine parallel input slots and one serial.

### Plotter Setting

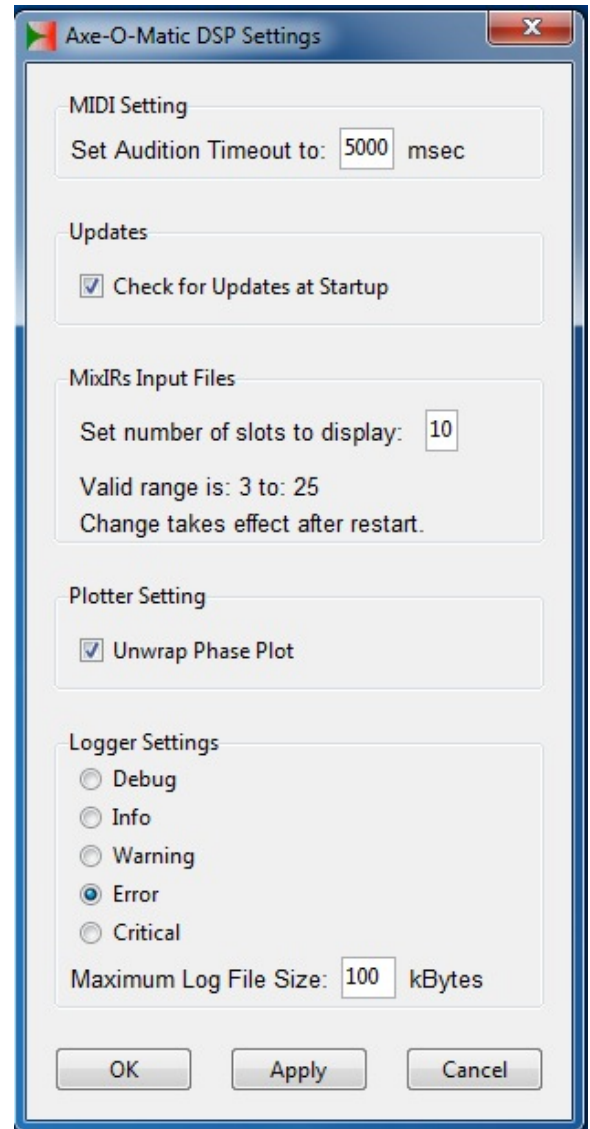
As described earlier, phase plots are sometimes converted so that all values fit within a single 360 degree range; if you would rather see the actual values, check Unwrap Phase Plot.

### Logger Settings

The logger inserts status messages into a log file, which is a type of text file. Each status message has a level associated with it, starting with Debug and going up to Critical. With the default setting of Error, only messages of level Error and Critical are logged, but if you are having problems with **Axe-O-Matic DSP**, it can be useful to set a lower level, such as Debug, so that more information is logged.

Many log messages will not be meaningful to the user since they generally provide internal program status, but they can be invaluable to me in tracking down a problem.

The Maximum Log File Size setting determines when the log file is large enough that it should be erased and a new log file started. If the size of the log file exceeds the setting **when Axe-O-Matic DSP starts up**, it will delete the old file and start a new one. Log files are never deleted regardless of size until **Axe-O-Matic DSP** is restarted, so you don't need to be concerned about losing information that has been stored during the current session.



<sup>9</sup> The names Axe-Edit and AxeManage are the property of FRACTAL Audio Systems.

**Log File Locations**

Log files are stored in the appropriate user area based on platform; on Windows (assuming that the boot drive is "C:\") :

For Windows XP the file is

`C:\Documents and Settings\user_name\Application Data\aoMDSP\aoMDSP.log`

For Windows 7 the file is:

`C:\Users\user_name\AppData\Local\aoMDSP\aoMDSP.log`

For OS X, the file is found on the boot drive at:

`/Users/user_name/Library/Logs/aoMDSP.log`

## Axe-O-Matic DSP Full and Demo Versions

**Axe-O-Matic DSP** is released in both a full version named **aomDSP**, and a demo version, named **aomDSP Demo**. The demo version contains only the Convert / Rename tab. Other than the name change and the tabs that are available the programs are the same, and there are no other limitations on the demo version. This user guide applies to both versions.

You should download **aomDSP Demo** if you have any concerns about whether Axe-O-Matic DSP will install and run on your operating system. Some systems using non-English character sets may prevent Axe-O-Matic DSP from launching. This is due to an issue in one of the system libraries used by Axe-O-Matic DSP. We anticipate that this issue will be fixed sometime in the next few months.

## Troubleshooting

### Problems

If you run into something that does not appear to work, the best way to get help is to:

1. Open **Preferences** and set the Logger Settings to Debug (see [Logger Settings](#) for instructions).
2. Run through the steps again that you are having problems with.
3. Email the log file to the address given for feedback in the **About** menu.

### Questions

If you have questions about how to use the program after reading through this guide, send them to the address given for feedback in the **About** menu. Suggestions for improving this guide are welcomed.