Amarra sQ

User Manual

www.sonicstudio.com

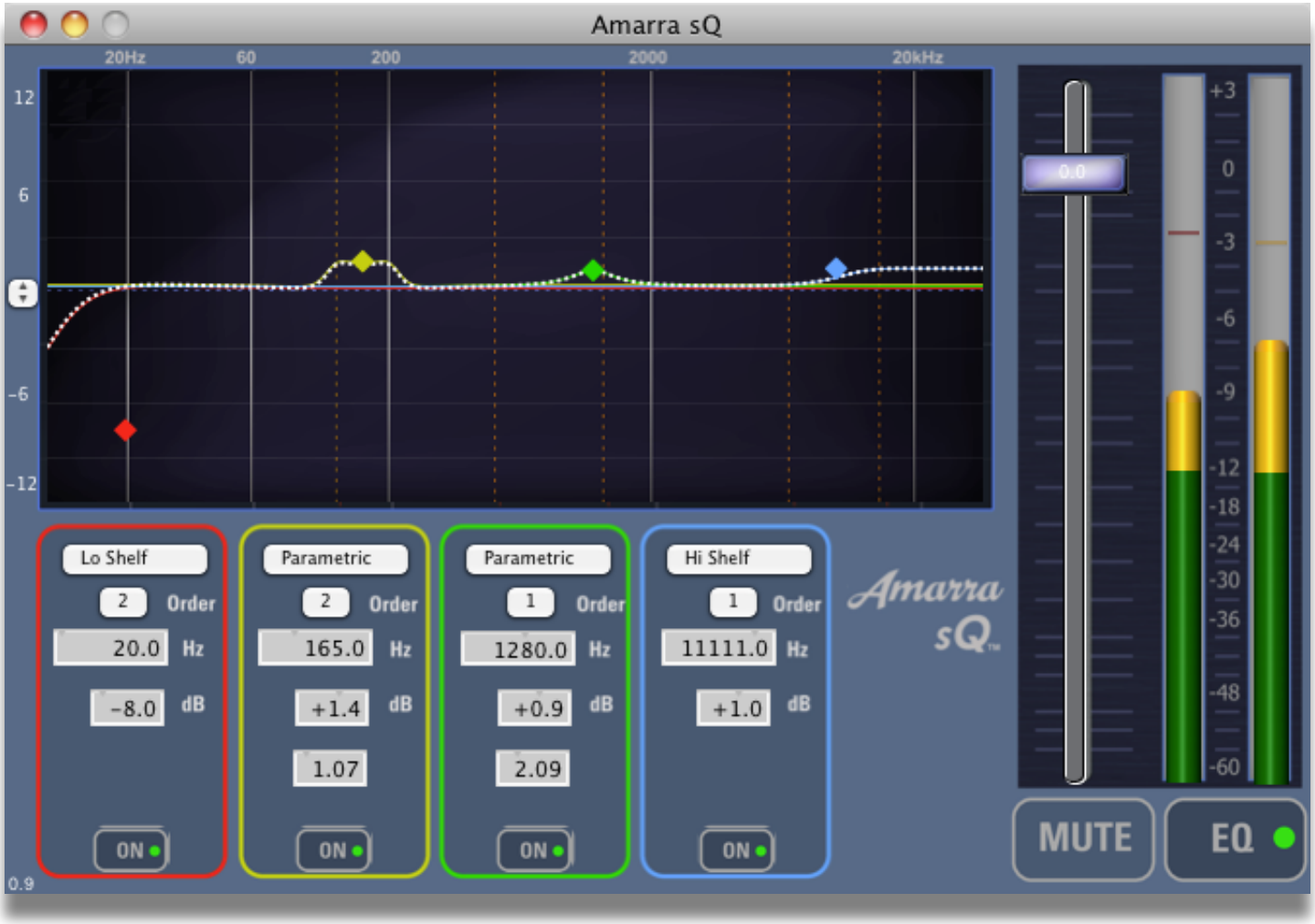
Sonic Studio Amarra sQ User Manual Table of Contents

Chapter 1 ..... Amarra sQ Overview

Thank you for purchasing Amarra sQ™! Amarra sQ is a stand-alone application for Mac OSX that is designed to improve the audio quality of all audio on your Mac, including streaming sources such as:

- Beats Music, Google Play, iTunes Radio, Pandora, Rdio, Spotify and other audio sources
- YouTube, NetFlix, iTunes, Hulu Plus, Vimeo and other video sources
- Your iTunes music library

Amarra sQ uses the same great audio technology that's in both our Amarra music player and soundBlade mastering software. Amarra sQ also incorporates a fully functional four-band EQ, each containing 7 different filters (see page 18), that's useful for tonal shaping and enhancing any content from your Mac.



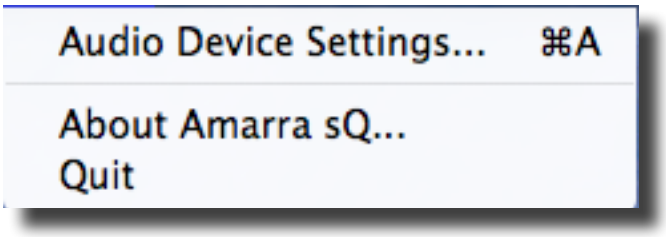
The Amarra sQ User Interface.

Learn: GoogleTranslate now provides for translating full documents into local languages. Please visit http://translate.google.com/ , select the desired language to translate to and click on 'translate a document'. It's not a perfect tool, but it may help those who prefer languages other than English

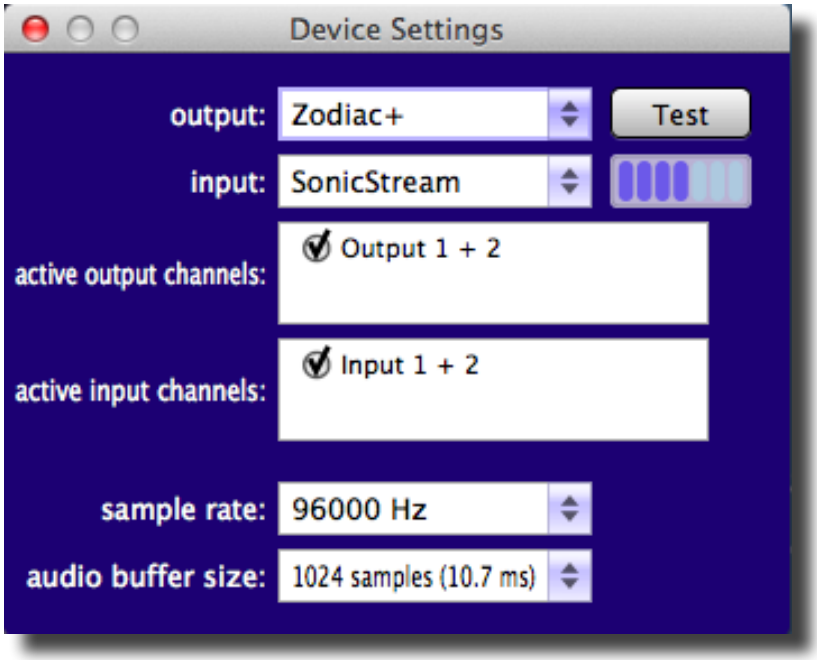
1.1 Amarra sQ Quick Start

Launch Amarra sQ and activate as Trial or Licensed (see page 6)

1. From the File => Audio Device Settings..., set the Audio Device to use for output.



File->Audio Device Settings... menu



Set Output to your DAC.
Set Input to SonicStream.
Set Sample Rate to your choice.
Leave audio buffer size to default of 1024 samples.

2. Listen!

Chapter 2.....Amarra sQ Set Up

2.1 Mac Host Requirements

At a minimum, Amarra sQ requires the following:

- Apple Macintosh Intel 2.6 GHz minimum or faster preferred
- 17" or larger display
- 3 GB RAM minimum, 4 GB RAM or more preferred
- OS 10.6.8 or newer

2.2 Installing/Uninstalling Amarra sQ

To install Amarra sQ, please click on the Amarra_aQ_Installer.pkg. You can download the Installer from:

http://www.sonicstudio.com/sonic/support/sonic_support#DOWNLOAD

Follow the on-screen instructions to install your software.

You may uninstall the Amarra sQ as follows

- Run Uninstall AmarraSQ.app. This will remove all components installed.

2.3 Launching, Licensing and Using Amarra sQ

When you purchase or register for a trial version of Amarra sQ, you are delivered an Activation Code via email.

Learn: The same activation process is used for both permanent and trial/demo licensing.

An iLok Account is not required to use Amarra sQ. An iLok Account is required to move your permanent license from one Mac to another.

Amarra sQ software is protected with PACE Anti-Piracy's InterLok copy protection. Learn more at iLok.com.

To activate your Amarra sQ license on your iLok2 or Mac:

The launch and license process for Amarra Using Amarra sQ is very simple. From your Applications->Amarra sQ folder in Finder, double-click on Amarra sQ.app.

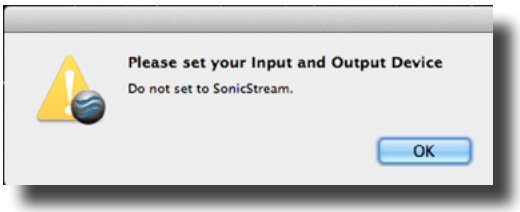
The first time you launch Amarra sQ, you will be asked to Activate or Quit the application. Click Activate and on the resulting screen, Copy (CMD+C) your trial or permanent Activation code then Paste (CMD+P) in the spaces provided and click 'Next'.

After you've entered your code and clicked 'Next', you'll be asked for your email address and first name. We do not distribute this information outside of Sonic Studio, LLC. Please enter the appropriate information and click 'Continue'.

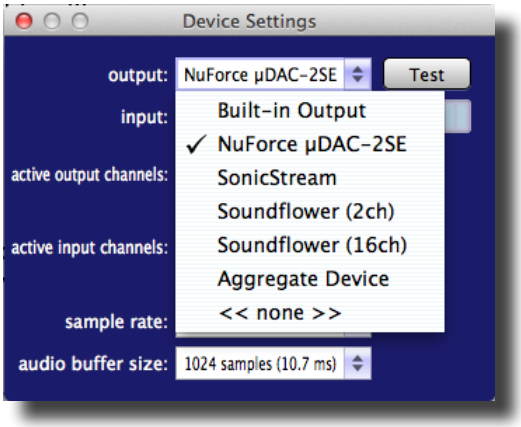
If you already have an iLok account, click the checkbox to register your license in your existing account.

The next step is to choose the location of your license. Most of you will store your license on your computer, some who has an iLok account may wish to store their license on the iLOK.

Click the STORE button next to your computer and you should be all set. Amarra sQ launches, you'll be reminded to set your output device appropriately.



Click the 'OK' button and in the resulting window, set the output device by selecting from the output device pulldown list.



Once you've properly set up Amarra sQ, simply launch your streaming audio source and hit play. Amarra sQ will automatically take over playback, any EQ settings turned on will be in effect, meters will be displayed and the Volume slider in Amarra sQ will be active.

Machine License vs. iLok2 License: Amarra sQ gives you added flexibility with how you license your software:

You will need to download and install the free **iLok License Manager Application** to use your Amarra sQ Product.

Machine License Method

Use if you do not own an iLok2. Less portable. Can be moved from one Mac to another using the iLok License Manager application.

iLok2 Method

Highly portable, just move your iLok2 from Mac to Mac. Requires an iLok2. iLok1 will not work with Amarra sQ.

2.3.1 Trial Mode

The Section describes how to activate your Trial 'Amarra sQ' iLok license.

To enable a fully functional 15 day trial of Amarra sQ:

1) Copy this trial Authorization Code: **4395-3663-6355-3996-8480-8989-5871-75**

2) Launch Amarra sQ

3) Paste the trail Activation Code into the Activation window when prompted

2.4 Managing your Amarra sQ License with iLM

Moving/managing your Amarra sQ license is an easy task. We use the iLok License Manager (iLM) app from Pace to manage your machine locked or iLok licensed Amarra sQ license. Please follow the steps below to manage your Amarra sQ License

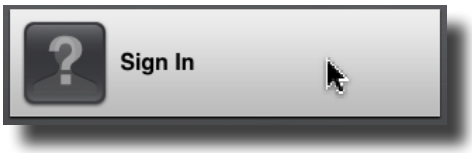
2.4.1 The iLok License Manager (iLM)

The iLok License Manager is the application you will use to manage your license. iLM is installed with Amarra sQ in Applications/iLok License Manager.

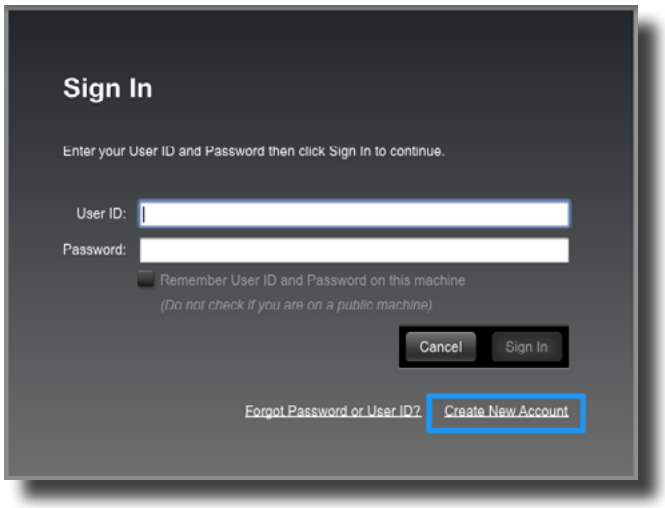
2.4.2 Your iLok Account

While not necessary to use Amarra sQ, you will need to create a free account at **https://www.ilok.com/#!registration** to manage your Amarra sQ license. Please note your iLok ID and Password as you'll need to use them to access your iLok account in the future.

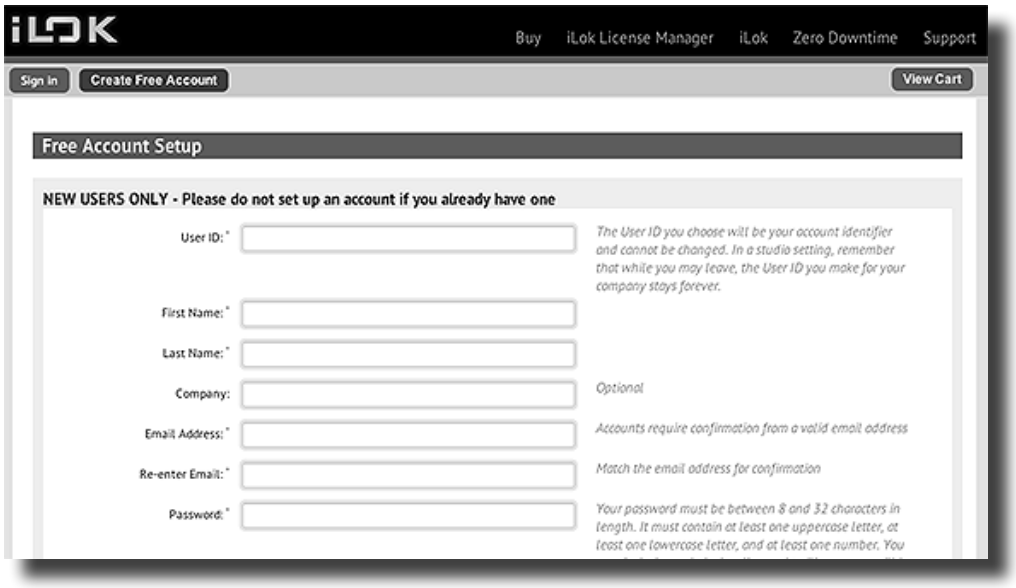
To Create an account, launch the iLok License Manager application, then select 'Create New Account:



Click Sign In.



Click Create New Account.



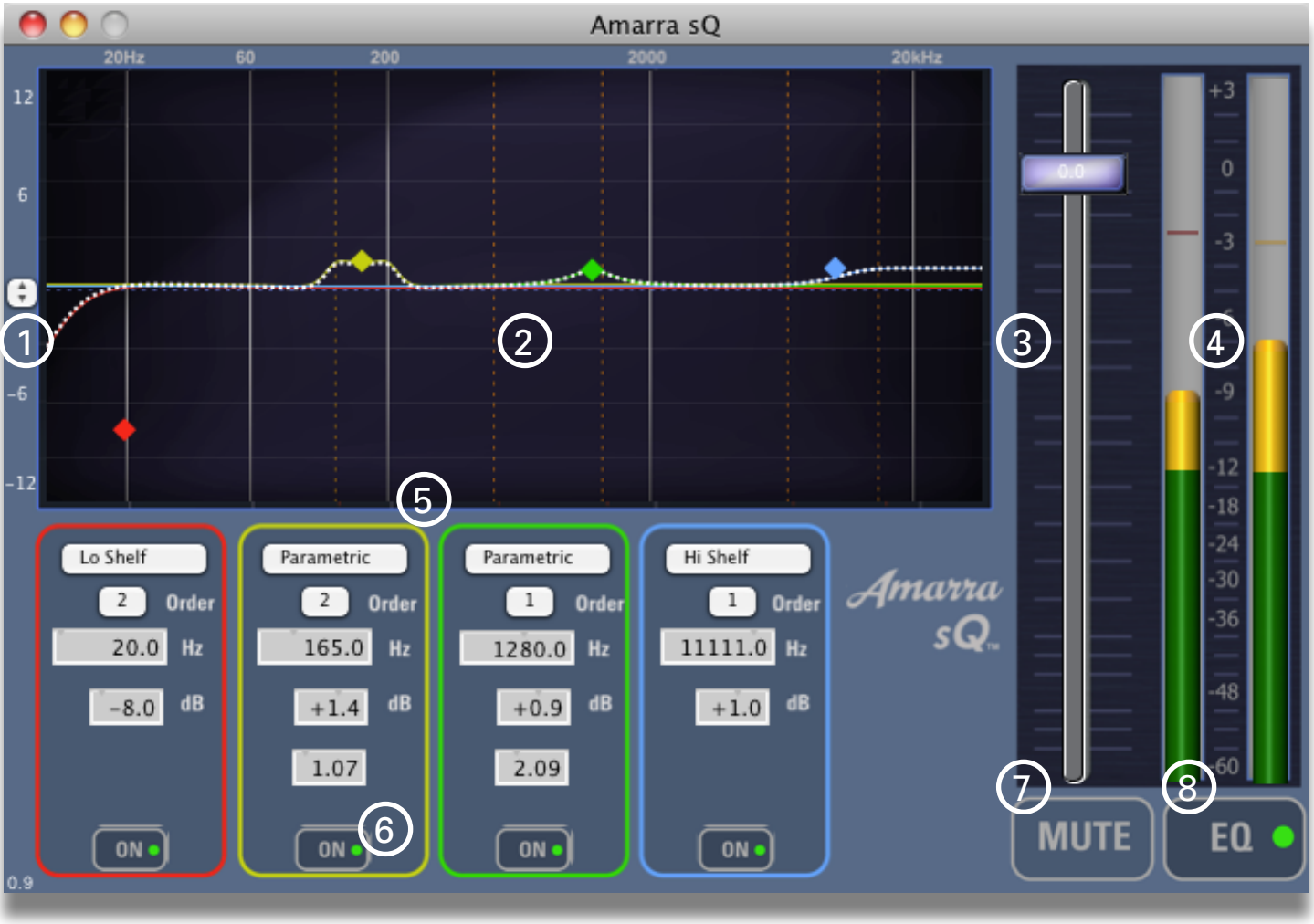
Enter your data in the appropriate fields. Make sure to note your User ID and Password.
After registration, you will receive a confirmation email. Please click on the link in the body of that mail to activate your iLok Account.
After confirmation, you can log into your iLok account and manage your license.

2.4.3 Managing your License

Once you've created your account and loaded the iLok License Manager, launch the ILM from Applications/iLok License Manager and sign-in with your User Name and Password.

To move your license, you will need to 'Take Ownership' of it. Once you take ownership, you are free to move your license to your account and to another machine as needed. To move your license to another machine, simply move the license back to your account, log in on another machine and move the license to that machine. Load Amarra sQ and you should be all set.

Chapter 3.....Amarra sQ User Interface



1) Frequency Visualizer Scaling in dB	2) EQ Visualizer
3) Gain Fader	4) High-Definition Meters
5) Equalizer Bands with 8 unique filters	6) EQ Band On/Off
7) Mute Button	8) EQ Global On/Off

3.1 Amarra sQ Controls

3.1.1 Frequency Visualizer Scaling in dB

This menu sets the vertical scale of Visualizer window in dB. The values are +24, +12, +6, and +3, with the default scale at +12.

3.1.2 EQ Visualizer

This area displays the current filter settings as a visual representation. Each color-coded filter node can be dragged and adjusted from within this window.

3.1.3 Gain Fader

Adjusts the overall gain of the plug-in. Parameters are +6 to -60 dB. Option click to (re)set to zero.

3.1.4 High-Definition Meters

The Meters section graphically displays real-time indications of Peak, RMS and VU values with hyper-ballistic accuracy. At the top of the meter strips, Peak and RMS values are displayed in numeric relation to zero; - for under zero, + for over zero. Both the meter strip and the numbers in this section will turn red when an over-zero level is detected.

3.1.5 Equalizer Bands with 8 Unique Filters

The bottom left half of the Amarra sQ window contains the master controls for each of the four available filter bands. The controls are context–sensitive and apply to the selected filter section and changes are reflected in the EQ Visualizer section.

Clicking on the top reveals a list the available filter types:

Filter Selection Menu.
Select your desired filter from the menu to instantiate.
Extra control sections will me enabled depending on filter type.

LEARN: See page 18 below for complete filter descriptions and graphical representations of their capabilities.

LEARN: Values can be entered by keyboard or by click+hold+mouse up/down.

3.1.6 EQ Band On/Off

This button toggles individual bands of Amarra sQ on or off and is useful for comparing the change induced in a single band of EQ.

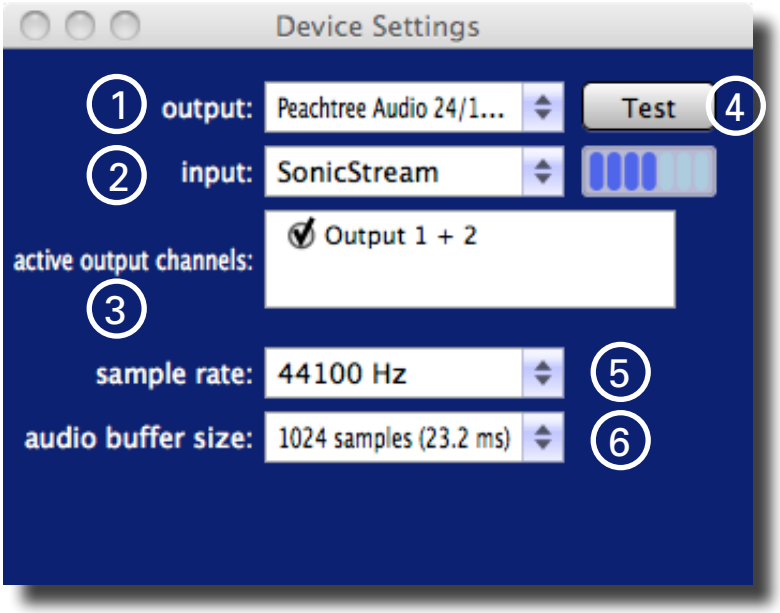
3.1.7 Mute Button

This button mutes or stops the output of Amarra sQ.

3.1.8 EQ Global On/Off

This button toggles the Amarra sQ on or off and is useful for comparing the sum of all changes made with this instance of EQ.

3.2 Audio Device Settings



Audio Device Settings Window

3.2.1 Output Selector

Choose your Digital-to-Analog Converter (DAC) from this list. That action sets Amarra sQ's output to feed to your DAC.

3.2.2 Input Selector

Select SonicStream from this list. The input menu should always be set to SonicStream.

3.2.3 Active Output Channels

This area assigns the routing of the output channels in your DAC. Most DACs only have 2 output channels, but if your DAC has more outputs, you can select them from the list.

3.2.4 Test Button

Pressing the Test button causes Amarra sQ to produce a test signal of 10 short pulses at 440 Hz. This useful for verifying that Amarra sQ is putting out signal to your DAC.

3.2.5 Sample Rate

In this pull-down menu, you can set the sample rate of Amarra sQ. Amarra sQ will upsample with many programs, but not all will work. 44100 is the best place to start.

3.2.6 Audio Buffer Size

Adjusts the audio buffer in sample values. 1024 is best.

3.3 Menus

3.3.1 Amarra sQ Menu

3.3.1.1 Services

The Services menu item provides access to Mac OS X's system-wide services.

3.3.1.2 Hide Amarra sQ

Use the Hide Amarra sQ menu item to hide Amarra sQ and all of its open windows, allowing you access to other programs running in Mac OS X. Clicking on the Amarra sQ icon in your Dock returns Amarra sQ to view.

3.3.1.3 Hide Others

Use the Hide Others menu item to hide all visible applications except Amarra sQ allowing you to focus on Amarra sQ alone. Clicking on any icon in the doc will return that application to view.

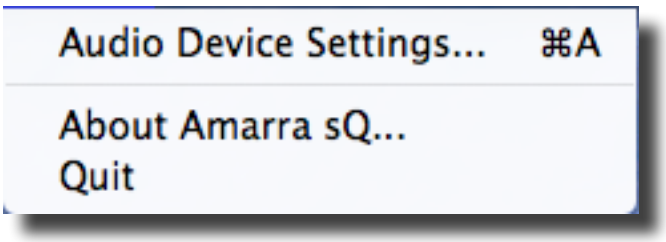
3.3.1.4 Show All

The Show All menu item unhides all running programs in Mac OS X.

3.3.1.5 Quit Amarra sQ

Use the Quit Amarra sQ menu item to quit Amarra sQ and close all open windows.

3.3.2 Setup Menu



3.3.2.1 Audio Device Settings...

Selecting Audio Device Settings opens the Audio Device Settings window (see page 13)

3.3.2.2 About Amarra sQ...

Opens a dialog box describing the version and build numbers of your Amarra sQ application. Clicking on the dialog box closes it.

3.3.2.2 Quit

Use the Quit menu item to quit Amarra sQ and close all open windows.

Chapter 4.....Trouble Shooting

4.1 Playback

Problem	Possible Cause	Fix
Can't Hear Sound in Amarra sQ	Your DAC is not set for output in Audio Devices Settings Window.	See page 13 for info on configuring Audio Device Settings.
	"SonicStream" is not in the list of devices in Sound Preferences or Audio Midi Set Up.	"SonicStream" should be in the list of devices. If "SonicStream" is missing please restart your computer and it should appear. If not a reinstall of the software is required.
Can't Hear Sound after quitting Amarra sQ	Your DAC did not reset properly after quitting Amarra Symphony.	Change the output device from SonicStream to your DAC in Sound Preferences or Audio MIDI Set Up.
Output meters are overloading	The volume or EQ settings are too high.	Turn down the volume fader until red overload indication goes away.
Output is too low	Volume fader is set too low.	Turn the volume fader up until it reaches a desirable level.

4.2 Licensing

Problem	Possible Cause	Fix
Can't Activate Demo	Activation Code is not correct	Use this code:4395-3663-6355-3996-8480-8989-5871-75
	You've tried Amarra sQ before.	Please contact sales@sonicstudio.com for another 15 day trial.
Can't Activate License	Activation Code is not correct	Verify that you copied and pasted the correct code.
	Your computer is not connected to the Internet.	Connect your computer to the Internet to Activate your software.

4.3 Contacting Sonic Studio, LLC

Thanks for purchasing a Sonic Studio product. We really appreciate your patronage and are always interested in your experiences with Amarra.

Sonic Studio Support Portal:

www.sonicstudio.com/amarra/amarra_supportportal

For bug reports and frequently-asked questions (FAQ), visit

www.sonicstudio.com/amarra/amarra_faq

Updates to Sonic SQ, when available, are in the Downloads section of the Sonic Studio website.

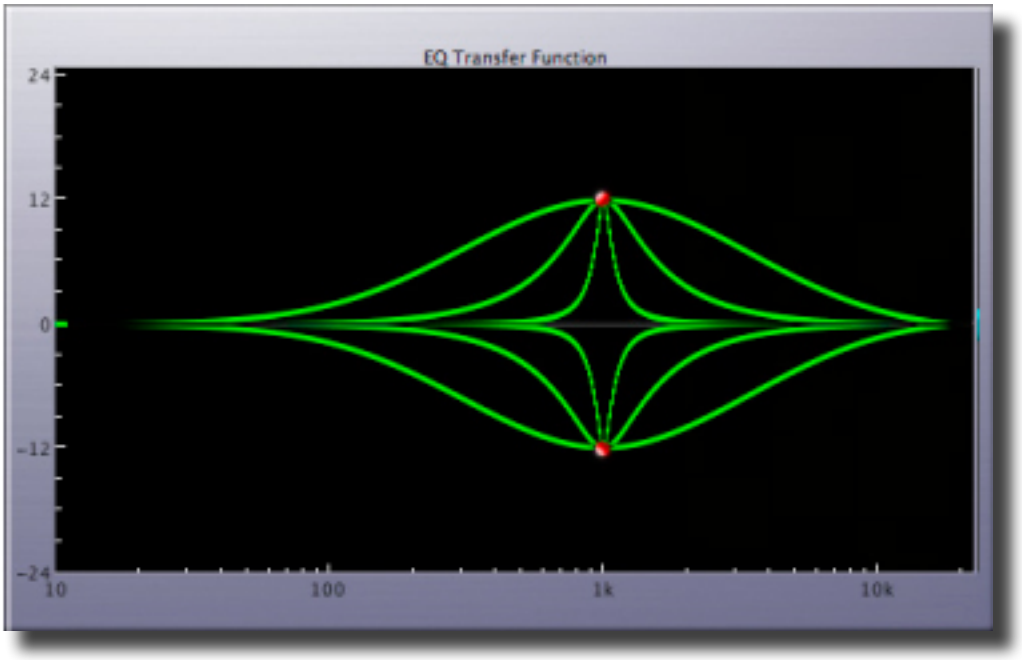
www.sonicstudio.com/amarra/amarra_support#DOWNLOAD

Appendix A..... Amarra sQ EQ Filter Specifications and Descriptions

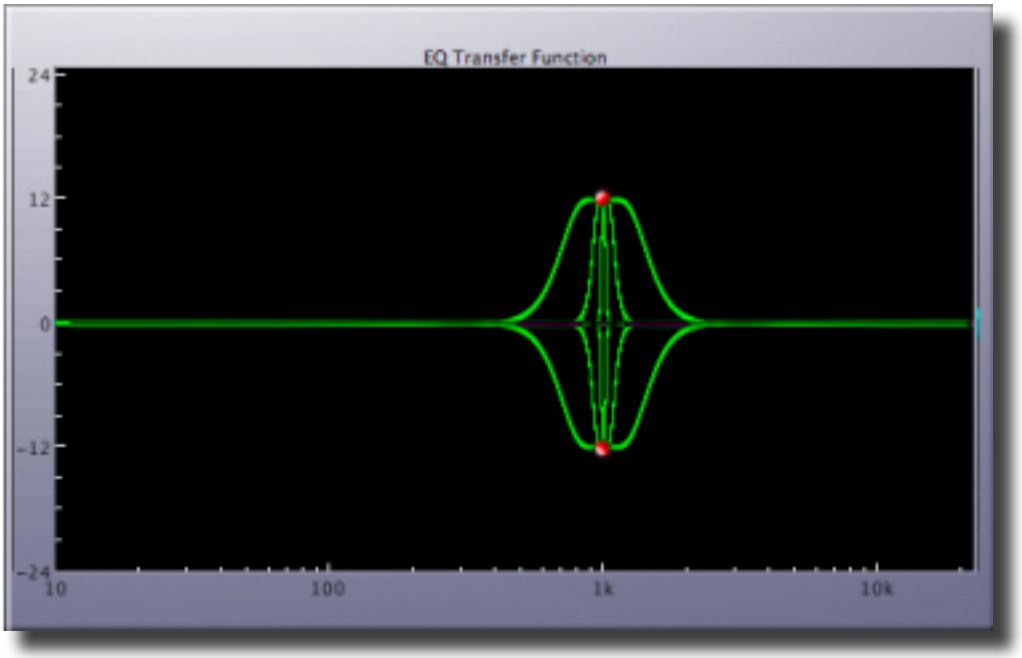
The parametric filters are classic, three parameter versions, with Resonant Frequency, gain, and Q. Q or Quality Factor is defined as the resonant frequency, or center frequency in the case of a symmetrical filter, divided by the bandwidth. The bandwidth is, in turn, defined as the one or two frequencies at which the filter response is 3 dB up or down from unity gain.

Expressing the width of a filter as a Quality Factor, rather than bandwidth, provides a more intuitive sense of the filter's subjective "sound," since the same value of Q will produce different bandwidths at different frequencies. The higher the frequency, the wider the bandwidth will be for a given Q value, which roughly corresponds to our auditory mechanism's ability to perceive a filter's action. As an example, a parametric filter with a Q of 1 has a bandwidth of 100 Hz when its center frequency is set to 100 Hz but, it has a bandwidth of 1000 Hz when the center frequency is set to 1000 Hz.

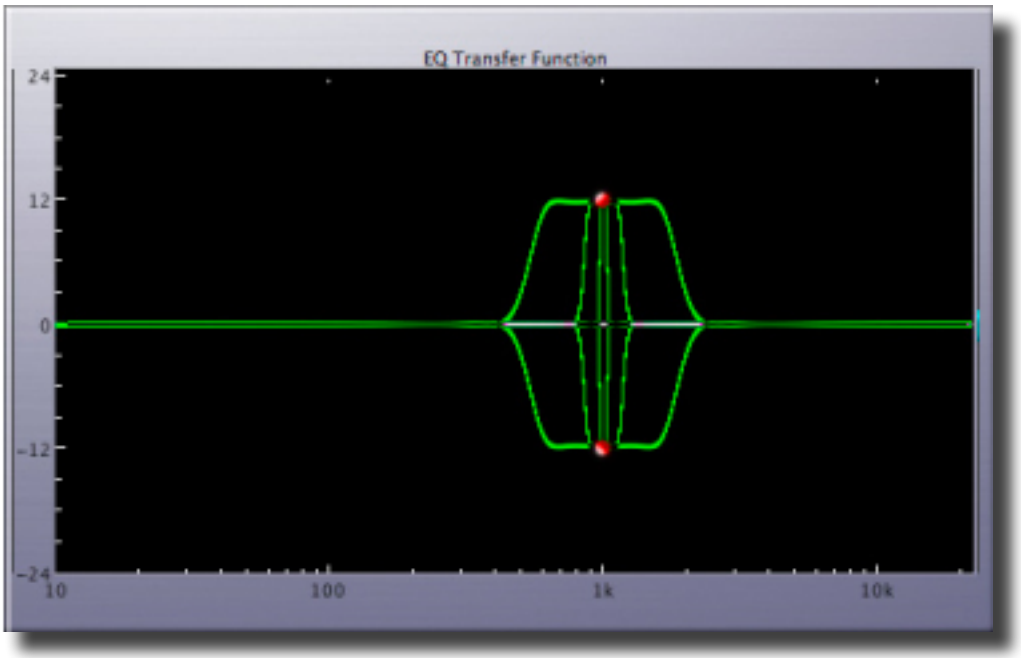
The order or slope of the filter is controllable, with 1st through 4th order or 6 to 24 dB per octave slope, respectively. Each of the four orders are separate menu choices. The family of curves shown below include a wide Q of 0.5, a medium Q of 2.0 and a narrow Q of 10.



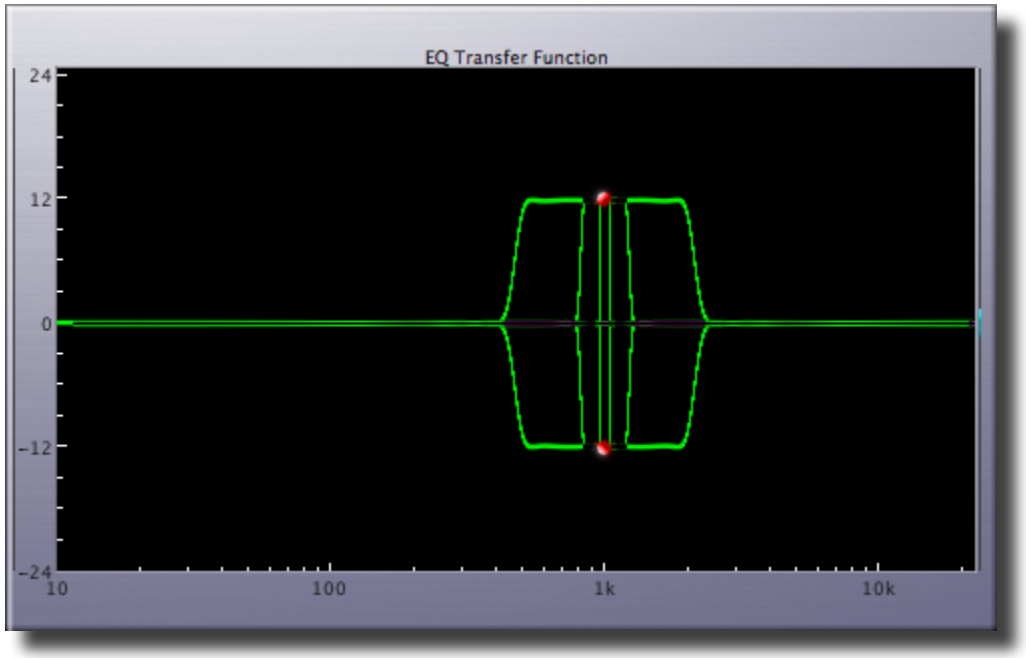
1st order parametric with f_R of 1000 Hz



2nd order parametric with f_R of 1000 Hz

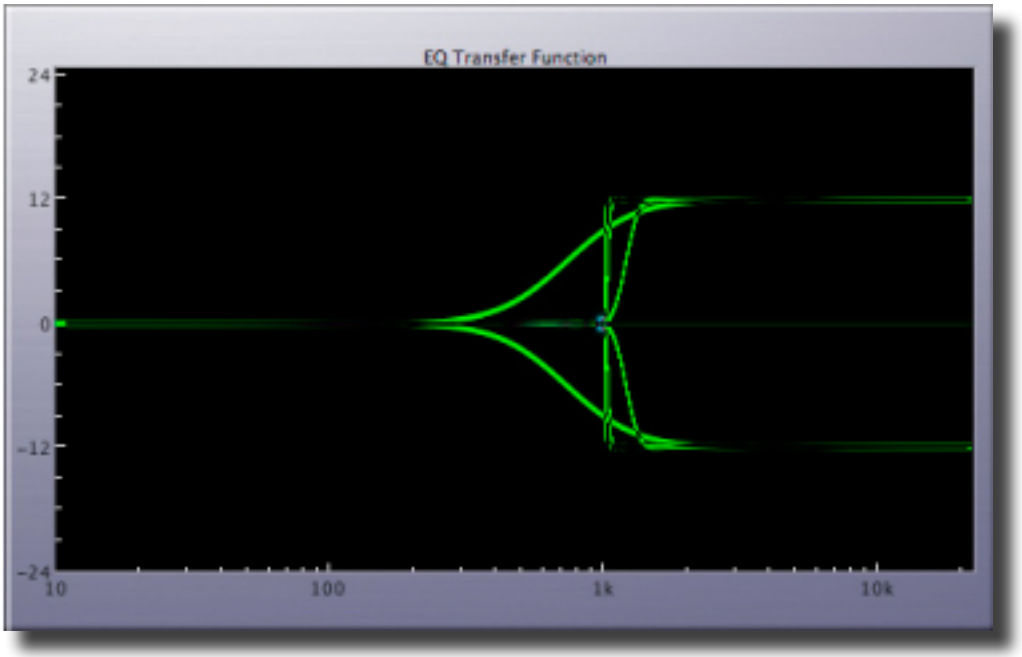


3rd order parametric with f_R of 1000 Hz



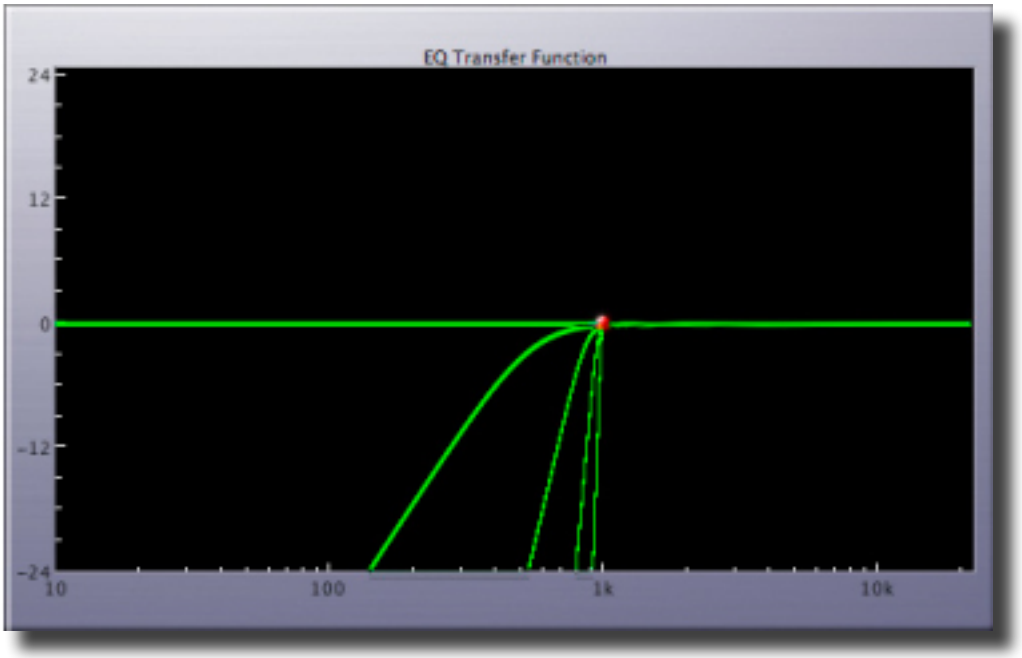
4th order parametric with f_R of 1000 Hz

The high and low shelves are also three parameter filters, with Resonant Frequency, gain, and order. The family of curves below include 1st through 4th order. The 4th order response is practically vertical in the transition region.



High shelf with f_R of 1000 Hz

The high and low pass filters also have three parameters. However, in this case stopband ripple, labeled Stop, has taken the place of gain. As with the shelving filter above, the family of curves below include 1st through 4th order.

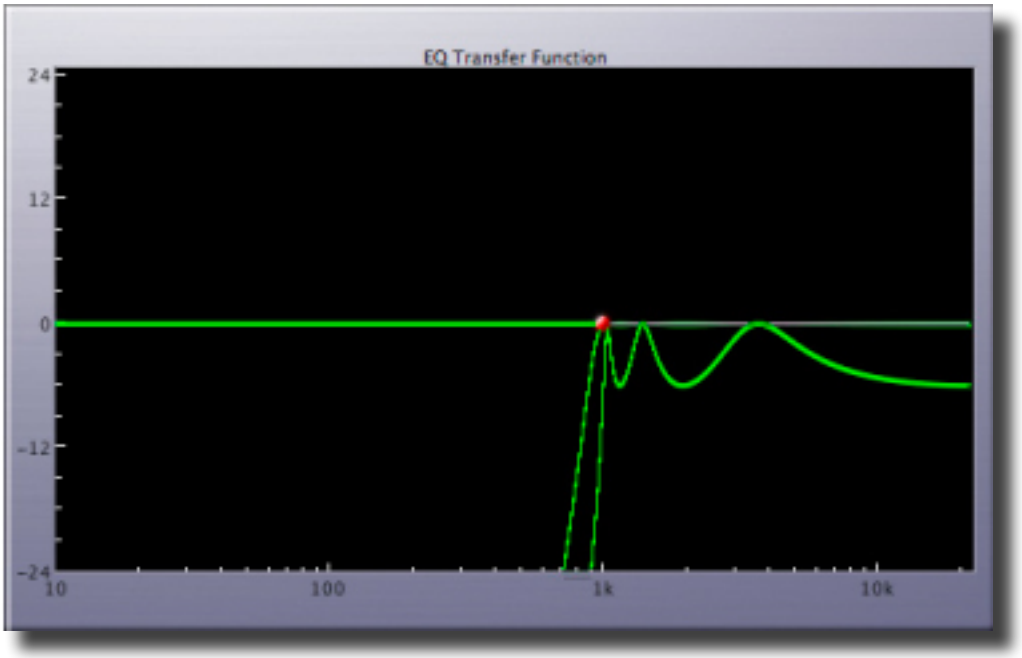


High pass with f_R of 1000 Hz

Stopband ripple describes the amount of amplitude variation or ripple in a filter's out of band response. Indirectly, it describes two more important parameters. One is out of band suppression or, how much "leakage" of unwanted signal you receive, and the other is phase shift and group delay.

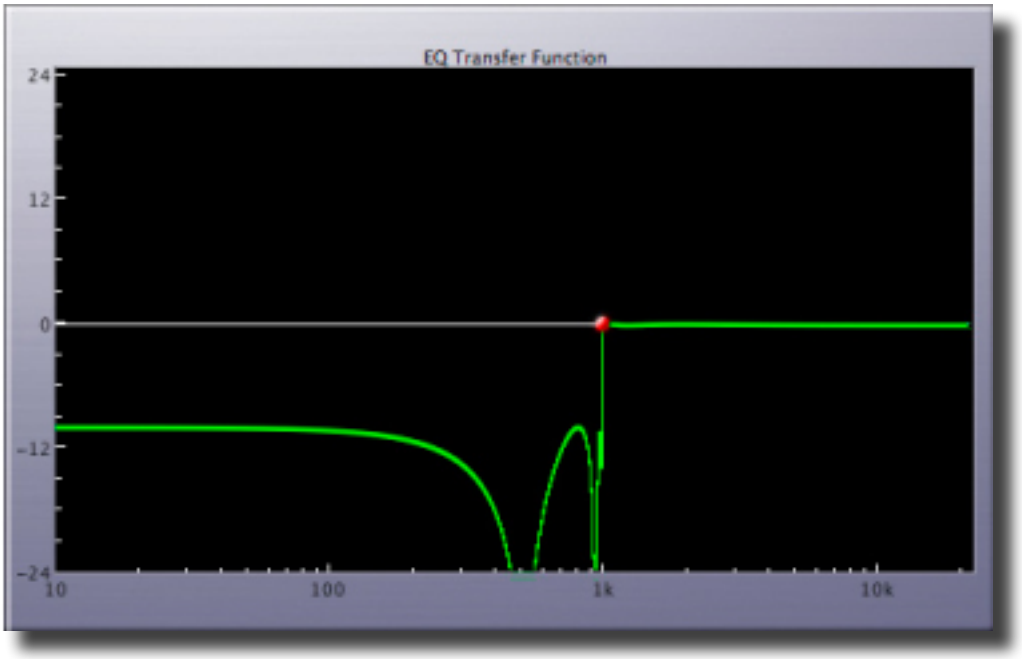
The stopband ripple parameter provides a range of -12 to -108. At the -12 setting, only 12 dB of loss will occur out of band, no much for a filter of this type. However, because the stopband ripple value is so low, the phase response and resultant temporal response of the filter will be excellent. At the other extreme of its range, stopband ripple will be 108 dB down from the (unity) passband gain but, the phase response will suffer, the group delay will be severe and the resulting temporal smearing may be unacceptable. As with any filter, careful listening will determine the tradeoff between stopband suppression and side effects.

Figure 10.8 below shows an typical 3rd order high pass filter. Superimposed on that curve is another 3rd order high pass with 6 dB of passband ripple & 120 dB of stopband attenuation. Notice the rippling "bouncing ball" amplitude response in the region above the resonant frequency. This passband ripple would create some possibly undesirable amplitude effects but, because the ripple spec has been relaxed, the phase response would be improved.



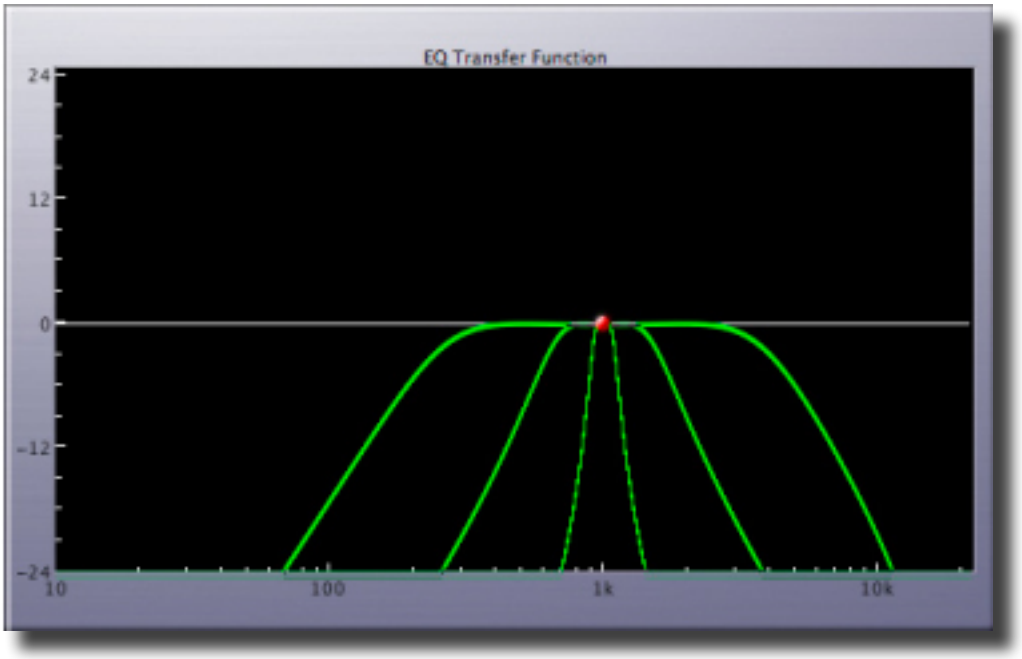
3rd order high pass with 6 dB of passband ripple & 120 dB of attenuation

Compare the response in figure 10.8 with the next figure, which shows a 3rd order high pass with 0.10 dB of passband ripple & 10 dB of stopband attenuation. This time, the stopband ripple would allow some material below the resonant frequency to "leak" into the filter's output. Again however, because the ripple spec has been relaxed, the phase response would be improved.

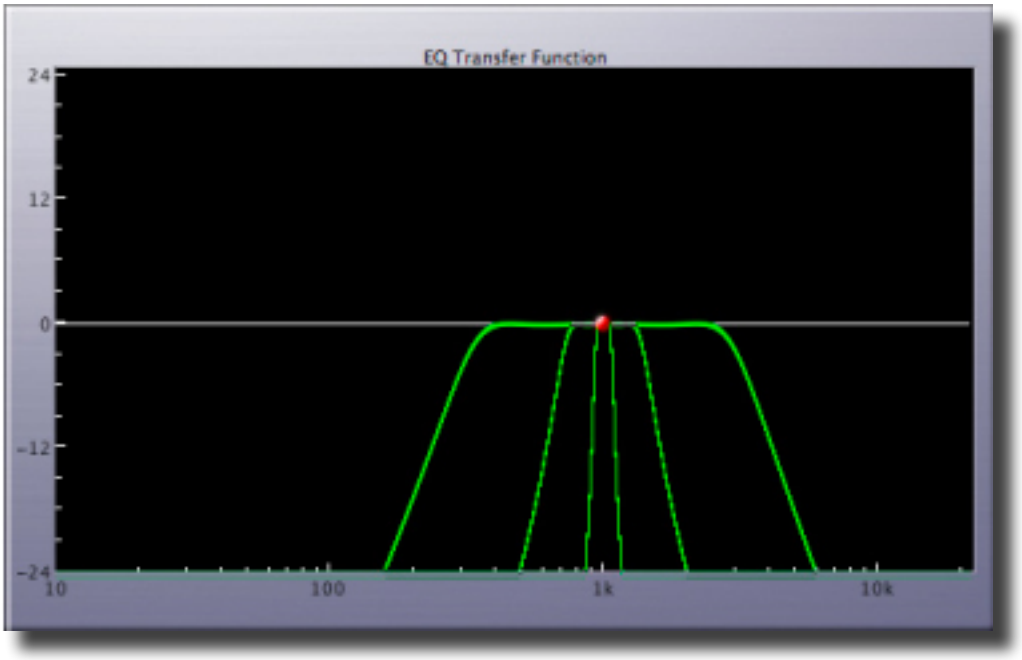


3rd order high pass with 0.1 dB of passband ripple & 10 dB of attenuation

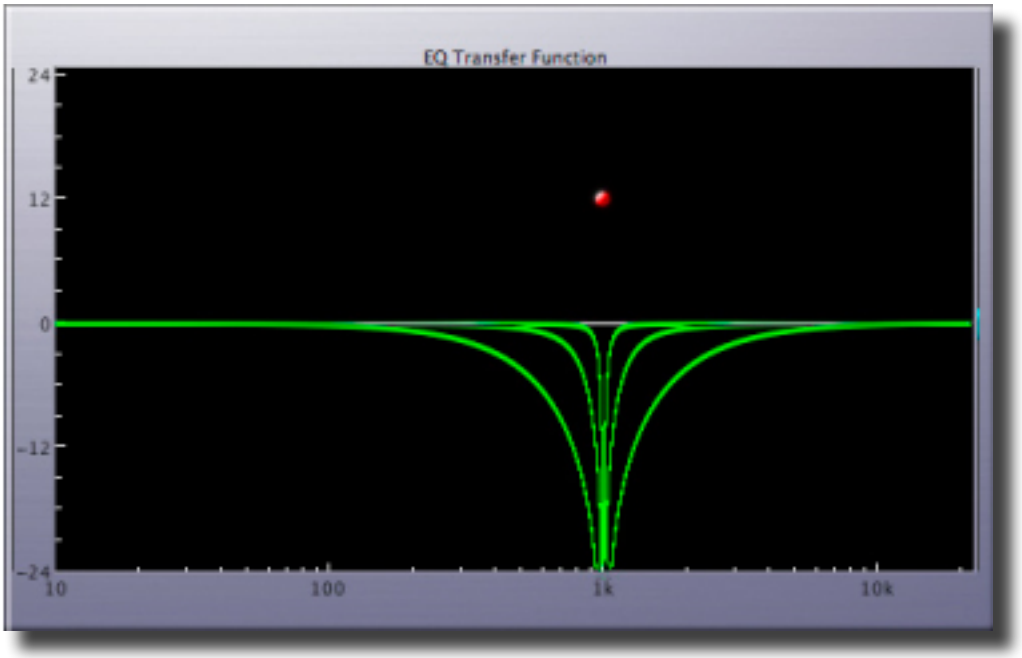
The bandpass and band stop filters are straightforward, three parameter forms, and the notch filter has only two parameters as the gain is implied to be -∞. The next two figures once again include quality factors (Q) of 0.5, 2 and 10.



1st order bandpass with f_R of 1000 Hz



3rd order bandpass with f_R of 1000 Hz



Notch filter with f_R of 1000 Hz

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Symbols

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Comments, corrections and suggestions regarding this manual are always welcome. Please contact us at <support@sonicstudio.com>.