

# elysia



PLUGIN MANUAL

# museq

**BRAINWORX**  
by Native Instruments

**Plugin Alliance**  
by Native Instruments

WELCOME!



# introduction



## SYSTEM REQUIREMENTS

Please check all information on this topic here:  
<https://plugin-alliance.com/en/systemrequirements.html>

## ACTIVATION

Details about the activation process can be found in the Plugin Alliance Activation Manual, located in the same folder as this PDF, or online:  
[https://files.plugin-alliance.com/products/activation\\_manual.pdf](https://files.plugin-alliance.com/products/activation_manual.pdf)

## TECHNICAL SUPPORT

Please contact Plugin Alliance for help:  
<https://plugin-alliance.com/en/support.html>

## FIRST OF ALL...

...thank you very much for using the museq plugin!

This great emulation makes our musical equalizer come alive on your DAW. It has all the original sound and functions the hardware is known and loved for, including the outstanding high/low cut filters with resonance and the Warm Mode sound shaper.

The plugin version even adds some powerful extras, like the integrated M/S matrix for mid and side processing, the possibility to link both channels for more convenient dual-channel operation, and dedicated output level controllers for adapting your settings to the available headroom.

In fact, the museq can be used with great benefit in so many different situations that we have decided to include two variants of the plugin in your license: The full fledged Master version with all the bells and whistles and a slightly reduced Mix version for quick and easy settings.

So here it is - the digital version of a very flexible and musical sounding EQ with an extremely powerful feature set, shining on any kind of audio material you throw at it.

Have lots of fun and success with it!



# introduction



## TRUE EMULATION

How has the hardware been 'translated' into software code? Actually the plugin is the result of a pretty long and complicated development process... The following provides just the basic idea:

Transferring a complex analog hardware into digital code is not exactly trivial, especially if the model is a completely discrete design like the museq.

The first important task in a project like this is to fragment the electronic circuitry into separate functional blocks. These blocks are translated into software step by step, after which they will be reunited to become a functional plugin.

This first result is measured very accurately and then compared to the hardware, which leads to an extensive and very detailed matching process. The work on the graphical user interface (photography, retouching, rendering) takes place at the same time.

The final stage is the calibration of the behavior of all the controllers in order to give the software the 'feel' of the real thing. Finally, the finished code is ported to different plugin interfaces (RTAS/VST/AU/AAX...) and packed into installation routines.



## OVERSAMPLING

The museq plugin benefits from higher sample rates in two ways: In the first place, it uses more samples during the same time for a better resolution of its filters.

Secondly, it reduces aliasing artifacts and therefore brings the high frequency filter curves of the museq even closer to its analog counterpart.

The museq plugin employs the oversampling technique in order to enjoy these advantages even if lower sample rates are used. This means that the basic sample rate of a project is multiplied by a certain factor inside the plugin without the need to set the complete project to a higher frequency.

This method consumes a certain amount of CPU power, but the acoustic result speaks for itself. The plugin uses oversampling according to the following rules:

- Project sample rate lower than 50 kHz: 4x oversampling
- Project sample rate lower than 100 kHz: 2x oversampling
- Project sample rate higher than 100 kHz: No oversampling



## MOUSEWHEEL SUPPORT

You do not necessarily have to click and drag the controllers of the plugin. Instead, try making your settings with the alternative mousewheel control, without clicking on the specific controller first!

### Fine mode

|     |                        |
|-----|------------------------|
| VST | Shift + mouse wheel    |
| AU  | Shift + mouse wheel    |
| PT  | Ctrl/Cmd + mouse wheel |

### Standard position

|     |                        |
|-----|------------------------|
| VST | Ctrl/Cmd + mouse click |
| AU  | Alt + mouse click      |
| PT  | Alt + mouse click      |

### Linear/Circular mode

|     |     |
|-----|-----|
| VST | Alt |
|-----|-----|



## VIRTUAL BAND BYPASS

The user interface of the museq does not have dedicated bypass switches for each individual band, however you can still A/B single filters conveniently:

Just Ctrl/Cmd + Click or Alt + Click (depending on your host) on the specific Gain controller, and you'll toggle between the zero position and the latest value you have set. This gives you virtual bypass switches for each individual filter band.



The museq plugin has a great additional feature which did not find a place on the hardware: An integrated M/S matrix! With it, you can process areas (the mid and the side) in a full mix that standard stereo processors could not give you access to.

#### Unlinked M/S Mode:

This really unleashes the full potential of Mid/Side processing. All the controllers can be set fully independent from each other. This is a very powerful tool, but it has to be used with certain care and experience.

#### Linked M/S Mode:

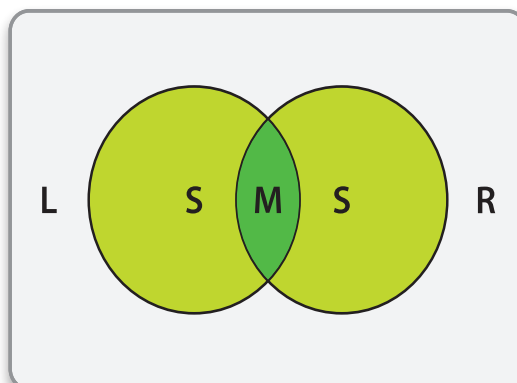
This is the "Light" version of M/S processing. All controllers are linked now, and the result will be the same as in linked stereo operation; the only exception being the controllers for the output gain: These remain unlinked and therefore allow changes of the stereo image.

If you are unfamiliar with the concept of Mid/Side processing, please read on and do not hesitate to spend some time investigating how this works – it is absolutely worth while.

M/S technology is commonly known as a variant of stereo microphoning. This technique uses a microphone with cardioid pattern for the middle signal (M) and another one with bi-directional pattern with an offset of 90° for the side signal (S). The main advantage of this technology is its mono compatibility. FM radio

stations use M/S technology for transmitting stereo signals exactly for this reason.

To create M/S signals, the left and right channels of the stereo sum are added to generate the mid (M), whereas the side (S) is created by subtracting the right from the left channel:



$$M = L+R$$

$$S = L-R$$

To decode an M/S signal back to stereo again, M is added to S for the left channel and S is subtracted from M for the right channel:

$$L = M+S$$

$$R = M-S$$

The integration of an M/S encoder and decoder into an equalizer generates new potentials that classic stereo EQs can hardly offer. One of the

main advantages is the possibility to process the middle and side signals separately. This way you can make the center sound more solid without corrupting the original stereo spectrum, for example.

Of course it is also possible to enhance the presence of the side signals in an already finished mix. The stereo width can be influenced fast and effectively, too, and it is also possible to process specific parts of a mix that could not be selected in a stereo mix as precisely as it is possible in M/S mode.

Depending on the mix, sometimes it is only the middle channel that needs some tweaking whereas the side channel remains unprocessed. Other mixes have a lot of stereo information; in these cases both middle and side channels are processed, the settings of which can be completely different from each other.

At the beginning, both gain controllers should be set at the same values, but that can change in the progress of optimization by all means.

*Note:* If you are new to the M/S technique, you might want to check out the free `bx_solo` tool from [www.brainworx-music.com](http://www.brainworx-music.com).



# controls



① **Gain:** Boosts the frequency you have selected with the related frequency controller (2). If you want to cut this area instead, use the corresponding button (5) to switch the band into cut mode.

If the outer Low and High bands are operating as low and high cut filters with resonance (4), the gain controllers set the amount of resonance for their individual bands.

② **Frequency:** Sets the frequency for each individual band.

③ **Level:** Raises or lowers the overall output level. Left is less, right is more, and the center position is neutral without any cut or boost.

④ **Low Cut/High Cut:** Switches the filter characteristics from low shelf to low cut or from high shelf to high cut respectively. These cut

filters have an additional resonance peak as a special feature, which can be useful in many different situations.

⑤ **Cut Mode:** Switches the corresponding gain controller from boost to cut mode.

⑥ **Narrow Q:** Switches the quality factor (Q) of the corresponding frequency band from low (wide curve: Q 0.5) to high (narrow curve: Q 1.3).

⑦ **Left/Right:** Activates or deactivates the corresponding channel.

⑧ **Warm:** Engages a sound shaping option which emulates the effects of an analog slew rate limiter. Subtle, but nice.

⑨ **M/S Mode:** Activates Mid/Side processing. The left channel becomes the mid, right be-

comes the side. If this function is not active, the EQ will work in stereo mode.

⑩ **Link:** Left and right (or mid and side channel alternatively) can be linked. In this case, every change you make in the left or right channel will be transferred to the other channel 1:1.

⑪ **Version:** A click on the elysia logo will reveal the actual version of the plugin you have installed and the people behind the project.



# controls



① **Gain:** Boosts the frequency you have selected with the related frequency controller (2). If you want to cut this area instead, use the corresponding button (5) to switch the band into cut mode.

If the outer Low and High bands are operating as low and high cut filters with resonance (4), the gain controllers set the amount of resonance for their individual bands.

② **Frequency:** Sets the frequency for each individual band.

③ **Level:** Raises or lowers the overall output level. Left is less, right is more, and the center position is neutral without any cut or boost.

④ **Low Cut/High Cut:** Switches the filter characteristics from low shelf to low cut or from high shelf to high cut respectively. These cut filters have an additional resonance peak as a special feature, which can be useful in many different situations.

⑤ **Cut Mode:** Switches the corresponding gain controller from boost to cut mode.

⑥ **Narrow Q:** Switches the quality factor (Q) of the corresponding frequency band from low (wide curve: Q 0.5) to high (narrow curve: Q 1.3).

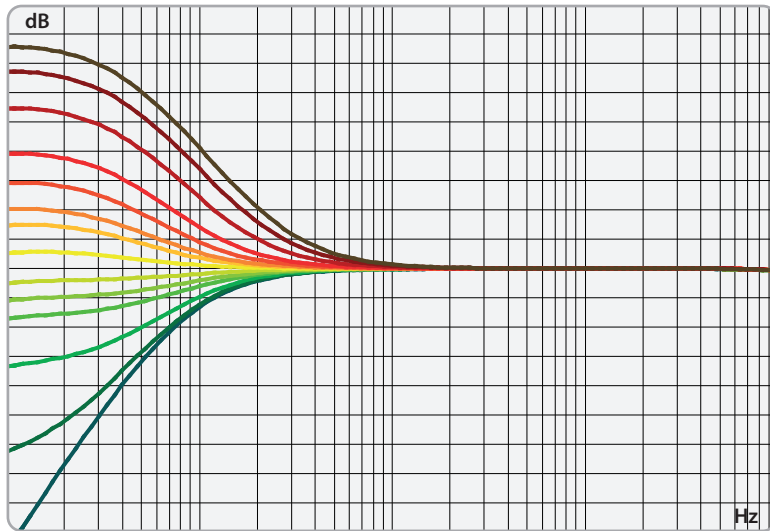
⑦ **Warm:** Engages a sound shaping option which emulates the effects of an analog slew rate limiter. Subtle, but nice.

⑧ **Active:** Activates or deactivates (bypasses) the plugin.

⑨ **Version:** A click on the elysia logo will reveal the actual version of the plugin you have installed and the people behind the project.

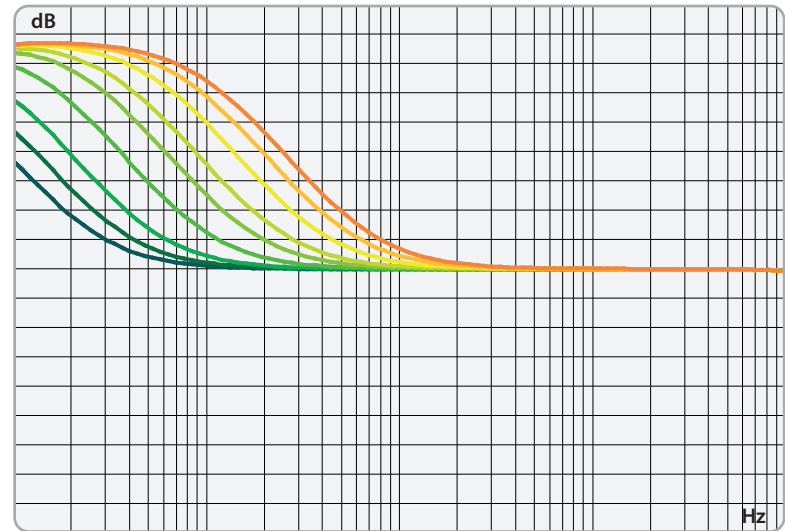


# controls



**Low Shelf Gain**

Miscellaneous settings of the gain controller in boost (red) and cut mode (green)

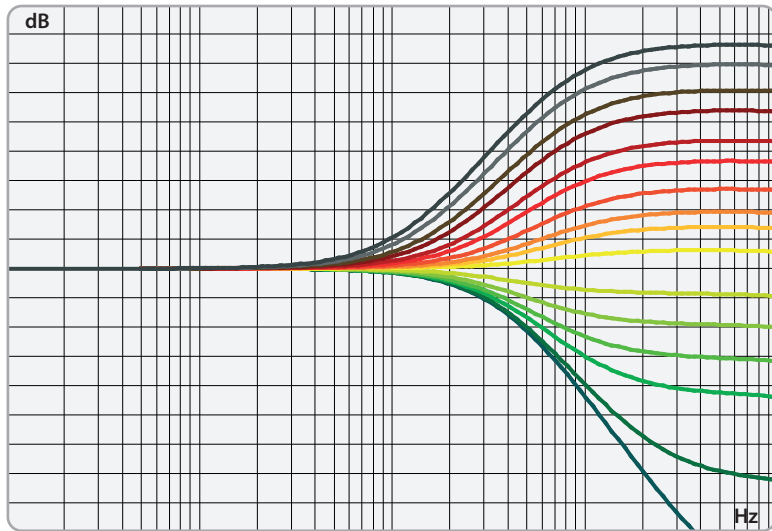


**Low Shelf Frequency**

Miscellaneous settings of the frequency controller in boost mode

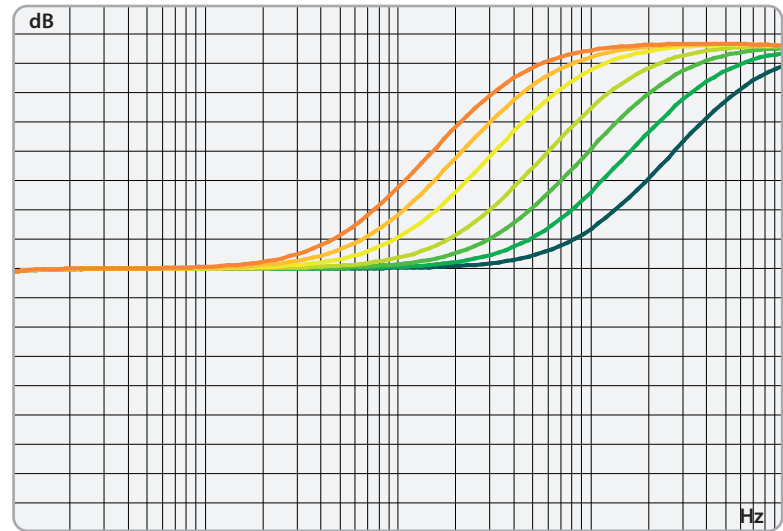


# controls



**High Shelf Gain**

Miscellaneous settings of the gain controller in boost (red) and cut mode (green)



**High Shelf Frequency**

Miscellaneous settings of the frequency controller in boost mode



# LOW CUT/HIGH CUT

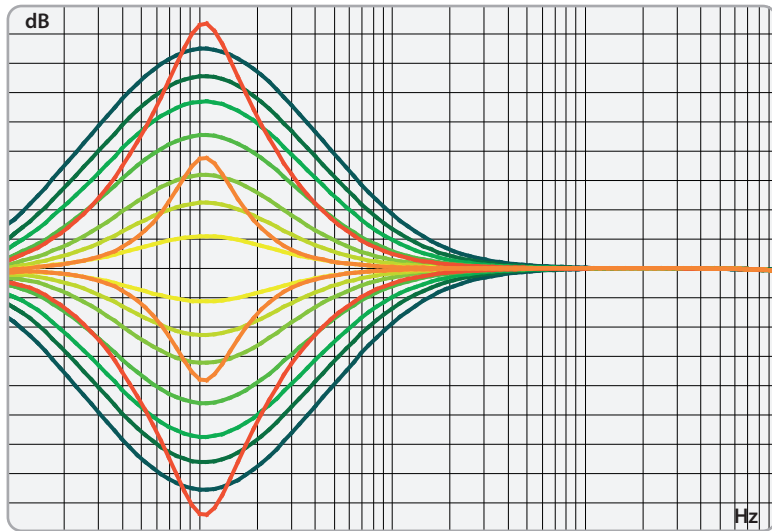


# controls



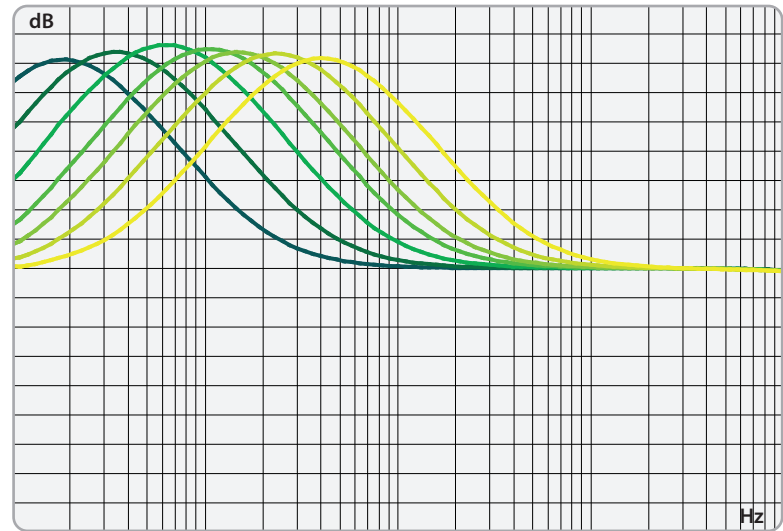


# controls



**Bottom Gain**

Miscellaneous settings of the gain controller with wide (green) and narrow Q (red)

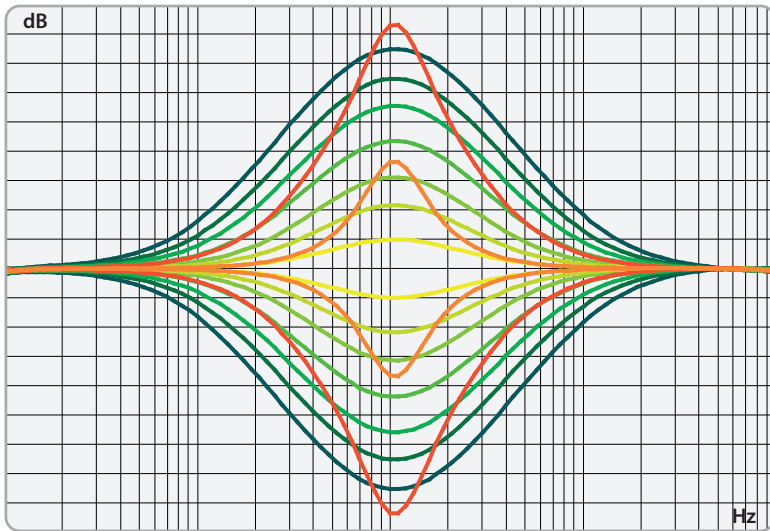


**Bottom Frequency**

Miscellaneous settings of the frequency controller in boost mode with wide Q

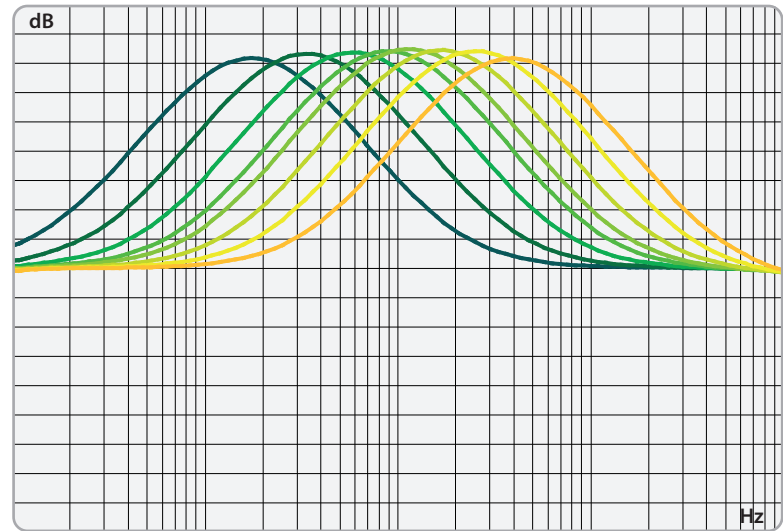


# controls



**Middle Gain**

Miscellaneous settings of the gain controller with wide (green) and narrow Q (red)

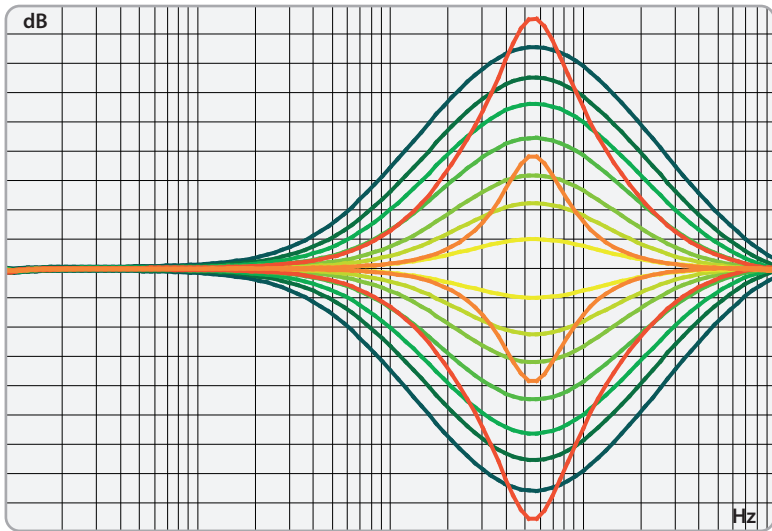


**Middle Frequency**

Miscellaneous settings of the frequency controller in boost mode with wide Q

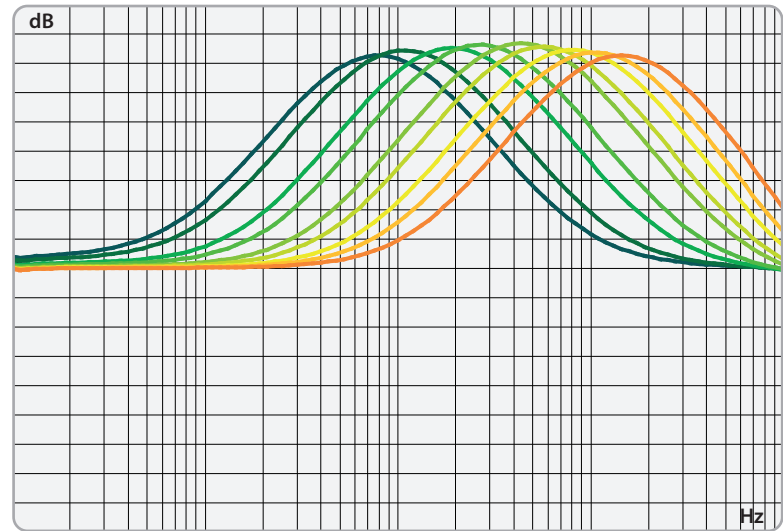


# controls



**Top Gain**

Miscellaneous settings of the gain controller with wide (green) and narrow Q (red)

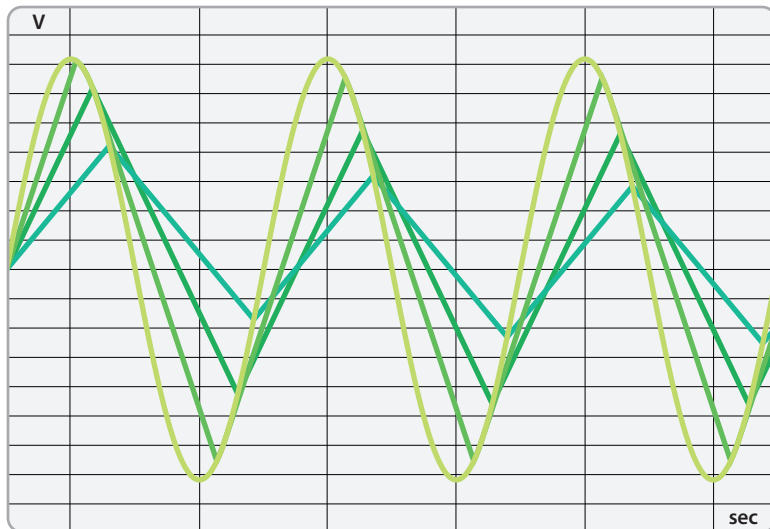


**Top Frequency**

Miscellaneous settings of the frequency controller in boost mode with wide Q



## controls

**Warm**

Effects of the slew rate limiter on a sine wave

This function emulates the effects of an analog slew rate limiter that reduces the speed of the output amplifier stages. This affects the frequency spectrum, the harmonics and the transient response at the same time.

Fast transients are slowed down a bit and the overall sound appears more round and merged. As this function influences the behavior of the output stages, the effect it creates has an impact on the complete processing results of all EQ stages.

This way the museq plugin offers two different sound characters at the push of a button: Powerful transparency by default, and the slightly colored richness of the Warm mode as an alternative.

Please keep in mind that this is much more a subtle audio shaping feature than a glaring sound effect, but it is certainly nice to add a little bit of color to a signal which might otherwise sound just too clean.

**TECHNICAL SUPPORT**

Please contact Plugin Alliance for help:  
<https://plugin-alliance.com/en/support.html>

elysia GmbH  
 Am Panneschopp 18  
 41334 Nettetal  
 Germany

[www.elysia.com](http://www.elysia.com)

General Manager:  
 Ruben Tilgner

Register court:  
 Krefeld, Germany

Registration number:  
 HRB 10987

VAT ID:  
 DE247353545

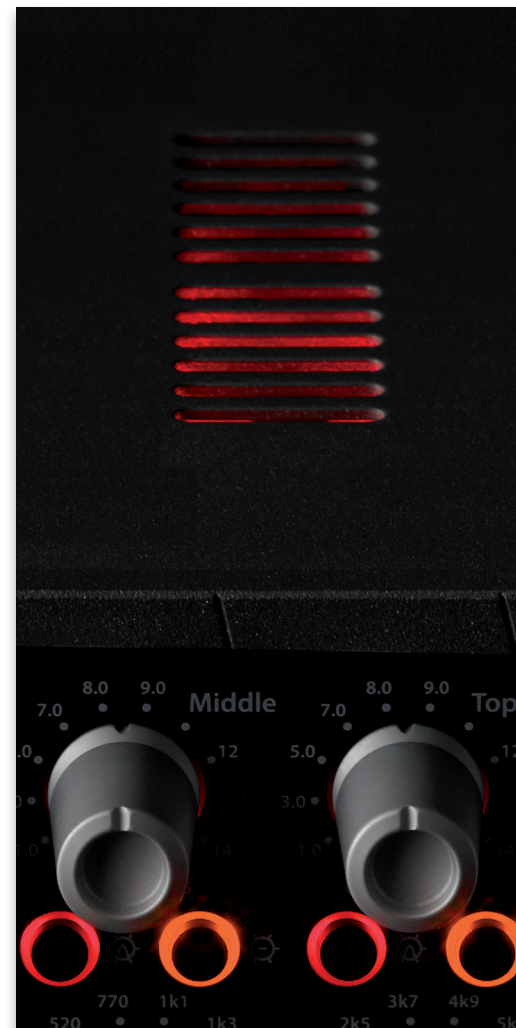
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