

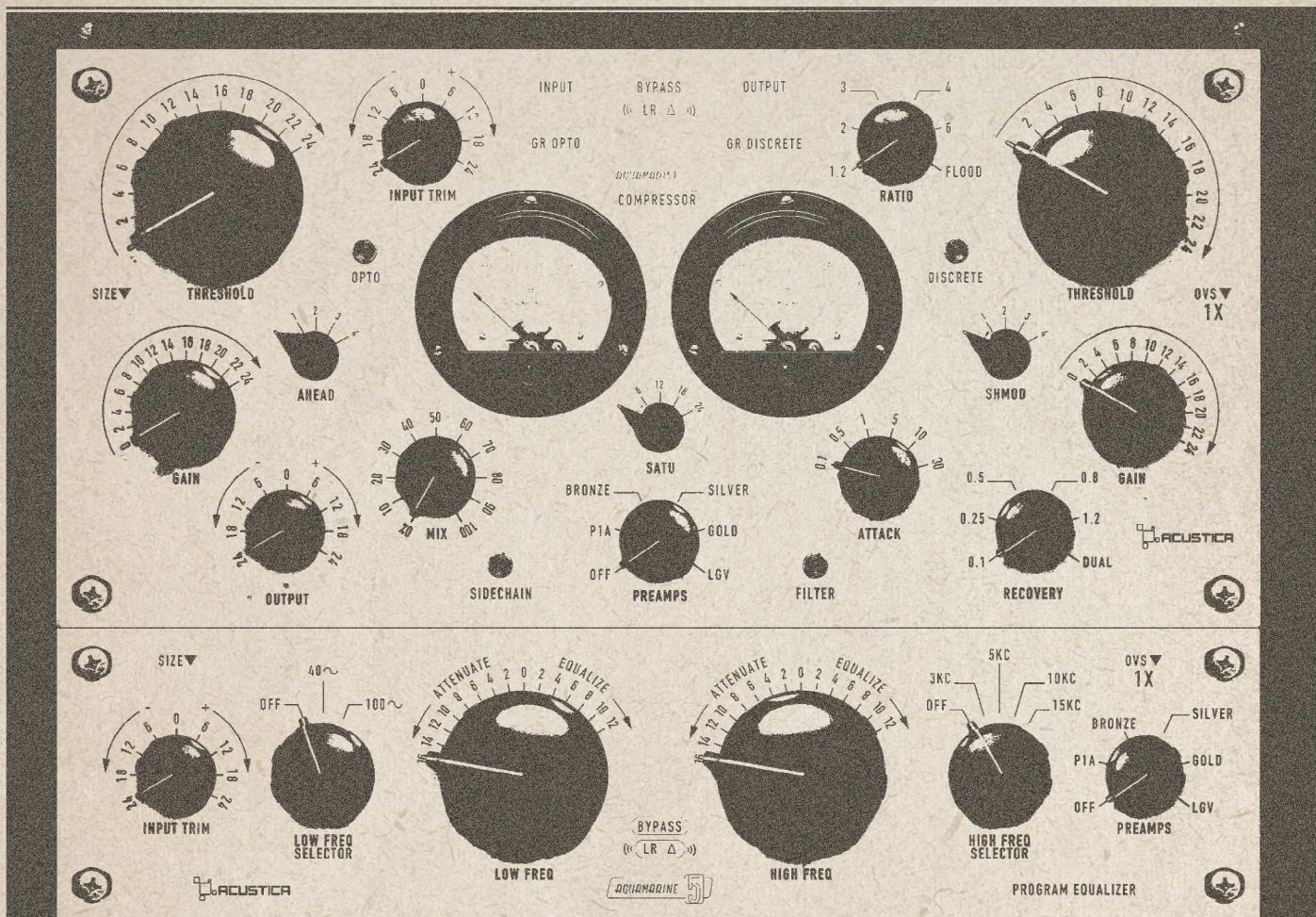


USER'S MANUAL

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# AQUAMARINE 5 SUITE



## PACKAGE CONTENTS

Aquamarine5 suite is made up of:

- Aquamarine5 (standalone Mastering discrete/optical compressor)
- Aquamarine5 EQ (standalone Vintage Passive Equalizer)

During the modeling process we used the best converters and cables on the market, we measured the unit in excellent conditions, and employed skilled experts in the sampling process using our self-developed sampling application. Now you have one of the best, high-quality professional audio software plugins in your audio workstation. We spend countless hours developing these no-compromise plug-ins to give you nothing but the best sound and feel that is as close to the real hardware as can be imagined.

We are confident that this plug-in will help you make more professional mixes... Because: Sound First!

Each plug-in included in the Aquamarine5 suite comes in a "Standard version" or an alternative "ZL\*" version which operates at \*zero latency and is thus suitable for use when tracking, at the cost of extra processing resources.

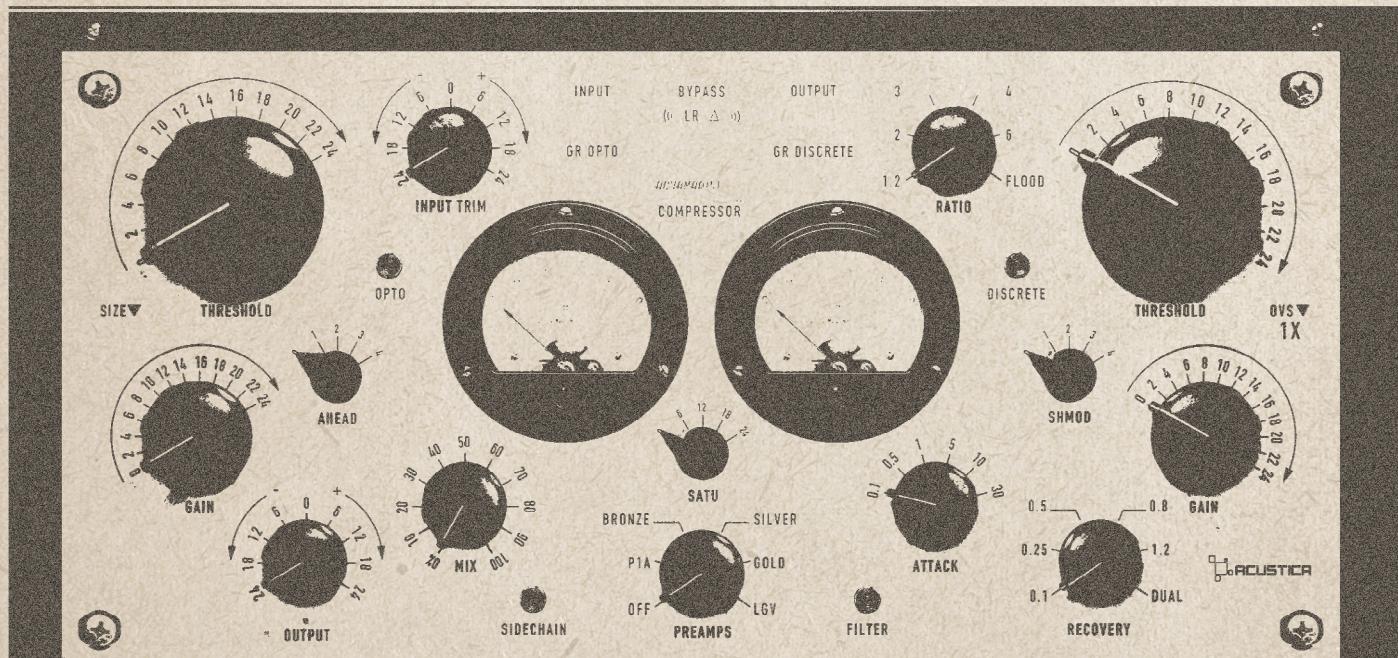
# AQUAMARINE 5 MASTERING COMPRESSOR

Welcome to the latest and most innovative technology, the Acustica AQ5 Mastering Compressor Plugin, originally developed by the British Royal Navy, then turned over to a group of raw and rogue civilians with no military rank (but with an ample supply of rebellious and rancorous spirit) that were used to spending most of their time drinking ale and playing the lute.

This ominous military technology, which has been described as a cross-hybrid of part black magic, part extraterrestrial tech, and part weaponry engineering, was used with great success during the The Battle of Trafalgar (21 October 1805) and is now brought to you in software form.

Originally there was an "electroluminescent optical attenuator" and a "discrete voltage controlled amplifier", which we tried to add to our seemingly magic box of war tactic secrets, but because of the size and weight, we were forced to go with software....luckily with zero loss of functionality. Inside this "box-o-docs" contained the answers to the victory of the battle, as well as the long sought after answers to mastering engineers needing affordable yet TOP QUALITY tools.

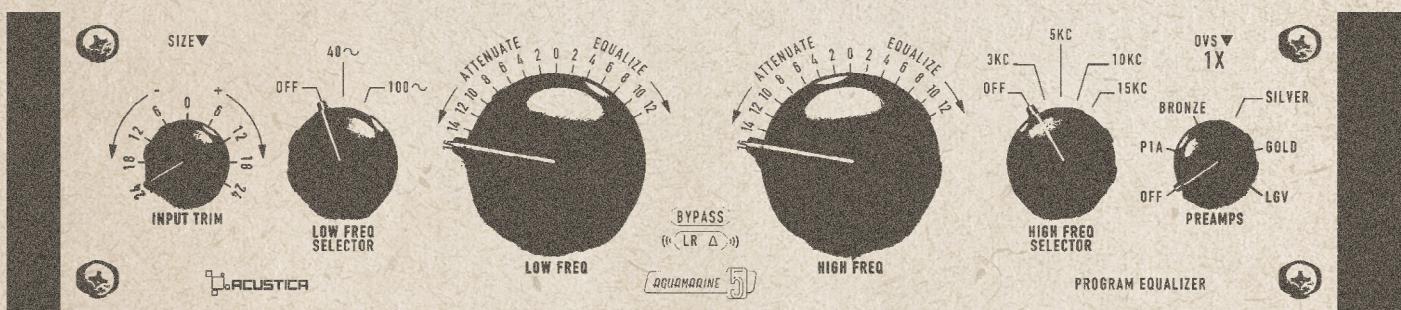
Compared to the original model, is the addition of a big-bulky-knob called "Mix", which is useful for the compression dosage; when set to 100%, both compression stages are mixed with the original signal. The preamp stage cannot be disabled or mixed and it is placed at the start of the audio chain like a real transformer, but you do have 5 different preamp options. We also included a bypass switch for the preamp stage, in order to limit harmonic distortion for a cleaner result.



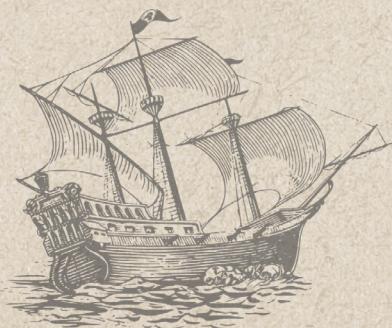
We improved the speed of the discrete section by reaching attack times close to zero, and we implemented appropriate gain staging. We also modified the shape of attack and release curves so as to minimize harmonic distortion and aliasing, keeping in mind that we are working with software (not a hardware context). On top of all this, we tried to keep the original times of rise and fall and the general attack/release curves shape, although in a smoother way. Sadly here we had to differentiate from the original model: keeping the correct shape and having a low aliasing is beyond the boundaries of computational physics, software is by definition a compromise.

It has to be stressed that our compressor must operate with an input signal of -18dB dBFS; otherwise the signal will be highly compressed and sometimes damaged even with the minimum threshold values. This also occurs in the hardware world, in fact our first compression test results in a reduction of 70dB with the threshold values around -20dB. Unless you want extreme compression and more importantly, if you want to use this software correctly, please keep this rule in mind.

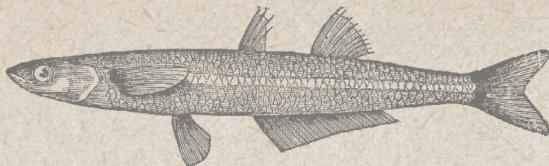
## AQUAMARINE 5 VINTAGE PASSIVE EQ



Aquamarine 5 EQ is a precise recreation of an American ultra-rare passive equalizer from the 1950s. It's equipped with only a few intuitive and independent controls for Low and High bands. And when we say 'ultra-rare' we say it for a reason. The owner of this unit, which we sampled in Berlin, explained how only a few of these beasts – possibly less than 5 – can still be found in good working order. We don't know how the others sound compared to the one we are bringing you or if they present any differences due to component variations or simply due to maintenance. What we do know, though, is that the DNA of Aquamarine's 5 EQ is the exact same one as its hardware counterpart and we like to consider it a tribute to this iconic piece of engineering. For further details consult "EQ SECTION" – pag.13.



# AQUAMARINE 5 COMPRESSOR



## PREAMPLIFIER SECTION

The first processing stage is the preamp section, switchable with the PRE switch. These selections allow you to switch between different preamplifier emulations.

### -EQ preamps:

- P-1: the same vintage preamp of PURPLE P-1, very clean.
- Lgv: Mono Line Preamplifier derived from ultra rare EQ unit, quite clean.

### -Comp preamps:

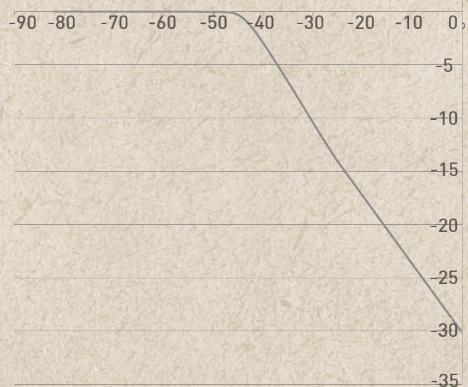
- Bronze: the most colored setting.
- Silver: more colored than gold but quite clean.
- Gold: with low distortion and flat low frequency response.

The Bronze, Silver, Gold preamps are the result of the sampling of the custom output transformers of the original compressor unit that are in effect: the most colored, colored, clean, respectively.

OFF: preamp bypass, this is a bypass that cuts the preamp stage out of the signal chain

## OPTO SECTION

The second stage is the Opto Compressor. This is an emulation of an optical attenuator. The controls for the Opto Compressor are Opto Threshold and Opto Gain.

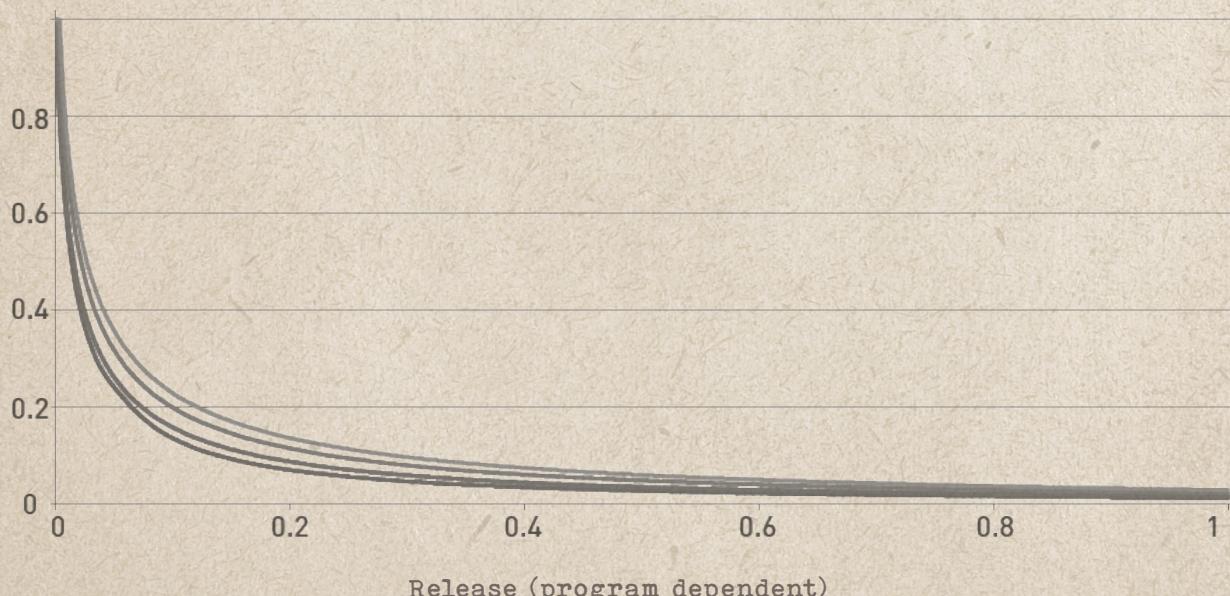
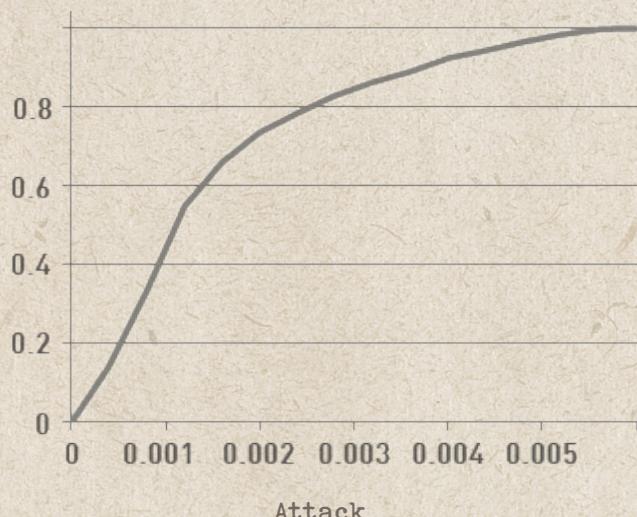


Opto transfer curve

- . Opto Threshold: controls the level above which the compressor considers the signal too loud, engaging compression, Aquamarine loads with a 0dB threshold.
- . Opto Gain: controls the amount of makeup gain, which is used to restore the compressed signal to the desired amplitude.
- . Opto: section is engaged by the Opto Bypass In/Out switch.
- . Opto ahead: this control is Program-dependent, it means that rather than responding to a fixed value, the attack time is variable based on the input signal.

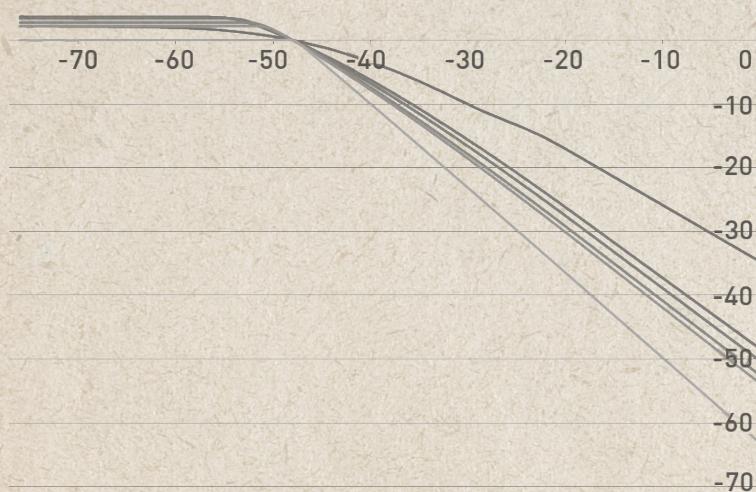
Look-ahead goes from 0 to 4 ms.

The input signal is split, and one side is delayed. The non-delayed signal is used to drive the compression of the delayed signal, which then appears at the output. This way a smooth-sounding slower attack rate can be used to catch transients.



## DISCRETE SECTION

The third stage is the Discrete Compressor, that emulates a VCA. The controls are similar to the optical section with some additional knobs: discrete ratio, discrete attack and discrete recover.



Discrete transfer curve

Discrete section: is engaged by Discrete Bypass In/Out switch.

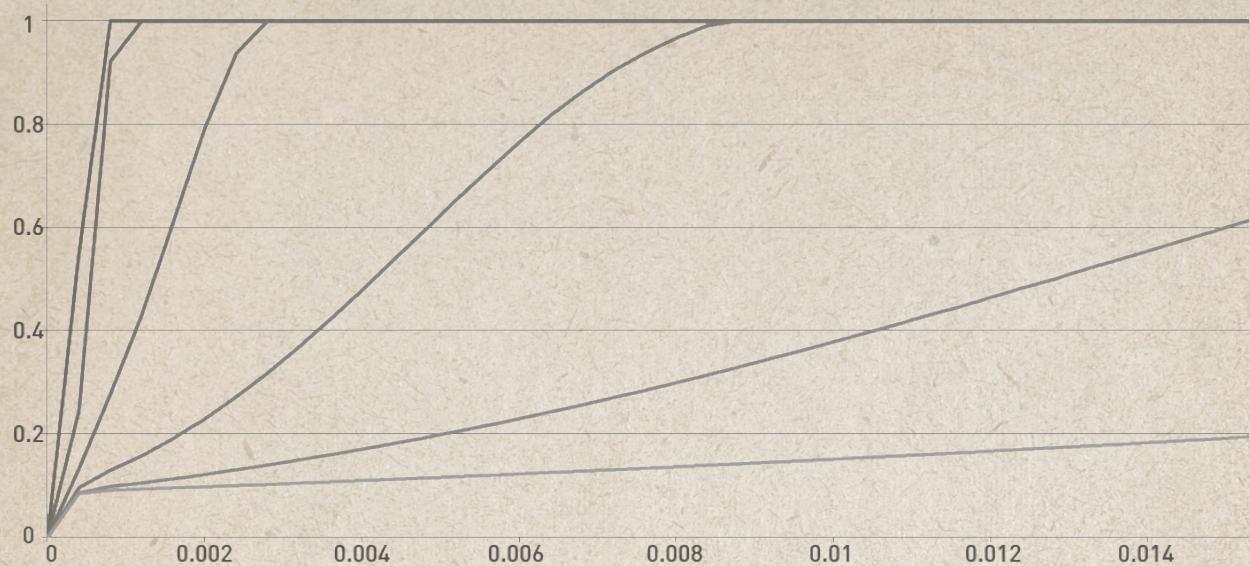
. Discrete ratio: has six positions and determines the ratio of the compressed signal. The first position corresponds to a ratio of 1.2:1, so one additional decibel above the threshold produced. Available values are 1.2:1, 2:1, 3:1, 4:1, 6:1 and FLOOD with 20:1 ratio.

. Discrete attack: varies how fast or slow the compressor engages once the compression threshold has been reached.

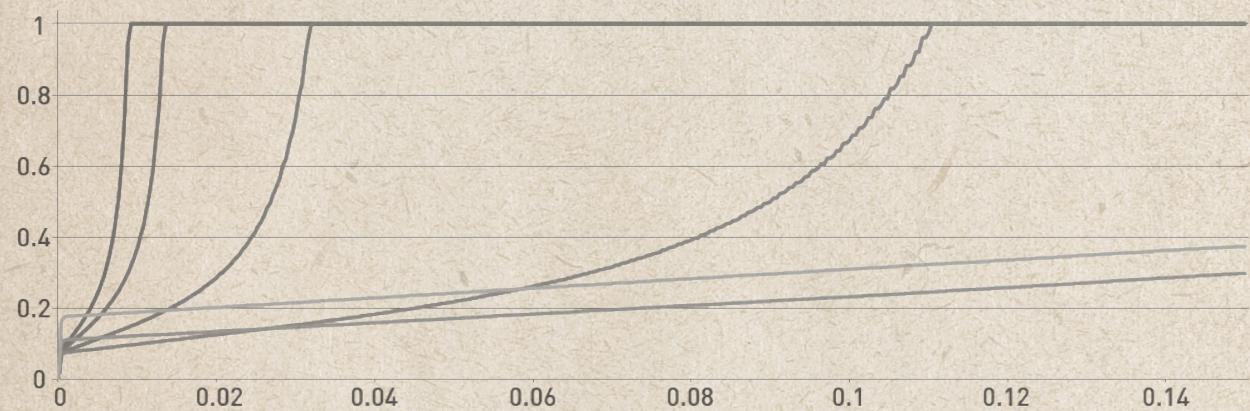
All attack values respond to fixed values.

. Discrete SH-MOD: ShMod control is an adjustable shape control for the attack behavior of the Discrete compressor.

The Default position is 2, it's the "normal" Aquamarine3 attack (0ms of look-ahead). You can go down to 0 reaching up to 4ms of look-ahead. On the other side you can go to position 4 to dramatically change the shape of the attack.



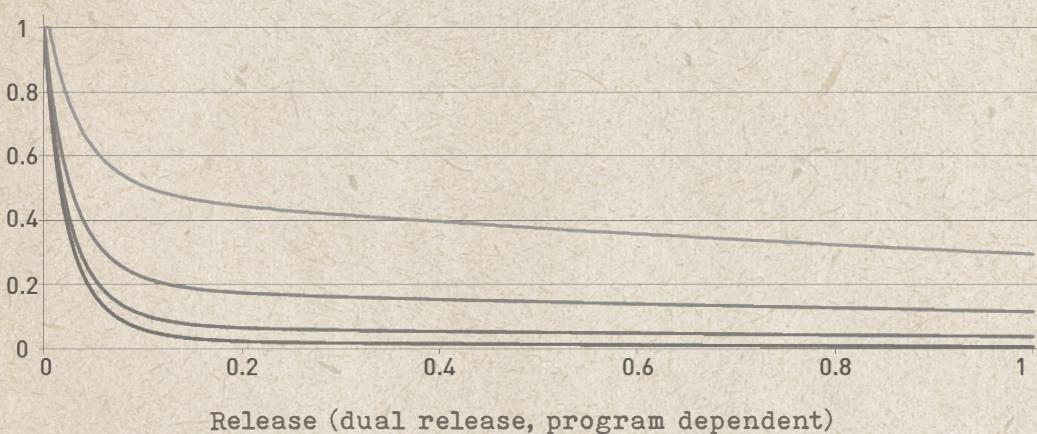
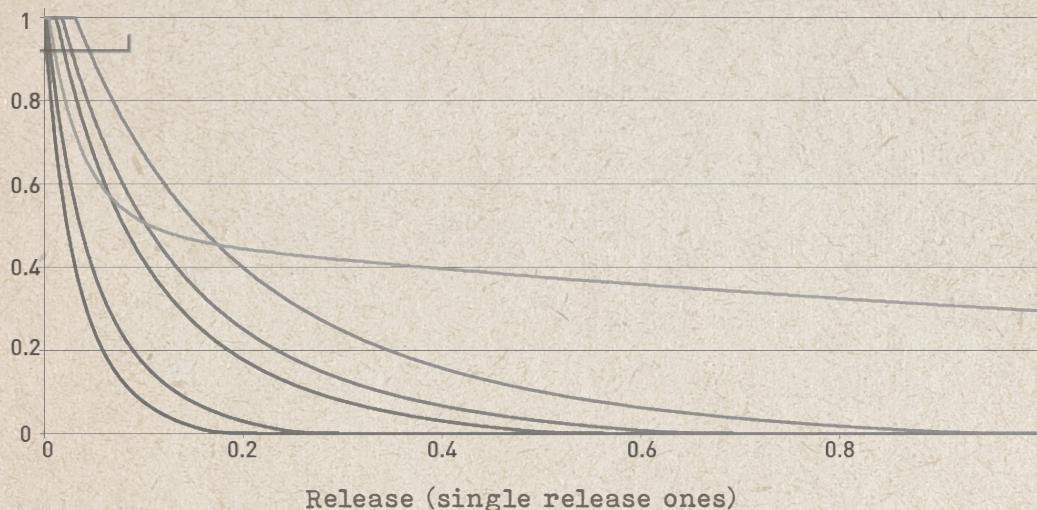
Attack curves plot: SHMOD=2



SHMOD=4



. Discrete recover: determines how long it takes the signal to return to the uncompressed level after the signal level falls below the set threshold. All recover settings respond to fixed values (single release) except for "DUAL" position (AUTO-RELEASE).



## FILTER

The side-chain filter button engages a filter in the (internal) side-chain of both the opto and discrete sections, which cuts off frequencies below 90Hz that will might trigger the onset of compression.

## MIX

The MIX knob weighs the original signal percentage in the final mix. With 0% the input signal is completely clean, while with 100% it's completely processed.

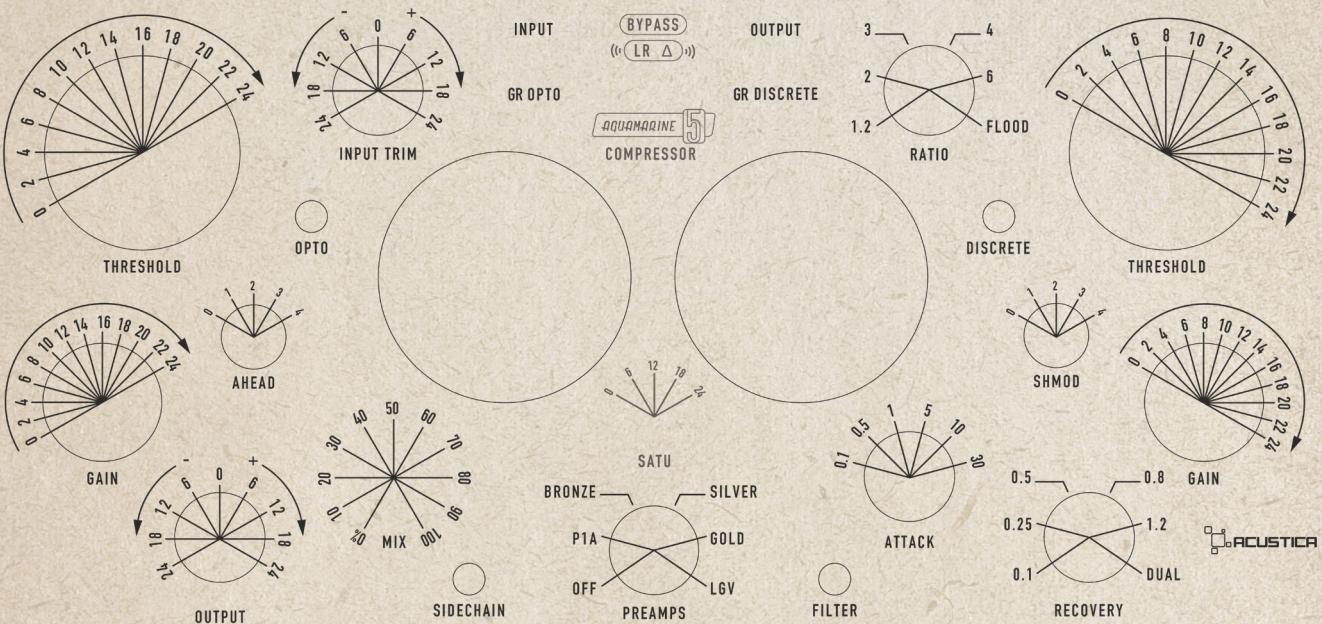


## METERS

Depending on the currently active program on the METER TYPE switch, meters may vary their output information;

Opto Discrete led on: meters display the reduction levels of the opto (left meter) and discrete (right meter) compressors;

Input-Output: these meters display the input (left meter) and output (right meter) levels of the plug-in.



## INPUT TRIM

This function allows for a "one knob" internal gain staging control by automatically linking input and output gain stages with an inverse law. The control sets the input level from -24dB to +24dB, and it is used to adjust the internal operational level of the plugin. Note that this is different from a standard input gain control due to the linked output gain stage, which always ensures that whatever gain change is introduced at Aquamarine's input, the output level is automatically compensated so that there's no perceived level change. When a positive value is selected the signal entering Aquamarine5 is brought up by the set amount in dB and the device will operate at a higher internal level.

NOTE: when the compressor preamp section is bypassed Input trim control has no effect on the plugins

## OUTPUT KNOB

This knob sets the input level from -192dB to +6dB.

# AQUAMARINE 5 EQ



## PREAMPLIFIER SECTION

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### -Comp preamps:

- Bronze: the most colored setting.
- Silver: more colored than gold but quite clean.
- Gold: with low distortion and flat low frequency response.

The Bronze, Silver, Gold preamps are the result of the sampling of the custom output transformers of the original compressor unit that are in effect: the most colored, colored, clean, respectively.

OFF: preamp bypass, this is a bypass that cuts the preamp stage out of the signal chain

## EQ SECTION

**INPUT TRIM:** this function allows for a "one knob" internal gain staging control by automatically linking input and output gain stages with an inverse law. The control sets the input level from -24dB to +24dB, and it is used to adjust the internal operational level of the plugin. Note that this is different from a standard input gain control due to the linked output gain stage, which always ensures that whatever gain change is introduced at Aquamarine's input, the output level is automatically compensated so that there's no perceived level change. When a positive value is selected the signal entering Aquamarine5 is brought up by the set amount in dB and the device will operate at a higher internal level.

**NOTE:** when the equalizer preamp section is bypassed Input trim control has no effect on the plugins

**Frequency control:** Frequency control is stepped and each band provides a series of frequency choices

Available frequencies are:

- Low freq selector: 40 Hz, 100 Hz.

- High freq selector: 3k Hz, 5k Hz, 10k Hz, 15k Hz.

- Low freq (Gain):

0 to approx +12 dB;

Clockwise for increased equalization.

- Q fixed: Shelving mode

0 to approx -16 dB;

Counter clockwise for increased attenuation.

- Q fixed: Shelving mode

- High freq (Gain):

0 to approx +12 dB;

Clockwise for increased equalization;

- Q fixed: Peaking mode;

0 to approx -16 dB;

Counter clockwise for increased attenuation;

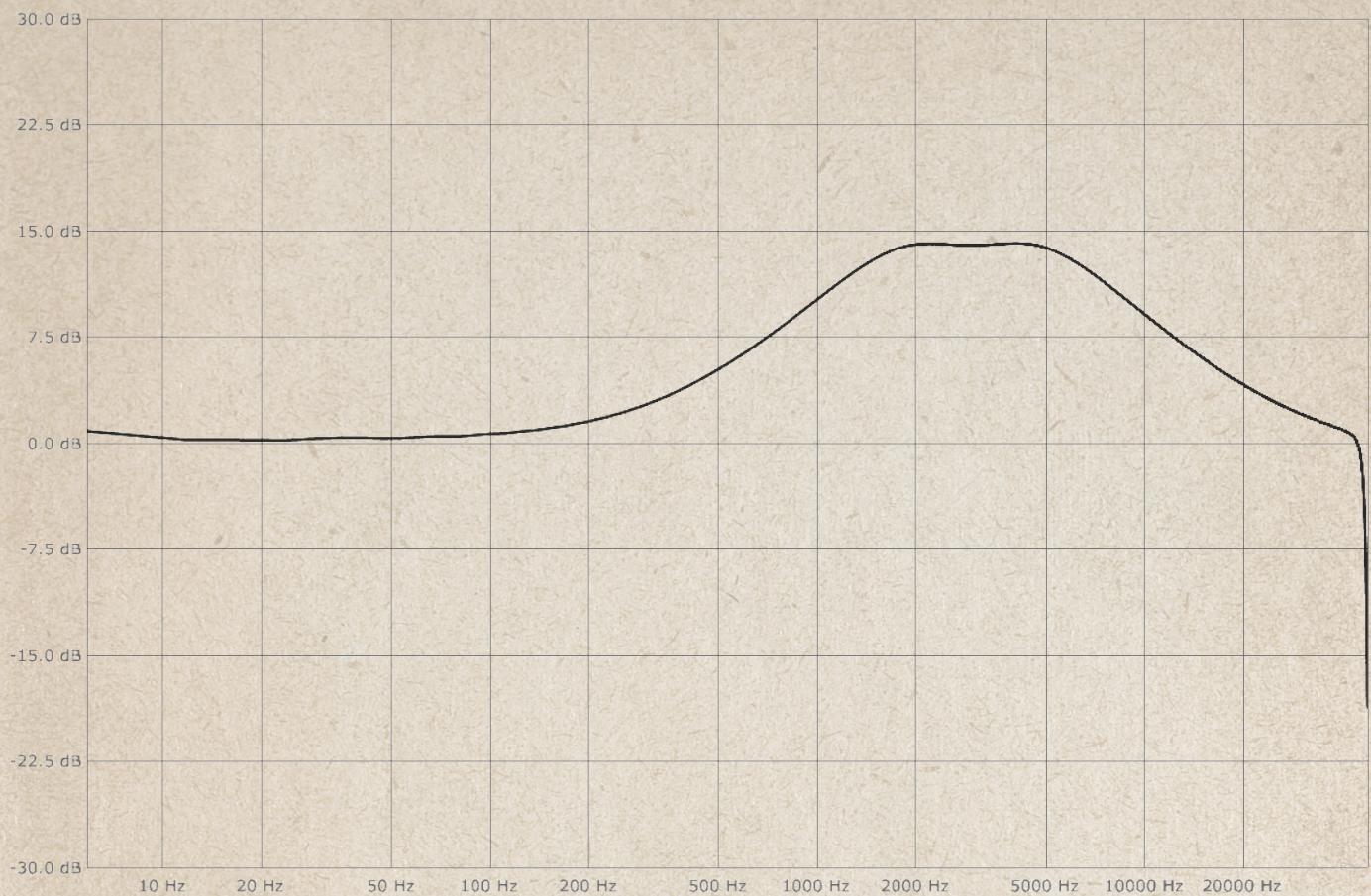
- Q fixed: Shelving mode;

**NOTE:** We are very proud to have created our software version of this historic EQ, you can consider it our personal tribute.

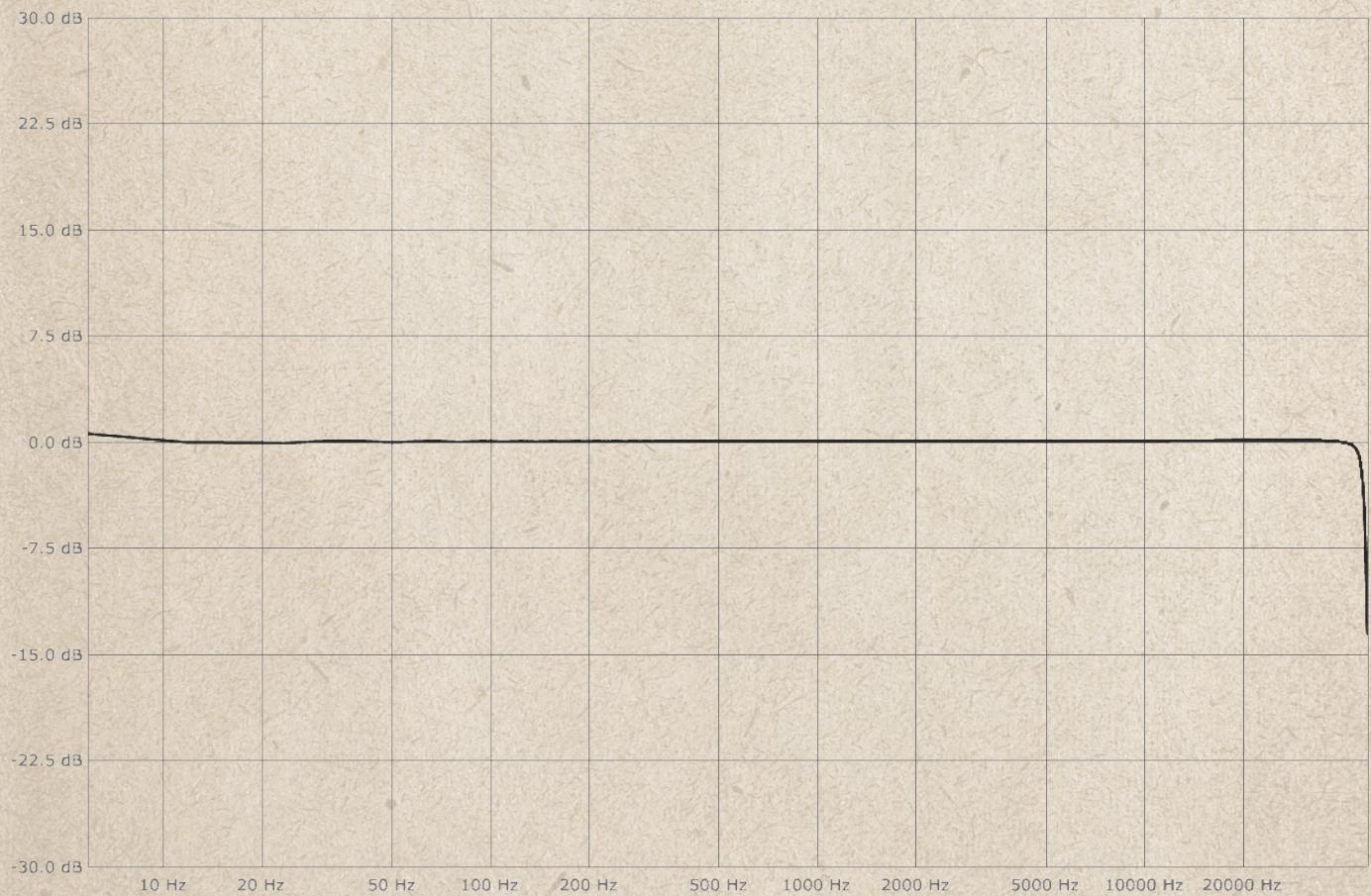
Therefore we decided to faithfully follow the graphics and preserve the values of the original unit's labels.

We would like to point out that each gain value reported on the GUI (both for LOW band and for HIGH band) will not slavishly correspond to the actual dB value of the plugin,

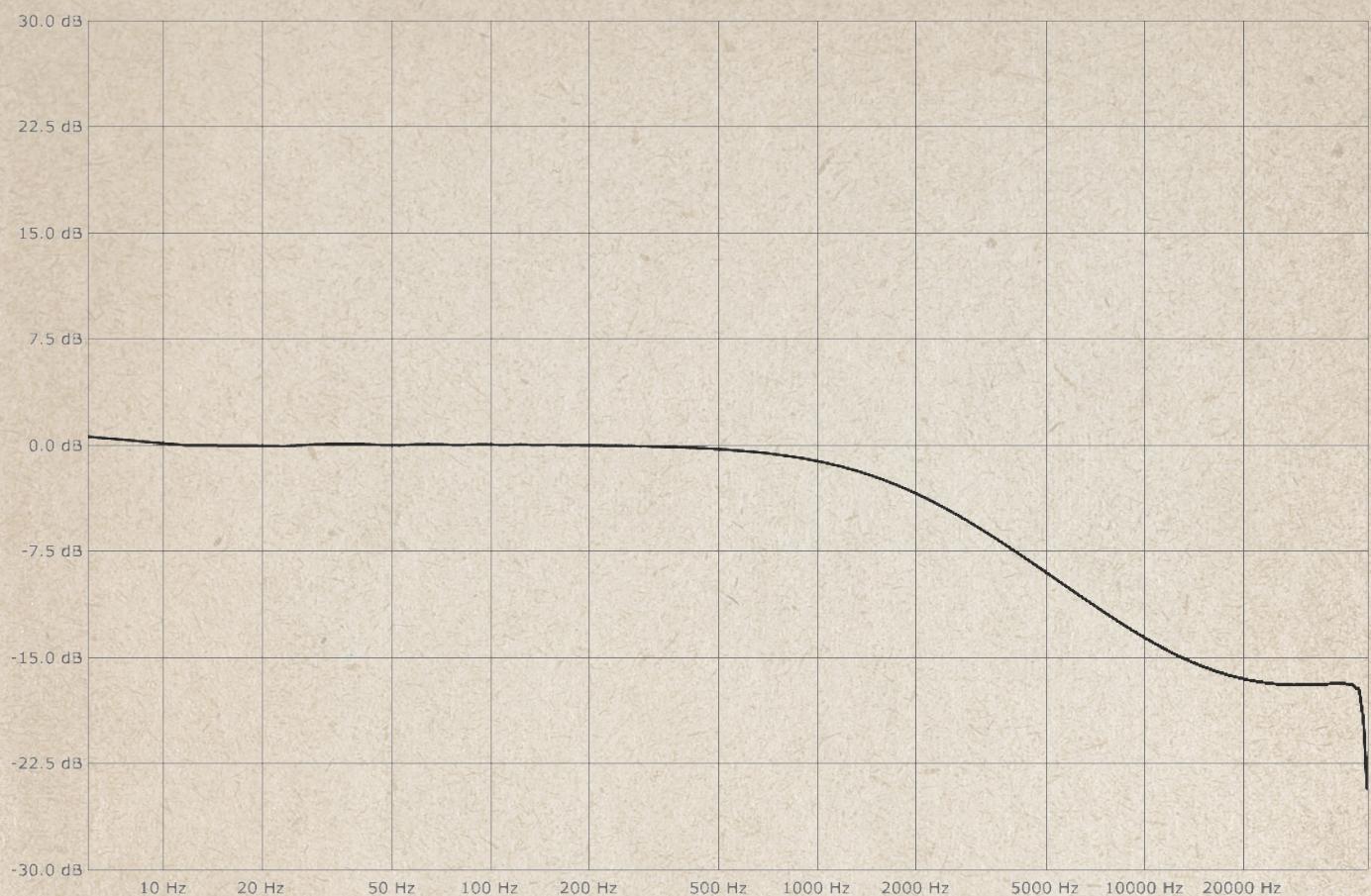
for this reason we report below a series of graphs of each band showing the effective gain and value mapping.



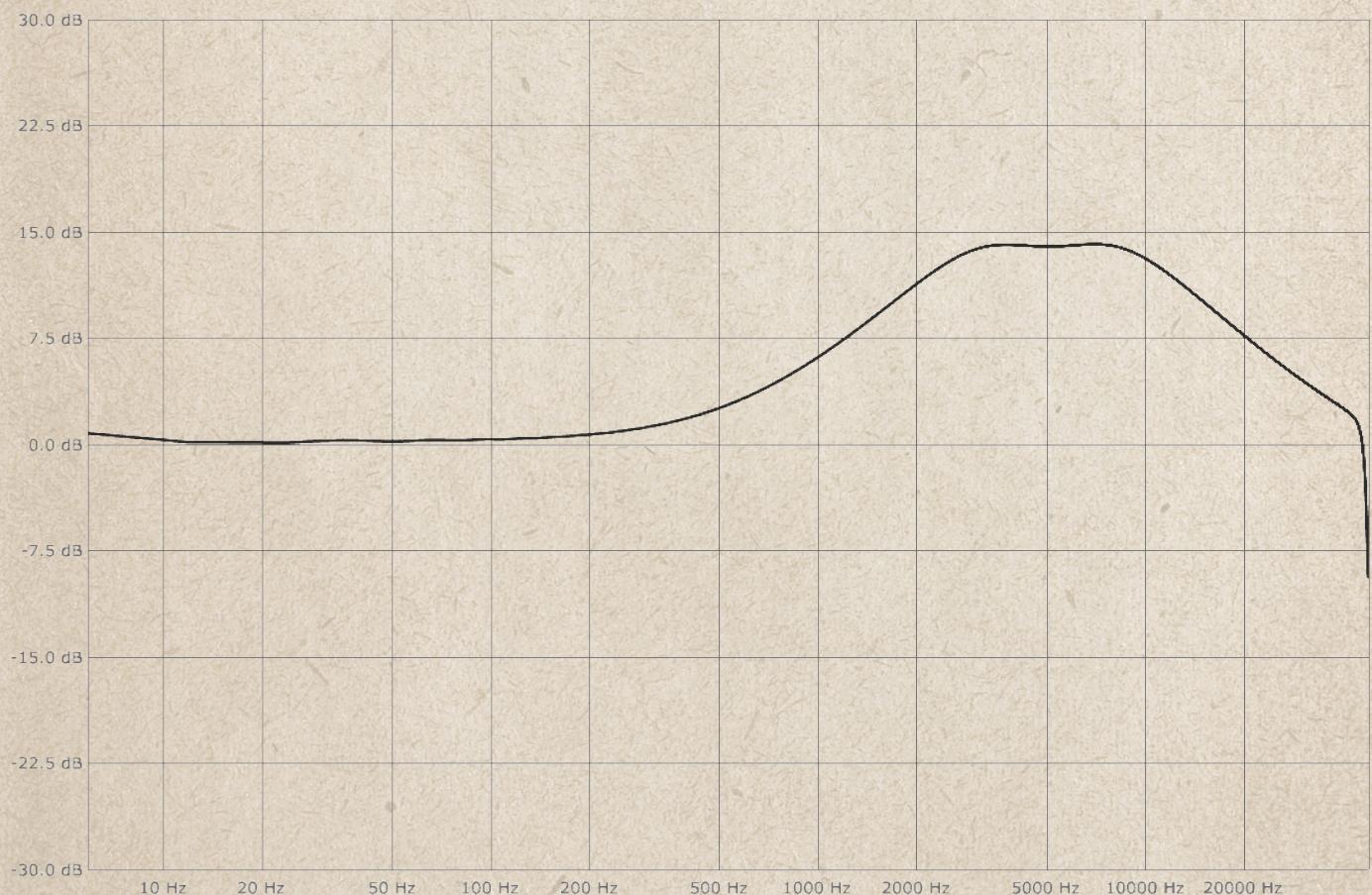
High band - frequency: 3 kHz - gain +12 dB



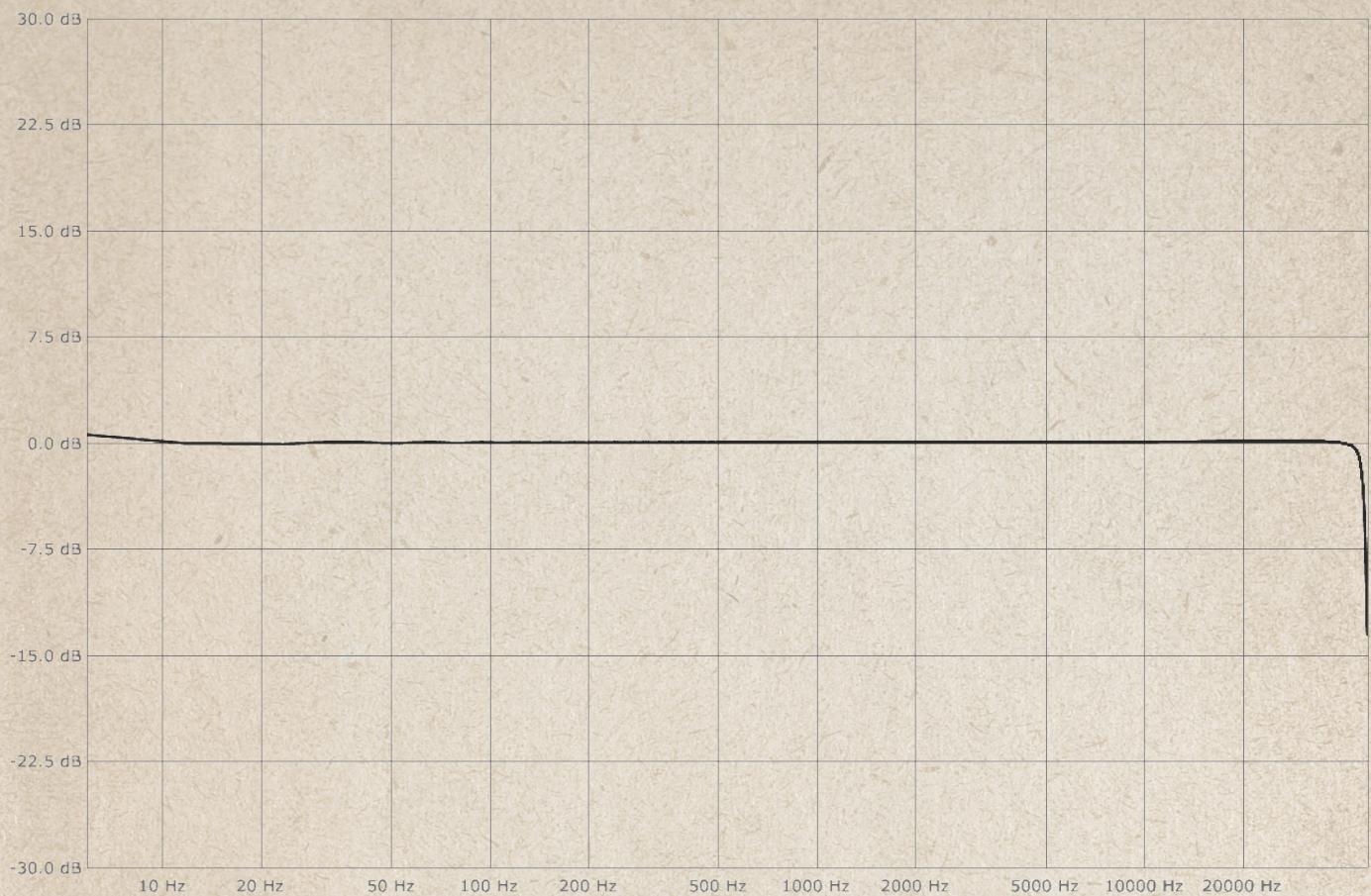
High band - frequency: 3 kHz - gain 0 dB



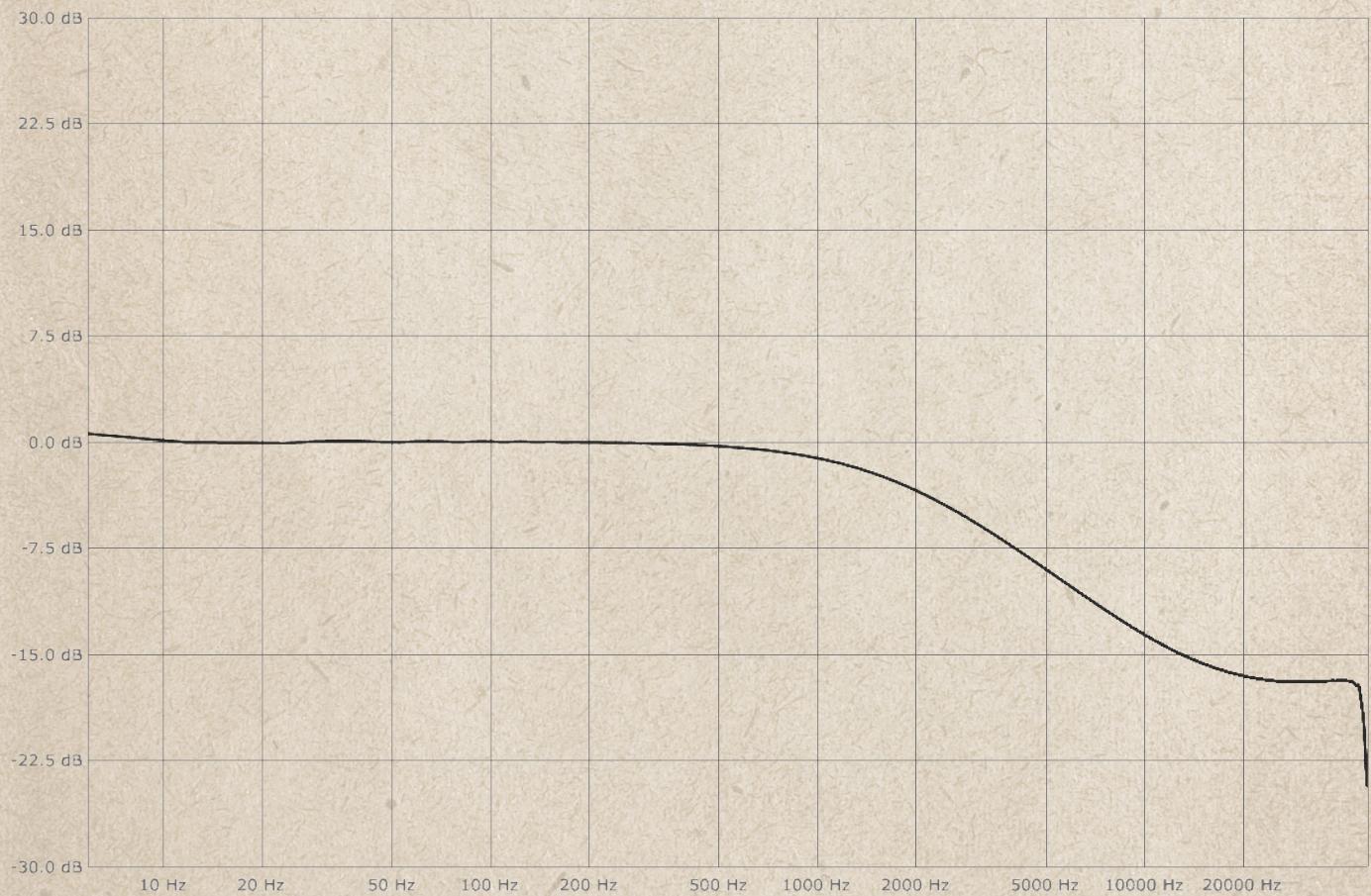
High band - frequency: 3 kHz - gain +16 dB



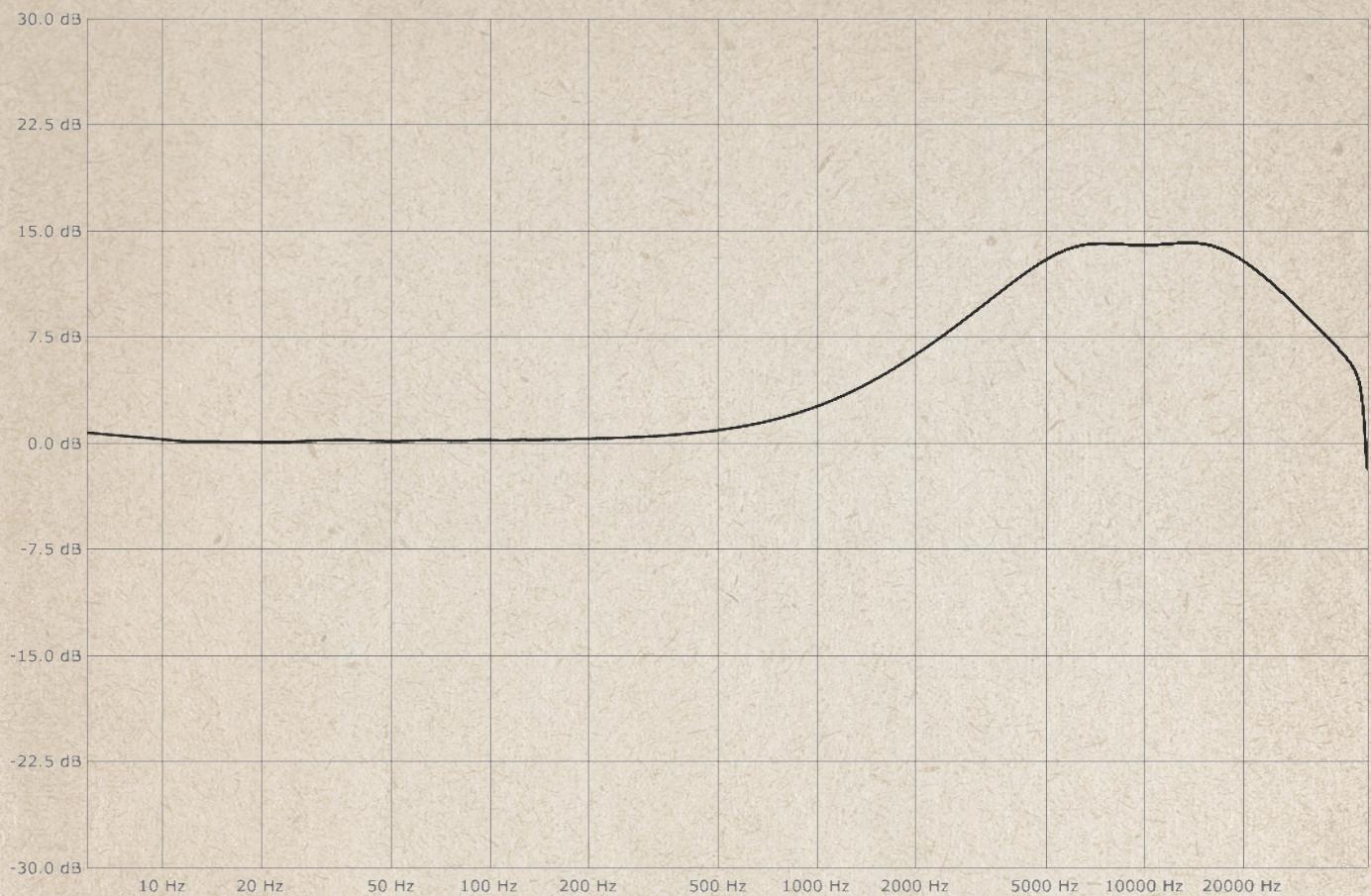
High band - frequency: 5 kHz - gain +12 dB



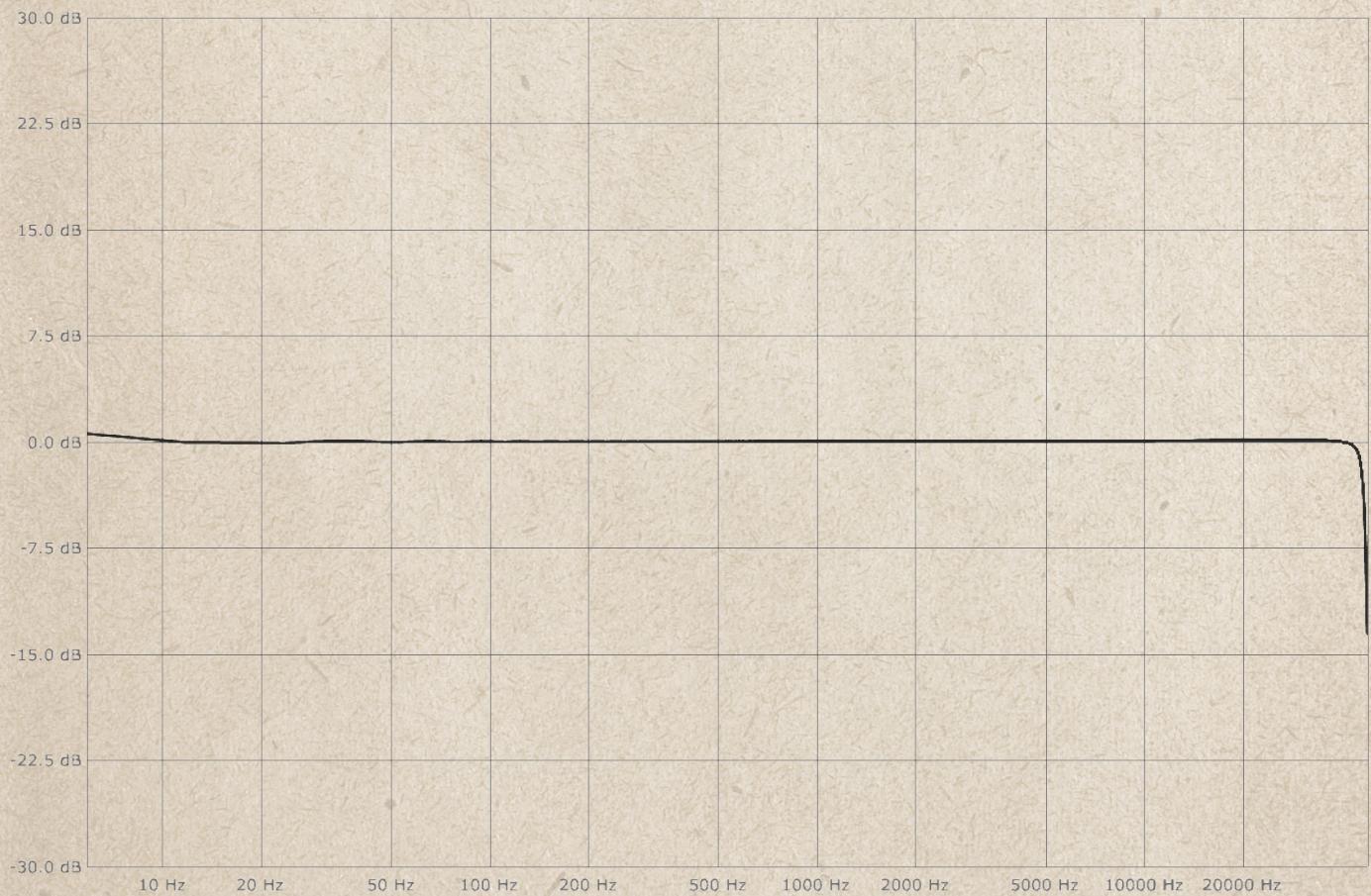
High band - frequency: 5 kHz - gain 0 dB



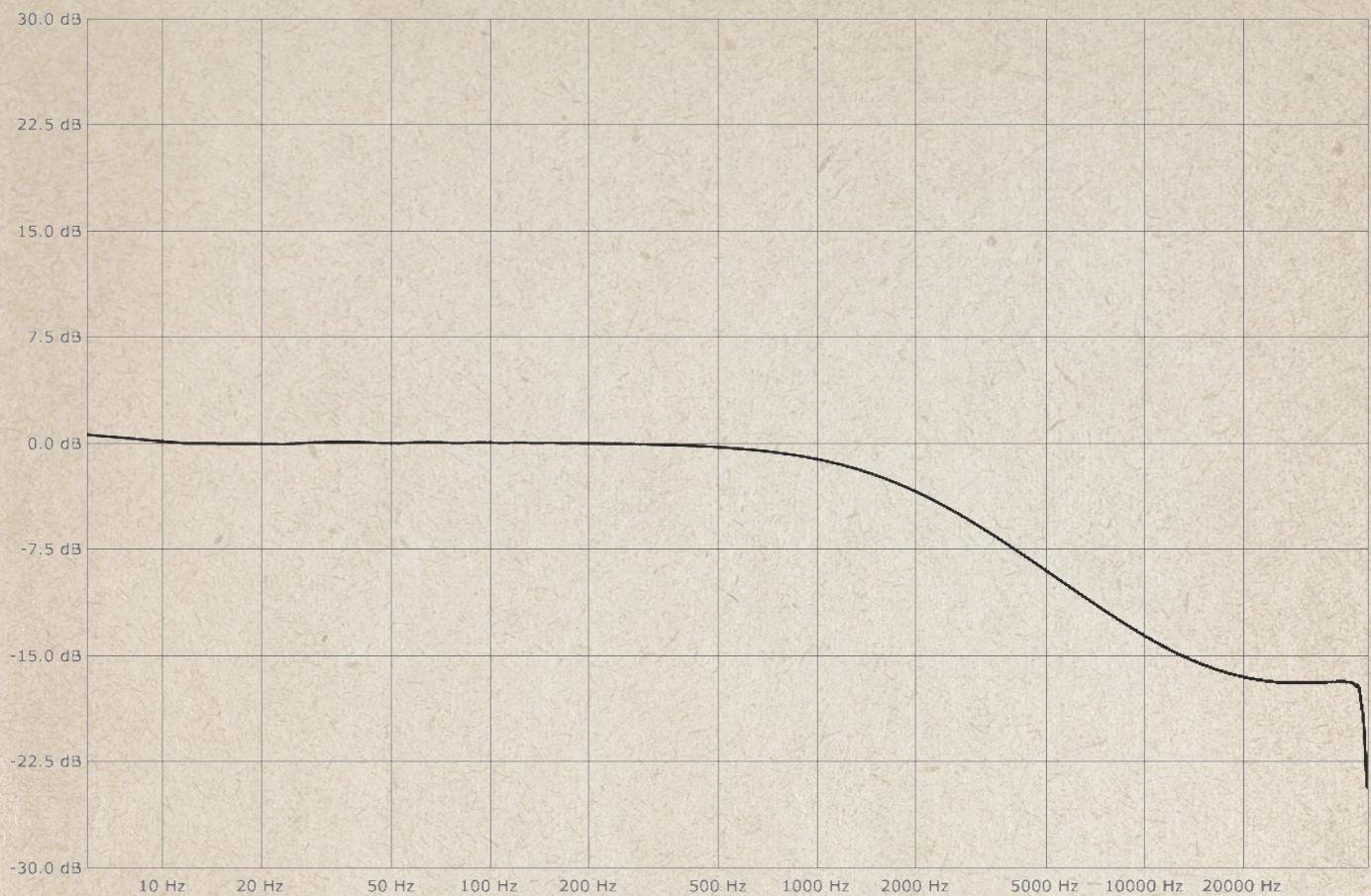
High band - frequency: 5 kHz - gain -16 dB



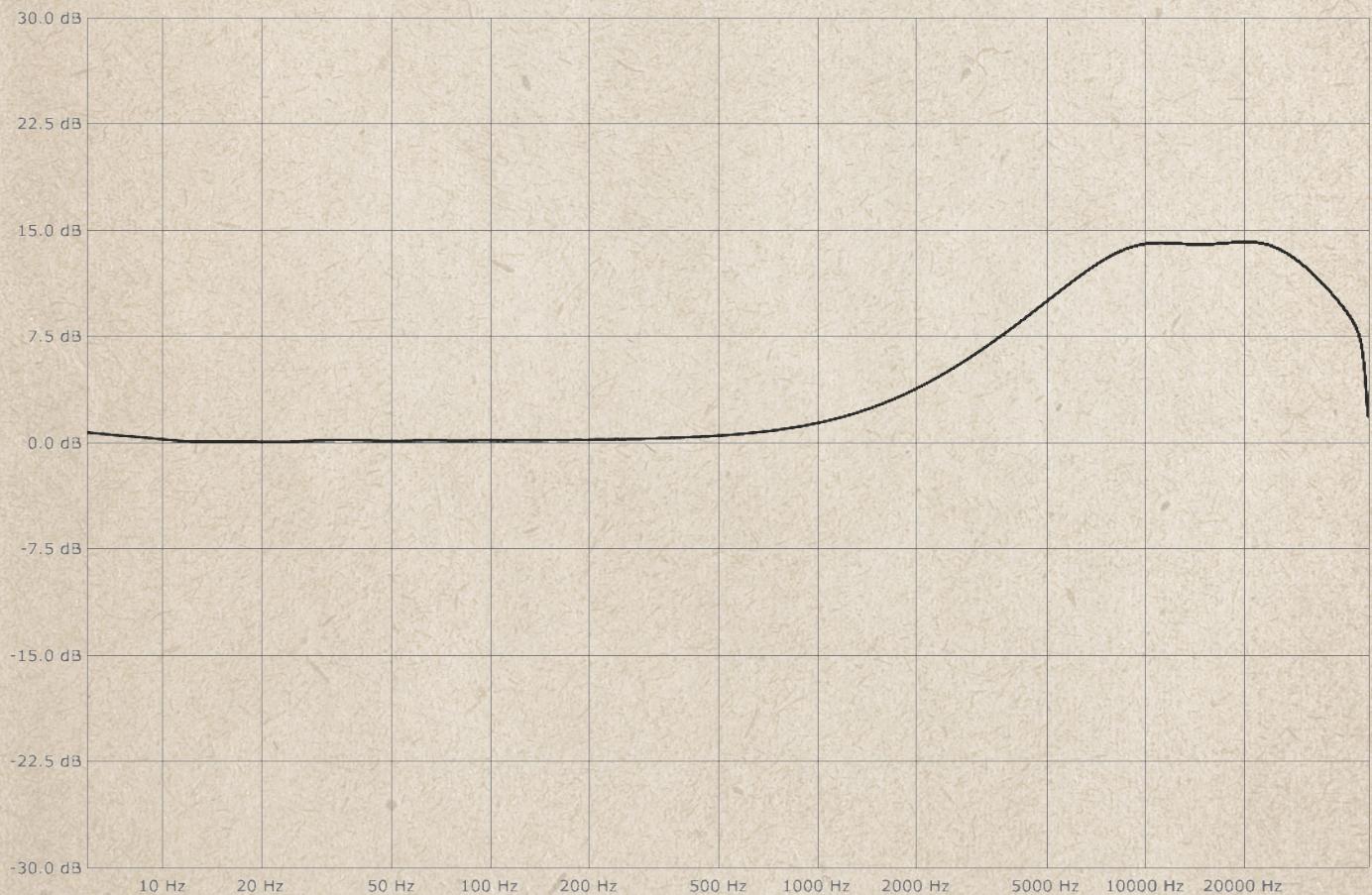
High band - frequency: 10 kHz - gain +12 dB



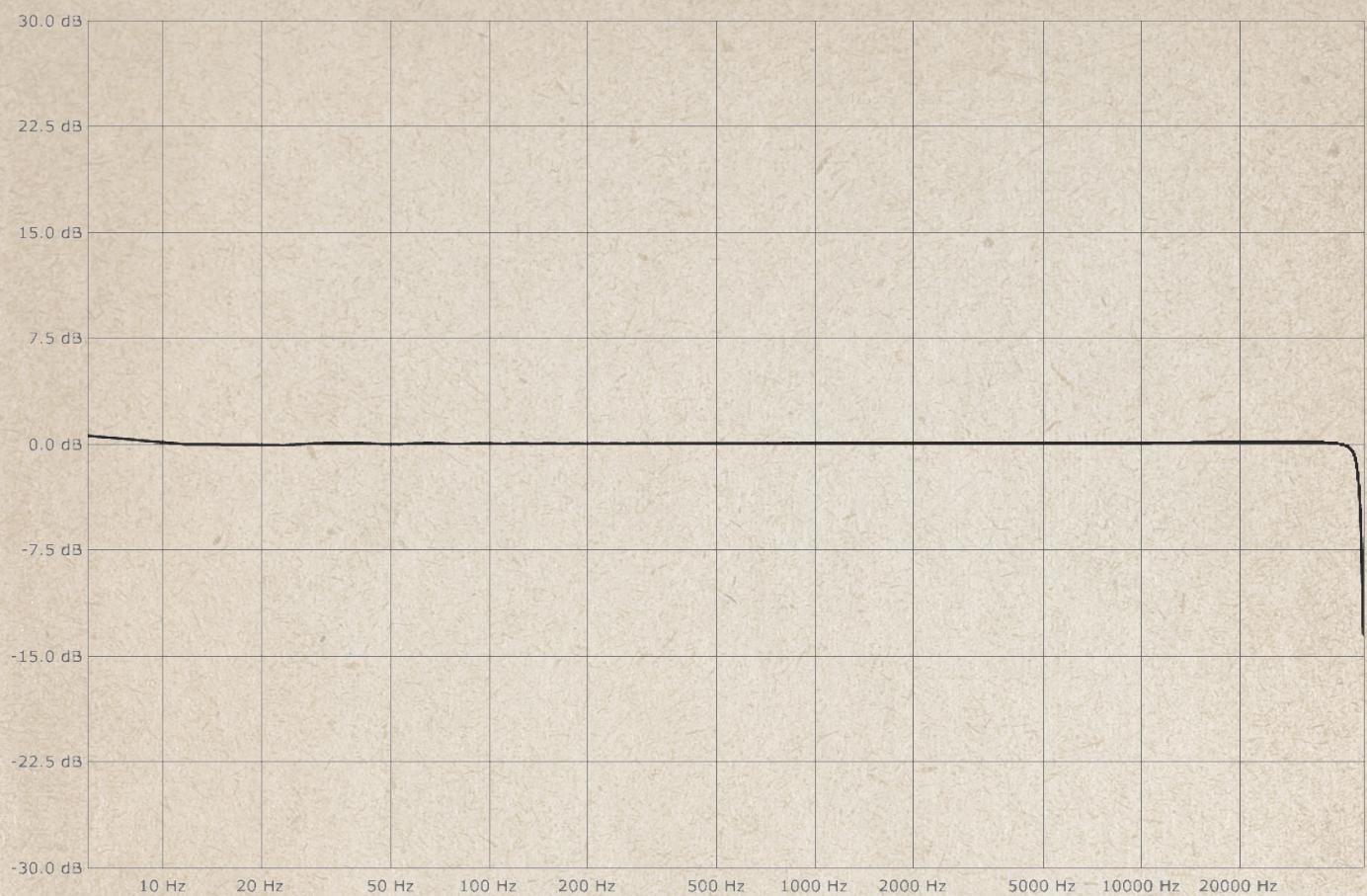
High band - frequency: 10 kHz - gain 0 dB



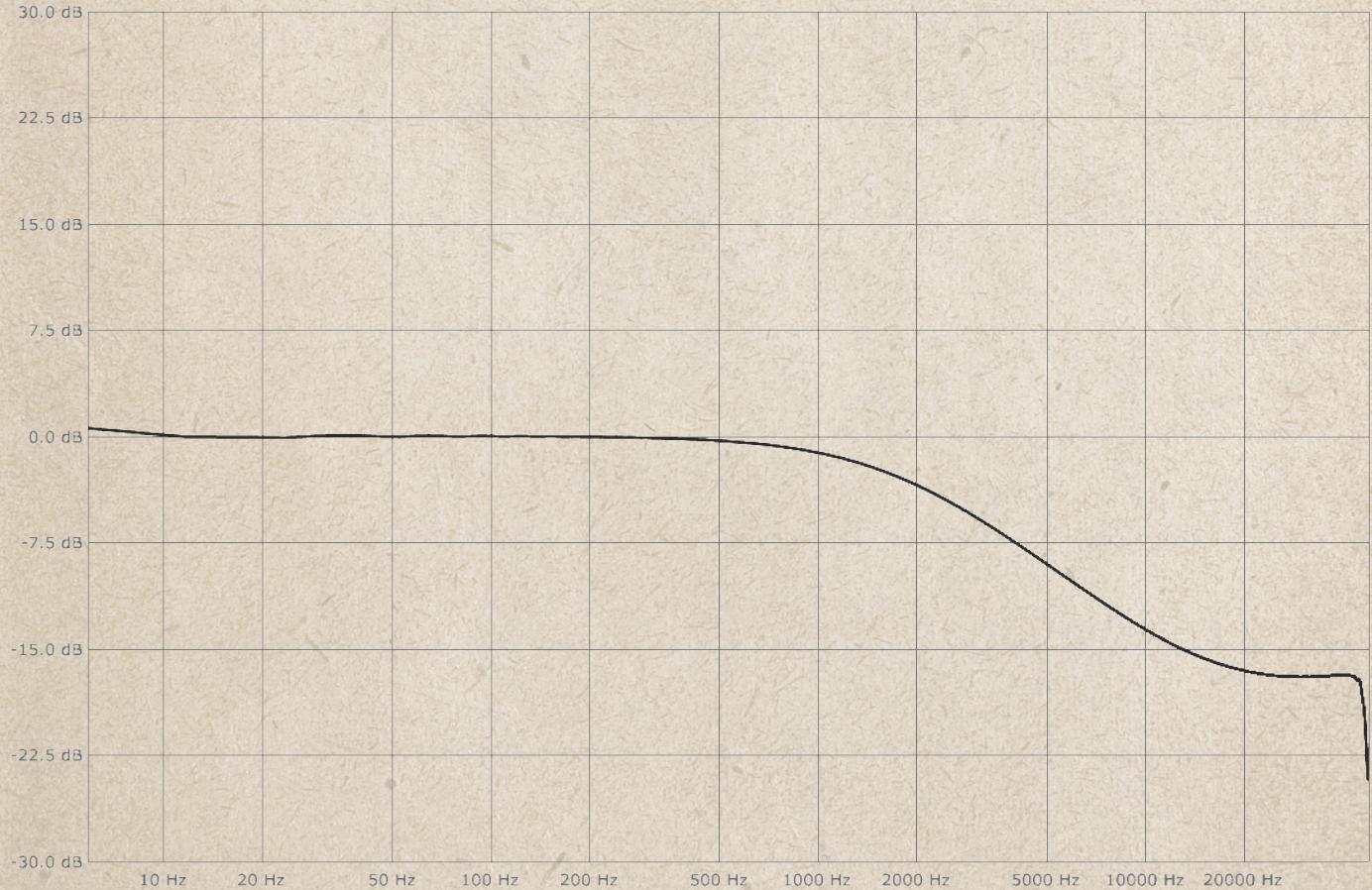
High band - frequency: 10 kHz - gain -16 dB



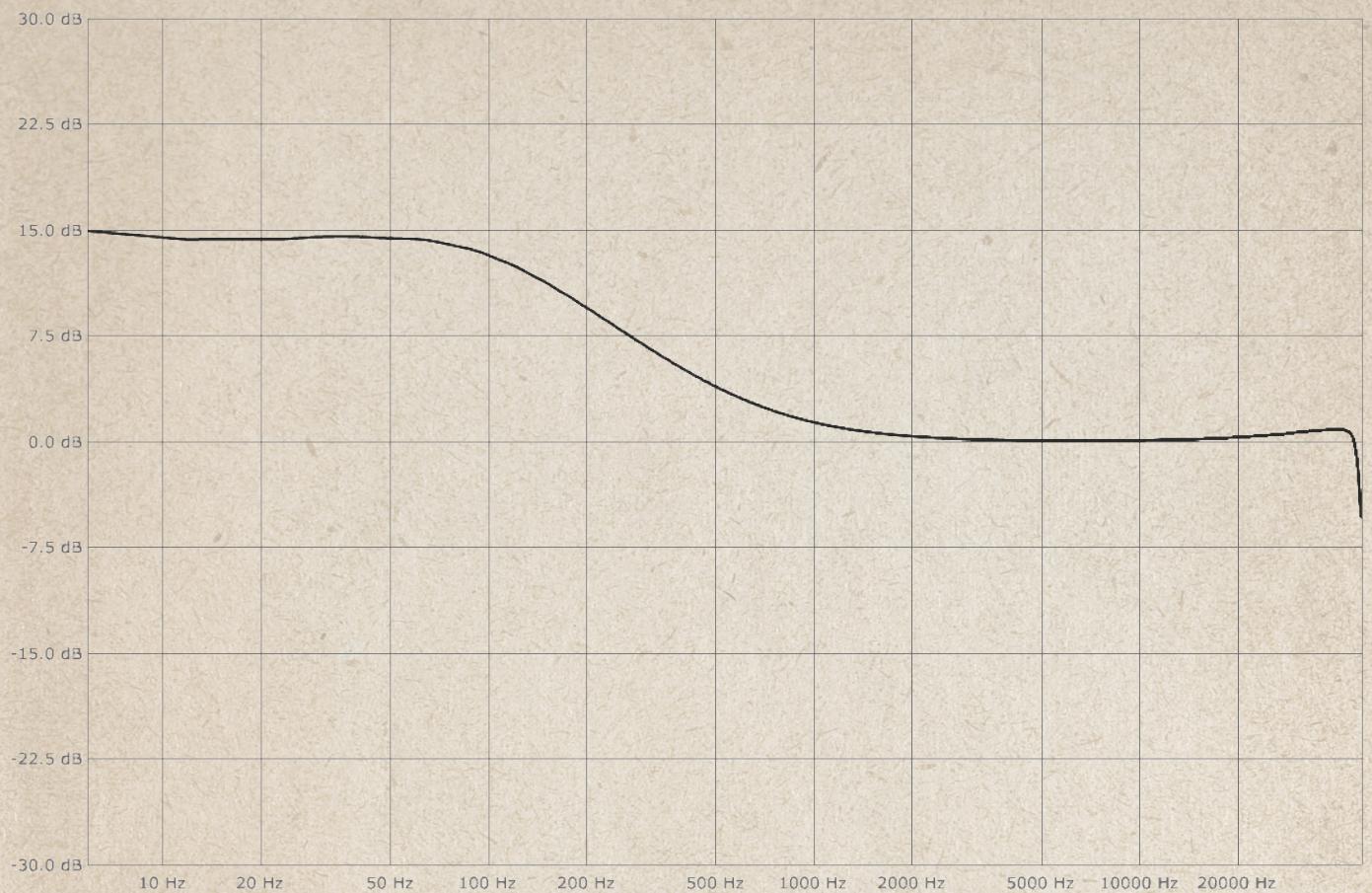
High band - frequency: 15 kHz - gain +12 dB



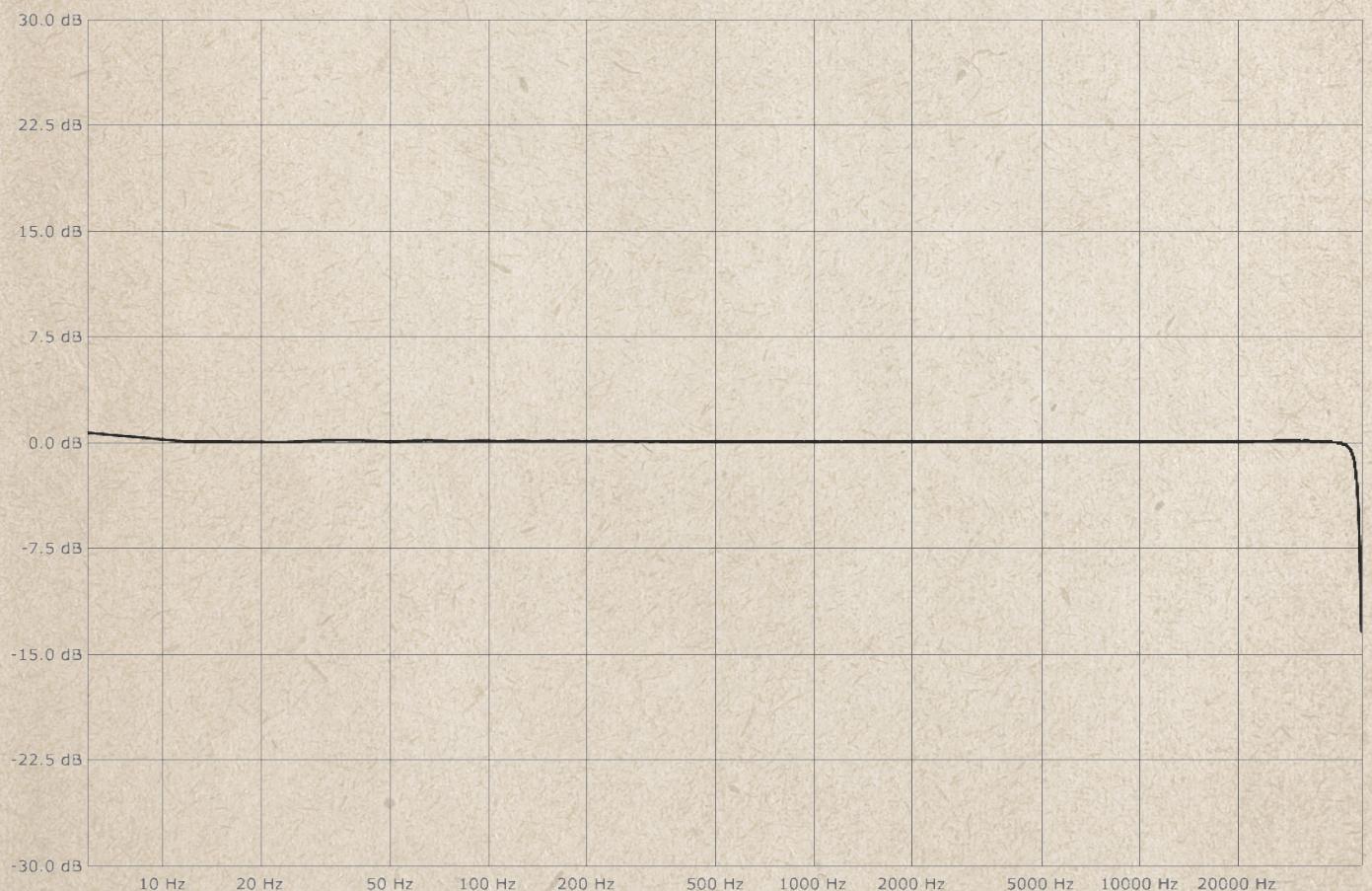
High band - frequency: 15 kHz - gain 0 dB



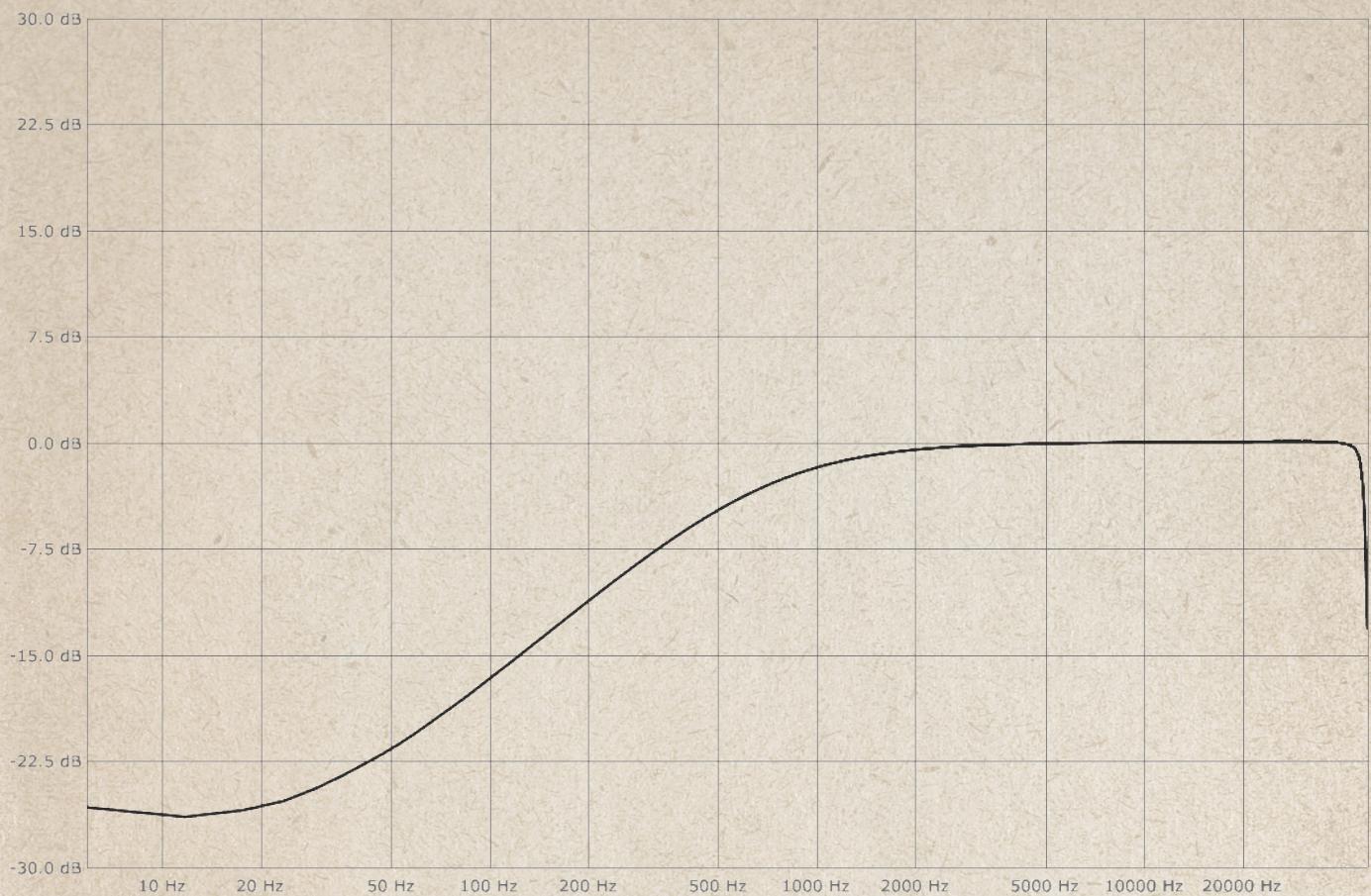
High band - frequency: 15 kHz - gain -16 dB



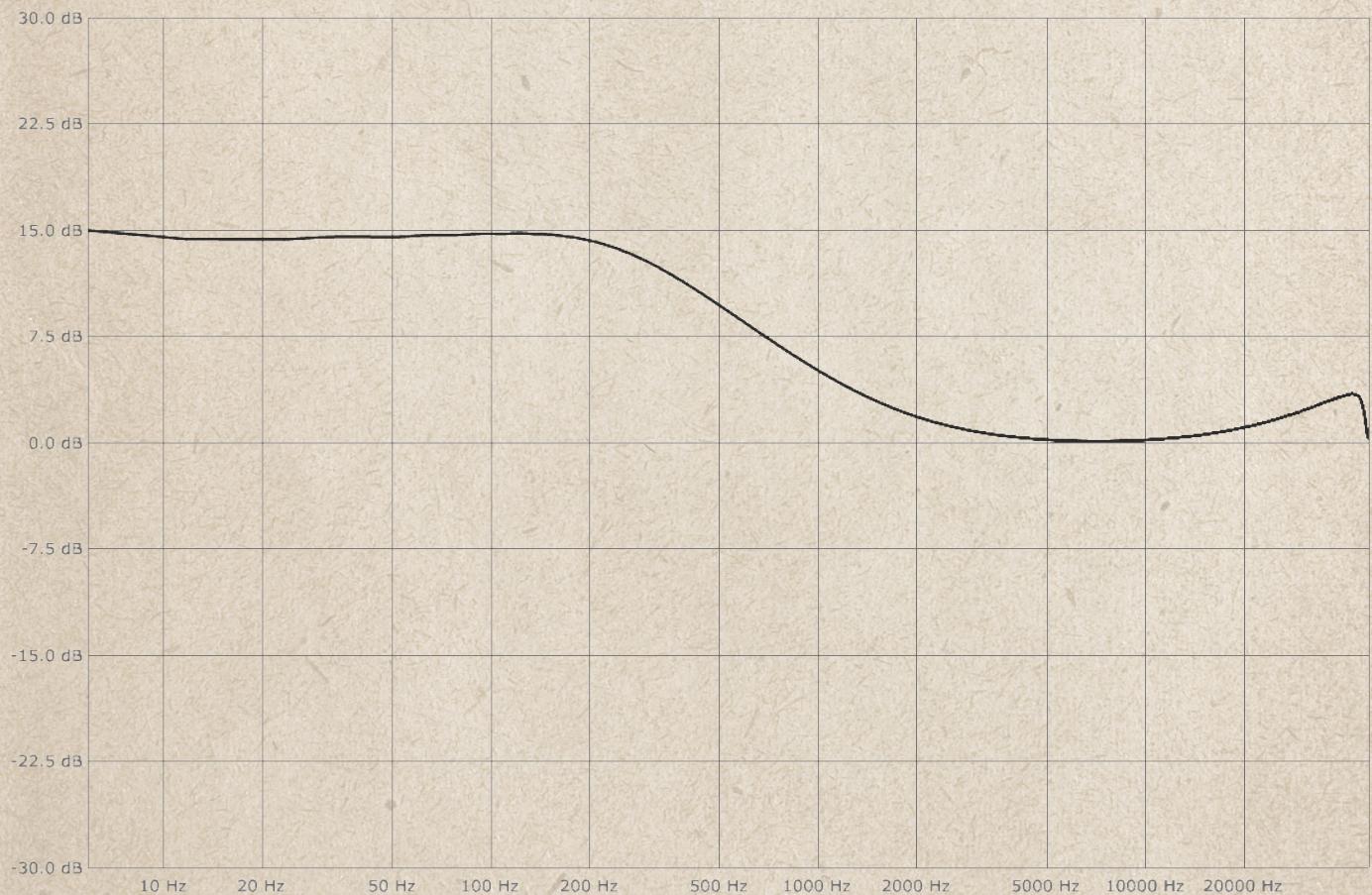
Low band - frequency: 40 Hz - gain +12 dB



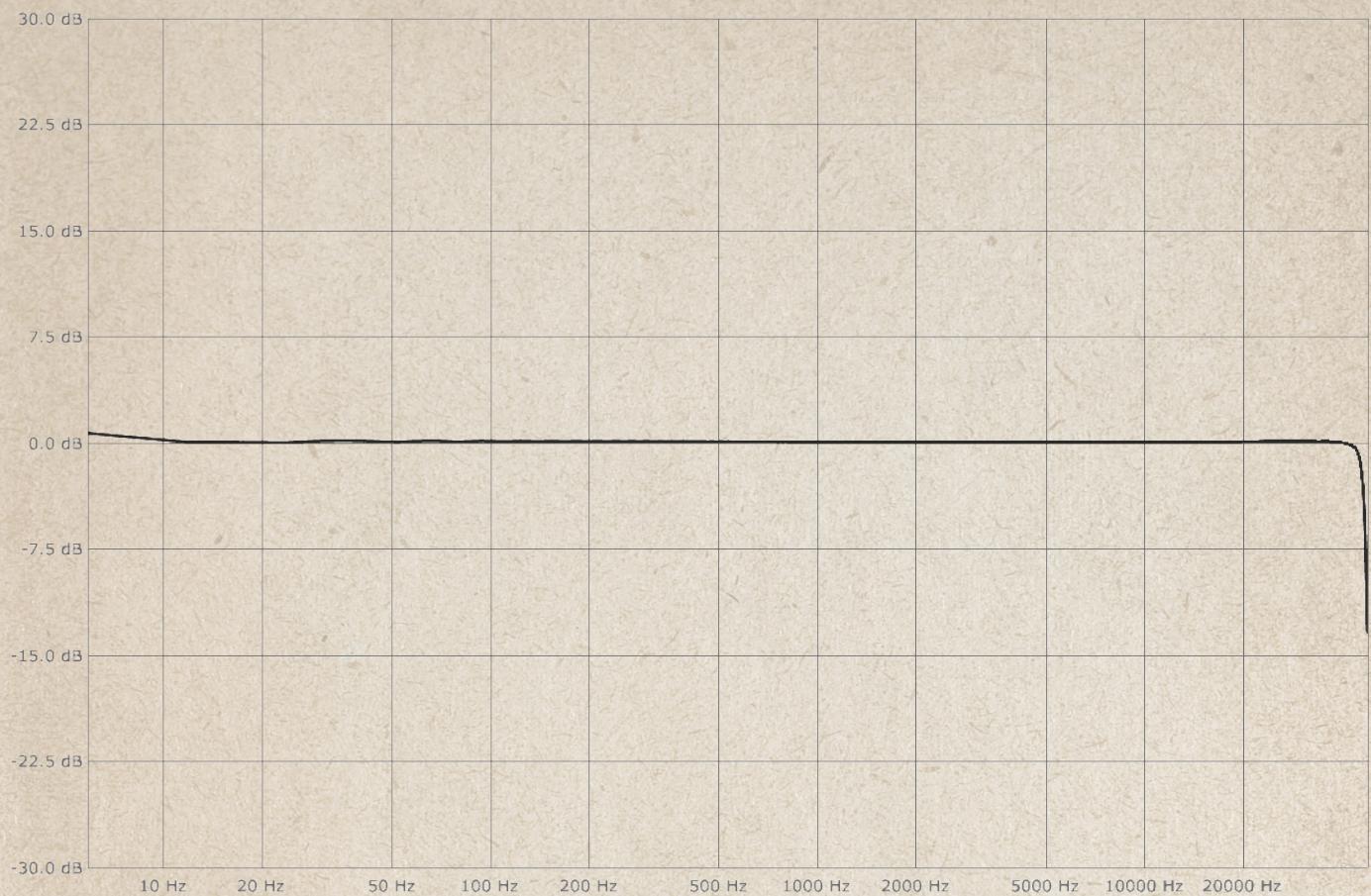
High band - frequency: 40 Hz - gain 0 dB



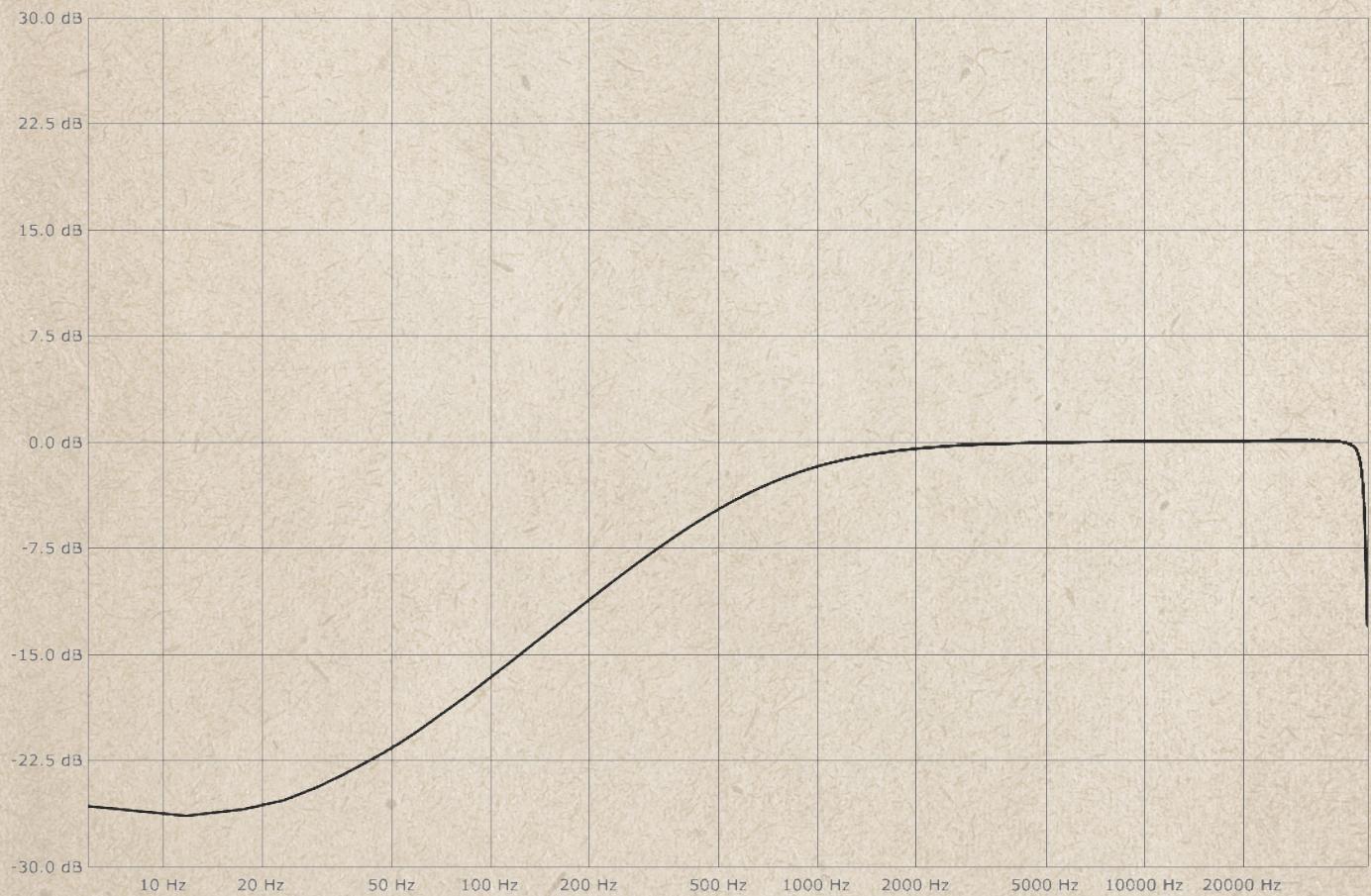
High band - frequency: 40 Hz - gain -16 dB



High band - frequency: 100 Hz - gain +12 dB



Low band - frequency: 100 Hz - gain 0 dB



Low band - frequency: 100 Hz - gain -16 dB

We did it again..

### Aquamarine 5 – Upgrade (release A009) – What's new?

We have taken the Aquamarine Compressor to a whole new level, adding some important new features that make this product even more accurate and upgrading it to our latest Hyper technology.

#### New features:

- Improved audio quality thanks to the oversampling inside the compressor.
  - New "Hyper" engine.
- New Input - Output - GR meters with numerical values.
  - Numerical value parameters of the compressor.
  - Various optimizations and graphical improvements.
    - Resizable interface (for both Comp and EQ)\*
- New additional buttons (Bypass LR and DELTA) to the compressor.
  - New SATU knob on compressor (Range: 0, +24 dB).  
Note: input trim acts only on compressor.
  - Bypass button added to the Aquamarine EQ.

\*Choose between 3 magnification values (1x - 1.5x - 2x) from the top left ▼SIZE drop-down menu.

Once the desired size has been selected, the plugin must be removed and re-loaded to apply the changes. This action affects the currently selected plugin. New instances of the same plugin will open with this magnification.

## HOW TO DOWNLOAD, INSTALL, AND AUTHORIZE YOUR PRODUCTS

Acustica Audio products can be downloaded, installed, and authorized using the Aquarius Desktop application.

The Aquarius Desktop application is a free standalone application that will manage every step in an automatic way without user intervention.

Download Aquarius Desktop Application  
[www.acustica-audio.com/pages/aquarius](http://www.acustica-audio.com/pages/aquarius)

### How to download a product in Aquarius Desktop Application

To download a product using the Aquarius Desktop application go to the purchase page and select the product and format (VST2, VST3, AAX, AU) to install. In case you can't find your product on the purchase page use the search page.

### How to install a product in Aquarius Desktop Application

The installation is done automatically by the Aquarius Desktop application after the download. As the Aquarius Desktop application creates a temporary file of the downloaded products, known as the stage area, at the moment you want to reinstall a product it will not be necessary to download it again.

### How to authorize a product in Aquarius Desktop Application

The authorization is done automatically by the Aquarius Desktop application after the product installation. You can manage your authorizations using the Aquarius Web Service.

Click [HERE](#) or a complete installation user guide

## SYSTEM REQUIREMENTS

Modern computers are powerful enough to run many plugins at once. However, our technology requires more resources than algorithm-based software, so we recommend optimizing your system to work with high CPU loads and low audio latency.

Before starting the installation process, please confirm that your system meets the minimum system requirements to run the plugins please consult the following link: <https://app.box.com/v/AASYSTEMREQUIREMENTS>



## CUSTOMER CARE

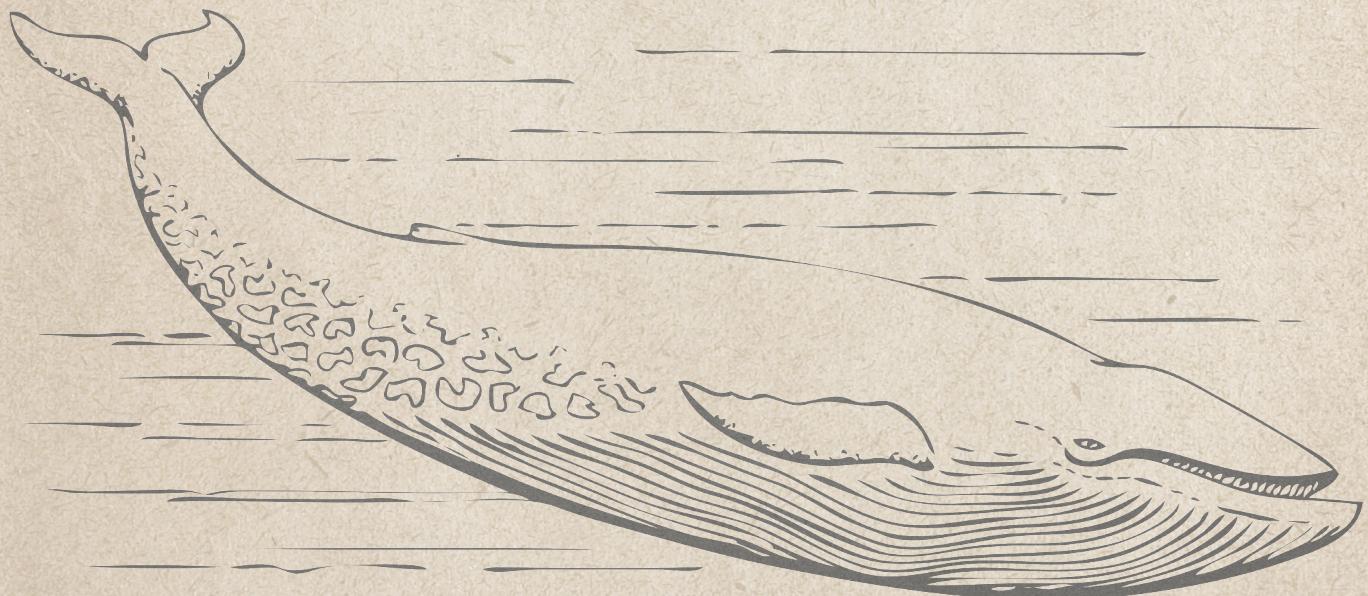
To contact Acustica Audio, always use the single point of contact, which is this help-desk portal: <https://acusticaudio.freshdesk.com/>

We do not provide official assistance via social networks, public forums, or email accounts. For troubleshooting and issue reporting, check the available solutions in the knowledge base.

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