

## Limited warranty

This product is guaranteed to be free of functional defects for a period of 1 year from original purchase date. Proof of purchase is required for any warranty claim. Return shipping costs are covered by Boredbrain Music within the first 30 days of purchase only. Products with obvious signs of abuse or that have been modified by the end user, may not be covered under this warranty, at the discretion of Boredbrain Music.

## service & inquiries

If you experience a problem with your Boredbrain product, or just want to share something interesting with us, please contact us at the link below and be sure to include your name, original purchase date, and a description of the problem you are experiencing. Then just hold tight, as we return most inquiries within 48 hours. We want to work with you to resolve your issue as soon as possible. Thanks.

[boredbrainmusic.com/contact](http://boredbrainmusic.com/contact)

Designed and Built in Richmond, VA USA



## boredbrain eqx5

EQx5 is an effective 5-band stereo equalizer for eurorack synthesizers. The module allows for quick and musical adjustments to the frequency content of audio signals, with voltage-control of all parameters for experimental EQ processing.

- Five frequency bands with  $\pm 12$  dB gain
- Post-EQ balance and level controls
- Control voltage inputs for all parameters
- Stereo I/O with discrete signal paths
- Additional mono sum output

## technical specs

- **Width:** 10 HP
- **Depth:** 1.0 in (25 mm)
- **Weight:** 4.0 oz (114 g)
- **SNR:** > 94 dB
- **Power:** +12 V 60 mA, -12 V 49 mA



## patch tips

### MULTIPLE TEMPO-SYNCD MODULATIONS

Patch several tempo-synced voltage modulators of different shapes and tempo divisions into the CV inputs of two or more EQ bands. This can be especially fun on a stereo drum bus, or even the entire mix.

### BAND ISOLATED AMPLITUDE MODULATION

Using audio-rate signals to modulate levels of individual bands can yield a more subtle effect than typical AM of a VCA. This can create interesting textures without overtaking the entire sound.

### VCO CROSSFADER

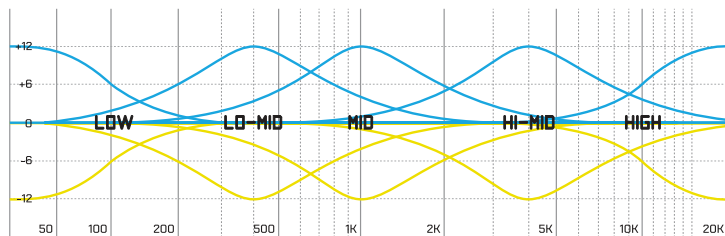
Fade evenly between two waveforms or VCO sound sources using the BALANCE parameter and OUT L+R mono output.

## Five Frequency Bands

The module has five bands of graphic equalization, each with  $\pm 12$  dB of level boost or cut. The first order filters employed for equalization have slopes of 6 dB/oct from their respective center frequencies.

<b>HIGH</b>	10 kHz shelf
<b>HI-MID</b>	4 kHz peak
<b>MID</b>	1 kHz peak
<b>LO-MID</b>	400 Hz peak
<b>LOW</b>	100 Hz shelf

Adjustments to these bands can make both subtle and dramatic changes to the frequency characteristics of the source audio signal(s). These adjustments can be useful in many scenarios such as attenuating problem frequencies and accentuating others, or strategically making "space" in the mix for specific sounds.



## Balance & Level

The **BALANCE** parameter is essentially an equal-power crossfader which simultaneously and inversely affects the gain of the Left and Right channels. When a stereo signal is connected to the module's inputs, this parameter functions like a Pan control, shifting the stereo image Left and Right. When two mono signals are connected to the module's inputs and the **OUT L+R** mono output is used, this parameter functions like a volume crossfader with no perceivable level drop in the center.

# eqx5

## VOLTAGE CONTROLLED EQUALIZER

## USER GUIDE

The **LEVEL** parameter is a post-eq volume adjustment, used primarily to compensate for level changes after frequency equalization. The module implements a pseudo-loudness feature, which gradually boosts the **LOW** and **HIGH** shelving filters as **LEVEL** is reduced. This helps to retain the signal's "fullness" as it is attenuated, accounting for the equal-loudness contour.

## Complete Voltage Control

A key feature of EQx5 is the ability of all parameters to be controlled with external voltages, opening up a range of experimental possibilities in the eurorack environment.

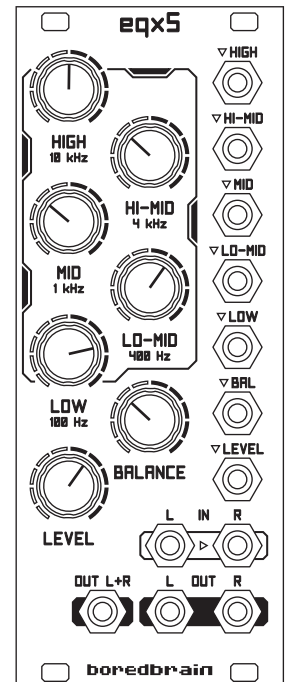
The amount of boost or cut for each band can be modulated using control voltage signals, with the full range being  $\pm 5$  V (10 Vpp). The frequency band's gain knob then defines the bias point to offset the incoming control voltage.

Additionally, both **BALANCE** and **LEVEL** have their own respective CV inputs, also with a full range of  $\pm 5$  V. The **LEVEL** parameter can act very much like a VCA when used in combination with its CV input.

## Input & Output

The two inputs, **L** and **R**, are designed for audio signals within the audible spectrum. These inputs are AC-coupled, and will block DC signals to reduce noise. **R** is normalised **L**, so if no plug is present, the channel will obtain a copy of **L**.

In addition to the two discrete **L** and **R** outputs, the module has a mono output, **OUT L+R**, which is the sum of the two channels. As mentioned previously, this output is useful when crossfading between two signals using the **BALANCE** parameter, or to conveniently obtain a mix of the two audio signals.



10 HP