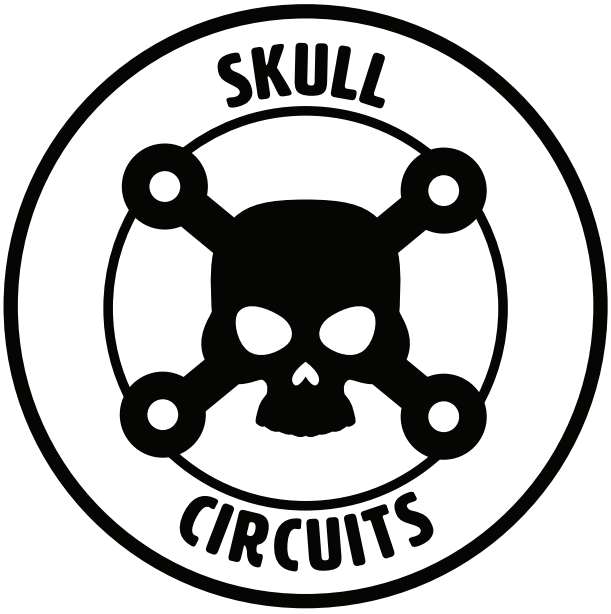


VCF-4

Switched capacitor filter

User manual

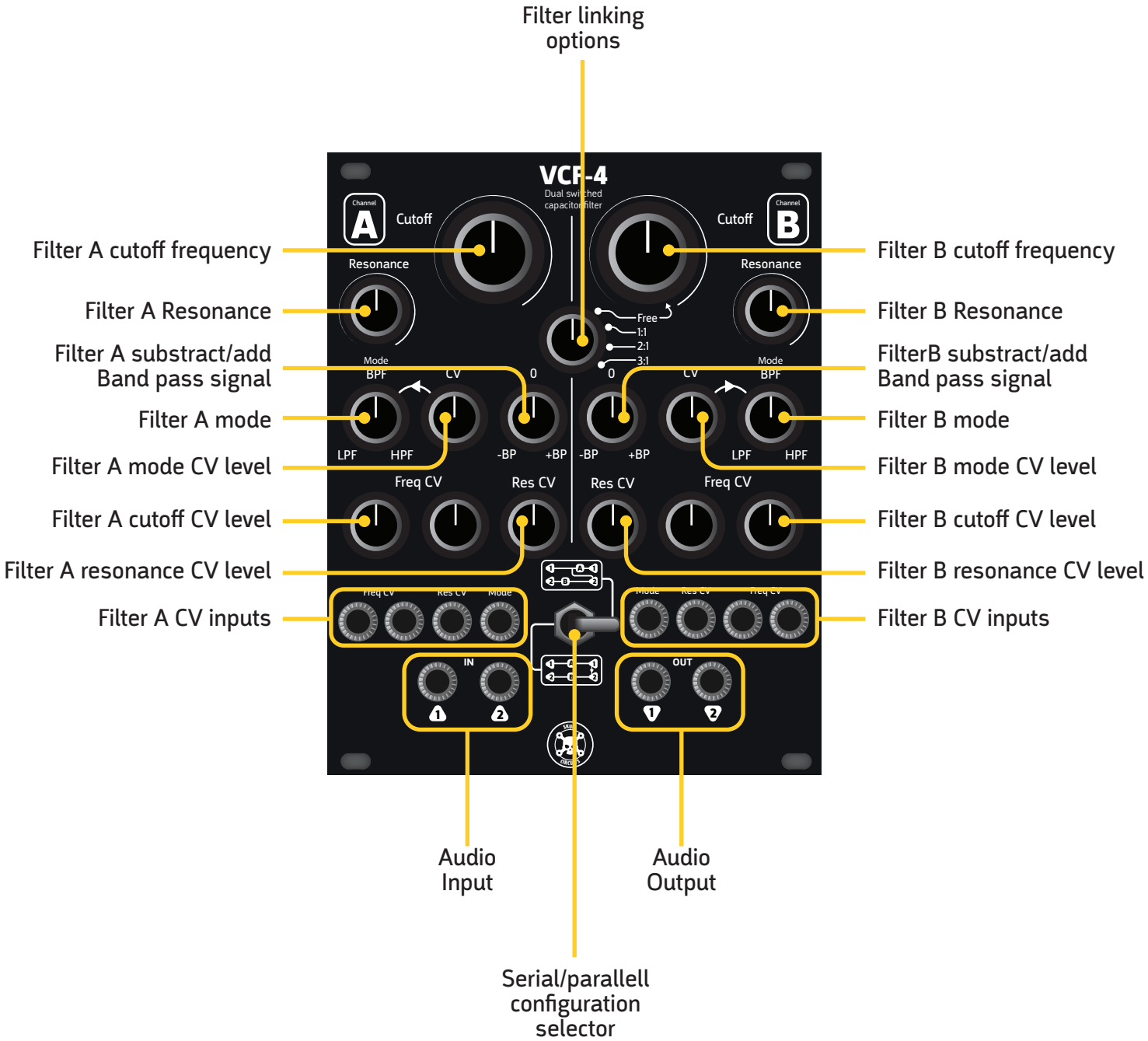
Introduction

Thanks for buying from Skull & Circuits. This manual hopes to provide you with some insight into the inner working of your brand new module for your Eurorack system. As a global warning to prolong the life of your module, don't do stupid things with it. I refer to your common sense to handle electronics without hurting yourself or the module.

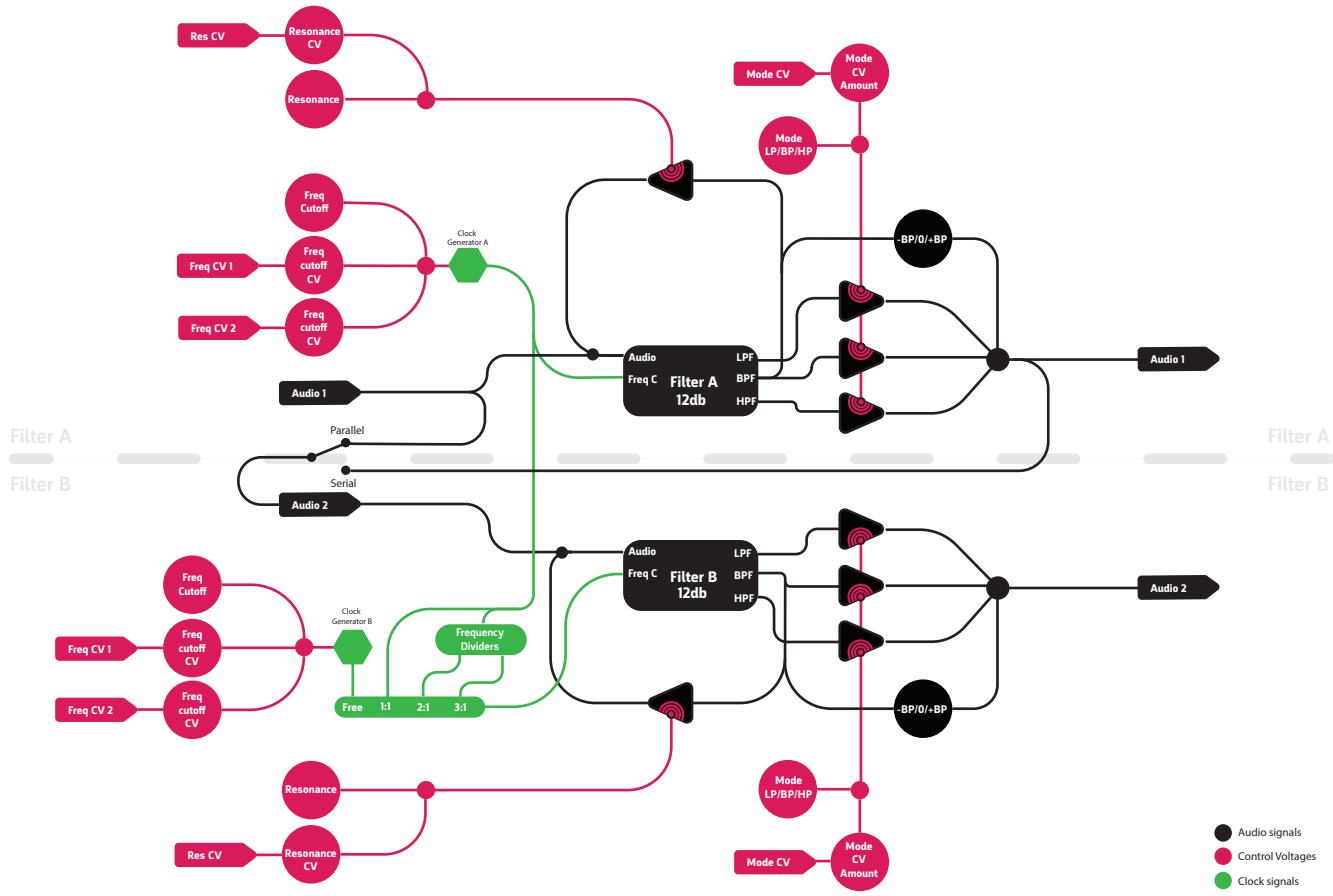
VCF-4 is a dual filter module for your Eurorack system designed with flexibility in mind. Based around a switched capacitor core it offers a unique sound not found anywhere else in the Eurorack world.

If you ever have any questions regarding this module, please contact me at info@skullandcircuits.com or through various social media channels.v

The Front Panel



Functional diagram



Boring descriptions

Both filters have the exact same settings (mirrored on the panel)

Cutoff: Sets the audio cutoff frequency.

Resonance: Sets the amount of feedback inside the filter frequency.

Mode: Allows to vary between the different filter modes (LPF — Low Pass Filter, BPF - Band Pass Filter, HPF - High Pass Filter) in a continuous fashion.

-BP/0/+BP: this allows to subtract or addthe band-pass signal to the filter output.

Serial/parallel switch: Allows the filters to be linked in a serial or parallel configuration. nput 2 is normalised to input 1 – when nothing is connected to input 2, it has the same signal as the one present on input 1.

Filter linking switch: This will allow you to link filter 2 to filter 1. On the first setting ‘free’ filter 2 is independent of filter 1. On all other settings the filter cutoff frequency of filter 2 is linked to filter 1. As a result the filter cutoff knob of filter 2 becomes inactive, as well as the frequency CV input of filter 2. setting 1:1 links filter 2 exactly to filter 1, 2:1 links filter 2 one octave lower then filter 1, 3:1 links filter 2 2 octaves lower then filter 1.

Installation

As with all Eurorack modules, the red-stripe indicates the -12V side. All Skull & Circuits modules use keyed headers to avoid wrong connections. However, not all buss boards use keyed headers, so be careful when connecting your module. It's therefor not advised to connect your module under the influence of alcohol or other recreational drugs as wrongly connecting your module will inevitably damage the module.

Make sure your power supply of your Eurorack system can supply sufficient power. This module will use around 160mA on the +12V rail and 91mA of -12V.

Calibration

If for any reason you feel the filter isn't working properly it might be due to calibration being off. 2 trimmers on the back of the module provide access to calibrating the filter response. With a small screwdriver you can use these multi-turn trimmers to alter the filter range. Using a plastic screwdriver will make your life considerably easier for this task.

Filter calibration steps:

- Connect the audio output signal of filter A to a scope, frequency counter or, in a pinch, your speakers.
- Set the filter mode to low pass
- Set the filter cutoff frequency to 0
- Set the resonance to 100%
- Use the trimmer on the back until you see a 5 to 10Hz sine on the output.
- Repeat for filter B

Data

Width: 20HP
Depth: 50mm
Power consumption +12V: 160 mA
Power consumption -12V: 91 mA
Power consumption +5V: 0 mA
Freq range: 10Hz to 10kHz

Some patch ideas

24db filter

The acid filter

The string filter

The stereo filter

Full on resonce

The animator