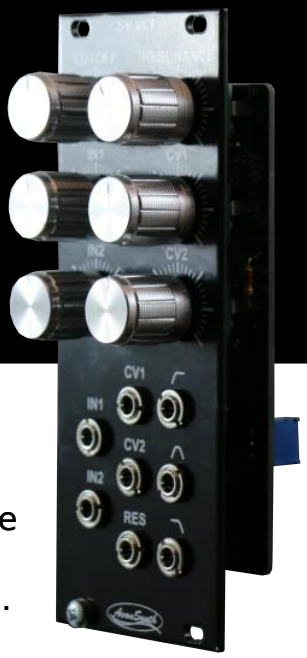
The AvonSynth User Guide

AVS-VCF-1 State Variable Voltage Controlled Filter



Thank you for purchasing from AvonSynth

Congratulations on your purchase of a brand new AvonSynth AVS-VCF-1 State Variable Voltage Controlled Filter Eurorack Module. We trust that it will both serve and inspire you as you create beautiful music with it for years to come.

In order to get the most out of your module, please ensure that you read this User Guide in its entirety so that you fully understand all of its functionality, and that you follow all necessary safety directions during use.

Included in the Box

1 x SV-VCF Module

1 x 10 pin to 16 pin flat-cable power cord

4 x M3 Mounting Screws

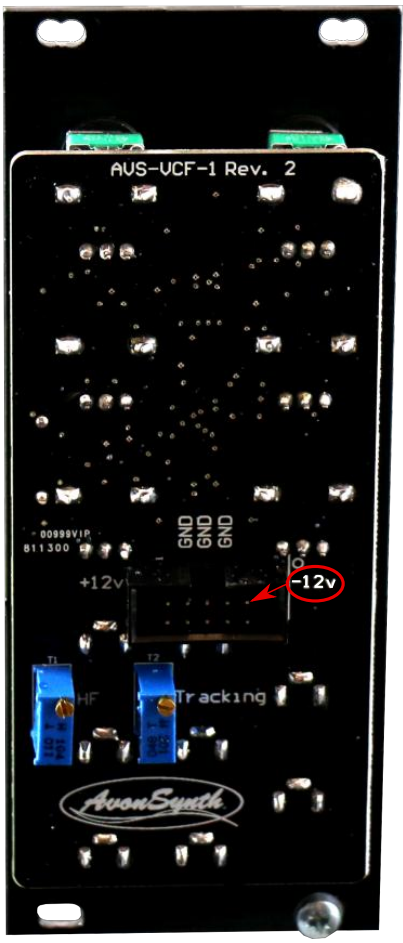
4 x Nylon Washers

Installation

Step 1: Power your system off. Place the module in your Eurorack-compatible rack in any convenient position. Affix the module to your rails using the included mounting screws and nylon washers. Neglecting to use these washers may result in unnecessary marking of the unit.

Step 2: Triple check the polarity of the power connector before connecting the power cord to your power supply. Ensure that the -12v line marked on the back of the module connects to the same end of the flat-cable that also connects to the -12v line on your power supply. While AvonSynth modules use shrouded connectors that make this process safer and more reliable, some systems do not conform to this polarity standard, so careful checking is **always** necessary. Connecting the module with incorrect polarity can result in damage done to the module which cannot be covered by warranty.

Step 3: Power up your system and start patching!



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AVS-VCF-1 State Variable Voltage Controlled Filter

Features & Specifications

- Fully Analogue State-Variable Voltage Controlled Filter
- 10 HP wide (50.5mm), 20mm deep
- 12db slope, with wide range and 1v/Oct response
- Current consumption: +12v 30ma, -12v 30ma
- Voltage controlled resonance with self-oscillation
- Self-oscillatin resonance tracks well as a sine wave
- Dual attenuated audio, and dual attenuated CV inputs
- Simultaneous low pass, band pass, and high pass outputs
- Smooth liquid character, but can be made more aggressive with hot inputs

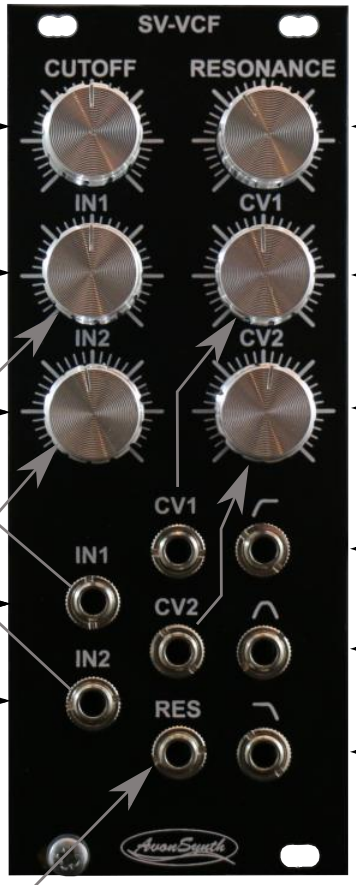
Description of Functionality

Cutoff Frequency
Sets the frequency at which the spectral content of the input sound begins to be attenuated.

Input Attenuators
These two knobs control the level of the audio input signals present at their corresponding sockets. When using high gain audio signals, these act to control the amount of overdrive occurring in the filter.

Signal Inputs
AC coupled inputs for the signals that you would like to filter. Each input is attenuated by the corresponding knob with the same name.

Resonance CV Input
Control voltage present at this input increases or decreases the resonance amount in conjunction with the resonance knob. Expects signals in the range of -5v to +5v.



Resonance
Sets the amount of emphasis applied to the cutoff frequency. At very high settings, self-oscillation occurs, whereas a sine wave is present at all outputs even without any input signal. In this mode, the VCF can act as a 1v/Oct pure sine-wave oscillator.

CV Inputs and Attenuators
Inputs for the CVs used to control the cutoff frequency in conjunction with the cutoff knob. The two CV knobs linearly attenuate their corresponding CV input. With the knobs fully clockwise, the inputs provide 1v/Oct response.

Audio Outputs
Three simultaneous filtered outputs with different responses. High Pass attenuates spectral content below the cutoff frequency, Low Pass attenuates above the cutoff frequency, and Band Pass attenuates both above and below.

High Pass

Band Pass

Low Pass

Calibration Trimpots

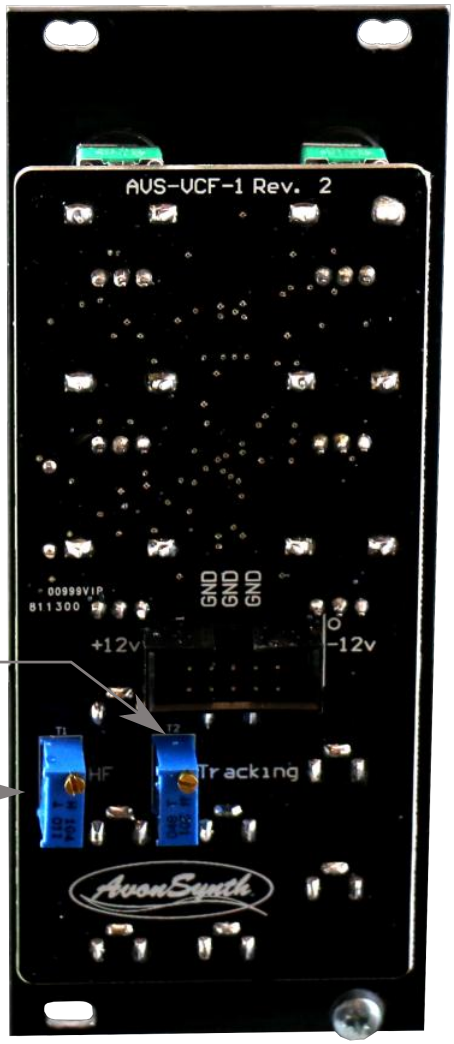
Your new AVS-VCF-1 State Variable Voltage Controlled Filter was expertly calibrated by hand for great 1v-per-octave tracking over a large frequency range. However, over time it is possible that the calibration could drift, or accidental movement of the calibration trimmers could decrease the precision of the tracking. Multiturn trimmer potentiometers are used in this module for increased accuracy in calibration and can be turned using a small flat-head screwdriver or other suitable implement.

Recalibrating this module requires the use of accurate multimeters, frequency counters, and precise control voltage generators. If you are not able to carry out recalibration yourself, the engineers at AvonSynth will be happy to recalibrate your module for you free of charge during the warranty period.

The tracking trimmer is responsible for setting the shape of the exponential relationship between the input CVs and the filter's cutoff frequency. Before calibration, the High Frequency Compensation trimmer should be set at its minimum value so as not to influence the setting of the main tracking trimmer.

Calibration is carried out by setting the filter to maximum resonance in order to induce self-oscillation, monitoring an output, and feeding the module precise control voltages in 1v increments. Adjust this trimmer until each 1v increment results in a doubling of the frequency of the output signal.

Once the Tracking trimmer is set in the most suitable position for the lower octaves, adding high frequency compensation with the HF trimmer can increase the range of accurate tracking of the module.



1v/Oct Tracking

High Frequency Compensation

Safety Precautions

Please use this module in accordance with the following safety guidelines in order to maximize the life of the module and ensure warranty from AvonSynth.

Keep water and other conductive liquids and materials away from this module. It is not water proof, or even water resistant. Exposure to these can cause short-circuits that can render the equipment unusable.


Be sure to keep this equipment in an environment with an ambient temperature above -20℃ and below +50℃. Excessively hot or cold temperatures can be damaging to the electronic circuits used.

Modules with exposed circuit-boards are delicate. Take the utmost care when handling and transporting this equipment, making sure not to subject it to excessive forces. Ensure that the module is installed correctly while being transported and that the original packing materials are used when sending the module anywhere by post.

Warranty & Support

This product is covered by AvonSynth's warranty for one year from the manufacturing date. Within this timeframe, any manufacturing defect will be repaired or replaced by AvonSynth. Damage caused to the product due to not following the safety precautions above, unauthorized modification of the hardware, or misuse such as subjecting the unit to reverse or excessive voltages will void this warranty.

If you have any concerns about your AvonSynth hardware, please get in touch via **info@AvonSynth.com** to discuss any issues. We will do our best to assist you in getting your hardware operating correctly, and if necessary, we will provide an RMA (Return Merchandise Authorization) to send back the unit for inspection. Any postal costs incurred in this process will be the responsibility of the customer. Please do not send back merchandise before receiving this authorization.