HEX MIX VCA

USER MANUAL

POWERING THE MODULE

THANKS FOR PURCHASING A MODULE FROM BEFACO!
BEFORE YOU PLUG THIS MODULE IN...

1. **Disconnect your cabinet from the mains.**

2. **Triple check the power cord polarity.** The coloured line on the cable (pin number one) is the -12V rail and must match white line in PCB.

3. **Connect power cable into POWER connector.** Find the connector marked in the silkscreen.

4. If you plug the cable **backwards or in the expansion port** you might burn it out and unfortunately this is not covered by the warranty.

5. If you have any questions about this product please send them to:
   befacosynth@gmail.com

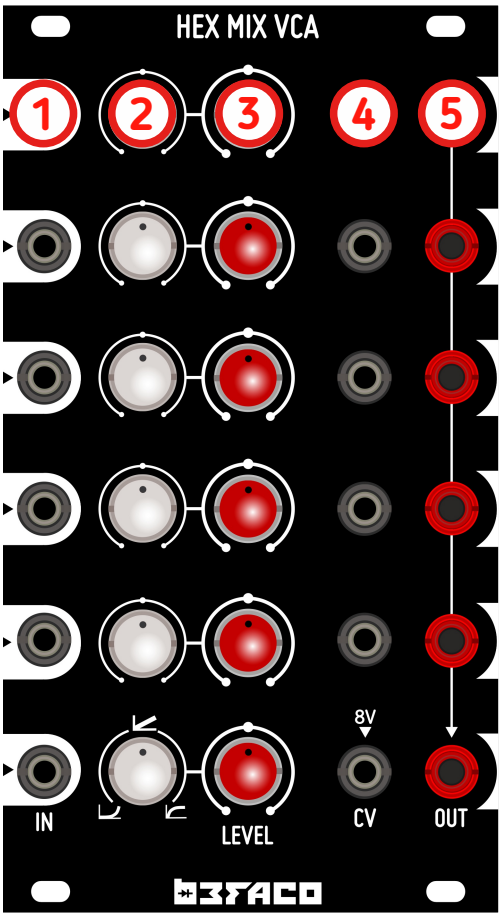
INTRODUCTION

SIX CHANNEL VCA WITH VARIABLE RESPONSE CURVE

The Hex Mix VCA is a compact six channel VCA with variable response curve, from exponential, through linear to logarithmic. This particular behaviour makes the module a powerful tool for design interesting timbres and complex forms of modulation. Hex Mix VCA can be used as a six channel mixer with manual gain controls, as all outputs are summed at channel six.

MODULE REFERENCE

AN EXAMINATION AND DESCRIPTION OF THE VARIOUS FUNCTIONS OF THE MODULE



1. Channel Input
Main channel Input. Acepting signals at +/- 10V.

2. Response Knob
Curve response control. While center position is lienar response, Turning the knob anticlockwise the response morphs from to an exponential curve gradually. In the same way, turning the knob clockwise, the response morphs from linear to a logarithmic curve. Useful for create timbres with different dynamics responses.

3. Volume Knob
Manual control for the output channel gain.

4. Channel CV Input
Voltage control input for the amplifier. Plug the output of an envelope or other modulators in this input to shape the incoming signal. Expects 0-8V.

5. Channel Output
Main channel output. In channel six this output can be the master of six channels sum (see later). Output level up to +/-10V.

RESPONSE CURVES

EXAMINATION OF THE DIFFERENT CURVES AND SIGNAL BEHAVIOURS.

INTRODUCTION

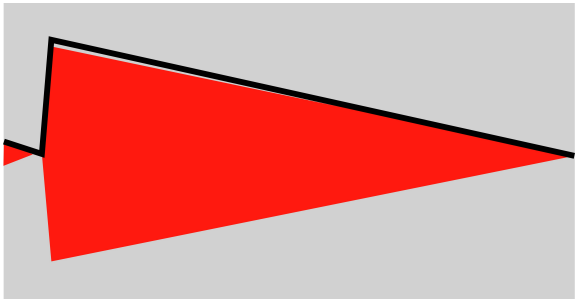
The most significant feature on the Hex Mix VCA is his precise response range. Starting from the usual linear curve, the module offers a wide range of responses that can be precisely adjusted from exponential to logarithmic. This variety of curves allow us to create timbres with interesting dynamics and complex modulations signals.

Let's check this with some graphics.

Patch Notes: Audio signal to Input Channel 1 - Linear Envelope to CV In 1

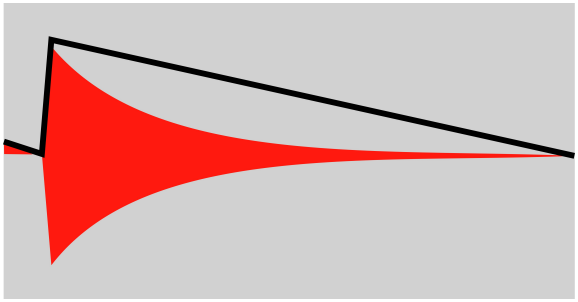
LINEAR RESPONSE

In Linear Mode, the VCA follows the control signal of the envelope in a linear form. This allows the signal to keep its exponentiallity intact and creates a sound with natural dynamics.



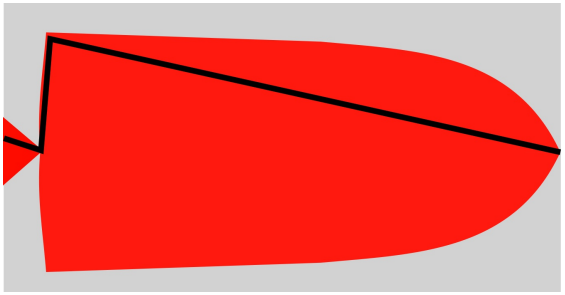
EXPONENTIAL RESPONSE

In this case, the VCA follows the control signal in a exponential way. This causes the signal to loose part of its dynamics and gain. Otherwise, it's useful to get a smooth CV control for modulation sources.



LOGARITHMIC RESPONSE

Unlike exponential response, with the Logarithmic one the signal adds lots of dynamics, making the response quite aggresive. Due to t it's strongest attack and abrupt decay, it makes this response a good choice to create harsh percussions and realistic audio crossfades.



MIXING SIGNALS

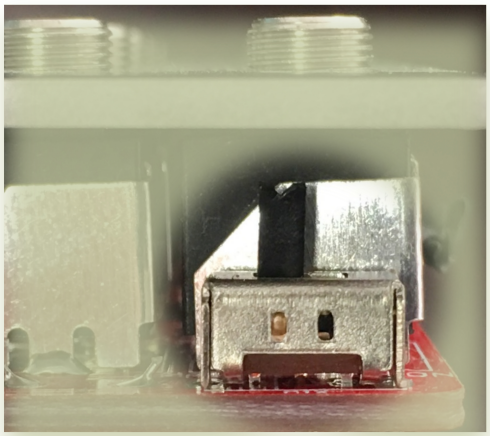
USING THE HEX MIX VCA AS SIX CHANNEL MIXER.

INTRODUCTION

The Hex Mix VCA is also a powerful six channel mixer with the capacity to extract any channel from the sum, as output jacks are normalled to the mix.

MIXING ACTIVATION

The sum of the six channels is activated by turning the switch located in the bottom right of the module (as pictured) to ON position.
At OFF possition, mixing capabilities are turned off and chanel 6 will act standalone.



Setting channel 6 to satandalone is useful when Hex Mix VCA is routed to our Hexmixer module. This can be achived connecting both of them via the Expansion Port located on the back side of the module.

EXTRACTING SIGNALS FROM THE MIX

The Hex Mix VCA have the capacity of extract signals from the sum keeping other channel's mix intact. To extract or eliminate a signal of the mix simply plug a cable in the output of the selected channel.

MORE INFORMATION

https://www.befaco.org/en/hexmix-vca/

VIDEO DEMO

https://www.youtube.com/watch?v=I5b0w4D6H1M

TECHNICAL SPECS

Current Needs: +12V: 50mA, -12V: 50mA
Width: 14HP
Depth: 30mm
Front Panel: Heat threated Aluminium
Design: Module designed, kits prepared and assembled in Barcelona.