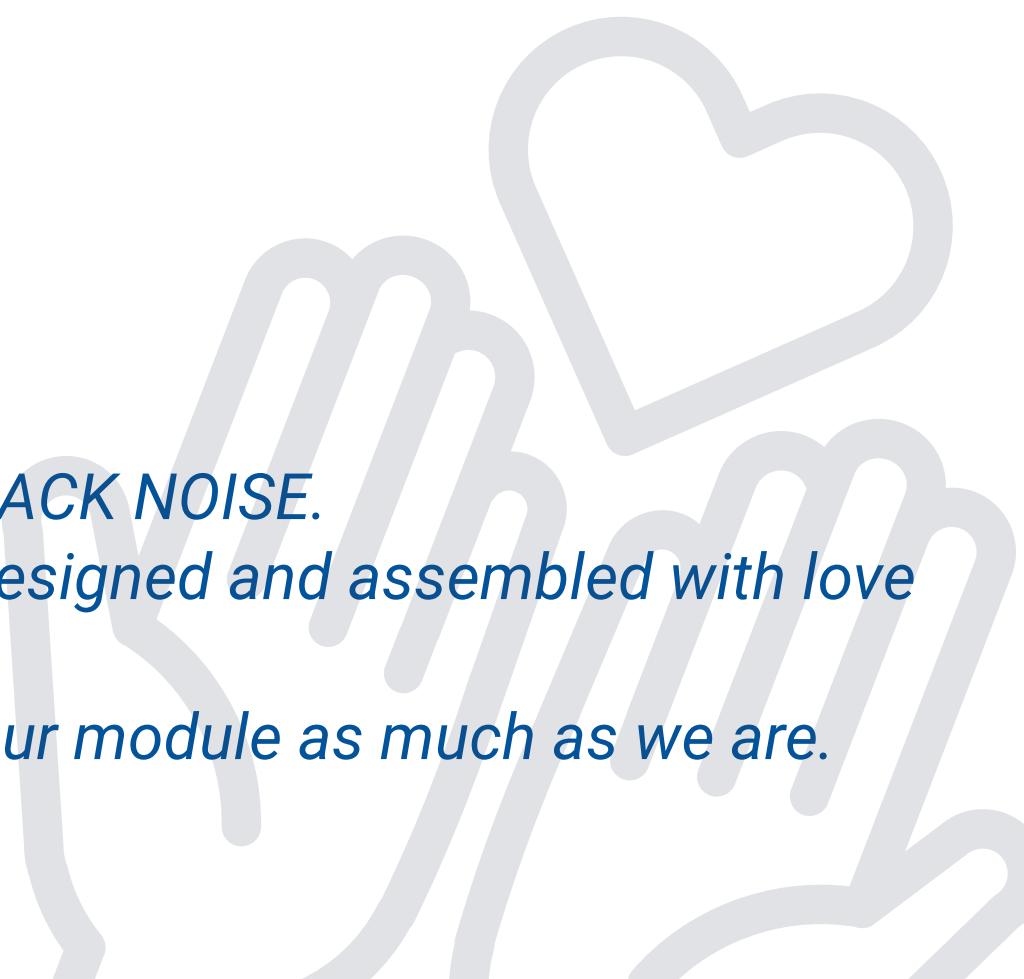


VOLTAGE PROCESSOR

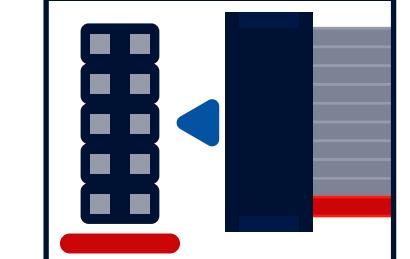
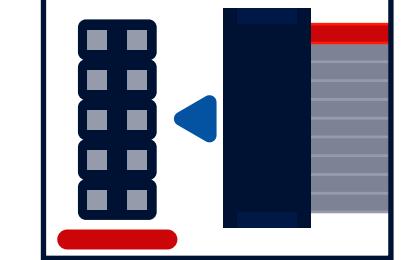
USER MANUAL

THANKS YOU

*Thanks for supporting BLACK NOISE.
Your module have been designed and assembled with love
and care in France.
We hope you will enjoy your module as much as we are.*

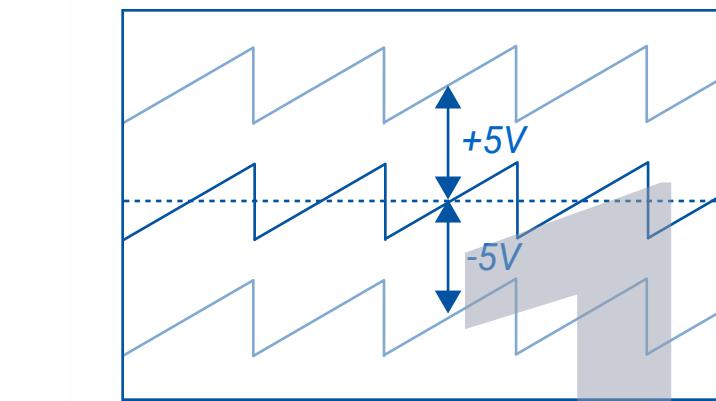
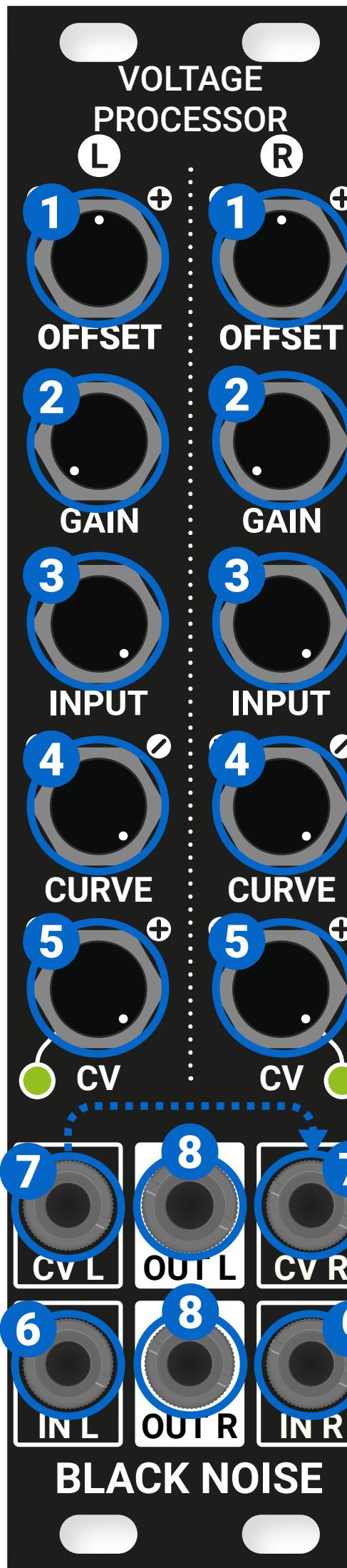


INSTALLATION & POWER SAFETY

- 1**
Disconnect you rack power from the main.
 - 2**
Align the red line from the power ribbon cable with the line draw next to the power connector on the module side.
 - 
 - 
 - 3**
Check again the polarity of the ribbon cable.
 - 4**
Check the polarity one last time.
 - 5**
Connect you rack power from the main.
 - 
 - 6**
Power you rack.
 - 7**
Check that the module work fine, else please contact us.
 - 8**
You can screw you module on your rack.
- ## DISCLAIMER
- All our modules are secured against reversed power connection, however plugging you module backward may damage you power supply or other modules installed in your rack.
- Backward connection are not covered by our warranty.*

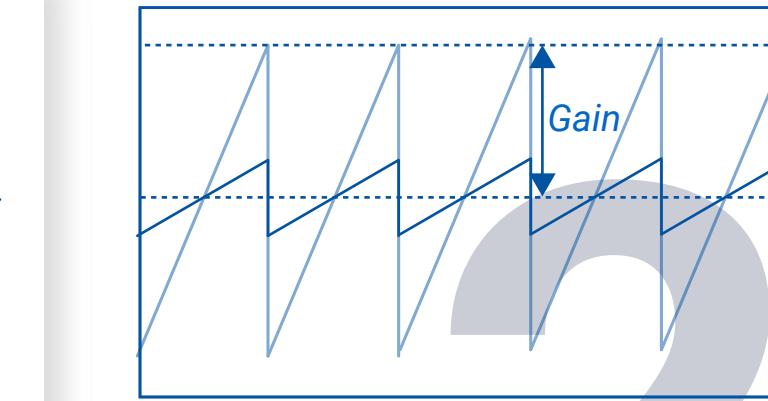
OVERVIEW

FRONT PLATE



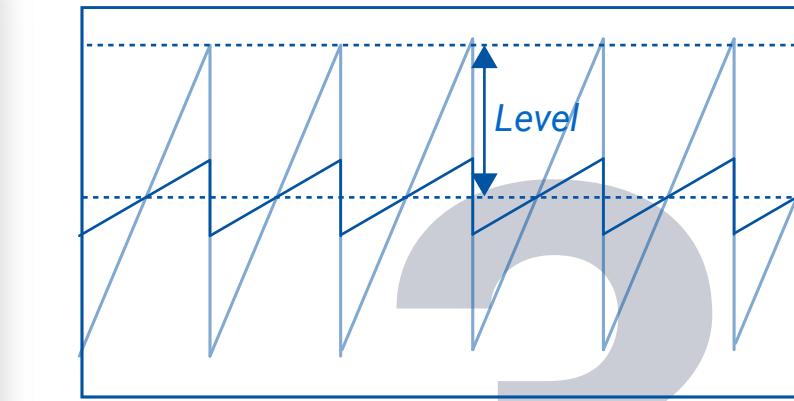
OFFSET

Allow to offset input to +/-5V. In fully counter clockwise the signal will be hard-clipped.



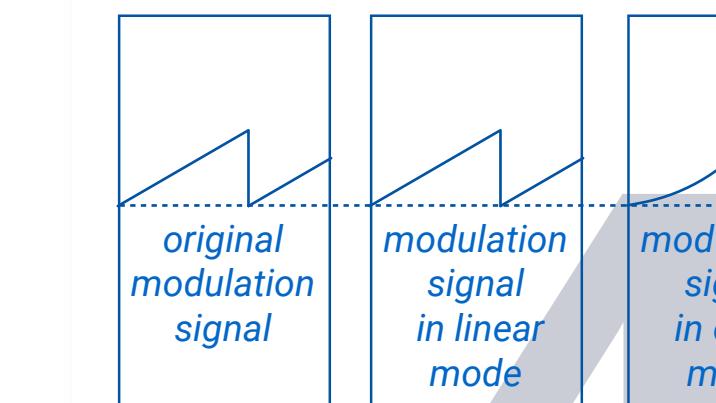
GAIN

Also known as Bias, GAIN allow to set the initial gain of the VCA. Unlike most VCA VOLTAGE PROCESSOR can amplify input signal above initial amplitude in the scale of +/-10V.



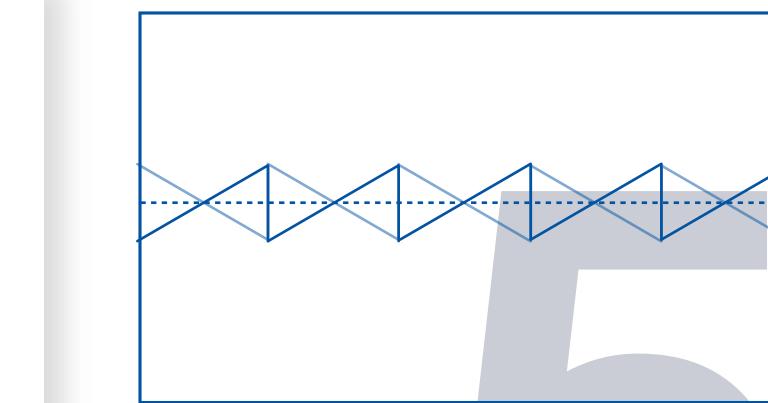
INPUT

Attenuator of the input level.



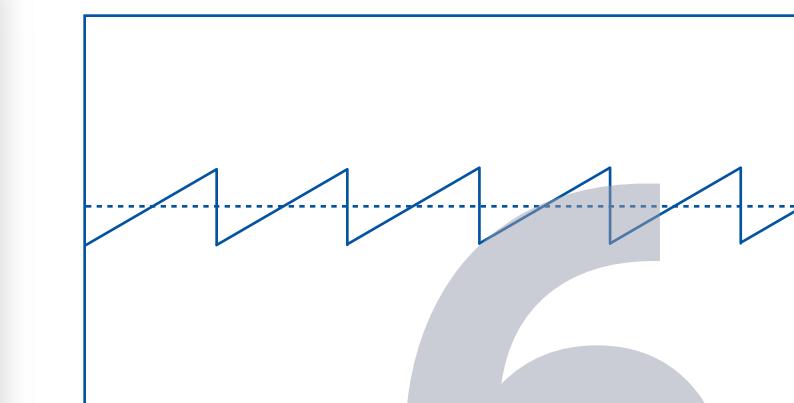
CURVE

VOLTAGE PROCESSOR can convert modulation signal in exponential CURVE allow you to crossfader between linear and exponential curve.
Due to is design amplitude of exponential signal is lower than linear. to compensate , increase GAIN.



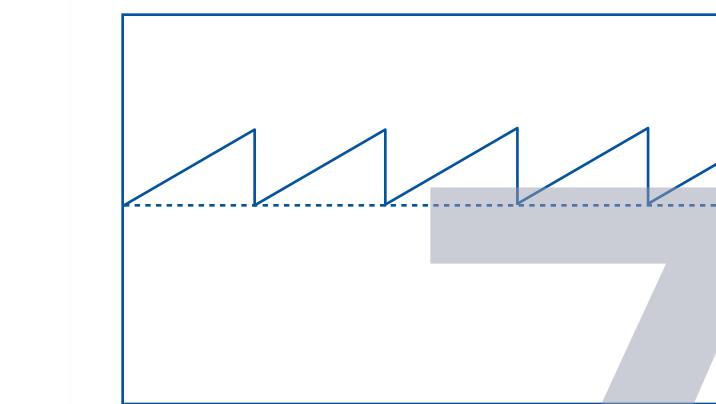
CV

Attenuverter for the CV input



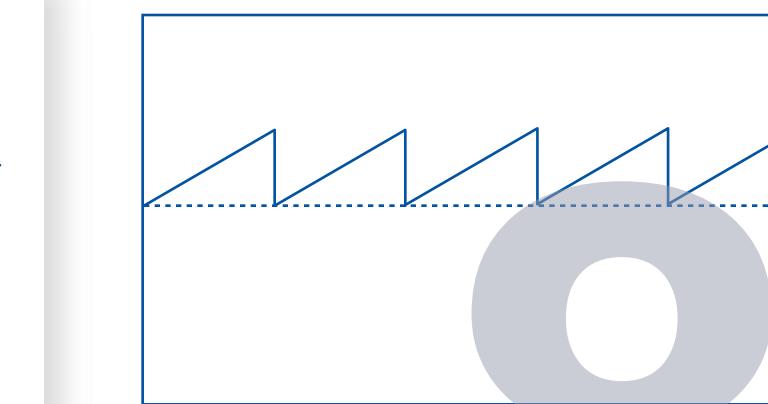
AUDIO INPUT

Audio input L is normaled to +10V, if no jack is connect you will get +10V.
Audio input R can be normaled to input 1 or +10V with the dedicate pinheader on the back.



CV INPUT

CV input R is normaled to CV input L. If no jack is connect to CV input R, you will gate a copy of CV input L. You can use CV knob of channel R to bypass CV modulation coming from CV L or plug a dummy cable.



AUDIO OUTPUT

Output of the VCA.

GENERAL SPECIFICATIONS

PANEL WIDTH : 6HP

MODULE DEPTH : 20mm

POWER CONSUMPTION :

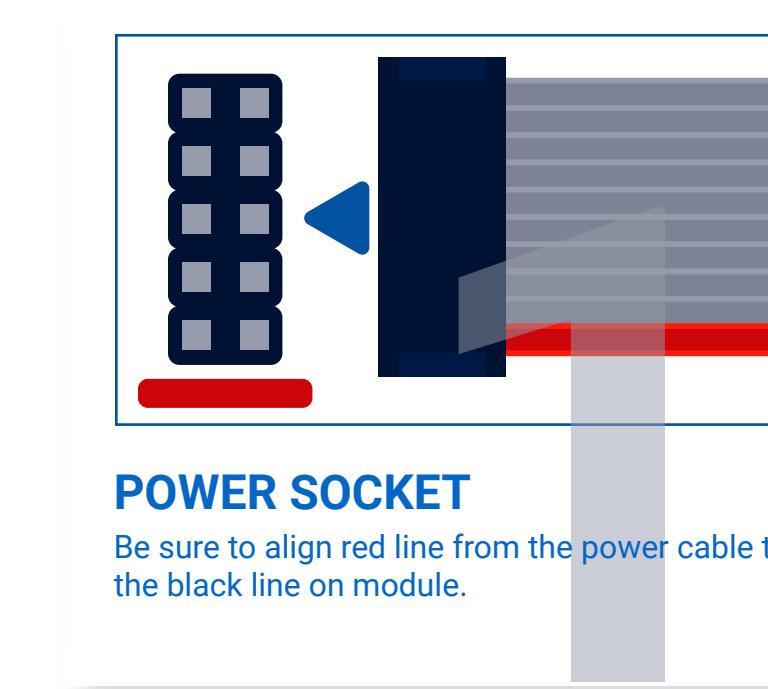
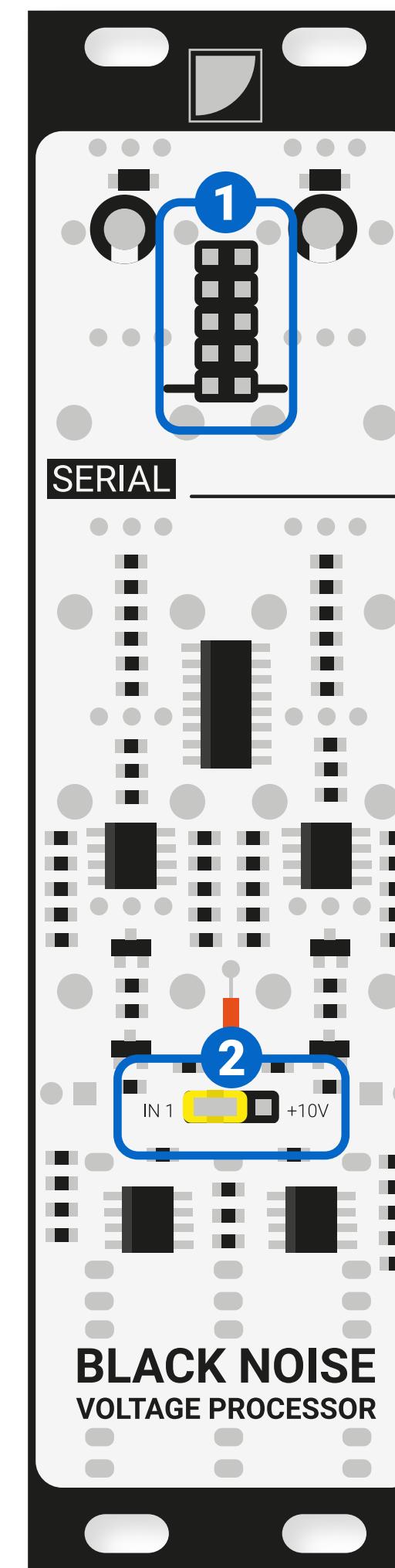
+12V : 30mA

-12V : 30mA

+5V : 0mA

OVERVIEW

BLACK PLATE



POWER SOCKET

Be sure to align red line from the power cable to the black line on module.

IN 1	Input Channel R normalized to input Channel L
IN 1	Input Channel R normalized to +10V
IN 1	Input Channel R normalized to nothing

INPUT R SETTING

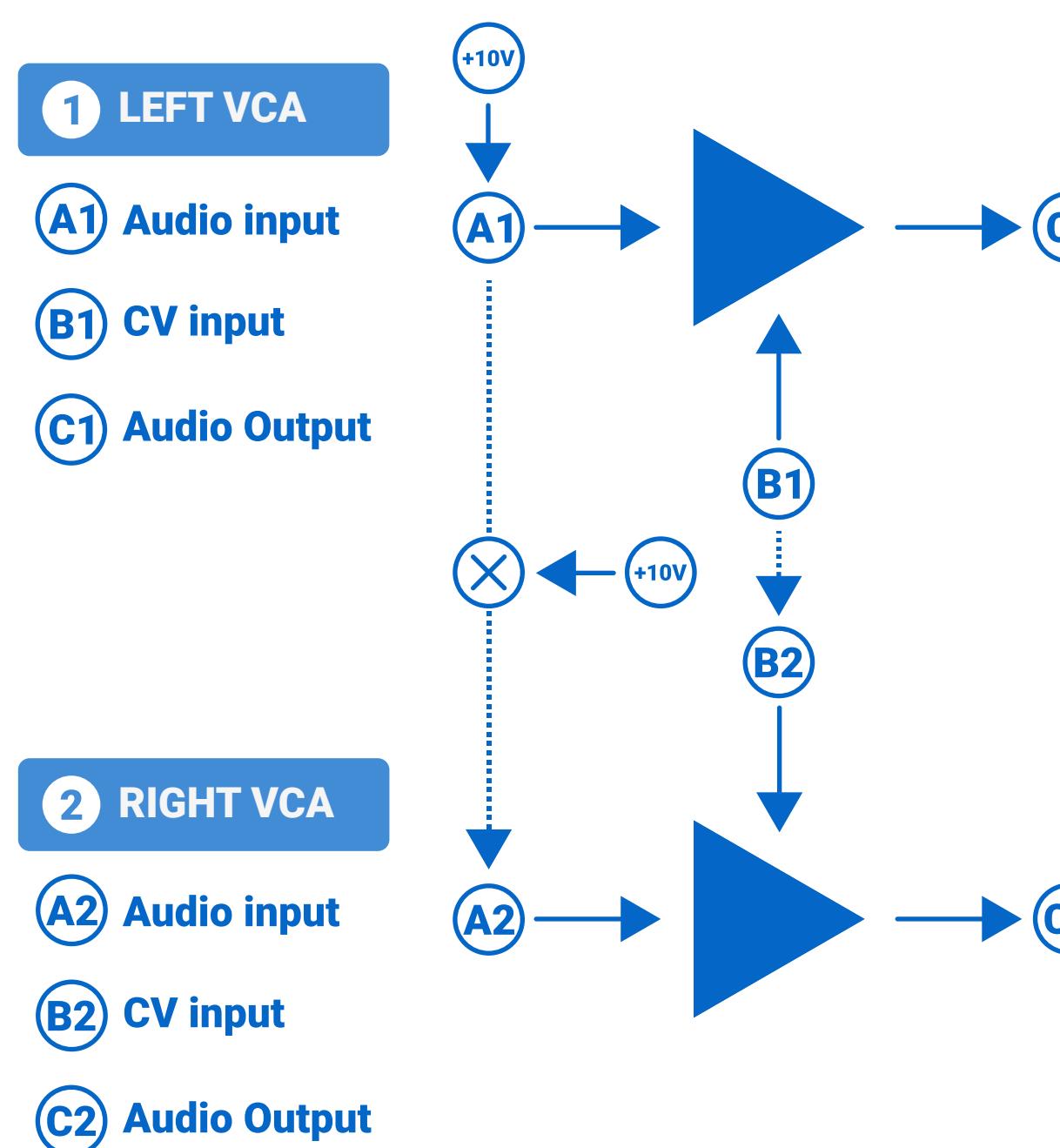
Input of channel R can be normalized to either Input channel L, +10V or none of those two. Normalized input can be disabled by connecting a jack into the Input of channel R. To select Input of channel R set the jumper to "IN 1". To select +10V set the jumper to "+10V". To break any normalization simply remove jumper.

PATCH IDEAS

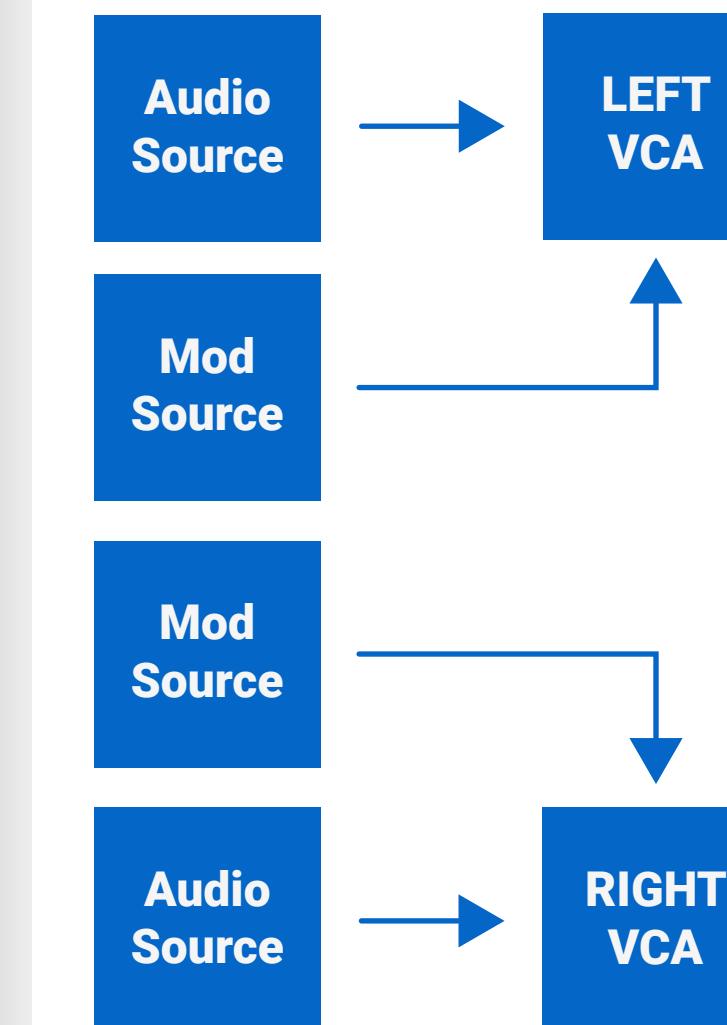
DUAL VCA

VOLTAGE
PROCESSOR

ROUTING



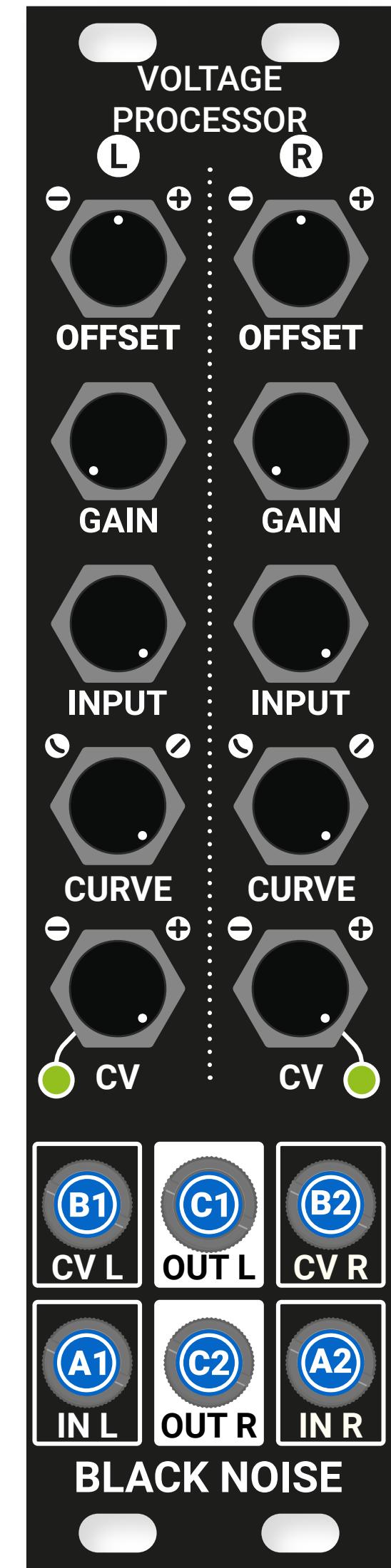
PATCH



INFORMATIONS

VOLTAGE PROCESSOR can be used as dual channel VCA.

OFFSET allow to convert DC to AC signal and the opposite.
GAIN control the bias of the VCA.
INPUT allow to attenuate input level.
CURVE go from linear to exponential.
CV act as attenuverter for the CV input
Input L is normaled to 10V
Input R can be normaled to 10V or input L using the header on the back of the module.
CV R is normaled to CV L

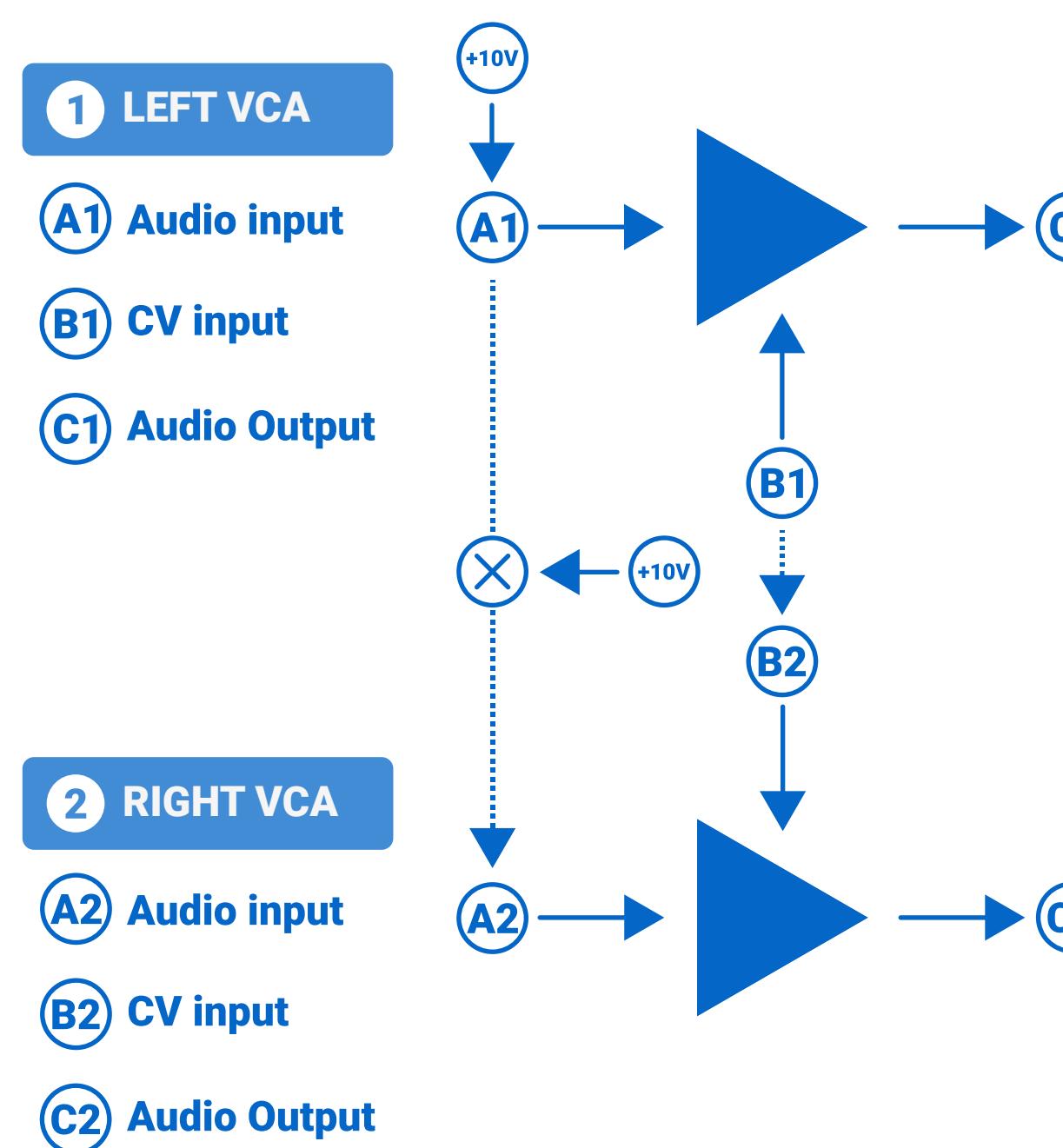


PATCH IDEAS

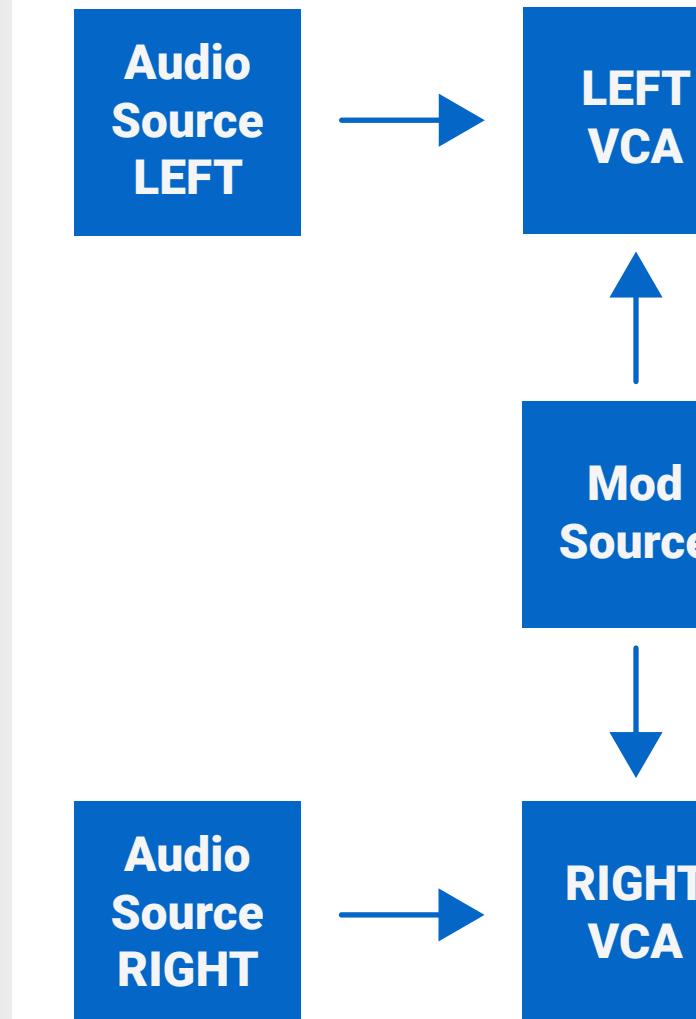
STEREO VCA

VOLTAGE
PROCESSOR

ROUTING



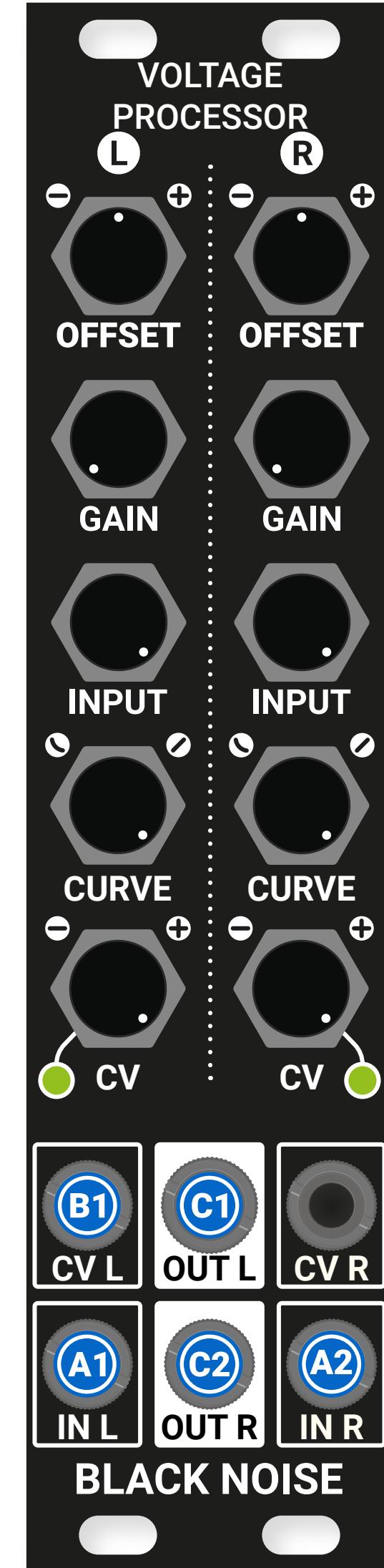
PATCH



INFORMATIONS

VOLTAGE PROCESSOR can be used as Stereo VCA.

GAIN control the bias of the VCA.
INPUT allow to attenuate input level.
CURVE go from linear to exponential.
CV act as attenuverter for the CV input

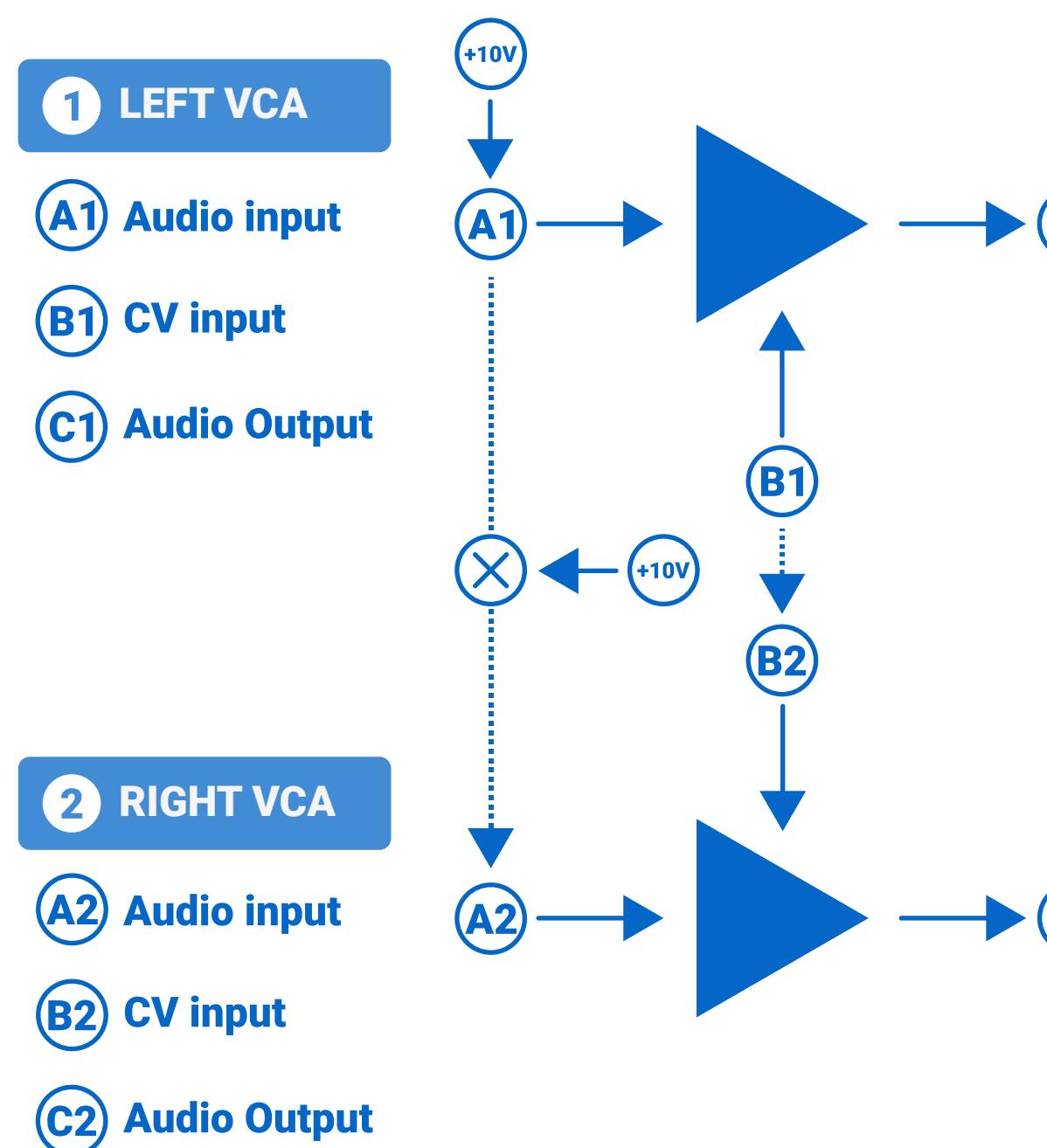


PATCH IDEAS

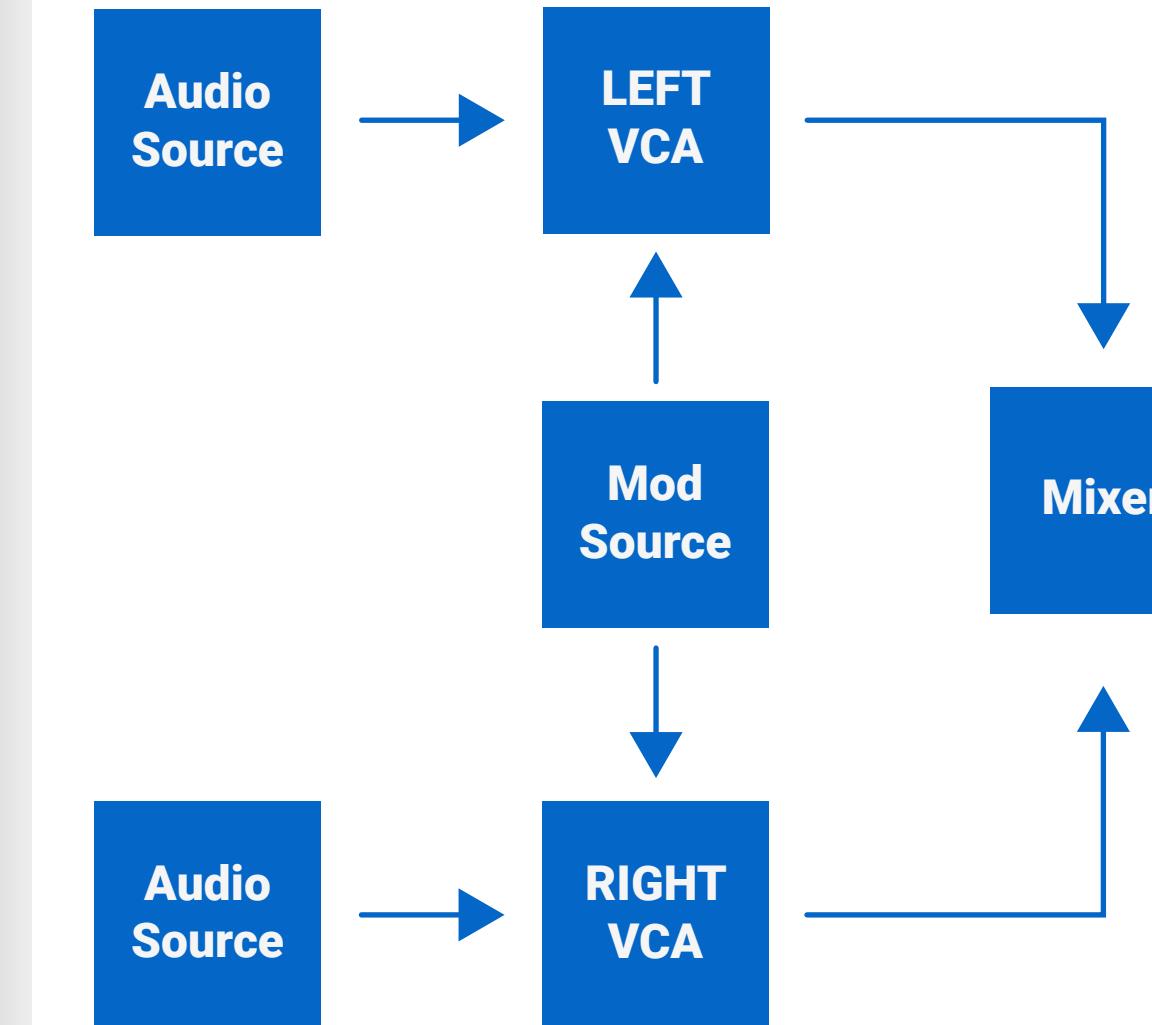
VOLTAGE CONTROLLED CROSSFADE 2:1

VOLTAGE
PROCESSOR

ROUTING



PATCH

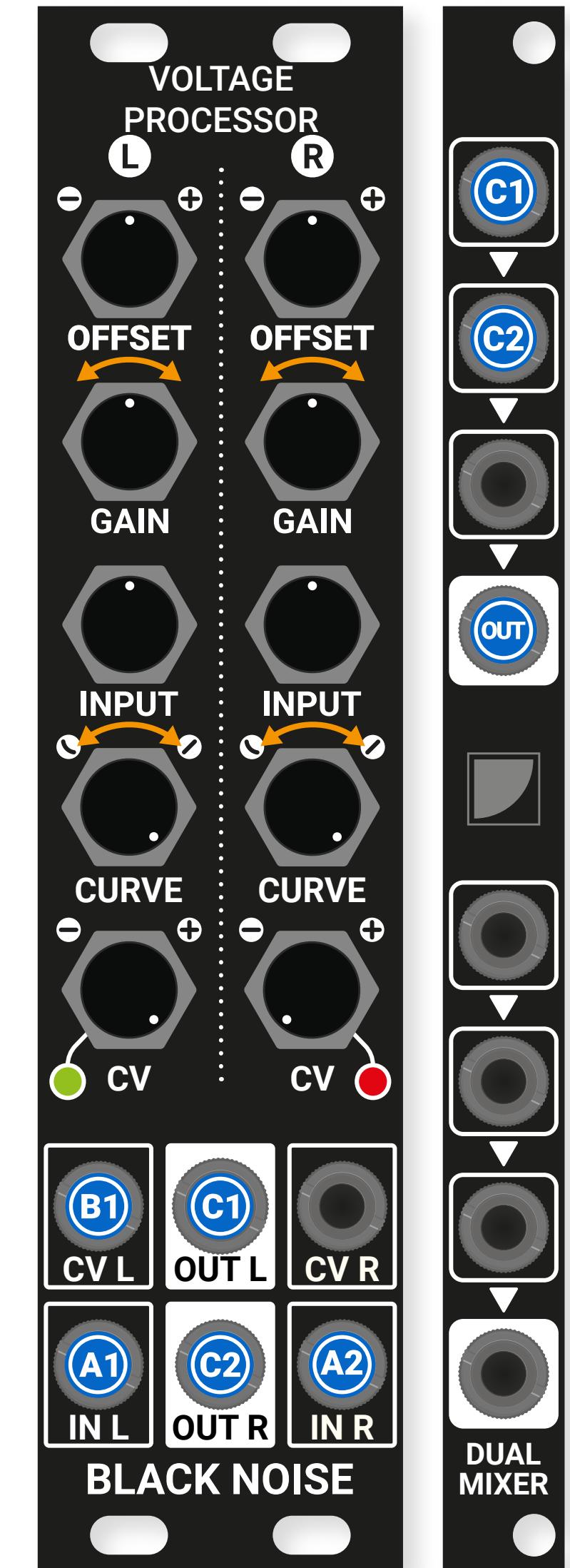
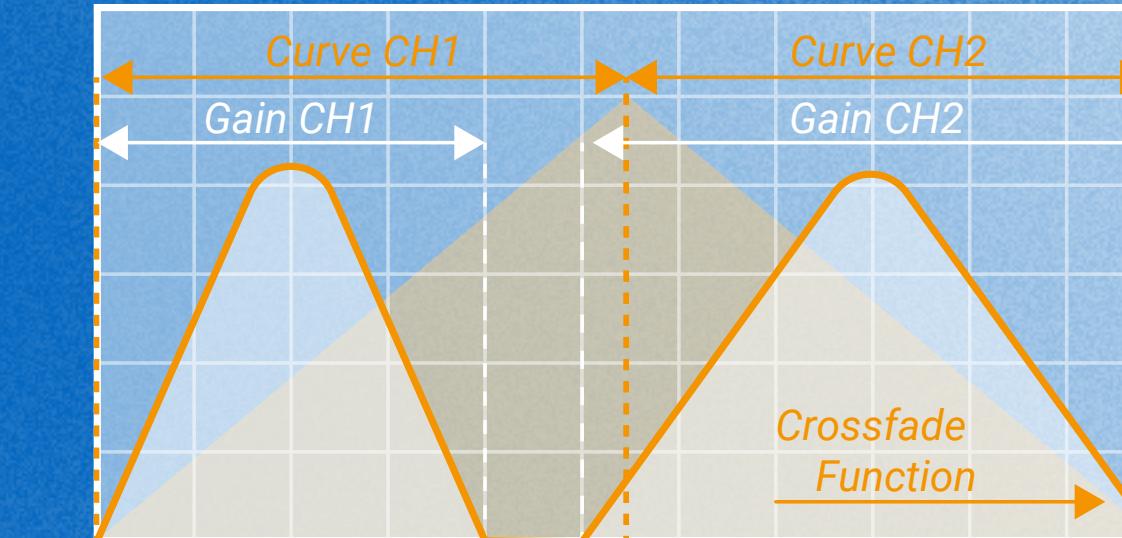


INFORMATIONS

VOLTAGE PROCESSOR can be configured as voltage controlled Crossfader 2:1 (2 inputs : 1 output).

GAIN controls the width of the input. For a smooth crossfade between inputs set GAIN at 50% on each channel.

CURVE controls the shape of the crossfade function. For a smooth crossfade between inputs set CURVE to linear on each channel.

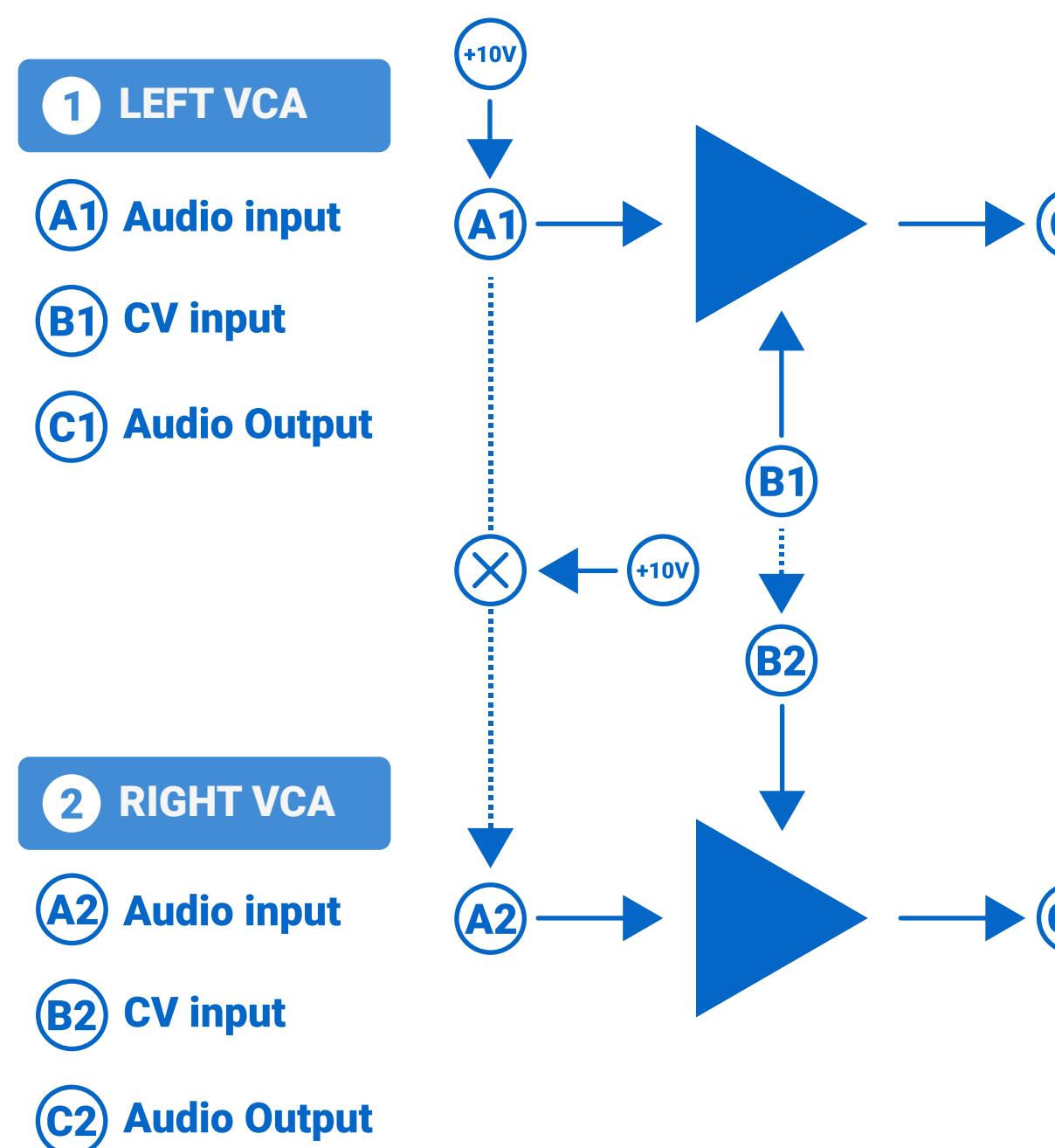


PATCH IDEAS

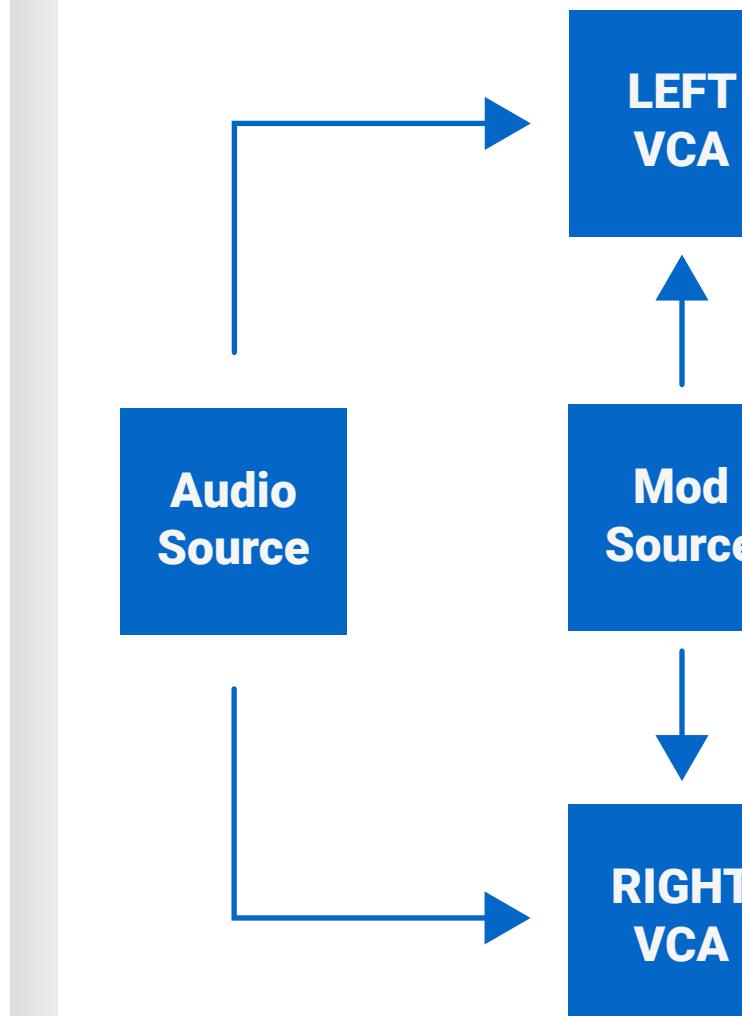
VOLTAGE CONTROLLED CROSSFADE 1:2

VOLTAGE
PROCESSOR

ROUTING



PATCH

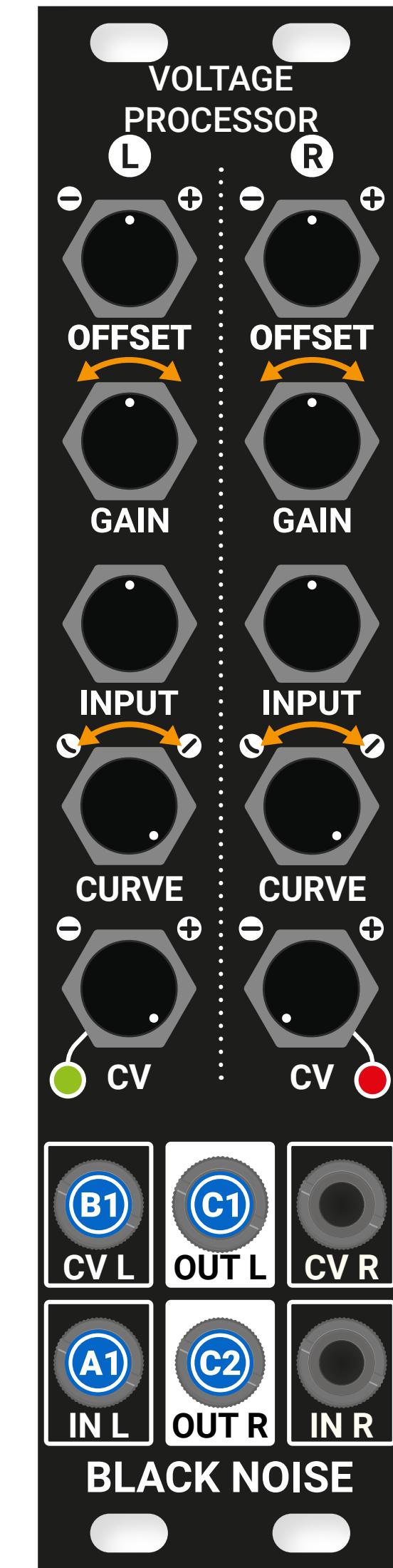
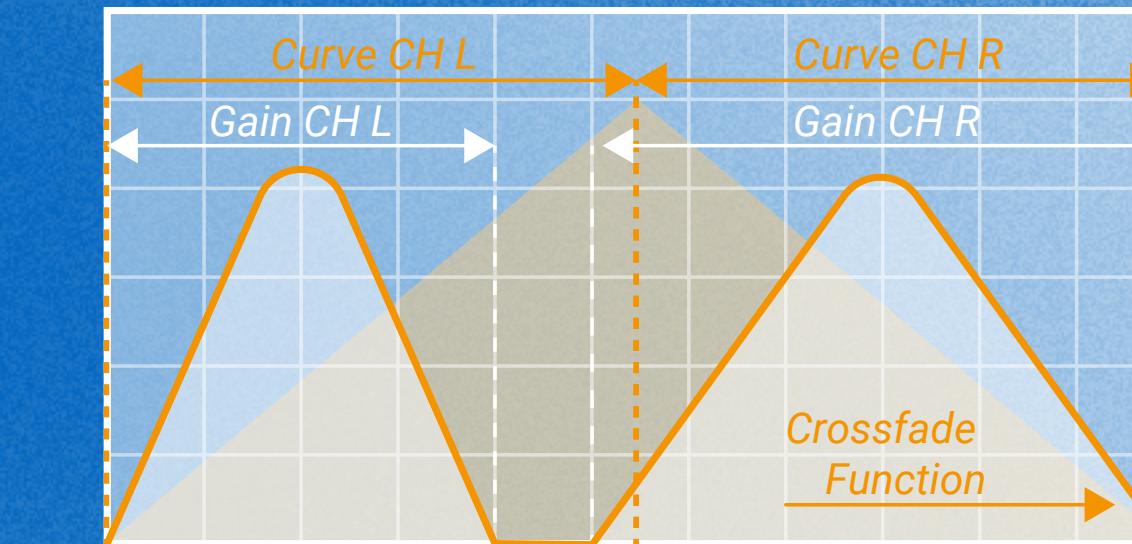


INFORMATIONS

VOLTAGE PROCESSOR can be configured as voltage controlled Crossfader 1:2 (1 input : 2 outputs).

GAIN controls the width of the input. For a smooth crossfade between outputs set GAIN at 50% on each channel.

CURVE controls the shape of the crossfade function. For a smooth crossfade between outputs set CURVE to linear on each channel.



PATCH IDEAS

DUAL AM

VOLTAGE
PROCESSOR

ROUTING

1 LEFT VCA

A1 Audio input

B1 CV input

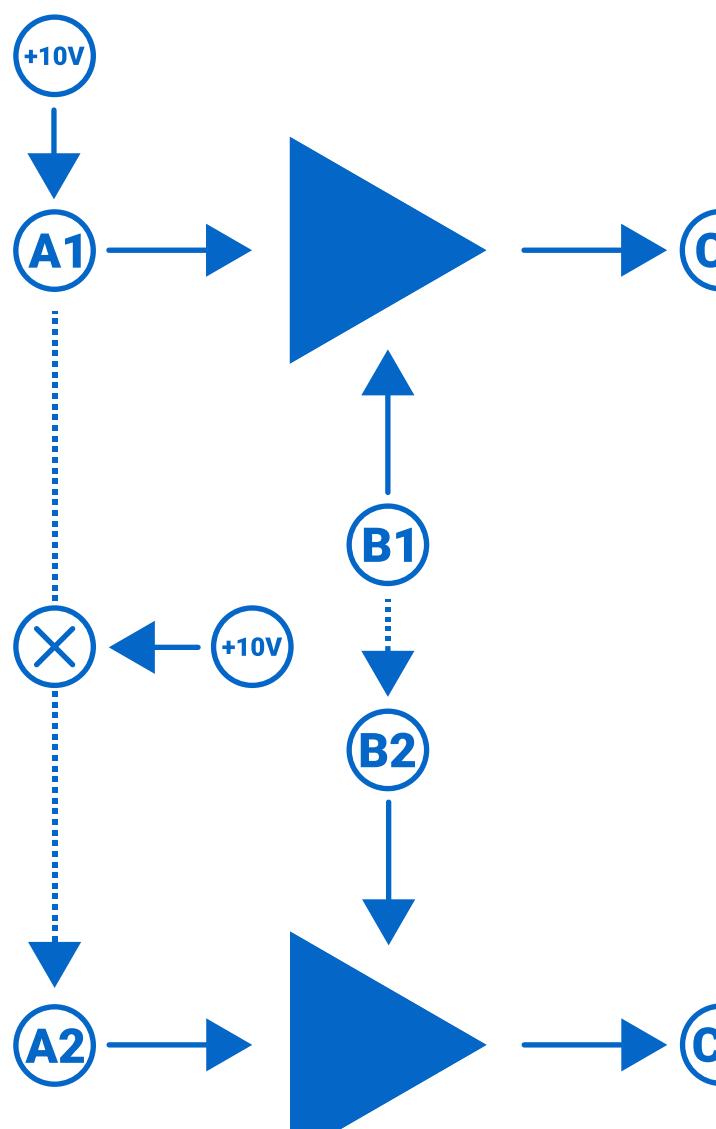
C1 Audio Output

2 RIGHT VCA

A2 Audio input

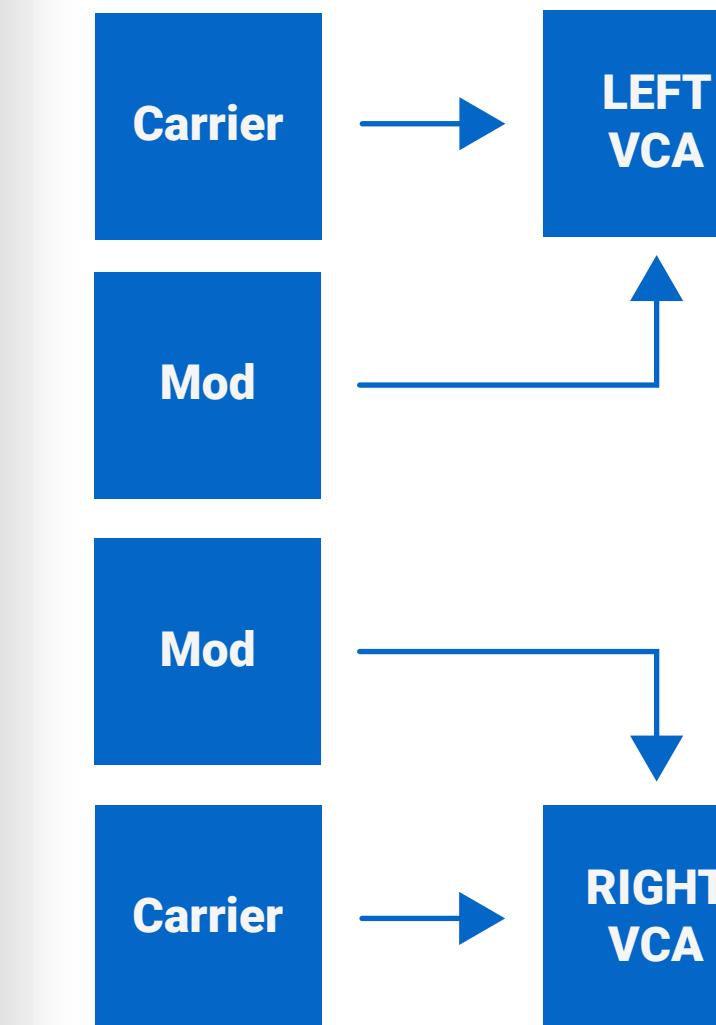
B2 CV input

C2 Audio Output



PATCH

PATCH

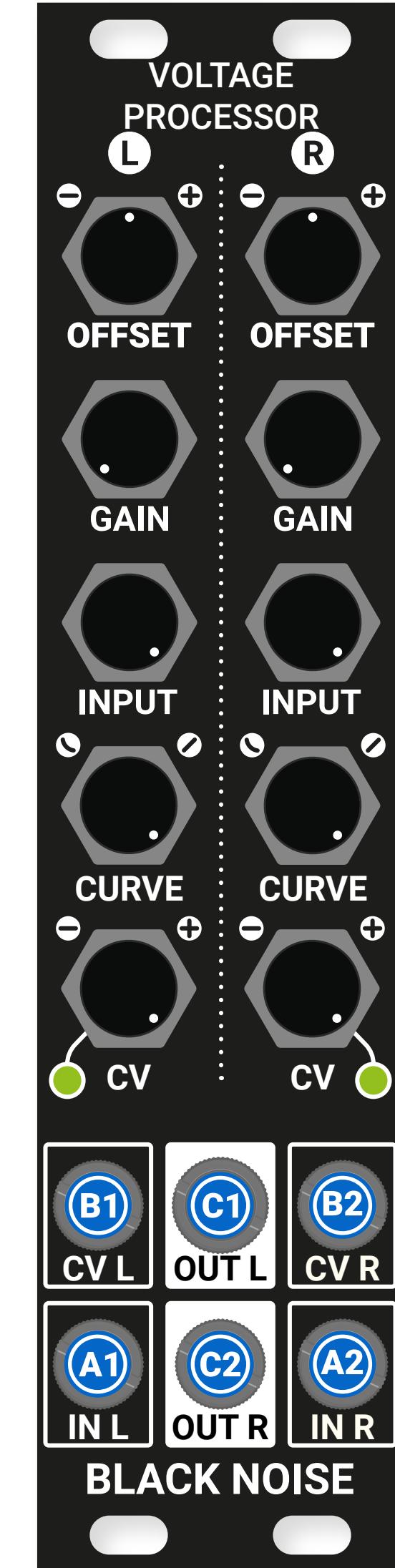


INFORMATIONS

VOLTAGE PROCESSOR can be used as a dual Amplitude Modulation.

Simply connect your Carrier signal on the audio input of each channel and your Modulator signal input both CV signal.

Since CV of channel R is normalized to CV of Channel L you can use 2 Carrier signal modulate by the same Modulator signal creating interesting output signal.

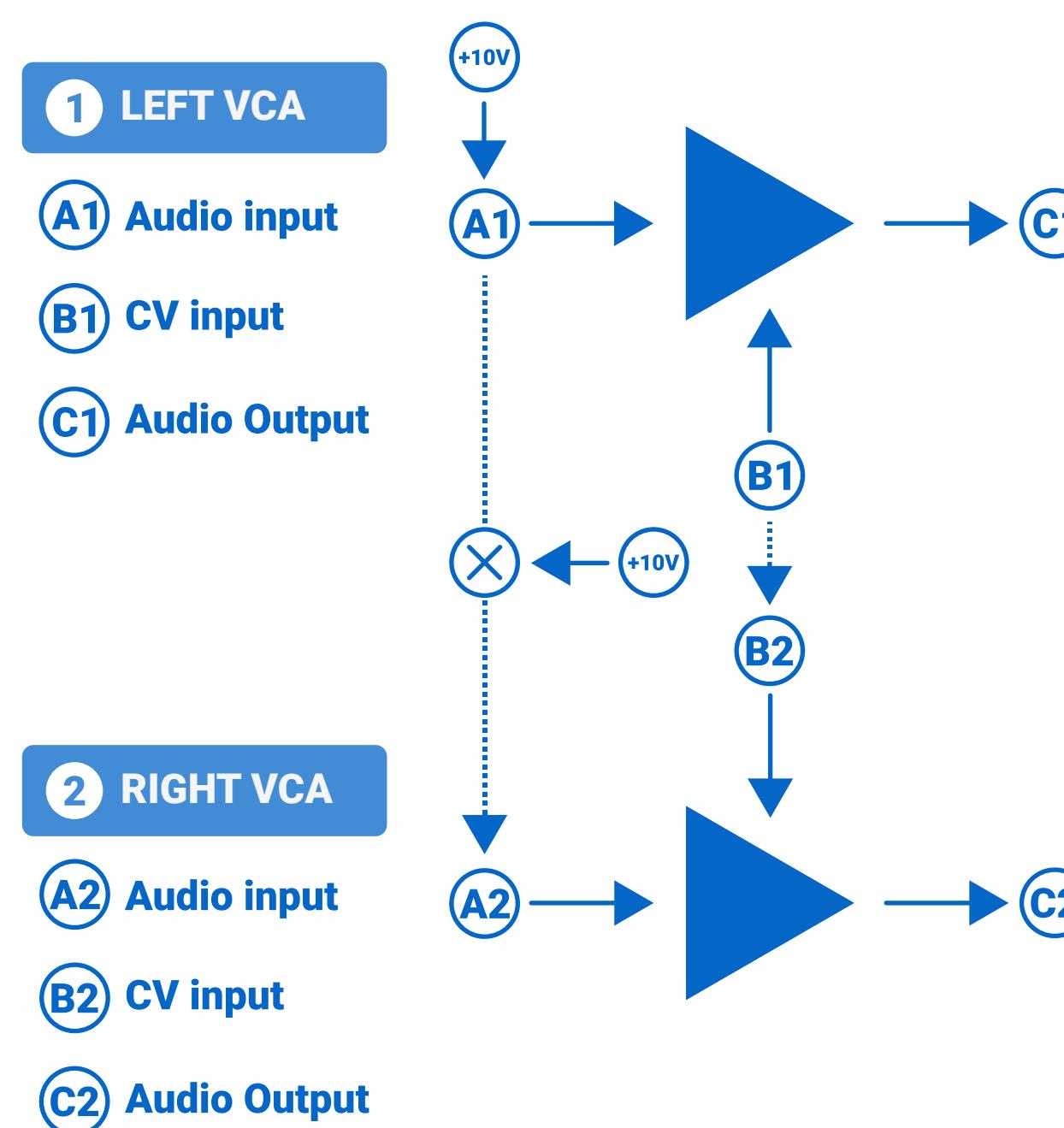


PATCH IDEAS

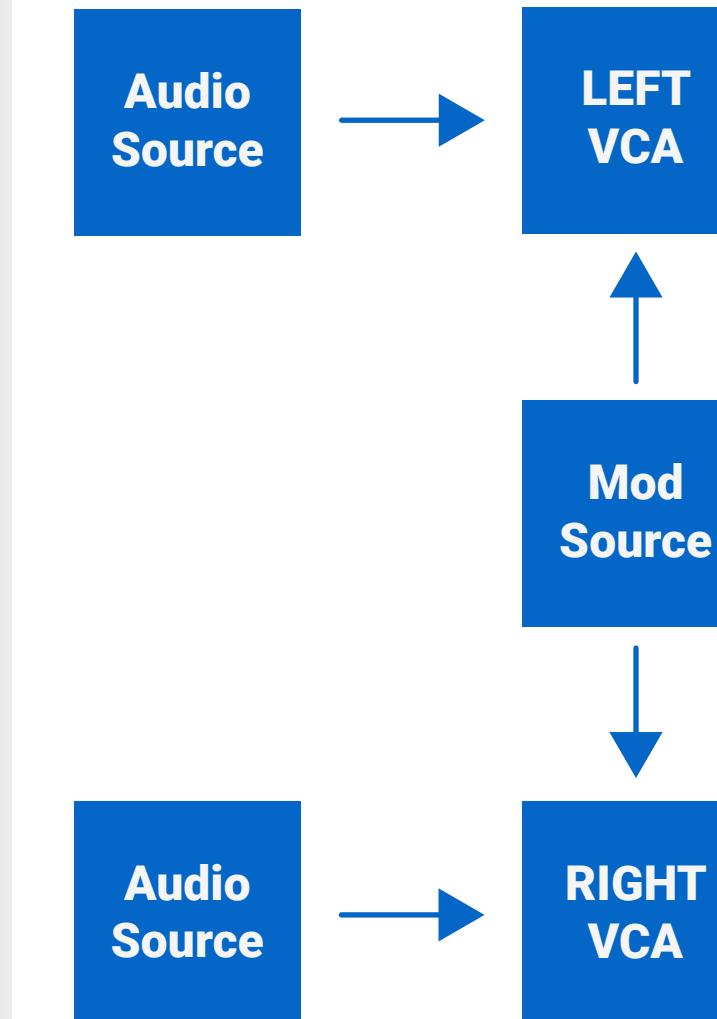
VC PAN

VOLTAGE
PROCESSOR

ROUTING



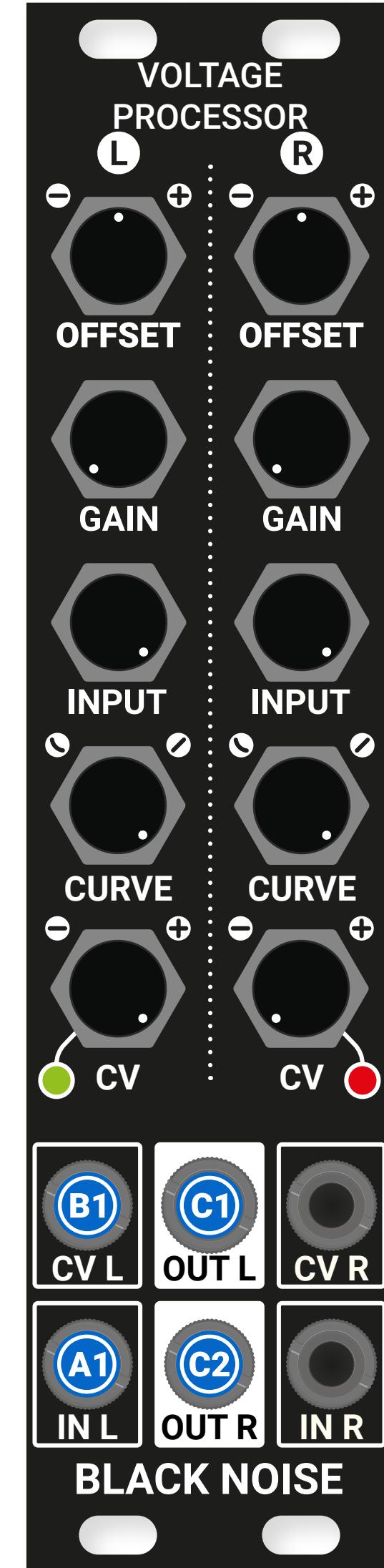
PATCH



INFORMATIONS

VOLTAGE PROCESSOR can be used as a Voltage Controlled Pan. This patch allows to create stereo effects such as stereo tremolo.

Simply plug your audio signal to Input Channel L and your Pan modulator to CV of channel L. Out L will be your left channel and Out R your right channel.

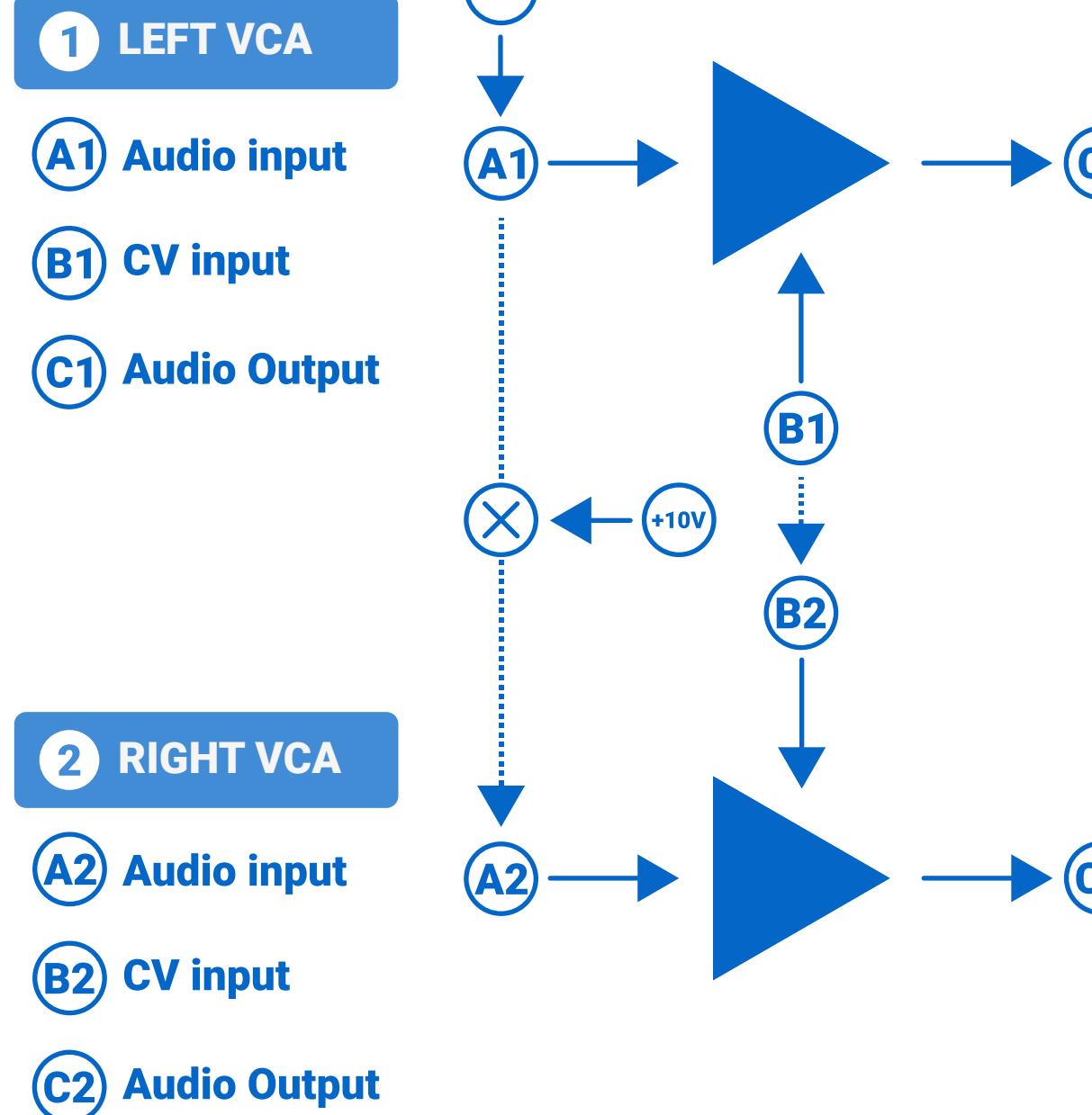


PATCH IDEAS

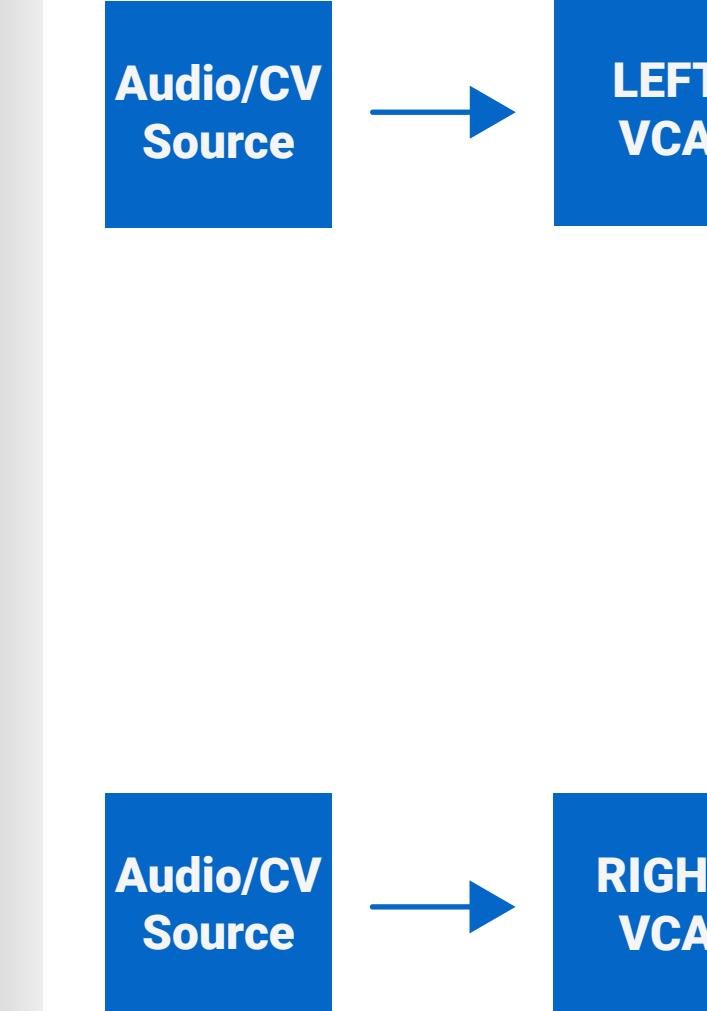
DUAL ATTENUATOR

VOLTAGE
PROCESSOR

ROUTING

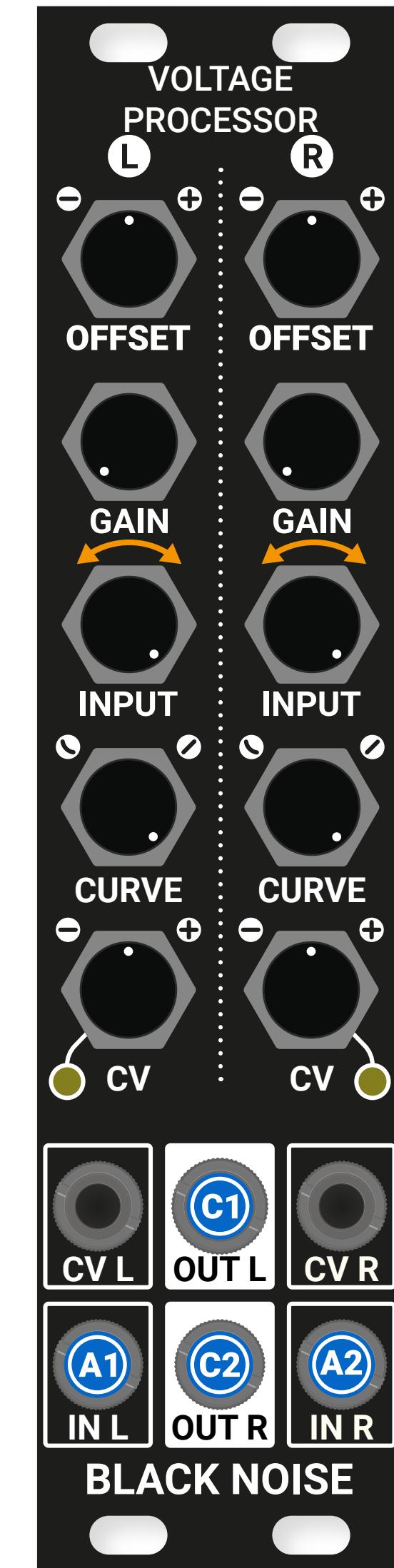


PATCH



INFORMATIONS

VOLTAGE PROCESSOR can be used as dual attenuator using the dedicated attenuator on each input channel.



PATCH IDEAS

DUAL INVERTER

VOLTAGE
PROCESSOR

ROUTING

1 LEFT VCA

A1 Audio input

B1 CV input

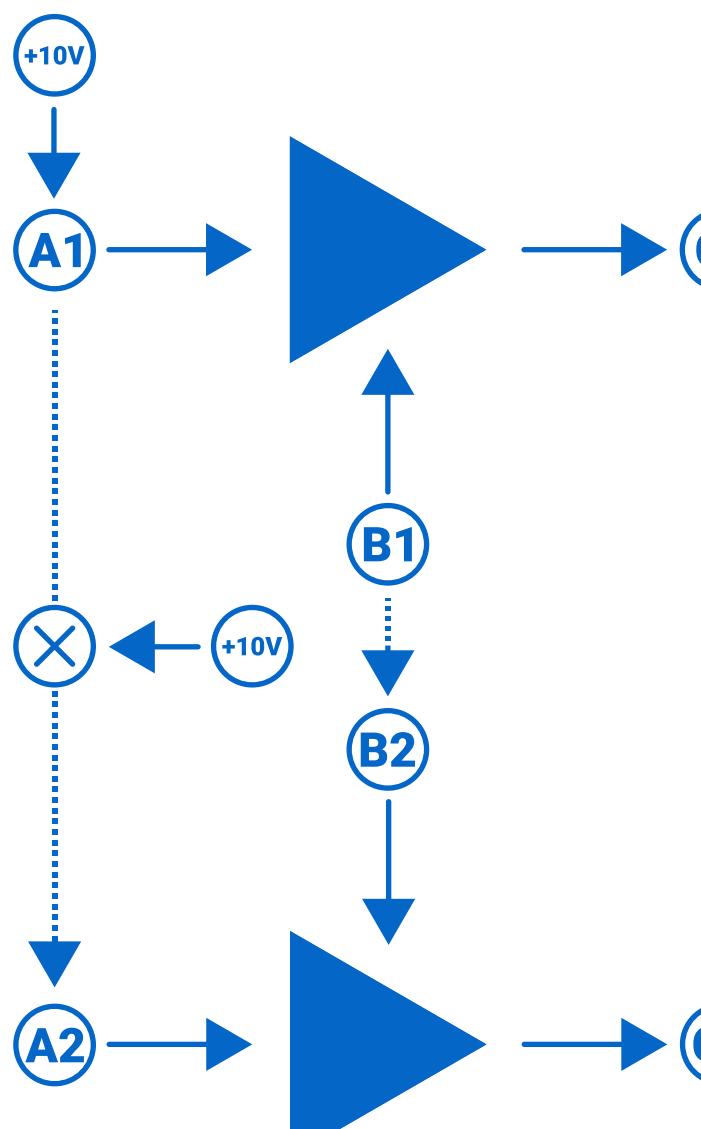
C1 Audio Output

2 RIGHT VCA

A2 Audio input

B2 CV input

C2 Audio Output



PATCH

Audio/CV
Source

LEFT
VCA

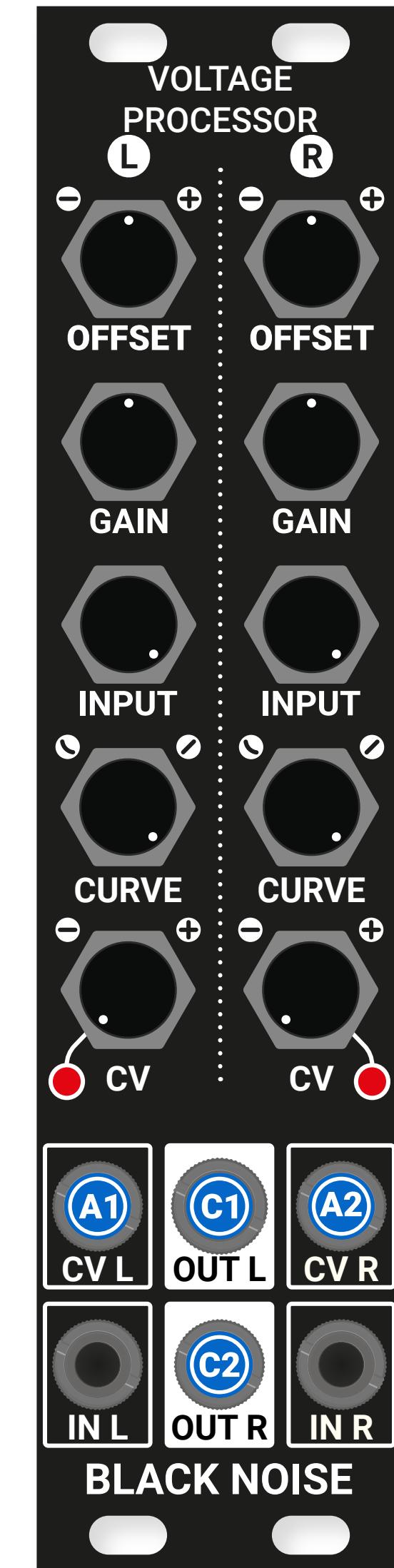
Audio/CV
Source

RIGHT
VCA

INFORMATIONS

VOLTAGE PROCESSOR can be used as dual inverter using the normal input to 10V.

Due to its design the output can be offset, to solve this problem you can use one channel as inverter and the second channel as offset generator. For more informations please see "Dual Offset" page below.

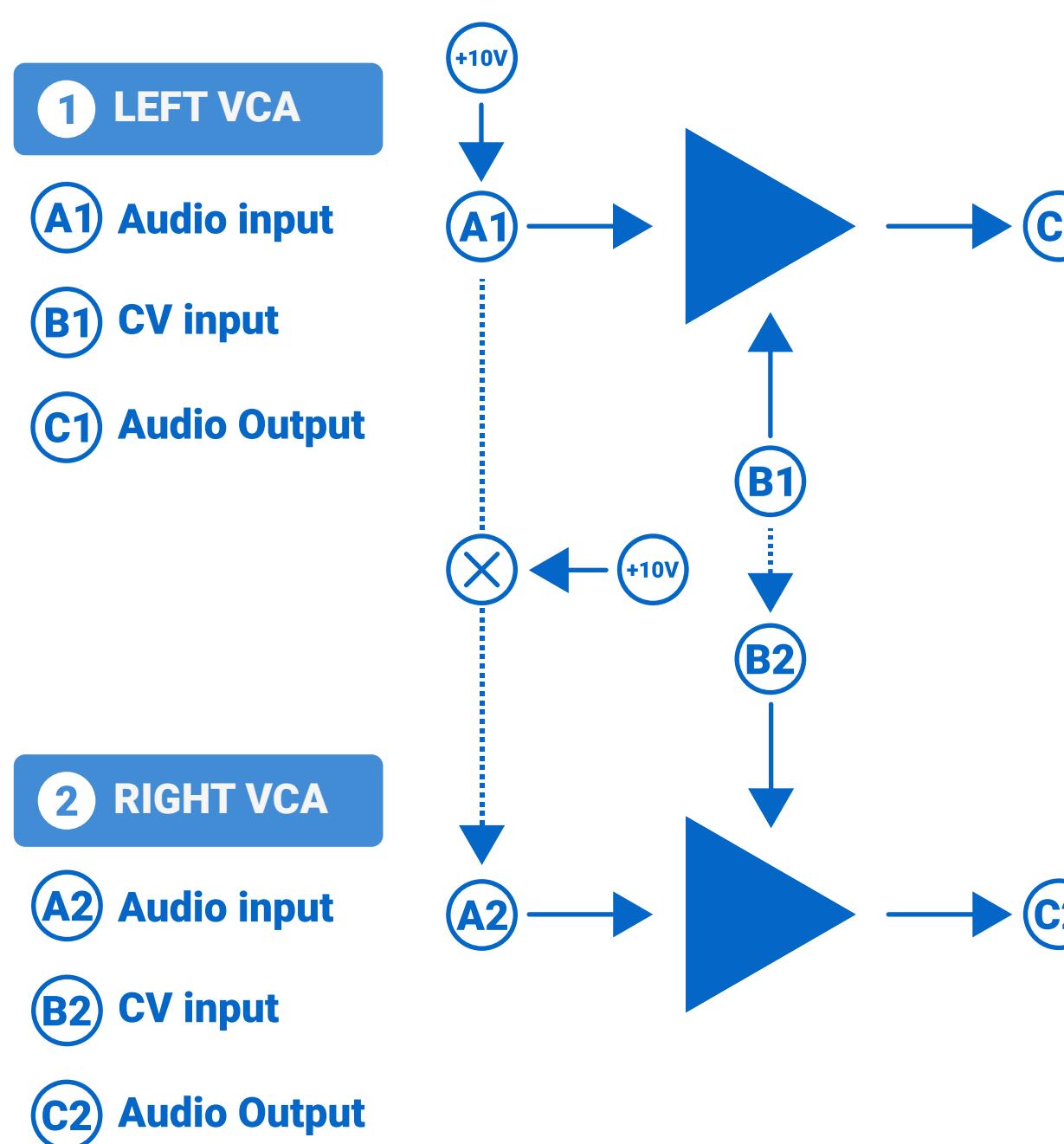


PATCH IDEAS

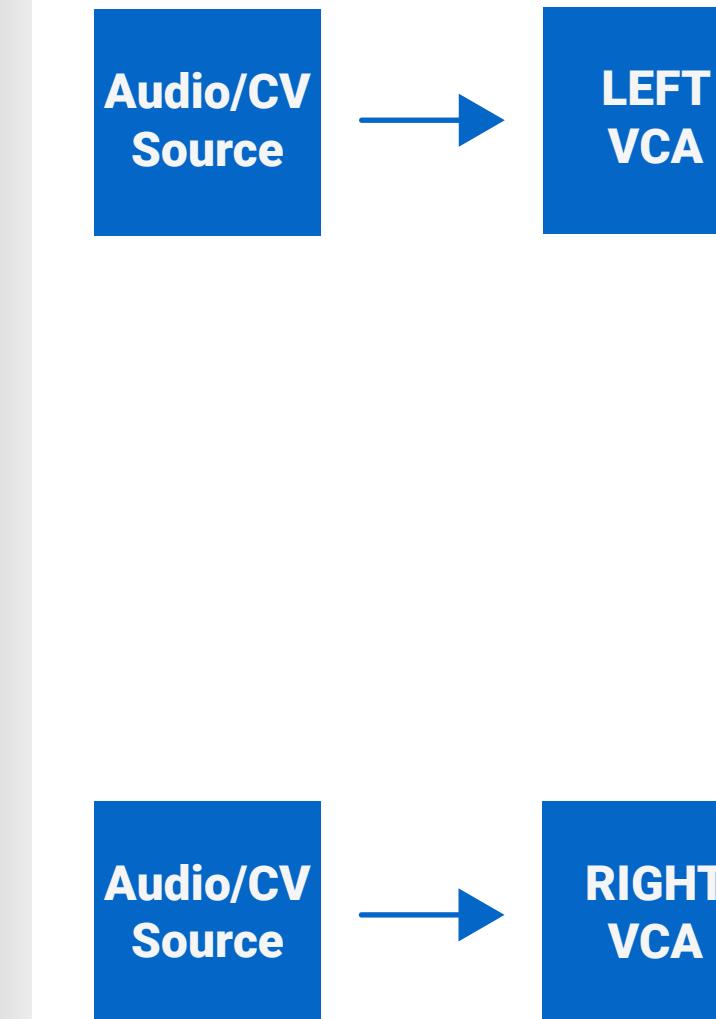
DUAL OFFSET

VOLTAGE
PROCESSOR

ROUTING

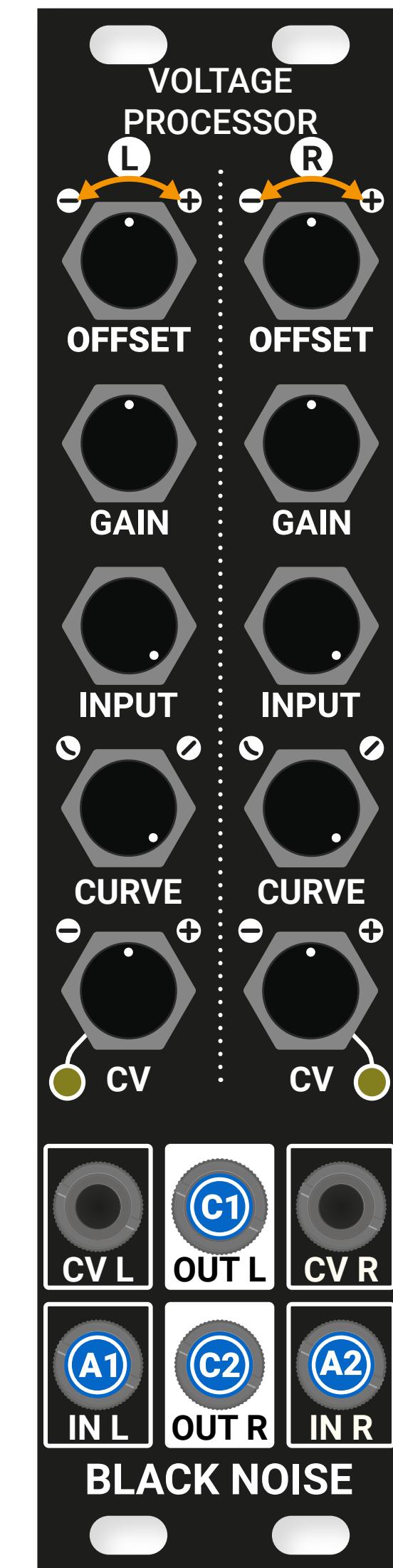


PATCH



INFORMATIONS

VOLTAGE PROCESSOR can be used as dual offset generator. This allow to convert DC to AC signal and the opposite. you can also use INPUT to attenuate the signal.

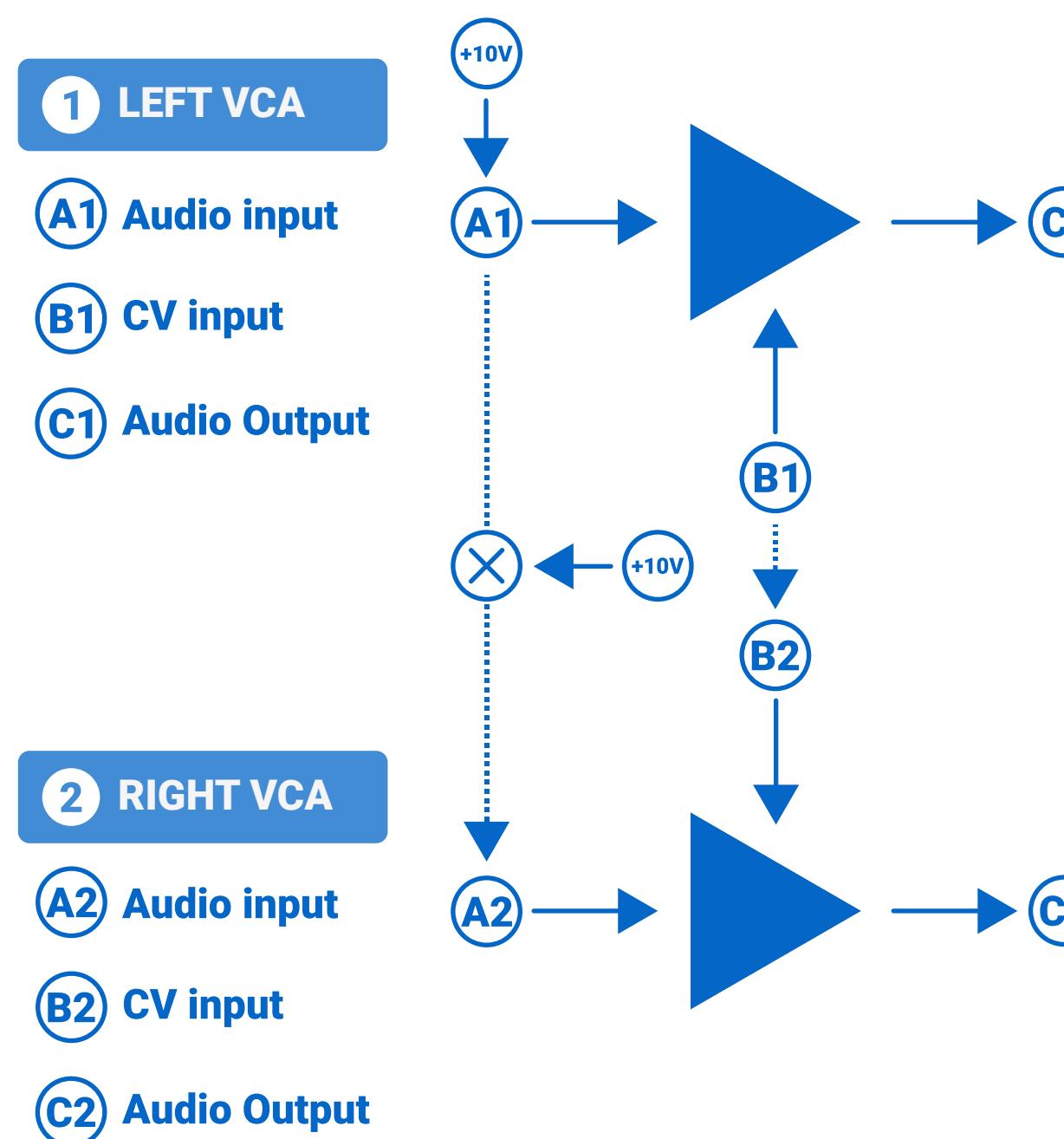


PATCH IDEAS

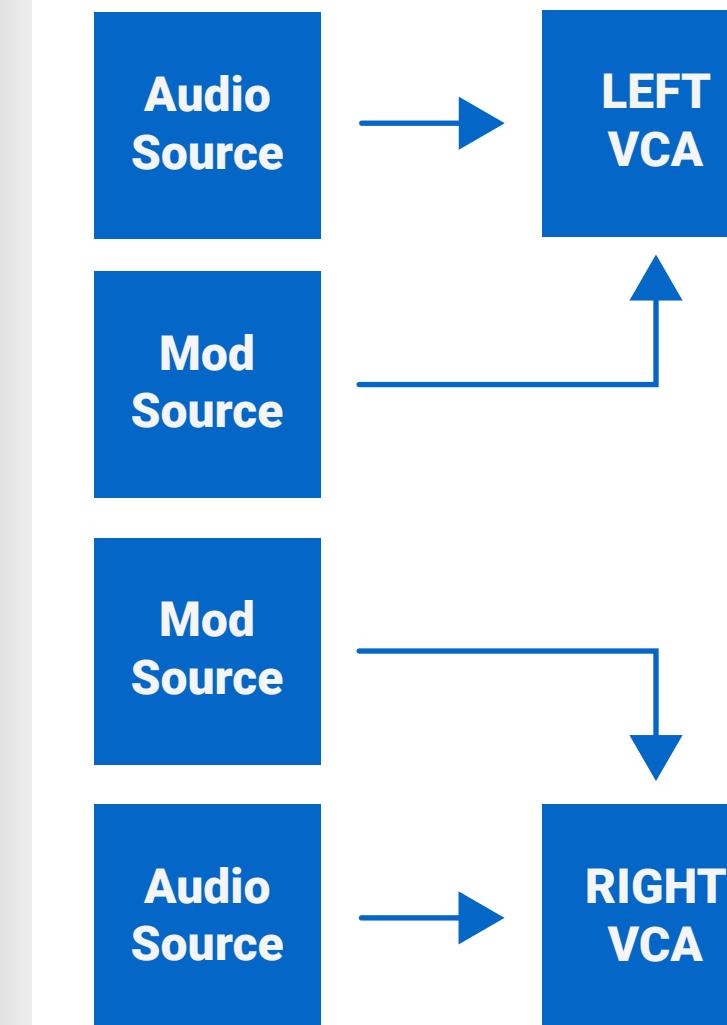
DUAL VOLTAGE GENERATOR

VOLTAGE
PROCESSOR

ROUTING



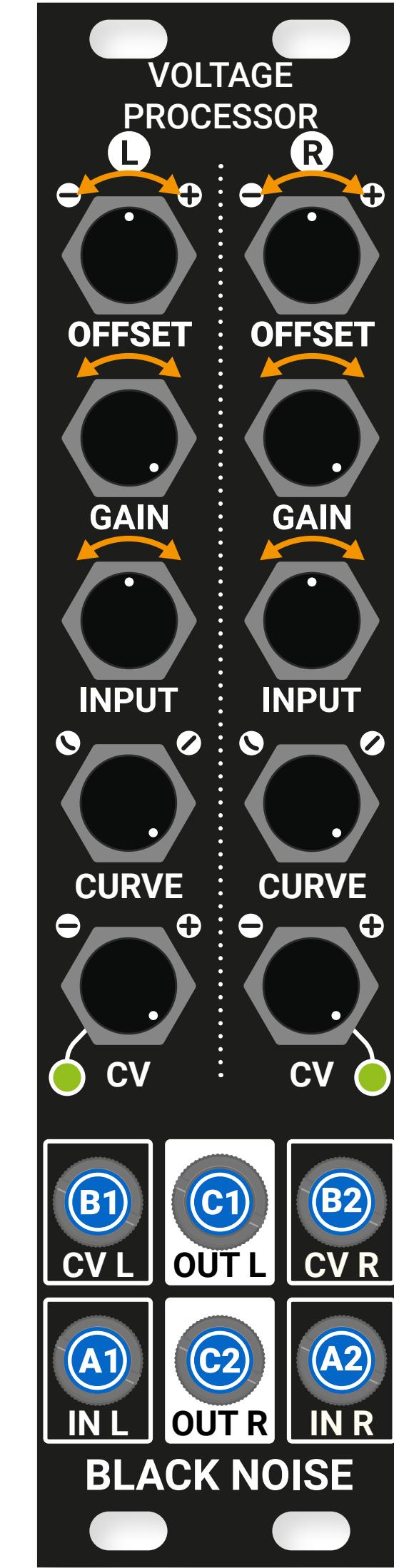
PATCH



INFORMATIONS

VOLTAGE PROCESSOR can be used as dual voltage generator. Since audio input of both Channel is normalized to 10V you can easily generate voltage.

INPUT set the voltage.
OFFSET allow to set voltage positive or negative.
GAIN can control the signal amplitude.

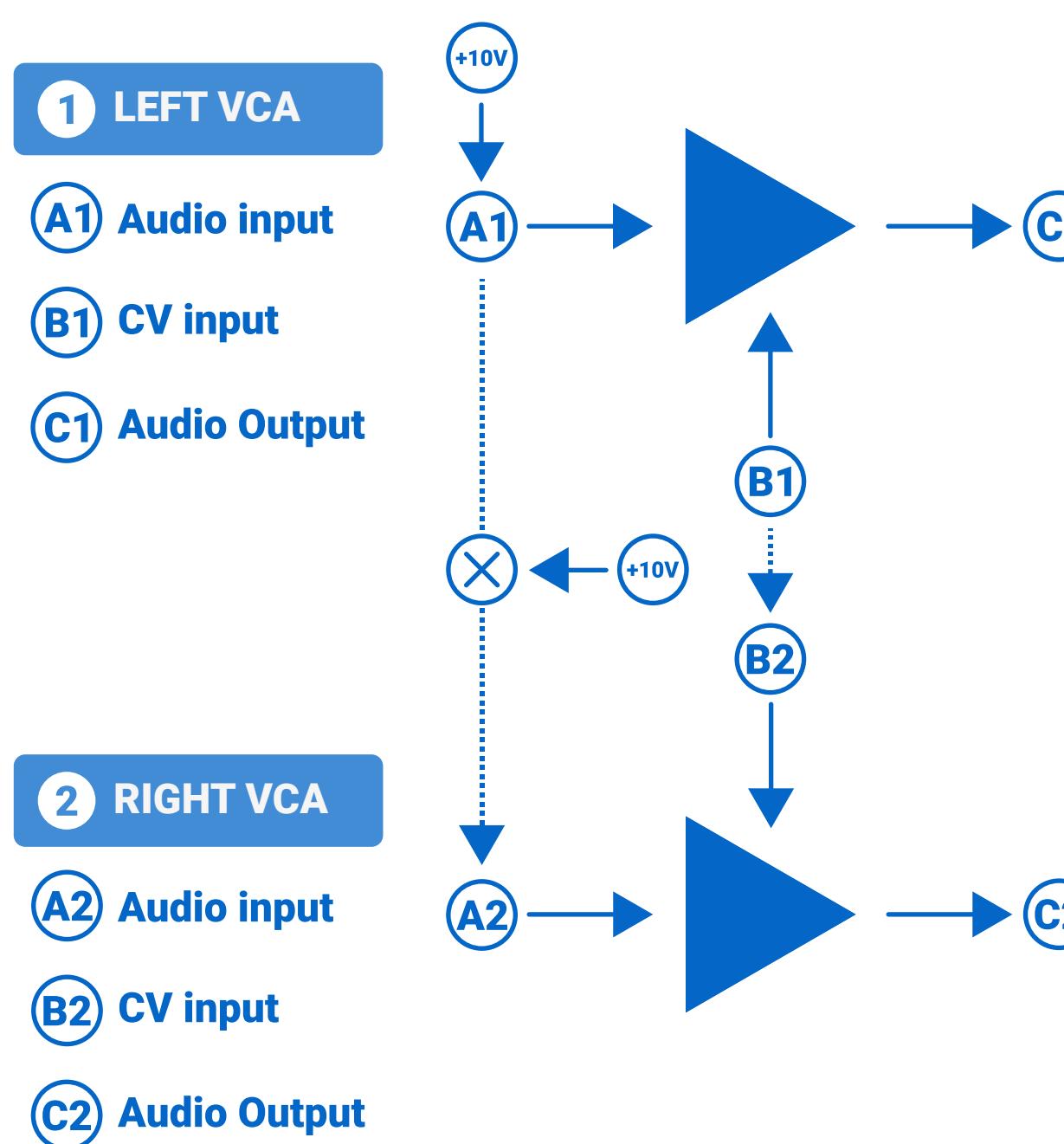


PATCH IDEAS

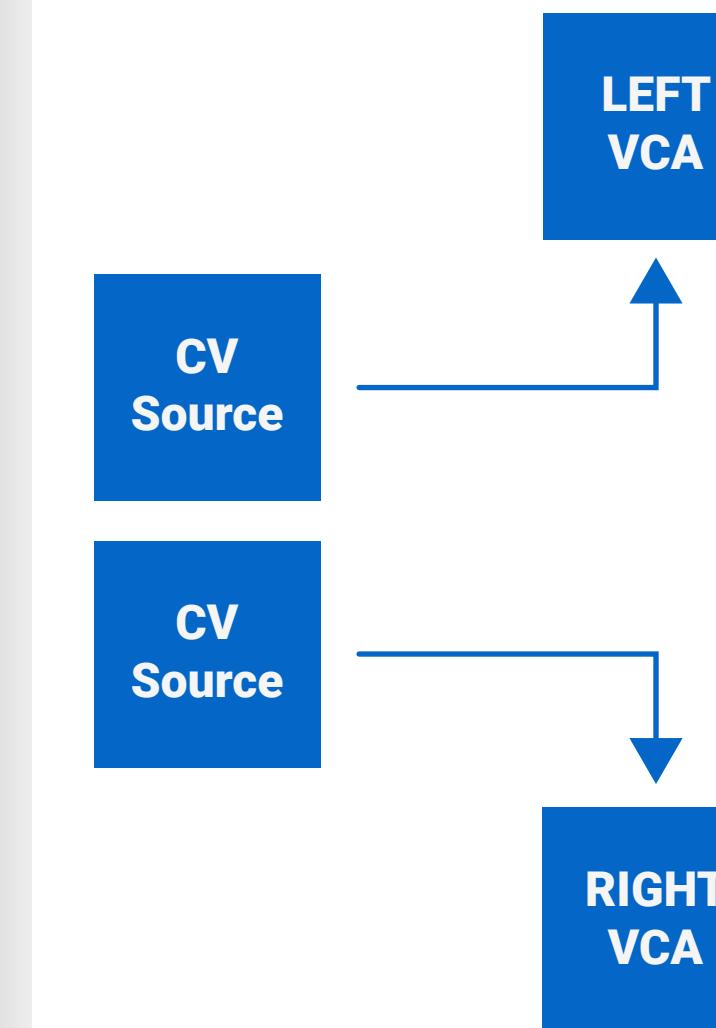
DUAL EXPONENTIAL CONVERTER

VOLTAGE
PROCESSOR

ROUTING



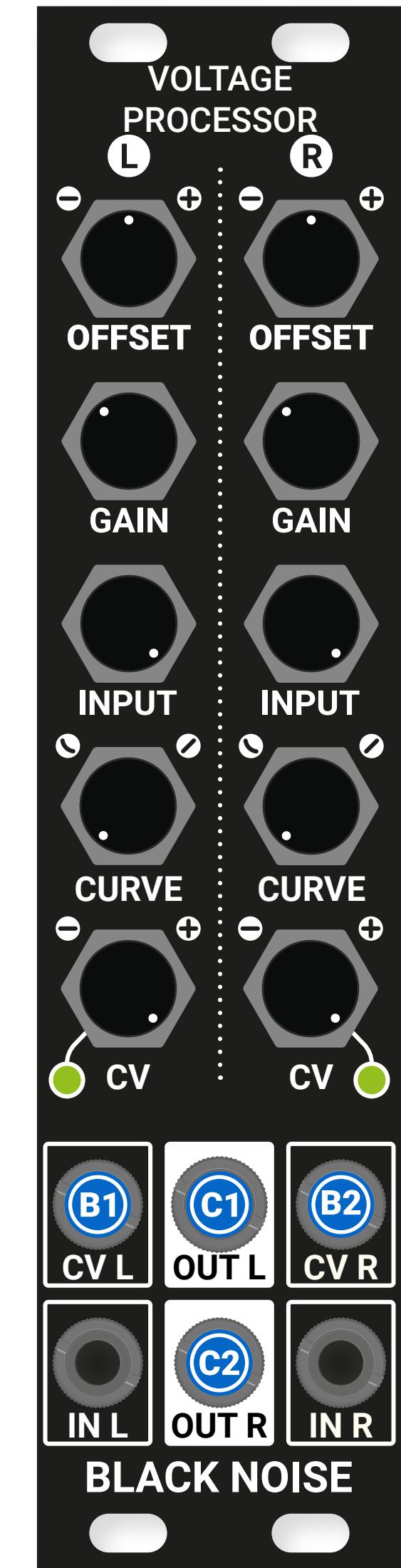
PATCH



INFORMATIONS

VOLTAGE PROCESSOR can be used as dual exponential converter.
this patch can be used to convert envelope shape, LFO or any voltage generator.
Using exponential curves instead of linear can add a more "human" feeling.

Simply connect input signal to CV input and set each knob as on the picture.

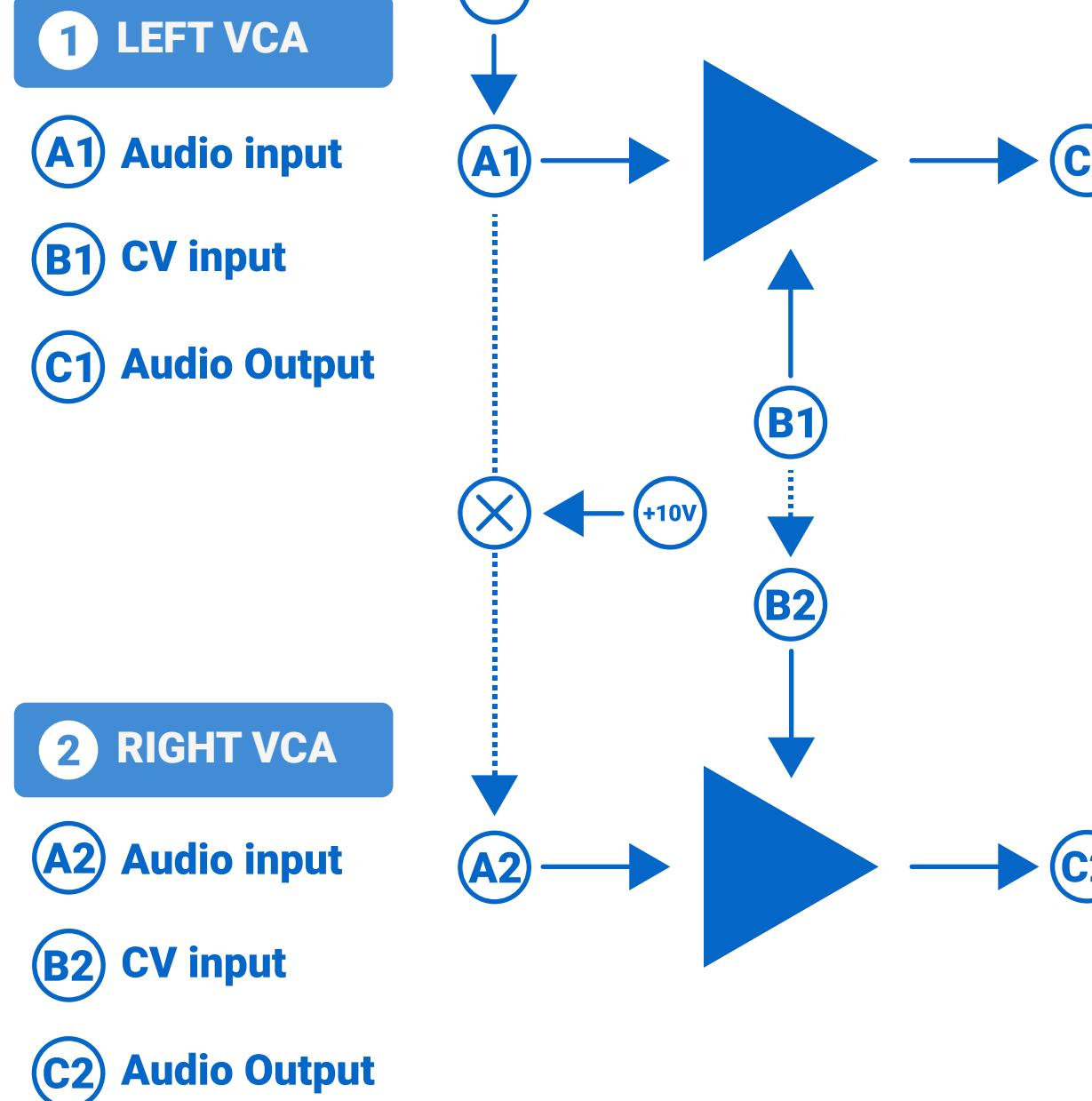


PATCH IDEAS

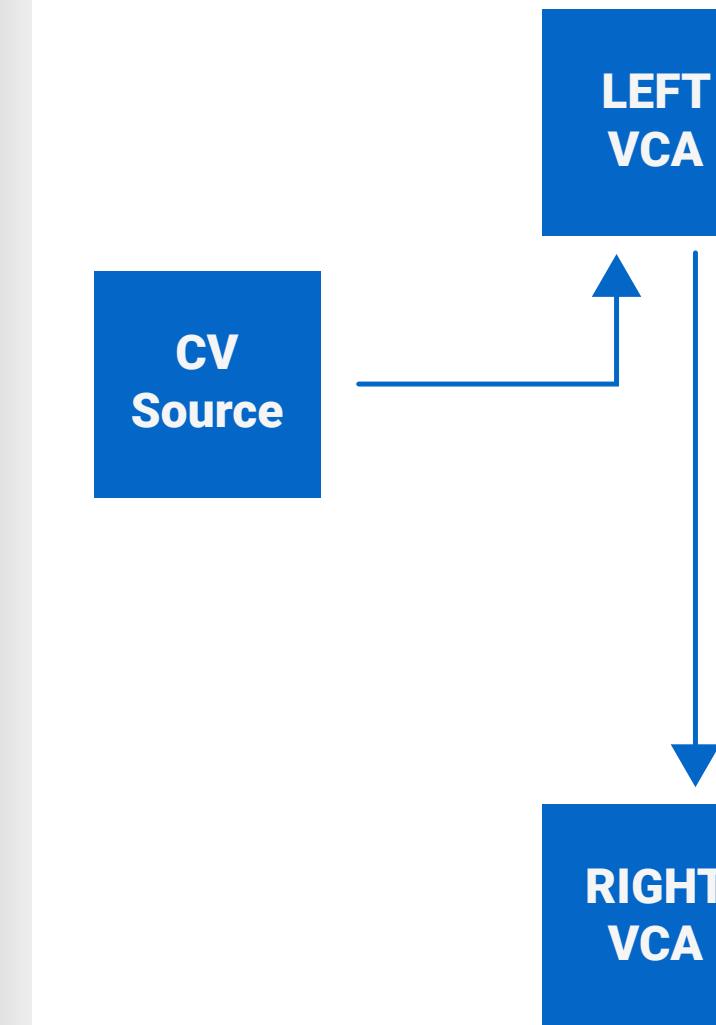
LOGARITHMIC CONVERTER

VOLTAGE
PROCESSOR

ROUTING



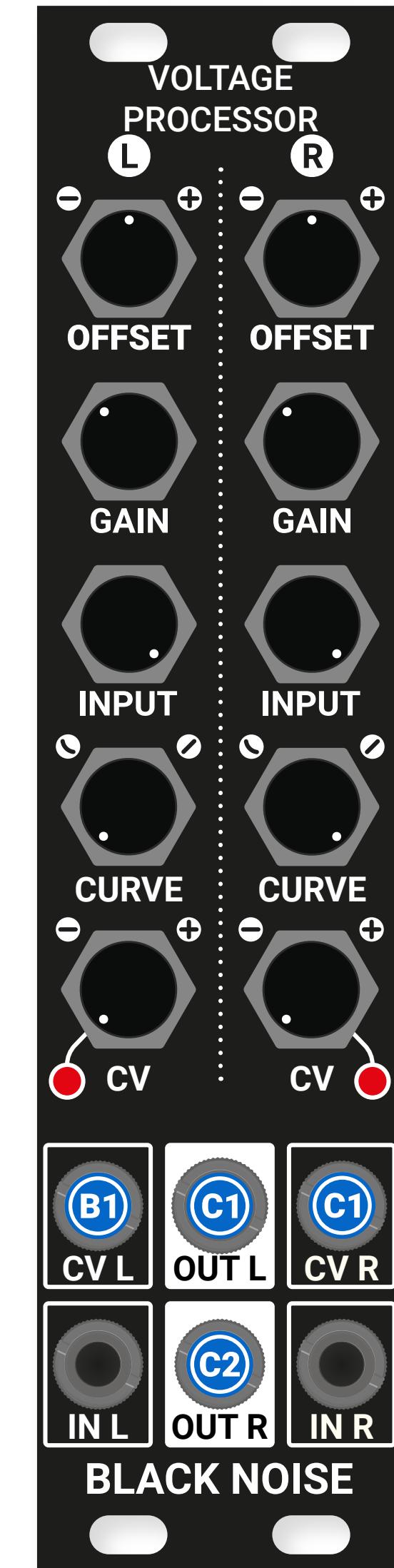
PATCH



INFORMATIONS

VOLTAGE PROCESSOR can be used as logarithmic converter.
this patch can be used to convert envelope shape, LFO or any voltage generator.
Using logarithmic curves instead of linear can add a more "human" feeling.

Connect linear signal to CV L input, connect Output L to CV R and set each knob according the schematic.

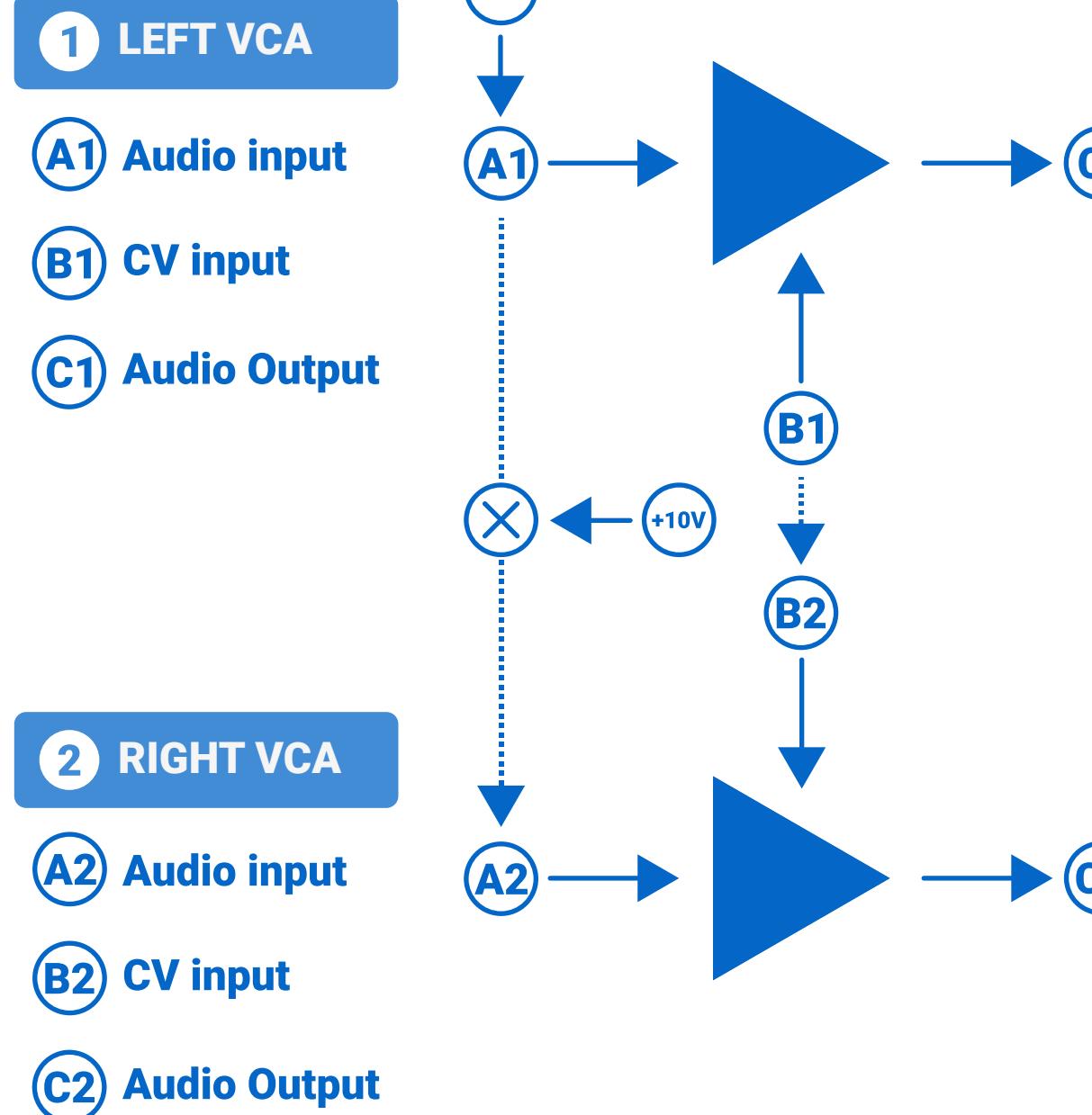


PATCH IDEAS

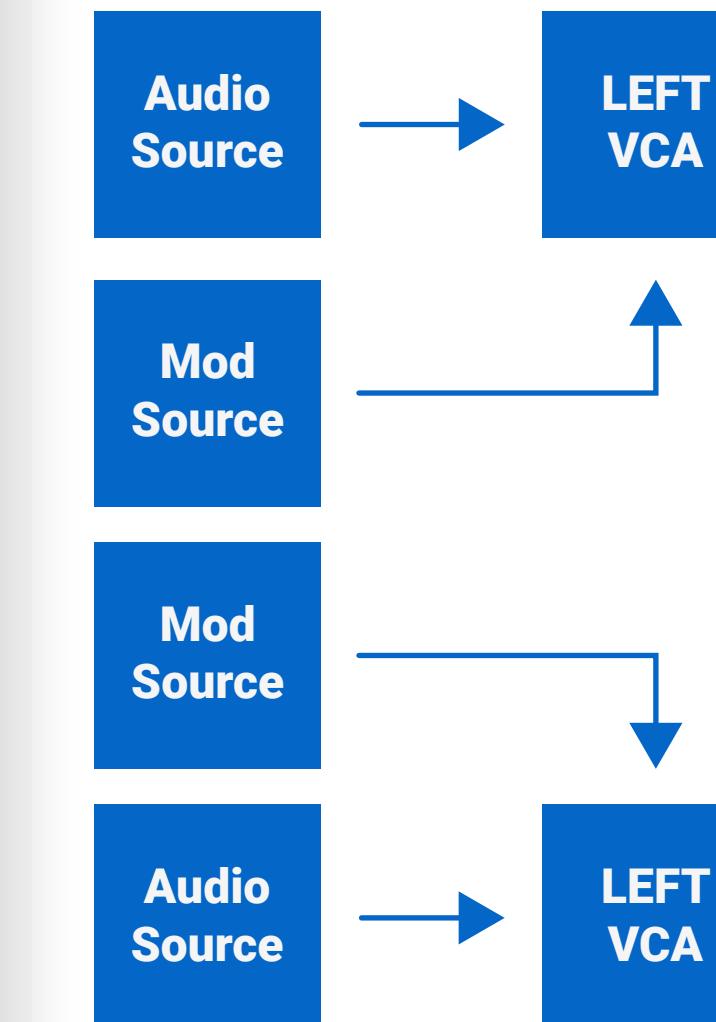
DUAL PWM

VOLTAGE
PROCESSOR

ROUTING



PATCH

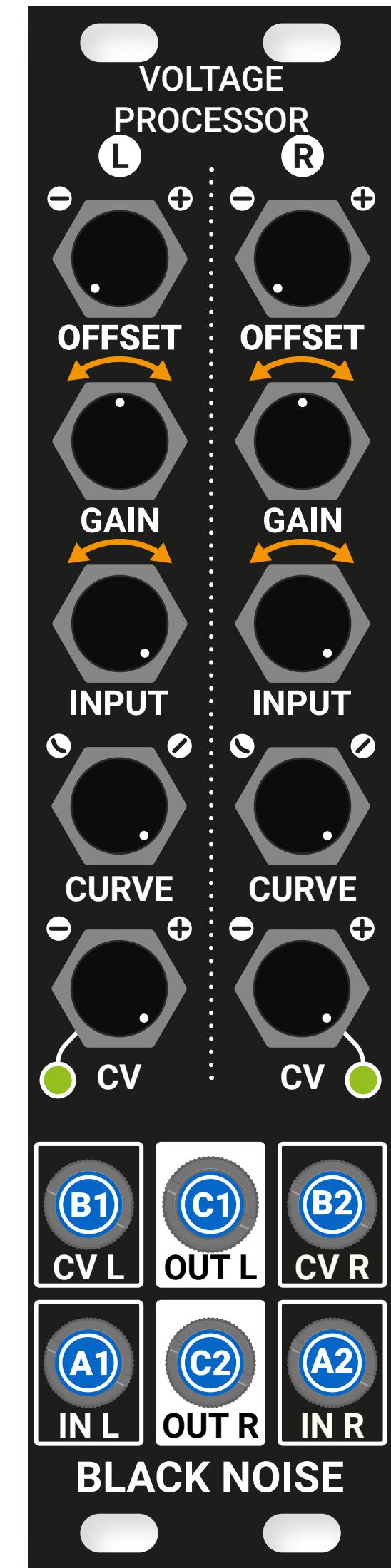
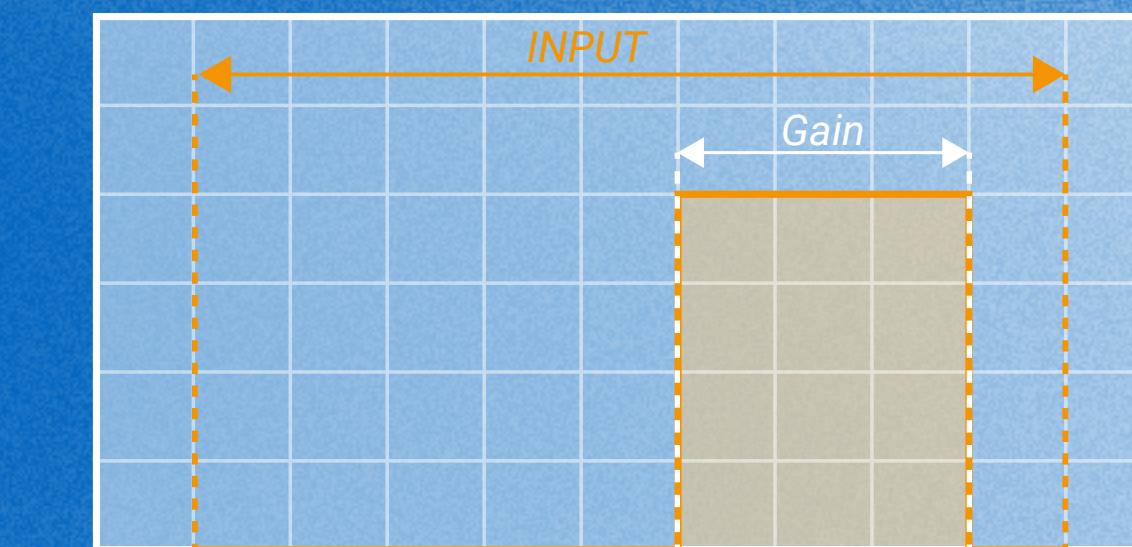


INFORMATIONS

VOLTAGE PROCESSOR can be used as a dual PWM generator.
Your input must be in +/-10V range if your input is between +/-5V or below you can use channel L as amplifier and channel R as PWM generator.

GAIN control the width of the pulse.

INPUT control the range of the width available.



PATCH IDEAS

DUAL VOLTAGE CONTROLLED OVERDRIVE

VOLTAGE
PROCESSOR

ROUTING

1 LEFT VCA

A1 Audio input

B1 CV input

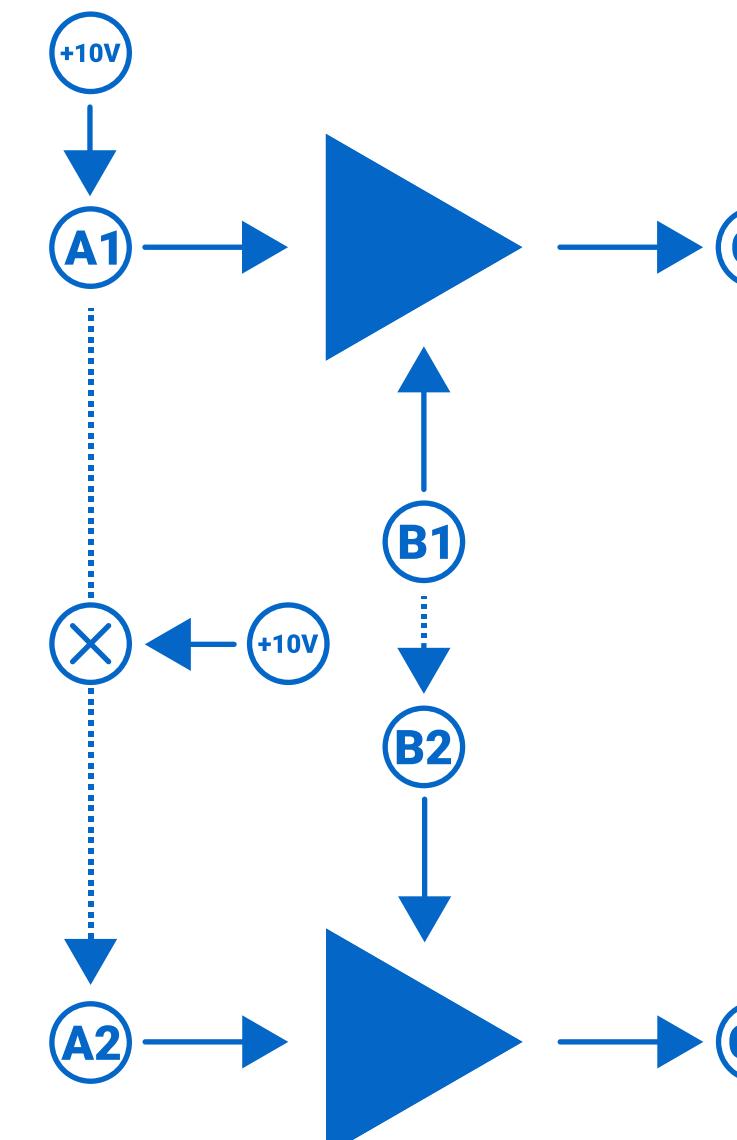
C1 Audio Output

2 RIGHT VCA

A2 Audio input

B2 CV input

C2 Audio Output



PATCH

Audio Source

Mixer

LEFT VCA

Audio Source

Mixer

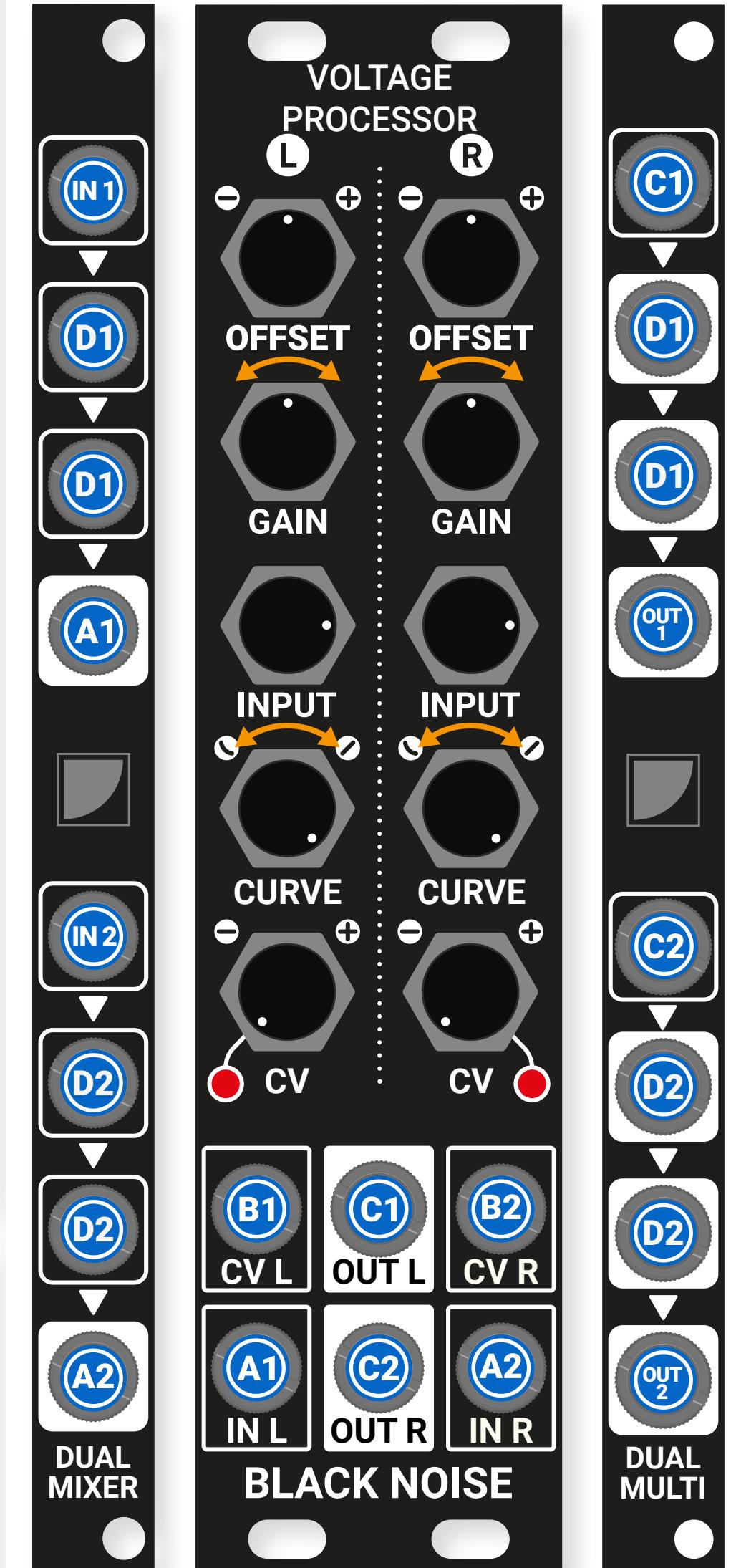
LEFT VCA

INFORMATIONS

VOLTAGE PROCESSOR can be used as dual voltage controlled overdrive. For this patch you will need a mixer and a multiples.

GAIN control the amount of distortion allowing soft clipping like overdrive to hard clipping in fuzz style.

CURVE control the color of the distortion, linear setting offer bright distortion like digital distortion, exponential setting offer more analog tone.



PATCH IDEAS

DUAL WAVEShAPER

VOLTAGE
PROCESSOR

ROUTING

1 LEFT VCA

A1 Audio input

B1 CV input

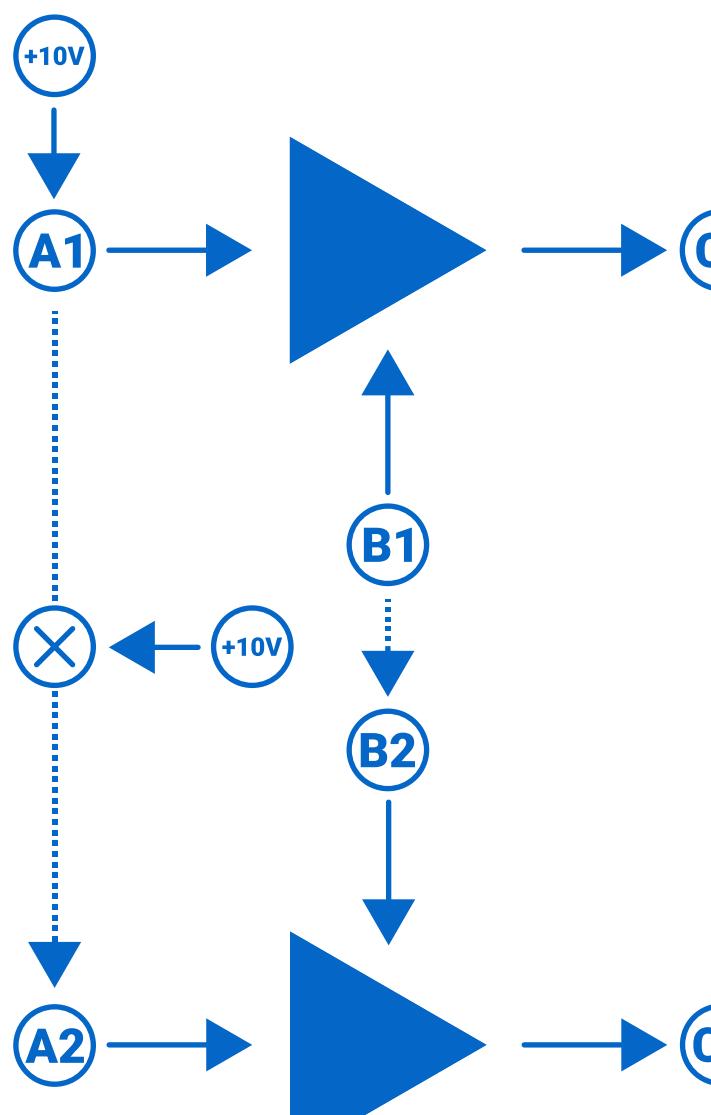
C1 Audio Output

2 RIGHT VCA

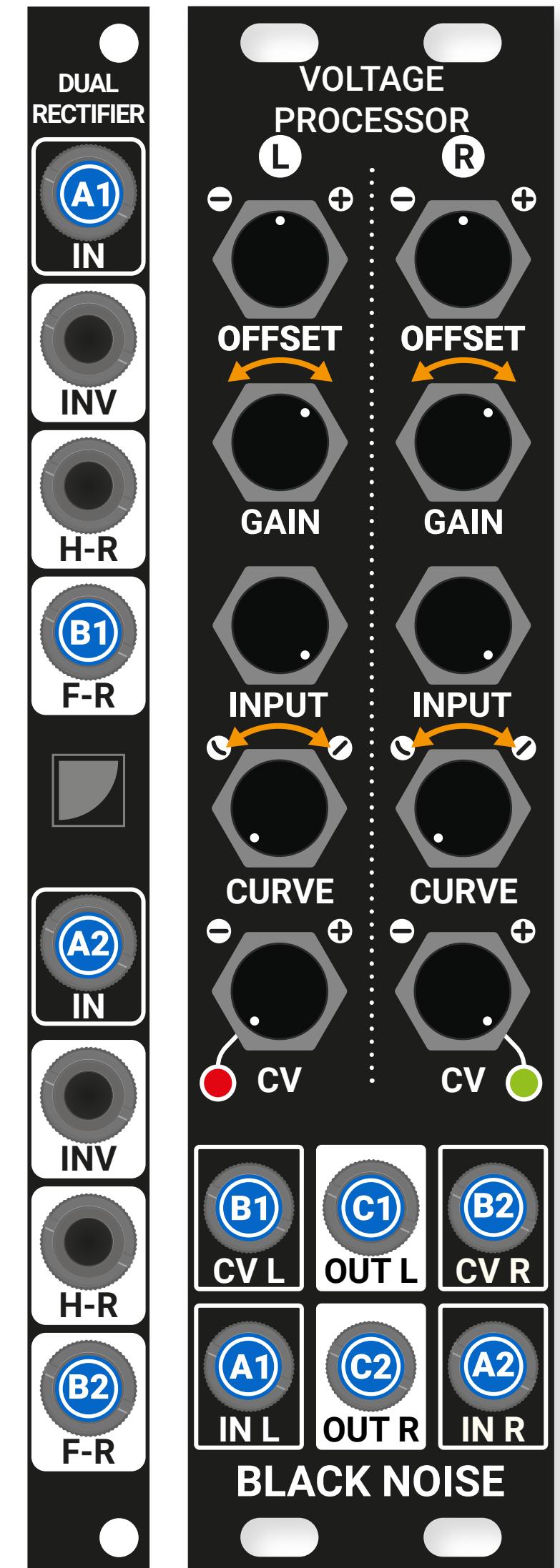
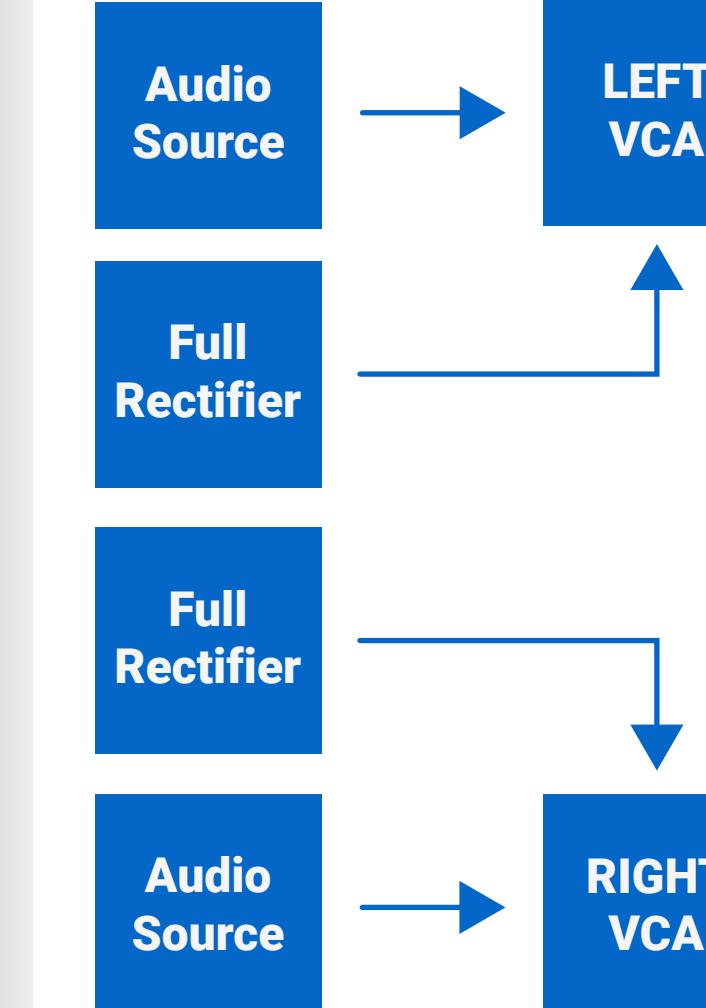
A2 Audio input

B2 CV input

C2 Audio Output



PATCH



INFORMATIONS

VOLTAGE PROCESSOR can be set as a dual waveshaper.
For this patch you will need a Full-Rectifier.
Since each channel will act as the first stage of a wavefolder we recommend to use it with sine or triangle signal.

GAIN will act as Dry/Wet.
CURVE will act as Color control. In exponential mode you will have the first stage of a wavefolder. In linear mode you will get a soft clipping signal like on distortion.

PATCH IDEAS

WAVESHAPER

VOLTAGE
PROCESSOR

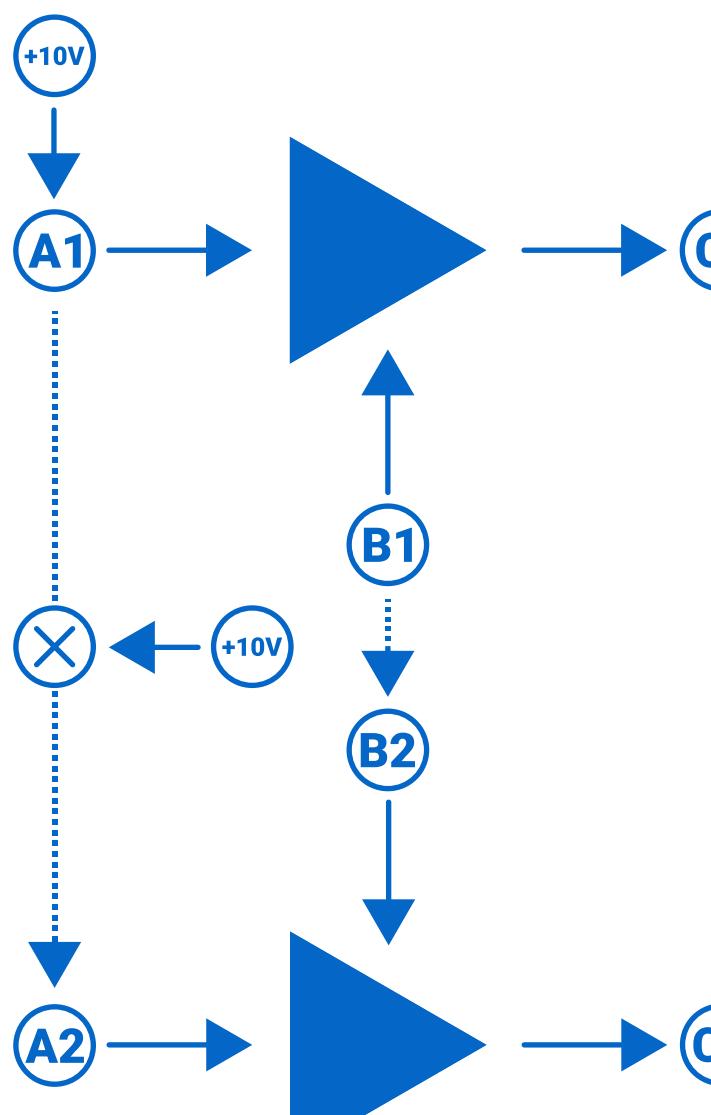
ROUTING

1 LEFT VCA

A1 Audio input

B1 CV input

C1 Audio Output



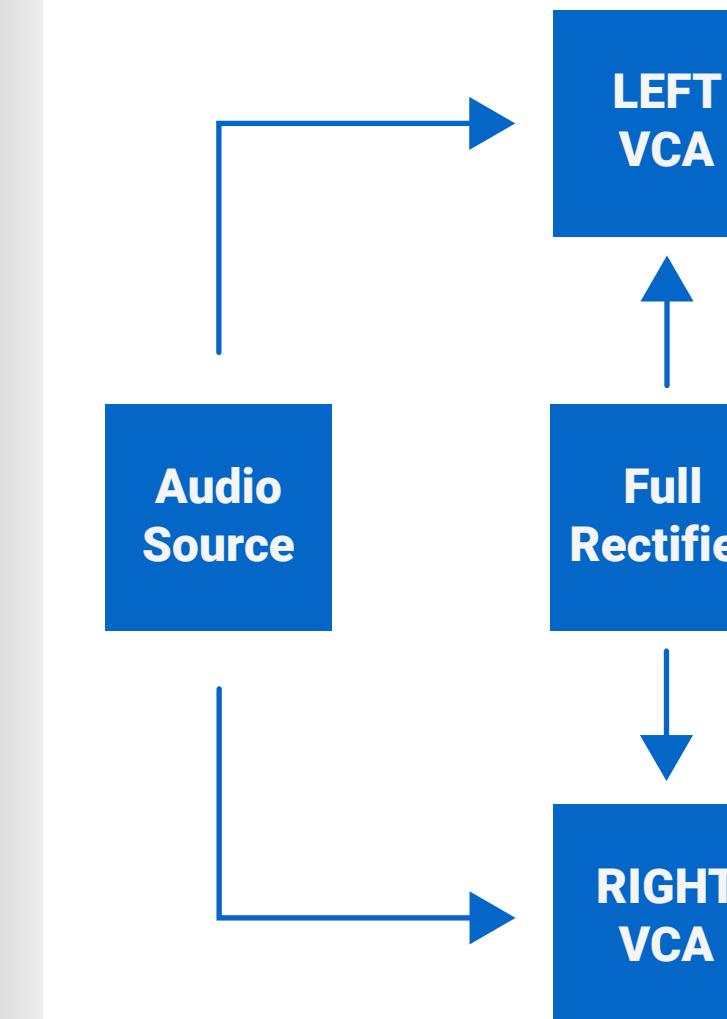
2 RIGHT VCA

A2 Audio input

B2 CV input

C2 Audio Output

PATCH



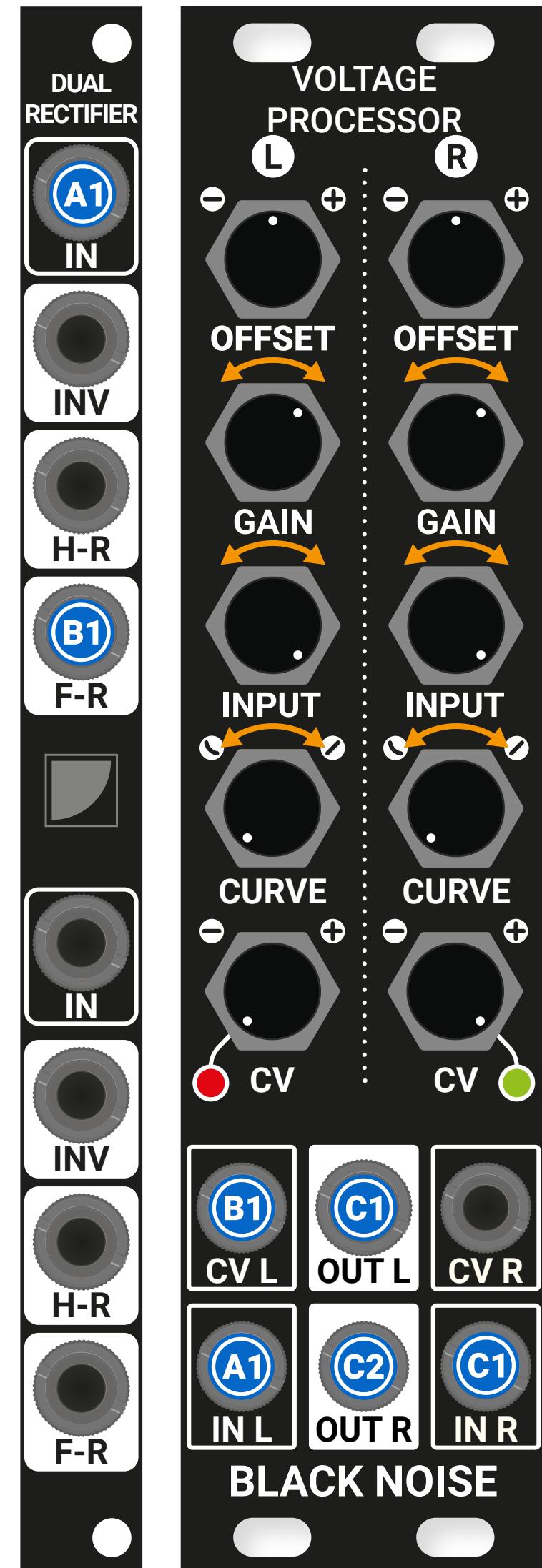
INFORMATIONS

VOLTAGE PROCESSOR can be set as a complex waveshaper.

For this patch you will need a Full-Rectifier.

For best result we recommend you to use sine or triangle signal.

Compare to the dual waveshaper patch above this configuration allow for more complex and tweakable waveshape. This patch is open to experimentation and allow you to choose from odd to even harmonics and mix between them in interesting and new ways.



PATCH IDEAS

DUAL RING-MOD

VOLTAGE
PROCESSOR

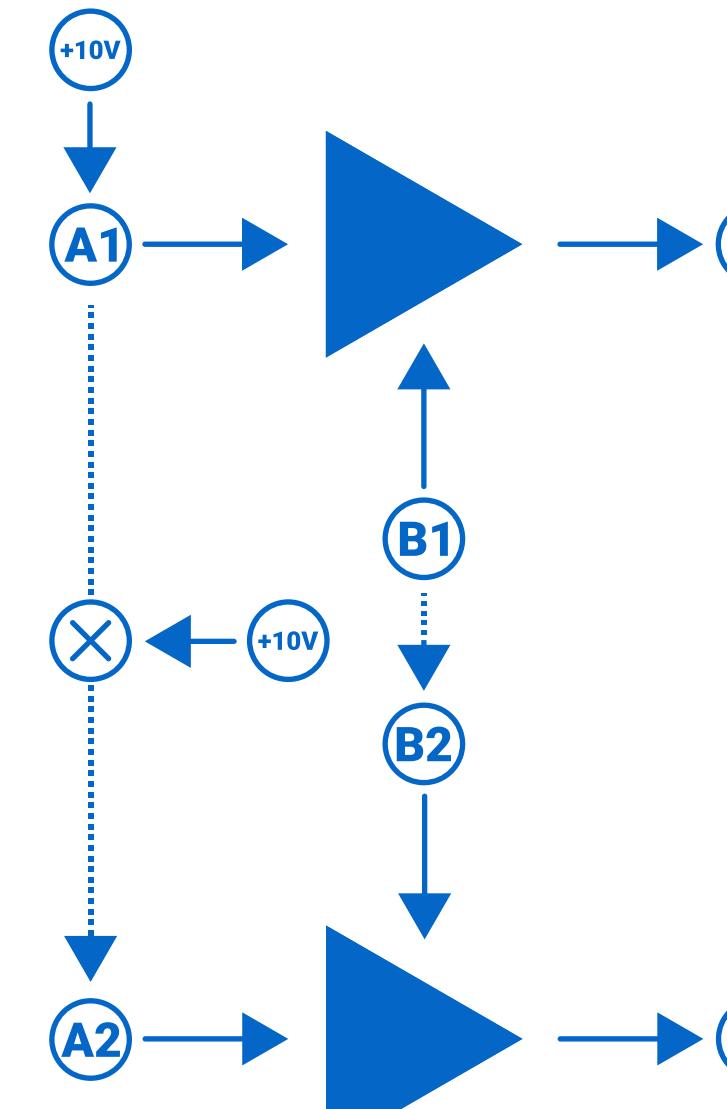
ROUTING

1 LEFT VCA

A1 Audio input

B1 CV input

C1 Audio Output



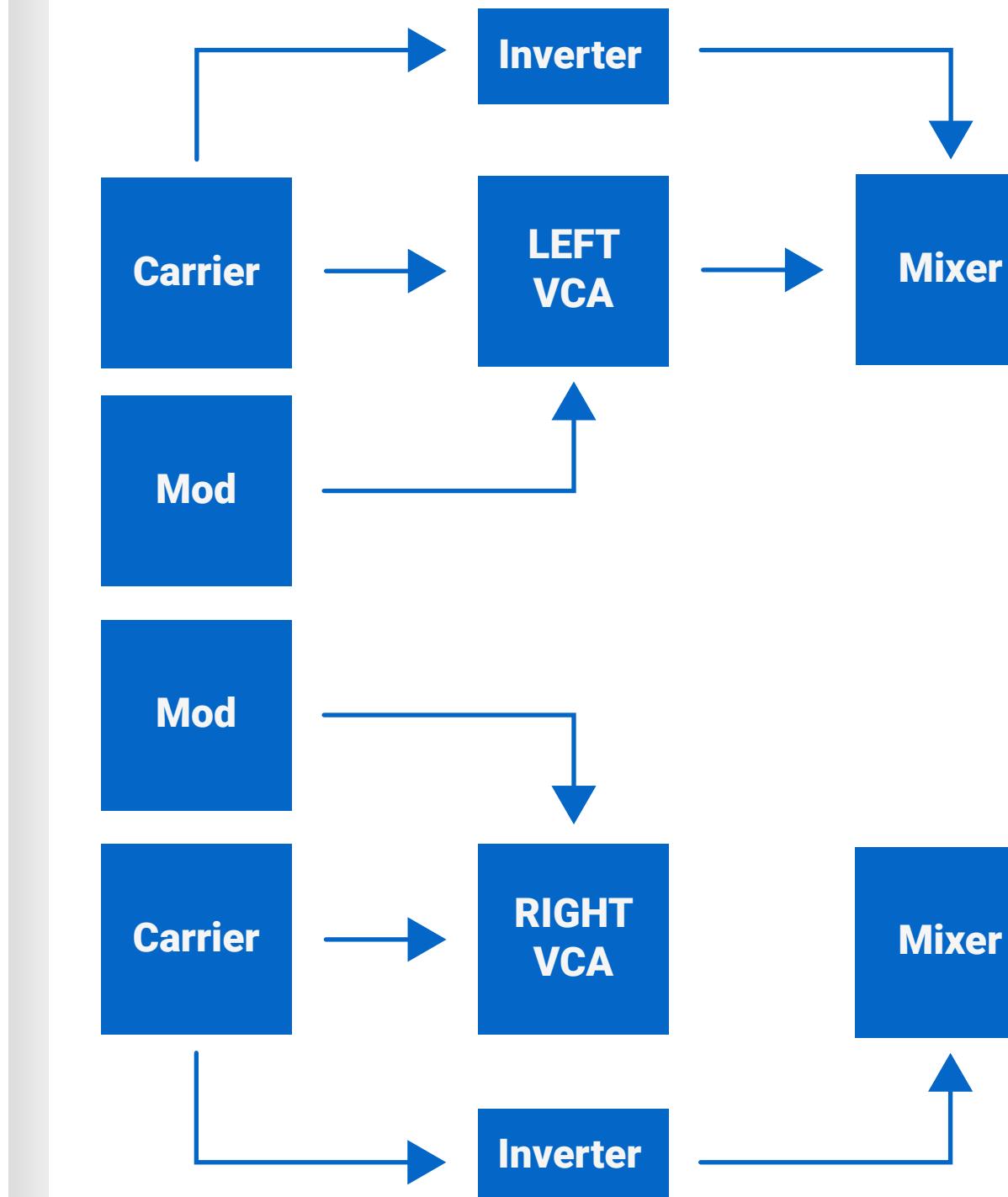
2 RIGHT VCA

A2 Audio input

B2 CV input

C2 Audio Output

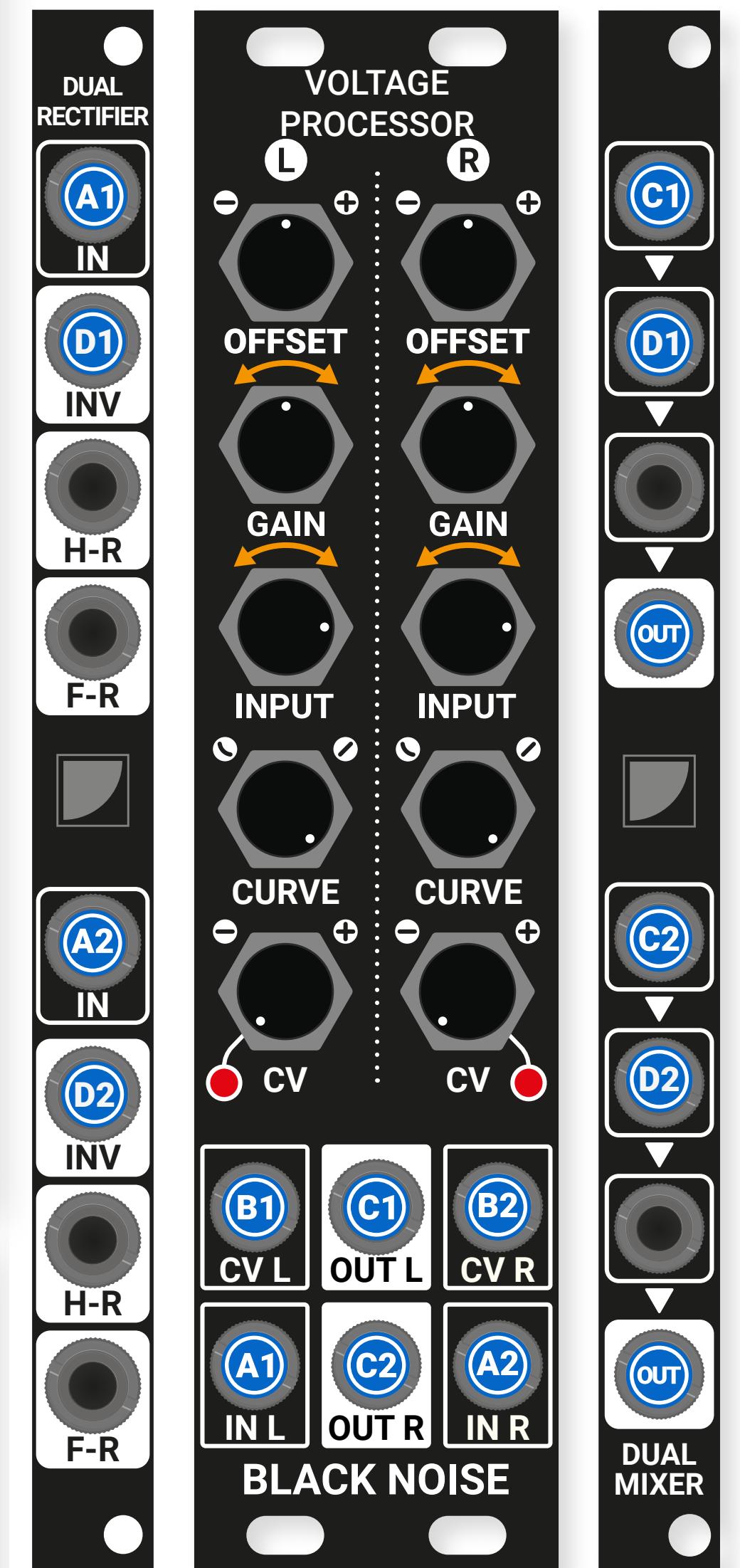
PATCH



INFORMATIONS

VOLTAGE PROCESSOR can be used as dual Ring Modulator.
For this patch you will need two inverter (Dual Rectifier in this case) and a mixer.

For fine tuning of the input please use OFFSET and GAIN in conjunction. You can also achieve Ring-Mod without tweaking using the "Ring-Mod" patch below.



PATCH IDEAS

RING-MOD

VOLTAGE
PROCESSOR

ROUTING

1 LEFT VCA

A1 Audio input

B1 CV input

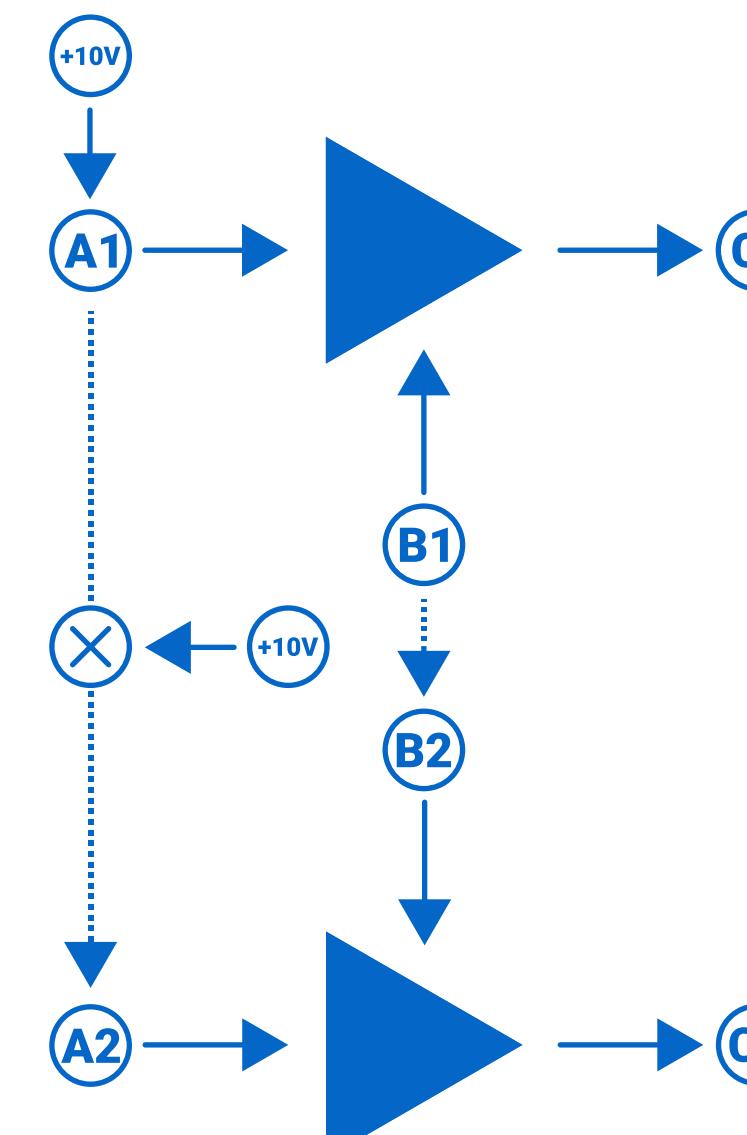
C1 Audio Output

2 RIGHT VCA

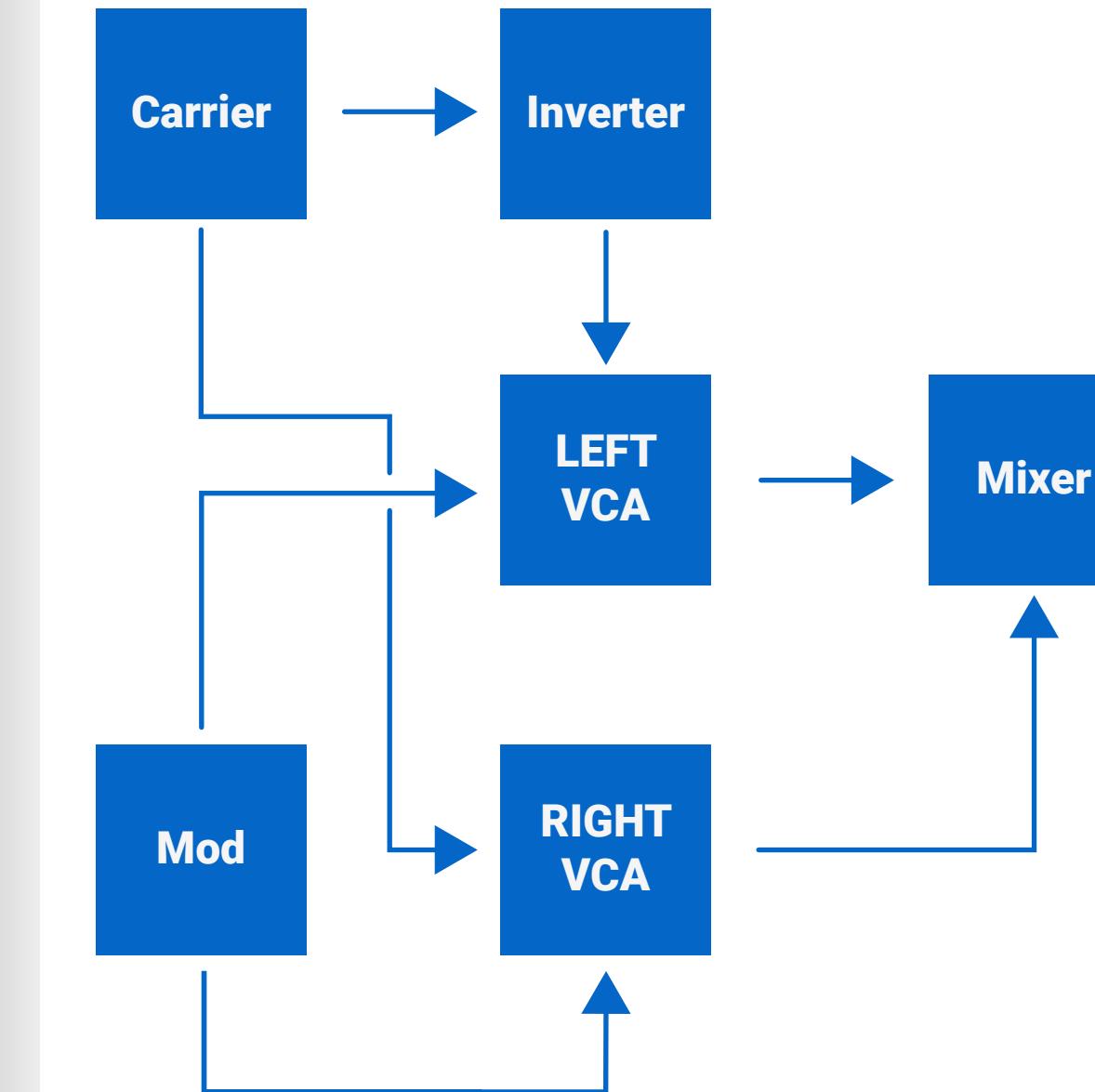
A2 Audio input

B2 CV input

C2 Audio Output



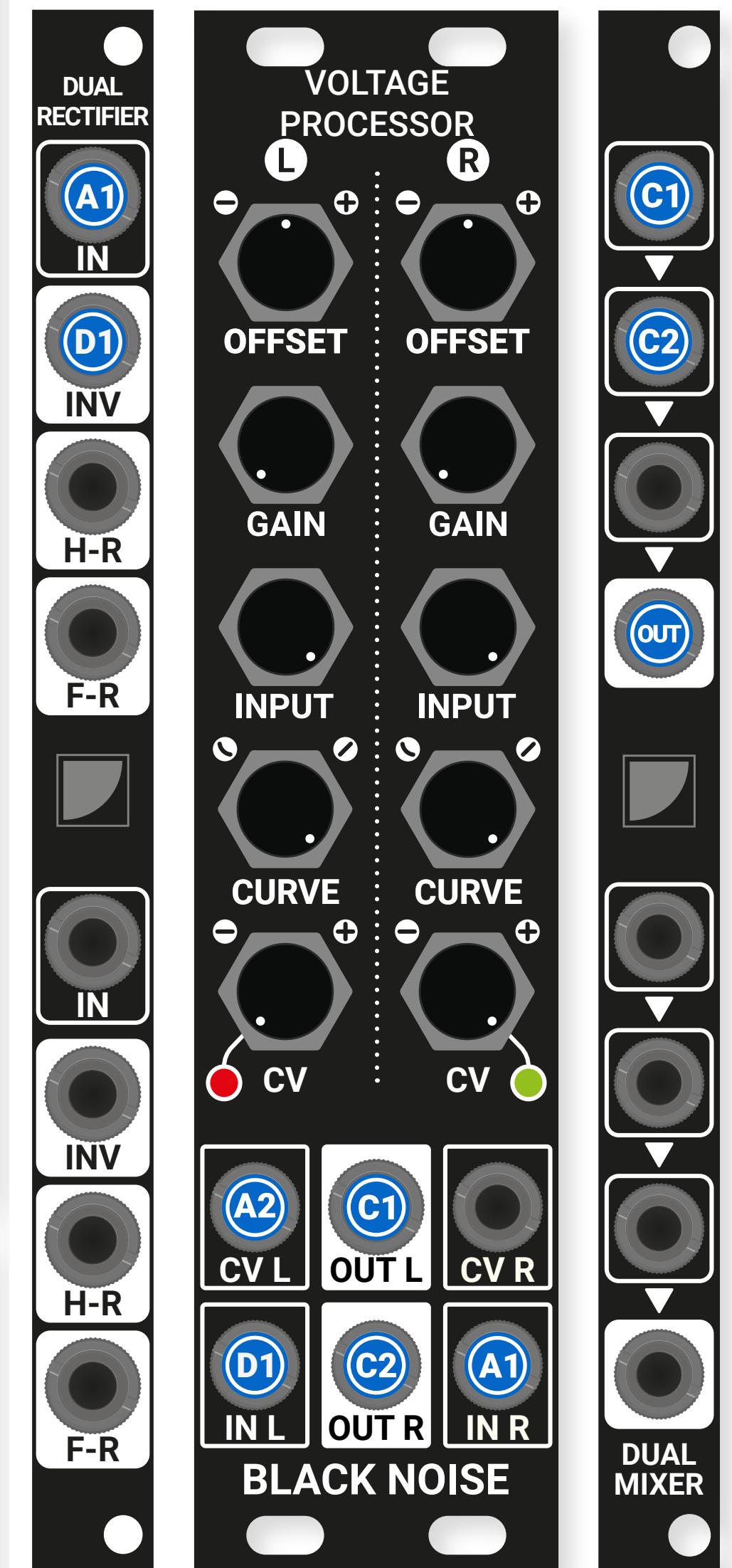
PATCH



INFORMATIONS

VOLTAGE PROCESSOR can be used as dual Ring Modulator.
For this patch you will need an inverter (Dual Rectifier in this case) and a mixer.

Since this patch doesn't require tweaking it's easier to set than the Dual Ring-Mod above.



PATCH IDEAS

COMPRESSOR

VOLTAGE
PROCESSOR

ROUTING

1 LEFT VCA

A1 Audio input

B1 CV input

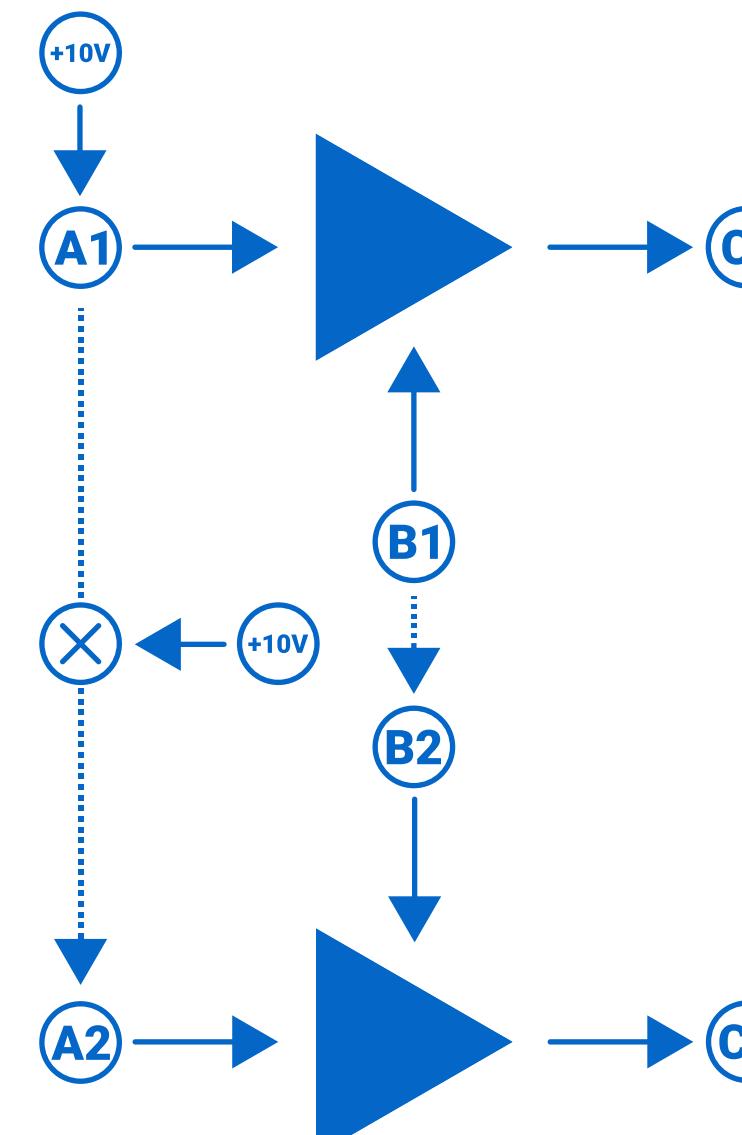
C1 Audio Output

2 RIGHT VCA

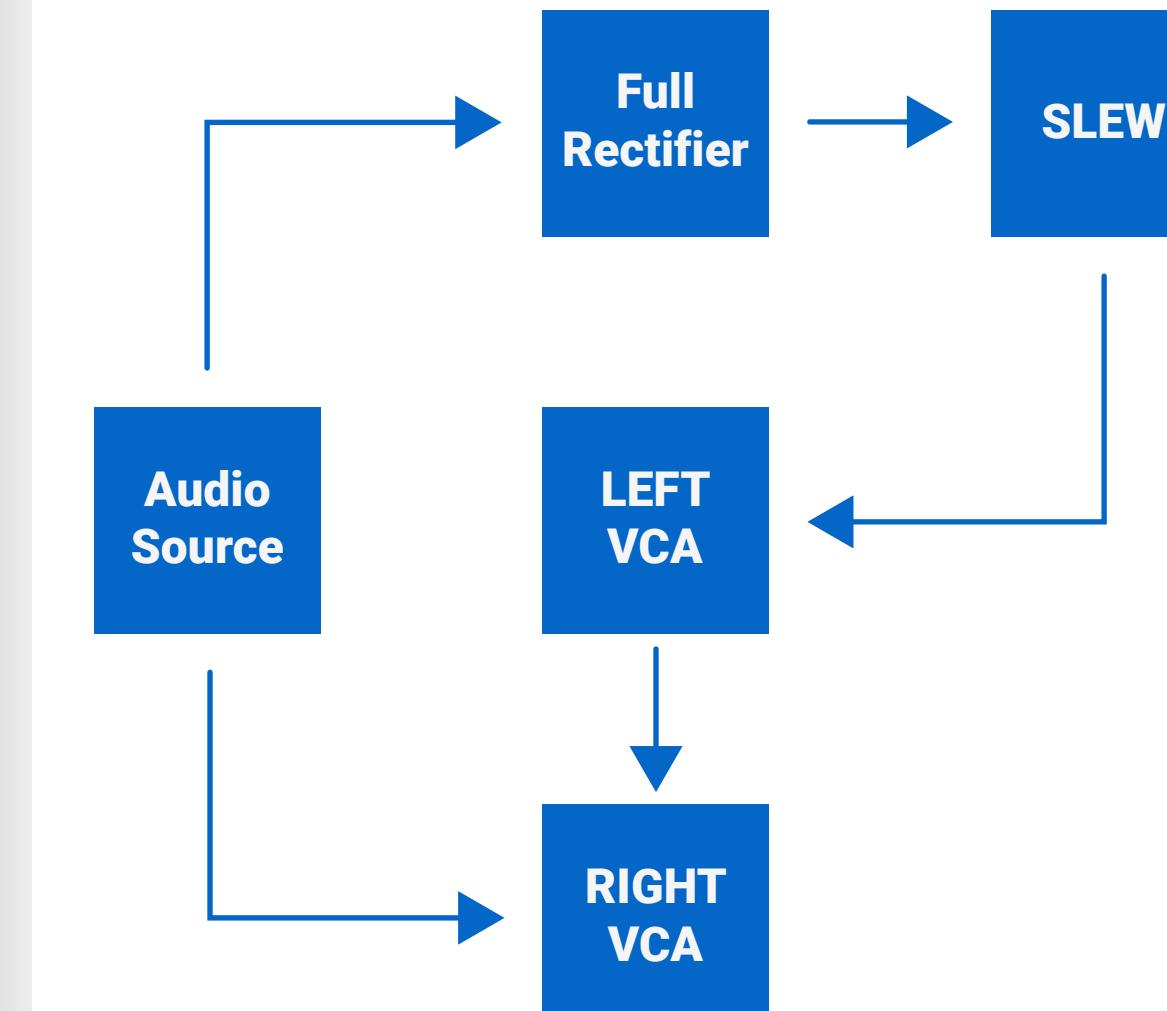
A2 Audio input

B2 CV input

C2 Audio Output



PATCH



INFORMATIONS

VOLTAGE PROCESSOR can be used as a powerful compressor. For this patch you will need an envelope follower. It can be achieved with a full-rectifier and a slew.

In this configuration VOLTAGE PROCESSOR offers the same function as most compressors but with deeper control over each parameter.

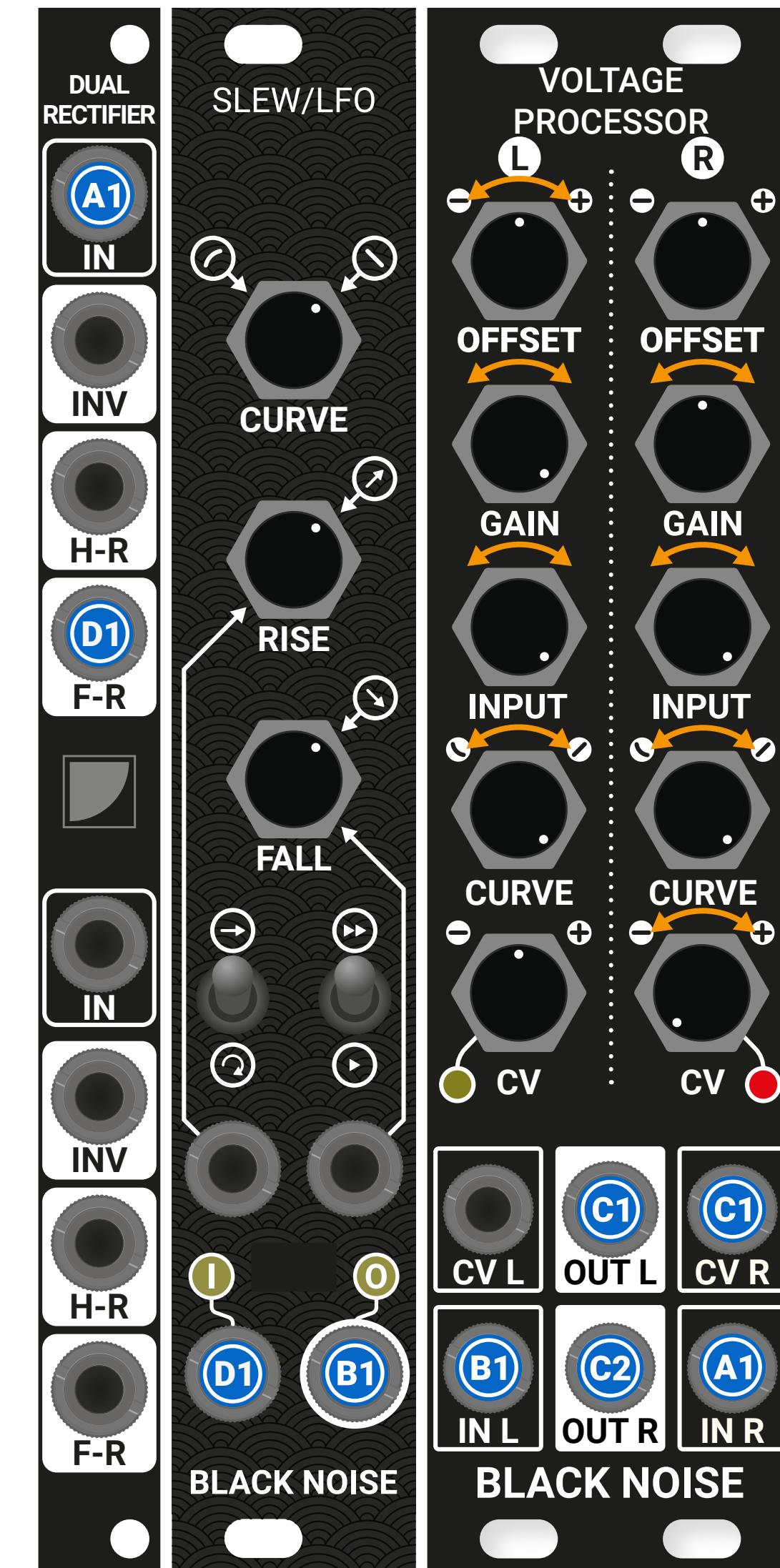
OFFSET of channel L controls the threshold of the signal.

GAIN of channel L controls the ratio of the compressor. GAIN of channel R can also be used to fine-tune the ratio.

INPUT of channel R controls the Make-up Gain.

CURVE of channel L acts as a soft knee, exponential setting acts as a Hard Knee. CURVE of channel R can also be used to increase knee. With both CURVE controls in exponential mode, you can achieve massive knee.

CV of channel R controls the Dry/Wet.



PATCH IDEAS

SIDECHAIN COMPRESSOR

VOLTAGE
PROCESSOR

ROUTING

1 LEFT VCA

A1 Audio input

B1 CV input

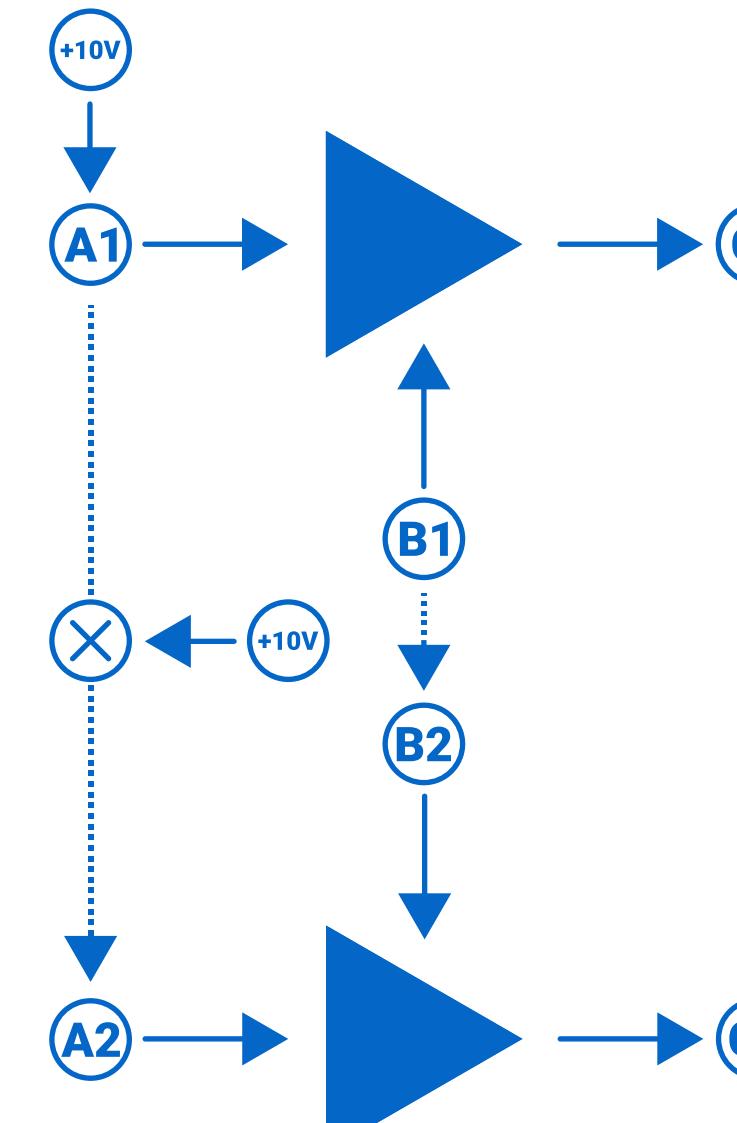
C1 Audio Output

2 RIGHT VCA

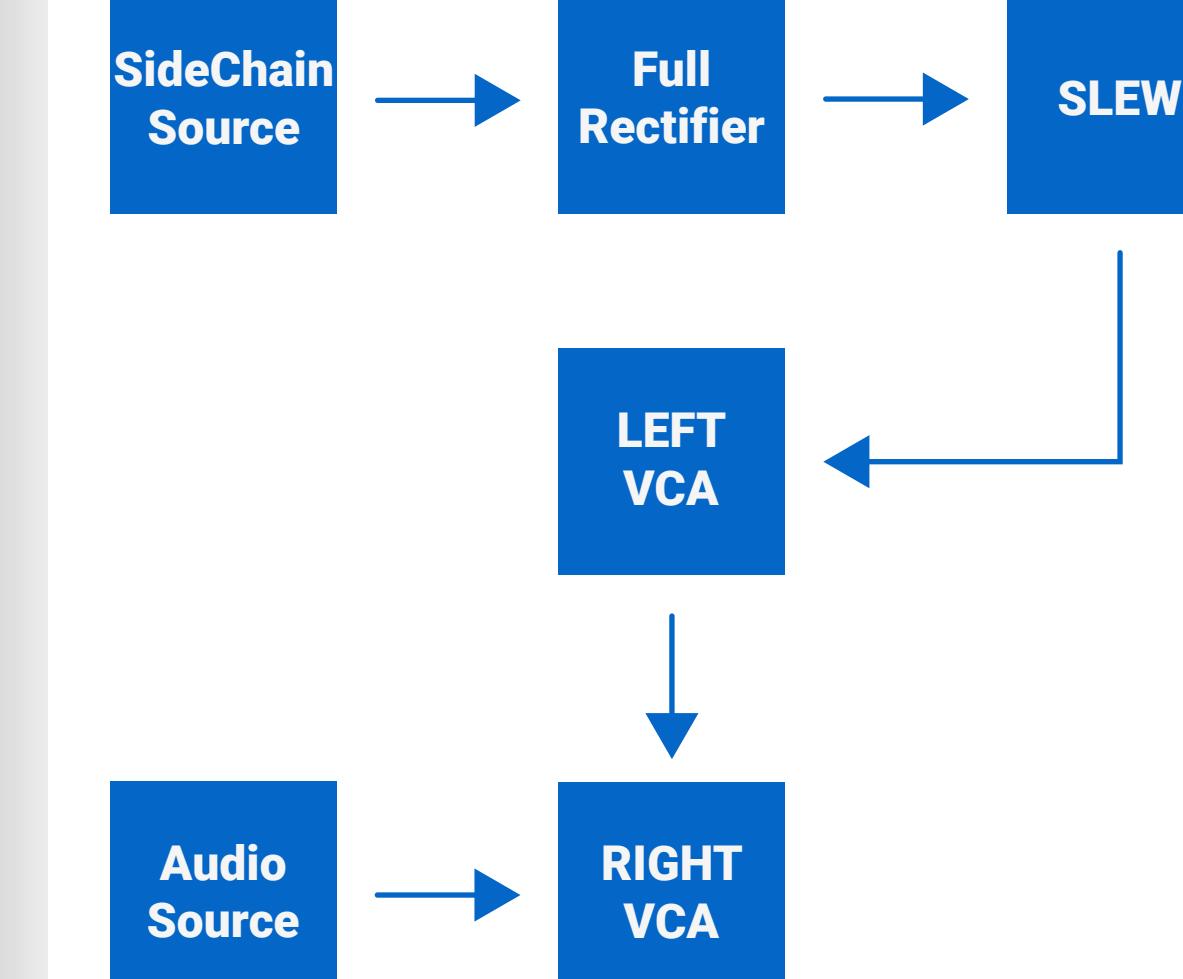
A2 Audio input

B2 CV input

C2 Audio Output



PATCH



INFORMATIONS

VOLTAGE PROCESSOR can be used as powerful compressor. For this patch you will need an envelope follower it can be achieved with a full-rectifier and a slew.

In this configuration VOLTAGE PROCESSOR offer the same function as most compressors but with deeper control on each parameters.

OFFSET of channel L controls the threshold of the signal.

GAIN of channel L controls the ratio of the compressor. GAIN of channel R can also be used to fine tune the ratio.

INPUT of channel R controls the Make-up Gain.

CURVE of channel L controls the Knee, in linear act as a soft Knee, exponential setting act as a Hard Knee. CURVE of channel R can also be used to increase Knee. With both CURVE control on exponential mode you can achieve very hard Knee.

CV of channel R controls the Dry/Wet.



WARRANTY

BLACK NOISE warrants its products to be free of defects in materials or workmanship and to be conform with the specifications at the time of shipment for a period of two years from the date of purchase.

During that period any malfunctioning or damaged units will be repaired, service and calibrated into your workshop. This warranty does not cover any problems resulting from damages during shipping, incorrect installation or power supply, abusive treatment, or any other obvious user-inflicted fault.

If your product warranty is passed, it still can be serviced as long as parts are available in our workshop. We reserve the right to charge for labor, parts and transit expenses where applicable.

Before sending your product to our workshop please contact us for RMA and details. Any unsolicited parcel will be rejected and or returned. The postage to our workshop is on the customer. The return of your module is on us. BLACK NOISE can not take any responsibility for damages caused during transport.