



DIVKID STEREO STRIP MANUAL



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QUICKSTART

**LEVEL CV INPUT
(STEREO VCA)**

**LEFT (MONO) &
RIGHT INPUTS**

**3 BAND EQ
LOW SHELF
MID BELL
HIGH SHELF**

**INPUT LEVEL
SWITCH
EURORACK OR
LINE**

**3 WAY MUTE
ON-OFF-
MOMENTARY**

**DOTS INDICATE
CV LEVELS FOR
UNITY GAIN
(SEE BELOW)**

PAN CV INPUT

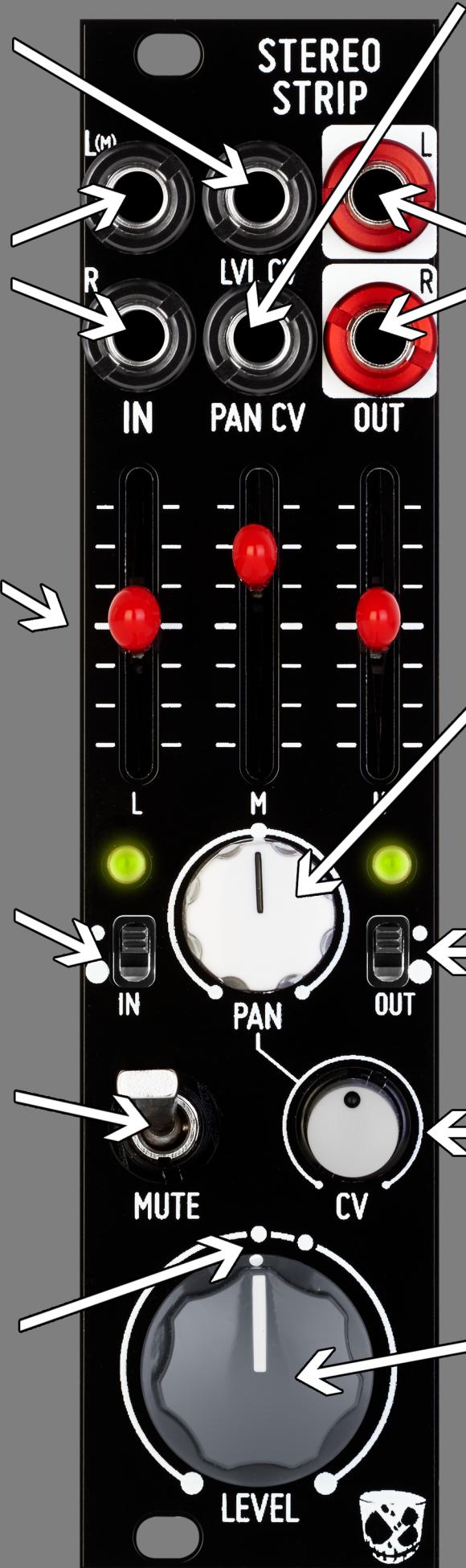
**LEFT & RIGHT
OUTPUTS**

MANUAL PAN

**OUTPUT LEVEL
SWITCH
EURORACK OR
LINE**

**PAN CV
ATTENUATOR**

**STEREO VCA
LEVEL CONTROL
(TURNS INTO LVL
CV ATTENUATOR)**



INTRODUCTION

Hello and thank you for purchasing a DivKid Stereo Strip Eurorack module. (Or thank you for your manual reading tendencies if you don't have the module yet!) Skip back to the annotated image on the previous page for a quick start on the module and read ahead for a more in-depth explanation of the features, functions and behaviours of Stereo Strip.

This manual will outline the functions and controls of the module and will provide some patch examples to get you started.

I'm proud to say that the Stereo Strip module is "powered by Befaco." It was made in collaboration with them and wouldn't exist without them.

WHAT IS STEREO STRIP?

Stereo Strip is a 6HP Eurorack module that builds upon the idea of a studio or mixer channel strip for a modular environment. If you're new to the term 'channel strip' think of a single channel strip from a mixing desk. You'll find amplification, EQ, panning and level control options. Stereo Strip builds on those ideas adding voltage control for increased functionality within the Eurorack modular synthesiser environment.

Stereo Strip can function with mono or stereo inputs applying the following:

- 3 band EQ
- panning (manual and voltage controlled)
- VCA level control (manual or voltage controlled)
- 3 way performance muting (on-off-momentary)
- Soft clipping limiter (distortion!)
- Line level input and/or output adjustment

CONTROLS & FEATURES

INPUTS & OUTPUTS

AUDIO INPUTS // Stereo Strip features two inputs for left and right audio signals. The left signal normalises to the right allowing the module to function as a mono input and stereo output module. The module can happily work with line level as well as standard Eurorack levels thanks to the switches on the front panel.

NOTE // While designed with audio in mind, the Stereo Strip inputs will accept CV, allowing you to use the stereo VCA and panning to modulate the level and routing of your CV signals within a patch.

CV INPUTS // There are 2 CV inputs for externally modulating the Stereo Strip. The top CV input controls the level of the stereo VCA. When you patch into this input the manual level knob turns into an attenuator for the incoming CV signals. The lower CV input is for the panning which has its own dedicated CV attenuator that determines how much of the external CV mixes into the manual pan control.

OUTPUTS // The left and right outputs are clearly marked with red bananuts on the output sockets. These can be set to Eurorack or line levels with the output level switch.

NOTE // As well as processing mono (on the left input) or stereo inputs you can use the module to process two independent mono signals. In that case both audio inputs would share the same control set, but it can be fun to patch left and right as two input streams and patch the left and right outputs as independent mono signal paths.

CONTROLS

EQ // The 3 sliders set the EQ levels. These controls have a centre detent so you can easily place them in the middle with 0dB of EQ adjustment. Pushing the slider up adds level to that EQ band and lowering them from centre will reduce that EQ band.

PAN // The centre white knob controls the manual panning of the signal. With a mono input it will pan the sound between the left and right outputs. With a stereo input it will adjust the balance of the left and right inputs relative to the outputs.

PAN CV ATTENUATOR // This knob controls the depth of modulation over the pan. The pan CV is summed with the main pan control and the attenuator enables control over how much external modulation affects the panning.

MUTE // This is a 3-position mute switch that is on when in the up position, off in the middle position and momentary on when held downwards. This allows for performable muting!

LEVEL // The bottom knob controls the VCA level. This affects both left and right inputs equally. With no CV present for LVL CV this is a manual control. When you patch into the LVL CV input this becomes an attenuator for the amount of external level modulation.

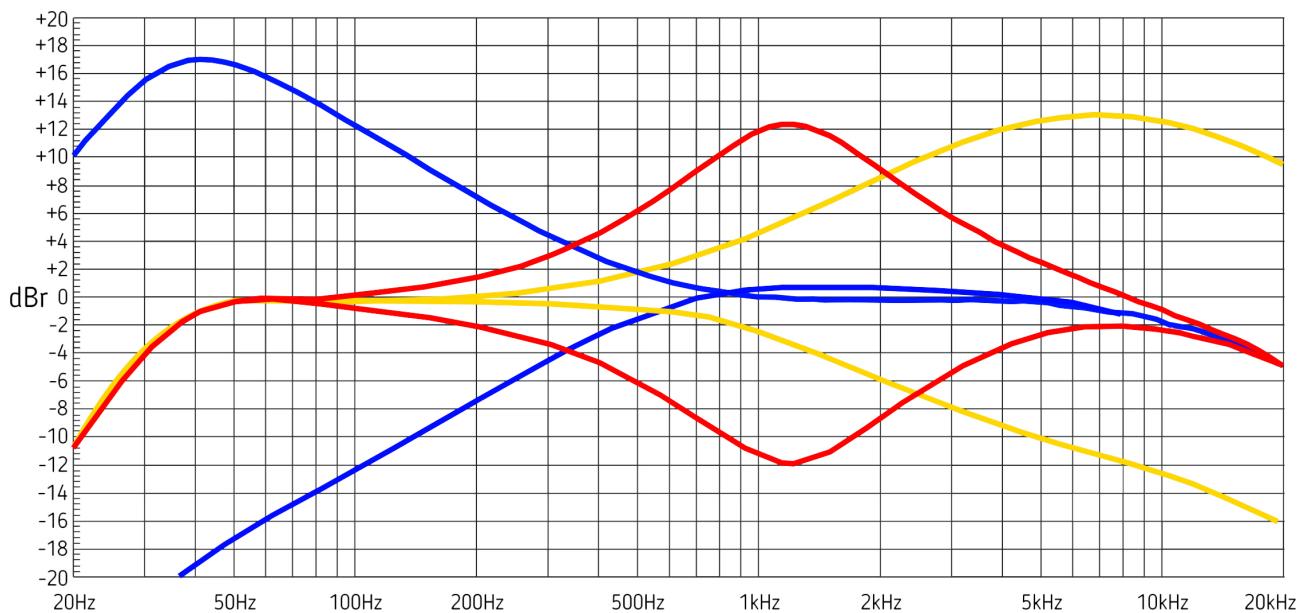
NOTE // The level knob and the graphic around the level control allows for easy scaling of levels for a wide range of CV inputs. See notes on behaviour and levels below.

INPUT & OUTPUT LEVEL // These switches adjust the input levels to deal with Eurorack or line level (switch on the left) and adjust the output from Eurorack levels to line levels (switch on the right).

BEHAVIOUR & LEVELS

EQ

The EQ is made up of a low shelf, mid bell curve and high shelf. Each band can cut or boost by ~12dB for drastic and musical shifts in tone while maintaining control for more subtle EQ shifts. The EQ curves vary depending on the level of reduction or boost and feature wide overlapping Q settings for broad adjustments in sound. See the graphic below for an approximate EQ curve, you can see how the EQ responses overlap and vary.



EURORACK OR LINE LEVEL I/O

The circle graphics on the panel indicate what level you are set to. The lower larger circle indicates working in the larger voltage ranges and louder levels of the Eurorack domain (for the input or output) and the upper smaller circles indicate working with the lower voltage ranges and quieter levels of line level gear (external hardware, sound cards etc).

The input switch (left hand one) should be ‘down’ position if you want to use a Eurorack signal as the input and in the ‘up’ position if you want to input a line level signal.

The output switch (right hand one) should be in the ‘down’ position if you want to output Eurorack levels and in the ‘up’ position if you want to output a line level signal.

The addition of these switches allows you to use the Stereo Strip as a stereo external interface for soundcards, other hardware and instruments. With the bonus of being an external interface where you can EQ, modulate the level and panning of external signals. The output level selection allows for reducing levels for external gear that can’t handle Eurorack voltages ranges. As an output (like as an input) you gain the addition of the EQ, VCA and panning at your output stage.

LEVEL KNOB GRAPHICS TO AID GAIN STAGING

In Eurorack there’s no standard range for how much voltage a VCA should need to open a signal from fully closed to fully open. There’s also no standard for what voltage ranges envelopes should occupy and envelopes are the main thing used to control the level of your sounds.

So what happens if the envelope you want to use peaks at 5V but your VCA needs 10V to open fully ... Well best case you’ll have half of your level and it will be quieter (if the VCA is linear) or worse you’ll have a lot less than half of your level (if the VCA is exponential). If you had 10V envelopes but a VCA that needs 5V to open you may clip (nicely or nastily) your VCA or clip the envelope so the VCA just holds until the envelope goes back down below 5V again. Neither of these are ideal!

Envelopes across the Eurorack format peak at 3 different “standards” 5V, 8V and 10V. The dots on the circular graphic around the level knob show you where to set the level knob (under CV control, from an envelope) to maintain your unity signal levels.



The VCA in Stereo Strip only needs 5V to open fully, so it can be used most easily, with less external utility modules. If your envelopes are 5V then patch that into the LVL CV and turn the level control up full, to the final dot (going clockwise around the knob). If your envelopes are 8V then turn the level control to the middle of the 3 dots (around 1 o'clock on the graphic). Finally if your envelopes are 10V in level then turn the level knob to the first dot half way around the knobs turn.

NOTE // You can use a higher voltage envelope or modulation source and turn the knob higher to push into saturation.

Bearing in mind that most of us just patch in and have fun, we wanted to add a simple graphic to show how you can make this work for the range of signals you may find in Eurorack for optimal level control.

SOFT CLIPPING, LIMITING & OUTPUT PROTECTION

The output stage of the Stereo Strip features a soft clipping limiter. This is there to protect the output of the module and any gear it may connect to. This isn't meant to be an effect at normal operating levels.

However you can push the levels to gain some soft clipping and limiting effects which you can abuse for creative and highly shapable distortions! You can also creatively abuse the line level input setting by switching to line level input (for a level boost) but patching in a Eurorack signal. You'll then have a large gain boost on the way into the module which gives a musical distortion. You can then use the EQ to shape the distortion and modulate the level for a CV controlled saturation effect! When setting the module for distortion this way you can tame the output with the level switch if needed. A patch example for distortion use cases is below.

AUDIO-RATE MODULATION & FREQUENCY LIMITING

The pan CV input is wide open for a huge range of subsonic, audio range and supersonic modulation signals. You can create some mind bending, ear tingling sounds like your head is inside a stereo ring modulator (best in headphones) with audio-rate tones or have fun with bringing supersonic signals down into the upper human hearing ranges for some aliasing style sound FX. The pan CV also responds to sequencing, random voltages and slower softly swaying modulation for auto-pan FX.

Unlike the pan CV response, the VCA level CV input is restricted in its frequency response in order to give a higher performance with the mute switch. As a result, you may notice that when modulated with an extreme audio-rate signal the overall level decreases. The point at which the level decreases has been fine tuned to allow for lower audio-rate or musical AM synthesis applications while optimising the performance of the mute switch.

NOTE // As a side note (as this applies to any VCA and not just Stereo Strip) if you use an oscillator as an audio-rate modulator for a standard VCA you will be losing the effect of half of your modulation signal. This is because VCAs respond to positive modulation and not negative modulation. Meaning for standard audio signals (which are bipolar, going both positive and negative) it will half-wave rectify (simply cut off any negative voltage as it won't respond to it) losing half the modulation signal. You can enable the input boost of the Stereo Strip to bring the level back up.

With this in mind, I recommend using the pan CV input for audio-rate modulation. This allows you to balance your audio-rate modulations on the pan CV attenuator without limiting the frequency of modulation you can apply to the panning. Doing so in mono means you can explore a wider range of AM synthesis and pseudo ring modulation tones, while applying this technique in stereo means you can pan at audio-rates for wild, stereo patch techniques! Have fun!

THANK YOU!

I hope you've found this manual helpful and inspiring and that it will help you get going with creating, shaping and managing stereo signals in creative and musical ways in your own systems.



I'd like to thank everyone at Befaco for their hard work in bringing this module to life. Their collaboration throughout has made the Stereo Strip what it is.

I'd also like to thank my Patreon supporters who continue to inspire and motivate as the amazing community they've grown into. If you'd like to gain exclusive discounts, videos and PDFs as well as joining our community head to <https://bit.ly/DK-patreon>

PATCH EXAMPLES

Here's 9 patches for getting started with creatively creating, shaping and managing stereo patches in your Eurorack system. You can find all 9 of these patches in the video demo.

STEREO VOICE CREATION & MODULATION

INTENTION // The idea here is to create or manage a stereo synth voice while also shaping that further with EQ. Placing the Stereo Strip at the back end of a synth voice where you'd typically have a basic VCA allows you to control stereo images, create stereo images with panning and to add sparkle, weight or focus to the sound with EQ.

INPUTS // Patch out of your mono or stereo filters, wave folders or shapers, or direct oscillator waveforms to be processed through the Stereo Strip.

LVL CV // Use an envelope to modulate the level of the stereo VCA. Note the dots around the level knob to indicate unity gain for 5V, 8V or 10V envelopes.

PAN CV // You can use the pan CV for adding subtle or drastic shifts in the stereo image of your patch. Whether it's creating a stereo image from a mono input or shifting the balance of an existing stereo image.

OUTPUT // Patch out to your mixer or interface as you would with any sound.

EQ // EQ to taste, be it adding weight to the low end, clearing up the mids or sparkle in the top end.

IN/OUT LEVEL SWITCHES // Eurorack level in and out.

SEND WITH BENEFITS

INTENTION // Stereo Strip was originally designed to better manage the routing to and response of FX modules. While you can use the Stereo Strip to process the output of your FX, it excels as a send (with benefits). As most FX (even stereo ones) sum stereo inputs to mono to be processed for the wet FX signal we can take advantage of the two outputs on the Stereo Strip to route to two different FX chains.

INPUTS // Patch a mono signal into the left input. This should be a split of your dry sound so you can mix your dry sound and FX sounds back together in a mixer further downstream in your patch.

LVL CV // Use an external voltage to modulate how much of your sound is sent out to your FX chains. The LVL CV here is your send (to FX) level. You could use a sequencer to push open the VCA only on certain steps, an LFO to feed your sounds into your FX chains in a cyclical fashion or a random voltage to continually shift how much sound goes to your FX chain.

PAN CV // How you modulate pan will alter the balance and routing of the input signal to your two FX chains. Using an LFO would swing the sound between your two FX, shifting the textures and layering in your patch as more of one FX raises in level above the other.

OUTPUT // Patch the left and right output to two FX chains. This could be two delays at different rates or two different FX types such as a reverb and a delay. You could also patch one output as your dry sound and the other to an FX chain. That way your pan and pan CV would alter the dry/wet balance in your patch.

EQ // As always EQ to taste. But I suggest removing low end to clean up reverb and remove rumble and try adding top end to delay FX for a crisper brighter echo. You can make room for your FX in a mix by removing low and high end, focusing the FX into the mid frequencies.

IN/OUT LEVEL SWITCHES // Eurorack level in and out.

STEREO MALLEABLE DISTORTION

INTENTION // As the Stereo Strip has a soft clipping limiter over the output we can push more level through it to hit the clipping, giving us musical distortion FX. Using the line level input selection will give the input a gain boost, so patching Eurorack signals with the line level input setting pushes much more level into distortion. The advantage here is that the distortion is stereo and we have EQ to shape it.

INPUTS // Any signal you'd like to distort, samples, filter outputs, oscillators, FX chains etc.

LVL CV // As the level control will increase the level in this example it also increases the drive. With this in mind the LVL CV acts like a distortion amount CV. So experiment with different modulation signals to shape the amount of distortion in the patch.

PAN CV // I suggest first exploring the distortion without modulating the pan. As the pan adjusts the levels it will also affect the distortion levels. So once you're comfortable with the distortion try using LFOs, sequencers and audio-rate oscillators for shaping the stereo image.

OUTPUT // Patch this to anything you'd like the distortion to hit. Your output or mixer if it's end of chain or into further FX.

EQ // When pushing the Stereo Strip into distortion the EQ is a powerful tool for shaping your sound. You can heavily sculpt and shape how much low end hits the clipping, or tame it back to clean it up. You can push the mids for more crunch or play with the highs for the overall brightness and fizz.

IN/OUT LEVEL SWITCHES // Input set to line (but patch in a Eurorack signal), output set to Eurorack, or line if you need to drop the signal level post distortion.

AUTO PANNER & TREMOLO

INTENTION // Basic panning and tremolo FX are often missing from the Eurorack environment. Most of us love the push and pull of a tremolo on guitar, Rhodes or synth sounds. With Stereo Strip we can patch these and explore them easily.

INPUTS // I suggest first patching into the Stereo Strip from the end of your patches. Much like patching into a pedal after an instrument. Also try patching into the Stereo Strip right after an oscillator or sound source but before further tone and level shaping.

LVL CV // The level CV here is your tremolo signal. Tremolo is an effect that changes the level of a sound in a cyclical fashion. With this in mind a looping envelope or LFO is perfect for getting your sounds to pulse. As the level knob changes to a CV attenuator you'll get the best results by mixing your modulation with an offset voltage before coming into the Stereo Strip. That way you can balance modulation depth and overall base level externally.

PAN CV // Any CV you add here can act like an auto panner. A slow smooth LFO shape such as a triangle or sine will give a softer swaying pan effect between the left and right outputs. Try adding 1v/oct tracking to your LFO patched into the pan CV so the pan rate changes along with the pitch of your patch.

OUTPUT // Patch out to FX or anything end of chain. If the Stereo Strip is shaping an oscillator at the start of your patch try patching into a stereo filter for further modulatable tone shaping.

EQ // EQ to taste.

IN/OUT LEVEL SWITCHES // Eurorack level in and out.

CV ROUTER & LEVEL MODULATOR

INTENTION // As the inputs to the Stereo Strip are DC coupled you can process CV with the stereo VCA and panner. With a single mono input you can route a CV signal to two destinations in your patch or using two CV inputs you can use the pan to alter the balance between them in your patch.

INPUTS // Any CV signal can be used but I suggest using LFOs and/or envelopes.

LVL CV // Use external modulation to alter the level of your input CV. Using a rising envelope to fade in the affect of an LFO, or using one LFO to alter the level of another leads to more dynamic and complex modulation signals.

PAN CV // You can use sequencers to alter the routing of your modulation in a stepped fashion or use slower LFOs to adjust where your modulation routes over time as your patch develops.

OUTPUT // Patch the left and right output to two different destinations. For example, taking an LFO at your input to your filter from the left output and to a VCA on your right output. If you have two different modulation signals on the inputs try mixing the left and right outputs together in an external mixing. This allows the mixer and Stereo Strip to function as a crossfader for CV.

EQ // The EQ will have no effect on sub audio CV signals.

IN/OUT LEVEL SWITCHES // Eurorack level input. Output can be set to Eurorack for full level or to line if your modulation needs some attenuation before patching into the rest of your patch.

OSCILLATOR SHAPER

INTENTION // The idea here is to use the distortion FX gained by setting the input level switch to line and patching in Eurorack signals and using that to shape oscillator waveforms.

INPUTS // Patch a single oscillator waveform into the left input, or try patching a second oscillator or second waveform from the same oscillator for working with two signals.

LVL CV // As we're pushing lots of level into distortion here the level CV can be used to envelope the sound into distortion and back out to silence. Start with no level modulation and use the EQ and manual control to shape your sound then add CV to level to vary the amplitude and saturation amounts.

PAN CV // You can use the pan CV to modulate where your sound is routed (left and right outputs as different signal paths). However my favourite thing is to go out of the left output for further processing or monitoring then use the right output as feedback patched back to the pan CV. Play with the manual pan and pan CV depth to impart some wild and wonderful overtones and kinks into your waveforms - feedback is awesome!

OUTPUT // Patch the output into filters or low pass gates to further shape the sound.

EQ // With this much level and distortion the EQ can be used to drastic alter the tone of basic input waveforms. Triangles can be pushed into clipping and their harmonic spectrums drastically altered with EQ.

IN/OUT LEVEL SWITCHES // Input set to line (but patch in a Eurorack signal), output set to Eurorack, or line if you need to drop the signal level post distortion.

EXTERNAL INSTRUMENT INTERFACE

INTENTION // The line level input switching allows you to use the Stereo Strip as an input stage for external gear, whether that's a soundcard or another piece of hardware.

INPUTS // Patch your line level signal into the inputs, using adapters as needed to go from alternative formats into Eurorack.

LVL CV // Experiment with different modulation sources for altering the level of your sound. Envelopes chopping up foley or found sounds, LFOs fading external vocals or use sequencers to bring sounds in and out of your patch in time with your Eurorack patching.

PAN CV // Use the manual pan and pan CV to either route a mono input to multiple destinations by patching the left and right output to two parts of a patch or use modulation to vary the stereo balance over time.

OUTPUT // Output your nicely Eurorack level matched signal out into the rest of your patch. Making the most of Eurorack FX or mixing the sound into the rest of your sounds.

EQ // Shape the sound with EQ as needed. Consider performing with the EQ to remove low or high frequencies and fade them back in manually over time.

IN/OUT LEVEL SWITCHES // Input set to line level, output set to Eurorack level.

AM SYNTHESIS & STEREO RING MODULATION

INTENTION // Using audio-rate modulation with the Stereo Strip really brings that synthesis method to life. The addition of EQ to shape the AM tones, or panning to create a mind bending stereo image with audio-rate stereo shifts is wonderful!

INPUTS // Patch in basic oscillator waveforms such as a sine or triangle wave.

LVL CV // For lower level audio-rate signals you can modulate the LCL CV to generate AM overtones. For higher rates of modulation skip the LVL CV and modulate the pan instead (or as well as - both can get wild!).

PAN CV // The pan CV is capable of handling subsonic, through audio-rates and supersonic signals. Use an oscillators sine wave to modulate pan and tune the modulating oscillator to a higher octave than the input waveform. When sequencing the waveform at the input take a buffered copy of your 1v/oct signal and patch that to the modulator. This way your pan CV will give a stereo Ring Modulation effect that tracks pitch relative to the input - this will keep things musical and dynamic rather than static.

OUTPUT // Audio-rate modulation can lead to harmonically rich tones. Try patching them into a low pass gate or filter/VCA combo to dynamically change the higher frequencies and level of the sound.

EQ // As with most of these examples EQ to taste. You can tame high end and mid frequencies to get smoother bass tones that better suit audio-rate modulation.

IN/OUT LEVEL SWITCHES // Eurorack level in and out.

FX MOVER & SHAPER

INTENTION // We've already talked about how the Stereo Strip can be a 'send with benefits' using CV to send signal out to FX chains and to tailor the frequencies that go into the FX. We can also use the Stereo Strip to shape and animate your sound post FX. Just as we could any sound adding panning, level shifts and EQ opens up further animation, interesting and tonal sculpting to your patches.

INPUTS // Big ambient FX chains

LVL CV // Mixing together an offset voltage (to hold the VCA open) and a slow LFO is a nice way to make big ambient FX ebb and flow in and around other sounds in your patch. You could also try using envelopes to chop into and create more rhythmic FX from big ambient washes.

PAN CV // Much like subtle level shifts try using slow LFOs with a low depth of modulation (low onboard CV attenuator level) to make your FX gently sway across the stereo spectrum.

OUTPUT // In this example the Stereo Strip could be the output of the patch or the output of the FX layer to blend back into other sounds in a patch.

EQ // While modulating the level and panning of FX is fantastic for creating movement in areas of a patch that are often static. The EQ really is the star of the show. Removing low end rumble, focusing the sound into the mids or even scooping the mids can shift the energy and focus in your FX tones.

IN/OUT LEVEL SWITCHES // Eurorack level in and out.