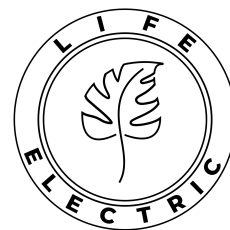


# PATCH GUIDE

LOOM, Rev 1.1



## DESCRIPTION

LOOM can be used for all sorts of utility functions/voltage knitting! I'll explain a few below (but I am still discovering things that I did not intend the module to do!)

## DESCRIPTION

Loom is made up from three units that can be also summed together to make a larger 4 channel mixer.

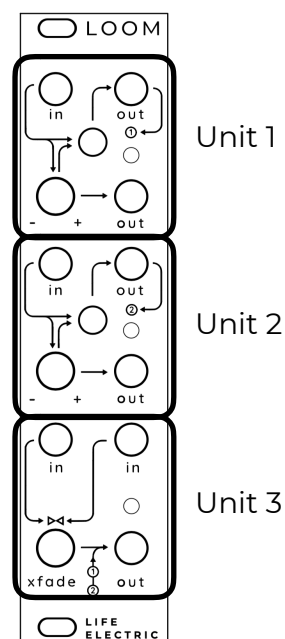
Units 1 and 2 are buffered multiples. The bottom channel will always output what the attenuverter is set to, and the top one will either output:

1. A perfect copy of the input signal
2. Whatever the attenuverter's output is

This can be switched by the toggle switch.

The input when nothing is patched into the input is a 5V reference voltage. The LED indicates whatever signal is being passed out of the bottom jack of the unit.

Unit 3 is a crossfade mixer for it's two inputs. The top two units are also mixed in as well by default, and they can be taken out of the mix by patching into the bottom jack on units 1 and 2!



## DUAL BUFFERED MULTIPLE/ATTENUVERTERS

Units 1 and 2 can be used as buffered multiples, as described above. I have found this useful in my patching for driving two oscillators with volt per octave pitch voltage, and using LFOs to modulate two aspects of a sound. Using the attenuverter, I like to multiply envelopes and invert one of them to allow different filter and VCA envelopes for more interesting lead tones!

The multiple can be used with the reference voltage to simultaneously provide +5V and provide another voltage between +5V and -5V from the attenuverter!

## CROSS FADE MIXER

Unit 3 is very useful for mixing two oscillators together before feeding them into a filter, or for mixing two gate signals together for some strange sequencing! It is completely DC coupled, so it can mix any voltage in your system!

## 4-CHANNEL MIXER

The two other units also mix into this cross fade mixer; I've found this useful for mixing lots of separate audio signals. NB the reference voltages will sum into the mixer by default, which can cause it to clip if both reference voltages are set to 5V! A good way to solve this is: turn unit two's attenuverter all the way negative so it provides -5V and unit one all the way positive, so they cancel to 0V! The LED will indicate the mix of the two input signals. The attenuverters can be used to make two of the inputs to the 4 channel mixer negative, so some crazy CV summing/subtracting can go on to produce strange modulation!

## REFERENCE VOLTAGES

These are present on the input jacks of units 1 and 2 when nothing is patched into them, and are 5V (although this can be configured to be different either by you or us; get in contact if you are interested!).

## EXTRAS...

Use the 4 channel mixer to mix two lots of 5V reference voltage from units 1 and 2 to deliberately clip the mixer output of unit three! This can be used for wave shaping. As the signal is being clipped against a power rail, the clipping is asymmetrical which was a distortion feature on vintage Moog systems! The reference voltages can also both be set negative to clip the bottom of a waveform. This can also be voltage controlled by using a CV input into unit 1 or 2, which varies the amount of bias the audio out from unit 3 has, and hence how much the waveform clips. I have found that this adds interest to a waveform when the clipping is controlled by an envelope!

If two oscillators are patched into the crossfade mixer, the LED for unit 3 will light up according to the two signals going in and out of phase. The rate of this is controlled by how closely they are in tune with each other. This means that the LED can be used to tune the oscillators by adjusting one oscillator's pitch until the LED is flashing about once per second.

Any interesting patches? Send them in, we would love to see what people are doing with this module!