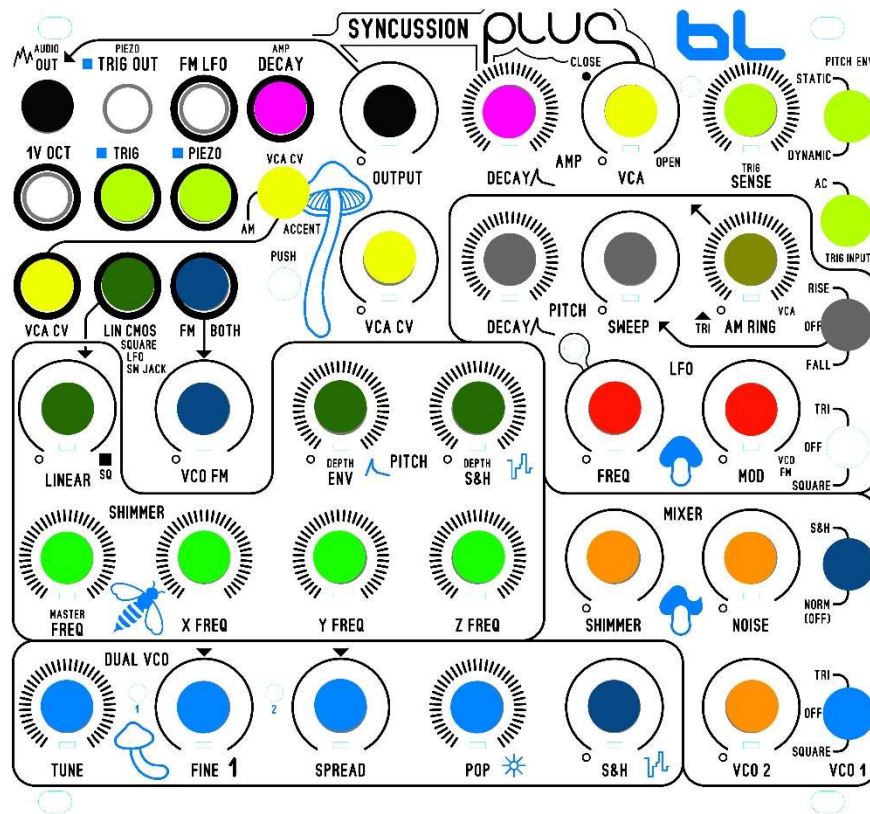


BLM SYNCUSSION PLUS MODULE



Blue Color Section: Dual VCO. There are two VCO's. VCO 1 has a fine tune, and is audible by toggle switch. In the mixer section VCO 1 when activated will be 100% loud. There is no volume attenuation for VCO 1. You can select triangle or square wave forms. VCO 2 has its own volume level parameter.

These parameter effect both VCO's: TUNE, SPREAD, POP, S&H, VCO FM

Tune: Master tune for both VCO's.

SPREAD: default setting is 12' o clock. Moving this parameter changes the pitch of both VCO's. One is moving in the opposite direction (inverse) of the other. You can quickly make 2 note chords with this.

POP: This adds an audible, short, quick transient to both of the VCO's.

S&H: Sample and hold parameter. You need to activate this by toggle switch, located in the mixer section. Using the toggle switch you can manually add random pitches, once you set up the S&H knob.

VCO FM: this will modulate both VCO's. This is an exponential input.

Green Color Section: Shimmer Generator. There are 3 Square waves doing ring modulation to each other. XYZ change the pitch of each square wave. The Master Freq knob allows some pitch change to all 2 square waves at the same time.

The Dark Green Parameters are input modulation attenuators for the shimmer generator.

-Linear FM. This is switch jack internally connected to the square wave from the LFO. To break the connection, just input a patch cable. You can also turn off this modulation by having the knob fully counter clockwise.

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-DEPTH ENV. This is internally connected to Envelope 2 (Grey Section). Pitch changes occur at lower knob setting. When the knob is past 12 o'clock, you can create a mute-like effect (ducking) for the shimmer generator.

-S&H: This is connected to the internal sample and hold. There is no toggle switch for this. To turn off the effect, have the S&H knob fully counter-clockwise.

Red Color Section: LFO. This has a Frequency Rate parameter, Mod send to both VCO's, Linear FM send to Shimmer Generator, and an AM ring mod send to VCA.

-MOD: sends the LFO to both VCO's. Use the toggle switch to choose a waveform: Triangle or Square Wave. You can turn off the send by having the toggle switch in the middle position.

-AM: sends Triangle wave LFO to the VCA CV. This will create a fade in and out effect at LFO slow setting. At fast LFO, it will create Ring Modulation to the Main Audio Path. It is normal behavior for the triggering section to get some feedback at high AM setting.

Violet Color Section: Envelope 1. This is the main Envelope. It is patched to both the Amplifier (VCA) and both VCO's CV (Pitch). There is a CV input jack (Decay CV) to change the Decay behavior. The Sense Knob works closely with the envelopes. Don't forget to experiment with the Sense knob to get different Envelope transients.

Lime Green Color Section: Sense, Trigger Condition Section. Sense parameter is an level input for the trigger conditioner.

-Static/Dynamic Toggle Switch: Static is more of a harder, consistent transient. Dynamic mode will react to the incoming level of the trigger.

-AC/Trigger Toggle Switch. AC adds a capacitor to the Trigger input signal path. This creates double trigger, and ghosts' hits. AC mode triggers on the rise and fall portion of a trigger. Trigger mode is the original single trigger mode found on the Syncussion.

Grey Color Section: Envelope 2. Decay, Sweep, Rise and Fall Toggle Switch.

This is another Pitch Envelope connected to both VCO's, and Shimmer Generator.

You have to use the toggle switch to turn on the effect and route to the VCO's. Select Rise or Fall.

Yellow Color Section: VCA

VCA Knob: manually open up the amplifier to hear a drone. At the Close setting, you will setup the amplifier for percussion duties. Fully counter-clockwise lowers the percussion amplifier for more short sounds.

VCA CV INPUT KNOB and Accent/AM Toggle Switch. Accent Mode places a diode on the signal patch so that only positive voltage makes it to the VCA CV core. AM mode allows both negative, and positive voltage signals to the VCA CV core (-5v/+5v Bi-Polar).

Orange Color Section: Mixer Section. Shimmer Generator, VCO 2, Toggler Switch VCO 1, White Noise Knobs.

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Black Color Section: Main Output Knob and Jack output. This is a mono -5v/+5v output.

Calibration

Front Panel Trimmers: These are 1V Per Octave Adjustment Trimmers for VCO 1 and VCO 2. Only adjust these if the pitch is way off when using the 1V/Octave jack. This is normally never adjusted once calibrated.

Back flat Trimmer: This is a Fine Tune for VCO 2. You need to have Fine 1 and Spread knob in the middle position (12' o clock). Have both VCO's in the mixer section on, and the VCA knob set to open. Adjust the Back trimmer to have both VCO's beat phasing as close to each other as possible. It is easier to have both in triangle waves.

The trigger conditioner, and both Envelope Generators are from the original Pearl Syncussion. The VCO's are modern VCA based (v2164) design, Triangle Core. The Shimmer Generator is from the CMOS FX Pro Module. There is no analog filter on the Syncussion Plus.

On the original Syncussion, when using drum pads, you have to hit the pads hard with sticks to create reasonable sounds. I did not like that too much, it got old really quick.

The Piezo Trigger Conditioner is my own design, and allows finger 'soft' triggering when using drum pads. No Sticks required.

Both Trigger and Piezo Trigger inputs can be used simultaneous. The Trigger OUTPUT on the front panel is coming from the Piezo Trigger Conditioner.

Both of these triggers are summed to the Sense Knob, Sense knob is key to changing up the Syncussion Plus's Behavior.

Width: 27HP

Current: +96mA,-86mA