Sn

Lofi FM synth

Contents:-

Layout.
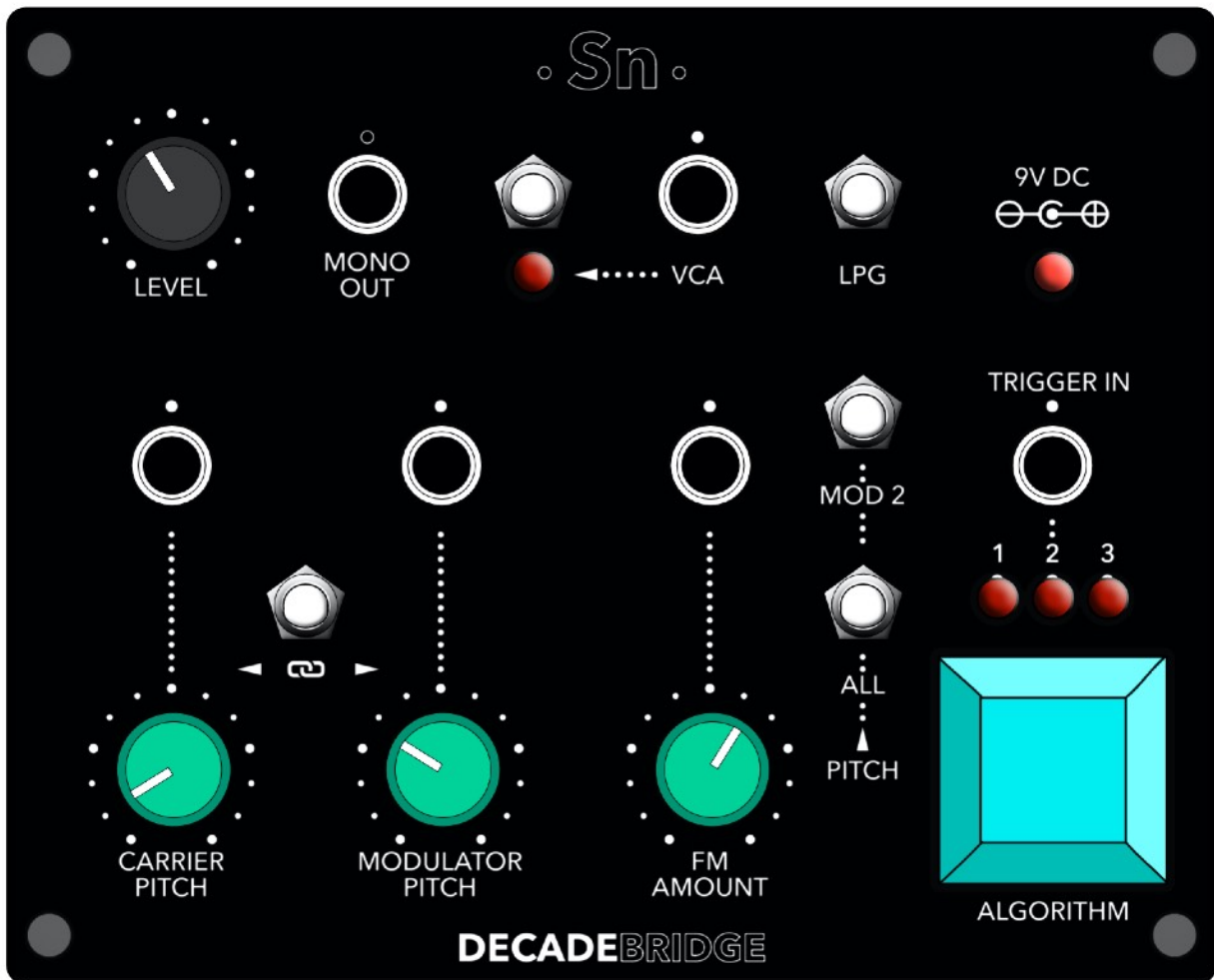
Sn is a lofi FM synth that is capable of producing a wide range of sounds and textures.
Sn has 7 different FM algorithms and switches for pitch link/unlink, pitch range and Mod 2 rate.

Sn runs off a 9 volt battery. A battery clip is included. We do not supply wall adaptors with our products to keep the cost as low as possible. If you would like to run **Sn** off of a wall adaptor please ensure it is a 9V DC centre positive adaptor.

DO NOT USE A CENTER NEGATIVE ADAPTOR AS THIS WILL DAMAGE THE SYNTH. IF YOU DO RUN INTO PROBLEMS PLEASE GET IN TOUCH AS IT IS POSSIBLE THE SYNTH COULD BE FIXED OR REPLACEMENT PARTS SENT TO YOU TO EASILY FIX IT YOURSELF.

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Algorithms.

Sn has 7 different algorithms. These are selected using the large button on the right of the synth. If the button is held down **Sn** will step through the algorithms automatically.
The **TRIGGER IN** jack above the button allows you to switch algorithms using a external 5 volt gate or trigger.
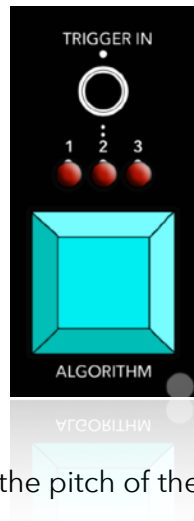
Algorithm 1:-
2 operators. Modulator 1 (**M**) modulates the pitch of the carrier (**C**).

Algorithm 2:-
3 operators. Modulator 1 (**M**) and modulator 2 (**M2**) modulate the pitch of the carrier (**C**).

Algorithm 3:-
3 operators. Modulator 1 (**M**) and modulator 2 (**M2**) modulate the pitch of the carrier (**C**). Modulator 2 modulates the pitch of modulator 1.

Algorithm 4:-
3 operators. Modulator 1 (**M**) and modulator 2 (**M2**) modulate the pitch of the carrier (**C**). Modulator 1 modulates the pitch of modulator 2.
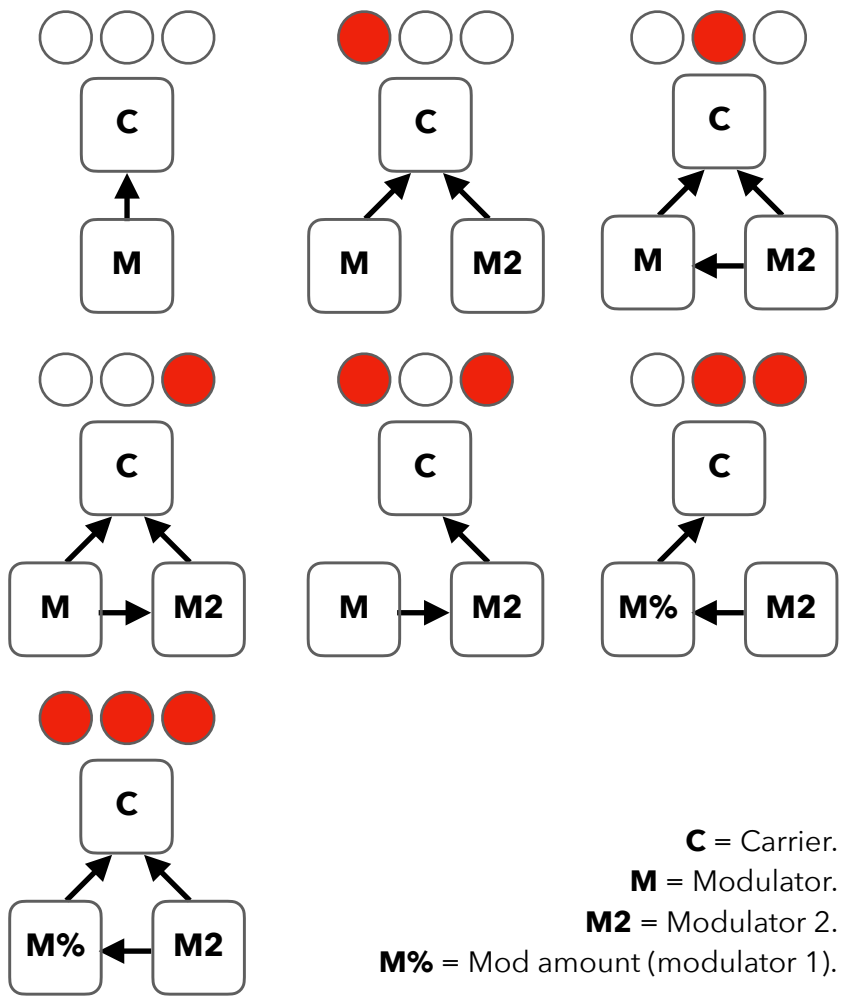
Algorithm 5:-
3 operators. Modulator 2 (**M2**) modulates the pitch of the carrier (**C**). Modulator 1 (**M**) modulates the pitch of modulator 2.

Algorithm 6:-
3 operators. Modulator 1 (**M**) modulates the pitch of the carrier (**C**). Modulator 2 (**M2**) modulates the level of modulator 1 (**M%**).

Algorithm 7:-
3 operators. Modulator 1 (**M**) and modulator 2 (**M2**) modulate the pitch of the carrier (**C**). Modulator 2 (**M2**) modulates the level of modulator 1 (**M%**).

C = Carrier.
M = Modulator.
M2 = Modulator 2.
**M%** = Mod amount (modulator 1).

Operators.

Sn uses 2 or 3 operators depending on the algorithm that is selected (see previous page).
The carrier pitch is set using the **CARRIER PITCH** pot.
The pitch of the modulator(s) is set using the **MODULATOR PITCH** pot.
The amount of modulation is set using the **FM AMOUNT** pot.
The 3, 3.5mm, mono jacks directly above each control are inputs for each parameter. Here you can connect a 0-5 volt control voltage source.
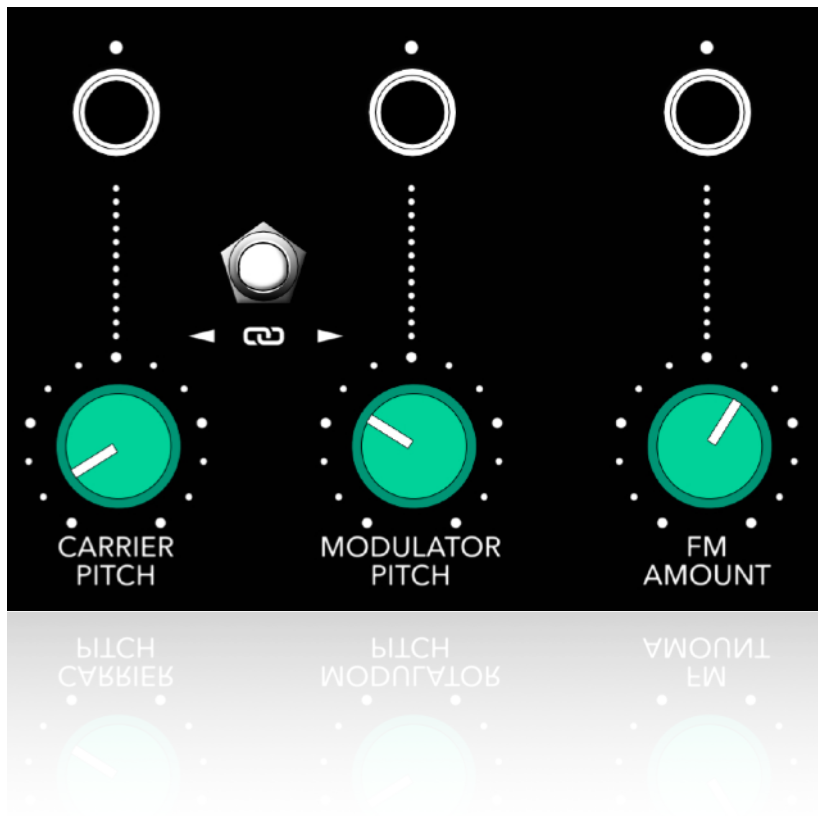
Link/Pitch switches.

Sn has 3 switches that change the pitch relationship between the operators. The table below shows how each switch position affects the pitch.
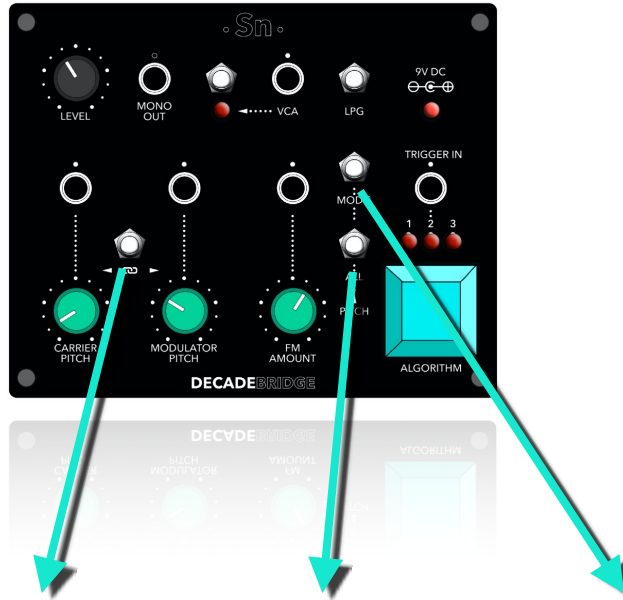
POSITION	LINK (6)	ALL (9-1)	MOD 2 (9-2)
DOWN	Modulator pitch is a ratio of the carrier pitch (multiplied).	Carrier pitch is quantised to 1V/Oct over 0-5 volts.	Modulator 2 is 4 times slower than the main Modulator pitch.
CENTRE	Modulator pitch is added to Carrier pitch (summed).	Carrier pitch 1V/Oct. Modulator pitch is set higher to create more noisy patches.	Modulator 2 is 2 times slower than the main Modulator pitch.
UP	Modulator pitch is not linked to Carrier pitch (free running).	Carrier pitch and modulator pitch are not set to 1V/Oct.	Modulator 2 is 1.5 times slower than the main Modulator pitch.

Sn

VCA/LPG and output.

Sn's output section has a few simple controls to help shape it's sound.
You can use a CV source to control the output volume of **Sn** by connecting it to the 3.5mm mono jack input labelled **VCA**. With the relative switch in the up postition, **Sn** will output audio continuously. With the switch in the down position, **Sn**'s volume will determined by the **VCA** input signal.
The **LPG** (low pass gate) switch allows you to select between to different passive filter cutoff points. In the middle position no filter is used. In the up position there is a slight roll off of the top end to 'darken' the sound slightly. In the down position a slighlty more 'darker' cutoff can be had.
When using the **LPG** and **VCA** together percussive sounds can be created. The **LPG** will implement the low pass filter as the control voltage drops. A strong CV signal is suggested here as this part of the synth is passive.
The resulting sound is then routed to the 3.5mm mono jack output. The overall level of the synth can be altered using the **LEVEL** pot.

The following video by oscillator sink has some great sound demos and explanaitions of all of **Sn**'s controls.