SAMPLING MODULATOR
USER MANUAL

POWERING THE MODULE | THANKS FOR PURCHASING A MODULE FROM BEFACO! BEFORE YOU PLUG THIS MODULE IN...

1. **Disconnect your cabinet from the mains.**

2. **Triple check the power cord polarity.** The coloured line on the cable (pin number one) is the –12V rail.

3. If you plug the module backwards you might burn it out and unfortunately this is not covered by our warranty.

4. If you have any questions about this product please send them to: befacosynth@gmail.com

INTRODUCTION | THE SAMPLING MODULATOR IS A MULTI–FUNCTION MODULE THAT LIES SOMEWHERE BETWEEN A VCO, A SAMPLE & HOLD, AND AN 8 STEP TRIGGER SEQUENCER

It can function as a sequencer clocked sample & hold, analog down–sampling effect, sampling modulator/shaper, 8 step trigger sequencer, and unusual V/oct VCO.
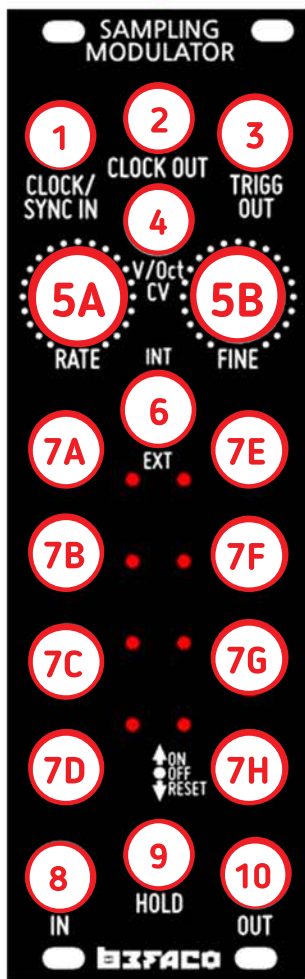
A veritable Swiss knife in just 8HP!

TECHNICAL SPECIFICATION
- Eurorack compatible

- Current requirements: 48 mA +12V / 18mA -12V

- 8 HP / 47 mm depth (including connector).

MODULE | AN EXAMINATION AND DESCRIPTION OF THE VARIOUS
REFERENCE | FUNCTIONS OF THE MODULE

7A-H. SEQUENCER SWITCHES

Switches for each step of the internal 8-step sequencer. Each switch has 3 positions:

– Up: On

– Middle: Off

– Down: Reset

8. AUDIO INPUT (IN)

Audio input. Routed to the internal Sample and Hold.

9. HOLD INPUT (HOLD)

Sample hold input. A gate on this input will hold the current sample/waveform position. The module will continue to track the waveform which will be returned to once the gate is removed.

10. AUDIO OUTPUT (OUT)

1. CLOCK/SYNC INPUT (CLOCK/SYNC IN)

Can be used to set the rate of the internal VCO and sequencer.

2. CLOCK OUTPUT (CLOCK OUT)

Clock output from internal VCO.

3. TRIGGER OUTPUT (TRIGG OUT)

Trigger output from internal sequencer.

4. CV INPUT (V/OCT CV)

Volt/Oct CV input to internal CV. Has 4 octaves of tracking.

5A/B. MANUAL RATE CONTROL FOR VCO (RATE & FINE)

Course (RATE) and fine (FINE) rate control for the internal VCO.

6. INTERNAL/EXTERNAL CLOCK SWITCH (EXT)

Switch between using the internal and external clock.

| FUNCTIONAL MODES | AN EXAMINATION AND DESCRIPTION OF THE VARIOUS FUNCTIONS OF THE MODULE |

SEQUENCER CLOCKED SAMPLE & HOLD

In this mode it acts much like a regular Sample and Hold (S&H) however since it is "sequencer clocked" it is capable of producing more interesting patterns than a standard S&H.

The CLOCK input can work in two ways:

1. As a typical clock

2. In "positive going hard" sync mode allowing you to create shuffling and polyrhythmic effects.

The HOLD input can be used (with a gate signal) to keep a single point on the input waveform playing. The module will continue to track the waveform and will return to it once the HOLD is removed.

ANALOG DOWN-SAMPLING EFFECT

In this mode (with the clock running at audio rates) you can go from nasty and harsh sampling rate reduction tones to an almost clean signal. (The clock runs at up to 25kHz without external CV and up to 200kHz with CV on the input).

SAMPLING MODULATOR/SHAPER

Thanks to the V/Oct clock, by feeding a simple waveform such as a sine wave to IN, and pitch CV to both the VCO and Sampling Modulator CV input, their related frequencies and the aliasing caused by the sampling rate reduction are capable of creating clangorous metallic sounds, 8-bit textures and much more.

The game becomes much more interesting when you try to destroy the wave by flipping on and off the switches of the sequencer (which at times can make it sound like three VCOs running in unison).

The Sampling Modulator uses a temperature compensated ramp core VCO with more than 4 octaves of tracking. This allows timbre to be maintained while you move through the scale as the internal and external VCOs are synced in a fashion similar to "frequency related, sampling rate modulation".

8 STEP TRIGGER SEQUENCER

A simple utility trigger generator which is also useful as clock divider. The switches have three positions: On, Off and Reset (which resets to the first step for non 4/4 signatures)

UNUSUAL V/OCT VCO

You can use the trigger outputs as a pulse VCO. Flipping the switches on and off offers a lot of interesting timbral changes.

BLOCK DIAGRAM

OUT

HOLD

IN

Sample & Hold

TRIGs

TRIG OUT

8 Step trigg seq.

= OUTPUTS

= INPUTS

CLOCK OUT

INT

EXT

PULSE VCO (⎍) (V/Oct Int Clock)

RATE   FINE

CV

CLOCK/ SYNC IN

B3FACO