

# BAKLENGS

BAKLENGS is a granular synthesizer. It can delay stuff, timestretch stuff, shuffle stuff, freeze stuff, pitch stuff upwards, pitch stuff downwards, fold back on itself through feedback and generally make lots of gnarly noises.

- VOL** Master volume. Unity gain is around noon. Max gain is +16dB.
- MIX** Analog dry/wet mixer.
- MOD** Random frequency modulation depth. Only applied to the wet signal.
- TIME** Delay time and timestretch parameter. From full ccw to noon increases the delay time. Turning the parameter cw from noon yields timestretching. At the max cw position the audio playback speed is frozen. The memory size range depends on the CLK parameter. The direction of the effect is dictated by the middle toggle switch detailed below.
- CLK** Digital signal processor system clock frequency. From approximately 10kHz to 50kHz. Sets the sampling rate, grain size, modulation speed and delay buffer length. The max buffer length varies from approximately 2700 to 550 ms (ccw → cw). Adjusting CLK will pitch shift any audio currently being processed. Cw rotation shifts the pitch upwards. Low clock settings will produce some noise on the wet signal path and give the TIME, LOOP and OCTAVE parameters a sluggish response time.
- LOOP** Decay parameter. At noon there's no regeneration. Increasing cw adds non-destructive looping feedback. At max audio is repeated indefinitely while allowing new audio to be written to memory. With looping feedback the modulation and octave effects will *not* be regenerated, meaning you'll stay at the same modulation depth and pitch at every repeat cycle. Decreasing ccw from noon adds destructive direct feedback. This *will* regenerate the granulation, modulation and octave of the wet signal. Chaos ensues.
- Left Footswitch** Overrides the LOOP parameter according to the left toggle switch. Holding down the switch for more than 500ms will only momentarily change the status.
- Left Toggle (LOOP)** Select between max direct feedback (left) or max looping feedback (middle and right). For looping feedback you have the additional option whether or not to allow new audio to be written to memory. Select the "boxed" infinity symbol to mute incoming audio. Note that this specific setting is only available through overriding the LOOP parameter.
- Mid Toggle (DIR)** Select between reverse, shuffling and forward granular delay/stretch. Note that the reverse mode is not a true reverse delay but an effect where the grains of audio are arranged in reverse. Adjusting the time stretch range in the shuffling (mid) mode may seem a bit odd. Similarly to the reverse and forward modes the audio is frozen when TIME is at max. Turning the knob ccw from max allows the stretching effect to aimlessly "wander" around in the memory buffer with increasing speed approaching noon. Adjusting this toggle resets the memory buffer.

**RIGHT TOGGLE (OCTAVE)** Select between -1, regular and +1 octave pitch shifting. Note that changing the octave does *not* reset the memory buffer.

**RIGHT FOOTSWITCH** Relay-based true bypass. Holding down the switch for more than 500ms will only momentarily change the status.

***Design notes:***

*BAKLENGS is the final entry in the backwards trilogy preceded by BAKVENDT and BAKFRAM. With this final entry I had several goals in mind. More dynamic control has been made available through offering footswitch function options and avoiding program resets when changing the octave setting. Replacing the cumbersome program selection system of BAKFRAM with toggle switches has made setup quicker and easier. Though the trippy “bonus” programs of BAKFRAM are gone I hope the new shuffle/freeze program will fascinate with it’s unconventional movement. Enjoy!*

### **TECHNICAL DATA**

Voltage	9VDC center negative. No battery operation.
Current	150mA
Input Z	1M $\Omega$
Output Z	< 1k $\Omega$
Size	125 x 66 x 60 mm