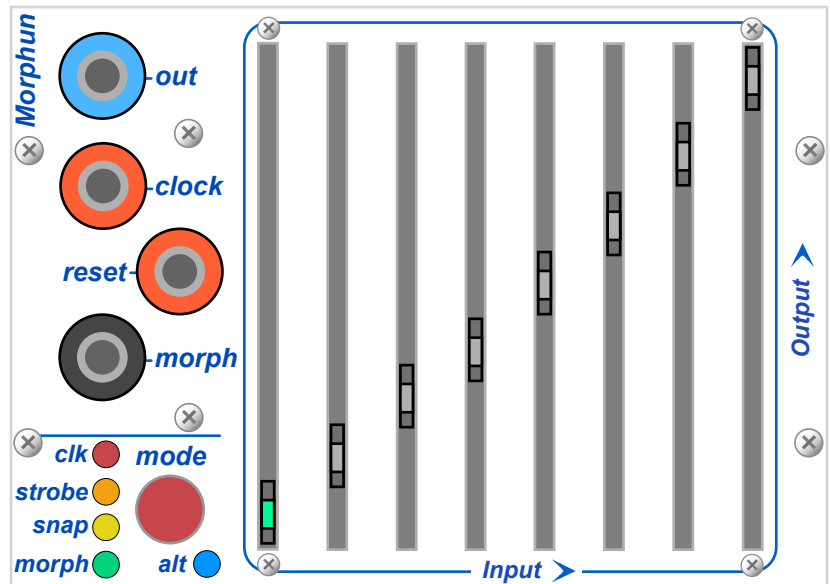


Morphun is a fun way to reshape control voltages and also a mini sequencer. The goal behind the morphing function is to make cv processing playable, and fun in the process.

The sliders have LEDs in the handles for feedback. In Morph mode the horizontal axis represents the Morph input, and the vertical position of the slider represents the output voltage. In other modes it indicates the current step.



Morphun has four main modes:

Morph Mode– As a historical reference, Morph mode is sort of like the Tracking Generator found on an Oberheim Xpander, and sort of like the breakpoint generator on the 256e/257e. In this mode, a control voltage coming into the morph jack scans across the values on the sliders, interpolating between slider values as it goes. This lets you sculpt / reshape a control voltage into many curious shapes. The Morph input range of 0-10 v. is scaled across however many stages of the Morphun are enabled, so the breakpoints are evenly spaced across the 0-10 v. range. I tend to think of it as a table with fixed X positions (based on number of enabled stages), variable Y positions, and the morph interpolating across it. If the Morphun is set for only two positions, the two sliders are like the knobs on either side of the 256e display, setting scale / inversion. If the Morphun length is set for three positions, it's like a 256e section with a breakpoint fixed in the middle of the X range.

Snap Mode– A full-scale ramp at the morph input will act as a sort of sequencer, stepping through the eight values on the slider. For example, if you drive the Morphun from an LFO with an ascending sawtooth wave, the sliders will be output in order, if from a descending saw the sliders will be output in reverse order. If you drive it with a Source of Uncertainty Quantized Random section set to 8 steps, the Morphun will randomly select among the eight sliders to output.

Clock Mode– Clock mode is more or less a normal sequencer. Pulses into the clock input select the next stage, and reset starts at slider one again.

Strobe Mode– Strobe mode is sort of a cross between Snap or Morph mode and Clock Mode. The output only changes when Morphun receives a pulse at the Clock or Reset inputs. For a Clock pulse, the Morph input is sampled, then the nearest slider is selected, just like

snap mode. For a Reset pulse, the Morph input is sampled then the interpolated value is looked up on the sliders, as is done in Morph Mode.

Mode switch

The most confusing thing about the Morphun UI is probably the mode switch, because it has three functions:

1 – Simple presses just step through the modes. No problems, so far.

2 – If you press and hold the mode switch for a little more than two seconds, you enter "toggle alt" mode. The alt LED will start blinking to indicate that you are in this mode. The brightness of the alt LED shows whether the mode is on or off. Once in this mode, press on the mode switch to toggle alt on and off. A second long press gets you out of this mode.

3 – If you hold down the mode button and wiggle a slider you enter "setting end" mode, as long as you wiggle before the timeout for getting into "toggle alt" mode. Once you have wiggled a slider to get into "setting end" mode, it stays in this mode until you release the mode switch. Every time you change the length of the Morphun, the currently lit slider blinks a little brighter for a bit.

Alt Enabled

In the early days this LED was labeled quant (for quantize), but it got changed when I found a good idea that I wanted to implement in some modes. At the end of the day, it only does quantization in all modes, so I shouldn't really have changed it. Clock and Snap quantize the sliders over a five octave range. Morph quantizes the input and slider combo over a ten octave range. Strobe uses the five octave range when being driven from the clock jack, and the ten octave range when being driven from the reset jack.

Deep Switch

These are both preferences for clocked mode:

Jumper 1-2 disables synchronous reset. Normally we wait for a new clock before resetting after a pulse into the reset jack. With this jumper on, we reset immediately.

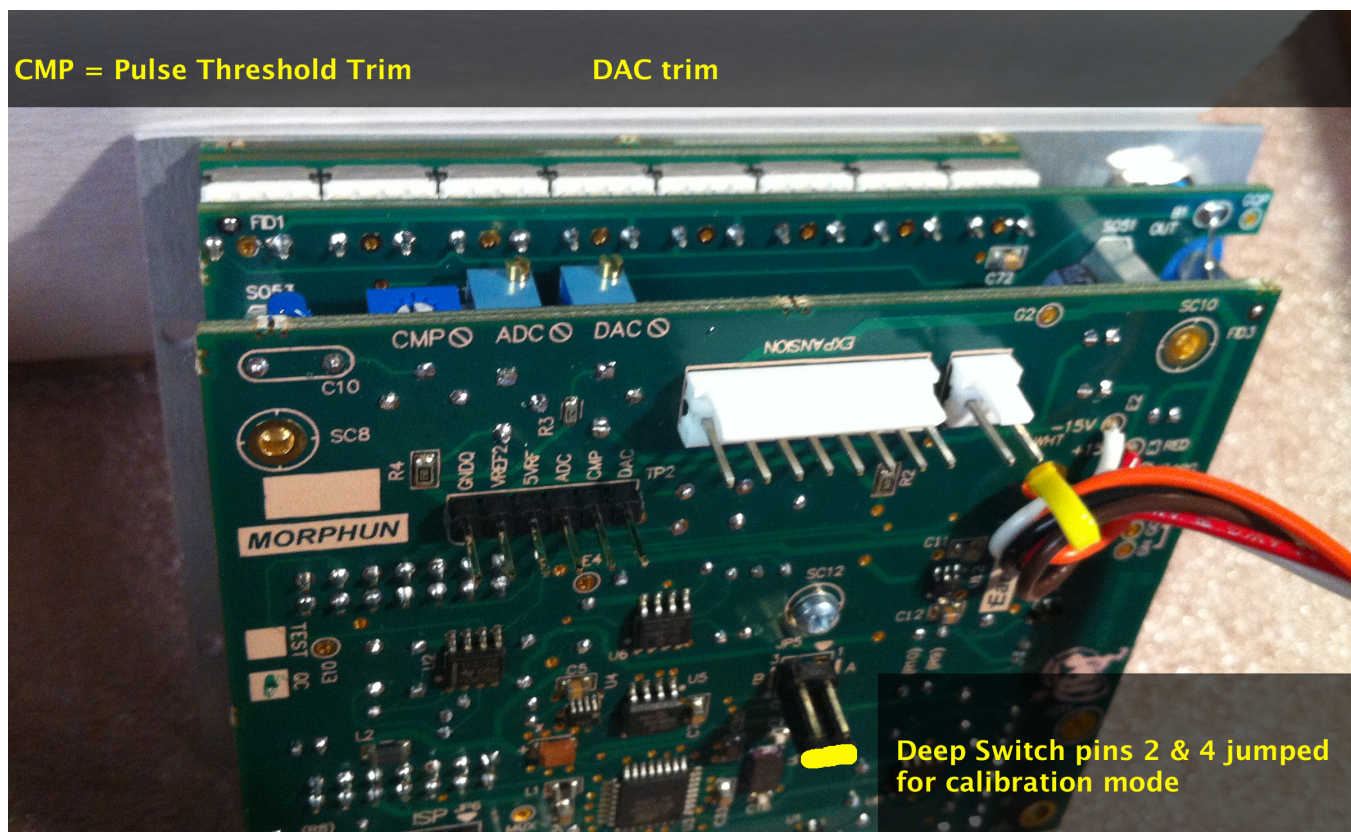
Jumper 3-4 enables a free-running sequence counter instead of the default method of running based on modulo math. Using modulo math for the counter means it better stays in sync when changing sequence lengths. Sometimes it's fun to be out of sync, though.

Calibration

With the Deep Switch jumpered in the peculiar manner of 2-4, we enter calibration mode. In this mode, the first slider jumps by octaves over a five octave range, and the second slider steps by semitones over a one octave range. I use this mode to tune the DAC output to my 259e. You'll probably want to tune the output to whatever oscillator you will be using. Unfortunately, I got the trimmer backwards, so clockwise is lower gain.

There is also a trimmer for the ADC gain, but you will probably never need to touch that one.

Finally, there's a trimmer for input pulse threshold. I set this for about 6 volts, so that anything over that is considered a pulse.



Calibration Mode Jumper