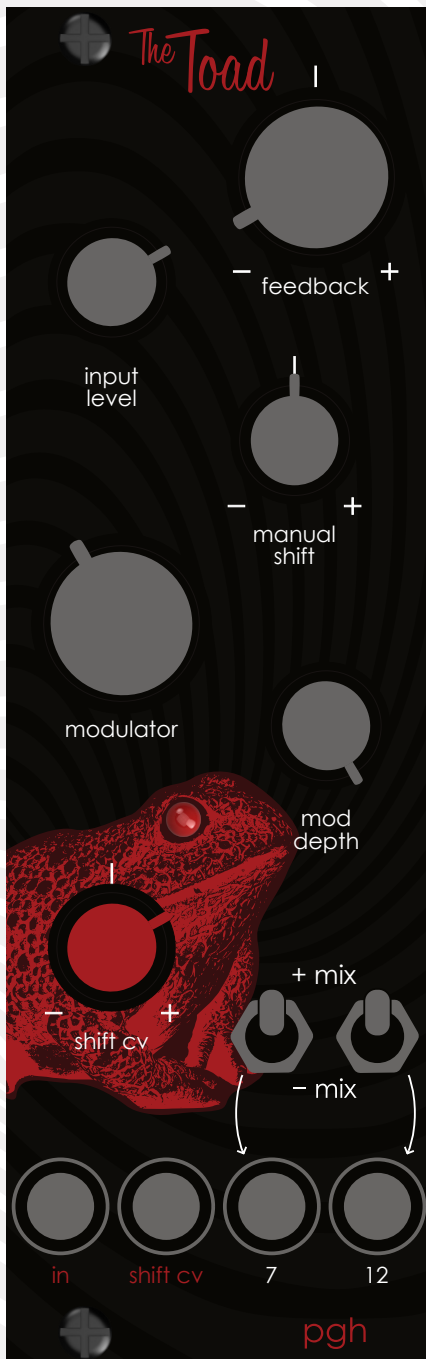


# The Toad

pgh



**A deep and flowing sonic journey. Stare into the eye of the Toad and you will understand.**

The Pittsburgh Modular Toad phase shifter is a gummy, 12 stage, all analog effect module designed to expand on the classic swirls, rich swooshes, and doppler effects associated with the phaser.

The Toad has a single 12 stage audio signal path to create a very rich, full sound. Phased audio outputs are tapped from stages 7 and 12. Each output has a switch that allows the phased signal to be mixed with a positive or inverted dry signal.

An attenuverting CV input and onboard triangle LFO allows for maximum flexibility for custom modulation options. Feedback can be positive or negative and The Toad is more than happy to self oscillate in either direction.

The phase shifter effect is created using a series of all-pass filters. Each all-pass filter stage shifts the phase of the audio signal by  $90^\circ$ . Chaining a series of all-pass filters together creates a larger amount of shift and a richer sounding effect. Mixing the dry, unshifted signal with the wet, shifted signal produces a notch filter effect. The notch filter effect is caused by the interaction of the 2 waves. Some frequencies are canceled out and some are reinforced creating peaks and troughs in the frequency spectrum. For every 2 stages ( $180^\circ$  of shift) another peak and trough is created. More notches in a notch filter the deeper the effect. The real magic of the phase shifter becomes apparent when the center frequency of each stage is modulated using an triangle wave or other modulation source to produce the signature sweeping sound.

**The Toad is a direct descendent of our classic Phase Shifter module. It pairs the original analog phaser stage blocks with a new feedback circuit and streamlined interface.**

## Knobs, and Jacks

**Input Level** Audio signal input attenuator.

**Feedback Attenuverter** Adjusts the amount of feedback within the phase shifter. Turning the knob to the left adds inverted feedback. Turning the knob to the right adds positive feedback. The Toad will self oscillate with the Feedback Attenuverter turned full left or full right.

**Manual Shift Attenuverter** Adjusts the center frequency of the phase shifter. Tuning the knob to 12 o'clock allows for even amount of positive and negative sweep for the modulator and LFO.

**Modulator Knob** Adjusts the rate of the triangle modulation LFO.

**Modulation Depth Knob** Sets the amount of the triangle modulation LFO used to modulate the phase shifter frequency. Full left is off.

**Shift CV Attenuverter** Bi-polar CV input. Turning the knob to the left adds inverted CV. Turning the knob to the right adds positive CV.

**Stage 7 Mix Switch** Sets the polarity of the dry signal mixed with the 7<sup>th</sup> stage output of the phase shifter. Up is positive, down is negative.

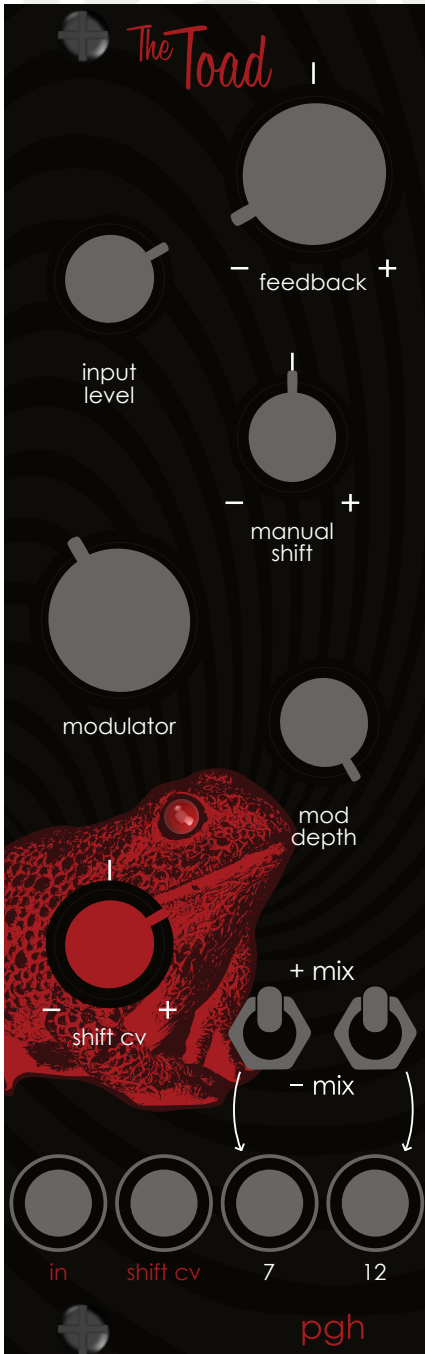
**Stage 12 Mix Switch** Sets the polarity of the dry signal mixed with the 12<sup>th</sup> stage output of the phase shifter. Up is positive, down is negative.

**Input Jack** Audio input.

**Shift CV Jack** CV input used to modulate the frequency.

**Stage 7 Output Jack** Stage 7 mixed audio output.

**Stage 12 Output Jack** Stage 12 mixed audio output.



## Specs

**Size** 8hp

**Depth** 35mm

**Power** +12v 110 mA / -12v 100 mA