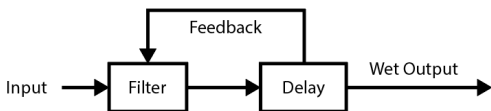


LUNAR DELAY

INTRODUCTION

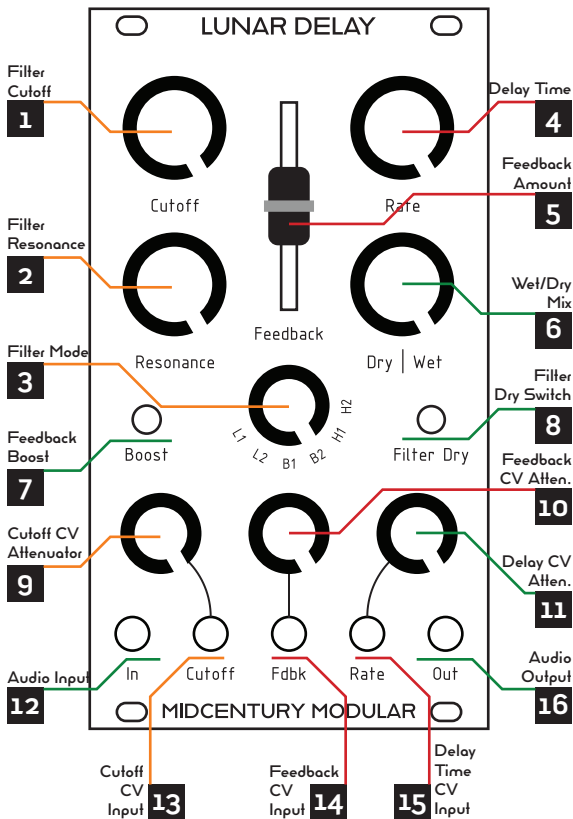
LUNAR DELAY is a combination multi-mode filter and delay effect. Audio is processed first by the filter, and the filtered audio is then delayed. Delayed audio is mixed with the input signal and processed again by the filter/delay in a feedback loop.



The FILTER is based on the AS2164 chip. There are knob controls for filter cutoff and resonance. Cutoff can also be modulated by CV. Six filter modes are available.

The DELAY is based on the PT2399 chip. There are controls for rate, feedback, and wet/dry balance. Rate and feedback can also be modulated by CV. The Boost switch will amplify the feedback signal above unity gain, and the Filter Dry switch determines whether the Dry signal is taken directly from the module's input or from the filter's output (See signal flow diagram on page 3 for more details).

MODULE OVERVIEW

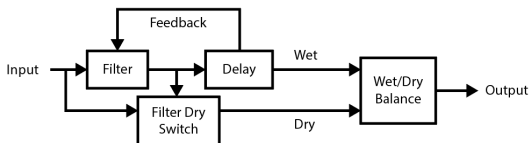


MODULE OVERVIEW

SIGNAL FLOW

Audio enters the module through the Audio Input (12). It is processed through the filter first, and then the delay. The delay's output is attenuated by the Feedback slider (5) and then mixed with the input in a feedback loop. Because the filter removes sound each time an echo passes through it, the Boost switch (7) provides the option for feedback to be amplified up to 150%.

The delay's output is also routed to the Audio Output (16) via the Wet/Dry Mix crossfader (6). The source of the mix's Dry portion is determined by the Filter Dry switch (8). When the switch is down, the Dry signal is taken directly from the Audio Input; when the switch is up, the Dry signal comes from the filter's output. Note that the filter's output is inside the delay's feedback loop - in this position, echoes will always be audible.



MODULE OVERVIEW

FILTER

There are six filter mode available, selected by the rotary switch in the center of the module (**3**):

L1 = 1 Pole Low Pass

L2 = 2 Pole Low Pass

B1 = 1 Pole Band Pass

B2 = 2 Pole Band Pass

H1 = 1 Pole High Pass

H2 = 2 Pole High Pass

The filter's cutoff is controlled with the Cutoff knob (**1**), as well as CV via the Cutoff CV input (**13**) and attenuator (**9**). Resonance is controlled with the Resonance knob (**2**).

DELAY

Delay time is controlled with the Rate knob (**4**) and CV via Rate CV input (**15**) and attenuator (**11**). Delay time ranges from 70ms to 500ms, though you can push beyond that range with CV. Turning the knob clockwise, or applying positive CV, will cause the rate to increase. Extreme negative CV can cause the delay circuit to become glitchy and unpredictable.

MODULE OVERVIEW

DELAY

Feedback is controlled with the Feedback slider (5), and CV via the Fdbk CV input (14) and attenuator (10). The range of the Feedback slider is determined by the Boost switch (7). When the Boost switch is down, the maximum amplitude of audio from the Feedback slider is unity gain; when the Boost switch is up, the maximum amplitude is 150% of unity gain.

INITIAL PATCH

Set each of the four larger knobs and the feedback slider to 50%. Flip both toggle switches down. The filter mode knob can be in any position.

TECHNICAL SPECS

Width: 14 hp +12V: 70 mA
Depth: 35 mm

Audio Input is -5V to +5V

All CV inputs optimized for -5V to +5V

Audio Output is -5V to +5V.