

## CRITTER & GUITARI™- Melody Mill™ Manual

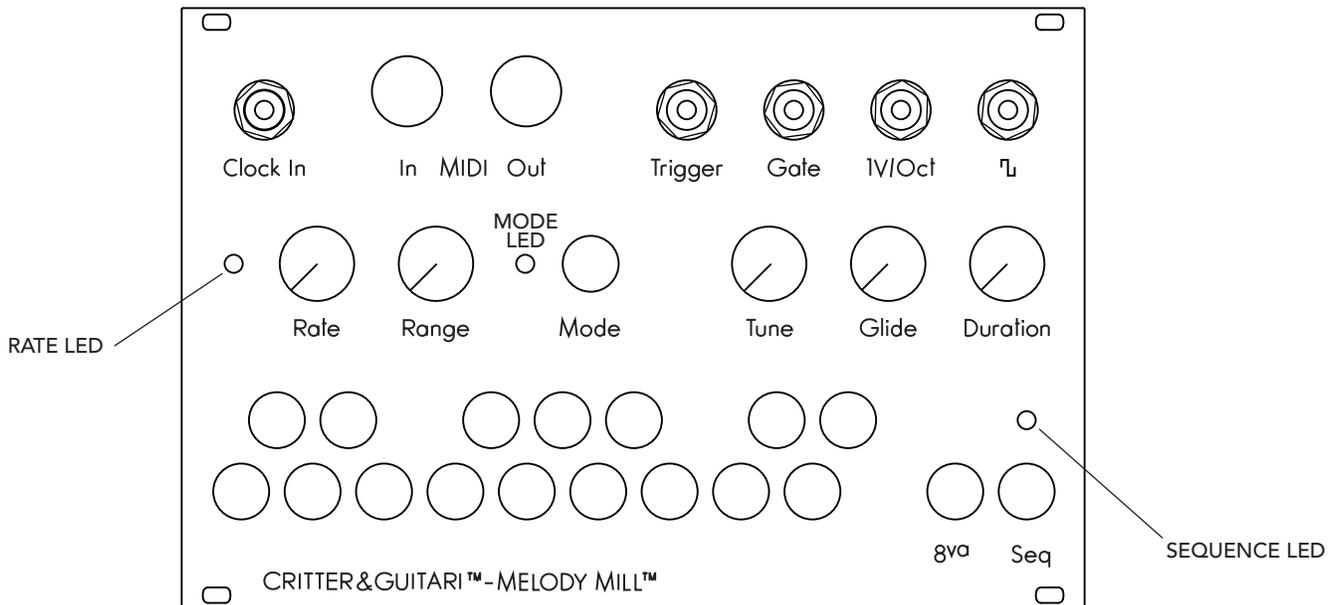
The Critter & Guitari Melody Mill is a note generation module for Eurorack modular synthesizers. It contains a keyboard, CV outputs, CV clock input, built-in arpeggiators, a sequencer, and full MIDI capabilities. The Melody Mill brings the fun of the Pocket Piano to modular setups!

The Melody Mill generates 1-Volt per octave, trigger, and gate control voltages. These signals are used to trigger other synthesizer modules. Notes may be played on the built-in keyboard or received via MIDI. The notes may be used directly to generate the CV signals, or fed through one of the five arpeggiator modes first. Adding to the fun is a hold button and a simple sequencer to record segments of notes. In addition to the CV outputs, the Melody Mill also outputs MIDI of the note it is generating.

A 'smart' arpeggiator clock selects a clock source depending on what is connected to the Melody Mill: CV clock input, MIDI clock, or internal (Rate knob).

In addition to the CV outputs, the module also provides a square wave oscillator output.

### Diagram & Description



### Clock Input CV - 1/8" Control Voltage Input

Control voltage pulses on this input are latched and used as the clock feeding the sequencer and the arpeggiators. An auto-detection algorithm selects this input as the clock source automatically, overriding MIDI or internal clock sources.

### Rate LED - Red / Green / Blue LED

This LED flashes in time and indicates the clock source feeding the sequencer and arpeggiators. The LED flashes every other clock tick. For example: if the clock is beating at the eighth note, the LED flashes on the quarter note. The color indicates the clock source:

● Blue - Internal Clock

● Green - MIDI Clock

○ White - CV Clock

### Rate Knob - Knob

The rate knob sets the clock rate, or clock division depending on the clock source. If the clock source is internal, the knob controls the clock speed from slow to fast. When the clock source is from control voltage input, the knob is disabled. If the clock source is MIDI (24 pulses per quarter note), the knob selects the beat division: eighth note, eighth note triplet, sixteenth note, thirty-second note as in this diagram:



### Range Knob - Knob

The range knob selects the range for the arpeggiators. The range depends on the arpeggiator mode.

### Mode Control - Button + LED

Pressing the button advances the arpeggiator mode. The mode is indicated by the LED to the left of the button. There are six arpeggiator modes available:

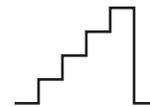
● Single Shot

There is no arpeggiation in this mode:



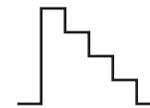
● Up

Notes arpeggiate in increasing octaves up to the range set using the Range knob. Notes are played in the order you hold them down.



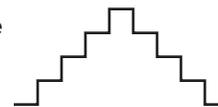
● Down

Notes arpeggiate in decreasing octaves from the range set using the Range knob. Notes are played in the order you hold them down.



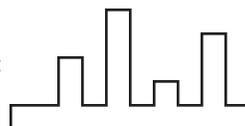
● Pyramid

Notes arpeggiate in increasing octaves up to the range set using the Range knob and then back down to the root note in decreasing octaves. Notes are played in the order you hold them down.



● Alternator

Notes are played in alternating octaves:



● Random

Plays a random note from the ones that are held down. The range is set with the Range knob.

**Tune Knob** - Knob

The tune knob tunes the control voltage output and the square wave output. The tuning of any note being produced may be adjusted continuously over a two octave range by turning the knob.

**Glide Knob** - Knob

Turning this knob the right will increase the glide time (portamento) between notes. Turned down all the way to the left is no glide. Turned all the way to the right is one second of glide.

**Duration Knob** - Knob

This knob controls the gate duration from 2ms (left) to 2 seconds (right). It also affects the duration of the square wave output.

**Trigger Output** - 1/8" CV Output

This CV output sends a +5V, five millisecond pulse for each note.

**1V / Oct Output** - 1/8" CV Output

This CV outputs a 0-10V range at 1 volt per octave. The range of this module is ten octaves.

**Gate Output** - 1/8" CV Output

This CV outputs a +5V signal for the duration of the note.

**Square Wave Output** - 1/8" CV Output

Even though the Melody Mill is mostly for generating CV and MIDI, we provide a frequency output as well. A 5V square wave is output, the frequency is tunable with the Tune knob.

**Keyboard** - Keys

Keys range from C2 (MIDI note #36) to D#3 (MIDI note #51).

**8va Button** - Key

Pressing this button raises the note currently being played by 1 octave.

**Seq / Hold Button and LED** - Key + RGB LED

This button is a combination sequence and hold button. To hold a current note or chord, quickly press and release this button while you are holding down some notes. The LED will turn purple and the notes will be held. The hold is released by pressing any keys other than those that are being 'held' or the button again.

To use the sequencer, press and hold the button until the LED is flashing red. At this point the sequencer is record enabled and it will start recording on the first key press. The LED will remain solid red while recording. To end the recording, press the button again. The sequence may be started and stopped by pressing the button while no keys are being held down.

**MIDI In / MIDI Out**

The Melody Mill sends and receives MIDI notes and receives MIDI clock. Channel 1 is used for receiving and sending notes. MIDI note messages are merged with the Melody Mill's keyboard. Note messages sent out are the same as those coming out of the CV out. When the Gate is turned on, a note ON message is sent. When the Gate is turned off, a note OFF message is sent out.

The Melody Mill's dimensions are 7.56" x 5.03" x 0.9".

We hope you have fun with the Melody Mill! Feel free to let us know how you use it - we are always curious! Click on the links below to get in touch with us:

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