

Metatron v1.0.1

by [Psychic Modulation](#)

Designed for the KVR Developer Challenge 2009 by Jack Resweber using [SynthEdit](#)

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1. Introduction

Metatron is a 2 oscillator phase synth with an arpeggiator that works alongside a gated modulation sequencer for creating unique rhythmic patterns and sounds. The oscillator section uses waveforms that double up to create a phasing effect similar to pulse width for each waveform. This along with a powerful unison detune section and ring modulator give Metatron a rich, fat sound. With the addition of versatile graphical envelopes, LFO's and other modulation options, Metatron becomes an instrument that can create complex sounds, but at the same time keeps things simple without trying to do everything, making it a perfect 'go to' synth for one-finger basslines, rhythmic techno leads, spacey gated pads and other creative arpeggiated sequences.

2. Oscillator Section

The oscillator section displays all the controls that affect the tone's shape and color.



Waveforms: Metatron has two oscillators that can be set to various waveforms by simply clicking on the black box that displays the waveform's name.

Phase: Metatron uses two phase oscillators, which are layered waveforms that can be offset with the 'phase' control to create a phasing effect similar to pulse width.

Sync: Syncs the pitch of the two oscillators, this can be useful when modulating the pitch of oscillator 2 for interesting effects.

Octave: Ranges from -2 through +2 octaves

Tune: Finetunes oscillator 2, when offset from osc 1, will create a wider sound

Level: Adjusts the volume of the two oscillators

Ring: Combines the two oscillators using ring modulation to create a harsh, metallic sound



D-tune: Detunes the voices set by the 'voice' control. The greater the number of voices, the wider the sound. This has a similar effect to detuning with the 'Tune' control above, but can produce much more extreme results.

Drift: This control causes a pitch drifting effect similar to that of analog synthesizers. This can create interesting results with pads and leads, giving them movement and unpredictability.

Stretch: This will expand the width of the detuned voices for yet more extreme widening.

Voices: This is where to set the number of voices in unison to be detuned, ranging from 1-16. The more voices, the wider the sound. However, more voices leads to greater cpu usage.

3. Filter Section

The filter section is used to color the sound of the oscillators, further shaping the tone by making the sound brighter or darker.



Filter Type: Selects which type of filter is in use: Lowpass, Highpass, Bandpass or Ringmod. Ringmod combines a low and high pass filter to create a harsh, yet unpredictable sound that can be useful for experimentation.

Cut: Sets the filter's cutoff frequency according to the filter type

Rez: Adjusts the filter's resonance, defining the peak of the frequency for

creating a sharper sound

Graphical Envelope: The graphical envelope can open and close the filter for each note. [More information on the operation of the envelope can be found here.](#)

Invert: The switch right above the envelope, next to the 'filter type' selector, will invert the envelope, flipping all stages opposite that of the current envelope settings.

Level: This will adjust the level of the envelope

Velo: Adjusts the filter velocity, or how the envelope level is affected by how the keys are pressed

Time: Adjusts the overall time of the envelope by increasing or decreasing all stages respectively

Limit: This switch turns on the limiter, which is post-filter for taming wild resonance using the 'limit' control

Pre: This is a pre-gain control for boosting the volume prior to limiting

4. Envelopes

Metatron uses graphical envelopes that can be shaped by clicking and dragging each point to adjust the attack, decay, sustain and release. The sustain point is the point on the envelope where the black meets the blue. Clicking between points, on the center of each stage will change the contour shape, giving a more specific shape to each stage of the envelope.



Velo: Adjusts the velocity, or how the envelope level is affected by how the keys are pressed

Level: This will adjust the level of the envelope

Time: Adjusts the overall time of the envelope by increasing or decreasing all stages respectively

The modulation envelope has an extra stage for further shaping to create interesting modulation. Click the black selector box above to set the parameter you wish to modulate with this envelope.



5. LFO Section

The LFO section consists of three LFOs, each with its own editing page. Each LFO (Low Frequency Oscillator) can be used to modulate a given parameter. The blue switches select the current LFO editor, while the orange switches turn each LFO on/off. The glowing lights displayed below each switch will dim and brighten along with the flow of modulation. This can be useful for observing which LFO is doing what.



Target: Selects the target parameter to be modulated by the LFO

Shape: Selects the shape that the LFO travels during modulation

Fade: Acts as a small envelope for the LFO. 'Fade In' defines how fast the LFO level will increase per key, while 'Fade Out' defines how fast the LFO level decreases after a key is released. Think of them as attack and release controls for the LFO level.

Rate: The LFO rate can be set to 'Sync' or 'Manual' by using the two small blue switches. 'Sync' will let you define the LFO rate via a tempo synced beat selector, while 'Manual' allows the rate to be adjusted freely by turning the knob from slow to fast.

Retrig: This will retrigger the LFO, causing it to restart its path on each note

Subtle: This switch is used for creating low-level LFO modulation, useful for more subtle effects

Level: Adjusts the level of modulation produced by the LFO

6. Arpeggiator

The arpeggiator creates note patterns that are cycled through the number of octaves specified for as long as a key is held. If multiple keys are held, it will cycle each note in layers. The arpeggiator can be used on it's own, but is designed to be used along with the sequencer for much more interesting results.



Active: Switches the arpeggiator on/off

Arp Type: Selects the direction the arp will travel through the octaves

Beats: Selects the rate of the arpeggio sequence

Velocity: Chooses how velocity will affect each layered note. Set to 'constant' for defining each layered note by the velocity of the first. Set to 'note' for giving each layered note independant velocity, this can create interesting rhythmic sequences with a more human feel.

Octaves: Selects the number of octaves to be cycled by the arpeggiator

7. Sequencer

Metatron's sequencer can be used in a variety of ways. It can function as a simple gate for rhythmic, gated pads, it can be used as a sequenced modulator for various parameters, or it can be used alongside the arpeggiator for creative modulating arpeggiation sequences. To ensure that Metatron's sequencer follows your host and doesn't stray off course from the arpeggiator, make sure that the 'host' switch is active and you will have a perfect sync.

The sequencer functions as a 16 step pattern generator. Each step can be switched on/off for gating effects. Below the orange steps is the sequence modulator that can be defined by adjusting the bars under each step or by simply drawing across the whole range with the mouse for adjusting multiple levels at once. The target parameter to be modulated by the sequencer can be selected in the top right corner.



Active: Switches the sequencer on/off

Host: Ensures that Metatron's sequencer follows your host sequencer. This switch is set to 'on' by default and should be used to ensure that Metatron's arpeggiator and sequencer follow each other perfectly on-beat while your host sequencer is running.

Retrig: This switch will retrigger the sequencer on each note, however should only be used in certain situations, as you may lose sync between the sequencer and arpeggiator.

Rate: Selects the beat of the sequence

Target: Selects the target parameter to be modulated by the sequencer

Level: Adjusts the level of modulation by the sequencer

Glide: Defines the gliding of modulation between steps during the sequence

8. Delay Section

The delay section is of a dual nature, with left/right controls for panning, levels and delay rates.



Active: Switches the delay on/off

Left/Right Panners: Pans the delayed signal left and right, the delay widens when the controls are furthest apart.

Rate: Selects the bpm-synced rate of the left and right delays

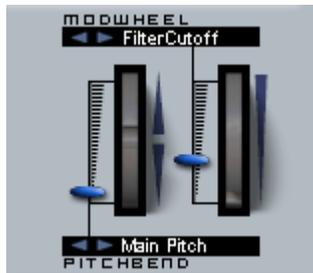
Level: Adjusts the volume levels of the left and right delays

Feed: Controls the feedback of the delay

Damp: Damping tames the feedback, applying a lowpass filter afterward

9. Modwheel And Other Features

Metatron's Pitchbender and Modwheel can both be assigned to control different parameters giving you even more modulation control, which can be especially useful in live situations.



Click on the black selector box that corresponds to each control in order to select its target parameter. The level sliders on each side adjust their modulation levels.



The group of controls on the bottom section are for various universal functions.

Mono: Switches the synth into Mono mode, switch this off to remain in polyphonic mode

Porta: Adjusts the portamento time, or the time it takes each note to glide into the pitch range of the next

Pan: Adjusts the overall left/right panning of the synth

Freq/Boost: These controls function for overall bass boosting. 'Freq' adjusts the bass frequency while 'boost' increases the level of that frequency. Setting 'boost' to -0- will bypass this effect.

Volume: Adjusts the overall volume of the synth

Credits

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