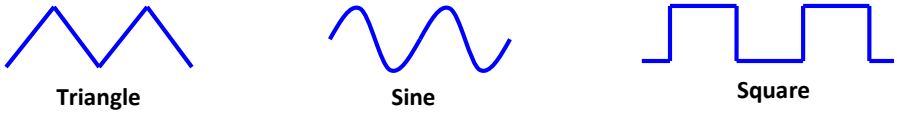
ALGORITHMS		PRIMARY (Turn)			SECONDARY (Twist)			Tap/Clock
		SPEED	DEPTH	TWEAK	SP1	SP2	SP3	
AMPLITUDE	Tremolo	Speed (BPM)	Depth	Glitch	Wave-Shape	Mono | Stereo Par	Gain	Yes
	Harmonic Tremolo	Speed (BPM)	Depth	Frequency	Wave-Shape	Mono | Stereo Par	Subtle | Deep	Yes
	Chopper	Speed (BPM)	Depth	Duty Cycle	Normal | Stutter	Mono | Stereo Par	Gain	Yes
	Dynamic Tremolo	Speed	Depth	Sens	Wave-Shape	Mono | Stereo Par	Dynamic Param	Yes
	Slow Volume	Echo Time	Echo Level	Swell Time	Tone	Feedback	Threshold	Yes
FILTERS	Filter	Speed	Depth	Mix	Mode	Wave-Shape	Sens	Yes
	Envelope Filter	Sens	Depth	Mix	Direction	Filter Type	Q Curve	-
	S&H Filter	Speed	Depth	Mix	Glissando	Filter Type	Q Curve	Yes
	Formant	Speed / Manual	Emphasis	Mix	Phrases	Glissando	Q Curve	Yes
	Wah Filter	Frequency	Depth	Mix	Taper	Filter Type	Q Curve	-
SWIRLS & SHIMMERS	Dimension C	Speed	Depth	Mix	Tone	Predelay	-	-
	Chorus	Speed	Depth	Mix	Low Cut	High Cut	-	-
	Tri-Chorus	Speed	Depth	Mix	Low Cut	High Cut	-	-
	Detune	Cents (-)	Cents (+)	Mix	Tone	Stereo Spread	Modulation	-
	Dyna Flanger	Speed	Delay	Mix	Static | Dynamic	Width/Sens	Feedback	-
	Tape Flanger	Speed	Depth	Mix	dditive | Subtracti	Wow & Flutter	Trigger	-
	S&H Flanger	Speed	Resonance	Mix	dditive | Subtracti	Crisp | Gliding	Timbre	Yes
PHASE	Phaser	Speed	Depth	Mix	Shape	tages (2 | 4 | 6 | 8	Feedback	Yes
	Envelope Phaser	Sens / Manual	Depth	Mix	nvelope | Manua	tages (2 | 4 | 6 | 8	Feedback	-
	S&H Phaser	Speed	Depth	Mix	Glissando	tages (2 | 4 | 6 | 8	Feedback	Yes
	UniVibe	Speed	Depth	Mix	Chorus | Vibrato	Vibe	Low-End Throb	Yes
MISCELLANEOUS	Octave	Sub-Octave	Octave	Dry	Reverb Delay	Reverb Decay	Reverb Level	-
	Vibrato	Speed	Depth	Sens	tandard | Dynami	Wave-Shape	Rise Time	-
	Ring Modulator	LFO Speed	Shift	Mix	LFO Depth	Wave-Shape	Tone	-
	Parametric EQ	Frequency	Gain	Volume	Bass	Treble	Q	-
	Bit Crusher	Sampling	Crush	Mix	Input Gain	-	Volume	-
	Pressed Junk	Speed	Depth	Mix	Gain	Wave-Shape	Tone	-
	Record Antics	Speed	Depth	Mix	Fidelity	Sample Rate	Vinyl Dust	-
	Phono Filters	Saturation	Resonance	Volume	Mode	N/P Density	Filters	-
	Horn (Rotary)	Slow Speed	Fast Speed	Volume	Acceleration	Mic Distance	Pre-drive	-
	Drum (Rotary)	Slow Speed	Fast Speed	Volume	Acceleration	Stereo Spread	Pre-drive	-
SEQUENCER	Arp Tremolo	Speed (BPM)	Depth	Chopiness	Sequence	Panning	Gain	Yes
	Arp Filter	Speed (BPM)	Depth	Mix	Sequence	Glissando	Filter Type	Yes
	Arp Formant	Speed (BPM)	Emphasis	Mix	Sequence	Voicing	Q Curve	Yes
	Arp Flanger	Speed (BPM)	Depth	Mix	Sequence	Timbre	Feedback	Yes
	Arp Phaser	Speed (BPM)	Feedback	Mix	Sequence	tages (2 | 4 | 6 | 8	Feedback	Yes
	Arp RingMod	Speed (BPM)	Shift	Mix	Sequence	Base Frequency	Tone	Yes
	Arpeggiator	Speed (BPM)	Level	Dry	Sequence	Scale	Direction	Yes

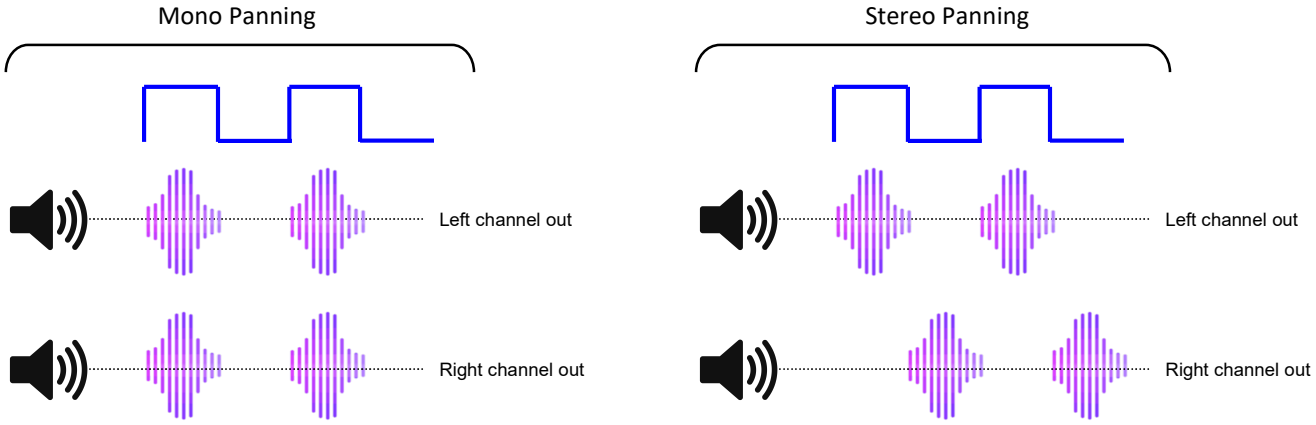
01. Tremolo

< Amplitude >

Tap-tempo / Midi Clock
YES

This algorithm modulates the amplitude of the incoming signal, resulting in periodic volume variation. There are 4 modulating wave shapes to choose from, and each one gives distinct tremolo characteristic.



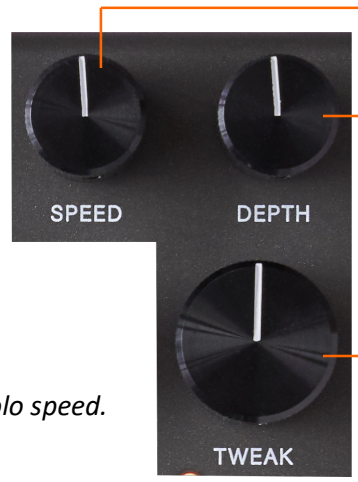


PRIMARY

Tremolo **Speed** (bpm)

Tremolo **Depth**
Sets the intensity of the tremolo effect.

[Tweak] = Glitch
Adds random variation to the tremolo speed.



SECONDARY

SP1 - Wave-Shape :
- Triangle
- Sine
- Square

SP2 - Panning :
- Mono
- Stereo

SP3 - Gain : [0 - 7]
Use it to make fine volume adjustment as needed.

☞ `Glitch` parameter randomize the tremolo speed, this adds an interesting and unpredictable dynamics to the otherwise static tremolo sound.

02. Harmonic Tremolo

< Amplitude >

Tap-tempo / Midi Clock
YES

Harmonic tremolo splits the incoming signal into two frequency bands : *Low-band* and *High-band*, then applies tremolo to the two bands in the opposite direction, that is, you hear the low-band signal and high-band signal alternatingly. The resulting sound is a uniquely lush throbing vibe with a touch of *phasing*.

To spice things up further, we've added a Frequency parameter which controls the center frequency at which the low-band and the high-band components intersect, this gives a wide ranging tonal variety.

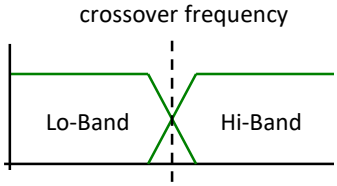
Finally, two 'vibe' modes : *Subtle* and *Deep* provide additional flexibility in shaping the harmonic bliss. Oh hey, don't forget to try the stereo panning mode!

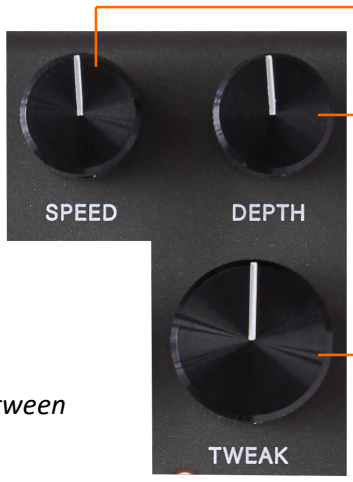
PRIMARY

Tremolo **Speed** (bpm)

Tremolo **Depth**
Sets the intensity of the tremolo effect.

[Tweak] = Frequency
Controls the crossover frequency between the Low band and the High band.





SECONDARY

SP1 - Wave-Shape :
- Triangle
- Sine
- Square

SP2 - Panning :
- Mono
- Stereo

SP3 - Vibe :
- Subtle
- Deep

03. Chopper

< Amplitude >

Tap-tempo / Midi Clock
YES

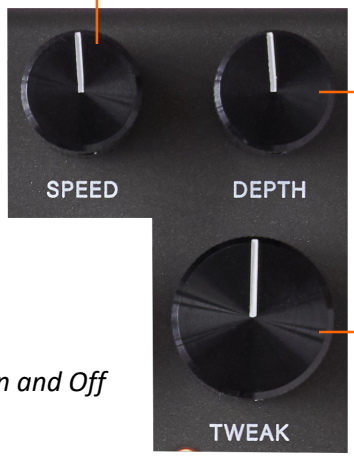
Chopper is a hard cutting square-wave tremolo, with variable *Duty-Cycle* parameter. Duty-cycle determines the proportion between the on and off period of the modulation waveform, this takes you anywhere from a mild throbing to helicopter-like sound.

PRIMARY

Tremolo **Speed** (bpm)

Tremolo **Depth**
Sets the intensity of the tremolo effect.

[Tweak] = Duty Cycle
Controls the balance between the On and Off period of the modulation waveform.

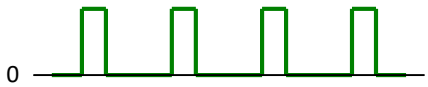


SECONDARY

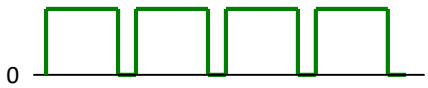
SP1 - Mode :
- Normal
- Stutter

SP2 - Panning :
- Mono
- Stereo

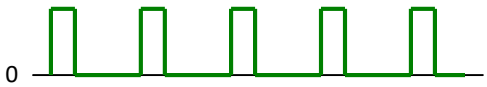
SP3 - Gain : [0 - 7]
Use it to make fine volume adjustment as needed.



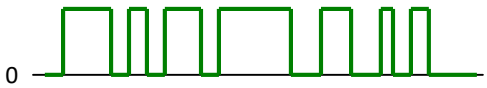
low duty cycle (helicopter sound)



high duty cycle



Normal



Stutter

Stutter mode randomizes the duty cycle, this adds an unpredictable, yet interesting rhythmic groove to the otherwise static hard tremolo sound.

Pairs very well with Phasers, Octave, Flangers.

04. Dynamic Tremolo

< Amplitude >

Tap-tempo / Midi Clock
YES

Dynamic Tremolo adds dynamic elements to the *Speed* or the *Depth* parameter.

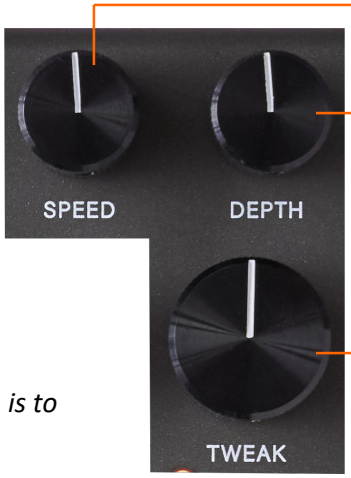
- Dynamic Speed (+) and Dynamic Speed (-) : tremolo speed follows your playing dynamics.
- Dynamic Depth (+) and Dynamic Depth (-) : tremolo depth follows your playing dynamics.

PRIMARY

Tremolo **Speed**

Tremolo **Depth**
Sets the intensity of the tremolo effect.

[Tweak] = Sensitivity
Controls how sensitive the algorithm is to your picking dynamics.



SECONDARY

SP1 - Wave-Shape :
- Triangle
- Sine
- Square

SP2 - Panning :
- Mono
- Stereo

SP3 - Dynamic Parameter
- Dynamic Speed +
- Dynamic Speed -
- Dynamic Depth +
- Dynamic Depth -

In ***Dynamic Speed*** modes, use the Speed knob (or tap-tempo) to set your base speed.
In ***Dynamic Depth*** modes, use the Depth knob to set your base depth.

Adjust Sensitivity to suit your guitar's pickup output level. Dial it up of you feel the algorithm is not responding enough to your picking dynamics, and dial it down if you feel the algorithm is over-reacting to you picking dynamics.

05. Slow Volume

< Amplitude >

Tap-tempo / Midi Clock
YES

This algorithm slows down the attack of the input signal's envelope, creating a 'volume swell' effect that is normally created using the guitar's volume knob or a volume pedal.

One thing we discovered while designing this algorithm is that things get exponentially more interesting when we have echoes following this volume-swelled sound. This combination produces huge layers of sound that fills up time and space. We have thus added a full-featured echo effect in this algorithm.

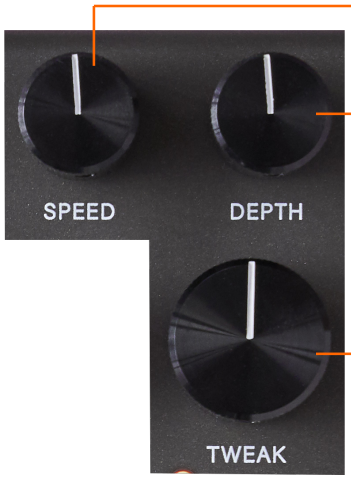
PRIMARY

[Speed] = Echo Time
Range : 0 to 1 second.

[Depth] = Echo Level

[Tweak] = Swell Time
Controls the time it takes for the swell to reach maximum value.

SECONDARY



SP1 - Echo Tone :
- Clear
- Warm
- Warmer
- Dark

SP2 - Echo Feedback : [0 - 15]

SP3 - Threshold : [0 - 7]

Setting the Threshold parameter
When playing single-notes phrases you will most likely set the `Swell Time` parameter low to get quickly rising volume, in this case set Threshold low for best result.

When playing with long swell you set the `Swell Time` parameter high to get slowly rising volume, set `Threshold` high to get the best result.

Is it possible to get only the Echo/Delay effect?
Yes it's possible, simply set `Swell Time` to zero, there will be no volume swells, and you get only the echo effect. Now you have a full-featured echo algorithm which you can use stand alone, or paired with the other on-board modulation algorithms.

This algorithm creates the volume swell by detecting the onset/attack of the incoming signal, it works best with clean and precise single note picking or clean chord strum (not appregiated).

06. Filter

< Filters >

Tap-tempo / Midi Clock
YES

This algorithm filters the incoming signal with a resonant lowpass filter whose center frequency is modulated by an LFO.

There are also two 'Dynamic modes' where the speed of the modulation follows your picking dynamics.

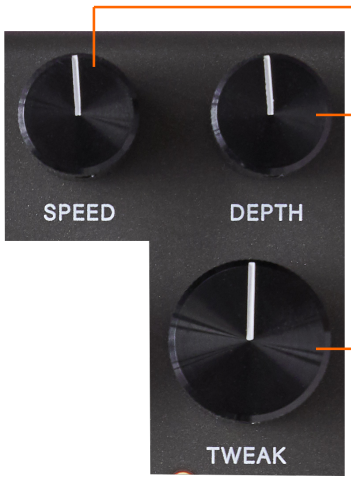
- Dynamic Speed - : speed slows down as picking strength increases.
- Dynamic Speed + : speed picks up as picking strength decreases.

PRIMARY

Tremolo **Speed**

Filter **Depth (Frequency Range)**

[Tweak] = Mix
Controls the wet and dry mix.



SECONDARY

SP1 - Mode :
- Static LFO
- Dynamic Speed -
- Dynamic Speed +

SP2 - Wave-Shape :
- Triangle
- Rising Sawtooth
- Falling Sawtooth
- Shark Fin

SP3 - Sensitivity : [0 - 15]

☞ In ***Dynamic Speed*** modes, use the Speed knob (or tap-tempo) to set your base speed.

☞ In ***Dynamic Speed*** modes, adjust Sensitivity to suit your guitar's pickup output level. Dial it up of you feel the algorithm is not responding enough to your picking dynamics, and dial it down if you feel the algorithm is over-reacting to you picking dynamics.

In ***Static LFO*** Mode the Sensitivity parameter is not applicable.

07. Envelope Filter

< Filters >

Tap-tempo / Midi Clock
NO

This algorithm filters the incoming signal with a resonant filter whose center frequency is modulated by your picking dynamics, you may also know this as the 'Touch-Wah'.

Four distinct filter types offer wide ranging evelope filter sound variety : the classic *Lowpass*, the wah-wah *Bandpass*, the bright and lively *Highpass*, and the warm and articulate *Peaking*.

PRIMARY

[Speed] = Sensitivity

Filter **Depth (Frequency Range)**

[Tweak] = Mix
Controls the wet and dry mix.

SECONDARY

SP1 - Direction :
- Up
- Down

SP2 - Filter Type :
- Lowpass
- Bandpass
- Highpass
- Peaking

SP3 - Q Curve : [0 - 3]
Sets the 'sharpness' of the filter resonance.
Higher value = more pronounced filtering.

☞ In ***Envelope*** mode, adjust Sensitivity to suit your guitar's pickup output level. Dial it up of you feel the algorithm is not responding enough to your picking dynamics, and dial it down if you feel the algorithm is over-reacting to you picking dynamics.

The `Direction` parameter controls the sweep direction of the filter.

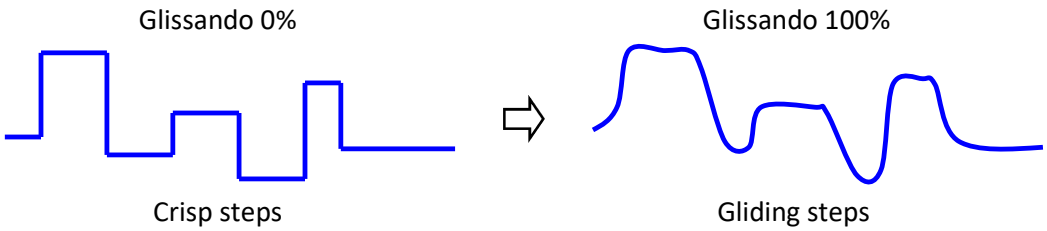
08. Sample & Hold Filter

< Filters >

Tap-tempo / Midi Clock
YES

This is the 'stepped' version of the basic FILTER algorithm. The LFO signal is a randomized step waveform which gives a groovy and unpredictable stepping filter sounds.

The *Glissando* parameter provides control over the smoothness of the steps.



PRIMARY

Modulation **Speed**

Filter **Depth (Frequency Range)**

[Tweak] = Mix
Controls the wet and dry mix.

SECONDARY

SP1 - Glissando :
- 0%
- 50%
- 75%
- 100%

SP2 - Filter Type :
- Lowpass
- Bandpass

SP3 - Q Curve : [0 - 3]
Sets the 'sharpness' of the filter resonance.
Higher value = more pronounced filtering.

⚠ The random nature of the step modulation waveform means this algorithms does not have a steady tempo; therefore, even though you can set the speed via tap-tempo or midi clock you may not get the 'synced-tempo' feel in the normal sense.

09. Formant

< Filters >

Tap-tempo / Midi Clock
YES

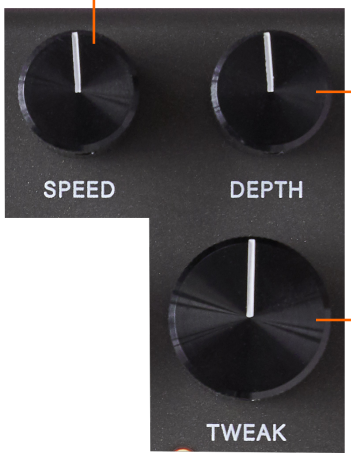
This algorithm applies a set of Formant filters, which mimic the characteristic of human vocal tract. Any signal that goes through this algorithm will sound as if it was radiated through a human's mouth. Spectrally-rich signal such as an overdriven guitar sound excites these filters the best, therefore the optimal placement is *after (post)* overdrive or distortion effect.

PRIMARY

Modulation **Speed**

[Depth] = Emphasis

[Tweak] = Mix
Controls the wet and dry mix.



SECONDARY

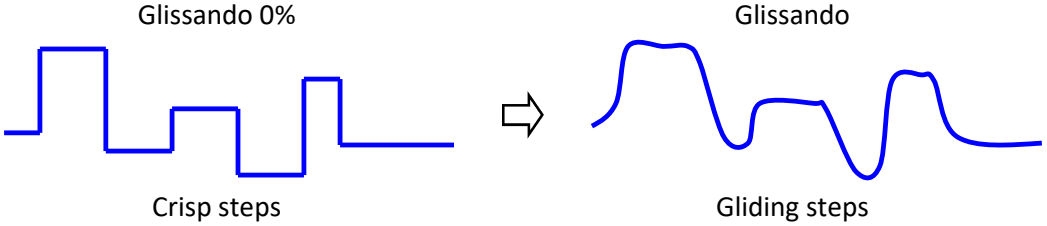
SP1 - Phrases :
- Phrase 1
- Phrase 2
- Phrase 3
- Phrase 4
- Phrase 5
- Garbled
- Random
- Manual

SP2 - Glissando :
- 0%
- 50%
- 75%
- 100%

SP3 - Q Curve : [0 - 3]
Sets the 'sharpness' of the filter resonance. Higher value = more pronounced voicing.

☞ In ***Manual*** mode the formant frequencies of the filters are controlled by the Speed knob.
Tips : Use an expression pedal (mapped to Speed knob) in Manual mode, and you get yourself a wah effect with human vocal flavors.

☞ For the first 5 modes (*Phrase 1* trough *Phrase 5*) the filters are modulated using smooth waveforms. For the *Garbled* and *Random* modes the filters are modulated using stepped waveforms, this is where the `Glissando` parameter takes effect.



10. Wah Filter

< Filters >

Tap-tempo / Midi Clock
YES

A resonant filter with manually-adjustable resonance frequency, controllable via knob, expression pedal, or MIDI. Map an expression pedal to control the resonance frequency and you get yourself a wah pedal, with adjustable Q factor, sweep taper, and filter type (*lowpass, bandpass, highpass*, and *peaking*).

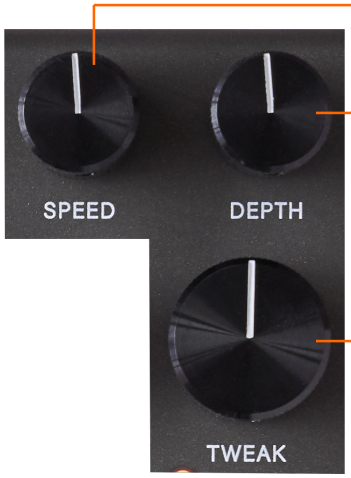
When used without an expression pedal, the algorithm can be used to impart a 'parked wah' tone shaping on your sound.

PRIMARY

Resonance Frequency

Filter **Depth (Frequency Range)**

[Tweak] = Mix
Controls the wet and dry mix.



SECONDARY

SP1 - Taper :
- Type 1
- Type 2
- Type 3
- Type 4

SP2 - Filter Type :
- Lowpass
- Bandpass
- Highpass
- Peaking

SP3 - Q Curve : [0 - 3]
Sets the 'sharpness' of the filter resonance. Higher value = more pronounced voicing.

11. Dimension

< Swirls >

Tap-tempo / Midi Clock
NO

This algorithm is a re-creation of the Roland® DC-2 Dimension C pedal, a highly revered effect unit with an unmistakably beautiful sound. DC-2 is basically a chorus pedal, with one important distinction : it tends to hide the pitch modulation and periodic nature of conventional chorus effects, thus allows pronounced chorusing without the pitch wobble. A signal that goes into this pedal will come out sounding big, spacious, with a sense of depth - sort of adding 'dimensions' to the sound.

Instead of providing four pre-set sounds as in the original pedal, we opted to provide full control over the *Speed* and *Depth* parameters. For even greater sound sculpting we have also added 3 tonal flavors and predelay control.

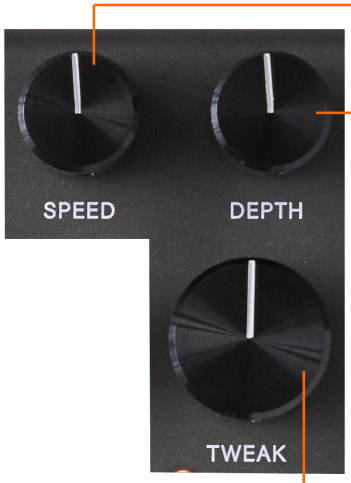
This is a subtle effect, but it's indeed the strength of the algorithm - it doesn't mess with your tone, just make it 'dimensional'. Works best in stereo.

PRIMARY

Modulation **Speed**

Modulation **Depth**

[Tweak] = Mix
Controls the wet and dry mix.



SECONDARY

SP1 - Tone :
- Warm
- Natural
- Vibrant

SP2 - Predelay :
- 6 ms
- 8 ms
- 10 ms
- 12 ms
- 14 ms
- 16 ms
- 18 ms
- 20 ms

SP3 - < n/a >
reserved for future development

12. Chorus

< Swirls >

Tap-tempo / Midi Clock
NO

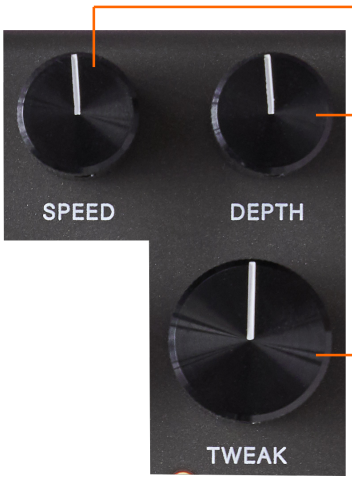
A classic chorus that is inspired by a couple of select vintage analog chorus pedals. Use this algorithm to add fullness and achieve rich, shimmering sound of the 80's, or maybe just a touch of subtle pitch movement.

PRIMARY

Modulation **Speed**

Modulation **Depth**

[Tweak] = Mix
Controls the wet and dry mix.



SECONDARY

SP1 - Low Cut : [0 - 7]

SP2 - High Cut : [0 - 7]

SP3 - < n/a >
reserved for future development

13. Tri-Chorus

< Swirls >

Tap-tempo / Midi Clock
NO

Tri-Chorus has the same parameters arrangement as the Chorus algorithm.

14. Detune

< Swirls >

Tap-tempo / Midi Clock
NO

This algorithm detunes the sound a few cents up and a few cents down, then mixes them with the original sound to create a lush chorus-like sound but without the pitch wobble.

You can adjust the *lower* pitch (indicated by - cents) and the *upper* pitch (indicated by + cents) independently.

The `Stereo Spread` parameter controls the panning of the detuned components. At minimum value the detuned components are mixed equally for both left and right channel, while at maximum value the detuned components are totally separated and sent to its respective output channel, creating a stereo widening effect.

PRIMARY

[**Speed**] = **Cents (-)**
Sets the amount of pitch shift in the downward direction.

[**Depth**] = **Cents (+)**
Sets the amount of pitch shift in the upward direction.

[Tweak] = Mix
Controls the wet and dry mix.

SECONDARY

15. Dyna Flanger

< Swirls >

Tap-tempo / Midi Clock
NO

This is our take on the classic Flanger effect, the most versatile of all modulation effects.
The 4 available modes :

- ***Static*** : static modulation by LFO (standard flanger).
- ***Dynamic Width (+)*** : the flanging sweeps wider as picking strength increases.
- ***Dynamic Width (-)*** : the flanging sweeps wider as picking strength decreases.
- ***Dynamic Sweep*** : the flangin sweep follows the picking dynamics.

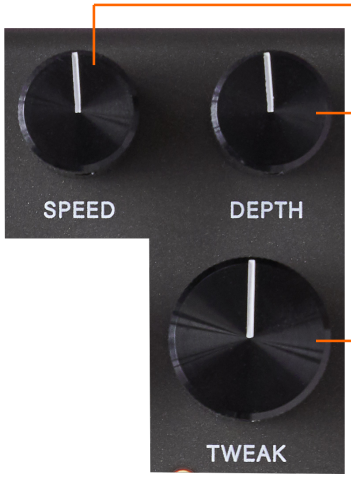
This versatile algorithm may take a little more tweaking to fully understand what the parameters are doing, and what it's capable of, but if you take the time you'll be rewarded :)

PRIMARY

Modulation **Speed**

[**Depth**] = **Delay (Manual)**

[Tweak] = Mix
Controls the wet and dry mix.



SECONDARY

SP1 - Mode :
- Static LFO
- Dynamic Width (+)
- Dynamic Width (-)
- Dynamic Sweep

SP2 - Width : [0 - 15]
(in Static mode)

Sensitivity : [0 - 15]
(in Dynamic mode)

SP3 - Feedback : [-8 to +7]

Resonance (Feedback) parameter
The resonance parameter goes from maximum *(-) feedback* to maximum *(+) feedback.*
- Set the knob at midpoint for *zero feedback* (no resonance).
- Turn clockwise for more *positive-feedback* resonance.
- Turn counter-clockwise for more *negative-feedback* resonance.

Delay (Manual) parameter
This parameter provide manual control the delay time shift of the flanger.
Usage : set `Width` to zero, then use the `Delay` parameter to manually sweeps the flanger. This can be done either using an expression pedal or ramping function (mapped to the Depth knob).

16. Tape Flanger

< Swirls >

Tap-tempo / Midi Clock
NO

This algorithm is an emulation of the way flanging was done in the old days using tape machine, you may also know this as the Thru-Zero Flanger. While staying true to the concept, we put in our own interpretation with modern parameters and implementation to make sure the algorithm is as fun to use as it is great sounding.

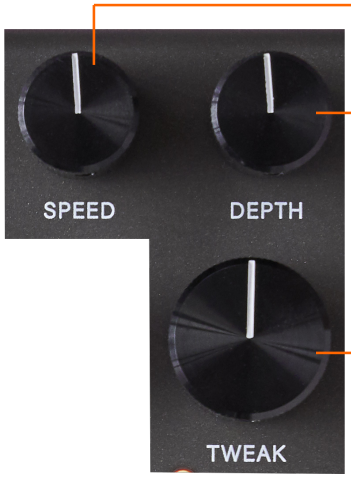
PRIMARY

Modulation **Speed**

Modulation **Depth**

[Tweak] = Mix
Controls the wet and dry mix.

SECONDARY



SP1 - Mode :
- Additive
- Subtractive

SP2 - Wow & Flutter :
- Off
- On

SP3 - Trigger :
- LFO
- Manual

Manual Trigger
In Manual trigger mode the flanger sweep is controlled via the Depth knob. This provides a way to add an expressive touch to your playing -> use the ramping* function (mapped to the Depth knob) to manually trigger the flanger sweep.

** See the user manual (chapter 1.10, page 9) for information on the ramping feature.*

Mix Parameter
Set mix to 100 to achieve maximum signal cancellation, back if off to reduce the signal cancellation.

17. Sample & Hold Flanger

< Swirls >

Tap-tempo / Midi Clock
YES

This is the 'stepped' version of the flanger algorithm. The LFO signal is a randomized step waveform which gives a groovy and unpredictable stepping flanging sounds.

The *Timbre* parameter alters the voicing of the resonance, set to low values for for natural voicing, and set to higher values for a more accentuated voicing.

This algorithm offers an impressively wide stereo image, try it over a stereo amp or headphones!

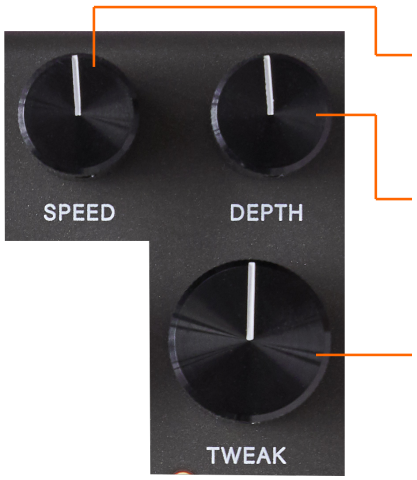
PRIMARY

Modulation **Speed**

[**Depth**] = **Resonance**

[Tweak] = Mix
Controls the wet and dry mix.

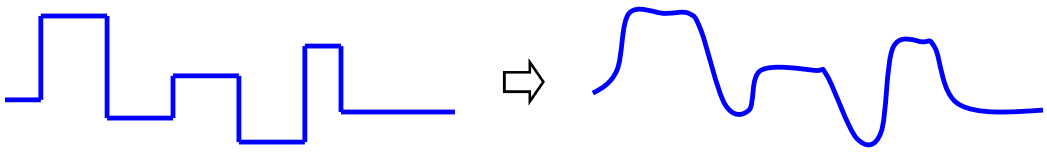
SECONDARY



SP1 - Mode :
- Additive
- Subtractive

SP2 - Steps :
- Crisp
- Gliding

SP3 - Timbre : [0 - 7]



Crisp steps

Gliding steps

⚠ The random nature of the step modulation waveform means this algorithms does not have a steady tempo; therefore, even though you can set the speed via tap-tempo or midi clock you may not get the 'synced-tempo' feel in the normal sense.

18. Phaser

< Phase >

Tap-tempo / Midi Clock
YES

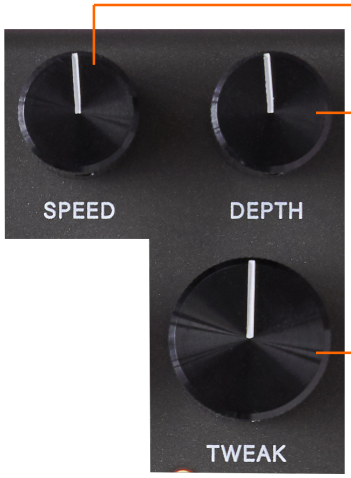
This classic phaser algorithm is modelled after the MXR® Phase 90 pedal, which uses 4-stage phase-shifting elements to create smooth and swirly phasing sounds. We extended the sonic possibilities by including the subtler 2-stage mode and the more radical 6-stage and 8-stage phasers, you can go from smooth and subtle all the way to thick and intense phasing sounds. The Resonance (feedback) control provides continuous adjustment of the phasing intensity.

PRIMARY

Modulation **Speed**

Modulation **Depth**

[Tweak] = Mix
Controls the wet and dry



SECONDARY

SP1 - Wave-Shape :
- Sine
- Square

SP2 - Stages :
- 2 Stages
- 4 Stages
- 6 Stages
- 8 Stages

SP3 - Resonance : [0 - 7]

19. Envelope Phaser

< Phase >

Tap-tempo / Midi Clock
NO

This is the 'dynamic' version of the basic PHASER algorithm, where the phase notch sweeps follows your picking dynamics. As with other algorithms that relies on signal dynamics, the optimal placement is *before (pre)* overdrive or distortion effect. The four stage modes and resonance control are still available.

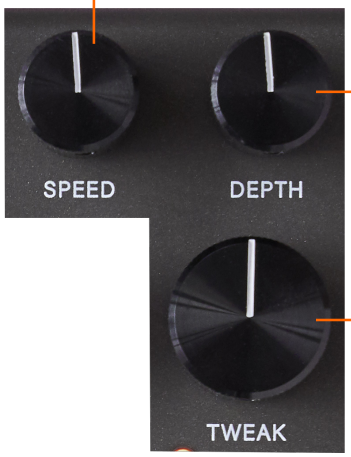
PRIMARY

[Speed] = Sensitivity
(in *Envelope* mode)

= Frequency
(in *Manual* mode)

Modulation **Depth**

[Tweak] = Mix
Controls the wet and dry mix.



SECONDARY

SP1 - Mode :
- Envelope
- Manual

SP2 - Stages :
- 2 Stages
- 4 Stages
- 6 Stages
- 8 Stages

SP3 - Resonance : [0 - 7]

In ***Envelope*** mode, adjust Sensitivity to suit your guitar's pickup output level. Dial it up of you feel the algorithm is not responding enough to your picking dynamics, and dial it down if you feel the algorithm is over-reacting to you picking dynamics.

In ***Manual*** mode the center frequencies of the phaser notch is controlled by the Speed knob. Tips : Use an expression pedal (mapped to Speed knob) in Manual mode, and you get yourself a "sweep notches" effect, reminiscent of a wah.

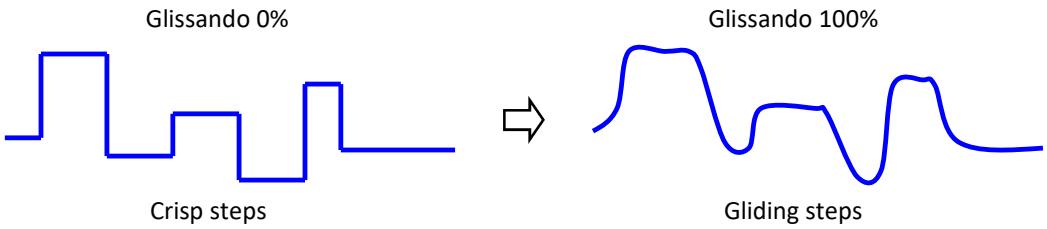
20. Sample & Hold Phaser

< Phase >

Tap-tempo / Midi Clock
YES

This is the 'stepped' version of the basic PHASER algorithm. The LFO signal is a randomized step waveform which gives a groovy and unpredictable stepping phaser sounds.

The *Glissando* parameter provides control over the smoothness of the steps.

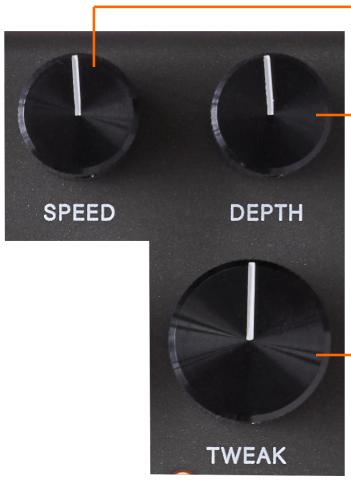


PRIMARY

Modulation **Speed**

Modulation **Depth**

[Tweak] = Mix
Controls the wet and dry mix.



SECONDARY

SP1 - Glissando :
- 0%
- 50%
- 75%
- 100%

SP2 - Stages :
- 2 Stages
- 4 Stages
- 6 Stages
- 8 Stages

SP3 - Resonance : [0 - 7]

⚠ The random nature of the step modulation waveform means this algorithms does not have a steady tempo; therefore, even though you can set the speed via tap-tempo or midi clock you may not get the 'synced-tempo' feel in the normal sense.

21. Univibe

< Phase >

Tap-tempo / Midi Clock
YES

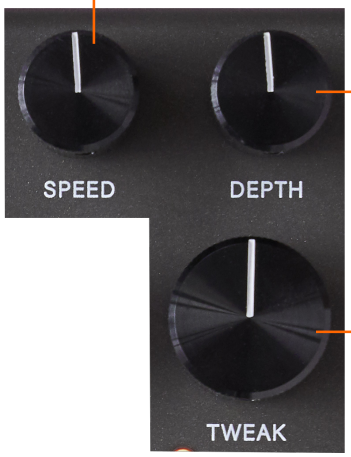
A re-creation of the classic Uni-vibe® effect. Technically this is similar to a 4-stage phaser, but the unique phase modulation sweeps created by the use of light bulbs and *light-dependent resistors* LDRs (in the original pedal) gives its signature sound, the sounds that was made huge by Jimi Hendrix, Robin Trower, and others in the 60's and 70's. While originally designed as a rotary speaker effect simulation (not so close) pedal, it became an effect its own right.

PRIMARY

Modulation **Speed**

Modulation **Depth**

[Tweak] = Mix
Controls the wet and dry mix.



SECONDARY

SP1 - Mode :
- Chorus
- Vibrato

SP2 - Vibe :
- Original
- Extended

SP3 - Low End Throb :
- Full
- Reduced

22. Octave Shifter

< Miscellaneous >

Tap-tempo / Midi Clock
NO

This algorithm synthesizes polyphonic octave-up and octave-down component of the input signal and blends these components with the direct signal to produce the composite output signals. The output level of each component are independently adjustable for maximum flexibility.

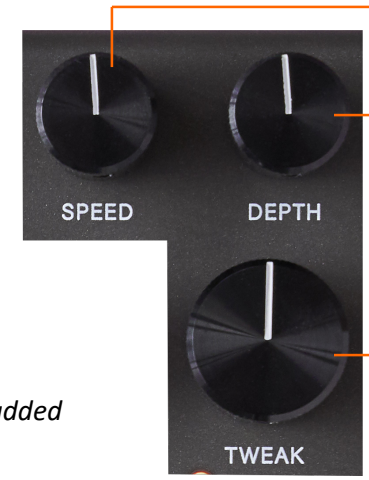
On top of this we added a reverb algorithm which smooths out the residual artifacts of the pitch-shifting algorithm. Beyond the smoothing effect, it turns out pitch-shifting and reverbs go really well together, we found them to be natural pair that complement each other.

PRIMARY

[Speed] = Sub-Octave
Controls the amount of sub-octave component added to the mix.

[Depth] = Octave
Controls the amount of octave component added to the mix.

[Tweak] = Dry
Controls the amount of dry signal added to the mix.



SECONDARY

SP1 - Reverb Delay :
- 0 ms
- 20 ms
- 40 ms
- 60 ms

SP2 - Reverb Decay : [0 - 15]

SP3 - Reverb Level : [0 - 15]

Reverb only?
By muting the Sub-Octave and Octave components, you get only the dry signal + the reverb. Now you have a great sounding reverb algorithm which you can use stand alone, or paired with the other on-board modulation algorithms.

23. Vibrato

< Miscellaneous >

Tap-tempo / Midi Clock
NO

This algorithm shifts the pitch of the sound up and down to create a vibrato effect. It can go from really subtle to extreme wide vibrato. It has 2 operation modes :

- ***Standard*** : static vibrato effect.
- ***Dynamic*** : intensity (depth) of the vibrato is surpressed as signal level is high, and then comes back up when signal level ceases. This is a very powerful mode, as it allows you to apply deep vibrato only on the tails of a phrase, leaving the main part of the phrase much less affected.

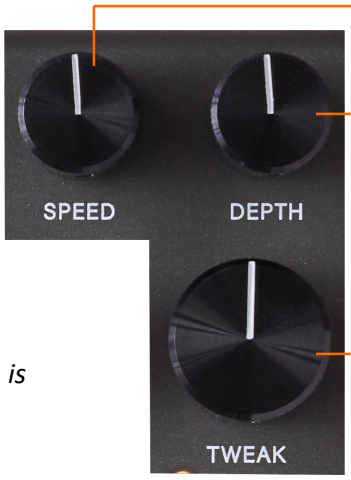
We have also added the *Rise Time* parameter, similar to that of the vintage Boss VB-2 pedal. This parameter controls the time it takes for the vibrato to reach full intensity when the algorithm is activated, in some scenario gradually intensifying vibrato gives a more natural result.

PRIMARY

Vibrato **Speed**

Vibrato **Depth**

[Tweak] = Sensitivity
Controls how sensitive the algorithm is to your picking dynamics.



SECONDARY

SP1 - Mode :
- Standard
- Dynamic

SP2 - Wave-Shape :
- Sine
- Triangle

SP3 - Rise Time :
- Snap
- Fast
- Slow

In ***Dynamic*** mode, adjust Sensitivity to suit your guitar's pickup output level. Dial it up of you feel the algorithm is not responding enough to your picking dynamics, and dial it down if you feel the algorithm is over-reacting to you picking dynamics.

Tips : use the Stompbox Mode and the momentary action feature to get 'vibrato-on demand'.

24. Ring Modulator

< Miscellaneous >

Tap-tempo / Midi Clock
NO

Added with firmware update v2.0.0

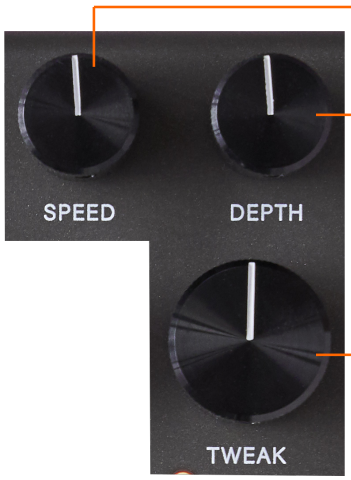
The majority of the newly added algorithms revolve around signal-corrupting effects. Ring Modulator falls squarely into this category. At its core this algorithm is a tremolo, with a super-extended range of modulation speed. At the lower end of the speed you get pleasing tremolo effects, and at the higher end of speed you get a plethora of weird and bizarre textures of dissonant tones.

PRIMARY

[Speed] = LFO Speed

[Depth] = Frequency Shift

[Tweak] = Mix
Controls the wet and dry mix.



SECONDARY

SP1 - LFO Depth : [0 - 7]

SP2 - Wave-Shape :
- Sine
- Ramp
- Saw
- Triangle
- Square
- Random

SP3 - Tone :
- Darker
- Dark
- Warm
- Bright

LFO Depth sets the amount of the Frequency Shift modulation. Set this to 0 to get the standard (static) ring modulator effect.

25. Parametric EQ

< Miscellaneous >

Tap-tempo / Midi Clock
NO

Added with firmware update v2.0.0

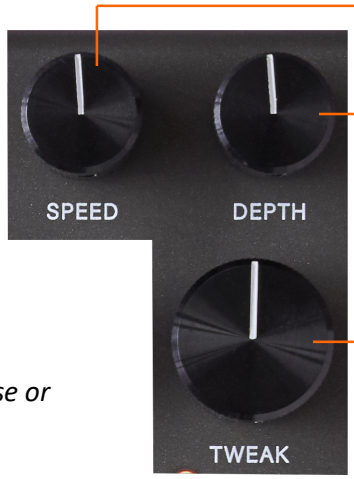
It may be unusual to find an EQ algorithm in a multi-modulation pedal, however in a dual-engine pedal like Synesthesia it makes a lot of sense to have a tone shaping tool that you can conveniently pair with the other algorithms. Parametric EQ gives you a full featured single-band parametric EQ plus a Low-shelving and High-shelving filters for shaping the bass and treble frequencies respectively.

PRIMARY

[**Speed**] = **Frequency**
100 Hz to 3 KHz

[**Depth**] = **Gain**
-9dB (cuts) to +9 dB (boost)

[Tweak] = Volume
Useful for compensating the decrease or increase in perceived loudness when cutting or boosting respectively.

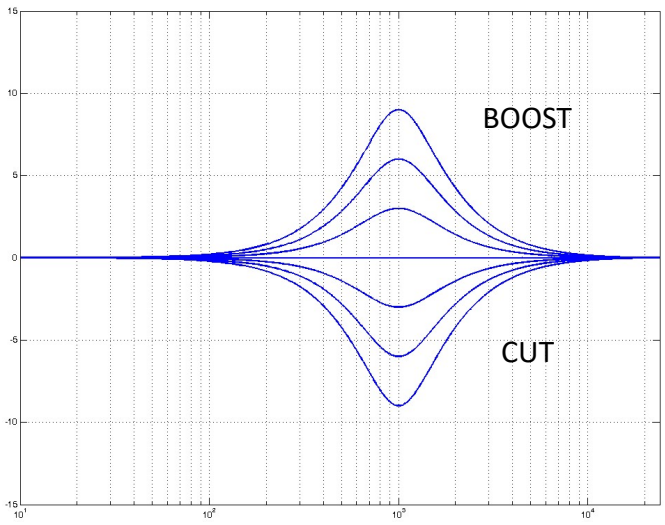


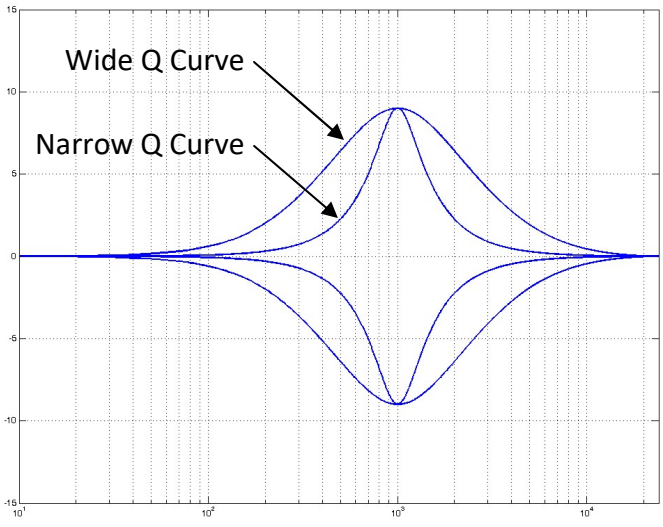
SECONDARY

SP1 - Bass : [-4 to +3]

SP2 - Treble : [-4 to +3]

SP3 - Q Curve :
- Wider
- Wide
- Narrow
- Sharp





26. Bit Crusher

< Miscellaneous >

Tap-tempo / Midi Clock
NO

Added with firmware update v2.0.0

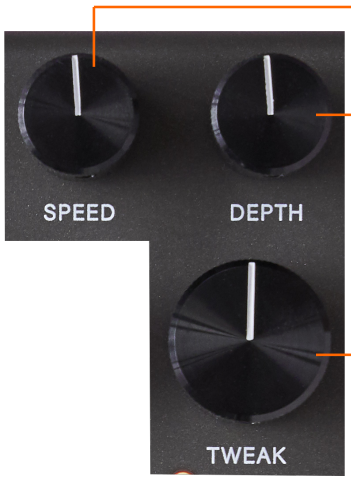
This algorithm applies fractional bit-resolution & sample-rate reduction to the input signal.
Bit-depth reduction adds warmth and grit, all the way to saturated distortion or dying battery fuzz sounds at extreme settings.
Reducing the sample-rate creates inharmonic overtones and aliasing distortion. Subtle reduction adds sizzle and high-end buzz, while extreme reduction produces that 8-bit video game sounds.

PRIMARY

[**Speed**] = **Frequency**
Sets the sampling frequency (rate).

[**Depth**] = **Crush**
Sets the amount of bit reduction.

[Tweak] = **Mix**
Controls the wet and dry mix.



SECONDARY

SP1 - Input Gain :
- Low
- Medium
- High

SP2 - < n/a >
reserved for future development

SP3 - Volume : [0 to 7]

Adjust `Input Gain` for optimal bit-crushing according to the pick up output level.

27. Pressed Junk

< Miscellaneous >

Tap-tempo / Midi Clock
NO

Added with firmware update v2.0.0

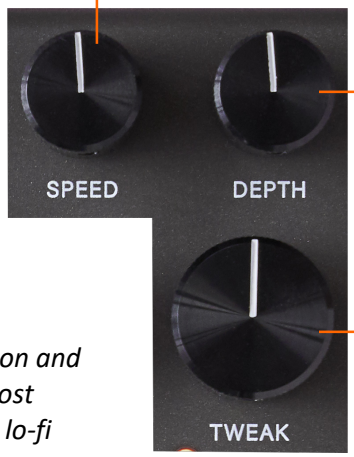
This algorithm draws inspiration from the ZVEX Instant Lo-Fi pedal. At its heart it is a mash-up of lofi vibrato and heavy compression. A mix control allows you to go from full on vibrato to all out compression, and anywhere in between. Couple this with various LFO waveforms and you have quiet an amazing pallete of lo-fi sounds.

PRIMARY

Vibrato **Speed**

Vibrato **Depth**

[Tweak] = Mix
Controls the mix between compression and vibrato. Full compressed signal at most counter-clockwise, and full smashed lo-fi vibrato at most clockwise position.



SECONDARY

SP1 - Gain : [0 - 7]

SP2 - Wave-Shape :
- Sine
- Triangle
- Square
- Random
- Cube
- Fubar

SP3 - Tone :
- Darker
- Dark
- Warm
- Bright

28. Record Antics

< Miscellaneous >

Tap-tempo / Midi Clock
NO

Added with firmware update v2.0.0

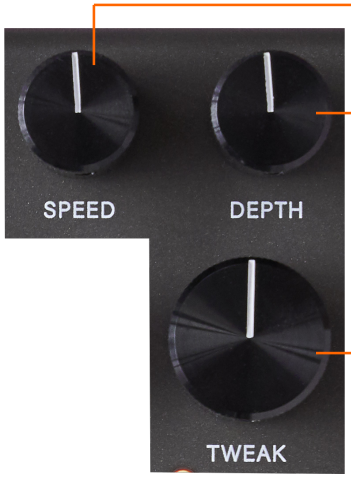
This algorithm emulates the sound as it's played through vintage vinyl record player, along with the artefacts and sound quality degradation accompanying it. Pair this algorithm with the Phonos Filters for added instant atmospheres and moods.

PRIMARY

Modulation **Speed**

Modulation **Depth**

[Tweak] = Mix
Controls the wet and dry mix.



SECONDARY

SP1 - Fidelity :
- 6 bit
- 7 bit
- 8 bit
- 9 bit
- 10 bit
- 12 bit
- 16 bit
- 24 bit

SP2 - Sample Rate :
- 2 KHz
- 4 KHz
- 6 KHz
- 8 KHz
- 12 KHz
- 16 KHz
- 24 KHz
- 48 KHz

SP3 - Vinyl Dust/Scratch : [0 - 7]

29. Phono Filters

< Miscellaneous >

Tap-tempo / Midi Clock
NO

Added with firmware update v2.0.0

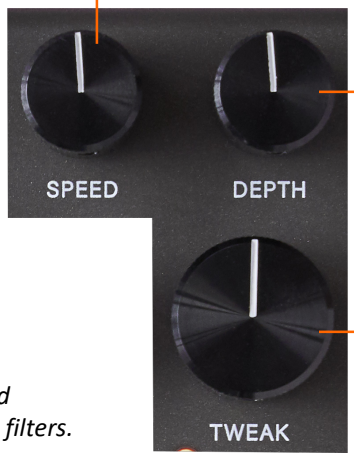
This algorithm is a collection of tone shaping filters simulating various audio appliances.
Pair this algorithm with the Record Antics for instant atmospheres and moods.

PRIMARY

[**Speed**] = **Saturation**

[**Depth**] = **Resonance**
Sets the depth of notches and peaks
In +Notch and +Peaks mode.

[Tweak] = Volume
Use this to compensate for the perceived volume differences between the various filters.



SECONDARY

SP1 - Mode :
- Normal
- +Notch
- + Peaks

SP2 - Density : [0 to 3]

SP3 - Filters :
- Phonograph
- Clock Radio
- Megaphone
- Antique Phone
- Cell Phone
- Intercom
- Lowpass 1
- Lowpass 2

Modes.

- In Normal mode, the filters have smooth frequency response.
- In +Notch mode, 'notches' are added on top of the smooth frequency response, adding a subtle complexity to the sound.
- In +Peaks mode, 'peaks' are added on top of the smooth frequency response, adding a subtle complexity to the sound.

Resonance and Density parameters are not applicable when using Normal mode.

Tips : Stereo widening effect can be achieved by using +Notch or +Peaks mode, and set Density parameter to 2 or 3.

30. Horn (Rotary)

< Miscellaneous >

Tap-tempo / Midi Clock
NO

Added with firmware update v2.0.0

This algorithm makes up the 'Horn' part of the Rotary Speaker algorithm. It is meant to be used in conjunction with the Drum algorithm (with *Mixture* dsp routing).

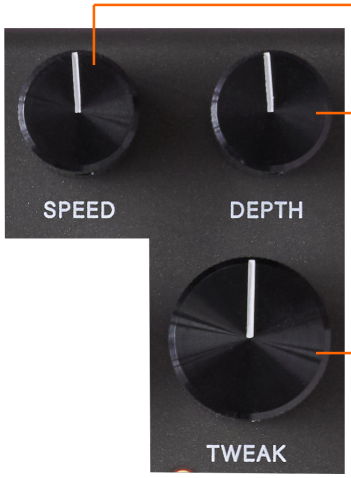
If you are wondering why we split the rotary algorithm into its Horn and Drum component please read our explanation in the 'Firmware v2.0.0 Release Note.pdf' document.

PRIMARY

[**Speed**] = **Low Speed**
Sets the low-speed of the rotor.

[**Depth**] = **Fast Speed**
Sets the fast-speed of the rotor.

[Tweak] = Volume



SECONDARY

SP1 - Acceleration : [0 to 3]

SP2 - Mic Distance : [0 to 3]

SP3 - Pre-Drive :
- On
- Off

`Acceleration` parameter sets the rate of transition from *Slow* speed to *Fast* speed and vice versa. 0 = slowest, 3 = fastest.

Tips :

1. Hold the A/Y or B/X switch for half a second to toggle the rotor speed, from Slow (Fast) speed to Fast (Slow)speed . You can also use an Aux switch or Midi to do this.

2. The Rotary Speaker algorithm sounds best when the speeds of the Horn and the Drum are not so vastly different. Do not set the Horn's speed to fast while the Drum's speed is slow, and vice versa.

3. Set `Volume` to achieve the desired balance between Drum and Horn sound.

4. Maximum stereo width is achieved with `Mic Distance` parameter set to 0.

31. Drum (Rotary)

< Miscellaneous >

Tap-tempo / Midi Clock
NO

Added with firmware update v2.0.0

This algorithm makes up the 'Horn' part of the Rotary Speaker algorithm. It is meant to be used in conjunction with the Drum algorithm (with *Mixture* dsp routing).

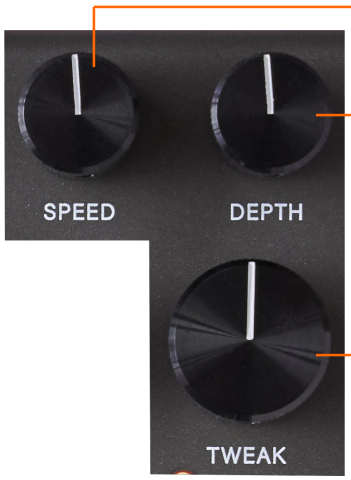
If you are wondering why we split the rotary algorithm into its Horn and Drum component please read our explanation in the 'Firmware v2.0.0 Release Note.pdf' document.

PRIMARY

[**Speed**] = **Low Speed**
Sets the low-speed of the rotor.

[**Depth**] = **Fast Speed**
Sets the fast-speed of the rotor.

[Tweak] = Volume



SECONDARY

SP1 - Acceleration : [0 to 3]

SP2 - Intensity : [0 to 3]

SP3 - Pre-Drive :
- On
- Off

`Acceleration` parameter sets the rate of transition from *Slow* speed to *Fast* speed and vice versa. 0 = slowest, 3 = fastest.

Tips :

1. Hold the A/Y or B/X switch for half a second to toggle the rotor speed, from Slow to Fast, and vice versa . You can also use an Aux switch or Midi to toggle the rotor speed.

2. The Rotary Speaker algorithm sounds best when the speeds of the Horn and the Drum are not so vastly different. Do not set the Horn's speed to fast while the Drum's speed is slow, and vice versa.

3. Set `Volume` to achieve the desired balance between Drum and Horn sound.

32. Arp Tremolo

< Arp >

Tap-tempo / Midi Clock
YES

Added with firmware update v2.0.0

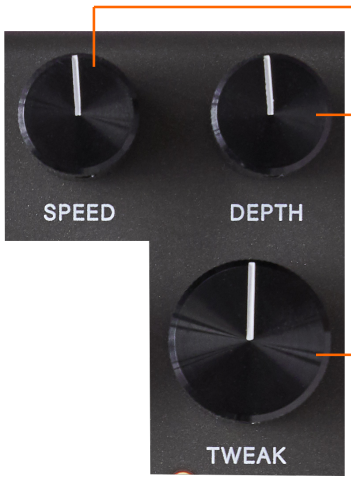
This algorithm is an arpeggiated / sequenced tremolo, a powerful algorithm for creating groovy pattern tremolo effects. You can select from 5 available sequences which can be edited via the SymmLab editor.

PRIMARY

Tremolo **Speed** (bpm)

Tremolo **Depth**
Sets the intensity of the tremolo effect.

[Tweak] = Chopiness
Controls 'choppiness' of the tremolo.



SECONDARY

SP1 - Sequence :
- Sequence I
- Sequence II
- Sequence III
- Sequence IV
- Sequence Random

SP2 - Panning :
- Mono
- Stereo

SP3 - Gain : [0 to 7]

With footswitch B/X reconfigured as a tap tempo button, or using an external tap tempo pedal, you can instantly reset the rhythm to the beginning of the sequence by tapping once on the tap tempo button. This is a very useful feature that allows you to sync the sequence to any cues during a performance.

33. Arp Filter

< Arp >

Tap-tempo / Midi Clock
YES

Added with firmware update v2.0.0

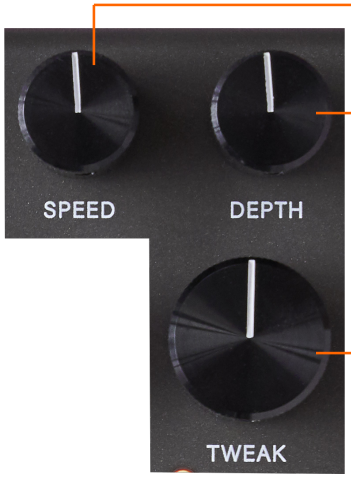
This algorithm is an arpeggiated / sequenced filter, a powerful algorithm for creating infectious resonant filter groove, reminiscent of the ZVEX Seek Wah pedal. You can select from 5 available sequences which can be customized via the SymmLab editor.

PRIMARY

Tremolo **Speed** (bpm)

Filter **Depth (Frequency Range)**

[Tweak] = Mix
Controls the wet and dry mix.



SECONDARY

SP1 - Sequence :
- Sequence I
- Sequence II
- Sequence III
- Sequence IV
- Sequence Random

SP2 - Glissando :
- 0%
- 50%
- 100%

SP3 - Filter Type :
- LP (mono)
- BP (mono)
- HP (mono)

Lowpass on Left, Bandpass on Right →
- LP | BP
- LP | HP
- BP | HP
- HP | LP
- HP | BP

With footswitch B/X reconfigured as a tap tempo button, or using an external tap tempo pedal, you can instantly reset the rhythm to the beginning of the sequence by tapping once on the tap tempo button. This is a very useful feature that allows you to sync the sequence to any cues during a performance.

34. Arp Formant

< Arp >

Tap-tempo / Midi Clock
YES

Added with firmware update v2.0.0

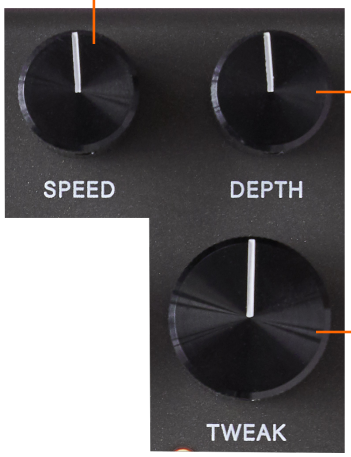
This algorithm is an arpeggiated / sequenced version of the Formant algorithm.

PRIMARY

Tremolo **Speed** (bpm)

[Depth] = Emphasis

[Tweak] = Mix
Controls the wet and dry mix.



SECONDARY

SP1 - Sequence :
- Sequence I
- Sequence II
- Sequence III
- Sequence IV
- Sequence Random

SP2 - Voicing :
- Adult
- Child

SP3 - Q Curve : [0 - 3]
Sets the 'sharpness' of the filter resonance. Higher value = more pronounced voicing.

☞ When editing the sequences in the SymmLab editor, play around with the `Depth(Emphasis)` parameter, it makes a huge difference.

☞ With footswitch B/X reconfigured as a tap tempo button, or using an external tap tempo pedal, you can instantly reset the rhythm to the beginning of the sequence by tapping once on the tap tempo button. This is a very useful feature that allows you to sync the sequence to any cues during a performance.

35. Arp Flanger

< Arp >

Tap-tempo / Midi Clock
YES

Added with firmware update v2.0.0

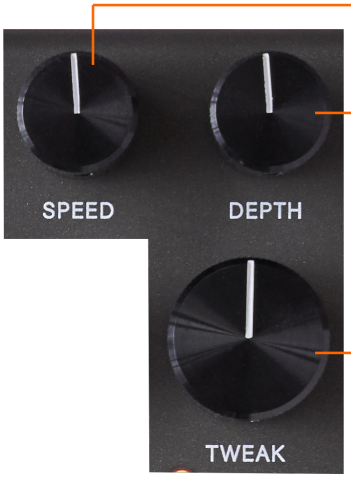
This algorithm is an arpeggiated / sequenced flanger, this is one of my personal favorites! The unique tones and timbres, coupled with the rhythmic sequences is absolutely hypnotic. You can select from 5 available sequences which can be customized via the SymmLab editor.

PRIMARY

Modulation **Speed** (bpm)

Modulation **Depth**

[Tweak] = Mix
Controls the wet and dry mix.



SECONDARY

SP1 - Sequence :
- Sequence I
- Sequence II
- Sequence III
- Sequence IV
- Sequence Random

SP2 - Timbre : [0 to 3]
Works as a 'voicing' modifier.

SP3 - Resonance : [-8 to +7]
Sets the amount of feedback (negative or positive).

When editing the sequences in the SymmLab editor, play around with the `Depth` and `Timbre` parameters, they make a huge difference.

With footswitch B/X reconfigured as a tap tempo button, or using an external tap tempo pedal, you can instantly reset the rhythm to the beginning of the sequence by tapping once on the tap tempo button. This is a very useful feature that allows you to sync the sequence to any cues during a performance.

36. Arp Phaser

< Arp >

Tap-tempo / Midi Clock
YES

Added with firmware update v2.0.0

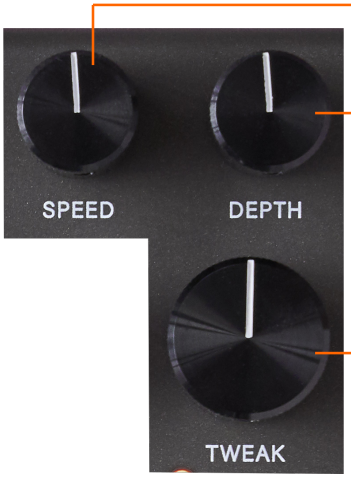
This algorithm is an arpeggiated / sequenced version of the Phaser algorithm.

PRIMARY

Modulation **Speed** (bpm)

Modulation **Depth**

[Tweak] = Mix
Controls the wet and dry mix.



SECONDARY

SP1 - Sequence :
- Sequence I
- Sequence II
- Sequence III
- Sequence IV
- Sequence Random

SP2 - Stages :
- 2 Stages
- 4 Stages
- 6 Stages
- 8 Stages

SP3 - Resonance : [0 - 7]

When editing the sequences in the SymmLab editor, play around with the `Depth` and `Stages` parameters, they make a huge difference.

With footswitch B/X reconfigured as a tap tempo button, or using an external tap tempo pedal, you can instantly reset the rhythm to the beginning of the sequence by tapping once on the tap tempo button. This is a very useful feature that allows you to sync the sequence to any cues during a performance.

37. Arp Ring Modulator

< Arp >

Tap-tempo / Midi Clock
YES

Added with firmware update v2.0.0

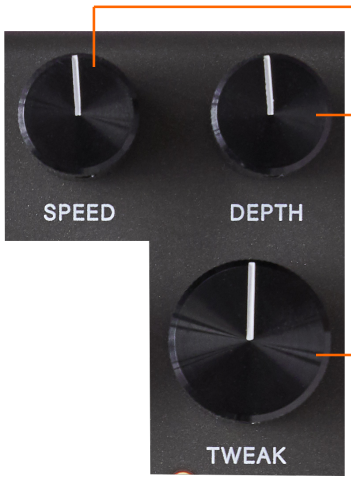
This algorithm is an arpeggiated / sequenced Ring Modulator. You can select from 5 available sequences which can be customized via the SymmLab editor.

PRIMARY

Modulation **Speed** (bpm)

[Depth] = Frequency Shift

[Tweak] = Mix
Controls the wet and dry mix.



SECONDARY

SP1 - Sequence :
- Sequence I
- Sequence II
- Sequence III
- Sequence IV
- Sequence Random

SP2 - Base Frequency:
- Lower
- Low
- Medium
- High

SP3 - Tone :
- Darker
- Dark
- Warm
- Bright

With footswitch B/X reconfigured as a tap tempo button, or using an external tap tempo pedal, you can instantly reset the rhythm to the beginning of the sequence by tapping once on the tap tempo button. This is a very useful feature that allows you to sync the sequence to any cues during a performance.

38. Arpeggiator

< Arp >

Tap-tempo / Midi Clock
YES

Added with firmware update v2.0.0

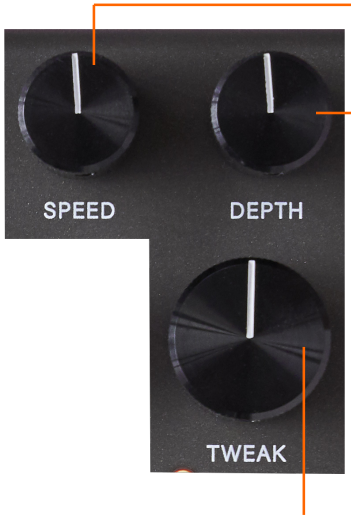
This algorithm is an arpeggiated / sequenced pitch shifter. The pitch of the incoming signal is shifted in sequenced steps, and the shift intervals are determined through a set of scales. You can select from 5 available sequences which can be customized via the SymmLab editor.

PRIMARY

Modulation **Speed** (bpm)

[Depth] = Level

[Tweak] = Dry
Sets the amount of dry signal added into the mix.



SECONDARY

SP1 - Sequence :
- Sequence I
- Sequence II
- Sequence III
- Sequence IV
- Sequence Random

SP2 - Base Frequency:
- Blues scale
- Pentatonic
- Phyrigian
- Altered scale
- Major
- Natural Minor
- Harmonic Minor
- Melodic Minor
- Japanese 1
- Japanese 2
- Japanese 3
- Japanese 4
- Balinese
- Gypsy Minor
- Oriental
- Indian Asavari

SP3 - Direction :
- Up
- Down

With footswitch B/X reconfigured as a tap tempo button, or using an external tap tempo pedal, you can instantly reset the rhythm to the beginning of the sequence by tapping once on the tap tempo button. This is a very useful feature that allows you to sync the sequence to any cues during a performance.