GFI SYSTEM

SOLIS VENTUS

DELAY - REVERB

Algorithm Reference

Rev - D (May 2025)

ALGORITHMS

Revision History

Rev C (Dec 2024) - Pilot public release.

Rev D (May 2025) - Added Nimbus delay algorithm.

- Added Swell and Infinity reverb algorithms.

Analog

(D E L A Y)

ANALOG

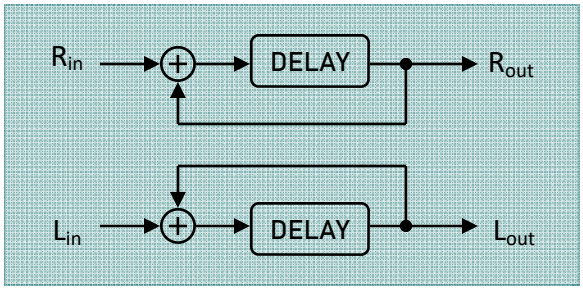
(True Stereo)

- TIME knob controls **DELAY TIME**
- MIX knob controls **WET** and **DRY**

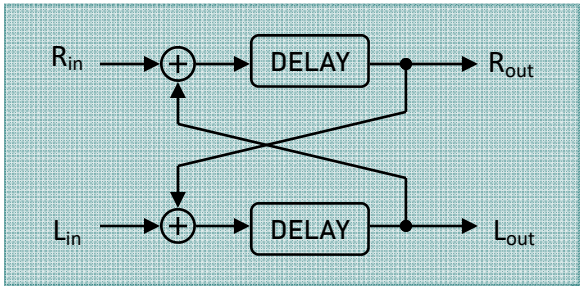
An analog-voiced delay with modulation, signal degrading, saturation, and self-oscillation. The delay time on the Right-channel can be offset to anywhere from 0ms to 200ms, or synced to a subdivision of the tempo, allowing wide range of stereo effects, such as stereo widening or ping-pong effects.

- **Param 1**: **REPEATS** - sets the amount of repeats. Delay starts to enter *self-oscillation zone* at >95%.
- **Param 2**: **TONE** - sets tonal voicing of the delay repeats.
  - **Soft** : smooth and soft attack, echoes nicely receeds into the background.
  - **Dark** : somewhere between Soft and Warm.
  - **Warm** : the vintage sound with punchy attack.
- **Param 3**: **DEGRADE** - sets the amount gradual high frequency loss and signal degradation.
- **Param 4**: **SATURATE** - set the amount of saturation on the delay repeats.
- **Param 5**: **MOD DEPTH** - sets the amount of delay modulation.
- **Param 6**: **MOD RATE** - sets the rate of the delay modulation.
- **Param 7**: **FEEDBACK ROUTING** - sets the type of the delay feedback scheme:

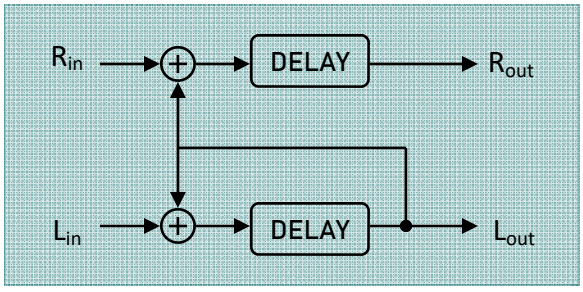
Standard Feedback



Cross-Coupled Feedback
a.k.a ping-pong configuration



Left-Coupled Feedback
Feedback for both Left and Right delays are taken from the Left output. Use this together with L/R Slapback to create repeats that bounce left and right .

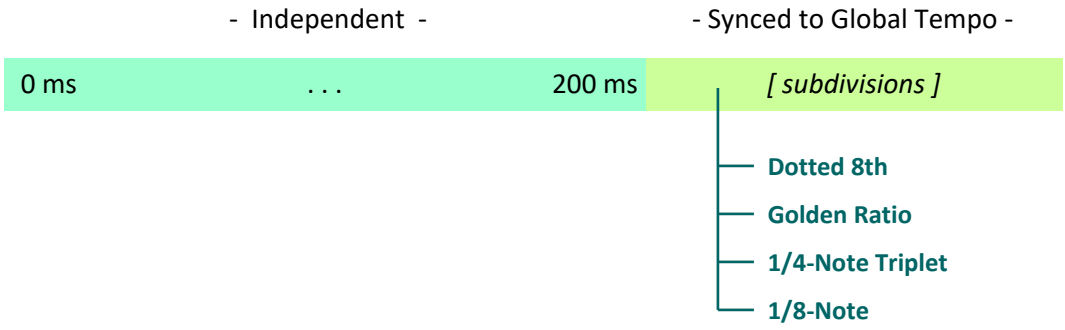


Analog
(D E L A Y)

ANALOG
(True Stereo)

- TIME knob controls **DELAY TIME**
- MIX knob controls **WET** and **DRY**

- **Param 8**: **L/R SLAPBACK** - sets the amount of delay *time offset* on the RIGHT channel, with respect to the delay time on the LEFT channel. The control values of this parameter comprise of two distinct regions: 'Independent' and 'tempo-synced'.



Tips: This parameter can be used for:
1. Widening the stereo image of the delay - use lower settings (1 to 50 ms).
2. Introducing 'ping-pong effect' (use higher setting > 100 ms, or the time-synced settings).

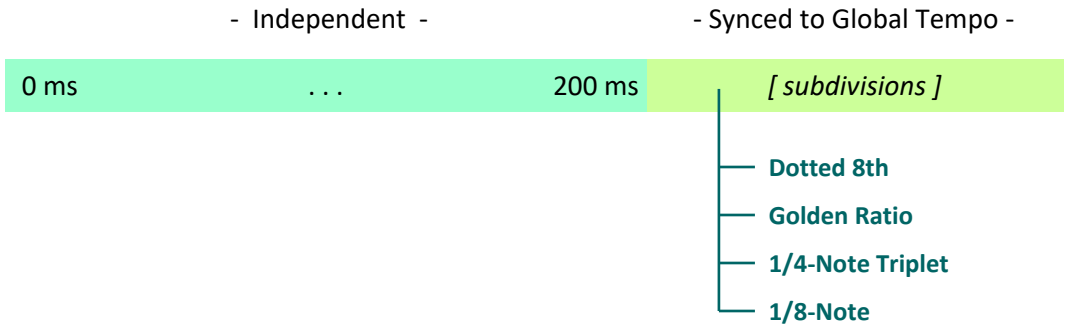
Tape
(D E L A Y)

TAPE
(True Stereo)

- TIME knob controls **DELAY TIME**
- MIX knob controls **WET** and **DRY**

A warm tape delay with all the good stuff that makes it a beloved piece of gear.

- **Param 1**: **REPEATS** - sets the amount of repeats. Delay starts to enter *self-oscillation zone* at >95%.
- **Param 2**: **TONE** - sets the tone of the delay repeats.
- **Param 3**: **WOW & FLUTTER** - sets the amount of irregular tape speed fluctuation due to the wearing out of tape support mechanisms.
- **Param 4**: **CONTOUR** - sets the tone contour of the repeats. Lower values give darkening repeats, and higher values give brightening repeats.
- **Param 5**: **MOD DEPTH** - sets the amount of the delay modulation.
- **Param 6**: **MOD RATE** - sets the rate of the delay modulation.
- **Param 7**: **CRINKLE** - sets the intensity of simulated random mechanical glitches in the tape support mechanism. Whereas the Wow & Flutter is more nuanced, the Crinkle is rather 'unhinged', excellent for introducing unpredictable delay time wobbling and wild pitch glitches.
  * You can get rid of all that by setting this parameter to zero.
- **Param 8**: **L/R SLAPBACK** - sets the amount of delay *time offset* on the RIGHT channel, with respect to the delay time on the LEFT channel. The control values of this parameter comprise of two distinct regions: 'Independent' and 'tempo-synced'.



Tips: This parameter can be used for:
1. Widening the stereo image of the delay - use lower settings (1 to 50 ms).
2. Introducing 'ping-pong effect' (use higher setting > 100 ms, or the time-synced settings).

Note: Starting with firmware v1.7.0, the parameter CONTOUR replaces the SATURATION as Param 4.

Digital
(D E L A Y)

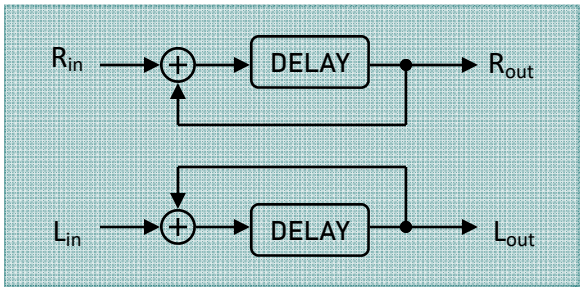
DGITAL
(True Stereo)

- TIME knob controls **DELAY TIME**
- MIX knob controls **WET** and **DRY**

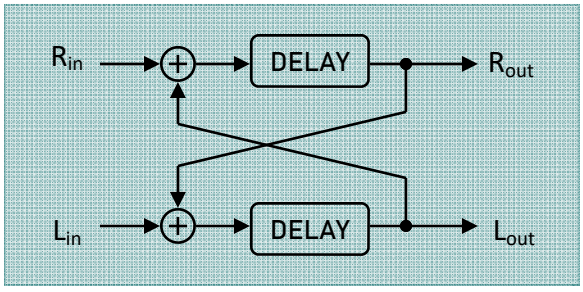
A pristine digital delay with modulation, filtering and smearing. The delay time on the Right-channel can be offset to anywhere from 0ms to 200ms, or synced to a subdivision of the tempo, allowing wide range of stereo effects, such as stereo widening or ping-pong effects.

- **Param 1**: **REPEATS** - sets the amount of repeats.
- **Param 2**: **TONE** - sets the tone of the delay repeats.
- **Param 3**: **MOD DEPTH** - sets the amount of delay modulation.
- **Param 4**: **MOD RATE** - sets the rate of the delay modulation.
- **Param 5**: **SMEAR** - sets the amount of attack softening on the repeats. Softening the repeats attack keeps the delay out of the the way of the dry signal, maintaining clarity and definition amid higher mix and repeats settings.
- **Param 6**: **LOW CUT** - sets the amount of low frequency cut of the delay repeats.
- **Param 7**: **FEEDBACK ROUTING** - sets the type of the delay feedback scheme:

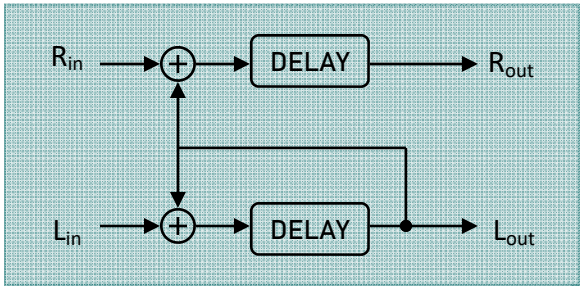
Standard Feedback



Cross-Coupled Feedback
a.k.a ping-pong configuration



Left-Coupled Feedback
Feedback for both Left and Right delays are taken from the Left output. Use this together with L/R Slapback to create repeats that bounce left and right .

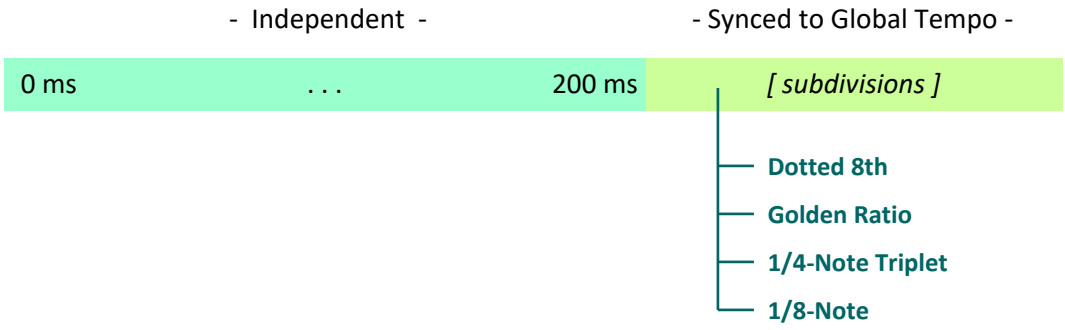


Digital
(D E L A Y)

DGITAL
(True Stereo)

- TIME knob controls **DELAY TIME**
- MIX knob controls **WET** and **DRY**

- **Param 8**: **L/R SLAPBACK** - sets the amount of delay *time offset* on the RIGHT channel, with respect to the delay time on the LEFT channel. The control values of this parameter comprise of two distinct regions: 'Independent' and 'tempo-synced'.



Tips: This parameter can be used for:
1. Widening the stereo image of the delay - use lower settings (1 to 50 ms).
2. Introducing 'ping-pong effect' (use higher setting > 100 ms, or the time-synced settings).

LoFi

(D E L A Y)

LOFI

(True Stereo)

- TIME knob controls **DELAY TIME**
- MIX knob controls **WET** and **DRY**

This algorithm lets you to 'destroy' the delay repeats by squashing the sampling rate and bit depth, introducing all kinds of artifacts and noises. A special voicing filter puts the icing on top.

- **Param 1**: **REPEATS** - sets the amount of repeats.
- **Param 2**: **LOFI MIX** - sets the blend between clear signal anf lofi signal in the repeats.

0 to 49 ------ *Frequency-shifted signal level goes from 0% to 100% as Dry signal stays at 100%*

50 ——● *Midpoint: both Dry and frequency-shifter signals at 100%.*

51 to 100 ------ *Dry signal level goes from 100% to 0% as frequency-shifted signal stays at 100%*

- **Param 3**: **SAMPLE RATE** - sets the sampling rate.

1 kHz	4 kHz	7 kHz	13 kHz
2 kHz	5 kHz	8 kHz	20 kHz
3 kHz	6 kHz	10 kHz	40 kHz

- **Param 4**: **BIT DEPTH** - sets the bit depth.

6 bit	10 bit	14 bit	20 bit
7 bit	11 bit	15 bit	24 bit
8 bit	12 bit	16 bit	
9 bit	13 bit	18 bit	

- **Param 5**: **VOICING** - set the voicing.

Off	Phonograph	Megaphone	Intercom
Vinage Amp	AM Radio	Cellphone	

- **Param 6**: **TONE** - sets the tone of the delay repeats.
- **Param 7**: **MOD DEPTH** - sets the amount of delay modulation.
- **Param 8**: **MOD RATE** - sets the rate of the delay modulation.

Modulated

(D E L A Y)

MODDLY

(True Stereo)

- TIME knob controls **DELAY TIME**
- MIX knob controls **WET** and **DRY**

This algorithm combines delay with detuning and chorusing/flanging to create lush swirling echoes. A flexible resonance control gives wide range flanging sounds that takes you from subtle to singing.

- **Param 1**: **REPEATS** - sets the amount of repeats.
- **Param 2**: **DETUNE** - sets the amount of detuning on the delay repeats.
- **Param 3**: **DETUNE PITCH** - sets the detuning pitch.
  - 1 cents
  - 2 cents
  - 3 cents
  - 4 cents
  - 5 cents
  - 6 cents
  - 7 cents
  - 8 cents
  - 9 cents
  - 10 cents
  - 11 cents
  - 12 cents
  - 13 cents
  - 14 cents
  - 15 cents
- **Param 4**: **CHORUS** - sets the amount of chorusing / flanging on the delay repeats.
- **Param 5**: **MOD DEPTH** - sets the amount of delay modulation.
- **Param 6**: **MOD RATE** - sets the rate of the delay modulation.
- **Param 7**: **RESONANCE** - sets the amount of resonant overtones in the flanging.
- **Param 8**: **TONE** - sets the tone of the delay repeats.

Filter

(D E L A Y)

FILTER

(True Stereo)

- TIME knob controls **DELAY TIME**
- MIX knob controls **WET** and **DRY**

A delay and multi-mode filter effect combo. Choose between Envelope Filter (*frequency sweep is controlled by picking dynamics*) or Fixed Filter (*frequency is fixed, manually controlled*). The filter can be positioned before (*pre*) or after (*post*) the delay.

- **Param 1**: **REPEATS** - sets the amount of repeats.
- **Param 2**: **FILTER MODE** - sets the operating mode of the filter.
  - **Envelope (Pre)** - envelope filter, before delay.
  - **Envelope (Post)** - envelope filter, after delay.
  - **Manual** - filter's frequency is fixed, controlled manually using knob.

- **Param 3**: **FILTER TYPE** - sets the filter type.
  - **Lowpass**
  - **Bandpass**
  - **Highpass**

- **Param 4**: **FILTER/DRY MIX** - sets the blending between dry signal and filtered signal.

0 to 49	*Filtered signal level goes up from 0% to 100% as Dry signal stays at 100%*
50	*Midpoint: both Dry and filtered signals at 100%.*
51 to 100	*Dry signal level goes down from 100% to 0% as filtered signal stays at 100%*

- **Param 5**: **SENSE/FREQ** - sets the sensitivity of the envelope tracker (for Envelope modes).
  - sets the center frequency of the filter (for Manual mode).
- **Param 6**: **RESONANCE** - sets the resonance (Q factor) of the filter.
- **Param 7**: **MOD DEPTH** - sets the amount of delay modulation.
- **Param 8**: **MOD RATE** - sets the rate of the delay modulation.

Tips: Set the FILTER MODE to Manual, FILTER TYPE to Lowpass or Bandpass, then assign an expression pedal to control the SENSE/FREQ parameter. Now you can control the filter sweep with your foot, like a Wah pedal.

3-Heads

(D E L A Y)

3HEADS

(True Stereo)

- TIME knob controls **DELAY TIME**
- MIX knob controls **WET** and **DRY**

A stereo delay with three output 'heads' or 'taps'.

- **Param 1**: **REPEATS** - sets the amount of repeats.
- **Param 2**: **TAPS PATTERN** - sets the operating mode of the filter.

  - Pattern 1
  - Pattern 2
  - Pattern 3
  - Pattern 4
  - Pattern 5
  - Pattern 6
  - Pattern 7
  - Pattern 8
  - Pattern 9
  - Pattern 10

- **Param 3**: **TAP TAPER** - sets the tapering of the taps

  - All taps have equal output level.
  - Subsequent tap output gets softer.
  - Subsequent tap output gets louder.

- **Param 4**: **TONE** - sets the tone of the delay repeats.
- **Param 5**: **RESONANT FREQ** - A resonant lowpass filter may be inserted at the output of delay Head#2. This parameter sets the frequency where the resonance happens. Set this parameter to zero to disable the lowpass filter.
- **Param 6**: **SMEAR** - sets the amount of attack softening on the repeats. Softening the repeats attack keeps the delay out of the the way of the dry signal, maintaining clarity and definition amid higher mix and repeats settings. This effect is applied only to the output of Head#2.
- **Param 7**: **MODULATION** - sets the amount of delay modulation.
- **Param 8**: **STEREO SPREAD** - sets the stereo spread of the delay repeats.

  - **Normal** - the repeats stays primarily on the center.
  - **Pong** - the repeats bounce left and right, filling up the stereo soundfield.

PingPong

(D E L A Y)

PONG

(Inputs Summed)

- TIME knob controls **DELAY TIME**
- MIX knob controls **WET** and **DRY**

A stereo delay with left-right bouncing repeats. The base delay engine can be configured as Digital or Analog.

- **Param 1**: **REPEATS** - sets the amount of repeats.
- **Param 2**: **BOUNCE WIDTH** - sets the spread of the echo bounce in the stereo soundfield. The sonic effect of adjusting this parameter is apparent only when listening to the output in stereo.

- **Param 3**: **DELAY STYLE** - sets the delay style.
  - Digital
  - Analog

- **Param 4**: **TONE** - sets the tone of the delay repeats.
- **Param 5**: **SMEAR/DEGRADE** - sets the amount of attack softening on the repeats (for digital delay style).
  - sets the amount of signal degradation o (for analog delay style).
- **Param 6**: **LOW CUT/SATURATE** - sets the amount of low frequency cut (for digital delay style).
  - sets the delay repeats saturation (for analog delay style).
- **Param 7**: **MOD DEPTH** - sets the amount of delay modulation.
- **Param 8**: **MOD RATE** - sets the rate of the delay modulation.

Android

(D E L A Y)

NDROID

(True Stereo)

- TIME knob controls **DELAY TIME**
- MIX knob controls **WET** and **DRY**

A delay and Ring Modulator mash up! The Ring Modulator imparts gnarly robotic overtones to the delay repeats, with adjustable (manual or LFO modulated) shift frequency.

- **Param 1**: **REPEATS** - sets the amount of repeats.
- **Param 2**: **FREQ SHIFT** - sets the amount of base frequency shift.
- **Param 3**: **LFO SHAPE** - set the shape of the LFO modulating the frequency shift.

Off - no LFO modulation.

Ramp

Saw

Triangle

Random

- **Param 4**: **LFO SPEED** - sets the LFO speed.
- **Param 5**: **RINGMOD MIX** - sets the blending between dry signal and frequency-shifted signal.

Frequency-shifted signal level goes up from 0% to 100% as Dry signal stays at 100%

Midpoint: both Dry and frequency-shifter signals at 100%.

Dry signal level goes down from 100% to 0% as frequency-shifted signal stays at 100%

- **Param 6**: **TONE** - sets the tone of the delay repeats.
- **Param 7**: **MODULATION** - sets the amount of delay modulation.
- **Param 8**: **L/R SLAPBACK** - sets the amount of delay *time offset* on the RIGHT channel, with respect to the delay time on the LEFT channel.

0 to 200 ms

Dotted 8th

Golden Ratio

1/4-Note Triplet

1/4-Note Triplet

time-synced

Tips: This parameter can be used for:

1. Widening the stereo image of the delay - use lower settings (1 to 30 ms).
2. Introducing ‘ping-pong effect’ (use higher setting > 100 ms, or the time-synced settings).

Ambiental

(D E L A Y)

MBIENT

(Inputs Summed)

- TIME knob controls **DELAY TIME**
- MIX knob controls **WET** and **DRY**

At the heart of this algorithm, is a special two-delays arrangement, time-synced to 'Golden Ratio' interval. At high feedback (Repeats) settings the echoes build up into a dense ambience wash, bluring the distinction between delay and reverb. A pitch-shifted overtone (Octave and Perfect 5th) can be added in to create a unique and hypnotic texture.

To summarize, this algorithm is about reverb-like ambience + pitch-shifted voices + stereo rhythmic groove. There are lots of wonderful delay sound pallete to be discovered.

- **Param 1**: **REPEATS** - sets the amount of repeats.
- **Param 2**: **OCTAVE** - sets the intensity of the Octave voice component.
- **Param 3**: **PERFECT 5TH** - sets the intensity of the Perfect 5th voice component.
- **Param 4**: **PITCH LAG** - sets the amount time lag of the voice component, the lags are synced to the tempo of the delay according to a selected time division.
  - 125 ms.
  - 1/32
  - 1/16 (Sixteenth note)
  - 1.5/16
  - 2/16 (Eight-note)
  - 2.5/16
  - 3/16 (Dotted 8th)
  - 4/16 (Quarter note)
- **Param 5**: **TONE** - sets the tone of the delay repeats.
- **Param 6**: **SMEAR** - sets the amount of attack softening on the repeats. Softening the repeats attack keeps the delay out of the the way of the dry signal, maintaining clarity and definition amid higher mix and repeats settings.
- **Param 7**: **MOD DEPTH** - sets the amount of delay modulation.
- **Param 8**: **MOD RATE** - sets the rate of the delay modulation.

Dual D2D

(D E L A Y)

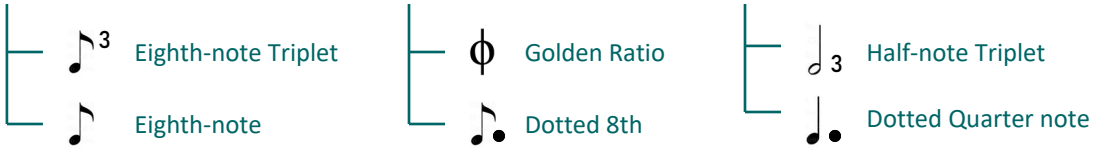
DIGDIG

(True Stereo)

- TIME knob controls **DELAY TIME**
- MIX knob controls **WET** and **DRY**

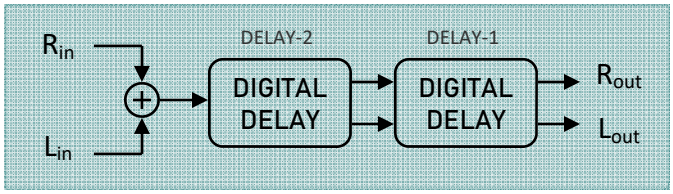
Two independent digital delays that can be combined in series, parallel, or dual-mono configurations. Delay-2 tracks the tempo of Delay-1 at selectable time ratios. The two delays have independent Re-generation (repeats) and Mix parameters.

- **Param 1**: **REPEATS (DELAY 2)** - sets the amount of repeats for delay 2.
- **Param 2**: **REPEATS (DELAY1)** - sets the amount of repeats for delay 1.
  *When set to zero, Param1 will act as the Repeats control for both Delay 1 and Delay 2.
- **Param 3**: **MIX (DELAY 2)** - sets delay 2 wet/dry mix.
- **Param 4**: **MIX (DELAY 1)** - sets delay 1 wet/dry mix
- **Param 5**: **TIME RATIO** - sets the time ratio between the two delays.

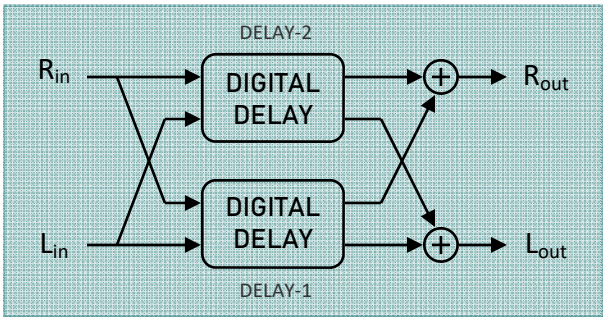


Param 6: **ROUTING** - the two delays can be combined in 3 different routing configurations.

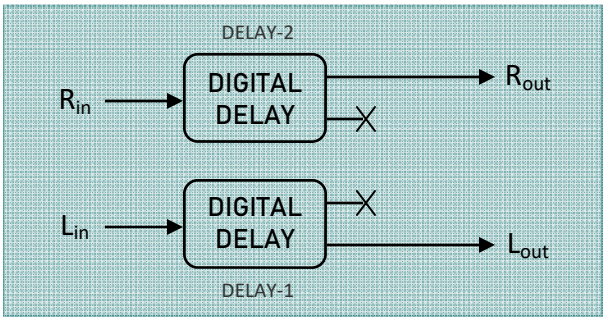
Series



Parallel



Dual Mono



- **Param 7**: **TONE** - sets the tone of the delay repeats.
- **Param 8**: **MODULATION** - sets the amount of delay mondulation.

Dual D2A

(D E L A Y)

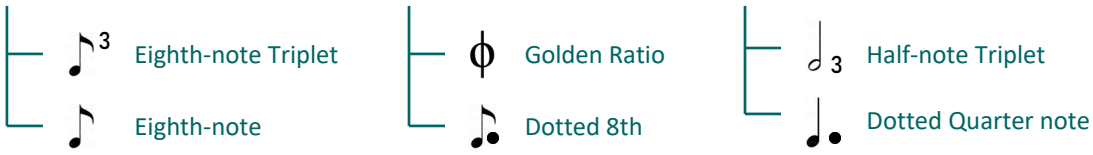
DIGANA

(True Stereo)

- TIME knob controls **DELAY TIME**
- MIX knob controls **WET** and **DRY**

A digital delay and analog delay combo that can be combined in series, parallel, or dual mono configurations. Delay-1 tracks the tempo of Delay-2 at selectable time ratios. The two delays have independent Repeats and Mix parameters.

- **Param 1**: **REPEATS (DIG)** - sets the amount of repeats for delay 2 (digital delay).
- **Param 2**: **REPEATS (ANA)** - sets the amount of repeats for delay 1 (analog delay).
  *When set to zero, Param1 will act as the Repeats control for both Delay 1 and Delay 2.
- **Param 3**: **MIX (DIG)** - sets delay 2 (digital delay) wet/dry mix .
- **Param 4**: **MIX (ANA)** - sets delay 1 (analog delay) wet/dry mix.
- **Param 5**: **TIME RATIO** - sets the time ratio between the two delays.



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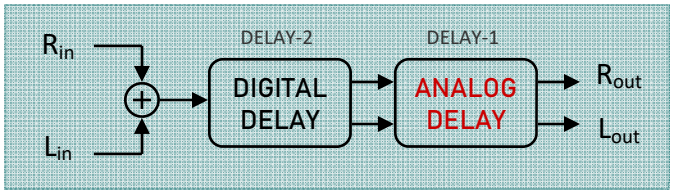
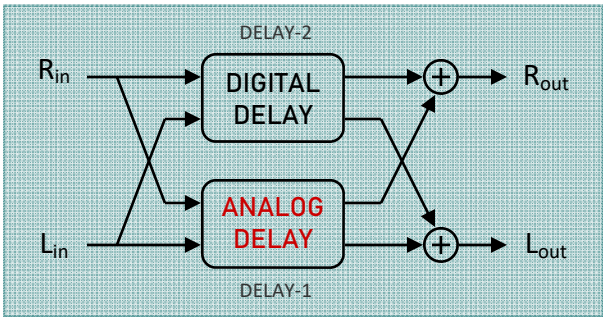
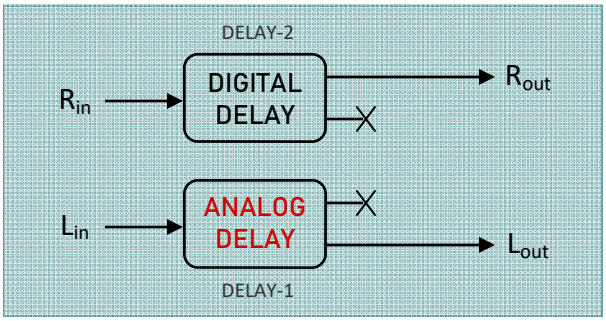
Series



Parallel



Dual Mono



- **Param 7**: **TONE** - sets the tone of the delay repeats.
- **Param 8**: **MODULATION** - sets the amount of delay modulation.

Dual D2P

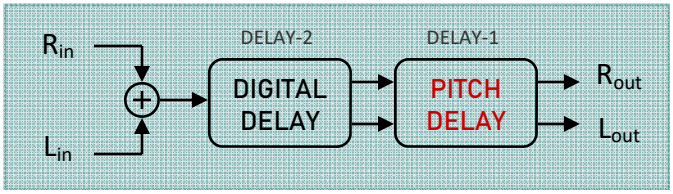
(D E L A Y)

DIGPIT

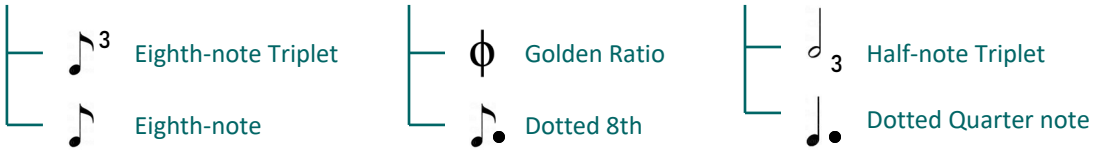
(Inputs Summed)

- TIME knob controls **DELAY TIME**
- MIX knob controls **WET** and **DRY**

A digital delay and pitch delay combo in series configurations. Delay-1 tracks the tempo of Delay-2 at selectable time ratios. The two delays have independent Mix parameter, and share Repeats parameter.



- **Param 1**: **REPEATS** - sets the amount of repeats for both delays.
- **Param 2**: **TIME RATIO** - sets the time ratio between the two delays.



- **Param 3**: **MIX (PIT)** - sets delay 2 (pitch delay) wet/dry mix.
- **Param 4**: **MIX (DIG)** - sets delay 1 (digital delay) wet/dry mix.
- **Param 5**: **TONE** - sets the tone of the delay repeats.
- **Param 6**: **MODULATION** - sets the amount of delay modulation.
- **Param 7**: **PITCH** - sets the pitch interval for the pitch-shifted delay.

- ***Random I*** applies random pitch changes within [-12, +4, +5, +7, +9, +11, and +12 semitones] intervals. Note that this is the 'major' scale, sounds great with songs played in major keys.
- ***Random II*** applies random pitch changes within [-12, +3, +5, +6, +7, +10, and +12 semitones] intervals. Note that this is the 'blues' scale.
- ***Random III*** applies random pitch changes within the entire chromatic scales.

Param 8: **LFO SPEED** - sets the speed of the pitch randomizer. This parameter is relevant only when a randomized pitch mode is selected (see Param 7).

Diffuse

(D E L A Y)

DFFUSE

(True Stereo)

- TIME knob controls **DELAY TIME**
- MIX knob controls **WET** and **DRY**

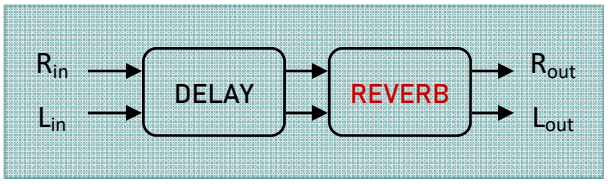
A digital delay and a Spatium style reverb combo that can be combined in series, parallel, or post-echo configurations.

- **Param 1**: **REPEATS** - sets the amount of repeats.
- **Param 2**: **DLY/VERB MIX** - sets delay and reverb mix

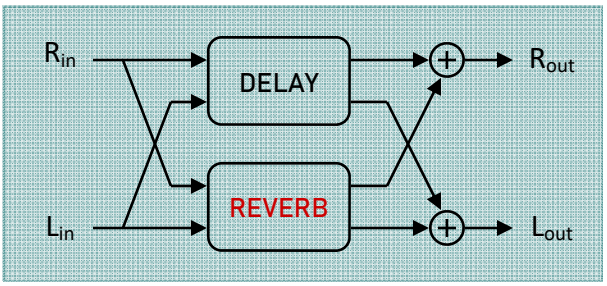
0 to 49	*Reverb level goes up from 0% to 100% as Delay level stays at 100%*
50	*Midpoint: both Delay and Reverb at 100%.*
51 to 100	*Delay level goes down from 100% to 0% as Reverb level stays at 100%*

- **Param 3**: **VERB DECAY** - sets the reverb's decay.
- **Param 4**: **VERB TONE** - sets the tone of the reverb's tail.
- **Param 5**: **DELAY TONE** - sets the tone of the delay repeats.
- **Param 6**: **MODULATION** - sets the amount of delay modulation.
- **Param 7**: **ROUTING** - the delay and reverb can be combined in 3 different configurations.

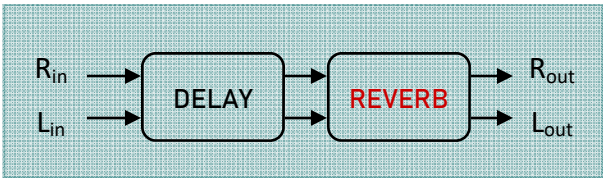
Series
Delay into Reverb.



Parallel
The delay and reverb run side-by-side and their outputs are mixed together.



Post-Echo
Similar to the Series mode, except that the reverb does not appear until the 1st echo.



Diffuse

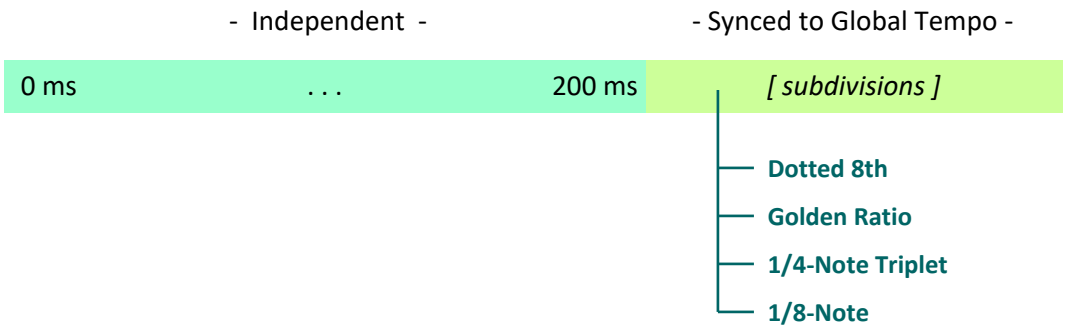
(D E L A Y)

DFFUSE

(True Stereo)

- TIME knob controls **DELAY TIME**
- MIX knob controls **WET** and **DRY**

- **Param 8**: **L/R SLAPBACK** - sets the amount of delay *time offset* on the RIGHT channel, with respect to the delay time on the LEFT channel. The control values of this parameter comprise of two distinct regions: 'Independent' and 'tempo-synced'.



Tips: This parameter can be used for:

1. Widening the stereo image of the delay - use lower settings (1 to 50 ms).
2. Introducing 'ping-pong effect' (use higher setting > 100 ms, or the time-synced settings).

Reverse

(D E L A Y)

REVRSE

(Inputs Summed)

- TIME knob controls **DELAY TIME**
- MIX knob controls **WET** and **DRY**

This algorithms produces 'reversed' repeats of the incoming sounds. The delay is triggered by the input signal, this gives predictable and musical reversed echoes. A Spatium style reverb is built into the algorithm for an expansive reverse soundscape.

- **Param 1**: **REPEATS** - sets the amount of repeats.
- **Param 2**: **ENVELOPE**
  - **Crisp**
  - **Smooth**
- **Param 3**: **TONE** - sets the tone of the repeats.
- **Param 4**: **MODULATION** - sets the amount of delay modulation.
- **Param 5**: **DELAY/VERB MIX** - sets the delay / reverb mix.

0 to 49	*Reverb level goes up from 0% to 100% as Delay level stays at 100%*
50	*Midpoint: both Delay and Reverb at 100%.*
51 to 100	*Delay level goes down from 100% to 0% as Reverb level stays at 100%*

- **Param 6**: **VERB DECAY** - sets the reverb's decay.
- **Param 7**: **VERB TONE** - sets the reverb's tone.
- **Param 8**: **L/R SLAPBACK** - sets the amount of delay *time offset* on the RIGHT channel, with respect to the delay time on the LEFT channel.

- Independent - | - Synced to Global Tempo -

0 ms . . . 200 ms | *[subdivisions]*

- **Dotted 8th**
- **Golden Ratio**
- **1/4-Note Triplet**
- **1/8-Note**

Tips: This parameter can be used for:

1. Widening the stereo image of the delay - use lower settings (1 to 50 ms).
2. Introducing 'ping-pong effect' (use higher setting > 100 ms, or the time-synced settings).

Reverse

(D E L A Y)

REVRSE

(Inputs Summed)

- TIME knob controls **DELAY TIME**
- MIX knob controls **WET** and **DRY**

Tips: There are two ways how to approach a Reverse delay:

1. Play in time. This will result in precise echoes, just like ordinary delay, only in reverse.
2. Play sustained chords or melodies. This will give interesting rhythmic textures.

Blend in some reverb with generous amount of Decay to create lush reverse sound, then dial in some L/R Slapback (Param 8) to create bouncing and enveloping stereo echoes.

Algorithmic limitation:

1. Delay Time.

Maximum delay time is 2200 ms, just like the other delay algorithms in Solis Ventus. Normally this maximum delay time can be extended (up to 4400 ms) by applying certain subdivision settings, however in Reverse delay 2200ms is the absolute maximum.

2. Time Change.

Time Change mode is restricted to 'Instant'.

Nimbus

(D E L A Y)

NIMBUS

(True Stereo)

- TIME knob controls **DELAY TIME**
- MIX knob controls **WET** and **DRY**

Nimbus delay heavily inspired by the Keeley Electronic HALO - Andy Timmons Dual Echo pedal. At the heart of the algorithm are twin stereo delay blocks, arranged in parallel configuration, with a unique cross-feedback from one delay block to the other. Delay time of one delay block is set to a ratio (subdivision) of the other delay block's delay time. In the HALO pedal, the ratio is fixed to Dotted 8th subdivision. In this algorithm, we expanded the choice of the time delay ratio for even more flexibility.

- **Param 1**: **REPEATS** - sets the amount of repeats.
- **Param 2**: **SATURATE** - set the amount of saturation on the delay repeats
- **Param 3**: **TONE** - sets the tone of the repeats.
- **Param 4**: **HIGHPASS** - sets the amount of low cut applied to the repeats.
- **Param 5**: **MOD DEPTH** - sets the amount of delay modulation.
- **Param 5**: **MOD RATE** - sets the rate of delay modulation.
- **Param 7**: **TIME RATIO** - the time ratio between the two delays.

Param 8: **STEREO SPREAD** - sets the width of the stereo image.

Aether

(R E V E R B)

AETHER

(True Stereo)

- TIME knob controls **PREDELAY**
- MIX knob controls **WET** and **DRY**

This is a 'Hall' type reverb with low initial diffusion that grows into a rich and smooth modulated tail. This algorithm offers a full scale blend control between early reflection and late reverberation, allowing for high resolution ambience/reverb adjustment.

- **Param 1**: **DECAY** - sets the length of reverb decay.
- **Param 2**: **AIR ABSORB** - sets the amount of 'air absorption' effect, which manifests itself in the gradual darkening of the reverb tail.
- **Param 3**: **EARLY/LATE MIX** - sets balance between early reflection and late reverberation tail. This control goes from 100% early reflection to 100% late reverberation tail. High Early-to-Late ratio gives an impression of an intimate space, whereas high Late-to-Early ratio gives an impression of large immersive space.
- **Param 4**: **EARLY SIZE** - sets the size of the early reflection window.
- **Param 5**: **LOW** - sets the amount of low frequency energy passed into the reverb.
- **Param 6**: **HIGH** - sets the amount of high frequency energy passed into the reverb.
- **Param 7**: **MOD DEPTH** - sets the amount of modulation.
- **Param 8**: **MOD RATE** - sets the modulation rate.

Chamber

(R E V E R B)

CHAMBR

(True Stereo)

- TIME knob controls **DELAY TIME**
- MIX knob controls **WET** and **DRY**

This algorithm covers a lot of ground, from small room to concert halls. An excellent choice for intimate room type reverberation with short to medium long reverb times. Incorporation of a specially designed and tuned echo algorithm adds complexities and depth. The echo time can be set using the Time knob, just like a delay algorithm.

- **Param 1**: **DECAY** - sets the length of reverb decay.
- **Param 2**: **PREDELAY** - sets the delay to the reverb onset (0 to 200 ms).
- **Param 3**: **AIR ABSORB** - sets the amount of 'air absorption' effect, which manifests itself in the gradual darkening of the reverb tail.
- **Param 4**: **DIFFUSION** - sets the initial diffusion of the reverb.
- **Param 5**: **LOW** - sets the amount of low frequency energy passed into the reverb.
- **Param 6**: **HIGH** - sets the amount of high frequency energy passed into the reverb.
- **Param 7**: **ECHO LEVEL** - sets the level of the echo.
- **Param 8**: **ECHO DEPTH** - sets the amount of echo regeneration.

Spring
(R E V E R B)

SPRING
(True Stereo)

- TIME knob controls **PREDELAY**
- MIX k.ob controls **WET** and **DRY**

This is our take on the venerable spring reveberation. Beyond replicating the warmth and the 'sproink' we crafted a set of carefully tuned parameters plus a full-fledged tremolo section. This algorithm never fails to bring the smile on our faces!

- **Param 1**: **DECAY** - sets the length of reverb decay.
- **Param 2**: **SPRINGS** - selects the number of springs.
  - Two
  - Three

- **Param 3**: **DAMPING** - sets the amount of high frequency damping in the reverb.
- **Param 4**: **TREM SPEED** - sets the tremolo speed. The control values of this parameter comprise of two distinct regions: 'Independent' and 'tempo-synced'.

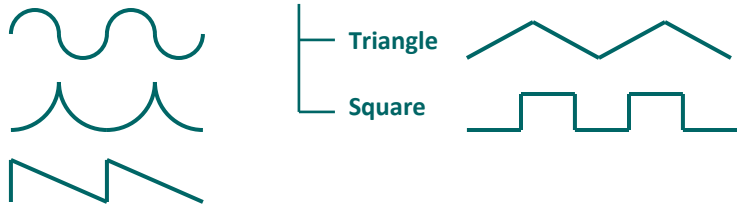
- Independent -
0.5 Hz . . . 10 Hz

- Synced to Global Tempo -
[subdivisions]

min speed *max speed*

- 1/16
- 1/12
- 1/10
- 1/9
- 1/8
- 1/7
- 1/6
- 1/5
- 1/4
- 1/3
- 1/2
- 2/3
- 3/4
- 1/1
- 4/3
- 3/2
- 5/2
- 3/1
- 7/2
- 4/1
- 5/1
- 6/1
- 7/1
- 8/1
- 9/1
- 10/1
- 12/1
- 16/1

- **Param 5**: **TREM DEPTH** - sets the tremolo depth (intensity).
- **Param 6**: **TREM SHAPE** - sets the tremolo LFO shape
  - Sine
  - Exponential
  - Saw
  - Triangle
  - Square



- **Param 7**: **LOW** - sets the amount of low frequency energy passed into the reverb.
- **Param 8**: **HIGH** - sets the amount of high frequency energy passed into the reverb.

Plate

(R E V E R B)

PLATES

(Input Summed)

- TIME knob controls **PREDELAY**
- MIX knob controls **WET** and **DRY**

The classic plate reverb, dense and smooth. This is a versatile algorithm that is suitable for a multi-tude of applications, from tight and subtle to thick and lush.

- **Param 1**: **DECAY** - sets the length of reverb decay.
- **Param 2**: **DAMPING** - sets the high frequency damping on the reverb. Higher damping value causes the high frequency energy in the tail to decay faster, giving an impression of a naturally darkening reverb.
- **Param 3**: **SIZE** - sets the size of the reverb.
  - **Small**
  - **Medium**
  - **Large**

- **Param 4**: **DIFFUSION** - sets the initial diffusion of the reverb.
- **Param 5**: **LOW** - sets the amount of low frequency energy passed into the reverb.
- **Param 6**: **HIGH** - sets the amount of high frequency energy passed into the reverb.
- **Param 7**: **TAIL SHAPE** - sets the shape of the reverb's tail.
  - **Natural** - reverb's envelope builds in a natural manner.
  - **Bloom** - reverb's envelope rises (blooms) to a rich and diffusive tails.

Param 8: **BLOOM INERTIA** - sets 'bloom time' (applicable only when Tail Shape is set to 'Bloom').

Spatium
(R E V E R B)

SPTIUM

(True Stereo)

- TIME knob controls **PREDELAY**
- MIX knob controls **WET** and **DRY**

A cathedral style reverb. Lush and spacious, with excellent clarity that never takes over your dry signal, even with extreme wet settings.

- **Param 1**: **DECAY** - sets the length of reverb decay.
- **Param 2**: **EARLY ENERGY** - sets the amount of early reflection energy, which adds an impression of 'space'.
- **Param 3**: **LOW** - sets the amount of low frequency energy passed into the reverb.
- **Param 4**: **HIGH** - sets the amount of high frequency energy passed into the reverb.
- **Param 5**: **VOICE PITCH** - selects the pitch interval of a pitch-transposed overtone.
  - **Perfect 4th**
  - **Perfect 5th**
  - **Octave**
- **Param 6**: **VOICE INTENSITY** - sets the level of the pitch-transposed voice component.
- **Param 7**: **TAIL SHAPE** - sets the shape of the reverb's tail.
  - **Natural** - reverb's envelope builds in a natural manner.
  - **Bloom** - reverb's envelope rises (blooms) to a rich and diffusive tails.
- **Param 8**: **BLOOM INERTIA** - sets 'bloom time' (applicable only when Tail Shape is set to 'Bloom').

Shimmer

(R E V E R B)

SHMMER

(True Stereo)

- TIME knob controls **PREDELAY**
- MIX knob controls **WET** and **DRY**

A Spatium-style reverb infused with regenerative pitch-shifted voices. The harmonized decay resembles the presence of multiple string pads accompanying your instrument. You can blend in two voices, each with selectable pitch intervals. With flexible controls and multitudes of options, the Shimmer algorithm offers powerful sound design capability that lets you create anything from brilliance of string pads to eerie and haunting atmospheric moods.

- **Param 1**: **DECAY** - sets the length of reverb decay.
- **Param 2**: **INTENSITY** - sets the intensity of both voice 1 and voice 2.
- **Param 3**: **VOICE 1** - sets the pitch of voice 1.

-1 Octave	-Perfect 4th	+minor 2nd	+minor 6th
-Major 7th	-Major 3rd	+Major 2nd	+Major 6th
-minor 7th	-minor 3rd	+minor 3rd	+minor 7th
-Major 6th	-Major 2nd	+Major 3rd	+Major 7th
-minor 6th	-minor 2nd	+Perfect 4th	+1 Octave
-Perfect 5th	-10 cents	+Tritone	
-Tritone	+10 cents	+Perfect 5th	

- **Param 4**: **VOICE 2** - sets the pitch of voice 2.

-1 Octave	-Perfect 4th	+minor 2nd	+minor 6th
-Major 7th	-Major 3rd	+Major 2nd	+Major 6th
-minor 7th	-minor 3rd	+minor 3rd	+minor 7th
-Major 6th	-Major 2nd	+Major 3rd	+Major 7th
-minor 6th	-minor 2nd	+Perfect 4th	+1 Octave
-Perfect 5th	-10 cents	+Tritone	
-Tritone	+10 cents	+Perfect 5th	

- **Param 5**: **VOICE BLEND** - sets the mixture of the two voices. Set to zero to for voice 1 only, set to 100 for voice 2 only, and anywhere in between for a continuous blend of the two.
- **Param 6**: **EARLY ENERGY** - sets the amount of early reflection energy.
- **Param 7**: **LOW** - sets the amount of low frequency energy passed into the reverb.
- **Param 8**: **HIGH** - sets the amount of high frequency energy passed into the reverb.

Marble

(R E V E R B)

MARBLE

(Input Summed)

- TIME knob controls **PREDELAY**
- MIX knob controls **WET** and **DRY**

This algorithm emulates highly reflective acoustic spaces

- **Param 1**: **DECAY** - sets the length of reverb decay.
- **Param 2**: **SIZE** - sets size of the space.
  - **Medium**
  - **Large**
- **Param 3**: **AIR ABSORB** - sets the amount of 'air absorption' effect, which manifests itself in the gradual darkening of the reverb tail.
- **Param 4**: **EARLY ENERGY** - sets the amount of early reflection energy.
- **Param 5**: **LOW** - sets the amount of low frequency energy passed into the reverb.
- **Param 6**: **HIGH** - sets the amount of high frequency energy passed into the reverb.

Modulated

(R E V E R B)

MODRVB

(True Stereo)

- TIME knob controls **PREDELAY**
- MIX knob controls **WET** and **DRY**

Aether style reverb + modulation stack

- **Param 1**: **DECAY** - sets the length of reverb decay.
- **Param 2**: **REFLECTION** - sets amount of early reflection, which adds an impression of 'space'.
- **Param 3**: **INTENSITY** - sets the intensity of the chorus/flanger.
- **Param 4**: **RESONANCE** - sets the amount of feedback in the chorus/flanger.
- **Param 5**: **MOD DEPTH** - sets the modulation depth.
- **Param 6**: **MOD RATE** - sets the modulation rate.
- **Param 7**: **LOW** - sets the amount of low frequency energy passed into the reverb.
- **Param 8**: **HIGH** - sets the amount of high frequency energy passed into the reverb.

Tremble

(R E V E R B)

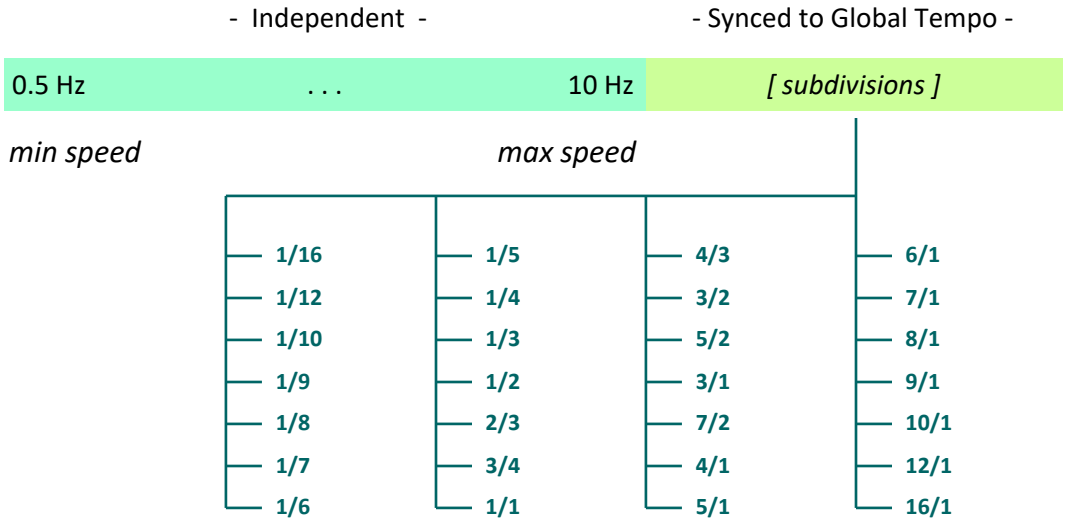
TRMBLE

(True Stereo)

- TIME knob controls **PREDELAY**
- MIX knob controls **WET** and **DRY**

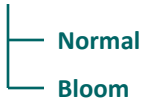
Amplitude-pulsating ambience that injects rhythm to a lush reverb. Tempo of the tremolo may be adjusted freely from 0.5Hz to 10 Hz, or be synchronized to the global tempo.

- **Param 1**: **DECAY** - sets the length of reverb decay.
- **Param 2**: **LOW** - sets the amount of low frequency energy passed into the reverb.
- **Param 3**: **HIGH** - sets the amount of high frequency energy passed into the reverb.
- **Param 4**: **TREM SPEED** - sets the tremolo speed. The control values of this parameter comprise of two distinct regions: 'Independent' and 'tempo-synced'.



- **Param 5**: **TREM DEPTH** - sets the tremolo depth (intensity).
- **Param 6**: **TREM SHAPE** - sets the tremolo LFO shape

- **Param 7**: **TAIL SHAPE** - sets the shape of the reverb's tail.



- **Param 8**: **BLOOM INERTIA** - sets 'bloom time' (applicable only when Tail Shape is set to 'Bloom').

Swell

(R E V E R B)

SWELLS

(True Stereo)

- TIME knob controls **PREDELAY**
- MIX knob controls **WET** and **DRY**

This algorithm fades in the onset of the reverberation, allowing your dry signal to cut through even with the thickest reverb. The algorithm does this by continuously looking at the input signal, and when it sees a transient a fade-in envelope is applied to the input signal. The effect works best with the dry signal completely muted.

Regenerative Octave and Sub-Octave voices, with adjustable intensity, add a shimmer/anti-shimmer like capability to the algorithm.

- **Param 1**: **DECAY** - sets the length of reverb decay.
- **Param 2**: **SWELL TIME** - sets the duration of the swell.
- **Param 3**: **LOW** - sets the amount of low frequency energy passed into the reverb.
- **Param 4**: **HIGH** - sets the amount of high frequency energy passed into the reverb.
- **Param 5**: **OCTAVE** - sets the level of a regenerating octave up voice within the reverb.
- **Param 6**: **SUB-OCTAVE** - sets the level of a regenerating octave down voice within the reverb.

Infinity

(R E V E R B)

INFNTY

(True Stereo)

- TIME knob controls **PREDELAY**
- MIX knob controls **WET** and **DRY**

This algorithm allows you to capture a brief snapshot of the sound that you are playing, and loop it indefinitely, then you can play over it (with Spatium-style reverberation).

- **Param 1**: **DECAY** - sets the length of reverb decay.
- **Param 2**: **MODE** - sets the audio capture mode:

  1-Layer - only one layer of sound can be captured and looped.

  Pros: Previously captured/looped sound can be erased or replaced with a new one.
  Cons: Overdubbing is not possible.

  N-Layers - unlimited number of layers can be captured and looped.

  Pros: You can create an ever-dense layer of sounds by adding 'overdubbing' new sounds.
  Cons: Previously captured/looped sounds can't be erased or replaced with new ones.

- **Param 3**: **INTENSITY** - sets the volume of the sustained sound.
- **Param 4**: **TONE** - sets the tone of the sustained sound.
- **Param 5**: **LOW** - sets the amount of low frequency energy passed into the reverb.
- **Param 6**: **HIGH** - sets the amount of high frequency energy passed into the reverb.

Tips: **Typical workflow using the Infinity algorithm**:

1. Adjust the parameters as desired, except INTENSITY and TONE, leave them alone for now.

2. Press and hold down footswitch A/Y and footswitch B/X together, after 1 second of holding the algorithm immediately begins to continuously capture a snapshot of whatever you are playing. As soon as the footswitches are released, the algorithm will take the last 0.25 seconds of the captured sound and loop it indefinitely, creating in a infinitely sustained sound.

Infinity

(R E V E R B)

INFNTY

(True Stereo)

- TIME knob controls **PREDELAY**
- MIX knob controls **WET** and **DRY**

3. Now adjust INTENSITY and TONE to get the desired level and tonality for the sustained sound.

Now you can play over the sustained sound, and when you want to change the sustained sound with a new one, simply repeat step-2; the current sustained sound will fade out and then you can fade in a new one. The new sound will fade in to the level you've set previously. Or alternatively, use the *N-Layers mode* to add more-and more layers on top of existing ones.

Tips: **Stopping the sustained sound**

1-Layer mode
You can stop the sustained sound by simply executing the 'audio capture' procedure (step-2), only this time do not play anything - the algorithm will capture 'silence' and loop it indefinitely, effectively stopping the playback of previously captured sound. Note that doing this will also erase the previously captured sound, you can't play it again.

N-Layers mode
Unfortunately, this mode does not offer a mechanism for stopping the sustained sound. A workaround that allows you stop the looped sound is to first switch to 1-Layer mode, execute the procedure as laid out above, then switch back to N-Layers mode. Note that all previously captured sound will get erased.

Tips: **Starting/Stopping audio capture remotely**

The audio capture process can be started or stopped remotely using

- An external (aux) switch: assign the 'Infinity Capture' function to the switch.
- MIDI: default CC#78, value 127 = Start, value 0 = Stop.

Using aux switches or MIDI is a lot easier - you only need to press a single switch. Plus, you don't need to hold the switch, instead a 'toggle' mechanism has been adopted for even more simplicity: tap once to initiate the capture, and tap once again to stop it.