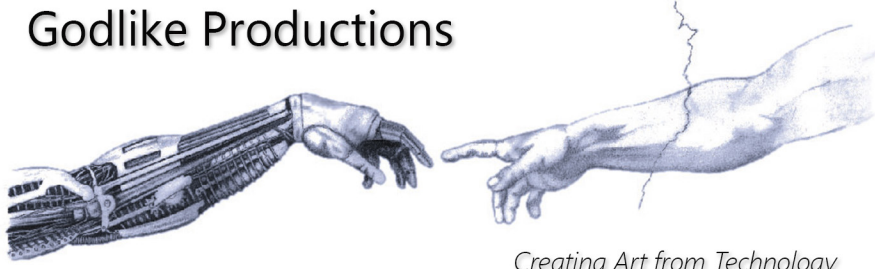# Instruction Manual

H3000 Swept Combs Replica & Swept Combs True Stereo

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Creating Art from Technology

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Caution

Ensure you have backed up all algorithms and other data of your H9000 prior to use of this product. You use these algorithms, chains, presets, sessions and/or other content entirely at your own risk and to all extents allowable under the law of Western Australia, Godlike Productions is not liable for loss of damage, direct, consequential or otherwise.

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Getting Started

This manual is for a custom algorithm for the Eventide H9000 available at https://godlike. com.au/index.php?id=420. The H3000 Swept Combs Replica algorithm can be downloaded either as an algorithm that you can import from a USB drive (FAT32 formatted) onto your H9000 from the front panel, via Emote, or that can be uploaded via VSIG 3.3.3 or later.

There will also be a copy of this manual in PDF format. If you lose your copy of the files, please contact us at https://godlike.com.au/index.php?id=contact and we will be happy to send you another copy, or re download the algorithm from the link above. This manual will be available within the zip file.

Installation and Activation

### Method 1 - Install from USB

- Unzip the Algorithm and any presets. Copy H3000 Swept Combs Replica.h9a as well as the .9kp files to your USB drive and insert into your H9000.

- Long press the front panel Save/Import button; the Load Options screen will appear.

- Use the cursor up/down buttons or the wheel to navigate to Algorithms and press the Enter Key.

- Use the cursor up/down keys or wheel to select the H3000 Swept Combs Replica algorithm and then press the SELECT Key.

- If you do not wish to load presets, then you can use this algorithm as is. If you wish to use the presets, you will need to repeat this proceedure until this algorithm appears as algorithm 10168. If you have installed to 10168, copies at lower numbers can be safely deleted using Emote (see below).

- Open the .9kf files from your USB drive using the same procedure.

Method 2 - Install from Emote

- Unzip the Algorithm and any Presets.

- In Emote, select Algorithm -> Import

- Navigate to the unzipped H3000 Swept Combs Replica.h9a file and press open.

- If you do not wish to load presets, then you can use this algorithm as is. If you wish to use the presets, you will need to repeat this proceedure until this algorithm appears as algorithm 10168.

- You can safely delete lower numbered algorithms used to bump this to 10168 by right clicking on the lower numbered algorithm and selecting Delete. Continue doing this until the only copy of H3000 Swept Combs Replica is the one loaded into slot 10168.

- If you are a subscriber at BuyMeACoffee.com or have purchased the premium Swept Combs True Stereo, repeat this procedure for that algorithm ensuring it is loaded into 10169 on the H9000.

- You can subscribe at https://buymeacoffee.com/godlikeprod

H3000 Swept Combs

The diagram below shows the signal flow of this algorithm.
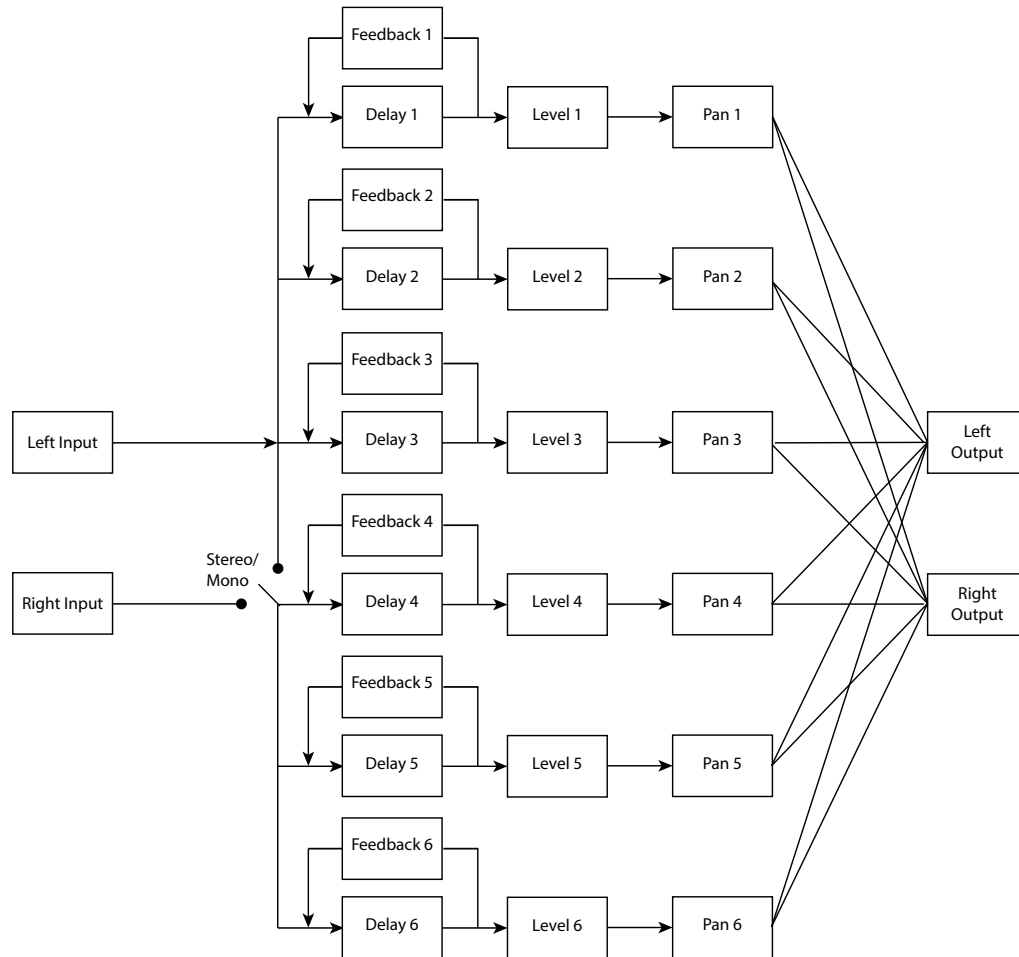
Parameters

Parameter	Description	Range
Stereo/Mono	This emulates the behaviour of the H3000 version where Mono sends the left input to all 6 delay lines, and Stereo sends the left input to delay lines 1-3 and the right input to delay lines 4-6.	Mono/Stereo Default: Mono

Parameter	Description	Range
Speed	This is a global control that varies the LFO speed of all delay lines based on the rates defined in the rates menu. This is a simple multiplier. At 100% the LFO rate will be the same as it is from the rate control. At 50% the LFO speed will be half of the rate control. 0% will freeze the LFO's. The LFO's modulate the delay time for each delay line by the amount of the individual depth control multiplied by the global depth control. The LFO's cannot be synced to MIDI in this version, as it is a faithful recreation of the H3000 algorithm, however the True Stereo version allows for MIDI sync.	0-100% Default: 58%
Depth	This is a global control that varies LFO depth of all delay lines based on the individual depths. This works in the sam way as Speed, above.	0-100% Default: 80%
Wave	This defines the LFO shape. It is global and affects all six LFO's.	Sine, Triangle, Square, Peak Default: Sine
Glide Tm	The original version stated that this was 0 to 100 without units. The control is inverted compared to the H3000 version with low values being quicker and high values being slower. Set to 0 is the same as disabling glide in the original algorithm. This is a global control for how long it takes an LFO to adjust to a new value. Higher values will take a longer time to change speed and will result in smoother transitions, at the expense of reduced responsiveness.	0-1000ms Default: 0ms
Delay 1-6	This sets the base delay time in milliseconds for each of the six delays. The default values are identical to the recreation of this algorithm by Italoop for the H8000 (increased delay memory). For faithful recreation of the H3000 limit the delay times to 200ms in each delay line.	0-600ms Default: 20, 15, 30, 50, 450, 600
Feedback 1-6	This controls the feedback for each of the 6 delay lines. The default values are identical to the original H3000 algorithm.	-100% to 100% Default: 0, 0, 12, -16, 31, 24
Rate 1-6	This controls the LFO rate for each of the 6 delay lines, subject to the Speed Control. The default values are identical to the original H3000 algorithm.	0-200 Hz Default: 0.25, 0.25, 0.32, 0.4, 0.8, 1.2

Parameter	Description	Range
Depth 1-6	This contols the amount of LFO modulation applied to the delay time, subject to the Depth control above. The default values are identical to the original H3000 algorithm. Note that the maximum delay cannot exceed 660 ms regardless of delay and modulation settings. High values will tend to induce pitch modulation	0 - 600ms Default: 5, 6, 8, 9, 7, 8
Level 1-6	This controls the output level of each delay line. The defaults are identical to the original H3000 algorithm. In the H3000 algorithm, these controls were a percentage. We have provided dB for better resolution.	-100 to 0dB Default: 0, 0, 0, 0, -3, -3
Pan 1-6	This is the pan applied to each delay line. The defaults are identical to the original H3000 algorithm. -100% is hard left, 0 is center, 100% is hard right. The original algorithm ranged from -10 to +10. This version gives better resolution. To faithfully emulate the original limit these settings to multiples of 10 only.	-100 to 100% Default: -100, 100, -100, 100, -100, 100

This algorithm is a faithful recreation of H3000 algorithm 105 - Swept combs. This is the orginal description from the H3000 manual.
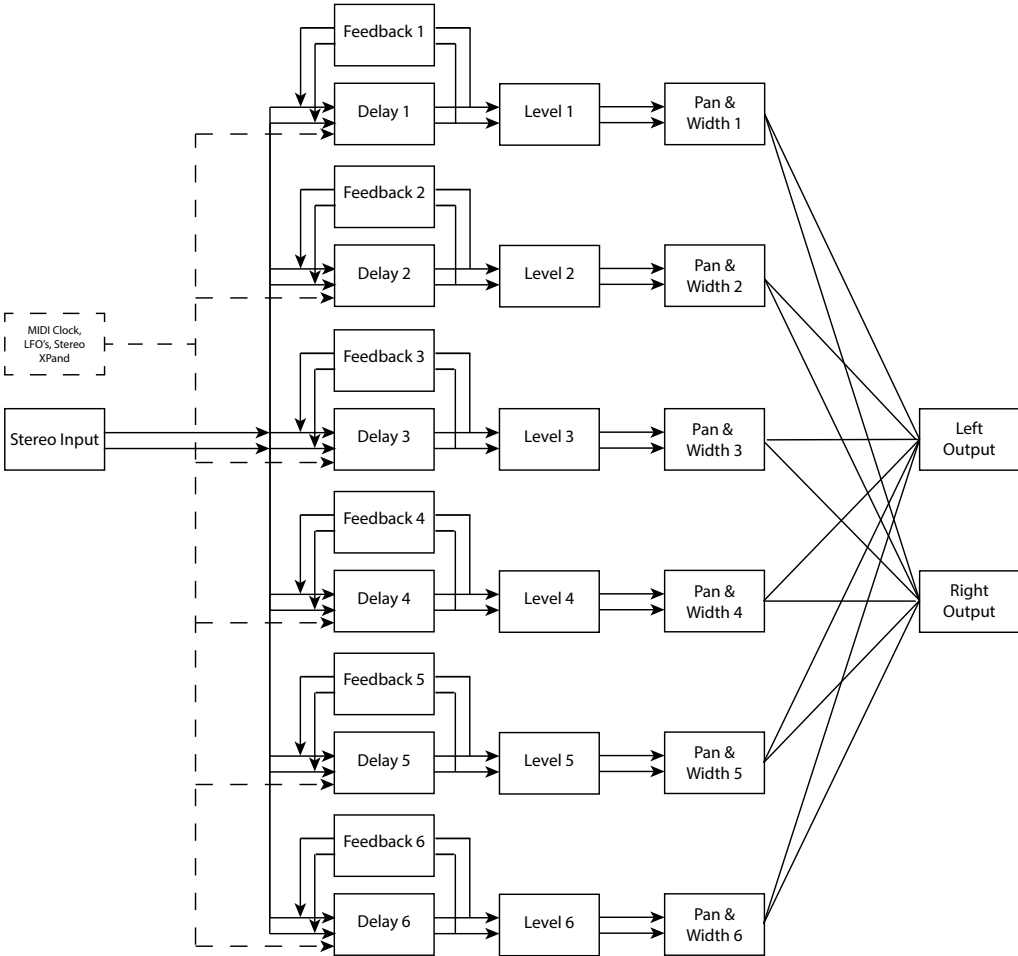
"Picture six high quality digital delay units racked together; each has a 1/4 second delay, modulation control and feedback; all are patche to a 6 input stereo mixer. Automation allows simultaneous control over teh digital delays and mixer or seperate control over each. All have extensive MIDI control. That is the power of the Swept Combs algorithm."

Godlike Productions has updated this algorithm with a True Stereo version that allows stereo inputs to all 6 delay lines with individual pan and width for each of the 6 lines, as well as MIDI syncable LFO's. This is available at xxx, and the manual is below.

For a demo of this algorithm visit https://youtu.be/1m1ygyKiepg

Swept Combs True Stereo

The diagram below shows the signal flow of this algorithm.

Parameters

Parameter	Description	Range
Stereo Expand	Unlike the H3000 version, this algorithm is always in stereo. The Stereo Expand control shifts the right channel delay for all delays adding or subtracting up to 100% of the left channel delay. At -100% the right channel will have no delay, at 100% the right channel delay will be double that of the left channel. At 0% the left and right delays will be the same.	-100% to 100% Default: 0%
Speed	This is a global control that varies the LFO speed of all delay lines based on the rates defined in the rates menu. This is a simple multiplier. At 100% the LFO rate will be the same as it is from the rate control. At 50% the LFO speed will be half of the rate control. 0% will freeze the LFO's. The LFO's modulate the delay time for each delay line by the amount of the individual depth control multiplied by the global depth control. The LFO's cannot be synced to MIDI in this version, as it is a faithful recreation of the H3000 algorithm, however the True Stereo version allows for MIDI sync.	0-100% Default: 58%
Depth	This is a global control that varies LFO depth of all delay lines based on the individual depths. This works in the sam way as Speed, above.	0-100% Default: 80%
Wave	This defines the LFO shape. It is global and affects all six LFO's.	Sine, Triangle, Square, Peak Default: Sine
Glide Tm	The original version stated that this was 0 to 100 without units. The control is inverted compared to the H3000 version with low values being quicker and high values being slower. Set to 0 is the same as disabling glide in the original algorithm. This is a global control for how long it takes an LFO to adjust to a new value. Higher values will take a longer time to change speed and will result in smoother transitions, at the expense of reduced responsiveness. This control will also smooth the delay time changes resulting from changes in tempo when synced to MIDI Clock. You will also need to turn Tempo Mode on, so that MIDI is passed through to the algorithm from the H9000.	0-1000ms Default: 0ms

Parameter	Description	Range
MIDI Sync	When turned on, this will allow delay times to be synced with the H9000's MIDI clock (whether set internally or synced to external MIDI clock). This will also change the parameters that are available to adjust. Ensure that	On, Off Default: On
Delay 1-6	This sets the base delay time in milliseconds for each of the six delay sets. If MIDI Sync is set to On, then these will be set by the Delay Offset, Delay Time and Delay Type knobs, but after being set, you can adjust this knob manually. Changing one of the MIDI controls will take control of this knob again. Each of the delays has 6x the delay memory of the H3000 delays.	0-1200ms Default: 20, 15, 30, 50, 450, 600
Delay Time 1-6	This sets the interval of the delay time in musical units. This parameter is influenced by the Delay Type knob, so for example if 1/8 is selected and dotted is set on the Delay type, the delay will be a dotted eight note. This delay time is added to the Delay Offset to determine the delay time of the individual delay line.	4 bar, 2 bar, 1 bar, 1/2, 1/4, 1/8, 1/16, 1/32, 1/64, 1/128, 1/256, 1/512 Default: 1/512, 1/256, 1/128, 1/64, 1/4, 1/8
Delay Type 1/8	This sets the basis for Delay Time 1-6, as straight notes, triplets, or dotted. **Note: this setting does not affect the Delay Offset.**	Normal, Dotted, Triplet Default: Normal
Delay Offset 1-6	This allows you to add an offset to the Delay time to acheive delay times like 3/8, 5/8, 3/16, 3/4, Bar + 1/4 Note, Bar + 1/8 Note, Bar + 1/2 Note. This parameter is not affected by Delay Type.	4 bar, 2 bar, 1 bar, 1/2, 1/4, 1/8, 1/16, 1/32, 1/64, 1/128, 1/256, 1/512, 0 Default: 0
D# Pinned	Each delay line has an upper limit of 1200ms (I had to set it to something). If you set a MIDI interval such that a delay time will exceed 1200ms, this will change display to "Pinned" meaning it has hit the maximum value. If you are chasing synced delays and something sounds wonky, this is the first place to check for each of the delay lines.	OK, Pinned

Parameter	Description	Range
Feedback 1-6	This controls the feedback for each of the 6 delay lines. The default values are identical to the original H3000 algorithm.	-100% to 100% Default: 0, 0, 12, -16, 31, 24
Rate 1-6	This controls the LFO rate for each of the 6 delay lines, subject to the Speed Control and Stereo Xpand. The default values are identical to the original H3000 algorithm.	0-200 Hz Default: 0.25, 0.25, 0.32, 0.4, 0.8, 1.2
Depth 1-6	This contols the amount of LFO modulation applied to the delay time, subject to the Depth control above. The default values are identical to the original H3000 algorithm. Note that the maximum delay cannot exceed 660 ms regardless of delay and modulation settings. High values will tend to induce pitch modulation	0 - 600ms Default: 5, 6, 8, 9, 7, 8
Level 1-6	This controls the output level of each delay line. The defaults are identical to the original H3000 algorithm. In the H3000 algorithm, these controls were a percentage. We have provided dB for better resolution.	-100 to 0dB Default: 0, 0, 0, 0, -3, -3
Pan 1-6	This control works slightly different to the H3000 Swept Combs Algorithm. In this algorithm the parameter sets the center point of the stereo field for the stereo delay line and it works in conjunction with the Width parameter. If this is set to 0% then the centre point output of the delay line will be centred, and if the width is set to 100% then the left and right will be panned hard left and right. Setting to a negative value will swap the position of the left and right outputs.	-100% to 100% Default: -20, 20, -10, 10, 0, 0
Width 1-6	This control left signal panning and right signal panning further from the Pan position as the parameter increases. At 100% the left signal will be panned 100% left and the right signal will be panned 100% right. Negative values will swap left and right sides. Setting to 0% will pan both the left and right delay outputs to whatever position Pan is set to. You can never set any panning greater than 100% or less than -100% regardless of the settings of pan and width. The diagrams below illustrate how pan and width work together.	-100% to 100% Default: 50, 60, 70, 80, 100, 100

Pan: 0%
Width: 83%

Pan: 0%
Width: -83%

Pan: 0%
Width: 50%

Pan: -25%
Width: 50%

Pan: 0%
Width: 25%

Pan: 50%
Width: 25%

Pan: 50%
Width: -25%

Pan: 0%
Width: 100%

Pan: 0%
Width: 0%
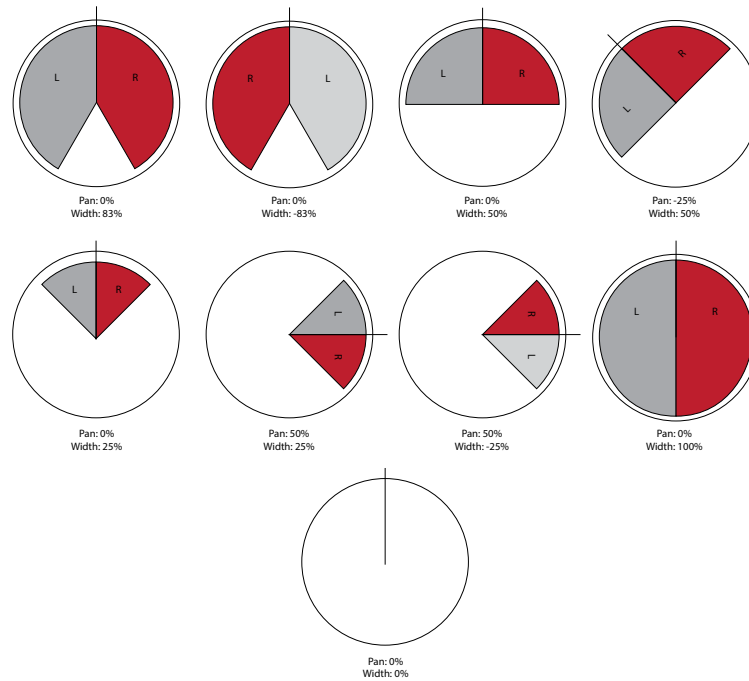
This algorithm is an updated version of the H3000 Swept Combs algorithm that takes advantage of the extra power of the H9000. This version preserves the stereo signal through all six parallel delay stages and packs six times the delay time for each and every one of the delays. In addition, the delays are now able to be synced up to MIDI

For a demo of this algorithm visit https://youtu.be/1m1ygyKiepg