
H3000 FACTORY

User Guide

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1.1 About This Product

H3000 Factory Mk II is a recreation of several key algorithms from the H3000 Ultra-Harmonizer® effects processor. It provides a convenient modular interface to combine up to 18 effects blocks together in an enormous number of configurations. It offers pairs of sweepable delays, pitch shifters, filters, mixers, amplitude modulators (or VCAs), and an assortment of modulation sources including two low frequency oscillators, envelope generators and more. Each of your custom effects can be easily manipulated in real time or synchronized to a session. All of this flexibility, with the sought-after sound of the H3000, brings you a great-sounding plugin that's as versatile as the original that inspired it.

Eventide H3000 Factory features:

- 18 effects blocks can be wired "anything to anything."
- Delays utilize a Beat Grid, letting you easily place delays in perfect time with the music.
- Fully adjustable filters offer Band Pass, High Pass, and Low Pass types with Q factors up to 1000.
- Over 200 parameters make this an incredibly versatile sound design tool.
- Drag and drop re-ordering of effects blocks.
- Full MIDI controller support for Parameter Modulation.
- Recreation of the H3000 Function Generator and Parameter Modulations provides for dynamic sound shaping.
- Soft Keys let you customize the most important preset parameters.
- Familiar interface and original presets from the H3000, with a new graphical patch bay for ease of use.

This chapter details the overall operation of the plugin as well as how each of the parameters function. Please take some time to familiarize yourself with what each parameter does and to read the section on Snapshots. Snapshots are a new and unique part of the product and may take a little getting used to in order to utilize them fully.

2.1 I/O Formats

H3000 Factory is available in **Mono → Mono**, **Mono → Stereo**, and **Stereo → Stereo** configurations. For Mono input configurations, the plugin input will be routed to both Left and Right input blocks. Similarly, for Mono output configurations the Left and Right output blocks will be summed at the plugin's output. For stereo input and output configurations, the Right and Left module blocks will correspond directly to the Left and Right channels entering and exiting the plugin.

The plugin also provides a dedicated input block to route side chain inputs from your session into the H3000 Factory signal path.

2.2 Patch Cables and Blocks

The H3000 Factory plugin contains 18 effect blocks in a patchable interface. These blocks are located in the lower left of the plugin, on the Program Page. Clicking on each input, output, or effect block will show that block's detail page, which includes all relevant parameters, modulation and routing. To create effects in H3000 Factory, you connect the effects blocks together using virtual patch cables. Click on the desired block's Output jack and drag the resulting cord over to any block's Input jack. The connection is made when you release the mouse button. You may start with an effects block's Input jack and drag to an Output jack as well. Audio and Mod signals can be interconnected unleashing incredibly dynamic effects. Patch cords are also color-coded for your convenience:

- **Blue** - Left audio channel
- **Red** - Right audio channel
- **Purple** - Mixed audio channel
- **Yellow** - Mod signal
- **Orange** - Noise signal
- **Cyan** - Side Chain audio signal
- **Grey** - Not connected to signal path

2.3 Effects Blocks

There are 27 blocks in the H3000 Factory patch bay which fall into 14 distinct types. They may be re-ordered in standard drag and drop fashion, allowing you to stay organized as you build complex effects.

The effects are:

- **I/O** – the Left and Right input and output blocks, and the Side Chain block, all represent the plugin's I/O.
- **Delay** – two Delay modules with feedback and modulation control over delay time and filter cutoff.
- **Pitch Shift** – two Pitch Shift modules with delay and modulation control over pitch shift amount and delay time.
- **Filter** – two Filter modules, switchable between lowpass, highpass, and bandpass. These have modulation control over both cutoff and filter Q, or resonance.
- **Amp Mod** – two Amp Mod modules, which are similar to a VCA, having modulation control over gain.
- **Scale** – two Scale modules, which are invertible level controls.
- **Mixer** – four, two-input Mixer modules.
- **Envelope** – two Envelope modules, which are envelope detectors/followers of the type used in compressors or envelope filters. These output the average level of the input signal over time, and have an additional ducker output, which can be used in combinations with the Amp Mod modules to make compressors, among other things.
- **LFO** – two retriggerable LFOs with 13 wave shapes to act as modulation sources. These can be synced to tempo and have an additional frequency modulation input.
- **Noise** – the Noise block is an audio rate white noise generator source.
- **Fullscale** – the Fullscale block provides a constant +1.0 and -1.0 source.
- **Mod Knob** – the Mod Knob is a constant control source which can be set by the user, or modulated by the H3000 Func Gen.

- **Func Gen** – is a recreation of the Function Generator from the H3000. This is an additional level of modulation which allows you to smoothly modulate many parameters of the other modules, or to assign those parameters to the Soft Keys, or to MIDI.

The H3000 Factory user interface panel is broken down into four main sections, each of which is detailed in this chapter:

PRESET BAR	The area above the Front Panel where you can recall, save, and scroll through presets.
H3000 FRONT PANEL	The top portion of the plugin panel that resembles the original H3000's front panel.
GLOBAL PARAMETERS	The center section that contains level, mix and tempo settings for the current preset.
ADVANCED PARAMETERS	The lower tabbed section of the plugin. Use the "EXPAND" button on the right side of the plugin to show and hide this section. Click on one of the Program, Expert or Function tabs to bring those parameters to the forefront.

3.1 H3000 Front Panel



LEVELS

The stereo meters allow you to monitor the audio signal levels. Click on the in/out button to toggle between the input and output signal. An illuminated LED indicates that the meter levels correspond to the input signal.

SOFT KEYS

The H3000's Soft Keys were originally designed for creating custom parameters that may not have been available in the chosen algorithm. This feature is incorporated into the H3000 Factory plugin as well. To adjust one of these parameters, click on the button below the Soft Parameter's name and then turn the big Knob to the right. It is also possible (and easier) to simply click on the value field below the Soft Parameter's name and drag the mouse to adjust the value, but then you won't be having authentic H3000 style fun. The specifics of assigning Soft Keys to parameters are detailed in the Program page later in this document, under the Function Generator section.

PAGE SELECT BUTTONS

The page select buttons are found between the Knob and the Soft Keys. These buttons act like the ones on the original H3000 by selecting the Program, Expert or Function page of parameters. As you click on one of these buttons, the bottom portion of the plugin panel changes to show the appropriate view of parameters. It's also possible to access these pages by clicking on the tabs in the lower section.

KNOB

The Knob allows you to adjust one Soft Parameter at a time. To do this, click on the button below the soft name and then turn the Knob.

3.2 Snapshots

Eventide Factory incorporates our unique Snapshots feature that allows you to quickly and easily load, save and even automate up to 32 of your favorite Factory “scenes.” Snapshots are very much like presets, but you can load them directly from the plugin panel and even automate them if desired. This means that you get the live performance functionality offered in our high-end hardware processors within the DAW’s environment.



Managing Snapshots

To load a Snapshot, click on any of the numbered buttons. To save your work and overwrite one of the Snapshots, command-click on any of the numbered buttons on Mac, or ctrl-click on Windows. There’s no undo, so be sure before you overwrite a Global Snapshot. To give a Snapshot a new name, click the name field to edit it.

Revert

Revert gives you the freedom to return to the effect settings you were working on before you loaded one or more Snapshots. It is similar to the compare button in the preset bar, except you can load a gajillion Snapshots, and still get back the same parameter values that you had edited prior to loading Snapshots.

As soon as you select a Snapshot, the Revert button pops out to indicate that you can press it. Click on some other Snapshots. It’s still out. If you click on Revert, it goes back in and you’re back to your original edits. You’ll also notice that the selected Snapshot button pops out and becomes unlit as soon as you change a parameter’s value. This is to indicate that you are no longer listening to a Snapshot.

Global vs. Current

There are two kinds of Snapshots, Global and Current, each grouped in banks of 16.

During installation, the Global bank is installed on your hard drive. You can overwrite each of these 16 defaults at any time and they will be available for every instance of the Factory plugin, on every DAW session on the hard drive. Use these like your favorite 16 Factory effects. You can even copy this file and move it to other systems that have Eventide Factory installed so you can take your favorites with you.

The Current bank differs in that it is saved with each preset. Every time a particular preset is loaded, those snapshots saved to it will be loaded into the Current slots.

Proper Snapshot Hygiene

Snapshots can be very powerful in use, but knowing how they work will help ensure that your Eventide Factory Snapshots load and sound right every time. So, if you want to load or automate a Snapshot, load it from the Current bank. If you want to build yourself your favorite 16 and use them everywhere, use the Global Snapshots. If you want to copy a cool Current Snapshot into the Global bank, simply load it with the Current button selected first, then command-click on the desired Snapshot button after selecting the Global button.

Restoring Global Defaults

If you need to restore the factory Global Snapshots at any time, simply run the plugin installer again, as it will place the default Global Snapshots back into the Snapshots folder.

Automating Snapshots

You can use the automation lane to select and load any of the 32 Snapshots. If you want to be sure that your session's sound will be unaffected by changes to global snapshots, be sure to only automate current snapshots.

3.3 Global Parameters



The original H3000 included a set of parameters that came up instantly after loading a preset. We've grouped them in the Global Parameter section for easy access. Like many of the parameters in the product, these sliders can be automated and many of them can be manipulated using the Parameter Modulation section on the Function page. We'll describe how to set that up later, but for now let's take a look at the parameters on this panel.

SESSION When this button is enabled, H3000 Factory's Tempo parameter will use and follow your DAW's session tempo. You will only be able to adjust the tempo and meter by changing your session's settings.

DELAY SYNC Enabling this button will cause delay times of the Delay and Pitch Shift effect blocks to be calculated based on the Tempo and Meter parameters. As the Tempo value changes, the delays will be scaled to maintain the rhythm that is displayed in the Beat Grid. When this parameter is off, Tempo and Meter changes will have no effect on delay times.

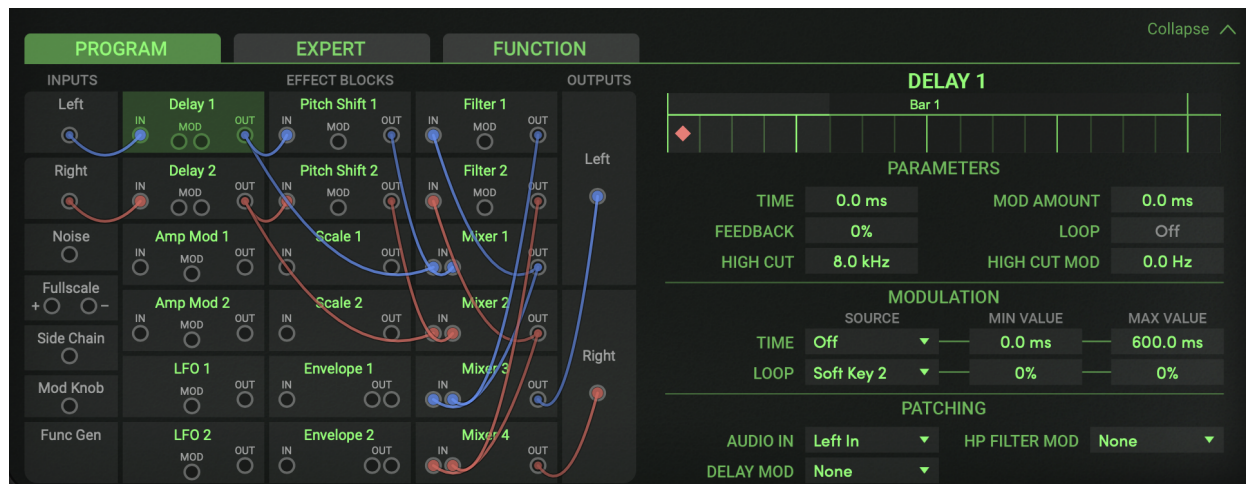
TEMPO When Session Tempo is disabled, this sets the Tempo parameter in beats per minutes (BPM). When Session Tempo is enabled, the Tempo parameter value will be greyed out and you will be unable to change it. Only altering the tempo of your DAW's session will affect the Tempo parameter when Session Tempo is engaged.

METER These parameters provide a way to set the song's meter, defining the number of beats in each measure and the integral beat division. The meter will be reflected in the Beat Grids of the Delay effect. When Tempo Based is enabled, these values will be greyed out and their value will be linked to your DAW's session meter.

Mix	This parameter sets the overall balance of wet (effected) signal to dry (original) signal. When the Mix is set to 0%, H3000 Factory is bypassed.
INPUT LEVEL	This parameter allows you to adjust the signal level into this plugin. Up to 12 dB of gain is provided to recover low-level signals. As with all parameters, you can Alt-click the fader or the text box to set the level value back to its default.
OUTPUT LEVEL	This parameter allows you to adjust the plugin's output level. Up to 12 dB of gain is provided.

3.4 Program Page

The Program page, accessible via the lower portion of the plugin panel, offers two working areas to help you manage the large number of parameters and their settings. The left half of the panel displays the 18 effects blocks, Inputs, and Outputs. Click on any of the effects blocks and you'll bring up the Effect Block Details on the right half of the Program page. Although many of these parameters are available via the Expert and Function pages, they are also displayed here to make your workflow more efficient.



To view this page at any time, expand the lower view and click on the PROGRAM tab. This page may also be selected by clicking on the Program button to the left of the Knob. We'll start by detailing the Inputs, the Effects Blocks and lastly, the Outputs in the following section.

Left and Right Inputs

Drag a patch cable from either of these inputs to send audio into another effects block. When H3000 Factory is inserted onto a mono track, these two inputs will receive identical audio.

Noise Input

This white noise generator is useful for affecting the timbre of an audio signal or creating a variety of random-sounding effects. Watch your audio levels when connecting this block—it provides a full scale signal output.

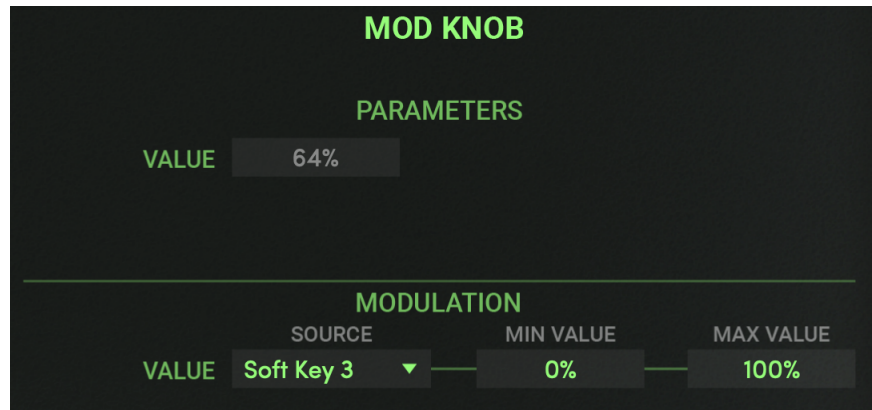
Full Scale Input

This block can be used in conjunction with other control signals to help maintain a steady signal or modify the output of others.

Side Chain Input

This block allows you to utilize the audio coming in through your DAW's side chain send.

Mod Knob Input



The Mod Knob was a key contributor to the wild effects that could be made using the original H3000 algorithms. Using the Mod Knob, a preset can be customized to allow a parameter to be manually modulated in real time. For example, if you set Mod Knob's modulation source to be Soft Key 1 and then connect the Mod Knob output to Pitch Shift 1's Mod Input, this will allow you to modulate the pitch shift amount in real time by scrolling the Wheel when Soft Key 1 is selected. Please note that simply connecting the Mod Knob to a Mod Input will not automatically link that parameter's modulation to the Wheel at the top of the screen. You will need to assign a Mod Knob Modulation Source in the Mod Knob details panel to activate it.

Function Generator

The screenshot shows a digital control interface for a Function Generator. It is divided into three main sections: PARAMETERS, MODULATION, and SOFT KEY SETUP. The PARAMETERS section includes controls for TYPE (Sine), RATE (1.00 b), AMPLITUDE (100%), and buttons for TEMPO SYNC and TRIGGER. The MODULATION section allows setting the RATE, AMPLITUDE, and TRIGGER of the modulation to Off, with corresponding MIN and MAX VALUE ranges. The SOFT KEY SETUP section maps four soft keys to Delay, Feedback, Filter, and Wobble functions, each with a range from 0 to 100.

FUNCTION GENERATOR				
PARAMETERS				
TYPE	Sine			
RATE	1.00 b			
AMPLITUDE	100%		TEMPO SYNC	TRIGGER
MODULATION				
	SOURCE		MIN VALUE	MAX VALUE
RATE	Off		20.00 b	0.10 b
AMPLITUDE	Off		1%	100%
TRIGGER	Off		40%	80%
SOFT KEY SETUP				
Delay	Feedback	Filter	Wobble	
SOFT KEY 1	SOFT KEY 2	SOFT KEY 3	SOFT KEY 4	
0 to 100	0 to 100	0 to 100	0 to 100	

The Function Generator (FG) is an LFO (low frequency oscillator) adopted from the H3000. It offers a variety of wave shapes that you can use to control many of the Global Parameters described earlier. You can even assign the FG's Amplitude, Rate and Trigger button as targets for Parameter Modulation. Each FG Type, or wave shape, can be set to a specific speed and range. Many are available as triggered waveforms. The Function Generator consists of five parameters, plus an LED that lights to help you see its effective output. These parameters are described below.

TYPE Select the wave shapes. See the next page for the complete list.

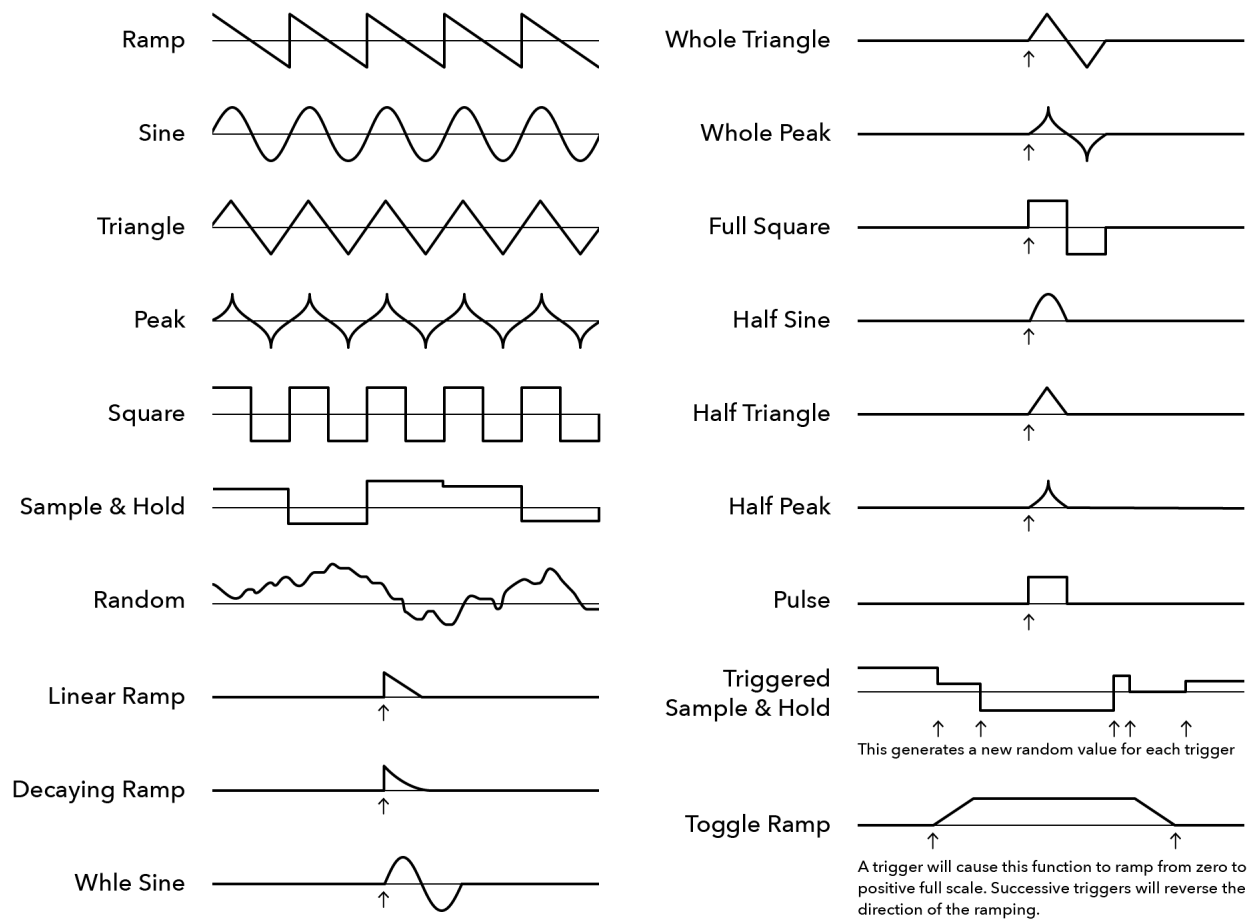
RATE Sets the rate (or speed) at which this oscillator runs freely. This also represents the time that the one-shot waveshapes take to complete their cycle.

AMPLITUDE Sets the overall output level of the oscillator.

TEMPO SYNC Sets the FG to calculate rates based on the current tempo.

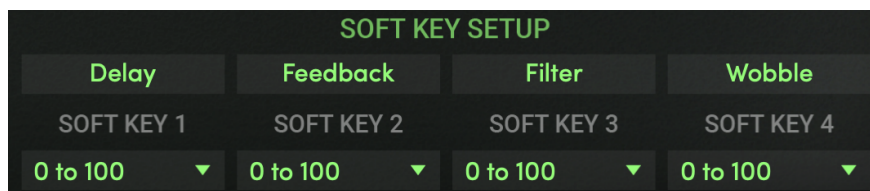
TRIGGER Retrigger the selected wave shape. A single press will cause the FG to run through the entire shape of the one-shot types and then stop.

The H3000 Factory plugin offers the same 19 waveshapes as the original H3000. Below is a list of the FG Types and a visual representation of each.



Soft Key Setup

The Soft Keys in the Function Generator page mirror those available at the top of the plugin when a preset loads. They were originally intended in the H3000 to let you create custom controls with different names. The four Soft Keys are useful when you want to create a custom parameter or just organize the most commonly-used parameters into an easy to access place. The four custom controls and their settings are specific to each preset allowing virtually every preset to be unique.



NAME Click to change the name of the Soft Key. It can be up to eight characters long.

POLARITY This sets the range of the chosen Soft Key and is useful when you want to change the knob's behavior. For example, you might choose "-100 to +100" when a Soft Key is controlling Global Pan. Otherwise, a range of "0 to 100" is the norm.

To use the Soft Key, select it as a Modulation Source for one or more of the available Modulation Parameters. Click on the Soft Key on the front panel and turn the Big Knob or just click and drag on the Soft Key value in the H3000 LCD to adjust it.



If you select a Soft Key as a source for FG Trigger and the FG Type is one of the one-shot wave shapes, turning the big knob will execute the one-shot.

Effect Block Parameters Section

Each Effect Block has a Parameters section, which mirrors the corresponding parameters found in the Expert page. These parameters are described with each of the effects block parameters in the following sections.

Effect Block Modulation Section

Most blocks feature a Modulation section that allows these effects receive mod signals from any of the following sources:

- Function Generator output
- Soft Keys 1-4
- MIDI Mod Wheel
- MIDI Pitch Wheel
- MIDI Volume (#7), Balance (#8), Pan (#10), and Expression (#11) Continuous Controllers
- MIDI General Purpose Controllers 1 - 4 (#16 - #19)

Each of these parameters also allow you to set a minimum and maximum value for when the source is at its minimum or maximum output.

Effects Block Mod Input and Patching Section

Most effects blocks will have an independent Mod Source input that you can use to modify one or more predetermined parameters in that block. Much of the power of H3000 Factory revolves around this feature, allowing audio and modulation sources to be connected to this input and dynamically alter the main effect attributes.

There are two ways to connect to this input:

- Drag a patch cable from another block's output to a MOD input.
- Select an input source from the drop down list in the block's Patching section at the bottom of the Effect Block. Not all modulation sources are available to connect with cables so you may have to use the drop down menu in certain situations.

Most of these inputs have an associated mod amount parameter which scales the modulation input value, before applying it to the appropriate parameter. Make sure this mod amount is set to the desired level to hear the intended modulation effect.

In the example below, the Side Chain output is connected to LFO 1. When the audio level at this input reaches -40dB, it will toggle the state of the exponential toggle wave. Notice that the Patching section's MOD/TRIG IN is set to Left In.



Delay 1 and 2

The screenshot shows the 'DELAY 1' interface. At the top is a 'Bar 1' grid with 16 vertical lines and a red diamond marker at the first line. Below this are four sections: 'PARAMETERS', 'MODULATION', and 'PATCHING'. The 'PARAMETERS' section has four controls: 'TIME' (0.0 ms), 'MOD AMOUNT' (600.0 ms), 'FEEDBACK' (90%), and 'LOOP' (Off). The 'MODULATION' section has four controls: 'TIME' (0.0 ms), 'MOD AMOUNT' (600.0 ms), 'FEEDBACK' (90%), and 'LOOP' (Off). The 'PATCHING' section has two controls: 'AUDIO IN' (Left In) and 'HP FILTER MOD' (None).

PARAMETERS			
TIME	0.0 ms	MOD AMOUNT	600.0 ms
FEEDBACK	90%	LOOP	Off
HIGH CUT	8.0 kHz	HIGH CUT MOD	0.0 Hz

MODULATION			
TIME	Soft Key 2	MIN VALUE	MAX VALUE
	0.0 ms	0.0 ms	600.0 ms
LOOP	Off	40%	80%

PATCHING	
AUDIO IN	Left In
HP FILTER MOD	None
DELAY MOD	None

The H3000 Factory plugin features two independent, sweepable delay lines that can be tempo-synced or modulated using any of the available sources. This section details the various parameters available within the Delay 1 and 2 blocks.

BEAT GRID

The Beat Grid allows you to set delays rhythmically by dragging the (X) marker horizontally, automatically quantizing the delay to musical beat divisions. Bars, beats and their subdivisions are displayed as vertical lines. The number of Bars and Beats displayed are dependent upon the Tempo and the chosen Meter. The Bars are labeled across the top and are divided into beats (the heavy vertical lines) and sixteenth note subdivisions (the light vertical lines). Holding the Command or Ctrl keys (for Mac and Windows respectively) while dragging this marker will disable quantization.

TIME

Instead of using the Beat Grid, you may set the delay time by typing a number, in milliseconds, into this Delay Amount text box. This method will not quantize the delay, thus providing control over the entire 600 ms range.

MOD AMOUNT

This controls how much the delay modulation input will affect the delay time. Short delay amounts set here will result in subtle chorus-like modulation while longer ones may cause more dramatic pitch sweeping effects.

FEEDBACK	This control determines how much of the delay's output will be fed back into its input. This causes the audio to repeat itself as the feedback amount is increased.
LOOP	Setting this parameter to On will cause the delay to mute the audio input and repeat the current audio infinitely, or loop, until it is set to Off again. The loop length is determined by the Time parameter.
HIGH CUT	This sets the cutoff frequency of a sweepable low-pass filter at the output of the delay line.
HIGH CUT MOD	This parameter controls how much effect the filter modulation input will have on the Delay's high cut filter setting.

Pitch Shift 1 and 2

The screenshot shows the 'PITCH SHIFT 1' block interface. At the top is a 'Beat Grid' with a red diamond marker on the first bar. Below it are four sections: 'PARAMETERS', 'MODULATION', and 'PATCHING'. The 'PARAMETERS' section has four controls: 'SHIFT AMOUNT' (20.0), 'SHIFT MOD' (0.0), 'DELAY TIME' (37.5 ms), and 'SPLICE LENGTH' (20.0 ms). The 'MODULATION' section has three controls: 'SHIFT AMOUNT' (Soft Key 3), 'DELAY TIME' (Off), and 'X-FADE LENGTH' (10.0 ms). The 'PATCHING' section has two controls: 'AUDIO IN' (Delay 1 Out) and 'PITCH MOD IN' (None).

PARAMETERS			
SHIFT AMOUNT	20.0	SHIFT MOD	0.0
DELAY TIME	37.5 ms	X-FADE LENGTH	10.0 ms
SPLICE LENGTH	20.0 ms	PITCH MODE	Detune

MODULATION			
SHIFT AMOUNT	Soft Key 3	MIN VALUE	MAX VALUE
		-20.0	20.0
DELAY TIME	Off	10.0 ms	600.0 ms

PATCHING	
AUDIO IN	Delay 1 Out
PITCH MOD IN	None

This section details the various parameters available within the Pitch Shift 1 and 2 blocks. The pitch shifter can operate in either a detune or pitch mode.

BEAT GRID

The Pitch Shift block also features the Beat Grid, which works the same as the delay blocks. Refer above for a detailed description.

SHIFT AMOUNT

This determines the amount of pitch shift or detuning that is applied to the audio. Setting it to very small amounts can result in a rich sound. This parameter is measured in units of cents (1/100th of a semitone). For example, a 1200 cent pitch shift would output signal an octave above the input.

SHIFT MOD

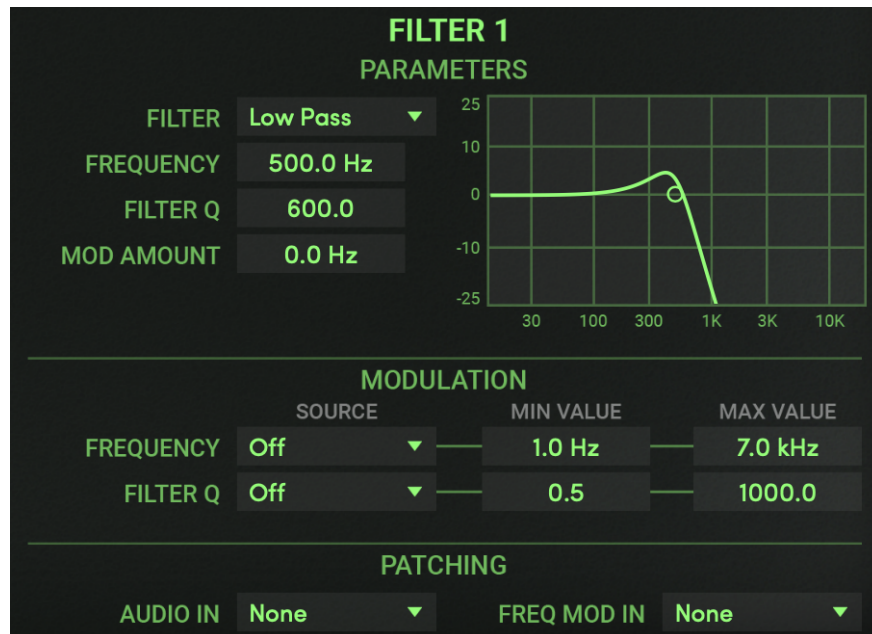
This controls how much the modulation input will affect the overall amount of pitch shift.

DELAY TIME

Like the Beat Grid, this control determines the total delay time before the shifted or detuned audio is heard.

PITCH MODE	The H3000 Factory's pitch 1 and 2 blocks can operate in two modes, depending on this setting. When set to Pitch mode, the block is running in a deglitched pitch shifting mode. This allows you to set fixed pitch shift amounts, but also to dynamically modulate them with a Mod source and the Mod parameters below, always receiving a clean output. When set to Detune mode, the pitch block operates as a detune effect, focusing on small pitch amounts to build lush pitch effects, or on heavily glitched sounds which can create a range of glitchy buffer effects.
SPLICE LENGTH	Controls the splice length for the detuning algorithm. Longer settings of this parameter will provide less "glitches" but will add more delay to the signal. Smaller settings may cause more glitches but will give a tighter sound (i.e. smaller delay). This control is only visible in the Detune Pitch Mode.
X-FADE LENGTH	Controls the crossfade time of the splices and the sound of the glitches. Smaller values will make the glitches shorter but more obvious whereas longer values will make the glitches longer but will have a tendency to smear the audio. Smaller crossfade times are suggested for more transient input signals whereas longer crossfade times are suggested for more tonal input signals. This control is only visible in the Detune Pitch Mode.
LOW NOTE / HIGH NOTE	Informs the pitch shifting algorithm of the lowest and highest notes it should expect from the input source. These controls are only visible in the Shift Pitch Mode.
SOURCE TYPE	Informs the pitch shifting algorithm of the source type to be shifted, with 1 being a fully Polyphonic source and 19 being a fully Monophonic source. This control is only visible in the Shift Pitch Mode.

Filter 1 and 2



H3000 Factory features two effects blocks dedicated to sweeping filters. They can be set for sound shaping or swept using the Mod parameters described here.

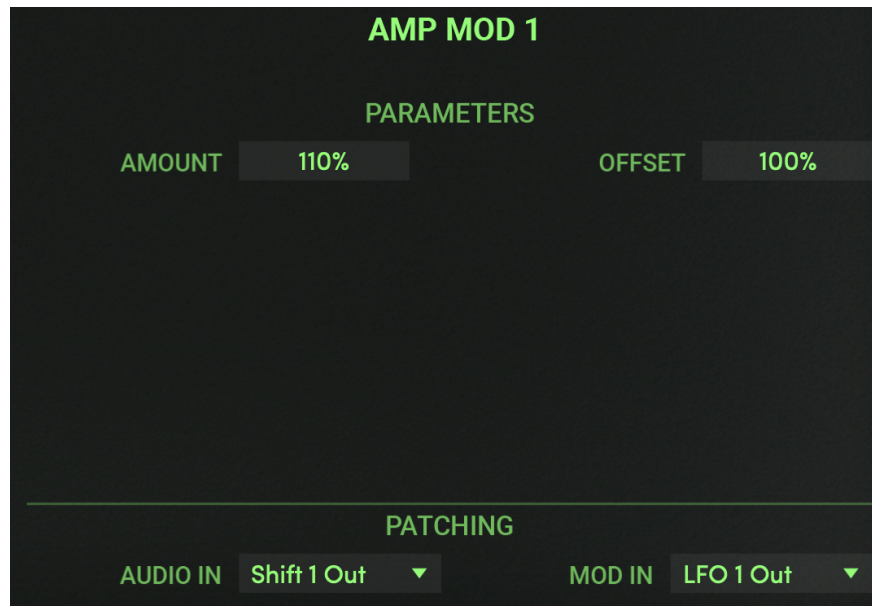
FILTER The filter effects have selectable filter types, including lowpass, bandpass, or highpass. Use this drop down box to choose a filter type.

FREQUENCY This control adjusts the filter's center frequency.

FILTER Q The Q factor of a filter determines the filters resonance. A high setting will result in a more resonant, pitched effect on the audio. At maximum Q, self-oscillation will occur. As Q is increased, so is the filter's gain, so use this parameter with caution.

MOD AMOUNT This determines how much the connected modulation input will affect the center frequency.

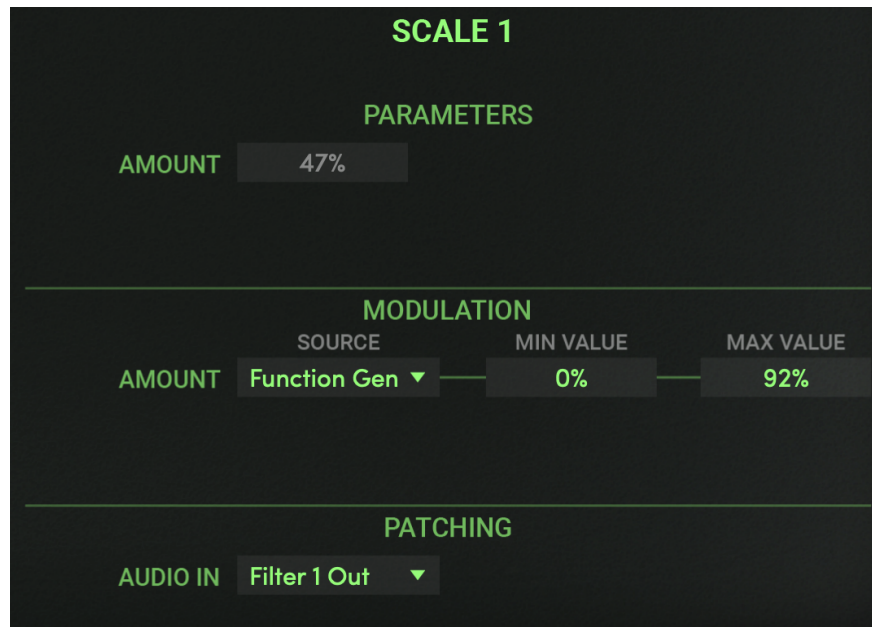
Amp Mod 1 and 2



The Amp Mod blocks are similar to synthesizer VCAs. Use these blocks to smoothly modulate audio signal levels creating auto-panning, ducking and other dynamic effects.

AMOUNT	This parameter determines how much the modulation input affects the gain of the audio signal.
OFFSET	The value here sets the minimum amount of gain change on the audio signal when the Mod source is at its minimum.

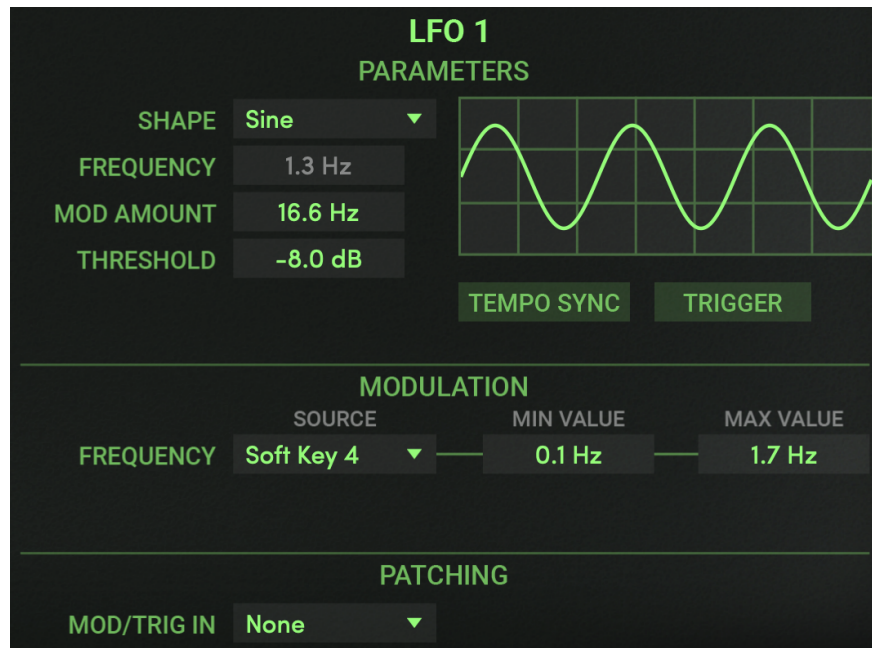
Scale 1 and 2



The two Scale blocks are available for controlling the gain of mod signals. By connecting it to an audio signal, a Mod source (such as a Soft Key) can be used to adjust the Mod source's effectiveness.

AMOUNT This value sets how much attenuation is applied to the mod source.

LFO 1 and 2



The H3000 Factory includes two independent low frequency oscillator (LFO) blocks. They provide exceptionally smooth modulation signals in thirteen waveshapes, including many one-shot types that can be triggered using any available Mod source. These LFOs may also be synchronized to your session tempo to create self-running effects that are perfectly locked to the music.

- | | |
|-------------------|--|
| SHAPE | Use this pull down menu to select from the 13 available wave shapes. |
| FREQUENCY | This parameter sets the speed at which the LFO will run. When the Tempo Based button is lit, this rate is expressed in Beats Per Minute (BPM), otherwise the range is expressed in Hertz (Hz). |
| MOD AMOUNT | When a Mod source is connected to the LFO block's Mod input, Modamount determines the overall frequency parameter's variation, in Hertz. This can be useful when adding a vibrato effect to a slow running sweep effect. |
| THRESHOLD | When any of the triggered wave shapes are selected, this parameter sets the level at which the Mod source will trigger the LFO. |
| TEMPO SYNC | Enabling this parameter will tie the LFO to the session tempo. The Frequency parameter will be displayed in BPM. |

TRIGGER

Use this button to manually start a triggered wave shape.

Envelope 1 and 2



Two independent envelope generators are available to create output in response to changes in the input signal. Two outputs are generated: an envelope follower output (the left output jack) and a ducker output (the right output jack). You can use these outputs to have any parameter (such as pitch shift) be controlled by the loudness of a signal.

ATTACK The attack time controls the speed at which the envelope follower tracks increases in the input signal.

DECAY The decay time controls the speed at which the envelope follower tracks decreases in the input signal.

DUCKER THRESHOLD This sets the level above which the ducker output begins to attenuate from 1.0.

DUCKER RATIO Using common in:out ratios, this control determines the overall amount of ducking that occurs for each dB of input signal that passes through the Threshold level.

Mixer 1-4

MIXER 1

PARAMETERS

LEVEL A100%

LEVEL B100%

MODULATION

	SOURCE	MIN VALUE	MAX VALUE
LEVEL A	Off	-100%	100%
LEVEL B	Off	-100%	100%

PATCHING

INPUT AShift 1 Out

INPUT BDelay 1 Out

Four two-input mixer blocks are available for combining two inputs for combining audio or control signals. They can be controlled remotely as well using the Modulation Source and Patching parameters. For example, assigning a single Soft Key to both Level A and B parameters can control the balance of two inputs. Just assign the Source as Soft Key 1 and set Level A's Min and Max Values to be inverse of Level B's. The Soft Key now acts like a cross-fade control.

LEVEL A This sets the input level for the A input (left input jack).

LEVEL B This sets the input level for the B input (right input jack).

3.5 Expert Page

The Expert Page interface is a dark-themed control panel with a 'Collapse' button in the top right. It features three main tabs: 'PROGRAM', 'EXPERT' (which is highlighted in green), and 'FUNCTION'. The parameters are organized into several sections:

- DELAY 1 / DELAY 2:** Includes parameters like DELAY TIME, MOD AMOUNT, FEEDBACK, LOOP, HI-CUT FREQ, and HI-CUT MOD.
- PITCH SHIFT 1 / PITCH SHIFT 2:** Includes parameters like SHIFT AMOUNT, SHIFT MOD, and DELAY TIME.
- LFO 1 / LFO 2:** Includes parameters like SHAPE, FREQUENCY, MOD AMOUNT, and THRESHOLD.
- AMP MOD 1 / AMP MOD 2:** Includes parameters like AMOUNT and OFFSET.
- FILTER 1 / FILTER 2:** Includes parameters like TYPE, FREQUENCY, FILTER Q, and FREQ MOD.
- ENVELOPE 1 / ENVELOPE 2:** Includes parameters like ATTACK, DECAY, THRESHOLD, and RATIO.
- SCALE 1 / SCALE 2:** Includes parameters like AMOUNT.
- MIXER 1 / MIXER 2 / MIXER 3 / MIXER 4:** Includes parameters like LEVEL A and LEVEL B.

Parameter values are displayed in green text, while modulation sources (indicated by a bracket icon) are displayed in grey text.

Adopted from the original H3000 architecture, the Expert page is where you can view all effect parameters at once. This was part of the many magic modules that made the H3000 such a dynamic studio processor. It offers an at-a-glance look at the myriad of effects block parameters. To alleviate the redundancy of explanation, this chapter will reference the individual parameters to their Program page counterparts as described in earlier sections.

To view this page at any time, expand the lower view and click on the EXPERT tab. This page may also be selected by clicking on the Expert button to the left of the Knob.


Note that when parameter values are displayed in grey, it means that the parameter has been assigned a modulation source and you will not be able to change the value manually.

3.6 Function Page

The Function page is where you create flexible, dynamic effects by assigning Mod Sources to the patchable parameters from nearly all of the input and effects blocks.

To view this page at any time, expand the lower view and click on the FUNCTION tab at the lower portion of the plugin panel. This page may also be selected by clicking on the Function button to the left of the Knob. All the options listed on this page, save the MIX parameter, are also available in the MODULATION sections of the individual effects blocks.

Note that the options listed in the Modulation Source drop down menu are all the ones that cannot be connected using cables on the Program Page.

PROGRAM		EXPERT		FUNCTION		Collapse 					
		MOD SOURCE		MIN VALUE	MAX VALUE			MOD SOURCE		MIN VALUE	MAX VALUE
DELAY 1	DELAY TIME	Off	▼	0.0 ms	600.0 ms	SCALE 1	AMOUNT	Off	▼	-100%	100%
	LOOP	Off	▼	40%	80%	SCALE 2	AMOUNT	Off	▼	-100%	100%
DELAY 2	DELAY TIME	Off	▼	0.0 ms	600.0 ms	MIXER 1	INPUT A	Off	▼	-100%	100%
	LOOP	Off	▼	40%	80%		INPUT B	Off	▼	-100%	100%
SHIFT 1	AMOUNT	Soft Key 3	▼	0.0	-100.0	MIXER 2	INPUT A	Off	▼	-100%	100%
	DELAY TIME	Off	▼	10.0 ms	600.0 ms		INPUT B	Off	▼	-100%	100%
SHIFT 2	AMOUNT	Off	▼	-1200.0	1200.0	MIXER 3	INPUT A	Off	▼	-100%	100%
	DELAY TIME	Off	▼	10.0 ms	600.0 ms		INPUT B	Off	▼	-100%	100%
LFO 1	FREQUENCY	Off	▼	20.00 b	0.10 b	MIXER 4	INPUT A	Off	▼	-100%	100%
LFO 2	FREQUENCY	Off	▼	20.00 b	0.10 b		INPUT B	Off	▼	-100%	100%
FILTER 1	CUTOFF FREQ	Function Gen	▼	1.0 Hz	2.0 kHz	GLOBAL	MIX	Soft Key 4	▼	0%	100%
	FILTER Q	Off	▼	0.5	100.0	FUNC GEN	AMPLITUDE	Soft Key 1	▼	1%	100%
FILTER 2	CUTOFF FREQ	Function Gen	▼	1.0 Hz	4.0 kHz		RATE	Soft Key 2	▼	0.0 Hz	8.0 Hz
	FILTER Q	Off	▼	0.5	100.0		TRIGGER	Off	▼	40%	80%

3.7 Preset Bar



Located at the top of the H3000 Factory Mk II Plug-In, the Preset Bar lets you load and save presets, along with several other features.

When H3000 Factory Mk II is installed, the factory preset library is placed in the following platform-specific location:

Mac	<user>/Music/Eventide/H3000 Factory Mk II/Presets
Windows	<user>/Documents/Eventide/H3000 Factory Mk II/Presets

Presets for H3000 Factory Mk II have a **.tide** extension and can be saved or loaded from the H3000 Factory Mk II preset bar in any supported DAW. You can also create sub-folders within the preset folder for organizing your presets if you wish.



Many DAWs offer an additional generic preset bar that saves DAW-specific presets to a separate location. We strongly recommend only saving your presets using the H3000 Factory Mk II preset bar to ensure that your presets will be accessible from any DAW.

LOAD/SAVE	Use these buttons to load and save your presets in .tide format.
COMPARE	Click to toggle between two different settings for the plugin. This is useful for making A/B comparisons.
MIX LOCK	Enables a global mix value that will be the same on every preset that is loaded.
INFO	Click this button to open this manual.
SETTINGS	Click the gear icon to open a drop-down menu with scaling settings for changing the overall size of the plugin.

We hope you enjoy the H3000 Factory Mk II plug-in and put it to good use in all of your mixes. Please be sure to check out Eventide's other native plug-in offerings for more unique and interesting effects.

For further questions or support, head over to the [user forums](#).