

2

Hypersonic 1.1 New Features & Enhancements

In this chapter we'll take a look at the new features available in Hypersonic 1.1.

Programmable Step Sequencer

Probably one of the coolest new Hypersonic features is the addition of a programmable 16-step sequencer to the arpeggio section.

To check it out just:

- 1** Load a patch.
- 2** Click *Edit*.
- 3** Select the *Patch Settings* page.
- 4** Set the Arpeggiator to *Step Seq*.
- 5** Click the Arpeggiator section *Edit* button.

2 Hypersonic 1.1 New Features & Enhancements

Note	Vel	Seq 1	Seq 2
+0	100 %	+94	+84
+0	0 %	+91	-83
+0	0 %	+80	+41
+0	0 %	+55	-47
+2	80 %	+18	+0
-5	100 %	-22	+50
+0	0 %	-55	-58
+7	50 %	-77	+0
+0	100 %	-91	+43
+0	0 %	-100	-50
+0	0 %	-66	+80
+0	0 %	-50	-75
-7	80 %	-13	-42
+9	100 %	+30	+66
+2	70 %	+67	-53
+12	89 %	+86	+28

OK

The Hypersonic step sequencer is very easy to use and an effective and creative patch making tool.

To create your own step sequences for any patch simply set a pitch value for each step (displayed in semitone increments) in the *Note* column and set a velocity amount in the neighboring *Vel* column.

The Hypersonic 1.1 step sequencer responds to the arpeggio *Rate* and *Steps* controls on the *Patch Settings* page, to allow you to adjust the playback speed and number of steps to be played.

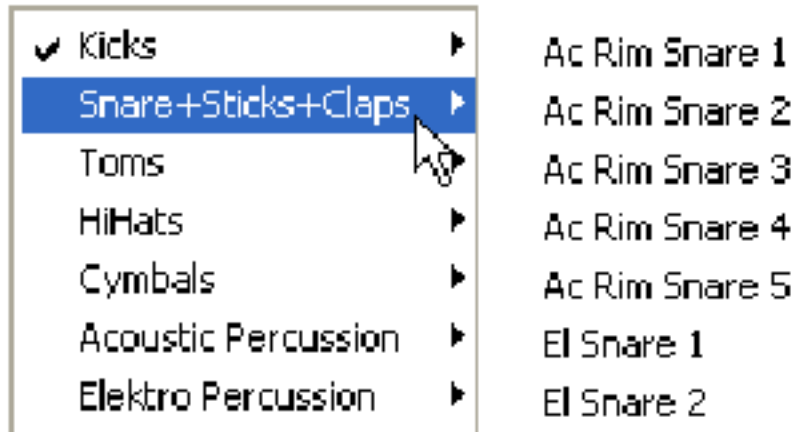
Also displayed on the Step Sequencer edit page are two extra columns, *Seq 1* and *Seq 2*. These allow US-1 users to generate and edit control sequences for use in the powerful US-1 modulation matrix. Control Sequences can be used, for example, to create gating effects, automate panning or to sweep Wavetables—the possibilities are endless.

For more information, see the 'Control Sequences' section in the US-1 manual.

Random Sequence mode (selected via the arpeggio *mode* menu) randomly selects step sequencer steps.

Sample Selector Display

Another nice addition to Hypersonic 1.1 is the *Waveform* drop down menu for sample elements.



From this drop down list you can choose any sample you like from any category in the complete Hypersonic sample content. This feature is especially handy for customizing or creating drum and percussion kits.

To test this feature:

- 1 Load a Hypersonic patch that uses sample elements.
A drum kit would be an easy first choice.
- 2 Click *Edit*.
- 3 Choose an 'S' (Sample) element from the elements list on the left of the Hyper Display or from the list shown when clicking in the Edit Name field.
- 4 Click in the new field directly under the knob *Waveform*.



A drop down menu appears with a complete list of all Hypersonic sample banks and samples.

- ❖ You can also use your mouse wheel to browse through samples. When the current sample is a drum loop, the mouse wheel selects individual loop slices.

New Effects Elements

Hypersonic 1.1 adds some new effects elements to its already comprehensive selection.

Tuned Resonators

This effect uses up to seven resonators tuned to musical pitches to make anything from eerie ambience effects or simple physical models to spring reverb sounds.

- ❖ *Mix*: Wet/Dry signal mix.
- ❖ *Bands*: Number of resonators 1—7.
- ❖ *Root*: Pitch of lowest resonator.
- ❖ *Detune*: Fine tuning applied to all resonators.
- ❖ *Spacing*: Pitch interval between each resonator, or turn the control all the way to the right to select a major or minor scale.
- ❖ *Decay*: Adjusts the decay time of the resonators.
- ❖ *Low EQ*: Low cut filter, useful for removing rumble when *Root* is set to a low pitch.
- ❖ *HF Damp*: Damping of the resonators, adjusts the sound from a muted pluck or clunk to a long ringing or whistling.
- ❖ *Width*: Spreads the resonator outputs across the stereo image.
- ❖ *Key/Rel*: Shortens the resonator decay time when all notes in the patch have been released, so the added resonance can be played as part of the instrument sound. Turning the knob away from the

center reduces the release time. When the knob is turned to the right the resonator pitches will also track the pitch of the last-played note in the patch.

(Key/Rel is not available when used as a global send effect).

Ducking Delay

This is a delay effect which adapts to the input signal level, so the delay repeats are either attenuated, “Ducked,” or accentuated when the input signal is playing.

- ❖ *Mix*: Wet/Dry signal mix.
- ❖ *Delay*: Delay time (optional tempo sync).
- ❖ *Feedback*: Feedback amount.
- ❖ *Balance*: Ratio of left delay time to right delay time.
- ❖ *Lo Damp*: Low cut filter to progressively thin the sound of the delay repeats.
- ❖ *HF Damp*: High cut filter to progressively dull the sound of the delay repeats.
- ❖ *Depth*: Turn to the left to increase gating of the delay repeats when the input signal is quiet. Turn to the right to increase ducking of the delay repeats when the input signal is loud.
- ❖ *Thresh*: Sets the threshold at which the Ducking or Gating takes place. When turned all the way to the left, the threshold tracks the input signal levels adaptively.
- ❖ *Attack*: Sets the onset time of the Ducking or Gating.
- ❖ *Release*: Sets the recovery time of the Ducking or Gating.

Grain Delay

This is a complex effect that cuts the input signal into small overlapping ‘grains’ which can then be individually delayed, re-pitched and panned. This produces anything from avant-garde tape splicing effects to completely unpredictable chaos.

- ❖ *Mix*: Wet/Dry signal mix.
- ❖ *Delay*: Overall delay time applied to each grain (can be tempo synced).
- ❖ *Feedback*: Feedback of the output signal to the input.
- ❖ *Grain*: Adjusts the length of each grain. When turned fully left the grain length tracks the pitch of the last-played note in the patch.
- ❖ *Pitch*: Adjusts the speed at which each grain is played back:
 - +200% is one octave up.
 - +100% is normal pitch and speed.
 - +50% is one octave down.
 - +25% is two octaves down.
 - 0% is zero speed, so freezes the input signal level.

Negative settings result in the same pitches as positive settings, but play the grain backwards.

- ❖ *Pit Mod 1*: Applies a random or alternating offset to Pitch. With a setting of Alt 100% and Pitch set to 0%, the pitch alternates between +100% and -100%, playing the grains alternately backwards and forwards.
- ❖ *Pit Mod 2*: Applies envelope or sine LFO modulation to Pitch.
- ❖ *PM Rate*: Adjusts the LFO or envelope tracking speed used by Pit Mod 2.
- ❖ *Del Mod*: Applies an alternating or random delay time to individual grains.

Remember [Ctrl]-Click sets knobs back to their center position.

- ❖ *Pan Mod*: Applies an alternating or random modulation to the panning of each grain. For long grain lengths this widens the stereo image, and for short grains produces a distorted, tearing sound.

Step Flanger

This is similar to the normal Flanger effect with the addition of sample-and-hold applied to the delay modulation for rhythmic stepping of the flanger 'pitch'.

- ❖ *Mix*: Wet/Dry mix.
- ❖ *Rate*: Sweep rate.
- ❖ *Depth*: Sweep depth (reduce for more swooshiness).
- ❖ *Feedback*: Feedback amount.
- ❖ *Pre Del*: Initial delay. Adjusts the minimum delay time/maximum flange frequency.
- ❖ *Step Rate*: Adjusts the time between steps and can be tempo synced. With the Rate control set to a slow speed this produces a 'staircase' effect of slowly increasing and decreasing flanger pitch. When Rate is set to a fast speed unrelated to the Step Rate, the steps follow a more random pattern.
- ❖ *Step Depth*: Mixes between the smoothly varying LFO of the original Flanger effect and the stepped values.

Vintage Filter

This is a multi-mode filter with LFO and envelope modulation of cut-off. Although there are already filters available on each voice in Hypersonic, a different range of effects can be achieved by passing a whole patch through a single filter.

- ❖ *Mix*: Wet/Dry signal mix.
- ❖ *Cutoff*: Cutoff frequency of the filter.
- ❖ *Reso*: Resonance, producing a peak at the cutoff frequency and at high settings the filter oscillates producing a sine wave.

Note that the maximum level of the resonant peak is fixed, so you can vary the relative levels of the filtered signal and the resonant peak by turning the input signal level up or down. If the Vintage Filter effect is used as an insert effect in a patch, this can be achieved with the output level controls of each element or with the MIDI Expression controller (cc 11) which unlike the patch level control is applied before any effects.

- ❖ *Mode*: Selects either 24dB/oct, 18dB/oct, 12dB/oct or 6dB/oct low-pass filters, or 12dB/oct bandpass or highpass filters. Higher

rolloffs in dB per octave make the filter sharper and remove more of the filtered-out signal.

- ❖ *LFO Rate*: Controls the LFO rate. The LFO has a very wide range, with a maximum frequency up to 200 Hz, so can be used for ‘experimental’ burbling or ring-modulation-like sounds.
- ❖ *LFO Depth*: Controls the amount of cutoff modulation by the LFO, which produces a sine wave when the control is turned to the right or a stepping sample-and-hold waveform when turned to the left.

This control also has a very wide range so can quickly sweep the filter cutoff across the whole audio frequency range.

- ❖ *Env Depth*: Controls the amount of cutoff modulation by the envelope level.
- ❖ *Env Mode*: Sets the mode used to follow the envelope level:
 - Follow—The envelope level is measured from the audio signal which can produce grainy and unpredictable modulations.
 - A-R—An Attack-Release envelope is triggered by notes played in the patch.
 - A-S-R—An Attack-Sustain-Release envelope is triggered by notes played in the patch.
 - LFO Rate—The envelope level controls the LFO rate only.
 - LFO+Env—The envelope level controls the LFO rate and also modulates the cutoff.
- ❖ *Attack*: Envelope attack time.
- ❖ *Release*: Envelope decay/release time.
- ❖ *Mode*: Switches the filter between mono and stereo operation. In addition to the obvious change in sound when used on stereo sources, in mono mode more processing power is spent on the filter to make the behavior at high cutoff frequencies more ‘analog’.

Additional Features Added To Existing Effects

Pitch Shift

Now has an extra digital delay feature added, with control over delay time, feedback, and feedback routing.

Modulate L-R

Now features an additional vocoder mode. Allowing you to apply the frequency spectrum of elements stereo panned to the left to elements panned to the right. The frequency bands of the vocoder cover a wide range to work well with rhythmic sources.

New Element Handling Features

Hypersonic 1.1 includes a few handy time saving element editing features:

Additional Muted FX Elements In All Patches

When you load any Hypersonic patch (old or new) and click *Edit*, you will see that we have added two muted FX elements to the end of the elements list. This is to help you quickly add effects to your patches. Click an effect element and select an effect type from the field displaying *No Effect*.

Easy Element Renaming

To rename the currently selected element in a patch, simply double click in the name field at the top of the *Edit* page, type the new name and hit Enter.

Element Copying

Elements can be copied and pasted by using the usual Ctrl-C and Ctrl-V key commands. Copied elements can be inserted before the currently selected element by pressing [Ctrl][Insert] ([Ctrl][I] on Mac).

Additional Setup Page Features

Hype

The new Hype feature is essentially a ‘Mastering’ processor which produces a more punchy and bright sound. Many hardware keyboards and modules have this kind of Hying active under the hood where you can’t get your hands on it, but we’ve given you the control. This feature effects all Hypersonic patches and is active on all outputs.

Because all Hypersonic settings are saved with your song, you can tweak the Hype to just the amount you like for each project or choose ‘Save Defaults’ to always have your preferred setting when starting new projects.

Master Tuning

Offsets the pitch by semitones and cents for all Hypersonic patches globally.

Patches can of course be tuned individually on the Hypersonic MIDI page.

New Master Plug-in Commands

You will find these features by right mouse clicking ([Ctrl]-click on Mac) anywhere around the edge of Hypersonic.

Play PC Keyboard

This feature allows you to play Hypersonic patches from your computer keyboard. The currently highlighted Hypersonic part (and any linked parts) will be played. The notes you play are also output via MIDI, allowing you to record them or to use Hypersonic as a MIDI source to play other VST Instruments in your host application.

Hypersonic's musical keyboard now also outputs MIDI information. Your host application must support MIDI output from plug-ins.

- ❖ The 'C' key plays a C₃ note. Keys on the same row play the adjacent white notes.
- ❖ The 'F' key plays a C#₃ note. Keys on the same row play the available black notes.
- ❖ The 'R' key plays a C₄ note. Keys on the same row play the adjacent white notes.
- ❖ The '5' key plays a C#₄ note. Keys on the same row play the available black notes.
- ❖ The left and right arrow keys transpose the keyboard in octaves.

If your computer keyboard layout is not English or German then some interesting scales may result!

Select Play PC Keyboard mode a second time to disable it.

All Notes Off

Releases all currently playing Hypersonic voices, useful if you have a MIDI jam. This is often called a 'Panic' mode.

Known Issue

Loading existing Hypersonic V1 songs after installing Hypersonic V1.1 in Steinberg hosts

Due to a problem in the Inspector in Cubase and Nuendo, loading songs created using Hypersonic V1 can result in the wrong patches being recalled in Hypersonic V1.1. This will be fixed in the next major update for these hosts.

A temporary solution to this issue is to do the following:

- 1** Turn off *Receive MIDI Program Changes* in the *Hypersonic Setup* page.
- 2** Click *Save Defaults*.
- 3** Reload the song.

Hypersonic will ignore the inspector program change messages.