FALCON

CREATIVE HYBRID INSTRUMENT

SOFTWARE USER MANUAL

SOFTWARE VERSION 3.0

EN231019

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INTRODUCTION

FALCON

INFINITE SOUND

Falcon gives you everything you need to create the sound of your dreams, delivering an extensive collection of cutting-edge tools in an open-ended semi-modular environment.
A powerful instrument for seasoned pros and beginners alike, Falcon can be easily adapted to serve many needs. Whether you're looking for inspiring sounds for a new song, or are deep-diving into creative sound design, Falcon can be as nimble or calculating as the task requires.
Explore sound with precision and finesse, from basic sample slicing and synth design to modulated multitimbral hybrids, create incredible layered synths, expressive MPE instruments, powerful drums, intricately chopped breaks, multi-channel surround sound, imaginative sound design, generative sequences, wild effects and much more.

WIDE RANGE OF SOUND SOURCES

Falcon includes 20 oscillators providing a wide range of synthesis and sample-based sound generation including virtual analog, wavetable, phase distortion, FM, additive, drum, noise, formant, pluck, harmonic resonators, bowed string, sample, stretch, granular, and more. Layer them, map them, modulate them, make them yours.

UNIQUE AND POWERFUL EFFECTS

UVI's proprietary DSP ensures pristine quality, Over 100 effects from lush modulated reverbs to incredibly accurate physically-modeled compressors, and beyond.

MODULATION

Rich sound means movement and Falcon can create it whenever and however you need it. AHD, Analog ADSR, Attack Decay, DAHDSR, Drunk, classic and parametric LFO, Multi Envelope and Step Envelope modulation generators all come standard and can be used to effect nearly anything in the Falcon environment. Create variation over time or on demand, drive your oscillators, effects or even other modulators, then add the most important parameters to the macro panel for clear and intuitive performance control.

EVENTS AND SCRIPTING

Manipulate incoming MIDI or generate it algorithmically using a wide variety of included scripts to enhance, augment, and modulate your performances – then pipe that data to the rest of your studio, all without needing to know how to program. And for those comfortable with Lua, Falcon offers a powerful way to extend its functionality, and create unique processors and instruments of your own design.

WORKFLOW

Falcon's interface is adaptable to your needs, from exploring presets and editing sounds, to creating instruments, mixing multichannel performances, and more. Features like UI Snapshots, program templates, extensive preset implementation, and tree view make realizing your inspirations all that much faster.

PERFORMANCE

Falcon was designed with a rich performance toolset including full Open Sound Control (OSC) implementation, host automation, flexible MIDI and audio routing, MIDI learn, key range and velocity range controls, keyswitching and more. Whether you're working with a single instrument or an ensemble, in a DAW or standalone, Falcon gives you the control you need to create dynamic and captivating performances.

SOUNDS

Falcon comes with an expansive factory library of 1500+ presets and 500+ wavetables created by some of the most respected sound designers in the world - tap them for instant gratification or to inspire your own sound design.
There's even more to discover, Falcon is fully-compatible with all UVI and UVI-Powered instruments. Opening up a world of over 200 instruments from a growing list of companies like AcousticSamples, VI Labs and PiSound.

CHANGE LOG

FALCON 3.0.1
- Fix MIDI out support in StandAlone version
- Fix MIDI out channel handling
- Fix issue with MIDI Record script
- Fix mapper preset reloading issue
- fix crash in some presets
- fix issue with some presets not responding to MPE

FALCON 3.0
- Add VOSIM Oscillator
- Add Bowed String Oscillator
- Add Harmonic Resonators Oscillator
- Add Harmonic Resonators FX
- Add Dispersor FX
- Add Ladder FX
- Add Opal FX
- Add MIDI Out support (in compatible host)
- Add MIDI CC Smoother Script
- Add Node Arp script
- Add Motion Grid script
- Add Snowflakes script
- Add Workspaces, save and reload UI snapshots to quickly move between views
- Add 21 Program templates, starting-point patches with optimized settings such as Analog Poly, Wavetable Static or Multi-Granular Strings.
- Add Mappers display to Program Editor
- Add 53 new presets
- Improve Slice Remixer script
- Improve MPE script
- Various UI improvements
- Refreshed Falcon Factory Presets of 1,500+ with improved macros and UIs

FALCON 2.8.5
- Speedup loading time for some soundbank with heavy script usage
- Fix possible crash in Performance page
- Fix possible crash with Digital EQ

FALCON 2.8.4
- Fix possible issue with alternate looping
- Add support for more customization in script
- Fix regression regarding Windows 7 support
- Fix slowdown issue in Augmented Orchestra and Quadra series when loading multiple part

FALCON 2.8.3
- Add support for more widget in script
- Apple ARM (M1) support in AAX format
- Other minor fixes

FALCON 2.8.2
- Fix sustain pedal handling in Ostinato Arp
- Fix possible crashes with VST3 version on some Windows

FALCON 2.8.1
- Fix crash with Ableton Live
- Fix crash with Slice Remixer if there was no sample in Slice oscillator
- Fix truncated volume name in browser for UFS with very long name on Windows
- Disable Metal layer on OSX until proper fixes

FALCON 2.8
- Add Texture Synth Oscillator
- Add Shifter FX with brand new pitch shifting engine
- Add Harmonizer FX with brand new pitch shifting engine
- Add Deffuse Delay FX
- Add Dual Delay X FX
- Add Velvet Delay FX
- Add Granulizer FX
- Add Feedback Compressor FX
- Add Chip Arp script
- Add Ostinato script
- Add Slice Remixer script
- Add Strum Wheel script
- Add Tape Mod script
- Add Portamento Stepped script
- Add Balloons script with Physics sub category
- Add Boids script with Physics sub category
- Add Waterfall script
- Add KeyTracking support to some filters
- Enhanced Multi Envelope Modulator, add support for sample Drag'n'Drop on multi envelope for pitch extraction
- 100 new presets with "Organic Texture" category
- Update UI and parameter for some drive / distortion modules
- Update UI and parameter for some EQ modules
- Some M1 CPU optimization
- Fix possible crashes with Logic on M1
- Fix some issue with VST3 version
- Fix possible glitches in Analog Chorus

FALCON 2.5.6
- Support for upcoming product
- Fix some visual glitch in volume mounting
- CPU optimization in Audio <-> UI communication

FALCON 2.5.5
- Fix issue with VST3 version

FALCON 2.5.4
- Add VST3 version
- Fix REX support on ARM
- Fix possible stuck note related to pedal handling in some sequencing script - Some ARM based optimization
- Fix possible crash related to UI
- Fix song position trigger mode in Parametric LFO
- Other minor fixes

FALCON 2.5.2
- Fix regression regarding Wavetable oscillator
- Fix issue with Standalone version not updating routing panel when changing audio device
- Fix some popup menu scaling handling
- Fix beat count in MIDI record script

FALCON 2.5.1
- Fix regression regarding automation reload
- Fix possible script error on prev/next
- Fix possible script error in Euclidean Keys
- Fix MIDI CC issue with some of the new sequencer scripts
- Fix issue with Standalone version not displaying sample rate and buffer size options

FALCON 2.5
- Apple ARM (M1) support
- Add TS Overdrive FX
- Add VCF-20 FX
- Add Multi LFO module
- Add Smooth Random module
- Add Cartesian Sequencer script
- Add Euclidean Keys Sequencer script
- Add Probability Arp script
- Add Rain Sequencer script
- Add Wave Sequencer script
- Add Warp Sequencer script
- Add MIDI Record script
- Add MIDI Pitch Delay script
- Add MIDI Monitor script
- Add Note Pan script
- Add Velocity Test script
- New UI for Chord Bank, Chorder, Chorder Extended, Scale, Mapper, Tonal Harmonizer, Step Line, Polyphonic Sequencer and MIDI CC LFO scripts
- Optimize Sallen Key filter
- Allow script UI only scaling
- Fix regression in standalone version regarding output selection

FALCON 2.1.8
- Fix regression regarding number of output
- Fix audio configuration listed by Logic X
- Support for upcoming product
- Other minor fixes

FALCON 2.1.7
- Support for upcoming product

FALCON 2.1.6
- Fix more popup dialog scaling handling
- Fix possible crash with undo

CHANGE LOG

FALCON 2.1.5
- Now uses JUCE handling of plugin format (AU, VST, AAX and standalone)
- Fix possible UI refresh issue on OSX
- Fix popup dialog scaling handling
- Add Revert parameter in Sample oscillator
- Fix possible issue with touch automation
- Other minor fixes

FALCON 2.1.4
- Fix some regression introduced in previous build

FALCON 2.1.2
- Add global Undo/Redo feature (Kudos to Louis for taking up this complicated task)
- Allow to disable switch to info page for soundbank
- Fix some obscure crashes
- Fix regression regarding File dialog on system with UTF-8 folder name

FALCON 2.1.1
- Script API enhancement
- Fix scaling handling in other popup UIs
- Add 175% scaling
- Other minor fixes

FALCON 2.1
- Add Feedback Machine FX
- Add Magnetic Bass Shaper FX
- Add Step Arp script
- Add Gate Mod, Gate Mod Poly and Gate Mod Bernoulli scripts
- Add Chord Strum script
- Add record option to Arpeggiator
- Enhanced Tonal Euclidean script
- Fix scaling handling in popup UIs
- Enhanced Script API
- Better handling of octave setting in Arpeggiator mono bassline mode
- 40 new Wavetables

FALCON 2.0.9
- Fix regression regarding Mappers
- Fis possible issue with noise oscillator in case of very high pitch
- OSX Core Graphics renderer fixes
- Fix regression regarding Windows DPI

FALCON 2.0.8
- EXS handling fixes
- Optimization in Waveshaper in case of default knee
- Fix regression regarding Windows DPI
- Enable async drawing on OSX Core Graphics renderer
- Handle sustain pedal in Step Line and Polyphonic Seq
- Fix possible out of range note in MIDI Player
- SFZ handling fixes
- Fix position spread on boundaries in IRCAM multi granular
- Fix possible soundcard regression on Windows in standalone version

FALCON 2.0.7
- Fix possible issue in WaveShaper, Lowpass 12 and 24
- Fix possible missing audio devices on OSX in Standalone version
- SFZ handling fixes
- EXS handling fixes
- UI fixes

FALCON 2.0.6
- Mapper editor now includes a smoothing button that modifies the current shape
- Fix Garage Band issue on OSX Catalina

FALCON 2.0.5
- Fix SFZ import issue
- Better aliasing handling in wavetable oscillator
- DMG is now notarized for OSX Catalina support
- Fix possible issue when using Best interpolation mode

FALCON 2.0.3
- Fix SFZ import issue
- Fix possible script retina assets issue
- Fix possible Cubase 10 scanner hang issue
- Update Falcon Factory to 2.0.1

FALCON 2.0.2
- Fix possible issue with favorite presets and version 2.0.1

FALCON 2.0.1
- Fix possible click issue in Additive oscillator at low frequency
- Fix issue with path sorting (visible with Pure Additive folder listed at the end)
- Can now only search for 2.0 patches by entering 2.0 in the search field (dot is now a token character)
- Fix SFZ import issue
- Fix Rise and Delay behavior in non bipolar LFO
- Fix Digital EQ multi selection editing
- Fix background spectrum analyzer display in non 44.1 kHz sample rate
- Update Falcon Factory to 2.0.1

FALCON 2.0
- Add Additive oscillator
- Add Tape Echo FX
- Add Sallen Key Filter FX
- Add entirely redesigned Redux FX algorithm for Analog Bit-crushing
- Add Formant Crusher FX
- Add Track Delay FX
- Enhance 3 Band Compressor
- Add Parametric LFO module
- Add Step Sequencer script
- Add Euclidean Drum and Tonal Sequencers script
- Add Chord Bank script
- Add Range Limiting script
- Add User Templates
- Add Modulation Quick View
- Various fixes
- 150 new wavetables
- 150 new handcrafted presets

FALCON 1.6.6
- Fix selection issue when using mouse wheel on a mod matrix slider
- Fix Digital EQ UI issue
- Fix possible stability issue in Digital Filter
- Fix UI issue with non ascii directory in preferences panel
- Fix issue with Bandlab Cakewalk

FALCON 1.6.5
- Better error report when a soundbank cannot be mounted at session reload
- Fix LFO speed issue in Phasor and CrossPhaser when changing sample rate
- Fix an issue in Vienna Ensemble Pro
- Better HiDPI support on Windows

FALCON 1.6.4
- Fix issue with Protools automation
- Fix digital UI issue on OSX
- Fix possible oscillator display order issue

FALCON 1.6.3
- Add remixing feature to IRCAM Scrub oscillator allowing to control volume of sine, noise and transients
- Fix possible issue when moving loop point in alternate loop while playing
- Fix issue in Digital EQ when changing sample rate

FALCON 1.6.2
- Fix UI glitch in Digital Filter FX with 18 dB/oct slope
- Fix regression regarding UI scaling on Windows
- Fix possible interaction issue with Micro Tuner and some script
- Fix issue with search reindexing when soundbank are updated

CHANGE LOG

FALCON 1.6.1
- Fix glitch in Digital Filter FX

FALCON 1.6
- Add Digital Filter FX
- Add Digital EQ FX
- Add new preset including 50 exclusive preset from Expressive E, the maker of Touché
- Add 40 new wavetables
- Fix regression regarding UI scaling

FALCON 1.5.6
- Fix Win7 comptibility issue

FALCON 1.5.5
- Fix sync issue with multipoint envelope
- Fix custom DnD issue with lots of samples on Windows

FALCON 1.5.4
- Fix regression in 1.5.2 regarding empty slice oscillator DnD
- Fix issue when playing an empty MIDIPlayer
- Fix issue with Multi browser avoiding to close the plugin UI

FALCON 1.5.3
- Fix regression introduced in previous version with XpanderFilter

FALCON 1.5.2
- Add optional oversampling in Exciter, Fuzz, Overdrive and Analog Crunch FX
- Fix oversampling in Wave Shaper
- Fix possible crashes when changing oscillator type
- Serialize slice oscillator markers when they differs from the one in the sample itself
- minor UI mods

FALCON 1.5.1
- Fix crash in Windows with CPU not supporting AVX
- Fix crash with Freq Shifter FX

FALCON 1.5
- add Freq Shifter FX
- add FM support in Wavetable oscillator
- add MIDI delay script
- add MIDI Controls and velocity remapper script
- add direct key tracking control in Comb filter
- add UI scaling in preferences
- add favorite support in browser
- add preview support in Search tab
- add 100 new preset in Falcon Factory
- fix issue with Mapper selection not being taken into account if one was already selected

FALCON 1.4.1
- maintain current trigger mode when loading envelope preset
- add length property for each step in Step line script. Gate can now go up to 110% which allows overlap for monophonic glide
- add “Center Root Note” command in mapping editor
- fix reload issue introduced in 1.4.0 following an Edition connection fix
- fix possible issue with loop in Stretch oscillator
- fix Falcon Factory patch “Prehistory 2 1.4” sequence button
- fix Falcon Factory patch “Winter 1.4” CPU overload

FALCON 1.4
- add support for MIDI and sample Drag’n’drop on multi envelope for features extraction
- add search tab in right panel
- add Scale script
- add Polyphonic Seq script
- add new Chorder script
- add MIDI CC redirect script
- add scale support in Step Line script
- enhance Strum script

FALCON 1.3.2
- fix reload issue when using VV2 soundbanks with VV1 sessions
- fix issue with non latin character set
- minor UI fixes introduced in previous version

FALCON 1.3.1
- fix Wavetable SymForm mode when phase distortion is at 0
- fix possible crash on Windows when Drag’n’droping samples from internal browser
- Multi point envelope can now have up to 128 steps

FALCON 1.3
- Add new Rotary FX
- fix first transient handling in IRCAM Stretch
- fix per voice Boost init in Xpander Filter
- fix rise time in LFO with non zero phase
- fix issue with bipolar multiEnvelope in some cases
- add basic AnaMark tuning (.tun) support
- fix possible click when modulating Analog ADSR sustain

FALCON 1.2.1
- add Phasor: A new phaser effect with up to 12 orders
- fix regression regarding display of oscillator actually played when using MIDI Select and Round Robin trigger modes
- add Layer Portamento curve (in Inspector)
- add basic EXS file format support
- fix possible crash when multi editing some FX
- fix display of continuous parameters in AU
- fix oscillator UI height which could be smaller than it should be
- fix possible UI issue on OSX in plugin mode

FALCON 1.2.0
- add Phasor: A new phaser effect with up to 12 orders
- add Phasor Filter: Similar to phasor but with manual frequency control
- add Diode Clipper: A new distortion effect
- add remixing feature to IRCAM streth oscillator allowing to control volume of sine, noise and transients
- new Dual Delay parameters
- new Xpander filter parameters
- new Rotary FX parameters
- new UVI Wide parameters
- fix Legato behavior in Stretch and IRCAM stretch oscillator
- fix memory leak
- allow to set start/end markers using the current mouse selection
- fix regression regarding IRCAM Stretch oscillator offline rendering

FALCON 1.1.4
- fix possible unison detune issue with very small value in Analog oscillator
- fix possible crash in Wavetable oscillator
- fix issue with Song position Trigger mode in Arpeggiator
- fix possible issue in streaming code
- fix issue with empty multi envelope loop
- fix possible issue when loading serialized mapper
- fix potential crash in Logic with smart controls

FALCON 1.1.3
- allow resizable UI in plugin version (bottom right corner inside the plugin)
- add input and output gain in Exciter FX
- fixes in MPE script with overlapping note-on the same midi channel
- improvements in Sparkverb and Dual Delay regarding CPU usage when silent
- fix possible issue when saving Effect Rack preset

FALCON 1.1.2
- fix issue in streaming with stop marker
- improve tilt filter UI
- fix possible issue with some script
- rotary FX improvements
- fix macro connection on IReverb in Falcon Factory patches

FALCON 1.1.1
- fix Effect Rack custom background display when used in Layer/ Keygroup level
- fix regression introduced in 1.1 in IRCAM Stretch with non looped samples
- fix IRCAM Stretch issue with very large stretching in some cases
- support for vst-xml DnD
- add “Song” Trigger Mode in LFO (synced with host song position)
- fix regression regarding markers missing reset when changing samples in an oscillator
- fix song trigger mode in Arpeggiator
- better Chord mode behavior in Arpeggiator
- Minor fixes for Falcon Factory

CHANGE LOG

FALCON 1.1.0
- add Thorus: A new Chorus FX with up to 8 voices
- add Sample controls (start, detune, key follow), Noise sustain and Stereo control to Pluck oscillator
- add phase and different oscillator tuning controls in FM oscillator
- add M/S Maximizer in Effect Rack preset
- add Fuzz4 in Effect Rack preset
- add script for MPE devices (LinnStrument, Roli Seabord, ...)
- add Copy/paste from clipboard for module preset in module menu to easily copy FX settings among instances
- CPU improvements in some FXs
- fix regression with Double Drive and UVI Drive introduced in 1.0.7
- fix possible crash when loading IR in Convolver or IR Reverb
- fixes in Micro Tuner
- fix issue related to sample markers when changing oscillator type
- Effect Rack is now featured in its own folder in Modules tree
- fix crash when receiving a very large amount of MIDI events
- allow to disable label or macro value display by right clicking on it in Edit mode
- fix Offset reload in Editon mode matrix mod connections
- other minor fixes
- extra MPE preset added to Falcon Factory

FALCON 1.0.7
- fix regression with legato multi point envelope introduced in 1.0.4
- fix issue with Guitar Boxes under Reaper
- allow edit of oscillators in multi selection
- fix possible crash when deleting mapper
- fix noise when activating filters in UVI Drive and Double Drive
- fix crash when adding Granular oscillator using Tree view
- fix crash when adding MIDI player in Edit view
- fix sample start handling in Sample oscillator
- allows right click on module tab to change their type (similar to long press behavior)
- fix potential crash in script processor when launching lots (100000+) of asynchronous commands
- fix possible issue with Mono Retrigger mode
- rotary FX improvements
- fix for scala keyboard mapping (.kbm) with 0 size

FALCON 1.0.6
- fix crash in script in case of script errors
- add free running option for each oscillator in Analog Stack (see Inspector)
- fix possible crash with selection and edit all oscillator function
- smoothed random LFO do not smooth the first outputed random value
- fix modulation handling on Drunk initial value
- fix regression in forward xfaded loop introduced in previous build
- fix possible stucked notes with scripted instrument in Digital Performer
- fix possible issue in Analog ADSR with very small attack time

FALCON 1.0.5
- fix regression introduced in 1.0.4 with some scripts
- fix potential crash in xfade + alternate sample loops
- optimize patch encoding

FALCON 1.0.4
- fix speed modulation on multi point envelope
- allow to duplicate Oscillators, FX and EventProcessors by pressing Alt key when Drag'n'droping their module name
- fix S&H LFO with null speed

FALCON 1.0.3
- allow to set omni on only one MIDI port
- fix batch oscillator type changes with custom start/stop markers
- fix regression regarding sample loading/purge in scripts
- add Pre/Post insert flag on auxes
- fix graphic issue on OSX pre 10.11

FALCON 1.0.2
- fix possible issue with cross-faded alternate looping in Sample oscillator
- WaveEditor sample auditioning now work like a play/stop toggle
- add Reveal in Explorer/Finder in treeview browser
- remember last Audio Config in Standalone app
- allow to change the default VST AudioConfig for VST Hosts that don't implement setpeakerArrangement
- allow using return key to go back to parent folder in right-panel browser
- fix potential crash when dragging stuff on the keygroup mapping view when collapsed.
- fix issue with non Latin character in MIDI panel on OSX
- fix possible crashes in rare cases when connecting modulation
- allow to duplicate a Part using right click menu on it
- add new Script Event Modulation module which allows polyphonic script driven modulation source
- improve randomness in noise oscillator
- allow to modulate Layer glide time
- add an offset to connection in edition mode (Macro and MIDI learn) as well as support for mappers
- add sorting to key and velocity columns in Keygroups list
- Chaos LFO waveforms now handle Phase parameter
- add Stereo switch in Noise oscillator
- fix brown noise volume issue
- toggling shift key while moving loop points will move both points accordingly to the loop length
- fix automation names in AAX when assigning automations
- fix tempo update in Slice oscillator when changing bar/beat settings

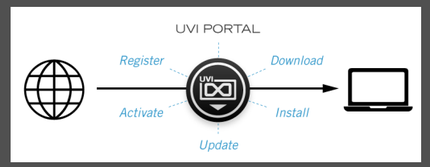
FALCON 1.0.1
- fix right-column file browser scrollbar visibility when the tree width becomes larger than the available size
- better auto naming behavior when binding macros to host automation slots: the host automation name now uses the macro display name
- allow manual renaming of host automation slots
- add Legato mode in IRCAM Stretch allowing to start new voices at the position of currently playing voices. Similar to Legato in regular stretch.
- fix tie mode in arpeggiator in special case
- added master gain parameter to Big PI Tone
- fix issue with Places
- improved support for different kinds of ".wt" file import
- display connected MIDI modulation source in TreeView
- fix potential crash in Multipoint envelope while deleting loop points while the envelope is running and the loop point is being played.
- added selection indicator in XpanderFilter mode menu
- fix potential crash in IRCAM Multi Granular when using reversed grains
- fix parameter automation display names in AU
- fix TreeView browser state serialization
- fix ratio modulation display
- added support for browsing user wavetables folder located in $(documents)/UVI/Falcon/User Data/Wavetable/
- added support for browsing pluck user excitations folder located in $(documents)/UVI/Falcon/User Data/Pluck/
- added support for browsing user Impulse Responses folder located in $(documents)/UVI/Falcon/User Data/IR/
- allow '.' as note name separator in automatic sample import
- fix issue when trying to modulate Organ Harmonic parameter
- fix potential errors in script processor when using midi port D

CHANGE LOG

INSTALLATION

UVI PORTAL

Download and Install UVI Portal



UVI Portal lets you register, download, install, activate and update all of your UVI products in a single convenient location. Click one of the link below to download and install UVI Portal for your system:

- UVI PORTAL FOR MAC OS
- UVI PORTAL FOR WINDOWS

IF YOU ARE SONICPASS MEMBER,

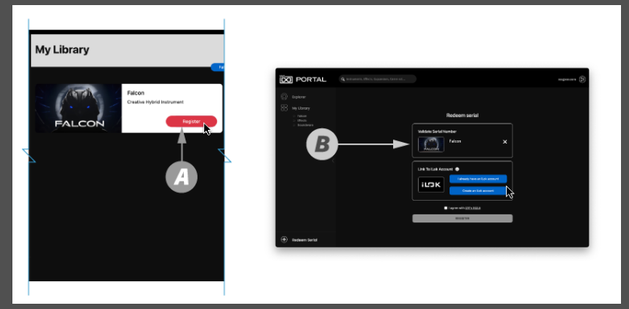
Please refer **HERE** for download and install the products including Falcon

1. OPEN UVI PORTAL AND LOGIN TO YOUR UVI ACCOUNT

2. REGISTER YOUR SERIAL NUMBER AND LINK IT TO YOUR ILOK ACCOUNT

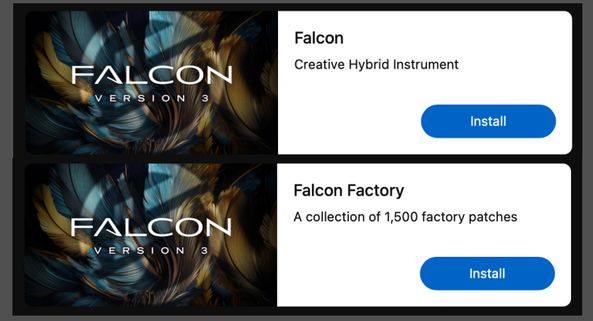
A - Click the Register button to strat

B - Make sure the serial number and choose the option to entier your iLok ID or create an iLok account if you don't have iLok ID



3. DOWNLOAD AND INSTALL FALCON BY CLICKING ON THE INSTALL BUTTON

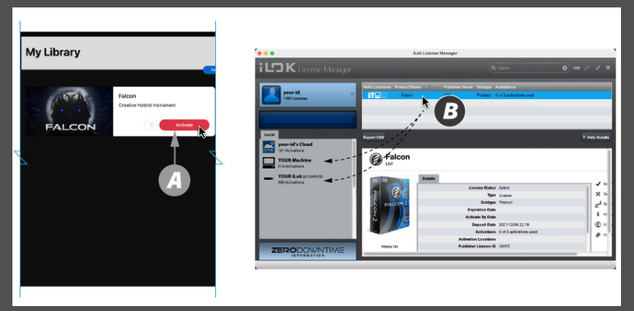
THE FALCON FACTORY LIBRARY NEEDS TO BE INSTALLED SEPARATELY



4. FINISH BY ACTIVATING FALCON WITH ILOK LICENSE MANAGER

A - Click the activater button to open the iLok License Manager app

B - Find the license and drag and drop it to the active device at the Local list on the left



Please refer to the **UVI Portal Manual** for more details.

STARTUP SCREEN

The startup screen provides quick access the program templates as well as recent patches..

The templates are covering a range of setups including many types of synths, samplers, MPE and more, Program Templates are a fantastic way to jump-start your creative process. You can even create your own!

1. LAUNCH FALCON

2. SELECT FROM THE OPTIONS:

   A. SELECT A TEMPLATE FROM **GETTING STARTED**

   B. SELECT A **RECENT** PROGRAM

   C. CLICK **NEW EMPTY PROJECT** TO START FROM SCRATCH OR SELECT RATCH FROM SOUNDBANK(S)

OTHER OPTIONS

- SMALL 'X' BUTTON AT LEFT UPPER CORNER TO CLOSE THE SCREEN
- UNCHECK THE 'SHOW AT STARTUP' TO LAUNCH FALCON WITHOUT THIS SCREEN
- VIDEO TO OPEN YOUTUBE FALCON VIDEOS WITH YOUR WEB BROWSER
- MANUAL TO OPEN THIS MANUAL WITH YOUR WEB BROWSER

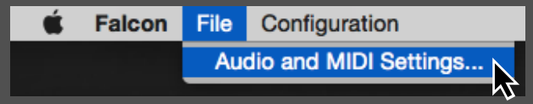
CONFIGURE I/O

If you plan to use Falcon in stand alone mode you may need to select which MIDI inputs and Audio outputs you want Falcon to use. This only needs to be done the first time you launch Falcon, or if you make changes to your hardware (such as changing your audio interface or controller keyboard), as these settings will be saved and reloaded the next time you start Falcon.

If you intend to use Falcon primarily as a plugin you can skip this step, as the audio and MIDI settings will be defined by your host DAW.

1. LAUNCH FALCON

2. SELECT 'AUDIO AND MIDI SETTINGS...' FROM THE MENU

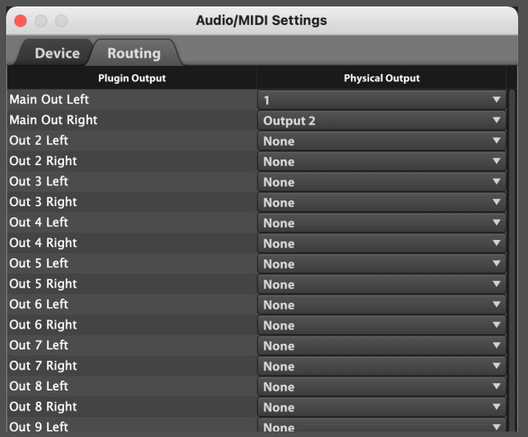


3. SELECT THE DESIRED AUDIO AND MIDI DEVICES...

DEVICE

Select the desired audio interface from the Output menu, click for activate the available output channels, then select the sample rate and buffer size from the menus.

Click to activate the available devices or sources for MIDI input.
All incoming MIDI inputs are merged, but channels remain discrete.
On your Falcon parts, select OMNI, or A1-A16 to listen to a specific channel.



ROUTING

Falcon can address up to 17 stereo outputs. Use this panel to link Falcon's outputs with those of your audio interface.

PRESET BROWSING

UVI Powered soundbanks are high-quality sound and instrument libraries available from UVI and third-party developers. Soundbanks and Falcon Expansions are fully supported and seamlessly integrated in Falcon.

To use Falcon Factory (and soundbanks) in Falcon you just need to tell it where to find them.

You can change the soundbanks location including external drive to install.

To manage your soundbank location, open the preferences pannel of UVI Portal, or Soundbanks Tab in preferences pannel of the UVI Workstation or Falcon.

NOTE: If you commonly use UVI Workstation it is recommended that you place your soundbank files and Falcon Expansions in separate directories.

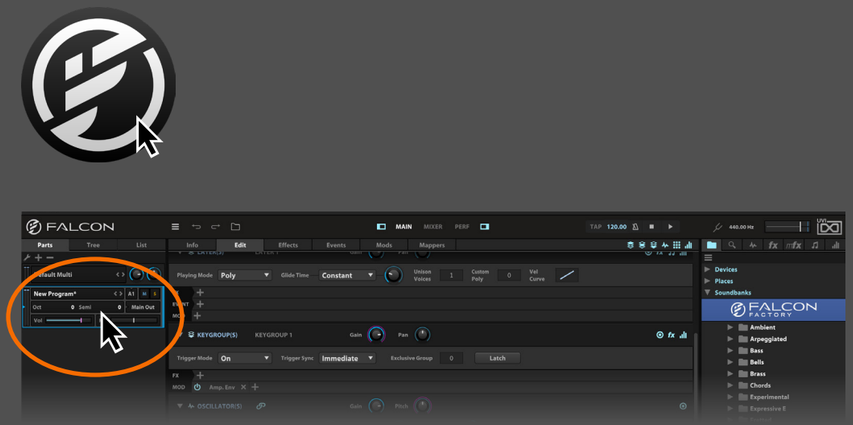
1. LAUNCH FALCON

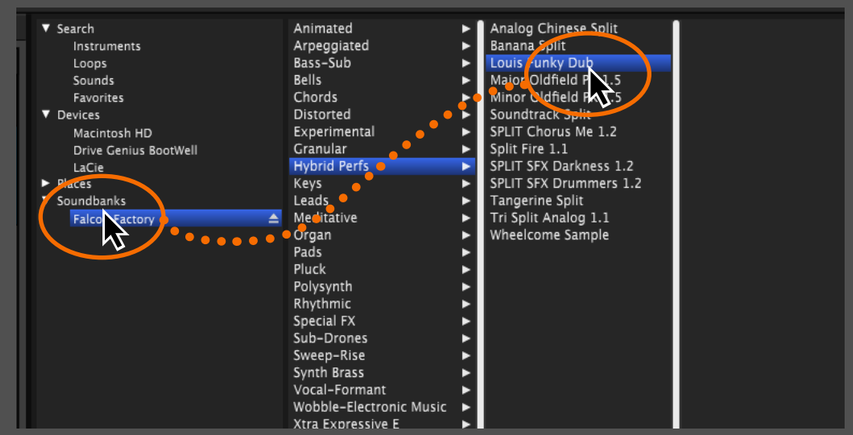
2. DOUBLE-CLICK THE WORD ‘NEW PROGRAM’ (OR ‘EMPTY’) IN THE PARTS LIST TO OPEN THE BROWSER

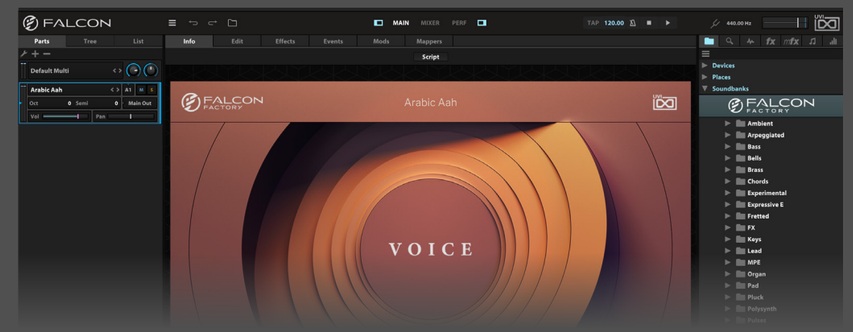
3. OPEN THE SOUNDBANKS TAB

4. SELECT A SOUNDBANK, IN THIS EXAMPLE WE’LL CHOOSE FALCON FACTORY, THEN SELECT AN CATEGORY AND PATCH DOUBLE-CLICK THE PATCH TO LOAD IT

5. CLOSE THE BROWSER AND YOU’RE READY TO JAM!







STRUCTURE

STRUCTURE

FALCON is a hierarchy of components, structured so that you can focus on the high-level arrangement or drill down to deeper levels as you prefer.

Each instance of Falcon contains:

- one **MULTI**, which contains ...
- one or more **PARTS**

Each of those **PARTS** then contains:

- one **PROGRAM**, which contains ...
- one or more **LAYERS**, each which contains ...
- one or more **KEYGROUPS**, each which contains ...
- one or more **OSCILLATORS**

Each level of this hierarchy has a rich variety of options for crafting your sound, using:

- **MODULATION** control signals, such as LFOs, envelopes, and MIDI controllers
- **AUDIO EFFECTS**, such as filters, delays, and reverb
- **MIDI EVENT PROCESSORS**, such as arpeggiators, micro tuners, and script processors

NOTE: Triggering envelopes only work on KEYGROUPS level, not on LAYER nor PROGRAM level.

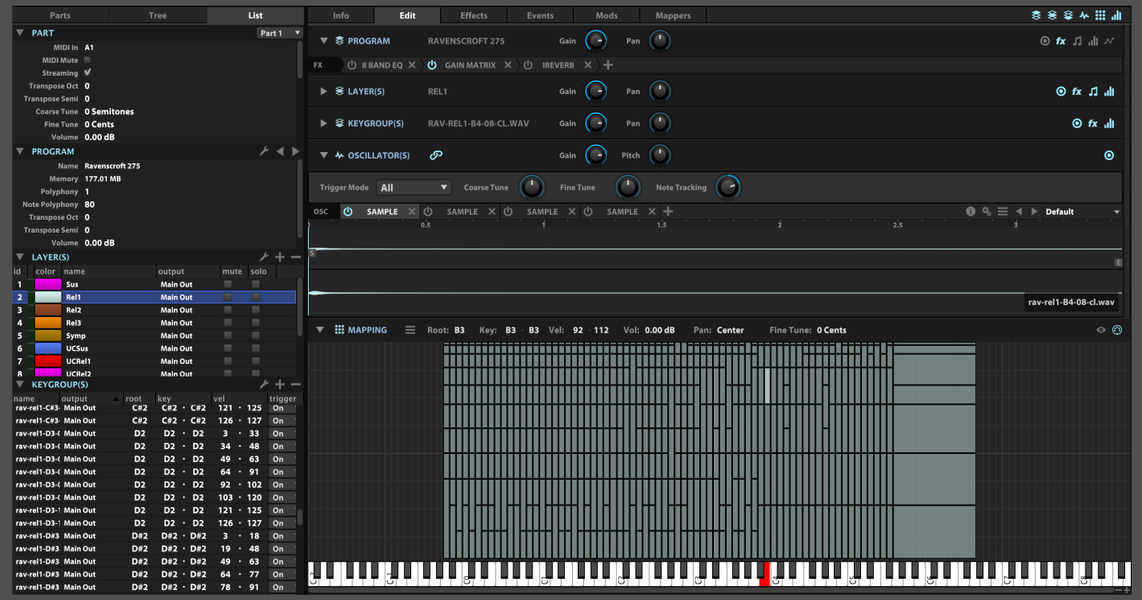
STRUCTURE

For example, a multi might contain two parts: a drum loop and a grand piano. The drum loop could have a single layer with a single keygroup, which contains a single oscillator playing a single audio sample. The grand piano program might contain three layers, each of which contains dozens of keygroups and audio samples, multiple envelopes and a script processor, all passing through reverb, EQ, and a multi-band compressor.

At its simplest, you can launch Falcon, load some instruments or loops, and just begin playing without worrying about how it's all put together. At the other end, you can craft from scratch your own multi-layered and advanced programs containing dozens or hundreds of oscillators with numerous modulation sources, and then mix many instruments and loops together using multiple parts and effects chains.

The sounds included with Falcon or with third-party libraries contain highly-detailed and richly-varied programs that don't require any editing at all. However, Falcon also provides the means to modify and extend sounds, which can be peeled back one layer at a time for increasingly detailed adjustments.

A single Pluck oscillator routed into a spectrum analyzer



Dozens of keygroups, with multiple sample oscillators and effects each, represent just a single layer of VI Labs exquisite Ravenscroft Grand Piano

COMPONENTS

The basic components of Falcon are:

- **OSCILLATORS**
- **EFFECTS**
- **EVENT PROCESSORS**
- **MODULATIONS**

These components, described in the following sections, can be combined in near-infinite variations to produce compelling sounds and instruments.

OSCILLATORS

One of Falcon's greatest strengths is its ability to freely layer oscillators to create elaborate hybrid instruments that capitalize on the unique features of both sample-based and algorithmic sound creation. There are no preset limits on the quantity or type of oscillators you can use, you're limited only by your computers processing power and imagination.

OSCILLATORS

An oscillator is the basic building block of a Falcon program. Oscillators generate the initial sound, which is then modulated, transformed, and combined with other oscillators into a full program. An oscillator can be one of two types: synthesis or sampling.

SYNTHESIS

Synthesis oscillators produce purely synthesized sounds — no audio sample is triggered. The synthesis oscillators provided are capable of a wide variety of sounds, from classic virtual analog synths to drum modeling to string synthesis.

SAMPLING

Sampling oscillators play back an audio sample. Each of the sampling oscillators is suited for different types of audio samples and different playback needs, from traditional pitch and speed transposition to slicing drum loops to granular pitch adjustments.

For in-depth details on each oscillator type, see: [Appendix A > Oscillators]

A synthesis-type oscillator: Analog Stack

A sampling-type oscillator: IRCAM Multi Granular

EFFECTS

Falcon includes over 100 high-quality effects, categorized for easy navigation: Delays, Reverbs, Modulation, Filters, Equalizers, Amps and Stereo, Drive and Distortions, Dynamics, Analysis and more. With effects suited for nearly every need from creative mangling to precise sound sculpting, mixing and analysis, Falcon provides a tremendous sound design facility.

EFFECTS

Effects are audio signal processors. This includes classic effects such as filters, reverb, and delays, to advanced analysis tools such phase meters and spectrum analyzers. Effects can be added independently at every level of the multi, from a single keygroup up to the master output.

MULITFX

Multiple effects can be saved and recalled as a group with a single Multi FX preset. This provides a way for complex chains of effects to be recalled instantly.

For more information on using effects, see: [Interface > Main > Effects Tab]

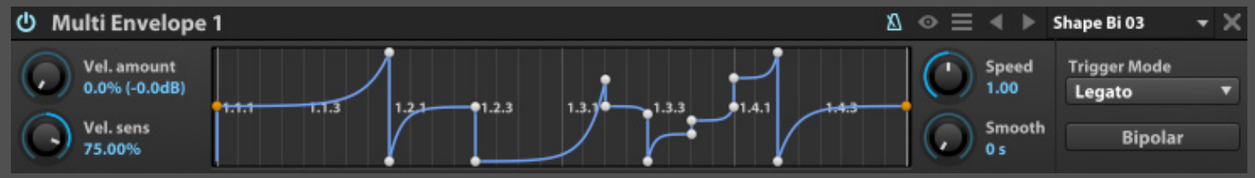
For in-depth details on each effect type, see: [Appendix A > Effects]

The Xpander Filter, one of the many Filter-type effects in Falcon

MultiFX are entire effect chains that can be saved and recalled as needed

MODULATORS

Falcon includes modulation generators such as AHD, Analog ADSR, Attack Decay, DAHDSR, Drunk, LFO, Multi Envelope, Parametric LFO and Step Envelope. Modulation generators can be instanced at any level in a patch allowing them to control nearly any parameter, be it on an oscillator, effect or even on another modulator. This system allows you to paint motion into your sounds almost effortlessly, from subtle variation over time to complex on-demand sequences.



A Multi Envelope modulator provides unlimited breakpoints with complex curve control and interpolation options

MODULATORS

Modulators are signal generators that modify a control's value. Modulators don't affect the audio or MIDI signal directly; rather, they adjust the values of Falcon's controls. There are two main categories of modulation sources: internal and external.

INTERNAL

Internal modulation sources originate from within the Falcon multi or program. This includes a variety of different types of envelopes and LFOs, which can be created at every level of Falcon's hierarchy: master, part, program, layer, and keygroup.

Additionally, macros are a special type of internal modulation. When a control is assigned to a macro, a macro control appears on the Info tab. When the macro control is adjusted, so is the control assigned to it. A control can be assigned one-to-one to a macro, as a shortcut for a commonly used control in the program, or multiple controls can be assigned to a single macro, for complex transformations of multiple controls by adjusting a single knob or button.

EXTERNAL

External modulation sources originate beyond the Falcon instance. External sources include MIDI messages, such as continuous controllers (CCs), pitch bend, velocity, aftertouch, and others. Some pre-defined external sources are also available, such as sources that randomize or alternate values.

Additionally, when using Falcon as a plug-in, you can assign a control to be linked to the host program's automation controls. Host automation extends Falcon's available modulation options by tapping into the host's modulation and automation capabilities as well.

For more information on using modulations, see: [Interface > Main > Modulation Editor]

For in-depth details on each modulation type, see: [Appendix A > Modulators]

EVENT PROCESSORS

Falcon's Event section provides control over pre-synthesis data, namely the manipulation, analysis or generation of MIDI. Event processors can do anything from arpeggiating incoming notes or strumming them like a guitar to applying micro tunings, playing back MIDI files or creating generative sequences.

EVENT PROCESSORS

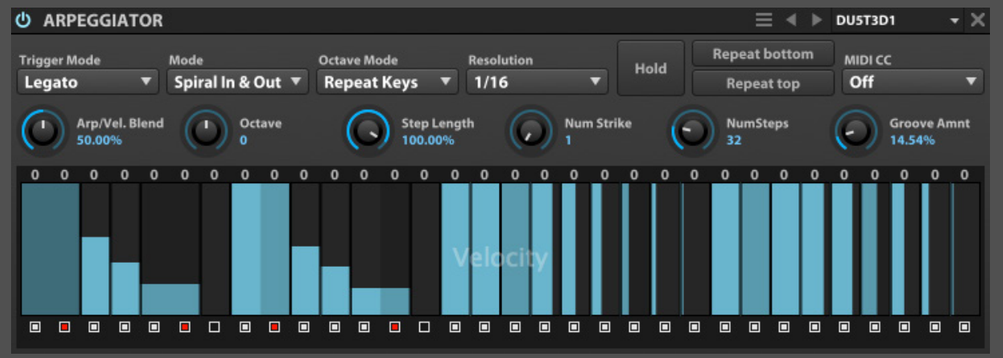
Event processors are MIDI signal processors. This includes well-known processors such as arpeggiators and micro-tuners, to complex, customized processing with the script processor.

SCRIPT PROCESSORS

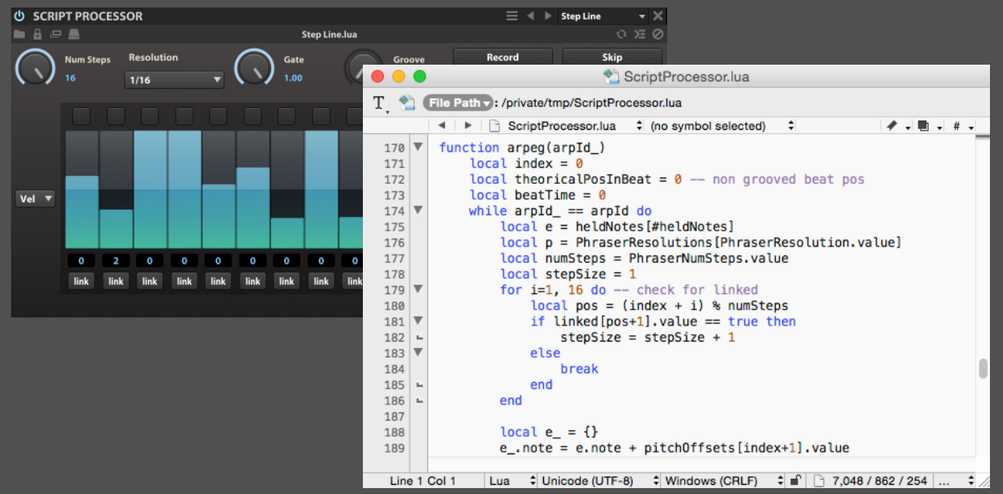
Script Processors are a unique subset of Events Processors which allow Falcon's functionality to be extended with the Lua language. Factory Script Processors include the Chorder, Harmonizer, Unison, Ensemble and many more. Load any Script Processor and click the 'Edit Script' button to take a look at how they work. Experiment with modifying them or write your own, Script Processors provide both an extremely powerful way to interact with existing instruments and a sophisticated code-driven approach to sound design.

For more information on event processors, see: [Interface > Main > Events Tab]

For in-depth details on each event processor type, see: [Appendix A > Events]

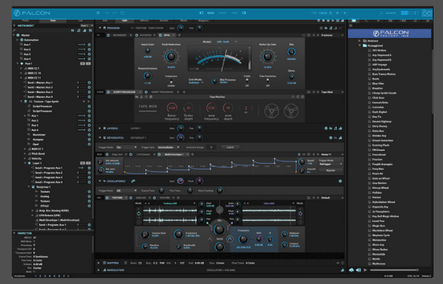


An advanced arpeggiator provides deep control over note sequences



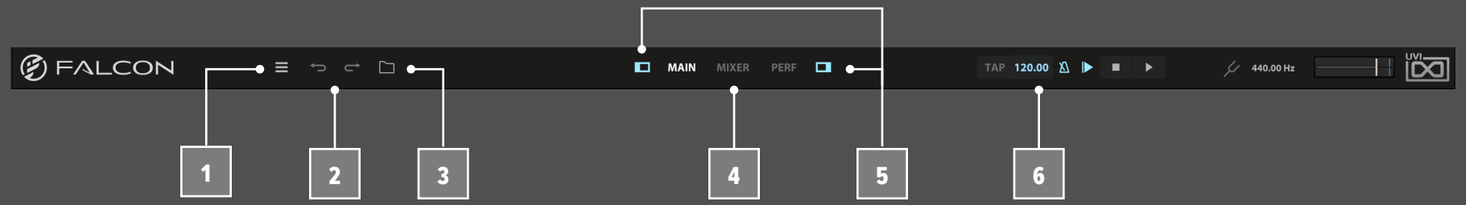
Falcon's Script Processors provide a powerful way to create your own custom tools

INTERFACE



TOOLBAR

The toolbar is displayed at the top of the window and is always visible in Main, Mixer, and Performance views. Most controls in the toolbar apply globally to the entire Falcon instance.



1 **MAIN MENU**

The main toolbar menu contains commands for loading/saving files and configuring Falcon. The menu is divided into several sections; details about the commands in each section can be found on the following:

- [User Preset]
- [Undo / Redo / History]
- [Snapshot]
- [Preferences]
- [Toolbar > Window size]

The **SNAPSHOT** comannds provide **LOAD** and **STORE** the UI settings of the left and center pane. And the menu for choose the one **RECENTLY** stored.

2 **UNDO / REDO**

UNDO or **REDO** the last action.
NOTE: You can step back to any previous state with the History panel (available through the Main Menu).

3 **BROWSER TOGGLE**

Click the folder icon button to open preset browser to view and load instruments, presets or loops and sounds to the chosen part. For more information please review [Interface > Main > File Browser].

4 **CHANGING THE VIEW**

The **MAIN**, **MIXER**, and **PERF** buttons change the primary view of the Falcon window. See [Interface > Main], [Interface > Mixer], and [Interface > Performance] for more information.

5 The left and right sidebars can be individually hidden or shown with the **SHOW/HIDE SIDEBAR** buttons. The left sidebar displays the **PARTS EDITOR**, **TREE EDITOR**, and **LIST EDITOR**; the right sidebar displays the **PRESET BROWSER**.

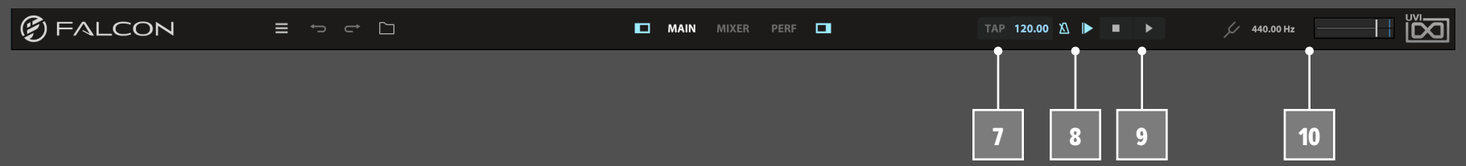
NOTE: The left sidebar is displayed in Main view only. In Mixer and Performance views, the left sidebar will not be displayed even if the button is enabled.

6 **TEMPO AND TRANSPORT CONTROLS**

Falcon's current **TEMPO** is displayed in the toolbar. You can edit the tempo here as well, from 10 to 400 bpm, by double-clicking to enter a value or by clicking and dragging the value up and down.

NOTE: When Sync To Host is enabled, the Tempo cannot be edited manually.

TOOLBAR



7 If you would like to tap to enter the tempo rather than typing in a value, use the **TAP** button. For best results, tap repeatedly at a consistent tempo.

8 Enabling **SYNC TO HOST** will cause Falcon to follow an external tempo source — the host application's tempo when using Falcon as a plug-in inside a host application, or MIDI Beat Clock when using Falcon as a standalone application. Additionally, enabling **AUTOPLAY** will cause Falcon to play and stop along with the host application. When using Falcon as a standalone application, the AutoPlay button is not displayed. For details on part auto-play, see also [Interface > Main > Parts > Auto Play].

9 The **PLAY** and **STOP** buttons are used to manually start and stop Falcon's playback. When AutoPlay is enabled, the Play and Stop buttons also activate to show the current state of the host application's transport.

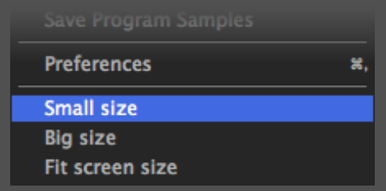
10 **GLOBAL TUNE AND VOLUME**

GLOBAL TUNE adjusts the tuning for all parts, using the A above Middle C as a reference. Global Tune defaults to 440 Hz, and is adjustable from 392 Hz to 493.88 Hz.

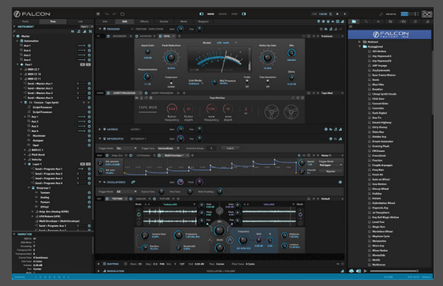
GLOBAL VOLUME adjusts the output volume for the Main Outs.

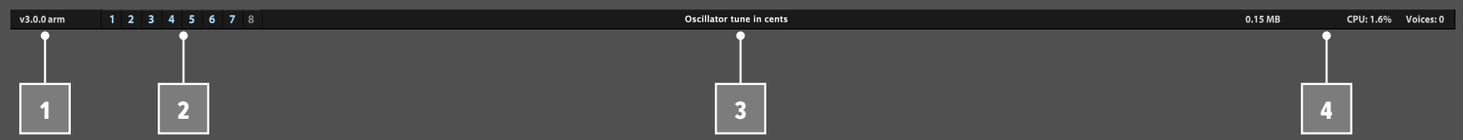
WINDOW SIZE

To adjust the size of the Falcon window, open the Toolbar menu and choose Small size, Big Size, or Fit screen size.



NOTE: The window size also can be click - drag the left bottom corner of the window.





STATUS BAR

The status bar is displayed at the bottom of the window and provides quick, at-a-glance information.

1 **VERSION**
The installed version of Falcon is displayed on the left side of the status bar.

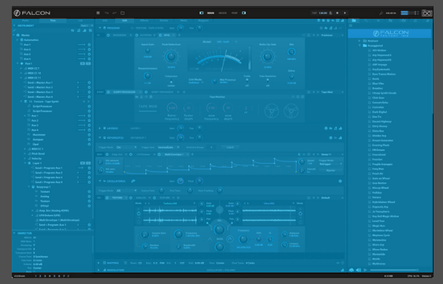
2 **WORKSPACE**
Store and choose the UI settings of the left and center pane as workspace up to 8. Click the button to select the workspace.
Shift - click the button to save the current status as workstapace.
Cmd/Ctrl + Shift - click the botton to delete the worksapce.

NOTE: Both Workspaces and Snapshots [Main Menu] are handle the left and center panel states, but they function independently.

3 **HOVER HELP**
As you use Falcon, the center of the status bar displays contextual help, such as “Global Volume” when hovering over the output volume knob in the top toolbar, or “Oscillator tune in semitones” when hovering over the Oscillator module’s Coarse Tune knob.

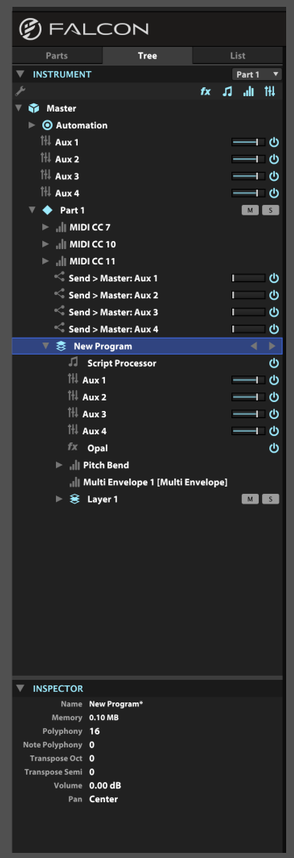
4 **PERFORMANCE SUMMARY**
The right side of the status bar displays a performance summary for the current multi:

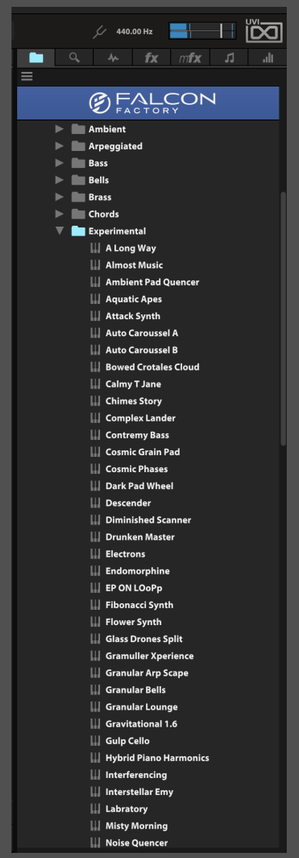
- memory usage
- CPU usage
- number of voices currently playing



MAIN

The Main view is the primary view for creating and editing parts in Falcon, and the instruments and samples that those parts contain.

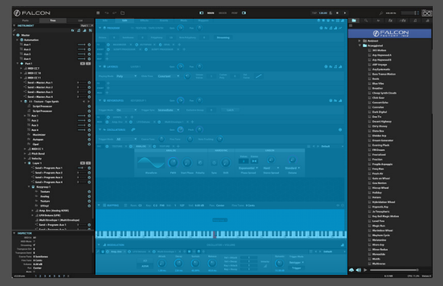




Left Sidebar | Center Pane | Right Sidebar

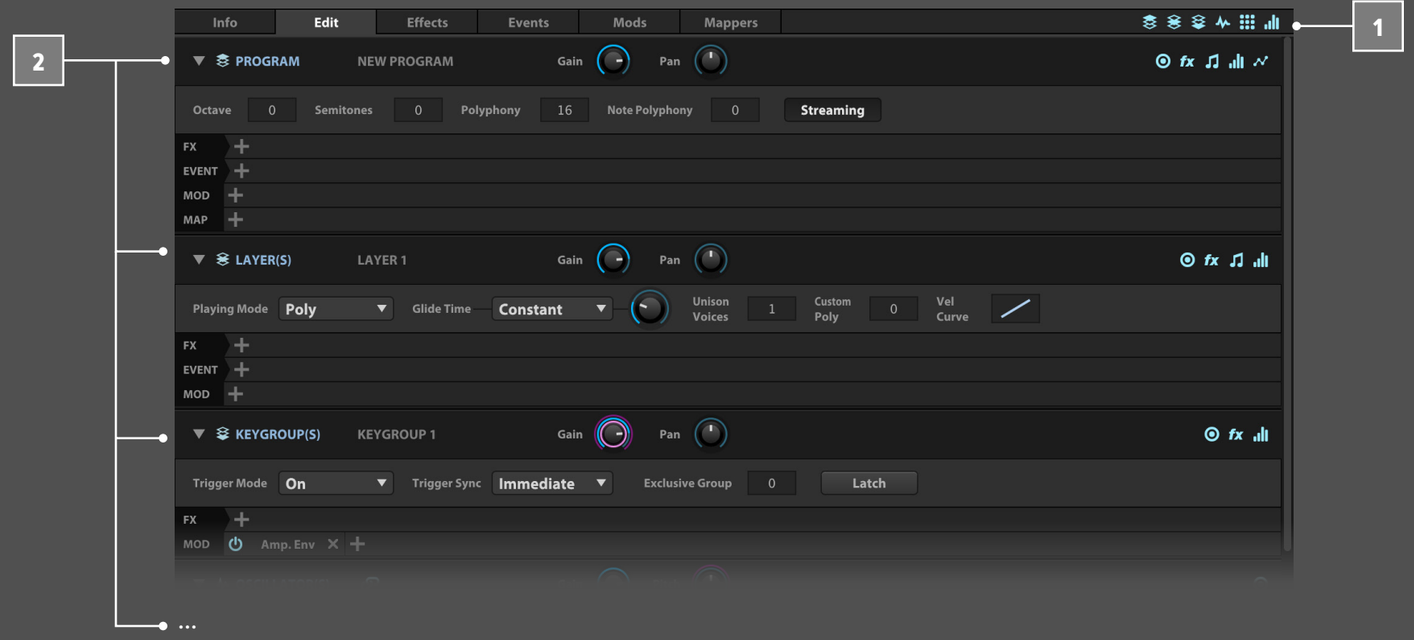
The primary areas of the Main view are:

- The **CENTER PANE**, for viewing and editing parts
- The **LEFT SIDEBAR**, for additional part controls
- The **RIGHT SIDEBAR**, for browsing and loading samples and presets



EDIT

The Edit tab is the primary view for editing a program.



THE EDIT TAB

The major sections within the Edit tab are:

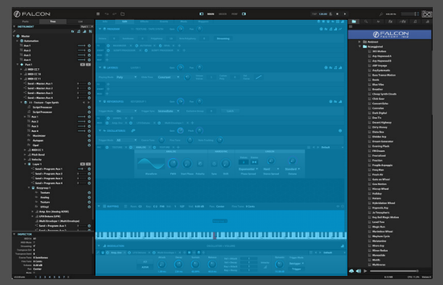
1

- **PROGRAM**
- **LAYER**
- **KEYGROUP**
- **OSCILLATOR**
- **MAPPING EDITOR**
- **MODULATION EDITOR**

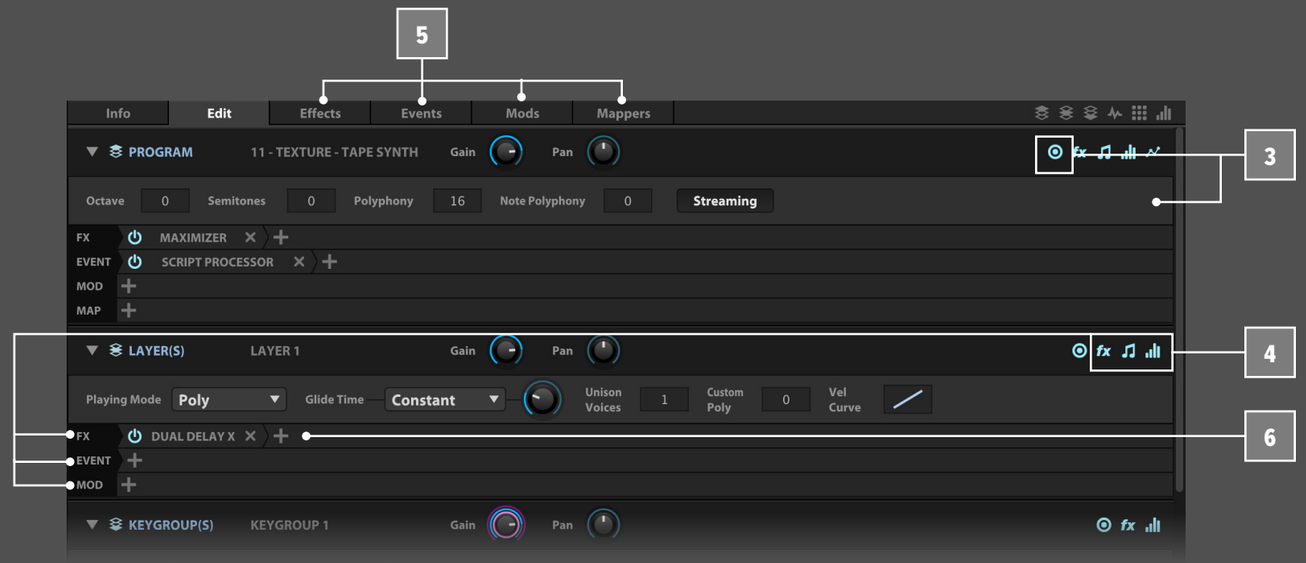
2 Each section may be shown or hidden, using the corresponding buttons in the upper-right toolbar.

When a section is shown, it can also be collapsed or expanded using the arrow to the left of the section name. Double-clicking the section header also collapses or expands the section.

The first four sections — Program, Layer, Keygroup, Oscillator — form a hierarchy. That is, a program contains layers, a layer contains keygroups, and a keygroup contains oscillators. For more information on how these pieces fit together, see [Structure].



EDIT



3

Each of these four sections contains a Parameters view which displays its controls, The section parameter view can be shown or hidden by pressing the toggle in the section header.

4

Other lanes can be shown or hidden for each section, such as effects, event processors, modulation sources or mapper editors. These lanes can be toggled with the corresponding buttons in their section's header.

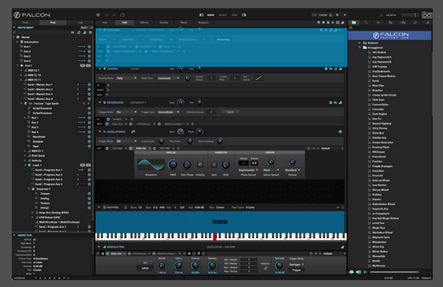
5

Each of these lanes is a condensed view of a corresponding tab, displaying only the modules of that type which are saved at that particular level of the program hierarchy.

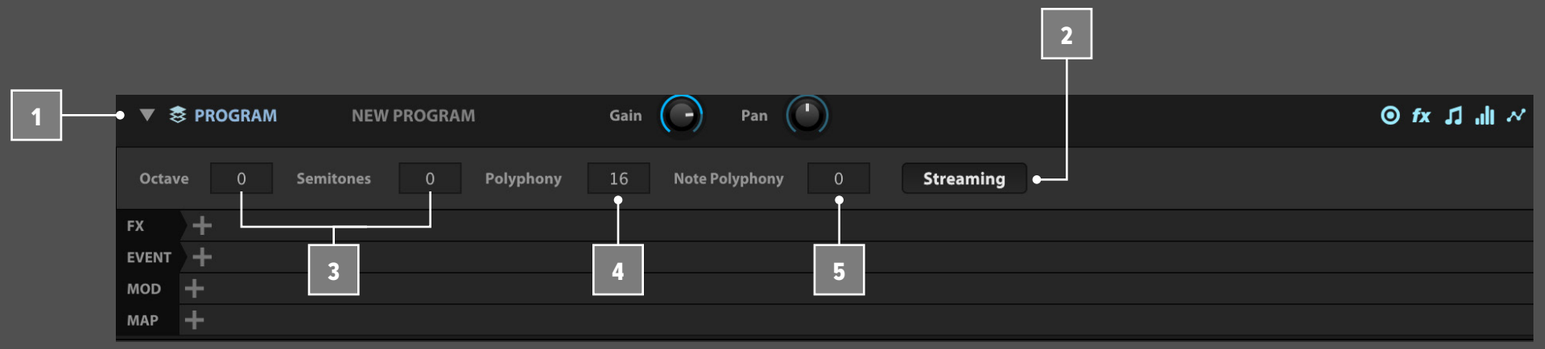
6

To add a new module to a lane, press the plus (+) button to display a menu of available modules. Each module displays a tab, and the module's controls are shown or hidden by selecting the tab's name. The module can be enabled or disabled with the **POWER** button on the left of the tab, or deleted with the **X** button on the right of the tab. Additionally, a press and hold on the module's name will display a preset browser menu to replace the existing module with a different one.

NOTE: For the Effects and Event lane, the left-to-right order indicates the signal flow. For the Modulations and Mappers lane, the order isn't significant. For more information, see: [Main > Modulations Tab].



EDIT » PROGRAM



THE PROGRAM EDITOR

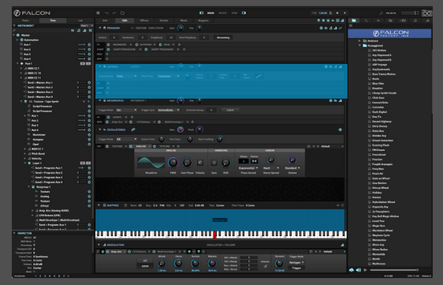
1 **GAIN** and **PAN** set the output level and stereo placement for the entire program. These are distinct from the Part gain and pan settings, and are saved with the program.

2 To choose whether samples in the program are streamed from disk or not, set the **STREAMING** toggle. For more details on streaming, see [Preferences > Streaming].

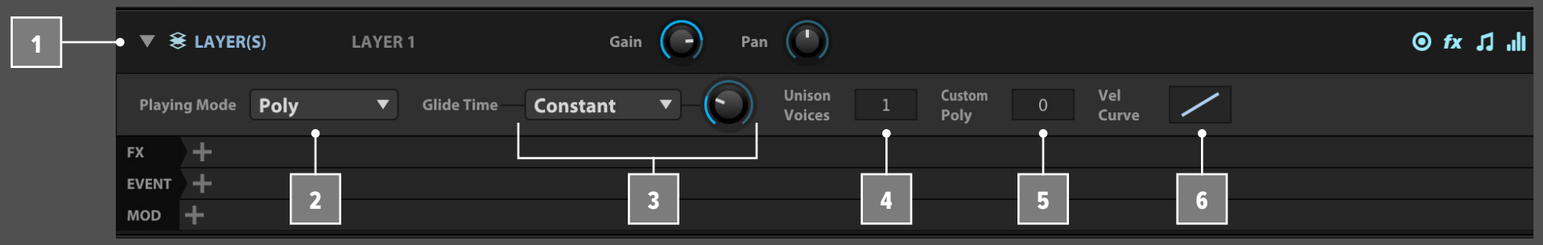
3 To transpose incoming MIDI to the program, adjust the **OCTAVE** and **SEMI** settings.

4 **POLYPHONY** set the default number of simultaneous voices available for each layer in the program. (To override this on individual layers, see [Custom Polyphony] in the Layer section.)

5 Keeping polyphony as low as you can helps reduce the processing power needed to play back the program, especially if you have per-keygroup effects or modulations. The **NOTE POLYPHONY** value sets the maximum number of simultaneous triggers of the same note. A setting of zero is a special value that indicates **UNLIMITED**.



EDIT » LAYER



1 **THE LAYER EDITOR**
GAIN and **PAN** set the output level and stereo placement for the selected layers.

2 **PLAY MODE** determines what happens when additional notes are triggered while another note is held. In **POLY** modes, multiple notes can be played at once, in **MONO** modes only the last triggered note will be played.

3 Additionally, with **POLY PORTAMENTO** or **MONO PORTAMENTO** there is a glide from the previous note to the current one. The duration of the glide is set by **GLIDE TIME**. **PORTAMENTO MODE** chooses whether the time is always the same (Constant Time), or whether the time is proportionally longer based on the spread between the two notes (Proportional Time). In **MONO PORTAMENTO SLIDE** mode, the next note always starts from the pitch of the previous note and glides to the new pitch, even if the next note is played after the previous note is released.

4 **UNISON VOICES** sets the number of voices triggered with each note received. When using multiple voices, the Unison modulation sources (found under External > Other) can be used to modulate parameters per voice, such as Keygroup Pitch or Pan, for a dynamic sound.

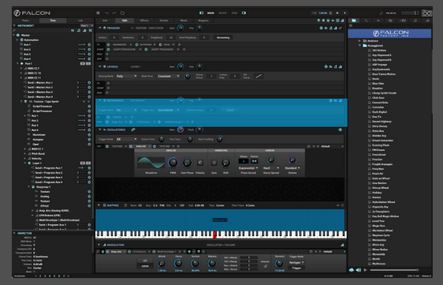
5 **CUSTOM POLYPHONY** sets the maximum polyphony for the layer. A setting of zero is a special value that indicates that there is no layer-specific limit.

6 The **VELOCITY CURVE** sets the mapping of incoming velocity values. The default is **NORMAL** (1:1 mapping).
To change the velocity curve, right-click and choose one of the preset:

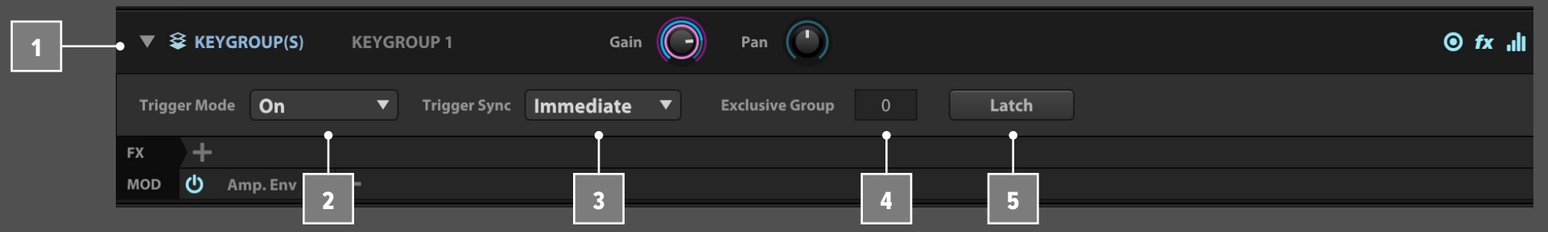
- **CONSTANT**: The same velocity is always triggered, regardless of the incoming velocity. To set the value, double-click and enter a velocity value.
- **MAX**: A constant velocity of 127
- **HARD**: Remapped so that higher velocities are triggered
- **NORMAL**: Default, 1:1 mapping
- **SOFT**: Remapped so that lower velocities are triggered

The curve displays incoming velocities on the X axis, and triggered velocities on Y. For finer adjustment of the velocity curve, hold the Shift key and drag the curve up or down. You can also double-click and enter a value:

- Values between -1 and zero cover the range between the Hard and Normal preset
- Values between zero and +1 cover the range between the Normal and Soft preset
- Values between +1 and 127 set a constant velocity



EDIT » KEYGROUP



THE KEYGROUP EDITOR

1 **GAIN** and **PAN** set the output level and stereo placement for the selected keygroups.

2 **TRIGGER MODE** determines what event triggers the keygroup to play back:

- **ON**: Keygroup is triggered by note-on; this is the default.
- **OFF**: Keygroup is triggered by note-off.
- **OFF + E**: Keygroup is triggered by note-off, and the current level of the amplitude envelope will be used as the initial amplitude.
- **OFF + V**: Keygroup is triggered by note-off, and the note-off velocity will be used as the initial amplitude.
- **OFF + VE**: Keygroup is triggered by note-off, and both note-off velocity and the amplitude envelope will be applied to determine the initial amplitude.

Off + E, Off + V, and Off + VE modes are helpful for matching the amplitude of a release sample with the samples that preceded it.

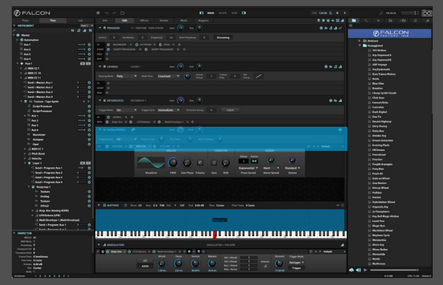
3 **TRIGGER SYNC** determines how the keygroup is played back once triggered:

- **IMMEDIATE**: The keygroup is triggered immediately
- **NEXT BEAT**: The keygroup is triggered at the beginning of the next full beat
- **NEXT BAR**: The keygroup is triggered at the beginning of the next full bar

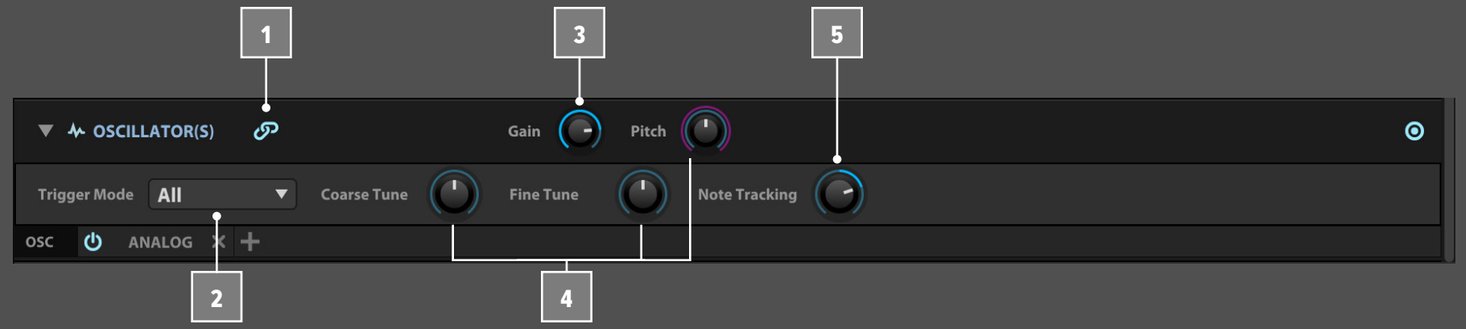
The Next Beat/Bar options are useful when triggering keygroups with tempo-synced effects such as arpeggiators, or a keygroup containing a tempo-synced loop.

4 The **EXCLUSIVE GROUP** is a way of indicating keygroups which should be mutually exclusive. The classic use case is a group of hi-hat sounds, where a closed hi-hat should cutoff any open hi-hat sounds. There are 32 separate exclusive groups available per layer. A setting of zero is a special value that indicates no exclusive group assignment.

5 When **LATCH** is enabled, notes are held (or “latched on”) indefinitely when they are triggered; to release the note, play the same note again.



EDIT » OSCILLATOR



THE OSCILLATOR EDITOR

1 A keygroup contains one or more oscillators. With **EDIT ALL OSCILLATORS** enabled, the parameters described below will be edited simultaneously for all oscillators in the keygroup. To edit each oscillator individually, disable Edit All Oscillators and select the desired oscillator tab.

2 If there are multiple oscillators in the keygroup, the **TRIGGER MODE** chooses which will be triggered:

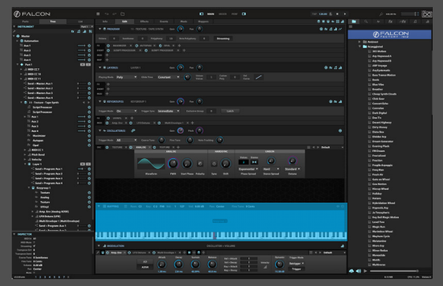
- **ALL**: All oscillators in the keygroup are triggered simultaneously with every note.
- **CYCLE**: Oscillators are triggered individually, “round robin” style. The first oscillator will be triggered on the first note, the second oscillator with the second note, and so on, always in the same order. With oscillators A, B, and C, the order will always be A-B-C, A-B-C, etc.
- **RANDOM CYCLE**: Same as Cycle, but the order is randomized within each cycle. Each oscillator will always be triggered once per cycle. Additionally, the first note of a cycle will never be the same as the last note of the previous cycle, so there won’t be any direct repeats. With oscillators A, B, and C, the order might be B-A-C, A-C-B, then C-B-A.
- **RANDOM**: One random oscillator is triggered individually. With oscillators A, B, and C, the order might be A-C-C-B-A-B-B-C-A.

3 **GAIN** and set the output level for the selected keygroups.

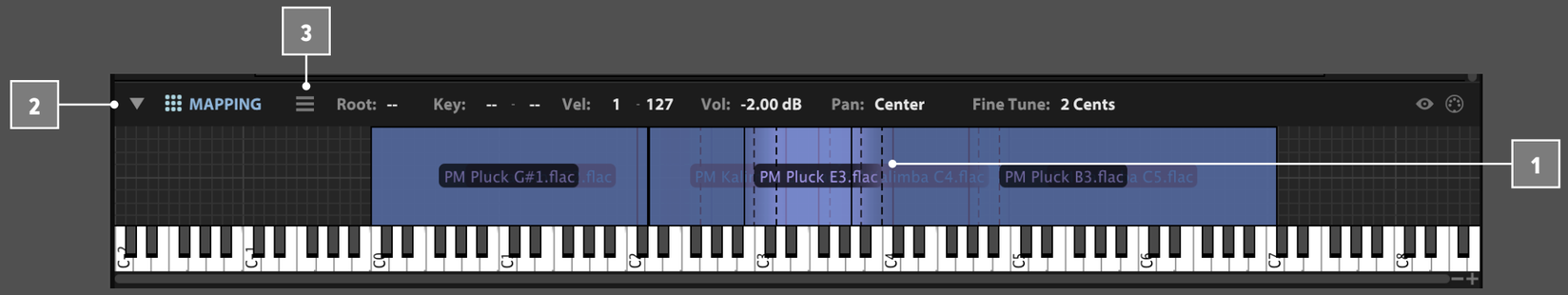
4 The **COARSE TUNE** and **FINE TUNE** controls set the oscillator’s pitch in semitones and cents. These controls are for static adjustments, and cannot be modulated. The **PITCH** control, however, can be modulated, and is adjustable over a wide range (±4 octaves). Typical usage might be: **FINE TUNE** to pitch-correct a sample that’s slightly out of tune, **COARSE TUNE** to shift the pitch a few keys up or down the keyboard, **PITCH** to modulate the oscillator’s pitch with an LFO or envelope

5 **NOTE TRACKING** determines how incoming notes are transposed. At 100%, each note is transposed relative to the root key 1:1. At 200%, transposition is double; for example, if the root key is G4 and an G#4 is played, the note will be transposed as if an A4 was played.

Negative values invert the transposition; for example, if the root key is G4 and a G#4 is played, at -200% the note will be transposed as if an F4 was played. For a constant pitch regardless of the note triggered, use 0%.



EDIT » MAPPING



THE MAPPING EDITOR

The Mapping Editor displays the arrangement of the program's layers and keygroups. Programs can contain anywhere from a single keygroup in a single layer assigned to the entire key range and velocity range, to many layers each with dozens of keygroups that are assigned to very small ranges.

Above the piano keyboard, the key range is displayed horizontally and the velocity range is displayed vertically. Each keygroup appears as a block covering its key and velocity range. When a program has multiple layers, the layers are stacked on top of each other.

Pressing a key on the piano keyboard will trigger the note; if a keygroup is assigned to that key, it will be played back. Higher velocities are triggered by pressing the key closer to the bottom; lower velocities are triggered by pressing close to the top.

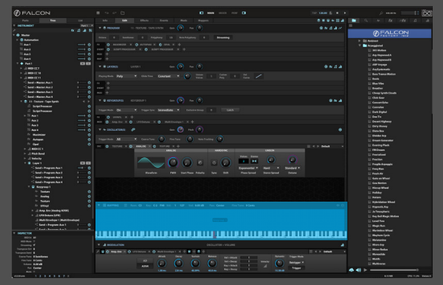
To view the mapping area in greater detail, zoom in or out horizontally using the + and - buttons in the lower right, or resize it vertically by dragging the Mapping Editor toolbar up or down.

To adjust a keygroup's key range or velocity range, select the keygroup then click and drag any edge.

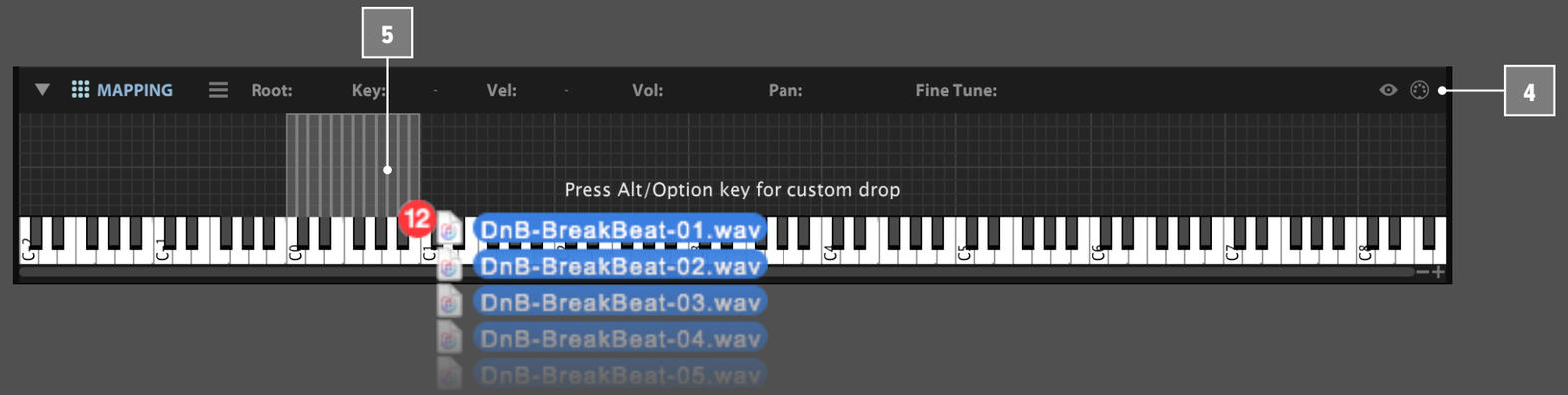
1 Hold the Command key (Mac) or Control key (Windows) before you start dragging the keygroup edge to fade the key or velocity range. The beginning of the fade will be indicated by a dashed line within the keygroup.

2 The toolbar above the mapping area displays details for the selected keygroup, such as its root key, key range, velocity range, and more. These fields can all be edited in the usual manner: double-clicking to enter text, scrolling, and so on. You can also select and edit multiple keygroups at once.

3 Additional commands are available under the menu, available by pressing the menu button towards the left end of the toolbar. **TIP**: The same menu is also available by right-clicking in the mapping editor.



EDIT » MAPPING

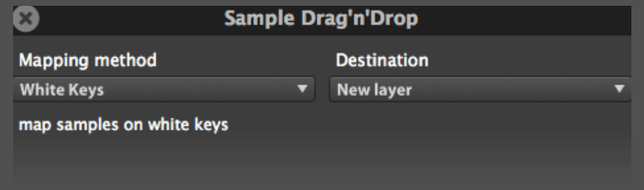


4 There are two additional options for helping navigate the mapping editor: **HIGHLIGHT PLAYED KEYGROUPS**, and **MIDI SELECT**. These options can be toggled on or off with the buttons at the right end of the toolbar. When Highlight played keygroups is enabled, keygroups are visually highlighted as they are triggered. With MIDI select enabled, keygroups are selected as they are triggered.

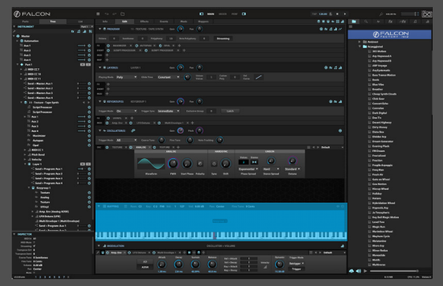
To edit a keygroup, select one or more keygroups then right-click to display a contextual menu of editing commands (described below).

5 **IMPORTING SAMPLES AS KEYGROUPS**

Samples can be easily imported as keygroups by drag and drop from the sidebar browser or your desktop. You can drag a single sample, or multiple samples at once. The vertical placement of the sample as you drop it is a quick shortcut for the new keygroup's key range assignment — the closer you drop the sample to the top of the velocity range, the larger key range the keygroup will span.



Additionally, if you hold the Alt/Option key while dragging in samples, a custom import dialog is displayed. Choose the **MAPPING METHOD**, such as "**NOTE NAME**" or "**BLACK KEYS**", many of which determine details about the sample from its file name or other metadata. The selected mapping method displays a description with details about how it will determine each file's assignment. The layer for the imported samples is chosen with the **DESTINATION LAYER** selector. Samples can be imported to one of the existing layers, or to a new layer.



EDIT » MAPPING

ADDING, MOVING AND DELETING KEYGROUPS

The Mapping Editor's menu contains all of the edit commands available in the Mapping Editor. To open the menu, right-click anywhere in the Mapping Editor grid or choose the menu button towards the left end of the toolbar.

Standard editing and selection commands are provided:

- **CUT**
- **COPY**
- **PASTE**
- **DUPLICATE**
- **DELETE**
- **UNDO**
- **REDO**
- **SELECT ALL**
- **DESELECT ALL**
- **INVERT SELECTION**

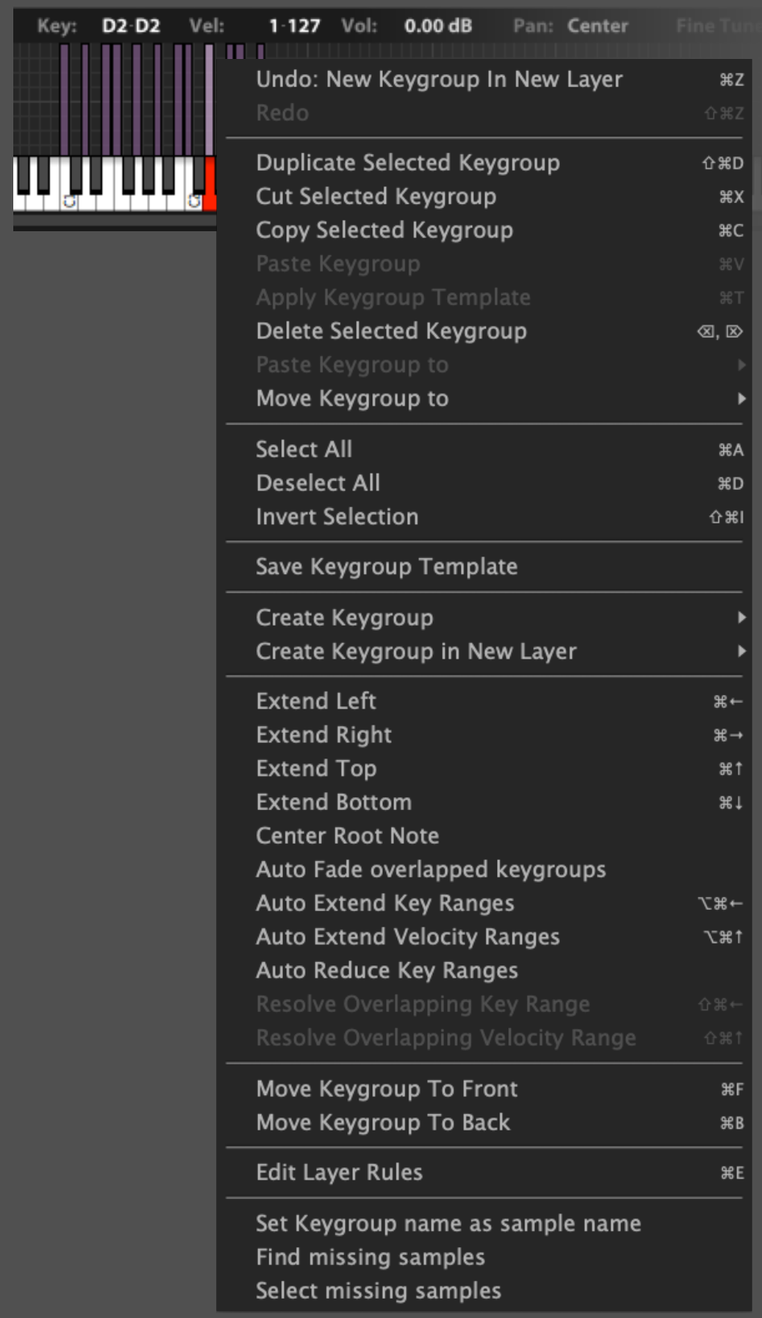
To move keygroups between specific layers, choose one of the following and select a new or existing layer:

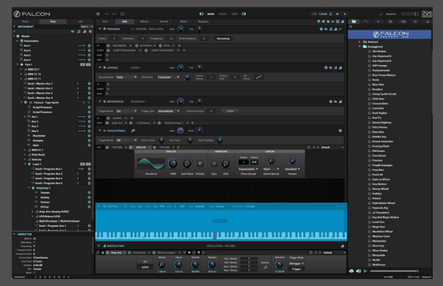
- **PASTE KEYGROUP TO**
- **MOVE KEYGROUP TO**

A new keygroup can be created, in the current layer or a new layer. Choose one of the following, then choose Sample or Synth:

- **CREATE KEYGROUP**
- **CREATE KEYGROUP IN NEW LAYER**

To copy the settings of one keygroup and apply them to another keygroup, copy a keygroup, then select the keygroup to be updated and choose Apply Keygroup Template. This will replicate the same keygroup settings (such as envelopes and other modulation sources) without changing the oscillator type.





EDIT » MAPPING

EDITING KEYGROUP RANGES

The **EXTEND** commands extend the keygroup's range in the chosen direction (right, left, top, or bottom) until another keygroup boundary is encountered, or it reaches the maximum value. The Auto Extend options are similar, but extend in both directions: left and right for **AUTO EXTEND KEY RANGES**, or top and bottom for **AUTO EXTEND VELOCITY RANGES**. A keygroup can also be reduced to only its root key, with **AUTO REDUCE KEY RANGES**.

For keygroups that overlap keys or velocities, choose **RESOLVE OVERLAPPING KEY RANGE** or Resolve Overlapping Velocity Range to adjust the ranges of the keygroups so they no longer overlap. Alternatively, the ranges of the keygroups can remain the same, but key or velocity fades can be applied with **AUTO FADE OVERLAPPED KEYGROUPS**.

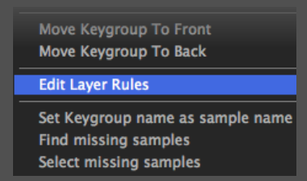
If you would like to simply change which keygroup is displayed on top of the other, without adjusting their fade or ranges, choose **MOVE KEYGROUP TO FRONT** or **MOVE KEYGROUP TO BACK**.

KEYGROUP SAMPLES

For keygroups with sampling oscillators, it can be helpful to use the **SET KEYGROUP NAME AS SAMPLE NAME** command to give the keygroups more meaningful names.

If a program's samples can't be located, the samples will be marked as missing. **SELECT MISSING SAMPLES** will select any keygroup that contains an oscillator with a missing sample; **FIND MISSING SAMPLES** checks for missing samples and displays an error window listing any missing files. From there, you can choose to ignore the missing samples, or open the file browser to locate them.

LAYER RULES



Layer Rules provide a way to dynamically change how a program's layers are triggered. For example, you might want to switch between legato and stacatto articulations, or cycle through multiple variations of the same note to provide a more realistic performance. Choose **EDIT LAYER RULES** from the Mapping Editor's menu to open the Layer Rules Editor.

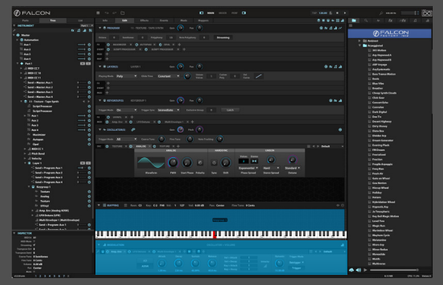
The rules are displayed on the left, and a list of layers is displayed on the right. First, right-click and add a **ROOT RULE**. Next, right-click and add a **SUB-RULE**, one for each layer or group of layers that you would like to be affected by the rule. Then select each sub-rule, and choose the desired layers from the list of target layers on the right.

Now choose a **RULE TYPE** for the root rule, such as Key Switch. Each sub-rule can now be assigned to the specific criteria which will trigger that layer. For example, with a Key Switch rule and two sub-rules, the first sub-rule might be assigned to C0 and the second to D0.

The rule types are:
Key Switch, Pitch Bend, Speed, Note Duration, Cycle, Random, Legato, Random Cycle, MIDI CC

Sub-rules can be added to sub-rules, to create further branches in the layer triggering logic.

TIP: Falcon's Script Processor module can also be used to dynamically change playback styles. For more details, see [Appendix B: Scripting in Lua].



EDIT » MODULATION

THE MODULATION EDITOR

The Modulation Editor displays modulation assignments and sources and is the central location for editing modulation generators.

1 When you select a parameter, the node and name of the parameter is displayed in the Modulation Editor. For example, when the layer gain knob is selected, the Modulation Editor displays “Layer > Volume”.

2 The top half of the Modulation Editor displays any **MODULATION ASSIGNMENTS** for the selected parameter.

3 The bottom half of the panel displays a **MODULATION SOURCE EDITOR** for the selected modulation source.

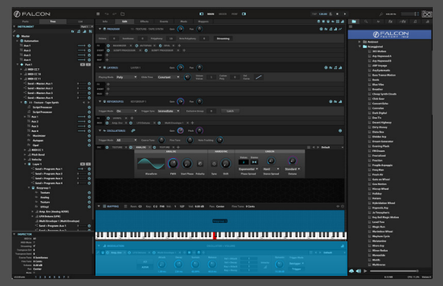
4 The modulation source editor can be shown or hidden with the button on the right side of the Modulation Editor header.

UNDERSTANDING MODULATION SOURCES

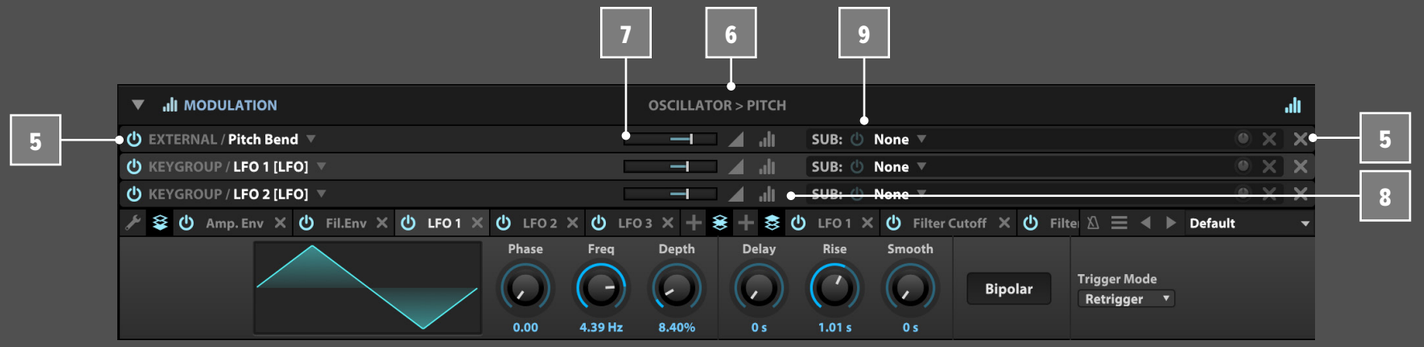
A modulation source generates a control signal that is used to modify other controls — on its own, it doesn’t directly affect Falcon’s output. A modulation source must be assigned to modulate another control to have an effect. The location in Falcon’s hierarchy where you create the modulation source determines its availability as an assignment choice.

Modulation data flows from the top (Master level), down through Part, Program, Layer and Keygroup levels to the bottom (Oscillators). Therefor, a modulation generator instanced at the Master level can target any parameter within a given Falcon instance, and conversely a modulation generator instanced at the Keygroup level can only see target parameters within its own Keygroup.

NOTE: Master and part modulation sources aren’t recommended to be assigned to program, layer, or keygroup controls as programs can be saved and recalled separately from the containing multi, and could result in missing modulation sources. If you work with any modules instanced above the Program level make sure that you save your work as a Multi (.uvim) file in order to maintain the integrity of your patch. For more information on signal flow in Falcon see [Structure].



EDIT » MODULATION



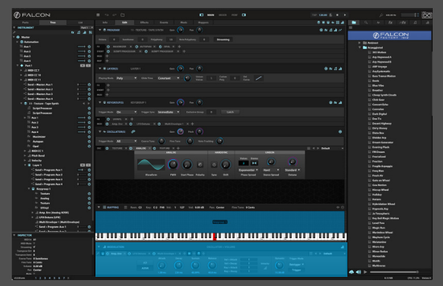
5 **MODULATION ASSIGNMENTS**
A parameter can have any number of modulation assignments. Each assignment can be enabled or disabled with the **POWER** button on the left of the tab, or deleted with the **X** button on the right of the tab.

6 Each assignment displays the node, name, and type of the modulation source. For example, with a keygroup DAHDSR envelope named “Amp. Env,” the assignment will display “Keygroup > Amp. Env [DAHDSR]”. To choose a different modulation source for the assignment, press and hold on the name and choose a different source from the menu.

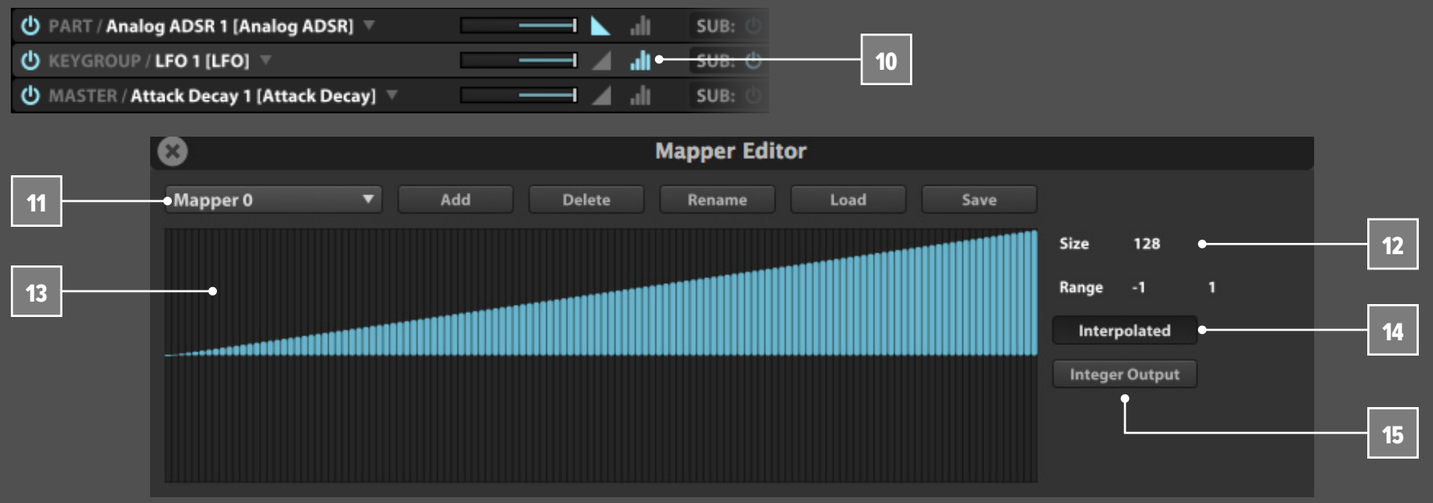
7 The amount that the modulation source will affect the parameter is set by the **RATIO** slider. The range is displayed as +1 to -1 for most parameters, which can also be thought of as +100% and -100%. For pitch-related parameters, the range is +48 to -48 semitones.

8 To further adjust the range, you can toggle **INVERT** to flip the range, or make detailed, custom shapes with the **MODULATION MAPPER EDITOR**.

9 Each modulation source also has a **SUB-MODULATION** source that modulates the depth of the primary modulation source signal. The sub-modulation source can be enabled/disabled, removed, replaced, and its ratio edited the same as for the primary modulation source. One example would be an LFO assigned to an oscillator’s pitch for vibrato, and the mod wheel assigned as a subsource; the mod wheel would then be used to dynamically set the depth of the vibrato.



EDIT » MODULATION



10 **MODULATION MAPPER EDITOR**
The modulation mapper editor sits between the modulation source and the parameter that it's modulating, remapping the values of the control signal according to the mapper shape.

When no mapper is chosen, the modulation source is mapped to parameter with a basic 1:1 relationship, visualized as a linear ramp from the lowest value to the highest value.

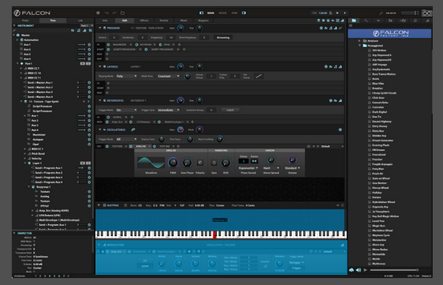
11 To enable a mapper, choose an existing mapper from the **MAPPER SELECTOR MENU** or press the **ADD** button to create a new one. You can also **LOAD** and **SAVE** preset files from disk, as well as **RENAME** or **DELETE** them.

12 To set the size of the graph, set the horizontal axis with the **SIZE** value and the vertical axis with **RANGE**.

13 Create the mapper shape by clicking and dragging in the graph; hold the Alt/Option key to draw a straight line. You can also right-click and choose from a number of preset shapes and functions.

14 When **INTERPOLATED** is enabled, the mapper transitions smoothly from one value to the next; when disabled, it transitions immediately from one value to the next, which can create a stair-stepped effect.

15 Enabling **INTEGER OUTPUT** further constrains the values output by the mapper to integer values only.



EDIT » MODULATION

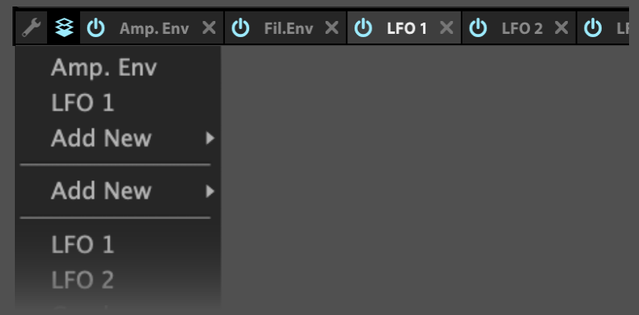
MODULATION SOURCE EDITOR

The Modulation source editor displays the parameters of the selected modulation source or sub-source.

The specific parameters shown for each modulation source are described in detail in [Appendix A: Modules > Modulators], and general use of modulation modules is described in [Interface > Main > Modulations Tab].

The modulation source editor displayed here has a few additional controls for helping navigate between different modulation sources.

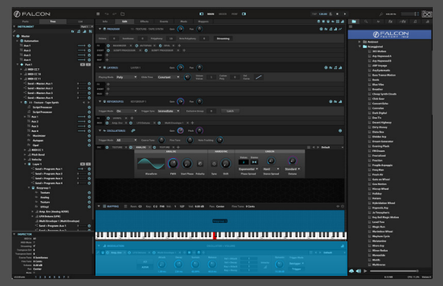
16 Click the button to open the Modulation Quick View menu to browse, select and create modulators. The list is divided into 3 sections with an 'Add New' menu for each, top-down they represent: Keygroup, Layer, and Program.



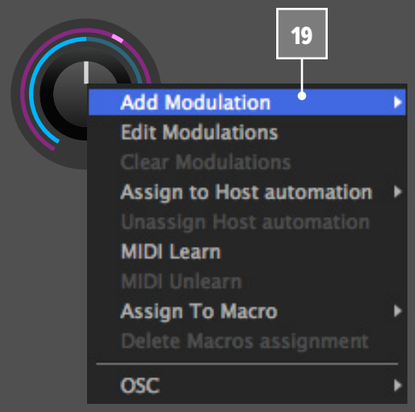
17 Directly above the modulation sources editor is the modulation ribbon. This displays all of the modulators in the selected keygroup, layer and program (from left-to-right), as indicated by the hierarchy icons. Here you can browse, select, toggle, create and delete modulators.

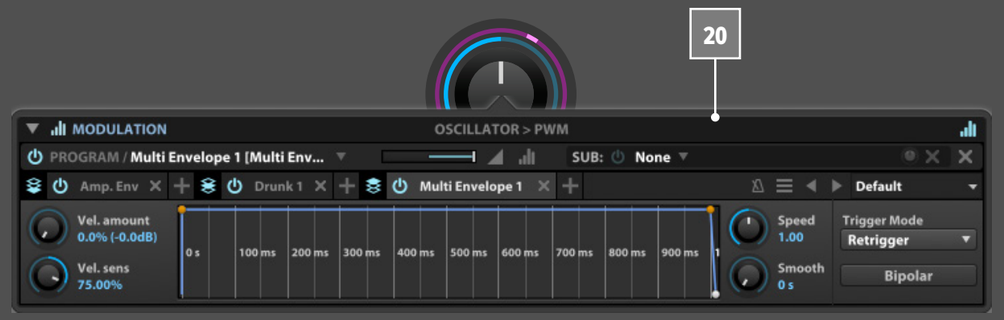
Tip: hover your cursor over the ribbon and use your mouse scroll wheel to navigate the list

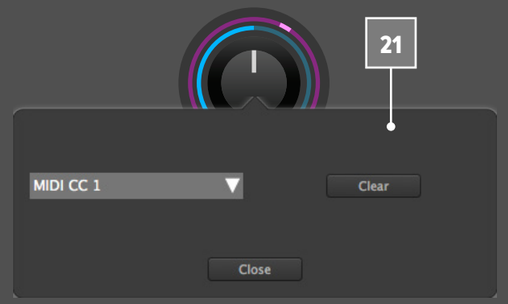
18 For modulation generators that support **TEMPO SYNC** there is a small metronome icon in the toolbar. To enable tempo sync simply toggle it on.



EDIT » MODULATION







MAKING MODULATION ASSIGNMENTS

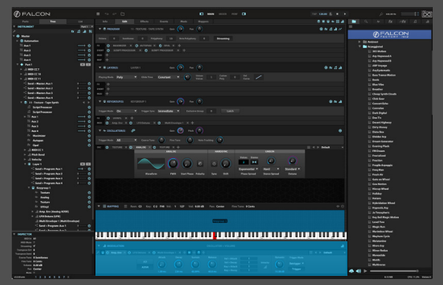
To assign a modulation source*, right-click the parameter that you would like to modulate and choose from the menu.

19 Choose **ADD MODULATION** to create a new assignment, using either an existing modulation source or a new one. For more innformation about Exteral Modulation sources see [External Modulation sources].

20 To edit existing modulation connections, choose **EDIT MODULATIONS** to view the parameters current assignments in a pop-up directly next to the parameter. Choose **CLEAR MODULATIONS** to remove all modulation assignments for that parameter.

Parameters can also be assigned to macros, for quick control from the Info Tab. Choose **ASSIGN TO MACRO** and assign one of the existing macros, or create a new one. To remove the assignment, choose **DELETE MACROS** assignment.

21 To quickly assign an MIDI CC to a parameter, choose **MIDI LEARN**. You can then choose a MIDI CC from the on-screen menu, or send the desired MIDI CC from your MIDI keyboard controller. To remove the assignment, choose Clear from the MIDI Learn window, or choose **MIDI UNLEARN** from the modulation context menu.



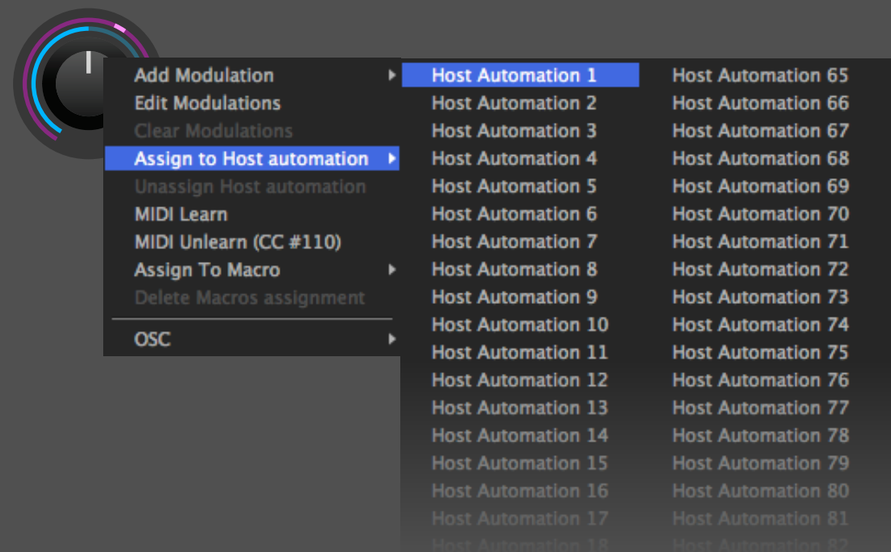
EDIT » MODULATION

AUTOMATION ASSIGNMENTS

HOST AUTOMATION

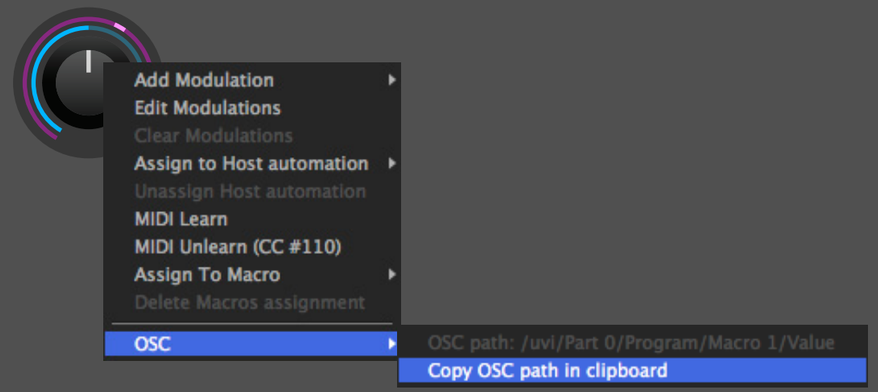
If you are using Falcon as a plug-in and would like to control a parameter with your host application's automation tools, choose **ASSIGN TO HOST AUTOMATION** and assign one of Falcon's 128 host automation controllers. To remove the assignment, choose **UNASSIGN HOST AUTOMATION**.

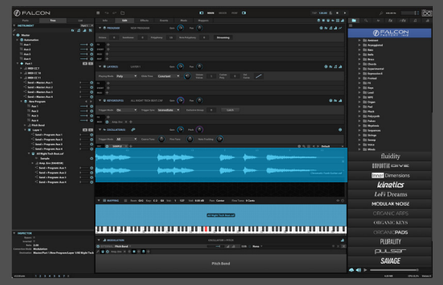
A limited number of parameters can be automated externally, but not modulated. For those, right-clicking the parameter will open the **MIDI/AUTOMATION CONTROL** dialog, where a MIDI or host automation source can be assigned.



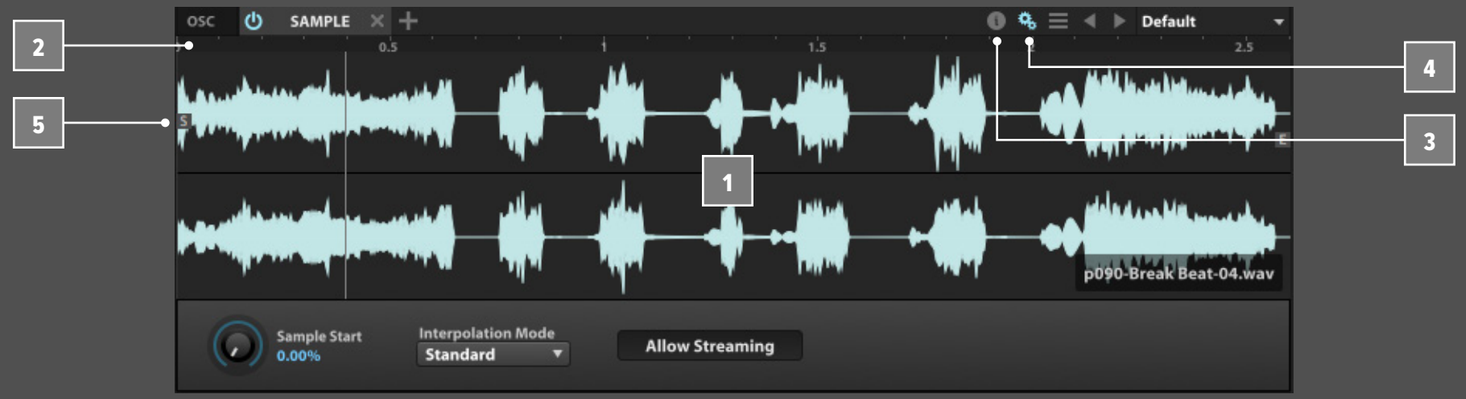
OSC (OPEN SOUND CONTROL)

Finally, if you would like to control a parameter externally with Open Sound Control, the parameter's **OSC** path is displayed in the menu. The path can also be copied to the clipboard for easy assignment in another application.





SAMPLE EDITOR



SAMPLE EDITOR

For sample-based oscillator types, the Sample Editor displays a waveform editor and additional controls specific to audio files and loops. (See [Appendix > Oscillators > Synthesis] for details on the editor controls available for each of the synthesis-based oscillator types.)

1 The Sample Editor's primary display is the waveform of the loaded audio sample. If the oscillator doesn't yet have a sample loaded, you can load one by drag and drop from the sidebar file browser or the Finder (Mac) / File Explorer (Windows).

2 The time ruler above the waveform displays the duration of the sample. To change the time format between Samples, Beats, or Seconds, right-click the ruler.

By default the sample's waveform is zoomed to fit the display. To zoom in horizontally, hold the Alt/Option key while scrolling with your mouse scroll wheel or trackpad scroll gesture. Holding the Shift key while scrolling zooms the waveform vertically.

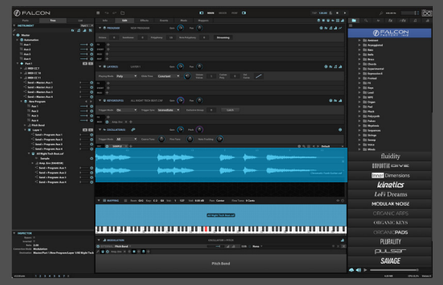
3 The **SAMPLE INFO** button displays an overlay on top of the sample waveform with details about the loaded sample: the sample file location, bit depth, sample rate, number of channels, duration, and file size. If the sample is looped, details about the file's loop are displayed as well.

4 The **PARAMETERS** button shows or hides the oscillator parameters that are unique for that oscillator type. See [Appendix > Oscillators > Sampling] for details on each sampling oscillator type.

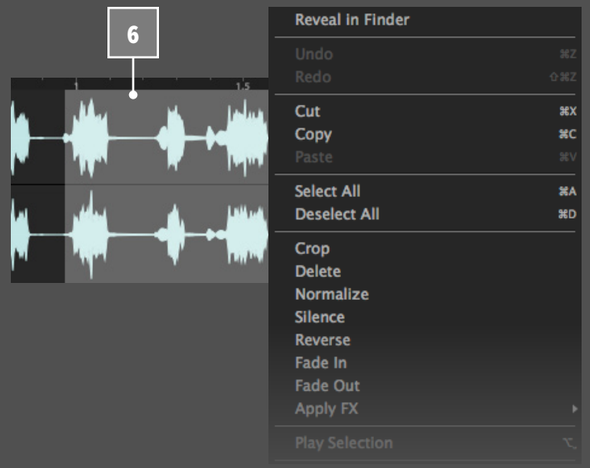
NOTE: Some of the sampling oscillators have a partial subset of the full set of sample editing options described below. The **SAMPLE** oscillator module has the largest variety of sample editing operations available.

5 **SAMPLE START/END**

When a sample is loaded, you can adjust the points where sample playback begins and ends within the file by clicking and dragging the "S" and "E" markers.



SAMPLE EDITOR



6

EDITING

To edit the sample file, click and drag to select a time range for editing, then right-click to display a contextual menu of editing commands.

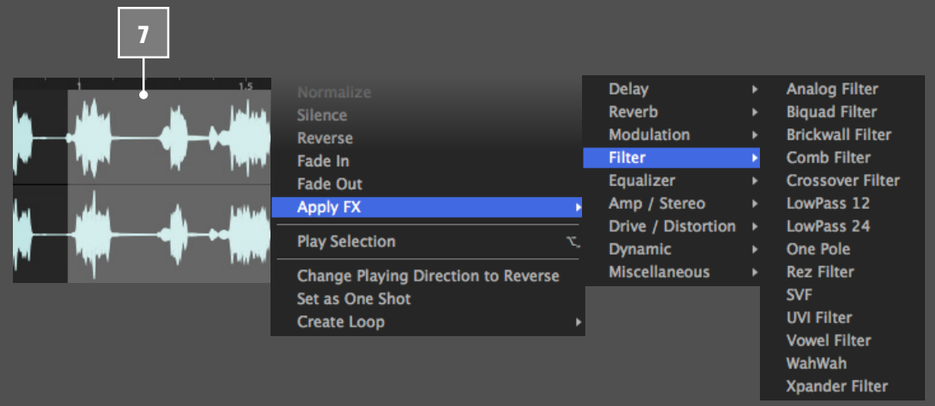
Standard editing and selection commands are provided: **CUT**. **COPY**, **PASTE**, **UNDO**, **REDO**, **SELECT ALL, DESELECT ALL**

Common sample editing commands are also provided: **CROP**, **DELETE**, **NORMALIZE**, **SILENCE**, **REVERSE**, **FADE IN**, **FADE OUT**, **PLAY SELECTION**

7

APPLYING EFFECTS

You can also permanently apply Falcon's audio effects to a sample file. Select some audio and choose **APPLY FX** from the contextual menu, and choose the desired effect. Set the effect parameters, then press OK to apply.
If you would like to make the effect permanent, remember to save the sample file. If not, choose Undo.



LOOPING

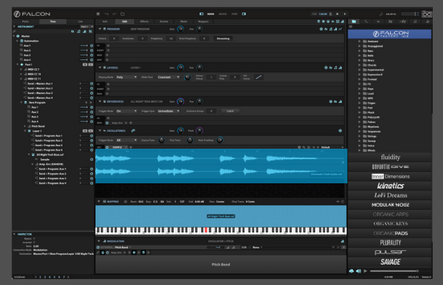
Sample files can be played back and looped in a number of ways.

Choose **CHANGE PLAYING DIRECTION TO REVERSE** to simply play the sample in reverse; choose **CHANGE PLAYING DIRECTION TO FORWARD** to change it back.

Choose **SET AS ONE SHOT** to play back a sample in its entirety each time it is triggered, regardless of the keygroup's amplitude envelope. This is a natural fit for drum and percussion samples. Choose **DISABLE ONE SHOT** to return to standard playback.

To add a loop to the sample, make a selection in the sample. Then choose **CREATE LOOP** and pick one of the loop types:

- **FORWARD LOOP**: The looped section is played forward; when playback reaches the end of the loop, playback begins again from the loop start point.
- **ALTERNATE LOOP**: The looped section is played alternately forward (from the loop start to loop end) and reverse (from loop end to loop start).



SAMPLE EDITOR

8 Once a loop is created, you can adjust the points where the loop begins and ends within the file by clicking and dragging the L and R markers.

9 You can also choose to crossfade the looped section. This can sometimes help make a loop sound less looped. Choose **ENABLE XFADE** to enable loop crossfade, or **DISABLE XFADE** to disable it. When the loop crossfade is enabled, you can adjust the loop crossfade point with the **X** marker.

When a sample has a loop and a note triggering the sample is released, there are two release playback options:

- **ENABLE LOOPED RELEASE**: Sample playback will loop in the looped section until the release phase is over.
- **DISABLE LOOPED RELEASE**: Sample playback will continue past the loop end marker until the release phase is over or the sample end marker is reached, whichever comes first.

Lastly, to remove the loop, choose **DELETE LOOP**.

10 **SAVING**

The standard module preset browser controls are also displayed (see [Module Preset Browser]). The Preset File menu also displays these options specific to sampling oscillators.

- **SAVE PRESET**: Saves the oscillator parameters
- **SAVE SAMPLE**: Saves the sample/file in place
- **SAVE SAMPLE AS...**: Saves the sample to a new file
- **SAVE SAMPLE WITH PLAYBACK OPTIONS**: Saves the sample/file in place and writes the sample and loop start/end markers to the file
- **SAVE SAMPLE AS WITH PLAYBACK OPTIONS...**: Saves the current sample to a new file and writes the sample and loop start/end markers to the file

To reveal the sample file's location, right-click the sample and choose **REVEAL IN FINDER** (Mac) / **REVEAL IN EXPLORER** (Windows) from the contextual menu.

BATCH EDITING

When multiple keygroups are selected, the Batch menu appears. From the Batch menu, you can apply an action to all of the selected keygroups at once, such as normalizing samples or applying FX.

EFFECTS

EFFECTS TAB

The Effects tab displays all of the audio effects processing paths, from the effects on the master output down to effects on an individual keygroup.

1

NAVIGATION

To choose which effects path you are viewing, choose a node from the navigation breadcrumbs. Press on a node's name to show its effects. You can also press on the arrow to the right of a node to view one of its child nodes. For example, you can press the arrow to the right of Program and choose from one of its layers.

2

You can also select a node in the Tree view sidebar, and the Effects tab will show the selected node's effects. For more details on the Tree view, see [Interface > Tree].

3

ADDING EFFECTS

To add an effect, press the **+** button in the upper right and choose an effect from the menu. You can also drag and drop effects from the Preset Browser on the right.

TIP: Keygroup effects are per voice. The more voices you play back, the more effects processing power your computer will need. Keygroup effects are best suited for effects that you want to be processed distinctly for each voice.

The signal flow is top to bottom. To reorder effects, press and hold on an effect's header and drag it to the new position. To replace an effect, press on the effect's name and choose a different effect from the menu.

For details on each of the effects included in Falcon, see [Appendix A > Effects].

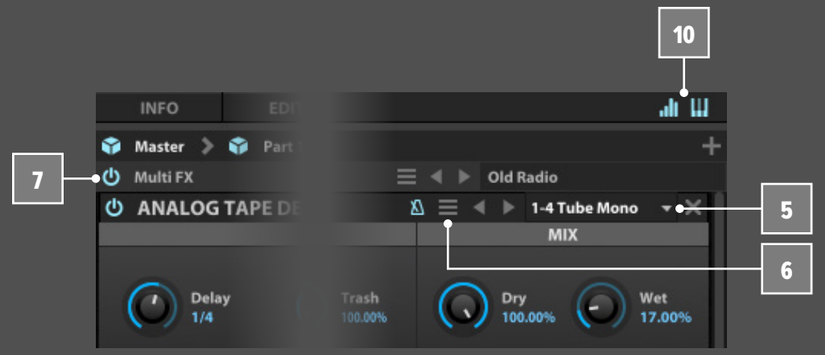
Each effect can be enabled or disabled with the **POWER** button to the left of its name, or deleted with the **X** button at the far right end.

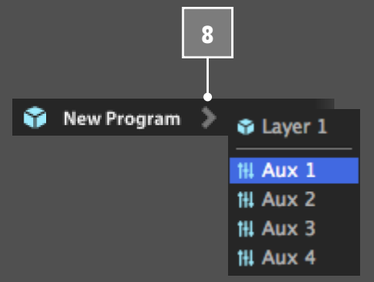
4

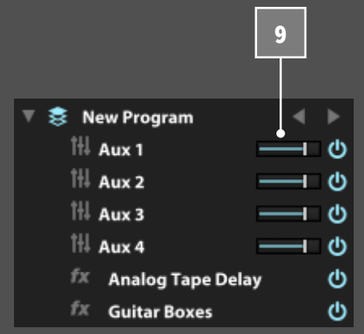
TEMPO-SYNCING EFFECTS

Some effects, such as delay or tremolo, can sync their time-based parameters to Falcon's tempo. If an effect supports tempo-syncing, a **TEMPO SYNC** toggle button will appear next to the Preset File menu.

EFFECTS







5 **SAVING FX PRESET**

Each effects module has a preset browser for saving, recalling, and browsing preset for that effect type.

6 To save an effect preset, press the Preset File menu, choose Save Preset, and name the preset. For more details on the preset browser, see [User Preset > Module Preset Browser].

7 **MULTI FX**

Multiple effects can also be saved and recalled as a group with a Multi FX preset. This provides a way for complex chains of effects to be recalled instantly. Multi FX preset are saved and loaded through the Multi FX preset menu. All effects for the current node can be enabled or disabled together with the **POWER** button to the left of its name. To clear all effects for the node, choose Clear Multi from the Multi FX preset browser.

AUX FX

There are two aux effects sections: master aux FX and program aux FX.

- The master aux FX are fed by sends on each part in the multi. These settings are saved in the multi.
- The program aux FX are fed by sends on each layer and keygroup in the program. These settings are saved in the program.

8 To view and add aux FX in the Effects tab, choose the aux bus from the navigation menu on the Part or Layer nodes. Each aux effects section has four independent aux busses.

9 To adjust the aux sends to each of the aux busses, show the aux FX nodes in the Tree view. On each node where aux sends are present, you can set the send level, mute/unmute the send, and toggle the send between pre/post fader. For more details on the Tree view, see [Interface > Tree].

You can also view the master aux FX and their sends in the Mixer view. For more details on the Mixer, see [Interface > Mixer].

10 **MODULATION AND KEYBOARD SECTIONS**

The Modulation and Keyboard sections can be toggled in the Effects tab, using the buttons in the top right.

EVENTS

EVENTS TAB

The Events tab displays all of the MIDI event processing paths, from master event processors down to event processors on an individual layer. (Event processors are not added to keygroups, as they generally address events that span multiple keygroups.)

1

NAVIGATION

To choose which event processing path you are viewing, choose a node from the navigation breadcrumbs. Press on a node's name to show its events. You can also press on the arrow to the right of a node to view one of its child nodes. For example, you can press the arrow to the right of Program and choose from one of its layers.

2 You can also select a node in the Tree view sidebar, and the Events tab will show the selected node's events. For more details on the Tree view, see [Interface > Tree].

3 **ADDING EVENTS**

To add an event processor, press the **+** button in the upper right and choose one from the menu. You can also drag and drop them from the Preset Browser on the right.

The signal flow is top to bottom. To reorder event processors, press and hold on an event processors's header and drag it to the new position. To replace an event processors, press on the event processors's name and choose a different event processor from the menu. For details on each of the event processors included in Falcon, see [Appendix A > Event Processors].

Event processors can be toggled on/off with the **POWER** button or deleted with the **X** button in their toolbar.

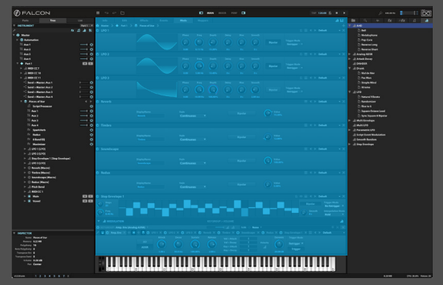
SAVING EVENT PRESET

Each event processor module has a preset browser for saving, recalling, and browsing preset.

4 To save an event processor preset, press the Preset File menu and choose Save Preset. For more details on the preset browser, see [User Preset > Module Preset Browser].

5 **MODULATION AND KEYBOARD SECTIONS**

The Modulation and Keyboard sections can be toggled in the Events tab, using the buttons in the top right.



MODS

MODULATIONS TAB

The Modulations (Mods) tab displays all of the modulation sources, from master modulation sources down to modulation sources for a single keygroup.

1

NAVIGATION

To choose which modulation sources you are viewing, choose a node from the navigation breadcrumbs. Press on a node's name to show its modulation sources. You can also press on the arrow to the right of a node to view one of its child nodes.

2

You can also select a node in the Tree view sidebar, and the Modulations tab will show the selected node's modulation sources. For more details on the Tree view, see [Interface > Tree].

3

ADDING MODULATION SOURCES

To add a modulation source, press the **+** button in the upper right and choose a modulation sources from the menu. You can also drag and drop modulation sources from the Preset Browser on the right.

TIP: Keygroup modulations are per voice. The more voices you play back, the more processing power your computer will need. Keygroup modulations are best suited for parameters that you want to be modulated distinctly for each voice.

NOTE: Unlike Effects and Events, the list of modulation sources doesn't have a top-to-bottom signal flow. Until a modulation source is assigned to modulate other controls, it won't have an effect on the signal flow. See [Interface > Main > Modulation Editor] for more details.

To replace a modulation, press on the modulation's name and choose a different modulation from the menu.

For details on each of the modulation sources included in Falcon, see [Appendix A > Modulators].

Each modulation source can be enabled or disabled with the **POWER** button to the left of its name, or deleted with the **X** button at the far right end.

MODS

SAVING MODULATION PRESET

Each modulation module has a preset browser for saving, recalling, and browsing preset for that specific modulation type.

4 To save a modulation preset, press the Preset File button, choose Save Preset, and name the preset. For more details on the preset browser, see [User Preset > Module Preset Browser].

5 **RENAMING A MODULATION SOURCE**

To rename a modulation source, double-click its name. Using a descriptive name can help differentiate between modulation sources of the same type (“Amp. Env.” and “Filter Env.” for example).

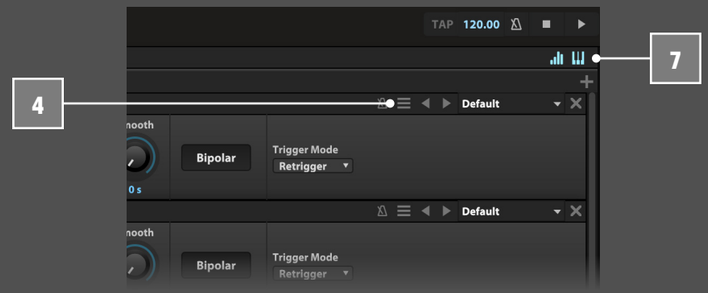
6 **ASSIGNING A MODULATION SOURCE**

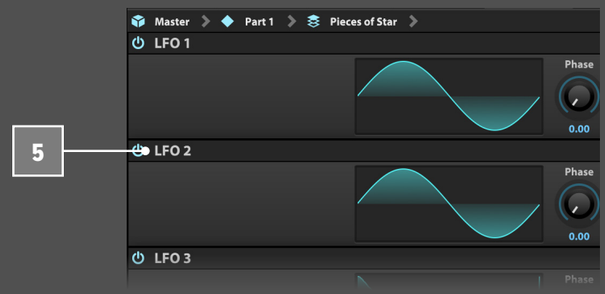
To assign a modulation source, right-click a control and choose from the Add Modulation menu. Existing modulation sources are listed first, or you can choose to create a new modulation source on the spot.

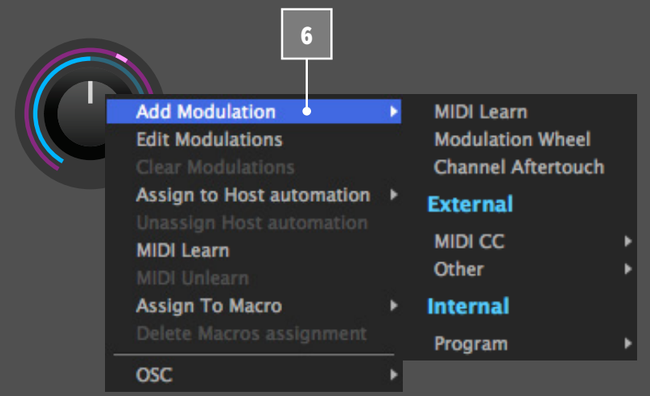
For more information on modulation assignments, see [Interface > Main > Modulation Editor].

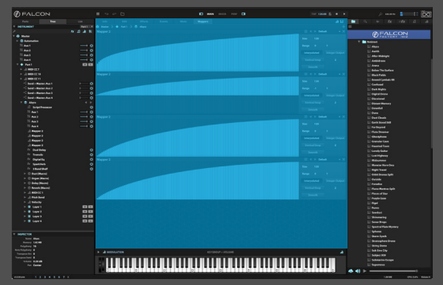
7 **MODULATION AND KEYBOARD SECTIONS**

The Modulation and Keyboard sections can be shown or hidden in the Modulations tab, using the buttons in the top right.

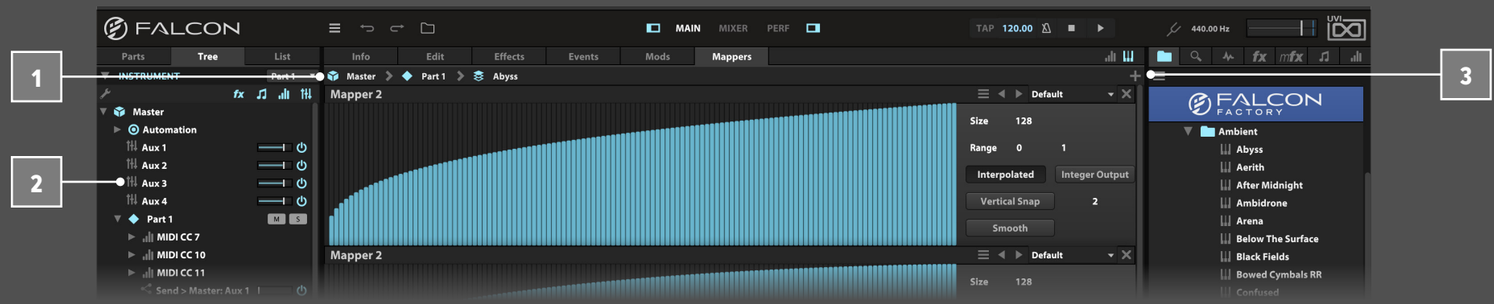








MAPPERS



MAPPERS TAB

The Mappers tab displays all modulation mappers of the program.

1 **NAVIGATION**

To choose which modulation sources you are viewing, choose a node from the navigation breadcrumbs. Press on a node's name to show its modulation mappers. You can also press on the arrow to the right of a node to view one of its child nodes.

NOTE: This doesn't valid for Mappers.

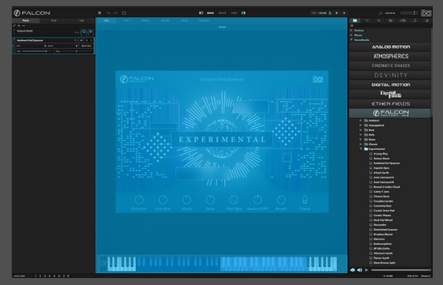
2 You can also select a node in the Tree view sidebar, and the Modulations tab will show the selected node's modulation sources. For more details on the Tree view, see [Interface > Tree].

3 **ADDING MODULATION MAPPERS**

To add a modulation mapper, press the + button in the upper right and choose a modulation sources from the menu.

For details on each of the modulation mappers included in Falcon, See [Interface > Main > Modulation Mapper Editor] for more details.

Each modulation source can be enabled or disabled with the **POWER** button to the left of its name, or deleted with the **X** button at the far right.



INFO

INFO TAB

The Info tab provides an overview of the selected program, houses macro controls, and provides a location for custom text and images via. the **(I)** view.

MACROS

1 If macros have been assigned in the program they will appear here. Macros are useful for placing important controls on the “front panel” of a program.

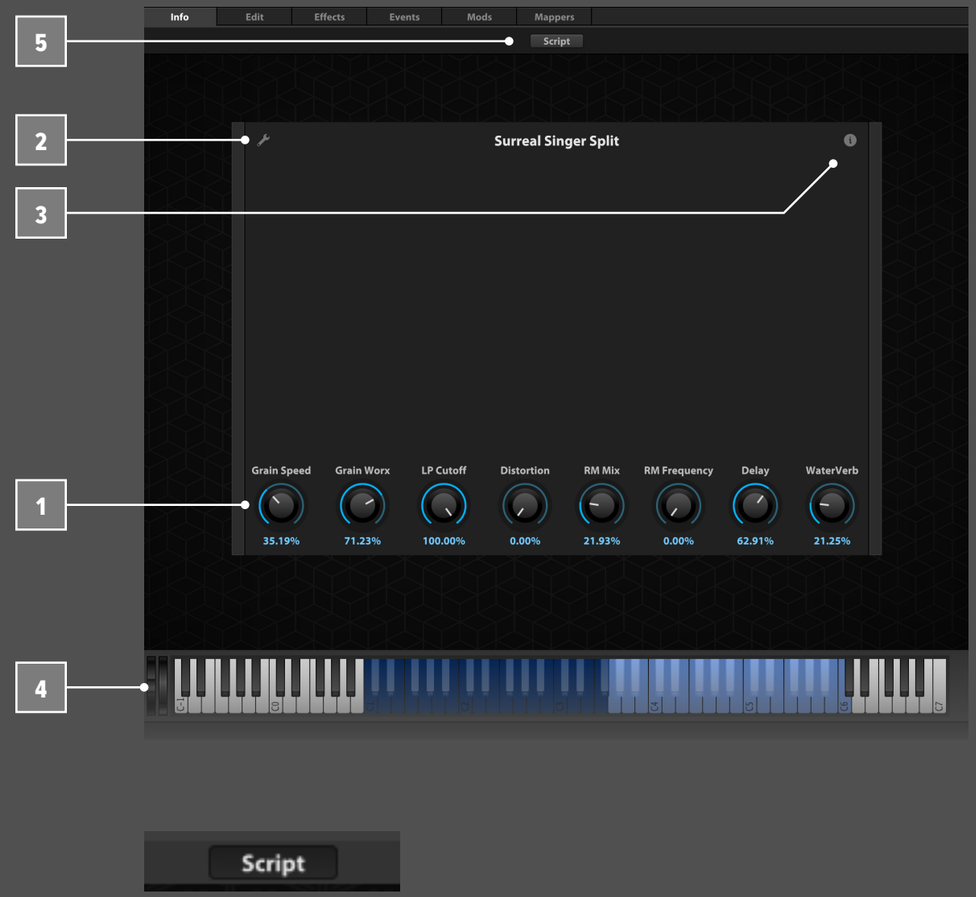
2 To change the layout of the macro controls, press the **EDIT** button in the upper left to switch to Edit Mode. You can press and drag a control to move it, double-click a label to rename it, or right-click and use one of the edit commands from the contextual menu. For more details on macros, see [Appendix A > Modulations > Macros].

PROGRAM INFORMATION

3 Press the **(I)** button in the upper right to display program information. Many factory preset will contain details about the program such as modwheel assignments, macro descriptions or tips for playing it. You can add and save descriptions for your own programs as well. Programs in UVI soundbanks also display an image for the program. If multiple images are present, “<” and “>” arrows will be displayed and pressing them will cycle through the images.

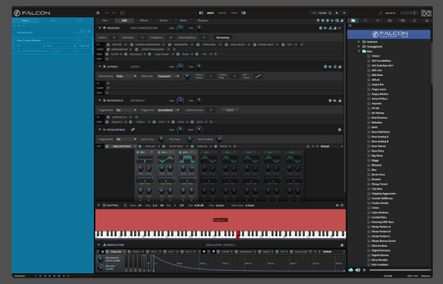
KEYBOARD

4 At the bottom of the Info tab, a keyboard is displayed and can be clicked to play the program. The key range of the program is highlighted, with keys outside the key range darkened. If keyswitch layer rules have been created, those keys are highlighted blue. Additionally, key color can be customized using the Script Processor. For more details on keyswitches, see [Interface > Main > Mapping Editor > Layer Rules].



SCRIPT INTERFACE

5 If the program contains a script that defines a custom user interface, the script interface will be displayed by default. To toggle between the script interface and the standard interface, use the Script button at the top of the Info tab.



PARTS

PARTS

The Parts List displays a list view for managing and editing all of the parts in Falcon, and for selecting a part to be displayed and edited in the center pane.

The Parts List is displayed in the left sidebar, which can be hidden or shown with its button in the Toolbar.

1 To resize the Parts List width, click and drag on its right edge. As the Parts List widens, the controls rearrange to allow for greater numbers of parts to be viewed at once.

MANAGING PARTS

When a part is selected in the Parts List, it will be displayed in the Main view's center pane for editing. Press anywhere on the part to select it.

The Parts List menu at the top left of the Parts List has additional options for the selected part:

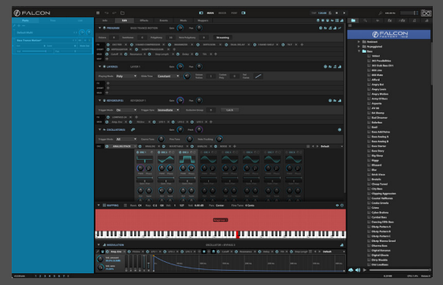
- Empty selected part
- Load program in selected part
- New program in selected part

2 To add or remove parts, use the **+** and **-** buttons next to the Parts List menu. To reorder parts, press and hold anywhere on the part and drag it to the new position.

3 **MULTI CONTROLS**

This section displays global controls for the Falcon multi. The name of the currently loaded multi is displayed. To load a different multi, double-click the name to open the file browser, or use the next and previous buttons to browse multis in the same directory.

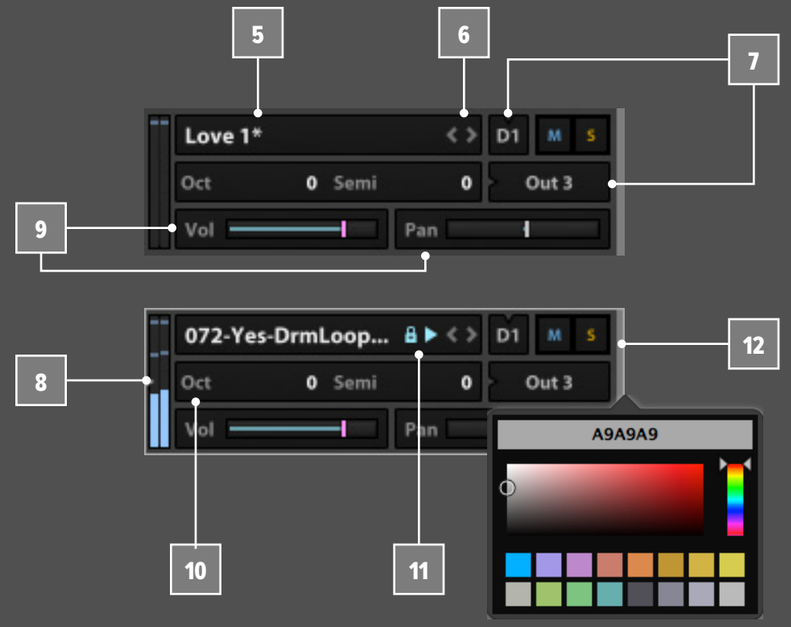
4 The **GLOBAL VOLUME** and **GLOBAL TUNE** are also displayed; see [Toolbar > Global Volume] and [Toolbar > Global Tune] for details. **OUTPUT METERS** display the audio levels for the Main Out output.



PARTS

PARTS LIST

The Parts List displays controls for each of Falcon's parts. Each of these settings are independent from the settings saved in the program loaded in the part. These part settings are saved and recalled with the multi (or your host session if you're using Falcon as a plug-in).



5 The program name of the currently loaded program is displayed. If there are unsaved changes, an asterisk will appear next to the name, for example, "Love 1".

To load a different program, double-click the name to open the [File Browser], or Shift-double-click to open the right hand sidebar [Preset Browser]. In either case, the browser will be opened to the location of the currently loaded program.

6 You can also use the next and previous buttons to browse files in the same directory, or right-click and choose an option from the contextual menu:
Empty part, Delete part, Load program, Reload program, New program

7 The **MIDI INPUT** and **AUDIO OUTPUT** assignments are displayed for each part. By default, each new part is assigned to the Main Out, and its MIDI input is incremented (A1, A2, A3, ...). To change the assignment, press and hold and choose from the menu. If the MIDI assignment is set to Omni, it will listen for MIDI input on all ports and all channels, and display an asterisk.

8 **OUTPUT METERS** display audio levels for the part's output. Also, whenever a part receives MIDI on its assigned input channel, the MIDI input indicator flashes.

9 **VOL** and **PAN** controls set the output level and stereo placement for the part. Each part also has **MUTE** and **SOLO** buttons to mute or solo the part's output. Alt/Option-click a mute or solo button to mute or solo only that channel; Command-click (Mac) or Control-click (Windows) to mute or solo all channels except the one you clicked.

10 The **OCTAVE** and **SEMI** controls transpose the part's incoming MIDI, in octaves and semitones.

11 If a loop is loaded in the part, two additional controls are displayed:

- **AUTO PLAY**: When enabled, the loop will be triggered when Falcon's playback begins.
- **PLAY**: Highlights when the loop is playing, and can also be used to manually start/stop loop playback.

12 The part's color is displayed on the right side. To change its color, click on the color bar and choose a color from the color picker.

TREE

TREE

The Tree view displays a hierarchical view of a single part, with each branch on the tree displayed as a “node”.

The Tree view contains two major sections: **INSTRUMENT**, which displays the structure of the nodes, and **INSPECTOR**, which displays details about the selected node. The Tree view is displayed in the left sidebar, which can be hidden or shown with its button in the Toolbar.

The Inspector and Instrument sections can be collapsed or expanded with the arrow to the left of the section name. Additionally, the height of the Inspector section can be adjusted by dragging its top edge.

1 **INSTRUMENT**

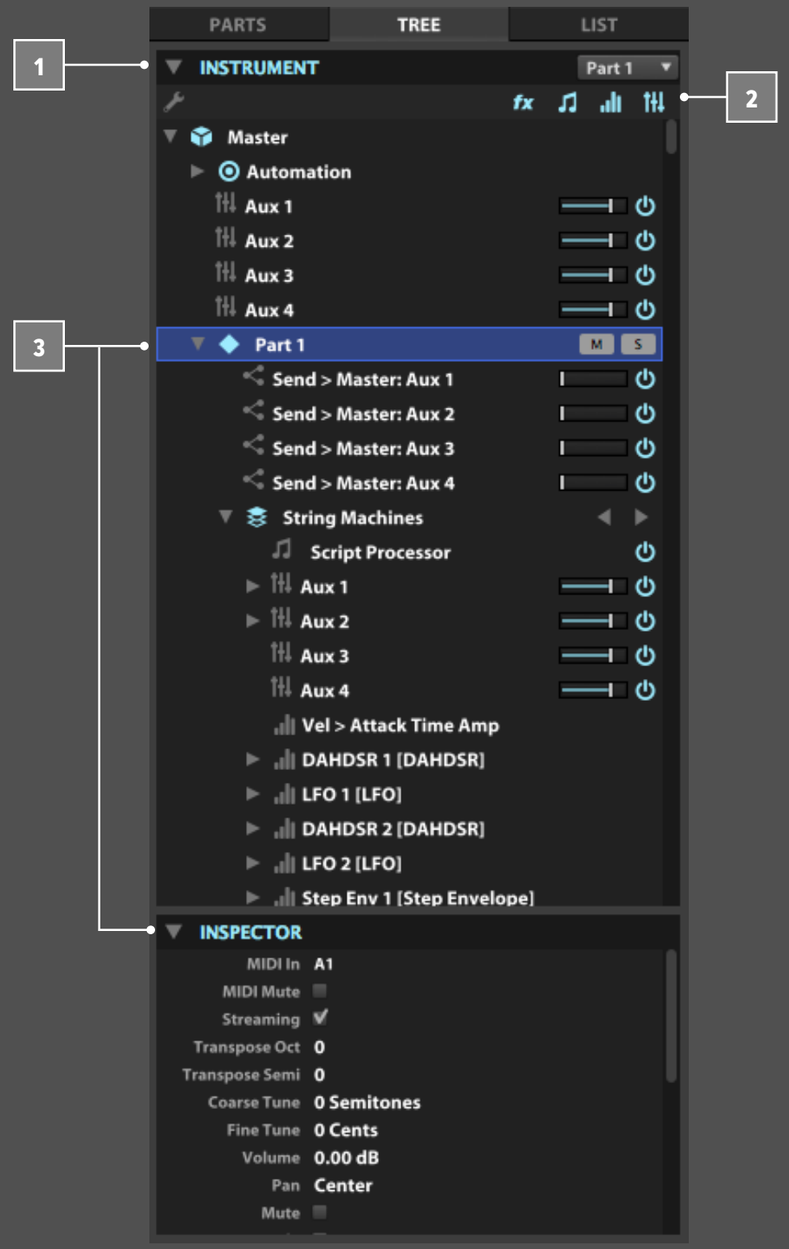
The Instrument section displays the nodes for a single part, as well as a few global nodes. To choose which part is displayed, choose the desired part from the **PART SELECTOR MENU** in the upper right.

2 To choose which nodes are shown or hidden in the Inspector, use the buttons in the upper right to toggle these node types: Effects, Event Processors, Modulation Sources, Aux FX busses and sends

Some node types are always displayed and cannot be hidden: Master, Host Automation, Part, Program, Layer, Keygroup, Oscillator

3 **NAVIGATING WITH TREE VIEW**

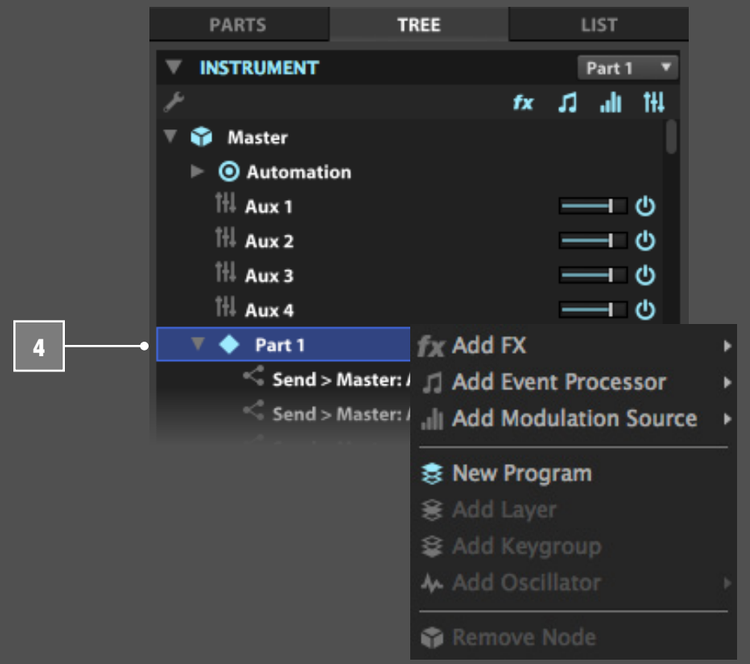
To navigate the nodes, press a node to select it and view its details in the Inspector. Press the arrow to the left of a node name to expand or collapse it. Holding the Alt/Option key while expanding a node will expand all of its children nodes as well.



TREE

The selected node in the Tree view also updates navigation in Falcon's other views, such as the Edit view, Effects Tab, and so on. Using the Tree view to navigate layers, keygroups, effects, and modulation assignments can be very helpful in a large, complex program.

Double-clicking a node will jump to that node's primary edit view. For example, double-clicking an effect will reveal it in the Effects Tab, and double-clicking a modulation source will reveal it in the Mods Tab.



4 **NODE OPTIONS**

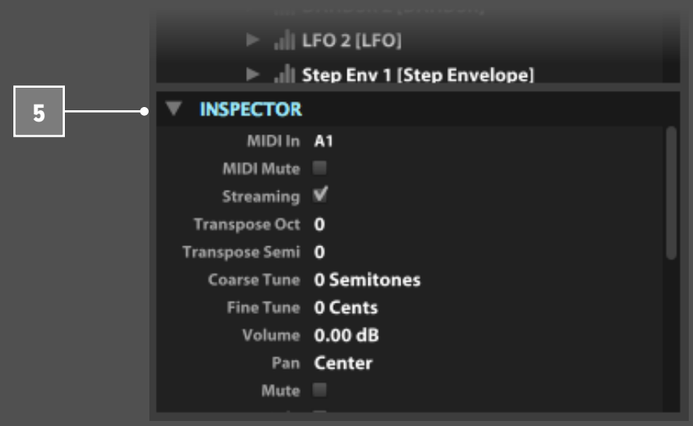
To see a menu of options available for a particular node, select it and choose the menu icon in the upper left, or right-click the node.

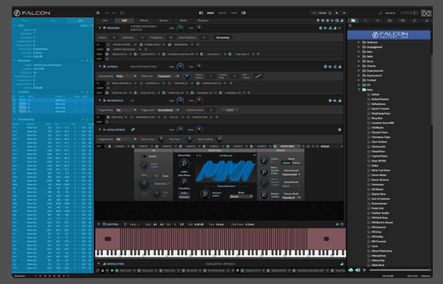
5 **INSPECTOR**

The Inspector displays details about the node that is selected above in the Instrument section.

For properties that can be edited, double-click the value to type in a new value, or click-drag the value up/down.

TIP: Most properties are also displayed in other views such as the Edit view or Mixer, but there are some "under-the-hood" properties displayed only in the Inspector.





LIST

LIST

The List view displays a detailed rundown of the settings for a single part and its currently-loaded program.
It contains four sections: Part, Program, Layers, and Keygroups.

The List view is displayed in the left sidebar, which can be hidden or shown with its button in the Toolbar. To resize the List view width, click/drag on its right edge.

Each section can be collapsed or expanded with the arrow to the left of the section name.

1 **PART**
The Part section displays the part settings for the selected part.

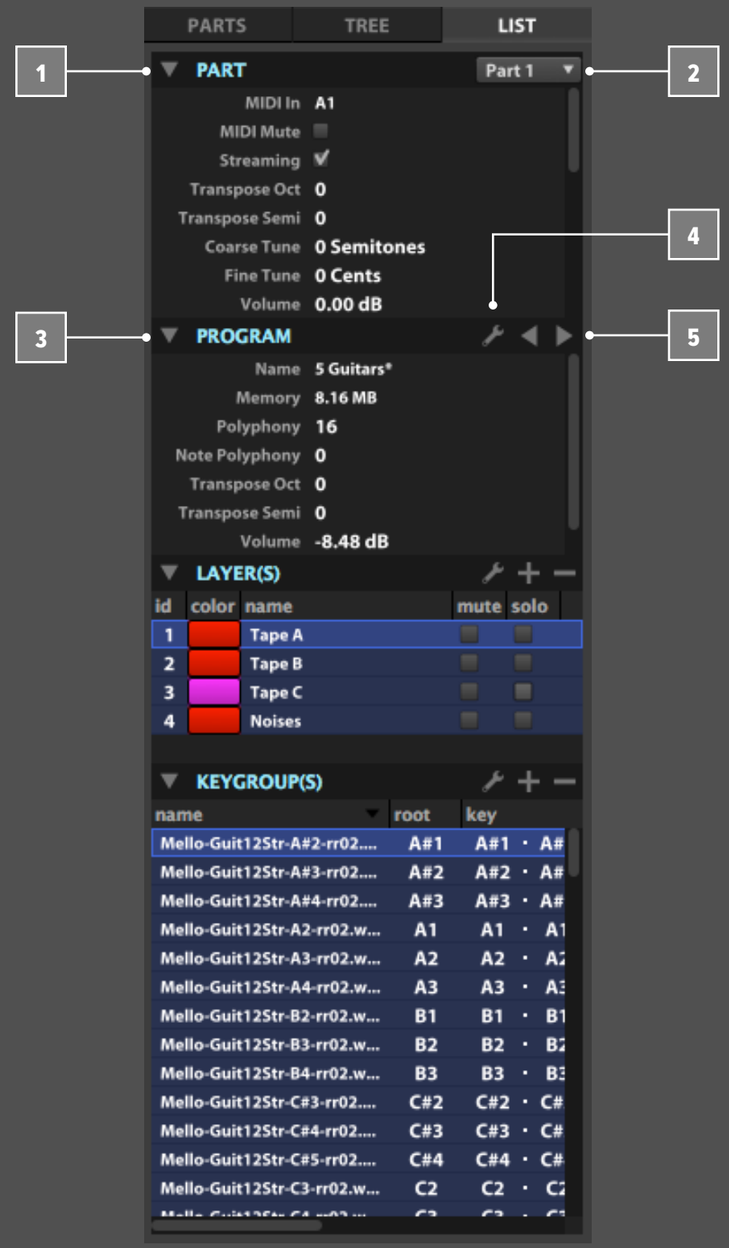
2 To choose which part is displayed, choose a part from the **PART SELECTOR MENU** in the upper right.

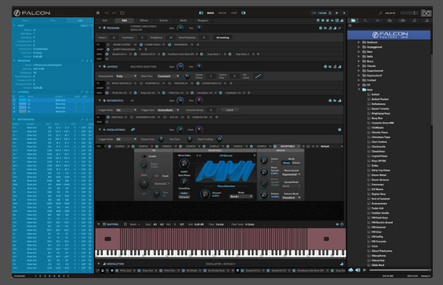
The Part settings displayed in List view are the same as those displayed in [Interface > Parts].

3 **PROGRAM**
The Program section displays the settings for the program loaded in the chosen part. The Program settings displayed in List view are the same as those displayed in the Program section in the Edit view.

4 On the right side of the Program section is the **PROGRAM MENU**, which contains options for creating, loading, saving, and protecting a program. For details on each of these options, see [User Preset].

5 Additionally, there are **PREVIOUS PROGRAM** and **NEXT PROGRAM** buttons for browsing program files.





LIST

LAYERS

The Layers section displays a list of all layers in the program. The selected layer in the List view also updates which layers are displayed in the Edit view. Using the Layers List to view one layer at a time can be very helpful in a large, complex program.

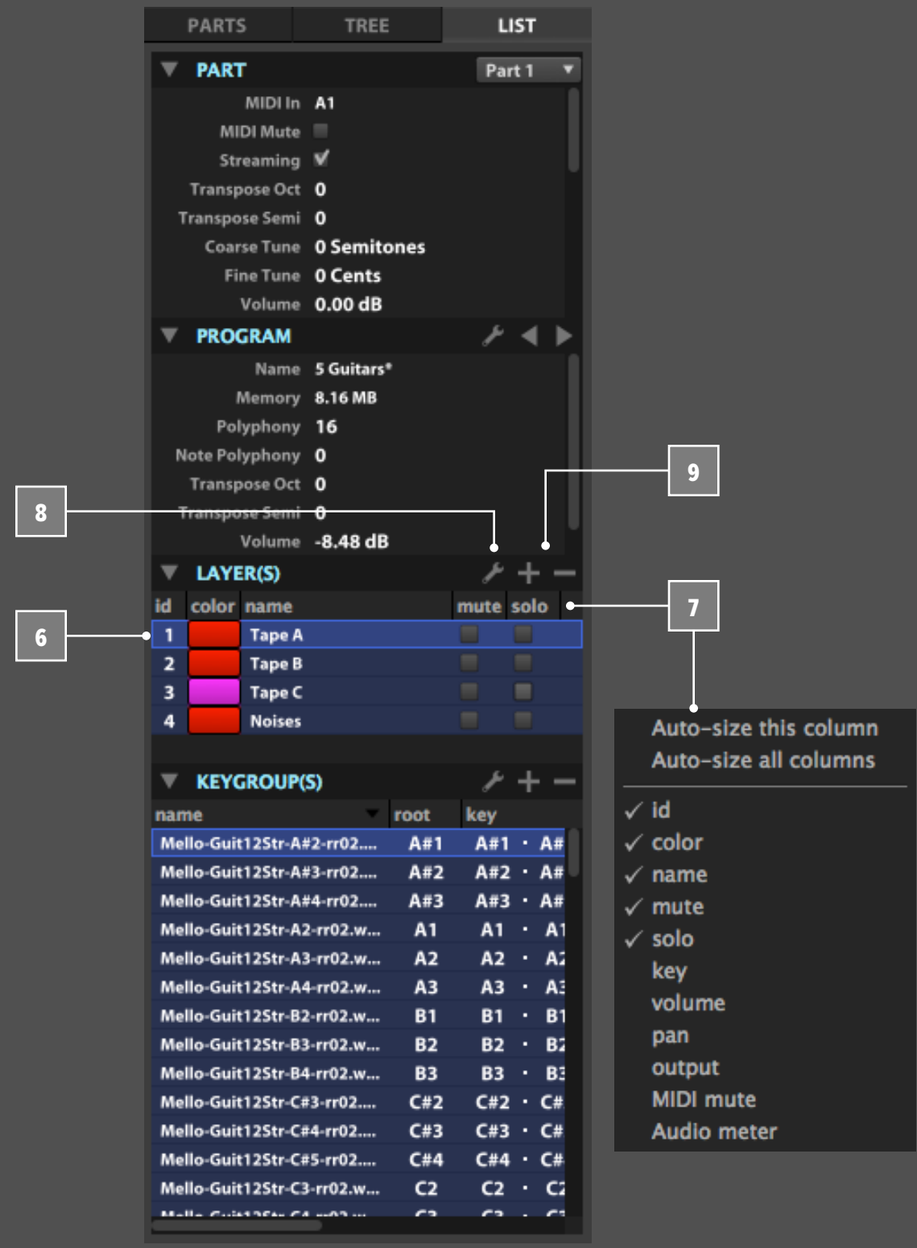
6 To select a layer, press on its name or ID; hold the Command key (Mac) or Control key (Windows) to select multiple layers at once. To deselect all layers, press in the space beneath the last layer in the list. (When there is no specific layer selected, the Edit view displays a composite of all layers, and edits to Layer settings apply to all layers.)

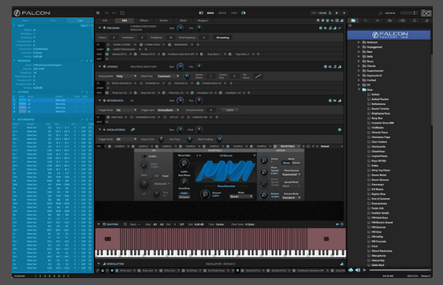
The Layer settings displayed in List view are the same as those displayed in the Program section in the Edit view (see [Interface > Main > Edit > Program]) or the Tree view inspector (see [Interface > Main > Tree]).

7 To choose which settings are displayed in the Layers list, right-click a column header and enable or disable the desired columns.

8 On the right side of the Layers section is the **LAYER MENU**, which contains options for editing layer rules, and copying, pasting, and duplicating the selected layers. For details on these options, see [Interface > Main > Mapping Editor].

9 Additionally, there is an **ADD LAYER** button for quickly adding a new layer, and a **REMOVE LAYER** button for removing the selected layers.





LIST

KEYGROUPS

The Keygroups section displays a list of all keygroups in the selected layers. The selected keygroup in the List view also updates which keygroup is selected in the Edit view. Using the Keygroups List view to select specific kegroups can be very helpful in a large, complex program.

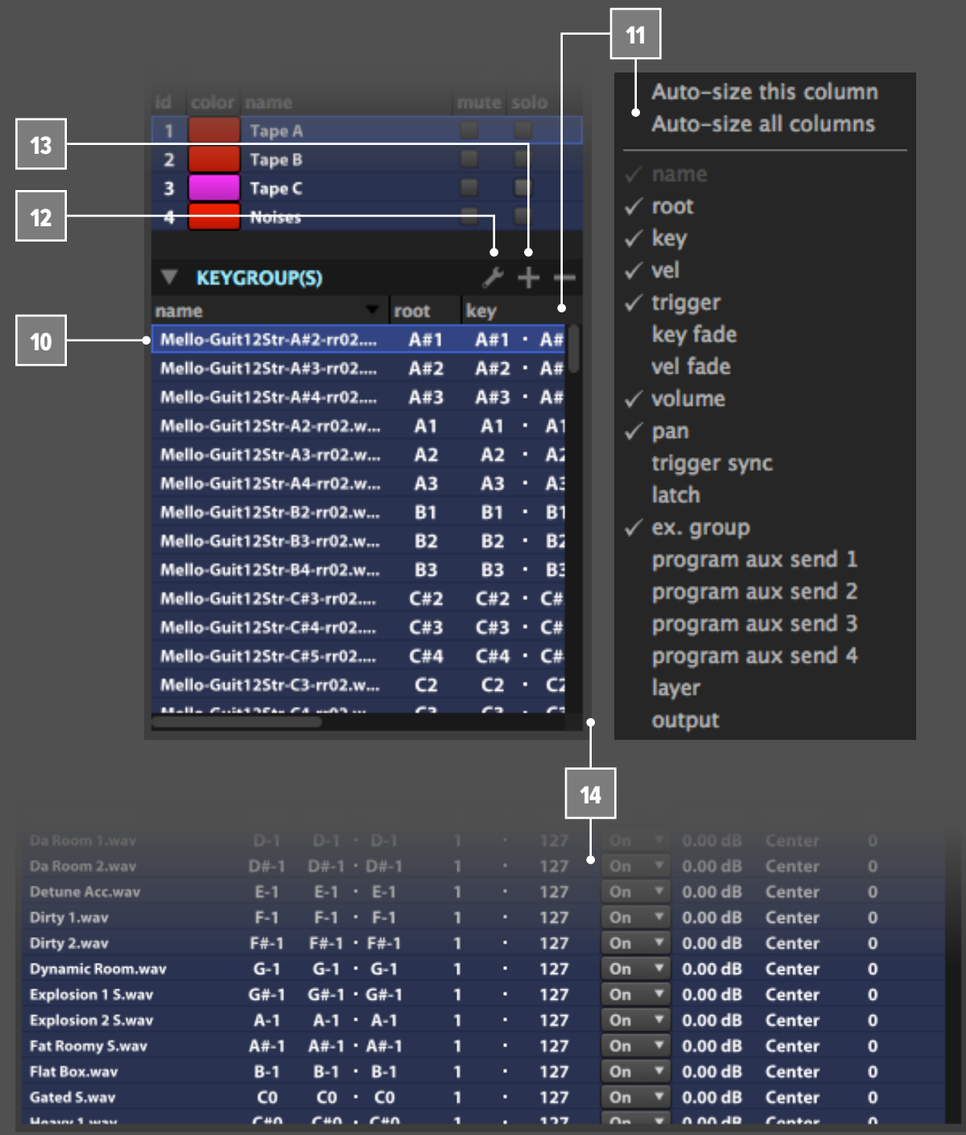
10 To select a keygroup, press on its name; hold the Command key (Mac) or Control key (Windows) to select multiple keygroups at once. To deselect all keygroups, press in the space beneath the last keygroup in the list. (When there is no specific keygroup selected, the Edit view displays a composite of all keygroups, and edits to Keygroup settings apply to all keygroups.) The Keygroup settings displayed in Keygroup view are the same as those displayed in other Keygroup and Mapping Editor sections.

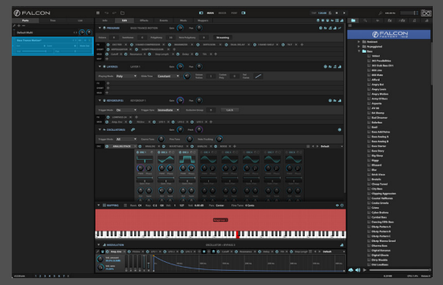
11 To choose which settings are displayed in the Keygroups list, right-click a column header and enable or disable the desired columns. Pressing a column name will sort the list by the chosen column; press it again to reverse the sort order.

12 On the right side of the Keygroups section is the **KEYGROUP MENU**, which contains options for copying, pasting, and duplicating the selected layers. For details on these options, see [Interface > Main > Mapping Editor].

13 Additionally, there is an **ADD KEYGROUP** button for quickly adding a new keygroup, and a **REMOVE KEYGROUP** button for removing the selected keygroups.

14 Click/drag the right edge of the column to expand its width to accommodate large parameter set.





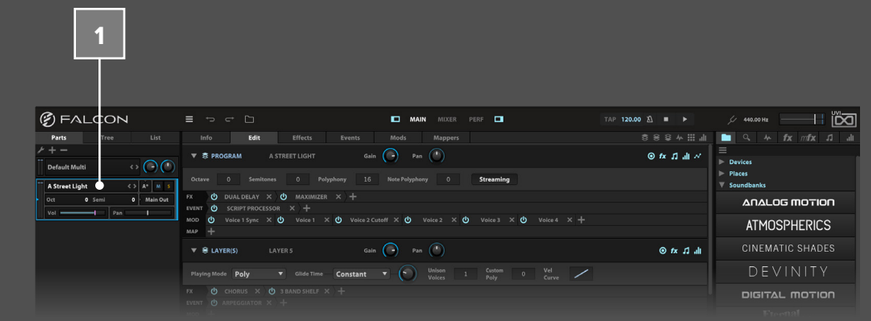
FILE BROWSER

FILE BROWSER

The File Browser is a view for browsing, searching, auditioning, and loading files in Falcon.

There are three types of file browsers:

- **PROGRAM FILE BROWSER**, for loading programs, loops, and samples
- **MULTI FILE BROWSER**, for loading multi files
- **SIDEBAR FILE BROWSER**, for quick drag & drop loading of any file type



1 **PROGRAM FILE BROWSER**

To open the program file browser, double-click a program name or an empty part in the Parts List, Mixer, or Performance view, or choose Load Program from the Toolbar menu.

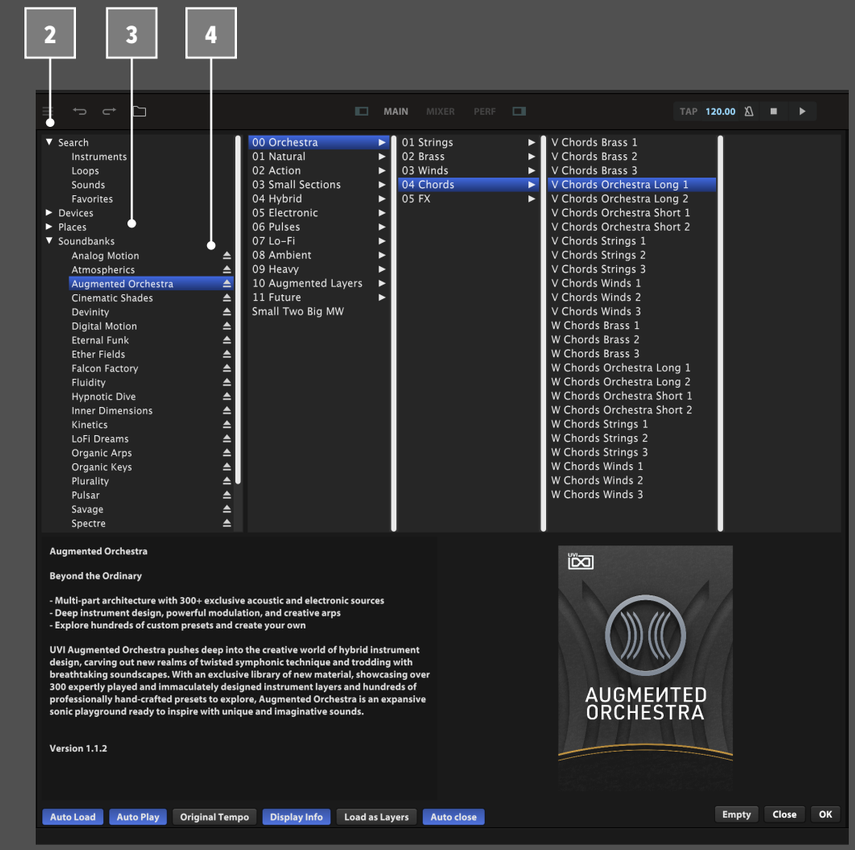
The program file browser has four sections in its left sidebar:

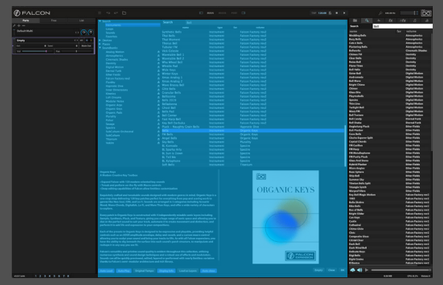
- **SEARCH**
- **DEVICES**
- **PLACES**
- **SOUNDBANKS**

2 Each available disk or volume is listed in the **DEVICES** section, including network volumes.

3 The **PLACES** section is a list of favorite folders saved for easy recall. To add a location to Places, drag a folder in the browser over to the Places section in the browser sidebar. To remove a folder from Places, right-click the folder name and choose Remove from Favorite Places.

4 Each mounted soundbank file is displayed in the **SOUNDBANKS** section. This includes soundbanks that you mount on-demand, and those auto-mounted on startup. For details on auto-mounting soundbanks, see [Preferences > Soundbanks].





FILE BROWSER

Some UVI soundbanks also have an additional **VERIFY SOUNDBANK INTEGRITY** option, available by right-clicking the name of the mounted soundbank. This verifies that the soundbank file was not corrupted when it was downloaded or moved between disks.

5 The **SEARCH** section is an alternative to choosing a specific location and browsing its contents; instead, a search term is entered and matching results are displayed across all searchable locations. For more details on Search, see below.

BROWSING AND LOADING

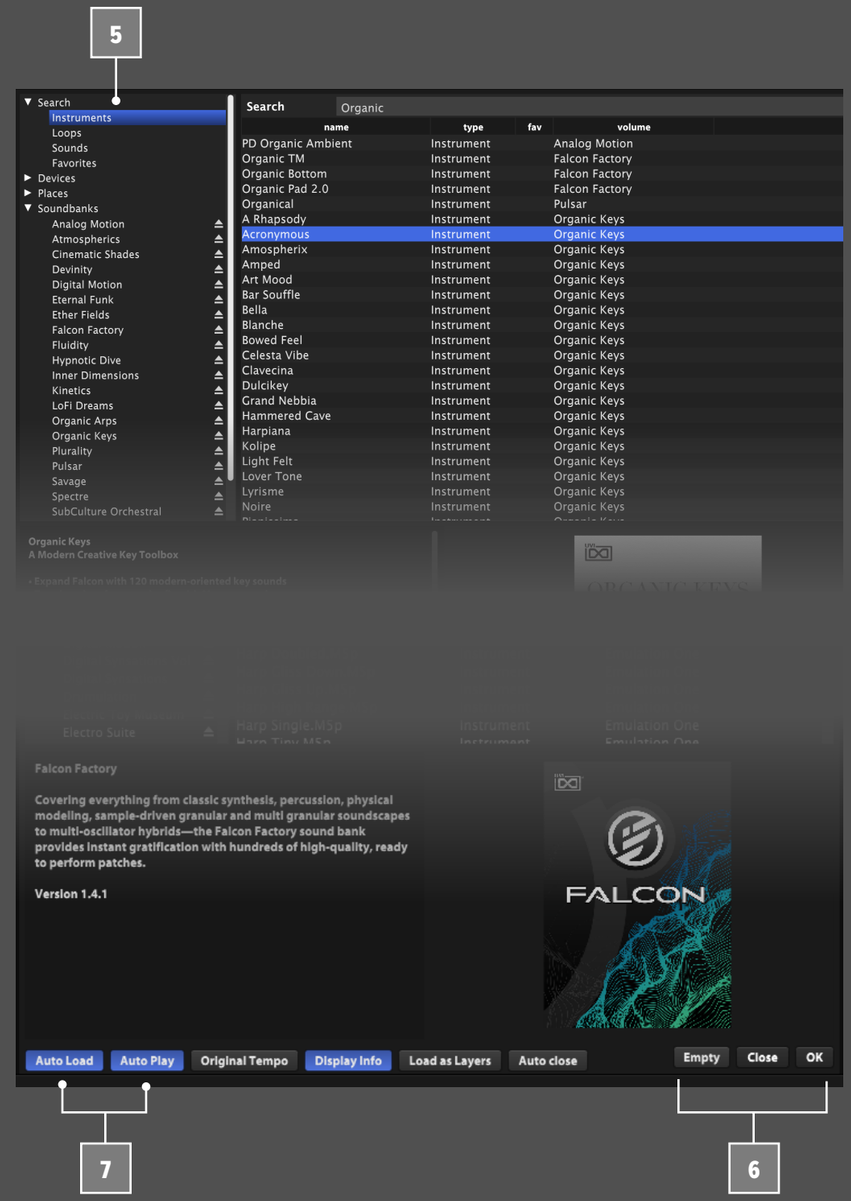
Choose a location from one of the sections in the sidebar to displays its contents. Its files and subfolders are displayed in columns extending to the right.

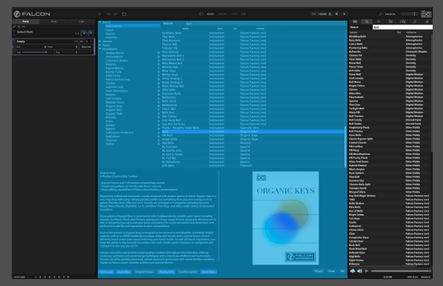
6 To load the selected program or audio file, double-click the file name or press the **OK** button. You can also drag and drop a file from the browser to the Parts List, by dragging onto an existing part or by dragging beneath the last part in the list to load it as a new part. To close the browser without loading a file, press the **CLOSE** button or press the Escape key. To unload the program or sample file currently loaded in the selected part, press the **EMPTY** button.

To reveal the location of a file or folder in the browser, right-click its name and choose **REVEAL IN FINDER** (Mac) or **REVEAL IN EXPLORER** (Windows). To delete a file, right-click its name and choose **DELETE FILE**.

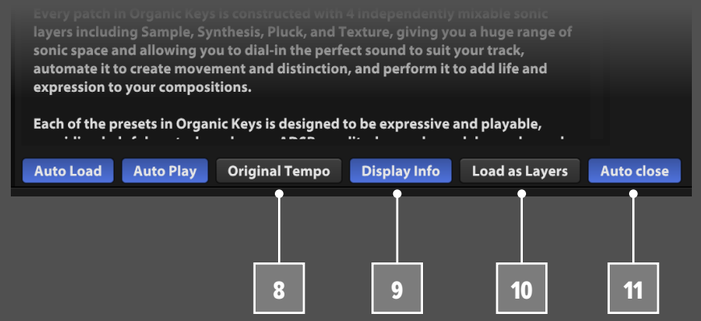
BROWSER OPTIONS

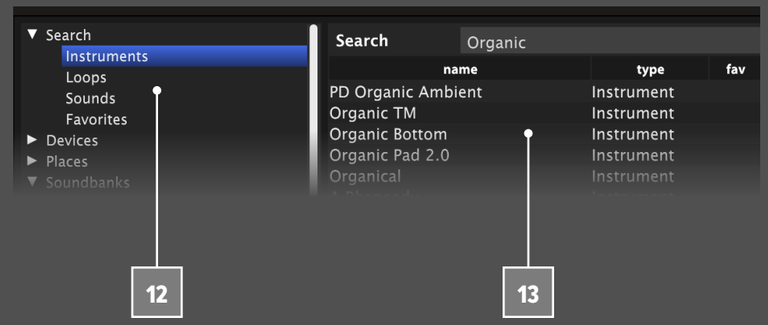
7 The program file browser has a number of options, displayed as toggle buttons along the bottom:
AUTO LOAD will automatically load the audio file selected in the browser into the currently selected part.
AUTO PLAY will automatically play the selected audio file to audition the file without loading it.





FILE BROWSER





8 If an audio file's tempo doesn't match Falcon's current tempo, enabling **ORIGINAL TEMPO** will cause the file to be auditioned at its original tempo. When disabled, the audio file auditions at Falcon's current tempo.

9 The **DISPLAY INFO** button toggles the information panel displayed in the lower half of the browser. When enabled, it displays information about the selected file.

10 To load multiple programs into a single part (for example, for multiple articulations of a single instrument, to be switched with layer rules), enable **LOAD AS LAYERS**. This will load additional programs within the current file as new layers (leaving the current program effects, modulations, etc. untouched). When disabled, each loaded program fully replaces the currently loaded program.

11 To automatically close the file browser when the OK button is pressed or a file is double-clicked, enable **AUTO CLOSE**; otherwise, the browser remains open until you press the **CLOSE** button or press the Escape key.

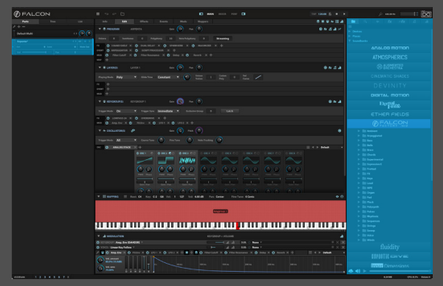
SEARCH

Rather than navigating to a specific folder and file, you can use search to find files that match your criteria. To set which locations are searched, add the folder in the Soundbank preferences. For more details, see [Preferences > Soundbanks].

12 To search, begin typing in the search field and results will appear as you type. Search results are one of four types of files:

- **INSTRUMENTS**: program files
- **LOOPS**: looped audio samples
- **SOUNDS** non-looped audio samples
- **FAVORITES** favorite tagged patches

13 To search across all types at once, highlight **SEARCH** in the sidebar. To show results for one specific file type, highlight the type name instead. You can also enter a search term, then switch between types to view the different results. The search results display information about each file, such as its name and file type. To choose which columns are displayed for the list of search results, right-click a column header and enable or disable the desired columns. Pressing a column name will sort the list by the chosen column; press it again to reverse the sort order.



FILE BROWSER

To clear the search results, highlight the current search term and delete it, or close the browser.

14 **MULTI FILE BROWSER**

To open the multi file browser, double-click the multi name in the Parts List or Toolbar, or choose Load Multi from the Toolbar menu.

The multi file browser is similar to the program file browser, but loads only multi files. When a multi is loaded, it clears the current multi and replaces all multi settings with the new one. If **APPEND MULTI** is enabled, additional multis are loaded within the current multi as new parts (leaving the current master effects, modulations, etc. untouched).

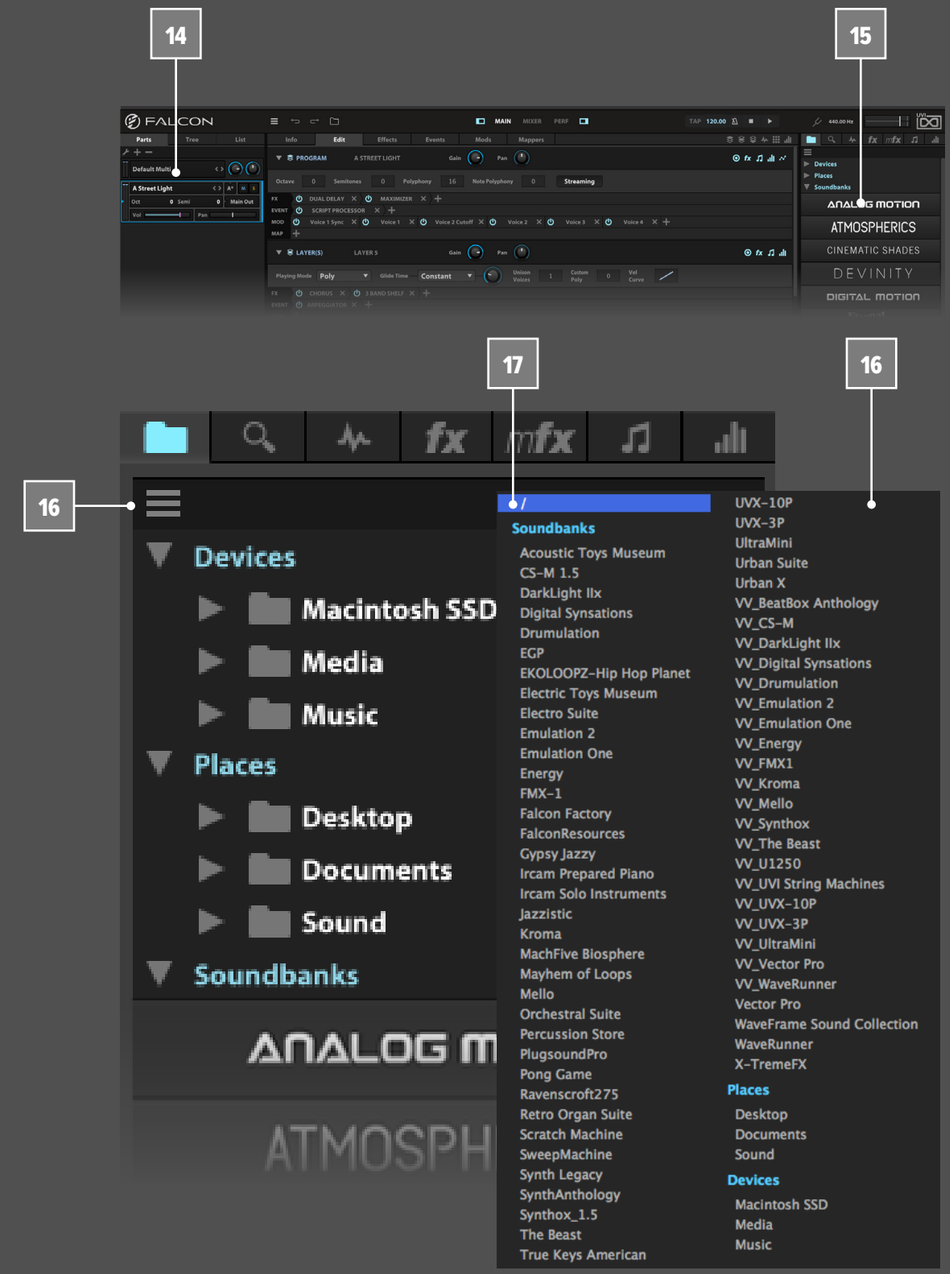
15 **SIDEBAR FILE BROWSER**

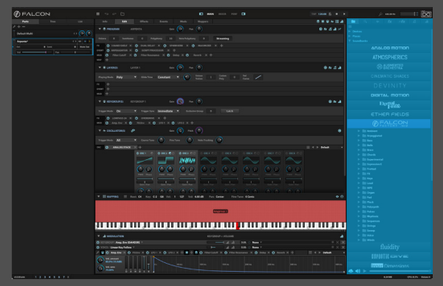
The sidebar file browser is displayed in the right sidebar in Main, Mixer, or Performance views, and can be hidden or shown with its button in the Toolbar. To resize the sidebar width, click and drag on its left edge.

The sidebar browser is similar to the full-size browser, but all navigation happens in a single column. Folders can be expanded or collapsed with the arrow to the left of the folder name. You can also double-click a folder name to drill down one level; to navigate back up to the containing folder, double-click ".. (Parent Folder)".

16 Pressing on the sidebar menu button opens a navigation menu. The menu displays links to each of your Soundbanks, Places, and Devices, as well as the path from the current folder back up to where you started.

17 To go back to the top level, choose "/".





FILE BROWSER

18 **SOUNDBANKS**
Each mounted soundbank file is displayed in the **SOUNDBANKS** section. Click on a soundbank name to expand it and display the soundbank's contents; click again to collapse the soundbank's contents.

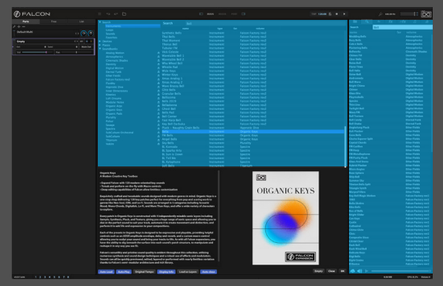
AUDITIONING AND LOADING FILES
The sidebar browser also has some options for quickly auditioning samples and adding them to a program.

19 **AUTO PLAY** will automatically play audio files

20 The **PLAY** / **STOP** button next to it lets you manually start and stop sample playback.

21 The **VOLUME** slider set the playback level.

22 When **AUTO LOAD** is enabled, the sample is automatically loaded in the selected keygroup. This is especially useful when you have already mapped the key range and velocity range of a keygroup, but would like to replace the sample file.



FILE BROWSER

FAVORITES TAGGING

Falcon supports ‘Favorite’ tagging of both preset and sounds within UVI Soundbanks (viewable in the Search tab’s ‘fav’ column), and of frequently used directories in your file system (viewable in the Browser/Places list).

UVI PRESET AND SOUNDS

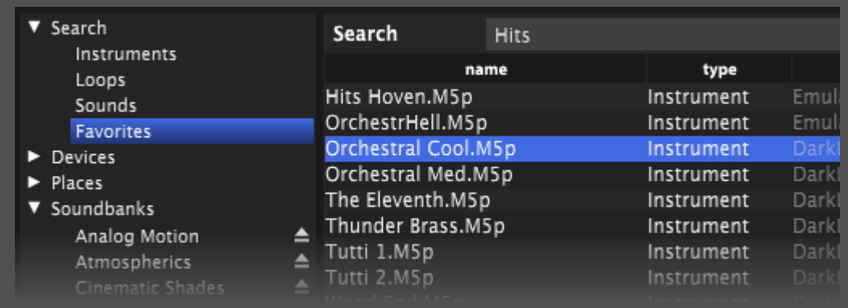
If you would like to mark a preset or sound in a UVI Soundbank as a Favorite, simply right-click it in one of Falcon’s browsers and select “Add to favorites”. Once done, the preset will display a “★” icon adjacent to its name showing that it has been tagged. To untag it, right-click and select “Remove from favorites”. To view your favorites list click the Search tab in the Falcon’s right-panel and click the ‘fav’ column label to sort by favorites.

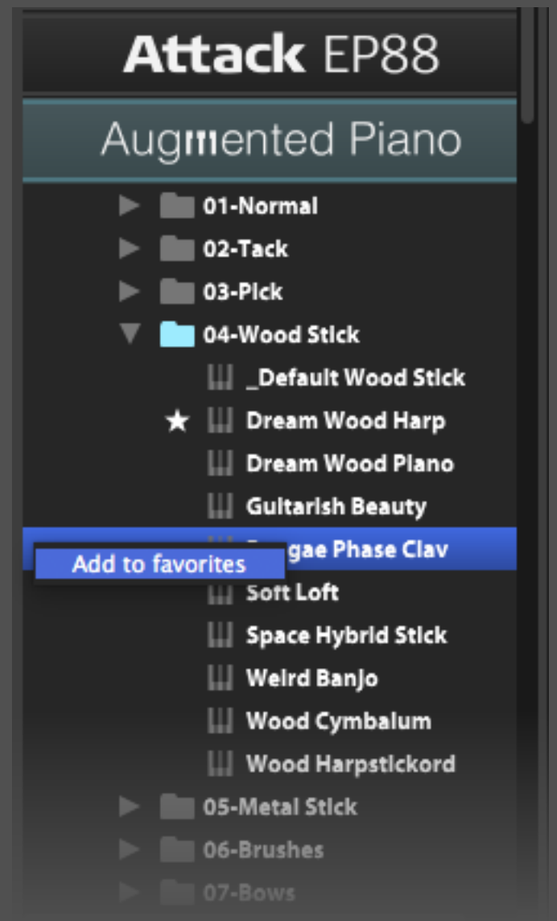
USER PRESET AND SOUNDS

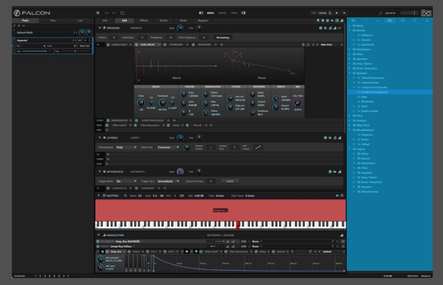
Any preset or sound can be tagged so long as its location has been indexed by Falcon. See [Preferences > Soundbanks] for more information on adding indexed directories to Falcon.

FAVORITE PLACES

If you have directories that you frequently use for saving your own custom patches or accessing user samples they can added to the ‘Places’ list for quick access. To create a Favorite Place, navigate to the desired folder in any of Falcon’s browsers, right-click it and select “Add to Favorite Places”. The directory will now be visible in the ‘Places’ list within any of Falcon’s browsers. To untag a directory, right-click it and select “Remove from Favorite Places.”







PRESET BROWSERS

PRESET BROWSERS

The Preset Browsers are views for browsing and loading preset files for specific module types, such as effects or event processors.

The Preset Browser is displayed in the right sidebar, which can be hidden or shown with its button in the Toolbar. To resize the Preset Browser width, click and drag on its left edge.

1 There are six Preset Browsers and a Search window, each displayed as a tab in the sidebar. From left-to-right the tabs represent:

- **FILES**
- **SEARCH**
- **OSCILLATORS**
- **EFFECTS**
- **MULTI FX**
- **EVENT PROCESSORS**
- **MODULATION SOURCES**

For details on the File Browser, see [Interface > File Browser]; for the rest, see below.

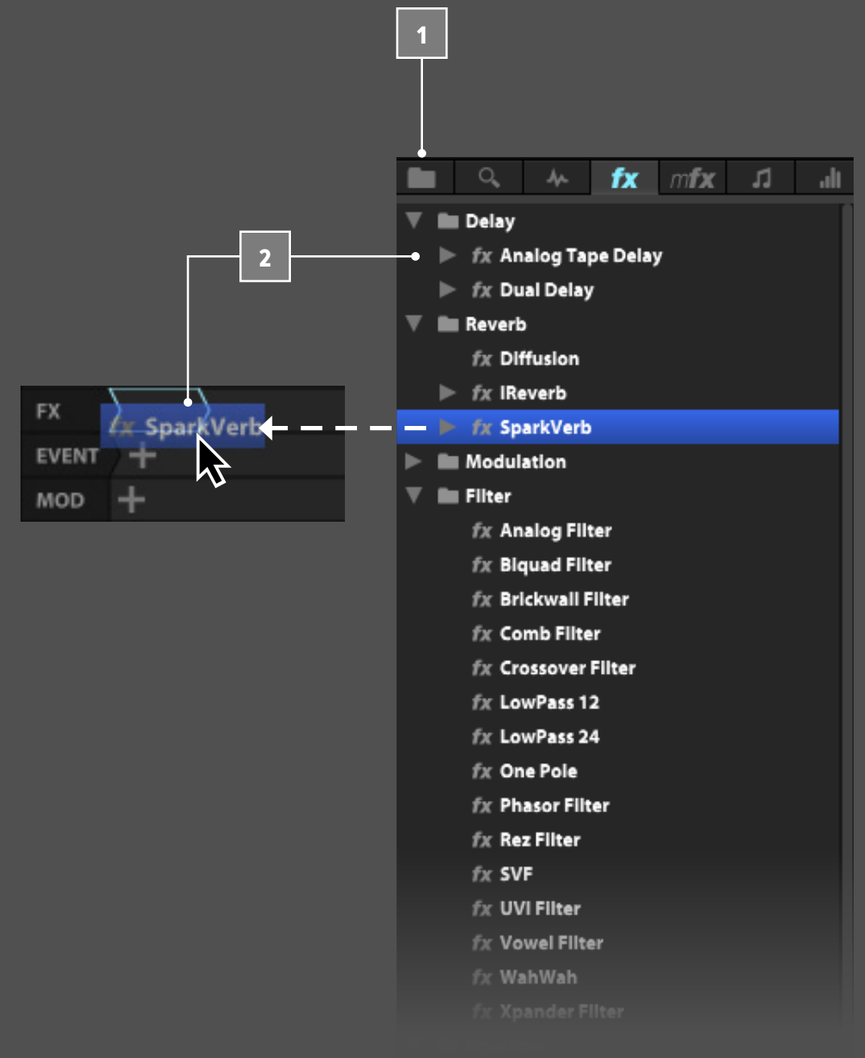
BROWSING PRESET

Each tab displays all of the factory and user preset for the chosen type. Preset are organized into folders, and can be nested as many levels as needed.

2

LOADING A PRESET

To load a preset from the Preset Browser, drag and drop the preset to the desired location. For example, you can drag an oscillator preset to the Mapping Editor, an effects preset to a channel strip in the Mixer, or a modulation source preset onto any control that can be modulated. When a target can accept the preset you are dragging, the target highlights.



MIXER

The Mixer view is similar to a traditional audio mixing console, with gain, pan, output assignments, and effects assignment and editing. The top half of the Mixer view displays the interface of the currently selected effect; the bottom half shows channel strips for each of the part, aux, and master outputs.

1 **MIXER OPTIONS**

To add or remove parts, use the **+** and **-** buttons on the right side of the Mixer. To reorder parts, press and hold on the part name and drag it to the new position.

2 To show/hide sections of the Mixer, use the toggle buttons on the right side. Each section can be independently shown or hidden:

- **PARTS**
- **AUXES**
- **MASTER**
- **FX**
- **AUX SENDS**

MIXER

3 **PART SETTINGS**

The Part settings displayed in the Mixer are the same as in the Parts List, but displayed here in a familiar audio mixer style. For more information on part settings, see [Interface > Main > Parts].

Double-clicking a part name opens the file browser. You can also right-click on a part name for additional options from the contextual menu:

- **EMPTY PART**
- **LOAD PROGRAM**

4 **EFFECTS**

The Mixer is an intuitive view for managing audio effects. To add an effect, press on the + button on any channel strip and choose an effect from the menu. You can also drag and drop effects preset from the Preset Browser onto the + button.

After the effect is added, it will be selected and its controls will be displayed in the effects editor above. The effects module displayed here is the same as is shown in the Effects Tab view.

To replace an existing effect with a different one, press and hold on the effect's name and choose a replacement from the menu. You can also drag and drop an effects preset onto it from the Preset Browser.

Effects can be bypassed temporarily by pressing the bypass button next to its name. Alternatively, you can bypass by Shift-clicking the effect's name, or with the effect's "power" button when the effect is selected and displayed in the effects editor.

To remove an effect, press and hold on the effects name and choose "Empty" from the menu. You can also use the effect's "X" button to remove it when the effect is selected and displayed in the effects editor.

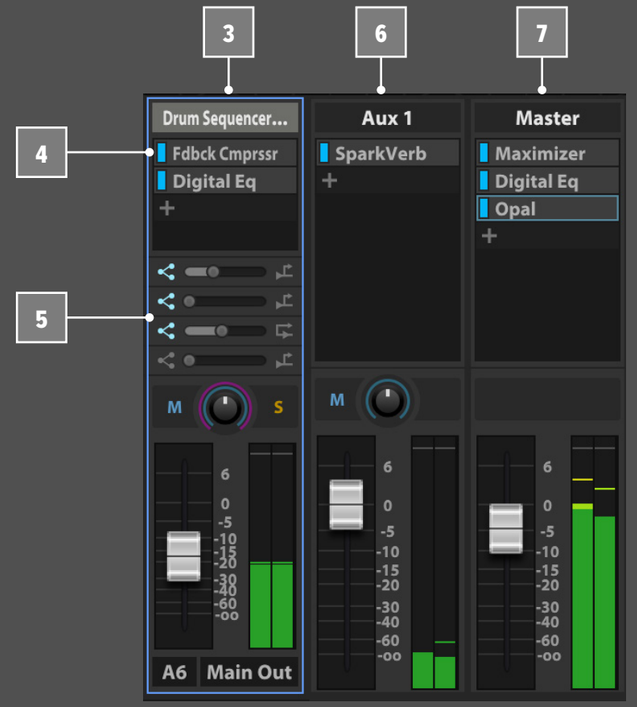
5 **AUXES**

The Mixer also displays the four master aux effect busses. Each part's channel strip has sends for the aux busses. Each send has an enable/bypass switch on the left, and a pre/post-fader switch on the right. The default is post-fader; toggle to switch to pre-fader.

6 The aux channel strips are similar to the part channel strips, just without the part-specific settings. Note that the output of the aux busses are always routed to the Main Out.

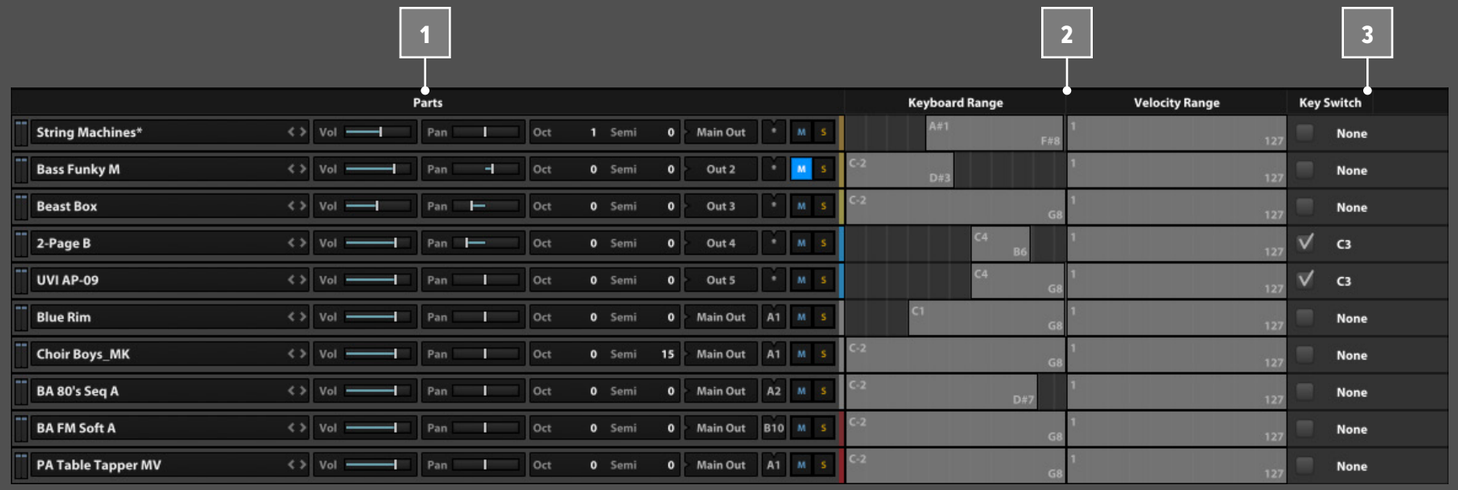
7 **MASTER**

Lastly, the Mixer displays the Master channel strip. Effects can be added to the Master output just as with parts and auxes, and the master fader adjusts the Global Volume.



PERFORMANCE

The Performance view displays a bird's-eye view of all parts at once. This can be used as an overview when there are a large number parts, or during a live performance for quick and simple access to part settings.



1 **PART SETTINGS**

Each part displays the same controls as in the Parts Editor (see [Interface > Main > Parts]). However, if the Parts column is resized to be relatively narrow, some controls will be hidden automatically.

2 **PART KEY AND VELOCITY RANGE**

The **KEYBOARD RANGE** and **VELOCITY RANGE** restrict the key and velocity range for the part. These are independent from the key and velocity range mapping of the program's layers and keygroups. Drag to adjust the ends of the range, or click and drag anywhere on the current range to move it. Holding the Option/Alt key while dragging to apply a fade.

NOTE: Changing a part's key or velocity range in Performance view won't extend a part's key or velocity range beyond what the program provides. These key and velocity range settings help stack or split parts by taking their existing ranges and constraining them. For example, a mono bass synth could be mapped to the left hand key range and a synth lead to the right hand key range. For more information on setting key and velocity ranges within a program, see [Mapping Editor].

3 **KEYSWITCH**

The **KEYSWITCH** set a keyswitch note for the part. When the chosen note is played, the part will be toggled on. This is useful when toggling between multiple articulations or styles of the same instrument, such as staccato and legato strings. Press the checkbox to enable a keyswitch, then double-click the note name to edit the value and assign a note.

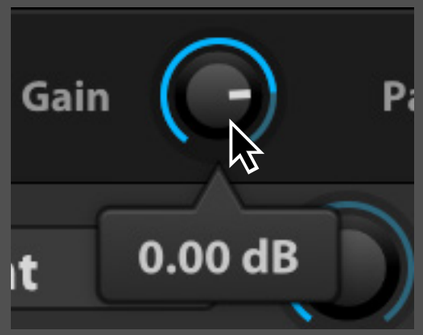
NOTE: Keyswitches assigned to parts in Performance view are independent from keyswitches saved in the program. For more information on keyswitches within a program, see [Mapping Editor > Layer Rules].

GENERAL CONVENTIONS

Throughout Falcon, some common conventions are used for adjusting and interacting with controls.

HOVER

Hovering the cursor over a control will display the control's current value in a pop-up help tag (sometimes also called a "tool tip").

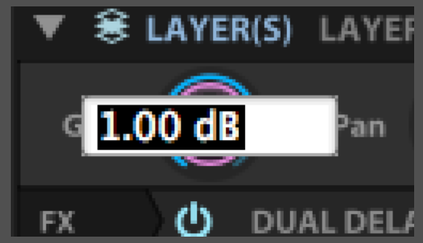


CLICK AND DRAG

Click and drag a control to adjust its value. Hold the Command key (Mac) or Control key (Windows) while dragging a control for finer adjustment. You can also hover over a control and scroll with your mouse scroll wheel or trackpad's scroll gesture.

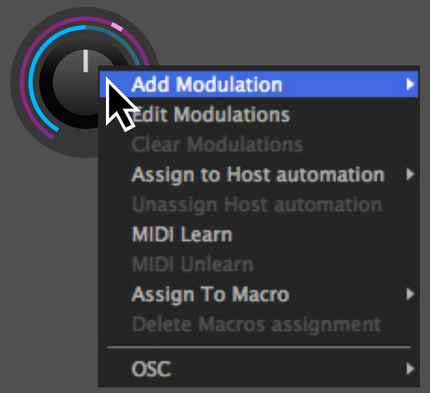
DOUBLE-CLICK

Double-click a control to enter a numeric value. To confirm a new value, press the Return key or click outside the text field. To dismiss without changing the value, press the Escape key.



RIGHT-CLICK

Right-click (or Control-click on Mac) to display a contextual menu if one is available. Contextual menus are used for many useful shortcuts, such as assigning modulation sources to a control. The menu items available in the contextual menu vary based on the item that you have right-clicked.



ALT/OPTION-CLICK

Alt/Option-click a control to return it to its default value.

ARROW KEYS

The arrow keys can be used to change the selected item in most lists, menus, and file browsers.

USER PRESETS

After creating or editing sounds in Falcon, you can save the results as presets for individual modules, programs for a single instruments, and multis for all parts and programs in the entire Falcon instance.

MODULES

Each type of module — Oscillator, Modulation, Effects, and Event Processor — supports saving and loading presets. Numerous factory presets are included for each module, and you can save user presets as well. Module presets allow for easy recall and reuse of specific module settings in different programs.

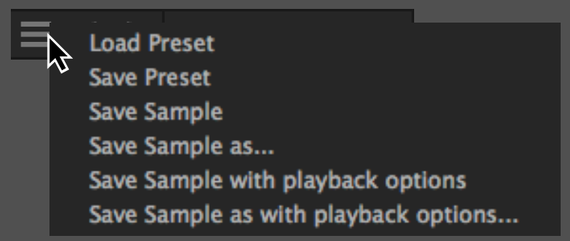
MODULE PRESET BROWSER

Each module displays a preset browser in the upper right:

The **PRESET MENU** displays the name of the current preset. Pressing the name displays a dropdown menu of factory and user presets for the module.

The **NEXT PRESET** and **PREVIOUS PRESET** buttons load the next or previous preset for the module.

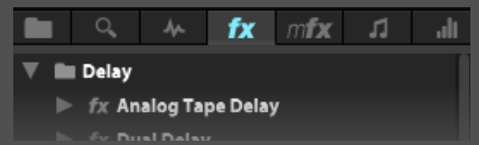
To save a user preset, press the **PRESET FILE MENU** and choose **SAVE PRESET** from the menu. User presets can be organized into subfolders, as many levels deep as you need. **TIP**: The Preset File menu additional options for sample-based oscillators. For more information, see [Interface > Main > Sample Editor].



To load a user preset from any location on disk, press the Preset File menu and choose **LOAD PRESET** from the menu.

SIDEBAR PRESET BROWSER

The Preset Browser is displayed in the right sidebar.



The Preset Browser displays all module presets in one place for easy browsing. For more information, see [Interface > Main > Preset Browsers].

PROGRAMS

A program file saves the state of everything within the program, including all of its layers and keygroups. If it's displayed in the Info Tab or the Edit Tab, it's saved with the program.

NOTE: A program does not save any part-specific settings, such as part gain/pan, part effects, and so on. To save part settings, use a multi (see below).

Many views throughout Falcon have options available for managing program files, such as in the Toolbar's main menu and the Parts List contextual menu. Each command is explained below.

CREATING

- **NEW PROGRAM**: Creates a new, empty program.

LOADING

- **LOAD PROGRAM**: Opens the Program File Browser.
- **RELOAD PROGRAM**: Reloads the most recently saved version of the program; this discards any unsaved changes to the program.
- **RECENT PROGRAMS**: Lists up to ten recently loaded programs for quick access.

USER PRESETS

SAVING

- **SAVE PROGRAM**: Saves the program file only
- **SAVE PROGRAM AS...**: Saves the program file only, under a new name
- **SAVE PROGRAM AND SAMPLES**: Saves the program file and all sample files
- **SAVE PROGRAM AND SAMPLES AS...**: Saves the program file under a new name, and all of the program's samples into a subfolder with the program name
- **SAVE PROGRAM SAMPLES**: Saves all samples only; does not save the program file

PROTECTING

- **PROTECT PROGRAM**: Adds a password to the program. This is useful for complex, scripted programs where the topology needs to remain unchanged. Once protected, only the Info tab is available for the program; the Edit view is disabled. In the Tree and List views, the program node displays only limited settings; the layer, keygroup, and oscillator nodes are not displayed.
- **UNPROTECT PROGRAM**: If the program is protected, you must enter the program password to edit the program.

MULTIS

A multi file saves the state of the entire Falcon instance — all parts, programs, effects, and master settings.

1 Multi files are managed primarily from the Toolbar's main menu.

LOADING

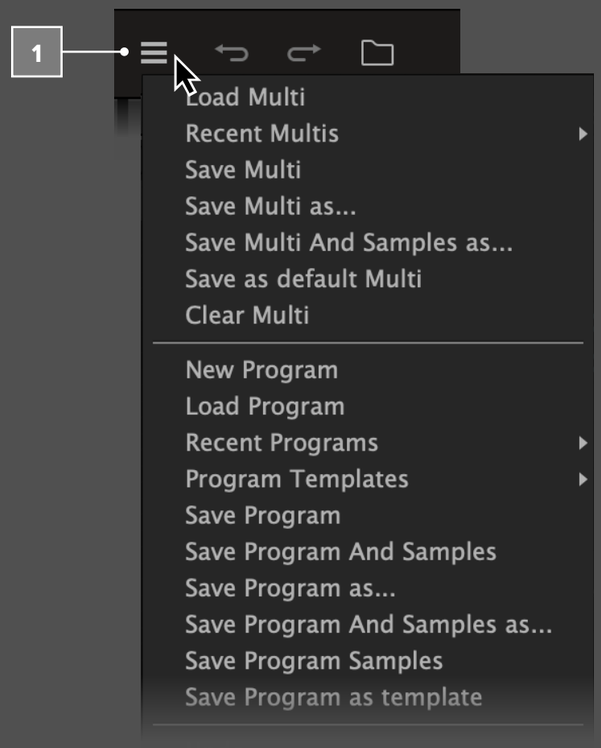
LOAD MULTI: Opens the Multi File Browser
RECENT MULTIS: Lists up to ten recently loaded multis for quick access.

SAVING

- **SAVE MULTI**: Saves over the current multi
- **SAVE MULTI AS...**: Create a new file for the current multi
- **SAVE MULTI AND SAMPLES AS...**: Saves the multi file under a new name, and all samples into a subfolder with the program name
- **SAVE AS DEFAULT MULTI**: Saves the current multi to be the default multi. The default multi is loaded whenever the Falcon plug-in or standalone application is first launched. This provides a useful method for loading a custom set of sounds, effects, event processors, and so on every time you use Falcon.

CLEARING

- **CLEAR MULTI**: Clears the multi (empties all parts).

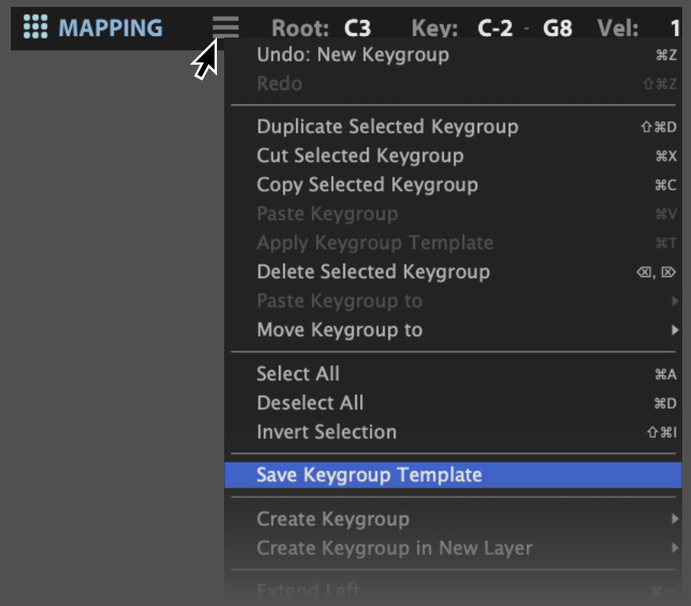


USER TEMPLATES

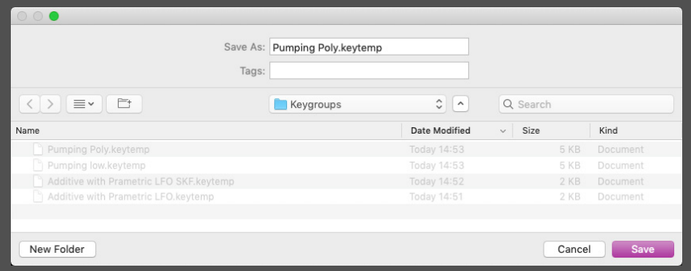
User Templates allow you to snapshot a keygroup in its entirety, including all oscillators, effects and modulators. These templates can then be quickly accessed as starting points for new patches or to speed up your workflow on complex part designs.

CREATING A USER TEMPLATE

In the Mapping Editor, select the keygroup that you'd like to template, then click the wrench icon in the Mapping Editor toolbar and select 'Save Keygroup Template' from the menu.



Next, name your template and click 'Save'. The new template will be added to the Mapping / Create Keygroup submenu.



LOADING A USER TEMPLATE

User templates can be added to your patch at any time by accessing the Mapping / Create Keygroup, or Mapping / Create Keygroup in New Layer submenus.

Simply click the wrench icon in the Mapping Editor toolbar (as shown to the left) or right-click anywhere in the Mapping Editor window.

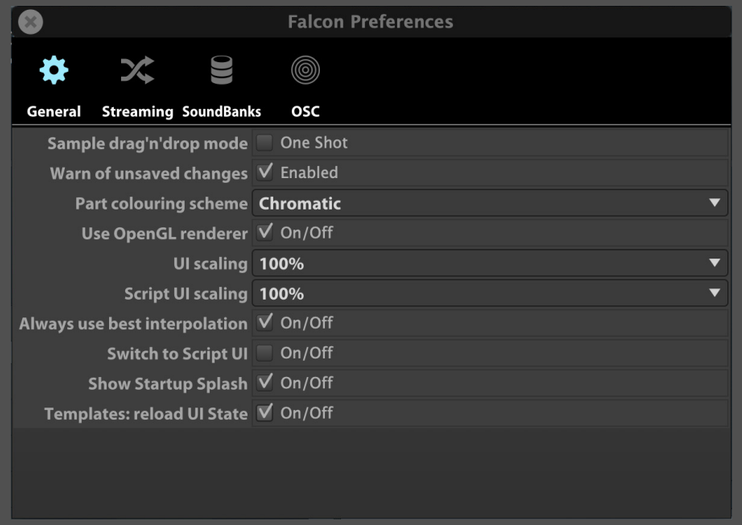
TIPS

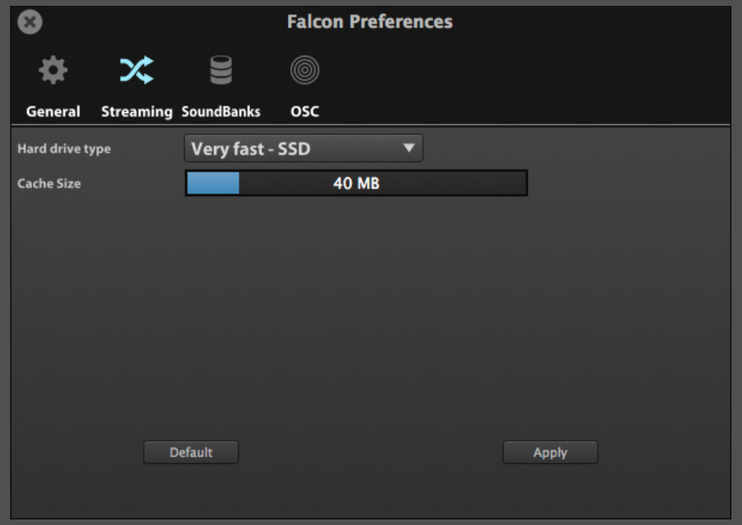
If the Save Keygroup Template command is grayed-out try using the TREE sidebar to select the desired keygroup.

If you want to rename, organize or share your user templates you can access them in: ~/Documents/UVI/Falcon/User Preset/Keygroups

PREFERENCES

Falcon's general settings are configured in the Preferences window. To open the Preferences, choose Preferences from the menu in the Toolbar.





GENERAL

ONE SHOT imports all samples in one shot mode by default. To change individual sample modes, see [Interface > Main > Sample Editor].
WARN OF UNSAVESD CHANGES shows saving dialog when change preset or quit Falcon

PART COLOURING SCHEME choose color scheme from
[Chromatic] assign each new part a random color
[Grey] will assign all parts the same shade of grey

USE OPENGL RENDERER offloads all intensive UI rendering to your GPU. For best results on Windows, make sure to keep your GPU drivers up-to-date.
UI SCALING controls the zoom level for all UI elements
SCRIPT UI SCALING adjusts only INFO panel script UIs

ALWAYS USE BEST INTERPOLATION forces the use of best interpolation mode in Sample oscillators at loading time
SWITCH TO SCRIPT UI automatically changes the visible tab to 'INFO' when loading a soundbank using script UI

SHOW STARTUP SPLASH enables startup splash when launching Falcon
TEMPLATES: RELOAD UI STATE enables UI state reloading when using templates

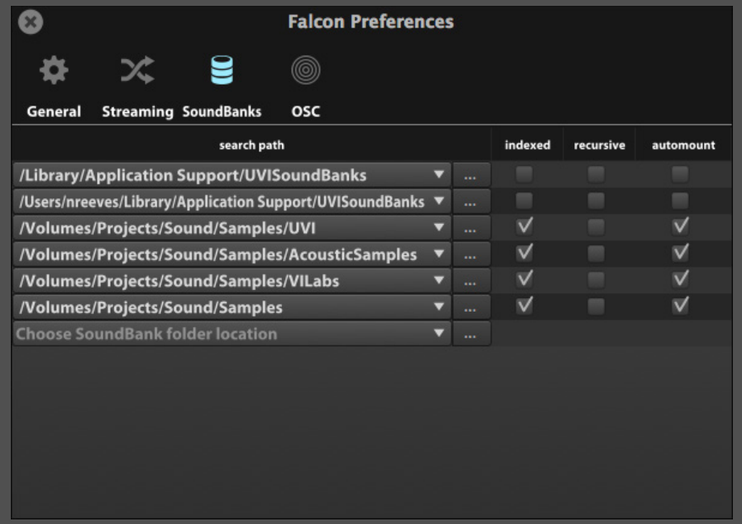
STREAMING

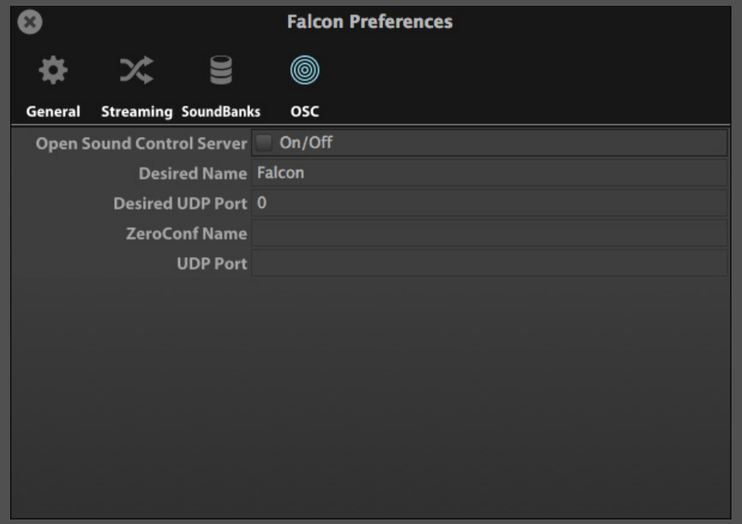
Rather than loading an entire sample into memory, samples may be read (streamed) from disk as they are played. This can improve overall performance by balancing resources between your computer's RAM and its disk drives. That said, streaming performance is directly affected by the speed of the disk, so the faster the disk, the better.

The default settings are optimized for most use cases. To adjust the settings for your computer, choose the appropriate Hard drive type and Cache size. To confirm your changes, press the Apply button. To revert to the default settings, press the Default button.

For details on enabling or disable streaming for individual parts, see [Interface > Main > Edit > Program].

PREFERENCES





SOUNDBANKS

Each **SEARCH PATH** is a location on your computer that will be scanned for sound libraries. To add or change a search path, press the "**...**" button and browse for the desired folder. You can also select a path and type to add a new path or edit an existing one. To delete a path, select the path name, press the Delete key, then press the Return key.

Each search path has the following options:

- **INDEXED**: Any supported files found in the search path will be indexed for searching in the File Browser. For details on searching, see [Interface > Main > File Browser].
- **RECURSIVE**: The search path directory itself and any subfolders within it will be searched. (When disabled, only the search path directory itself will be searched.) Note: this can significantly increase Falcon's startup time.
- **AUTO-MOUNT**: Any UFS soundbanks in the search path will be auto-mounted in the File Browser.

OSC

Open Sound Control (OSC) is a protocol used to communicate between different computers and other audio devices, optimized for use with networked devices. Falcon can be controlled remotely by any app or device that supports OSC.

Enabling the Open Sound Control Server will begin broadcasting Falcon as an OSC destination. **DESIRED NAME** and **DESIRED UDP PORT** set the preferred name and port for the current Falcon instance. Once the OSC server is running, **ZEROCONF NAME** and **UDP PORT** show the actual name and port assigned to the current Falcon instance.

For more details on using OSC in Falcon, see [Interface > Main > Modulation Editor > Automation assignments].
For general information on OSC, see:
http://opensoundcontrol.org

LEARNING FALCON 100:
SYNTHESIS

TOPICS:

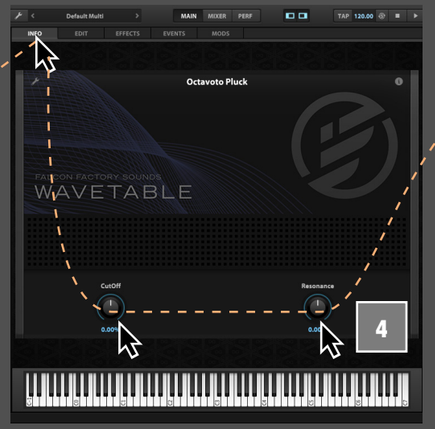
The following section will illustrate the basics of using Falcon, from loading and saving patches to creating a number of common sounds and instrument setups from scratch. It's a perfect place to start if you're new to Falcon and need some quick tips to get going.

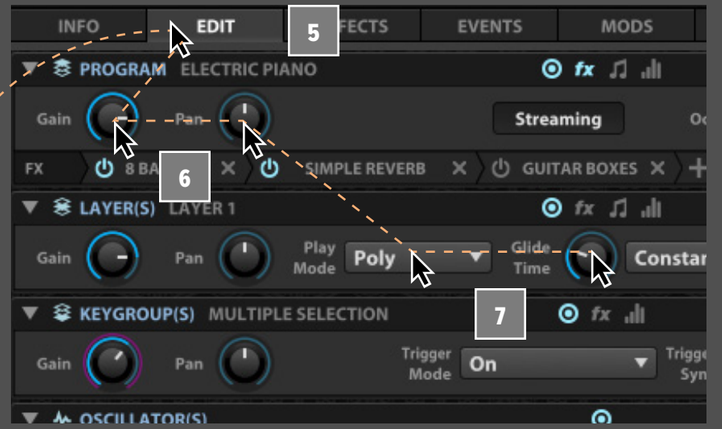
Falcon's synthesis engine offers a wide range of tools for playing, editing, and creating instruments and samples. You can freely mix sounds created with pure synthesis and sample playback even in the same program. Each of Falcon's oscillator types has a different speciality; only a few of the possibilities are explored here.

Before continuing, check that you have your audio and MIDI devices connected and working properly. Additionally, some of the following examples use programs and samples from UVI soundbanks. It's recommended to have the "Falcon Factory.ufs" soundbank available to follow along with most of the examples.

The Falcon factory soundbank is available through UVI Portal and the My Products page on UVI.net

LEARNING FALCON 101: **WORKING WITH PRESET**





LOADING AND TWEAKING A PRESET

1 Let's start by loading a sound from the Falcon Factory. Double-click the part name ("Empty") in the Parts List to open the File Browser.

2 The Falcon Factory will appear in the Soundbanks section of the File Browser. Select the **FALCON FACTORY** soundbank, then **RHYTHMIC > OCTAVOTO PLUCK**.

Press OK or double-click the program name to load it, so the Main view now displays the parameters of the loaded program. The Info tab shows the "front panel" of the program with macro controls for commonly-used settings, and the Edit tab shows all of the program's parameters.

3 Let's go to the **INFO** tab first. Here we can see the instrument's macro controls and an on-screen keyboard. Press the keys on the keyboard to trigger a note, or play a note from your MIDI controller. You should hear the instrument now; if not, check your Audio and MIDI settings.

To see a description of the instrument, press the Info "i" button in the upper right.

4 Let's make some changes to the program, by adjusting the **CUTOFF** and **RESONANCE** macro controls. Click a knob and drag to adjust it. You can also hover over a control and scroll your mouse scroll wheel, or scroll with your trackpad.

5 That's a start, but to dig in a little deeper, let's switch to the **EDIT** tab. Here we can see the settings for the major components of the instrument: program, layer, keygroup, and oscillator. Additionally, the Sample Editor, Mapping Editor, and Modulation Editor provides editing of sample files, the mapping of the layers and keygroups, and modulation assignments.

6 Let's make some edits to the instrument. To change the program's output level and panning, go to the **PROGRAM** section and adjust the **GAIN** and **PAN** settings.

7 Let's also change the instrument from polyphonic to monophonic. Go to the **LAYER** section and change Play Mode mode to **MONO PORTAMENTO**, and adjust **GLIDE TIME** to change the amount of "slide" between notes.

LEARNING FALCON 102: **SAVING A PROGRAM**

SAVING A PROGRAM

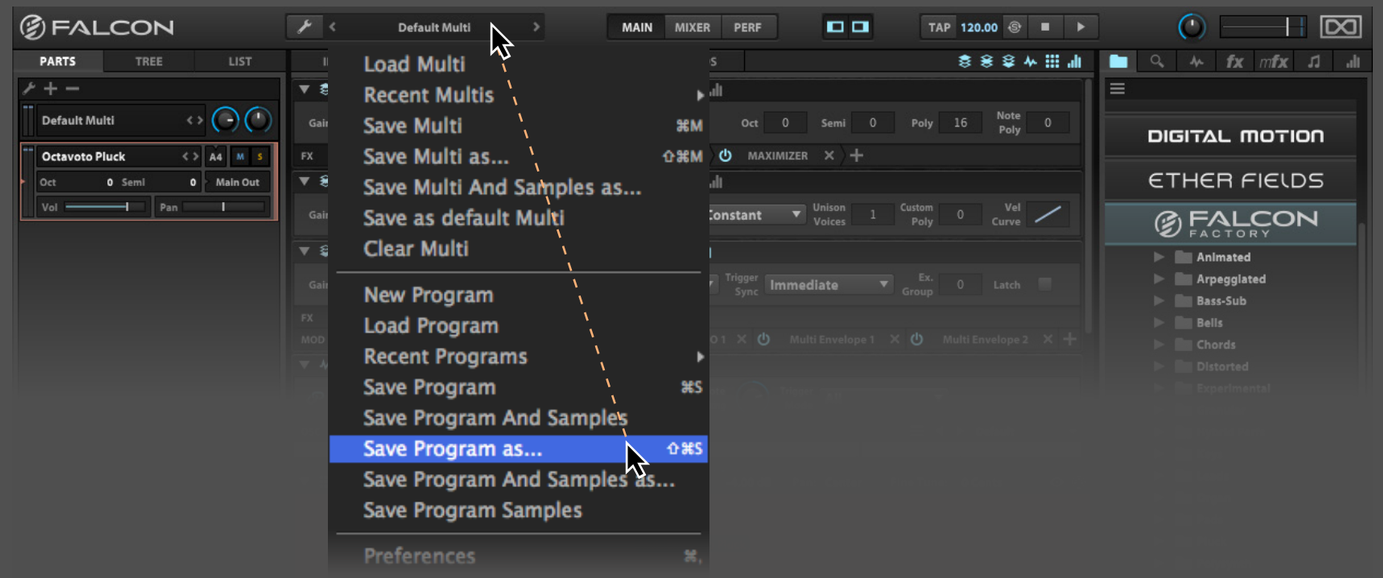
1 Now that we've made some changes to the program, let's save our edited version. The main menu in the toolbar is a central location for many of Falcon's save/load options. From the **MAIN MENU**, choose **SAVE PROGRAM AS**.

Choose the location where you'd like to save the file, enter a file name, then Save — your edited program is now saved with a new file name. The original program file is unchanged, and your edits are saved under the new program.

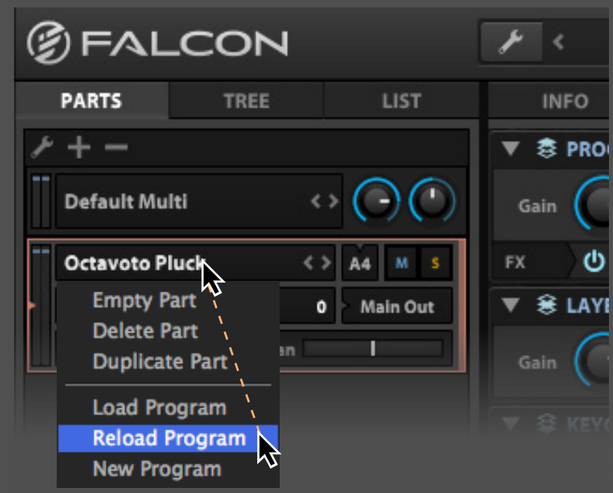
If you make some more edits to this program, you can save the same file again with Save Program. That will save the same file in place, and won't prompt again for a file name.

2 If you'd rather discard changes you've made since the last time you saved the file, you can instead choose to reload the program file. Right-click the part in the **PARTS LIST** and choose **RELOAD PROGRAM** from the context menu to undo all of those changes.

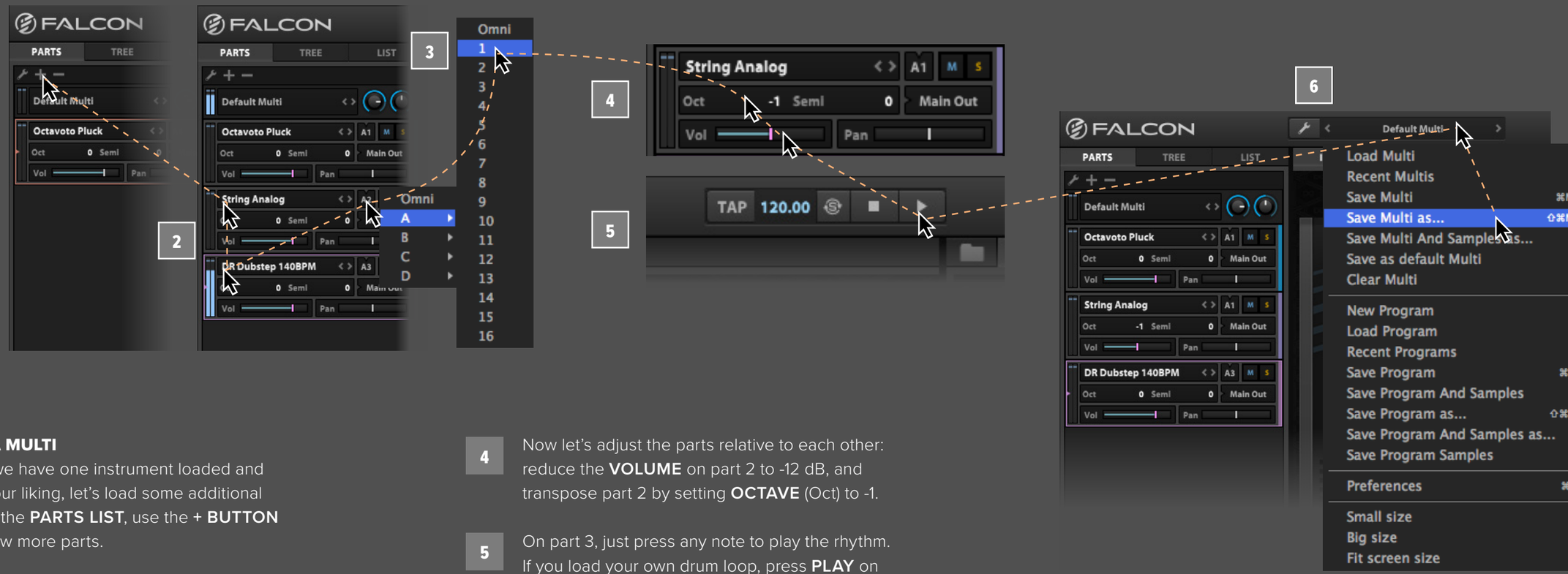
1



2



LEARNING FALCON 103: **SAVING A MULTI**



SAVING A MULTI

1 Now that we have one instrument loaded and edited to our liking, let's load some additional sounds. In the **PARTS LIST**, use the **+ BUTTON** to add a few more parts.

2 Let's load a few more sounds from the Falcon Factory soundbank, such as the **PADS > STRING ANALOG** instrument and **RHYTHMIC > DR DUBSTEP 140BPM**, or choose a slice drum loop file from other UVI soundbanks or from your own library and start building a multi-timbral multi.

3 To stack parts 1 and 2, change the **MIDI INPUT CHANNEL** on parts 1 and 2 to A1. Play a few notes from your MIDI controller — you should now hear both parts trigger at the same time.

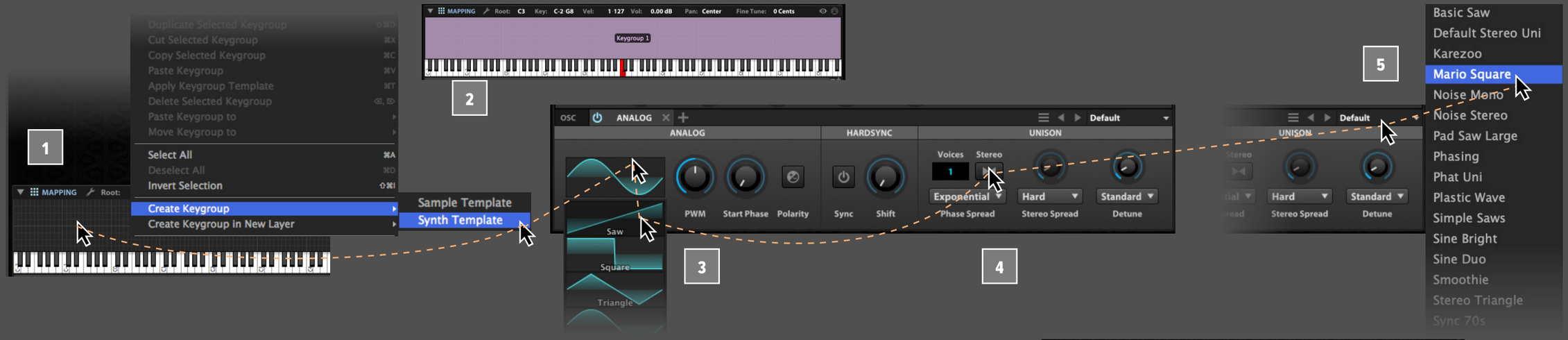
4 Now let's adjust the parts relative to each other: reduce the **VOLUME** on part 2 to -12 dB, and transpose part 2 by setting **OCTAVE** (Oct) to -1.

5 On part 3, just press any note to play the rhythm. If you load your own drum loop, press **PLAY** on Falcon's toolbar and you will hear the drum loop auto-play, synced to Falcon's tempo. Edit Falcon's tempo, and the rhythm automatically stays in sync.

6 Now with our multi taking shape, let's save it. From the **MAIN MENU** in the toolbar, choose **SAVE MULTI AS**.

All of the details about this instance of Falcon are saved in the multi, and can be recalled with this single file.

LEARNING FALCON 104: **MAKE A SIMPLE SYNTH**



MAKE A SIMPLE SYNTH

1 Now that we've looked at editing existing sounds, let's start creating some new ones from scratch. In an empty part, go to the Main > Edit view. In the **MAPPING EDITOR**, right-click and choose **CREATE KEYGROUP > SYNTH TEMPLATE**.

2 A new keygroup has been created, mapped to the full key and velocity range.

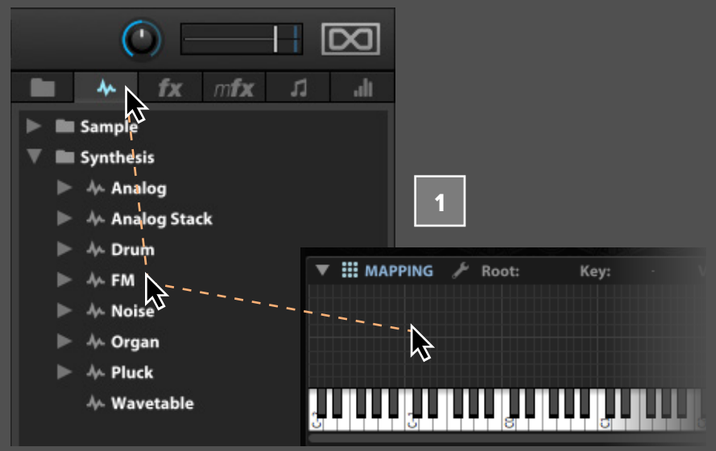
3 Play a few notes, and you'll hear a simple sine wave oscillator. Let's change that to a sawtooth wave, by clicking the **WAVEFORM** and choosing **SAWTOOTH** from the menu.

4 We can continue building our sound by editing the other synth engine parameters, such as enabling Stereo mode and adding additional voices.

5 To stack multiple synth sounds, we can add a second synth keygroup. Let's choose **CREATE KEYGROUP > SYNTH TEMPLATE** a second time, and another keygroup will be stacked on top of the first. For this keygroup, let's choose one of the oscillator's factory preset, such as "**MARIO SQUARE**."

6 Perhaps instead of stacking these sounds, this could be a split program instead, with one sound for the left hand and another for the right hand. To do that, we'll need to adjust the key ranges of the keygroups so they don't overlap. Right-click in the Mapping Editor and choose **SELECT ALL**, then choose **RESOLVE OVERLAPPING KEY RANGE**.

The keygroups can now be easily edited separately. For example, the key and velocity ranges could be further adjusted by dragging the edge of the keygroup.



MAKE AN ARPEGGIATED SYNTH

Falcon has numerous synthesis options in addition to the classic virtual analog oscillator we've already seen. Let's explore the FM (frequency modulation) synth oscillator, using one of the factory preset as a starting point.

1 Open the right-hand sidebar and choose the **OSCILLATORS TAB**. Expand the Synthesis folder, and drag the **FM** oscillator to the **MAPPING EDITOR**.

2 While playing a few notes, press the next or previous buttons in the oscillator module to browse the preset. Let's choose the **EP HOLLOW** preset and build from there.

The FM oscillator has four operators (A, B, C, and D), and each operator's frequency is a ratio to the base note. For example, a ratio of 2.0 means the frequency is doubled, or one octave up from the base note. Whole integers and simple ratios (3/2, 4/3, etc.) create some of the more obvious harmonic relationships, but the ratios are fully adjustable and small changes can create interesting and unexpected results. Let's set **OPERATOR C TO 2.17** and **OPERATOR D TO 1.17** and hear the difference.

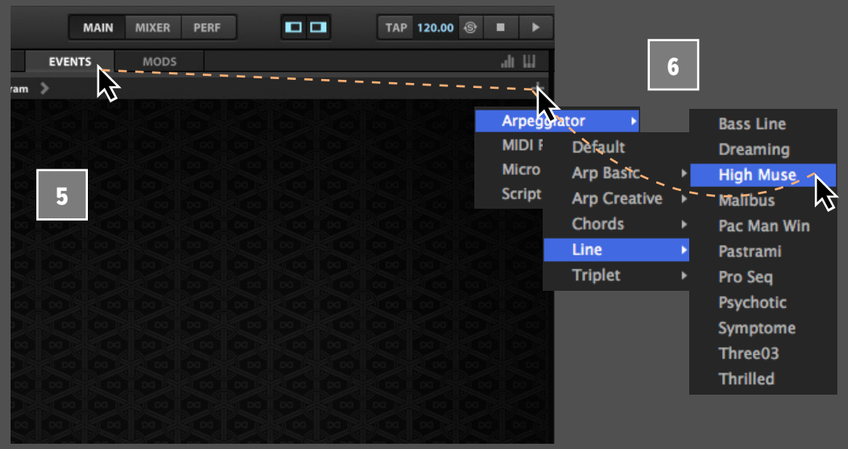
3

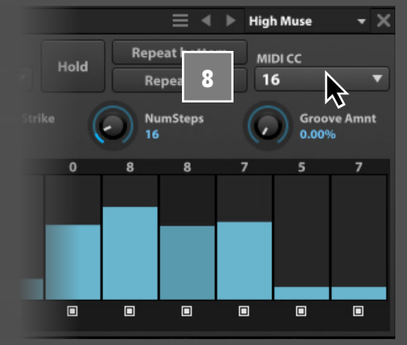
The operators can also be arranged in a variety of topologies. Using the same ratios, different topologies can change the sound drastically. To change the topology, press on the topology diagram in the lower right and choose a topology from the menu. For example, change the **TOPOLOGY** from #8 to #7.

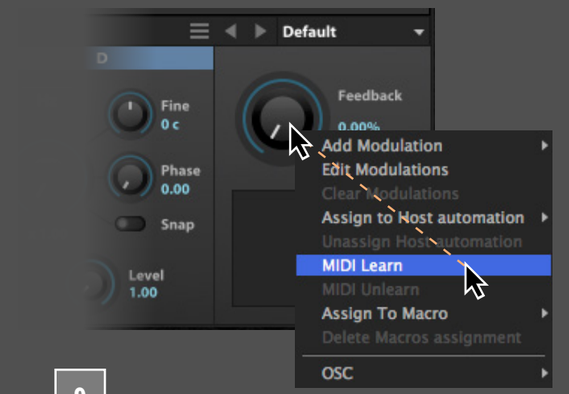
4

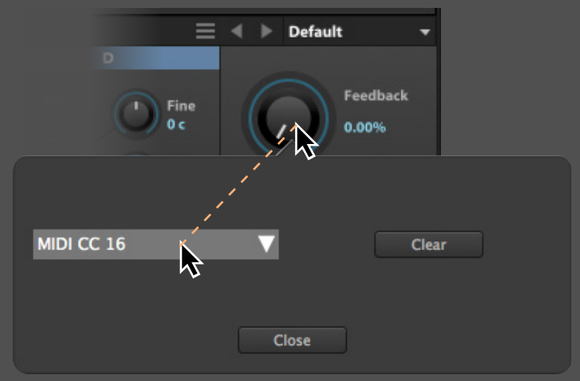
Now that we've customized the sound source, let's make it more dynamic by adding an arpeggiator.

LEARNING FALCON 105: **MAKE AN ARPEGGIATED SYNTH** (PART 2)









5 Switch to the **EVENTS** tab, press the + button, and choose Arpeggiator.

6 To load one of the factory preset, press on the **PRESET MENU** and choose one from the menu. Let's choose one of the sequenced pitch preset, such as **ARPEGGIATOR > LINE > HIGH MUSE**.

Press and hold a few keys to hear the arpeggiated sequence. There are actually three layers to the arpeggiator: note velocity, pitch, and MIDI CC. To view the different layers, **RIGHT-CLICK THE STEP GRID** and choose the layer from the menu.

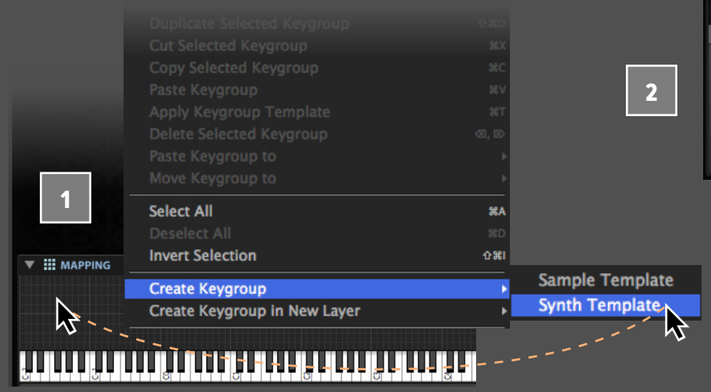
7 There are actually three layers to the arpeggiator: note velocity, pitch, and MIDI CC. Let's use the MIDI CC layer to generate a control source for modulating the FM operators. Switch to the **MIDI CC** layer, then press and drag across the step grid to enter step values.

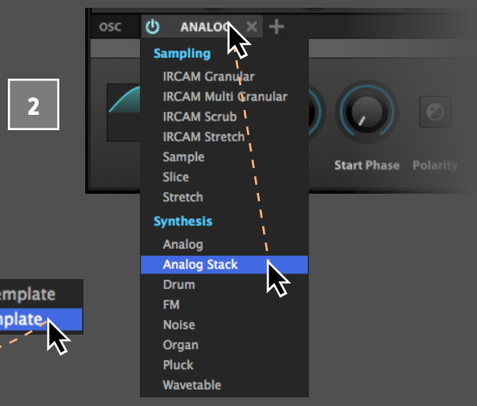
8 Then choose a MIDI CC for the arpeggiator to output; a general purpose MIDI CC such as **16** is a good choice.

9 Switch back to the **EDIT** view, right-click the **FEEDBACK** knob, and choose **MIDI LEARN**. In the pop-up, choose **MIDI CC 16** from the menu.

Press and hold a note, and you'll see the value automating in sync with the arpeggiator sequence. Let's also slow the tempo down just a bit. Since the arpeggiator is tempo-synced, it will automatically adjust when Falcon's tempo changes.

LEARNING FALCON 106: **MAKE AN EVOLVING PAD**





MAKE AN EVOLVING PAD

Now let's build a pad sound, one that evolves over time by using modulation to create movement.

1 In an empty part, create a new synth keygroup.

2 This time, let's use the Analog Stack synth; press on the oscillator name and choose Analog Stack from the menu to change the synth type.

The Analog Stack starts with the same basic options as the Analog oscillator type, but offers a unified bank of eight oscillators for quickly created stacked sounds.

3 Press the **POWER** button on oscillators **2** and **3** to enable them. Each oscillator has independent controls for its waveform shape, gain, pain, pitch offset, and so on.

4 Let's change the pitch of oscillator 2's pitch offset to be **+7 SEMITONES** from oscillator 1, and oscillator 3 to be **+1 OCTAVE**.

5 We can also modulate each oscillator independently. To add a new modulation source for the oscillator 2 pulse width modulation, right-click its PWM knob and choose **ADD MODULATION**.

6 We want to modulate this per-voice, so we'll create a keygroup modulation source by choosing **INTERNAL > KEYGROUP > NEW LFO**.

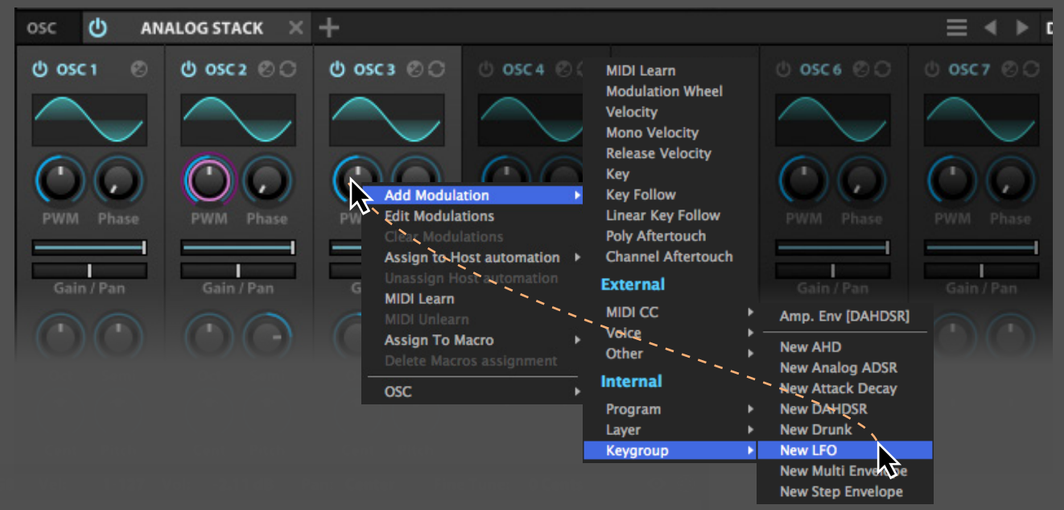
7 The new modulation source now appears in the **MODULATION EDITOR**. If you don't see the Modulation Editor, make sure that its toggle button is enabled at the top of the Edit view, and that it's expanded with the arrow next to its name.

Play a note and you'll hear the LFO modulating PWM; this LFO is modulating it too drastically, though, so let's edit it.

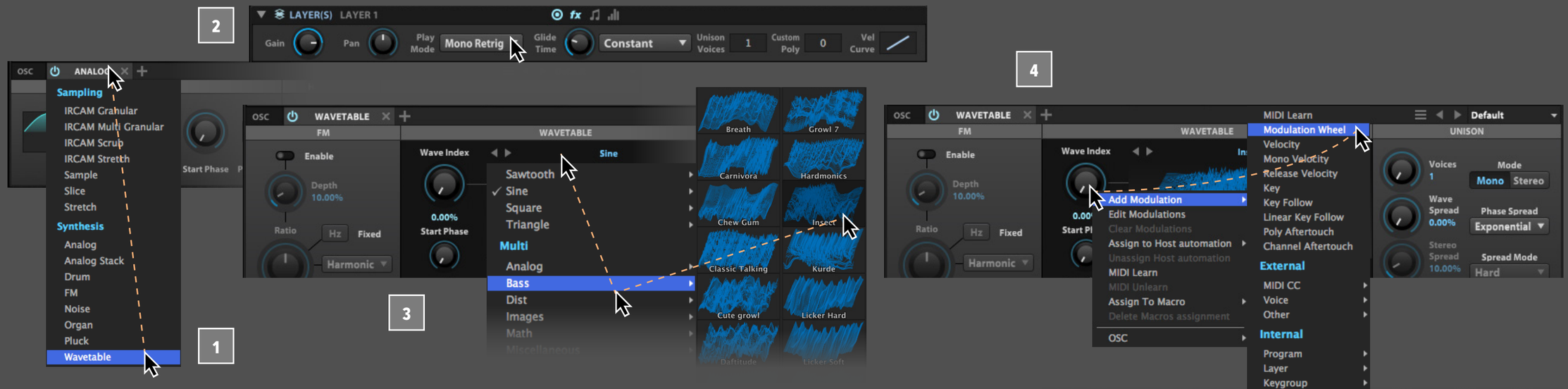
8 Change the **DEPTH TO 0.25**, play a note again, and you'll hear that its intensity has been reduced.

9 We can also slow down the LFO speed, to **0.15 HZ**. Let's do the same with oscillator 3 PWM, but with a different LFO.

10 Create another LFO, and set its frequency to be different than the first LFO. This will create a sound that shifts and evolves over time. In this way, we can continue to build up the sound by adding modulation to each oscillator's parameters, such as pan, phase, or pitch.



LEARNING FALCON 107: MAKE AN INTERACTIVE WOBBLE BASS



MAKE AN INTERACTIVE WOBBLE BASS SOUND

Falcon's modulation engine provides endless opportunities for customizing and modifying sounds. Let's create a wobble bass that we can tweak in realtime from our MIDI controller.

1 As with the previous examples start with a clean patch, create a new Synth Template keygroup and change the Analog oscillator to **WAVETABLE**.

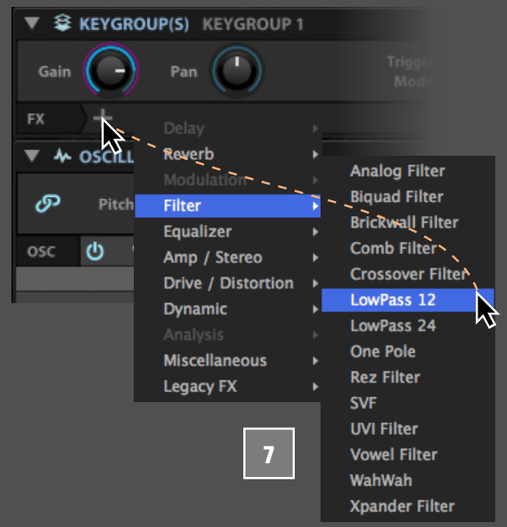
2 We also want this sound to be monophonic, so in the Layers section, change the Play Mode from Poly to **MONO RETRIGGER**.

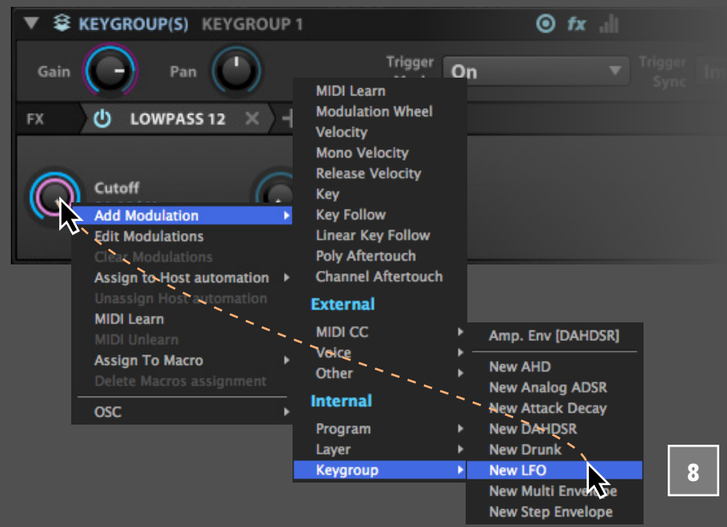
3 To change the wavetable, press on the menu above the waveform and choose from the menu. Let's choose **MULTI > BASS > INSECT**.

Play and hold a note to audition the wavetable. While holding the note, adjust the **WAVE INDEX** to change the active waveform within the wavetable. This is a good control to adjust in realtime while playing, so let's assign the Mod Wheel as a modulator.

4 Right-click the Wave Index knob and choose **ADD MODULATION > MODULATION WHEEL**.

5 The new modulation assignment now appears in the Modulation Editor. (If you don't see the Modulation Editor, make sure that its toggle button is enabled at the top of the Edit view, and that it's expanded with the arrow next to its name.)





6 Each modulation assignment has a ratio slider that defines how the modulation source maps to its assigned parameter. By default the full range of the mod wheel will map to the full range of the Wave Index knob, but in this case we'd like the mod wheel to sweep over only half of the Wave Index range. So, to halve the range, adjust the **MIDI CC 1 RATIO SLIDER TO 0.5**.

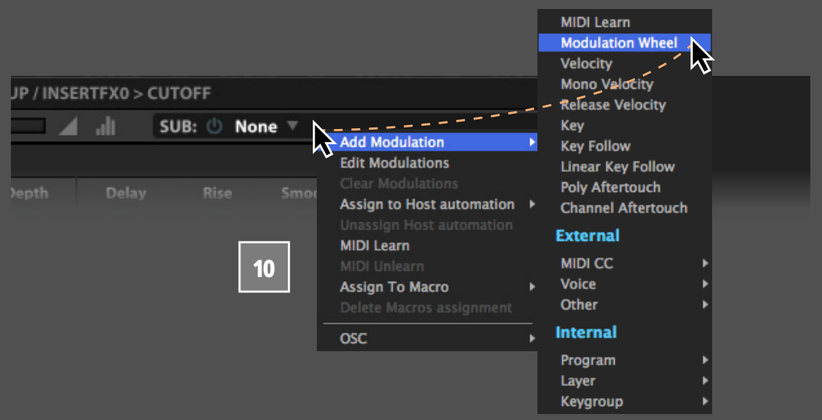
7 Now let's add a low pass filter. To add a filter, go to the **KEYGROUP > EFFECTS LANE** and press the + button, and choose **FILTER > LOWPASS 12**.

8 To create the wobbling effect, we can modulate the cutoff frequency with an LFO. Set the **CUTOFF FREQUENCY** near the upper end of the its range, then right-click, choose **ADD MODULATION**, and add a new **LFO**.

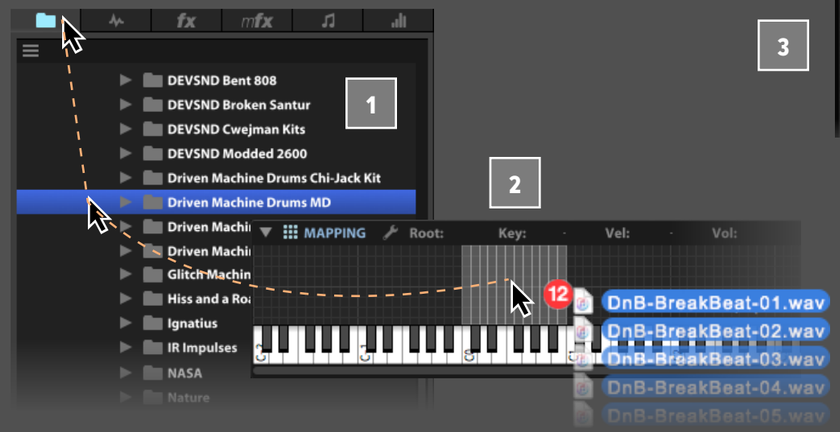
9 On the new LFO, uncheck its **BIPOLAR** option, then set its modulation ratio to **-0.5**. A unipolar LFO will modulate in only one direction, and a negative ratio means that direction will be downward.

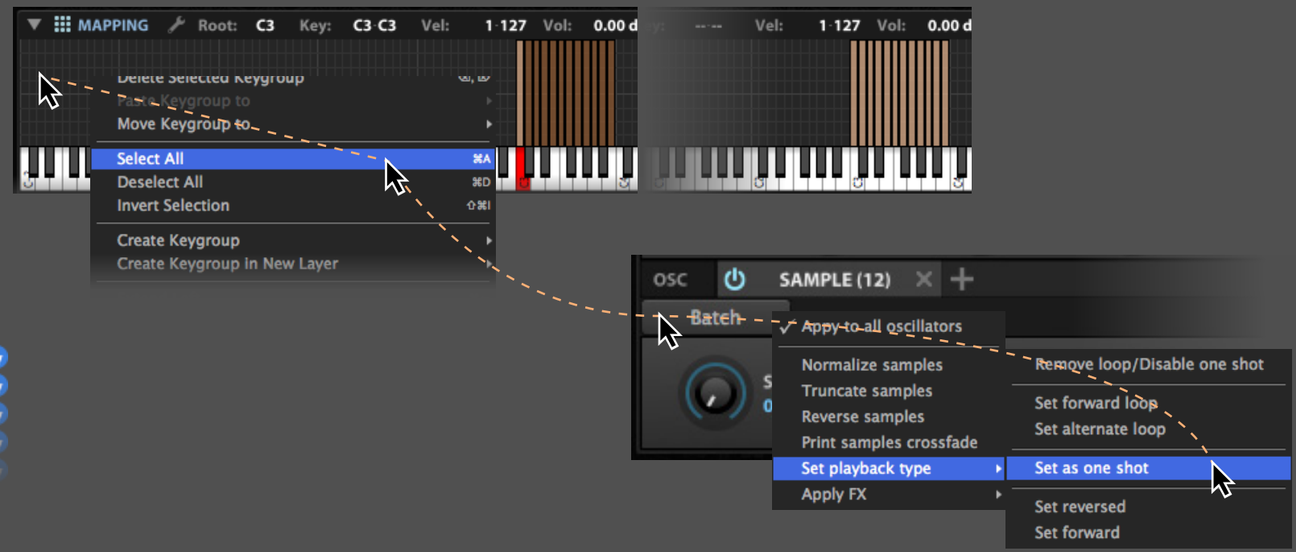
10 Play a note, and you'll hear the cutoff frequency sweeping downward with the LFO. The LFO is applied as a constant modulation, however. To apply the LFO modulation selectively with the modulation wheel, add the mod wheel as a sub-modulation source. Right-click on the **SUB** menu and choose **MODULATION WHEEL**.

Play a note now, and you won't hear the LFO applied any more. As you raise the mod wheel, the LFO modulation will be increasingly applied, along with the Wave Index modulation we assigned to the mod wheel earlier.



LEARNING FALCON 108: MAKE A DRUM KIT FROM SAMPLES





MAKE A DRUM KIT FROM SAMPLES

Creating new programs from samples is just as easy as creating a synth-based program. Most of Falcon's controls are used in the same way whether you're using synth oscillators or sample files. Let's create a drum kit from sample files.

1 Open the right-hand sidebar and use the **BROWSER** tab to locate a folder containing some drum samples on your system.

2 Select the drum samples you want to use and drag them onto the **MAPPING EDITOR**.

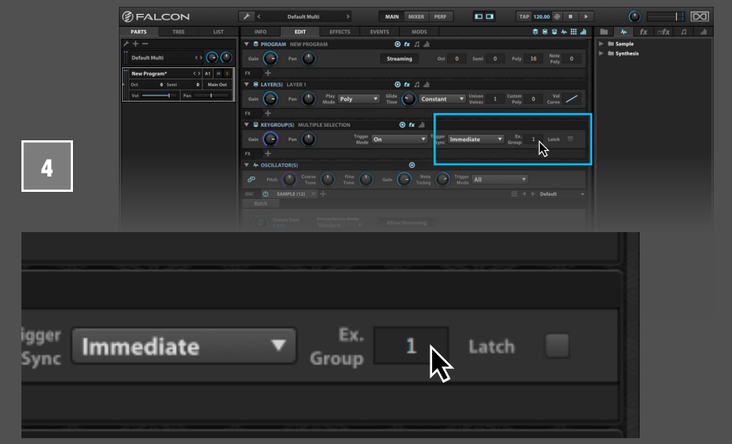
Now let's set the imported samples to be "one shot" samples, so that the entire sample will be played back when the note is triggered.

3 Choose **SELECT ALL** from the **MAPPING EDITOR MENU**, then press the **BATCH** button and choose **SET PLAYBACK TYPE > SET AS ONE SHOT**.

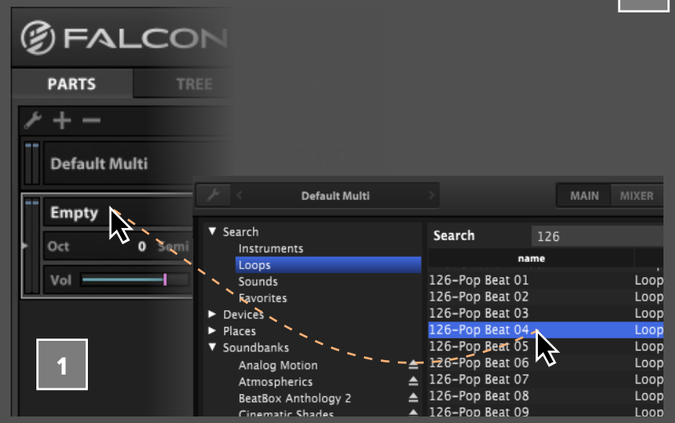
We might also want to adjust the settings of individual samples. For example, if a sample needs to be panned or have its pitch adjusted, select the keygroup and then edit the value in the Mapping Editor's toolbar.

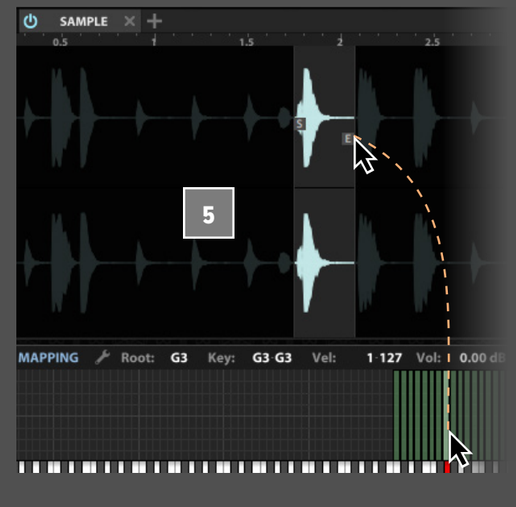
4 Lastly, let's set an exclusive group for the hi-hat sounds. This will mimic the natural behavior of hi-hat sounds cutting each other off, such as a hi-hat closing and cutting off a ringing open hi-hat.

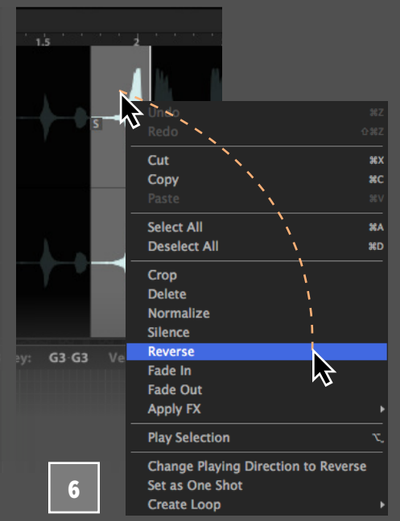
Select the hi-hat keygroups, then set **EX. GROUP** to **1** in the Keygroup section.



LEARNING FALCON 109: **MAKE A DRUM KIT FROM A LOOP**







MAKE A DRUM KIT FROM A LOOP
Drum loops often provide great source material for building a drum kit, especially if the loop has distinct hits where the different kit elements aren't overlapped. By slicing and mapping the hits in the loop, we can easily take a single loop and turn it into a full kit.

1 Let's start by loading a drum loop into an empty part. In this case we use Falcon's search engine to find a Loop from our Mayhem of Loops soundbank and double-click to load it. If Mayhem of Loops not avilable for you, choose a loop from your soundbank, such as BeatBox Anthology 2 or Toy Museum or your own loop libraries.

2 You'll see that the sample is loaded within the **SLICE** oscillator, with slices marked at each transient. Press Play in Falcon, and the slices are played back in sync with Falcon's tempo.

3 You can convert these slices to separate keygroups, in order that each slice can be triggered independently. Press the **MAP** button, and a new layer will be created with the slices mapped to individual keys.

4 The original keygroup containing the loop will still be present in a muted layer. To hide it, open the **TREE** view and select only the "**MAPPED**" layer.

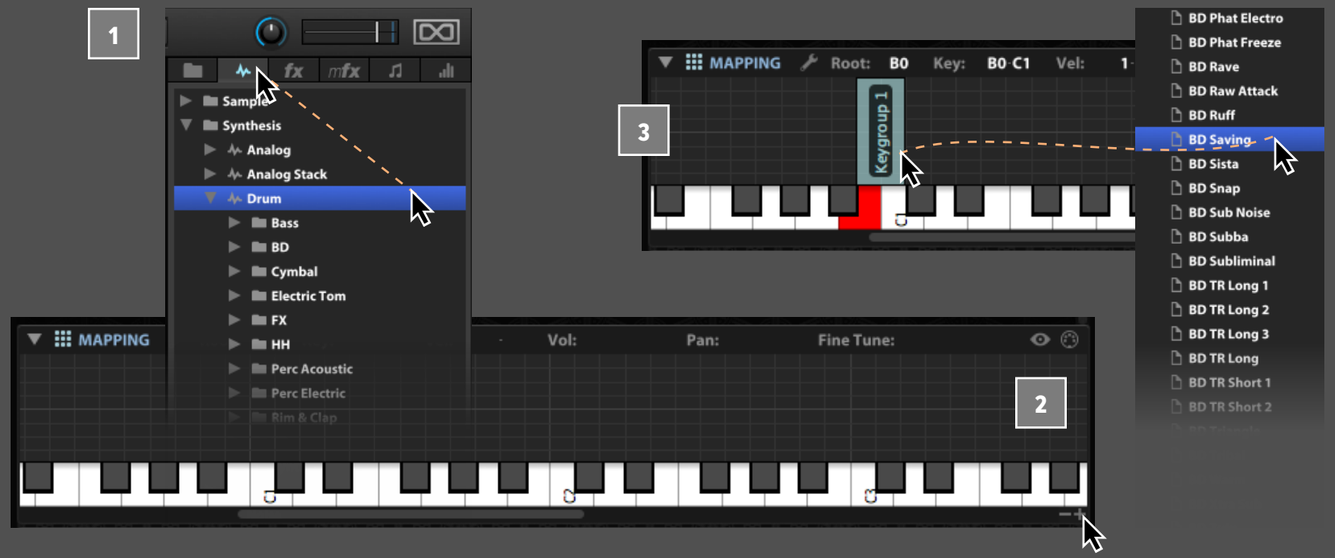
Play a few notes on your keyboard to trigger the new sliced keygroups. You can now easily rearrange the slices to the mapping of your choice, such as a standard drum mapping.

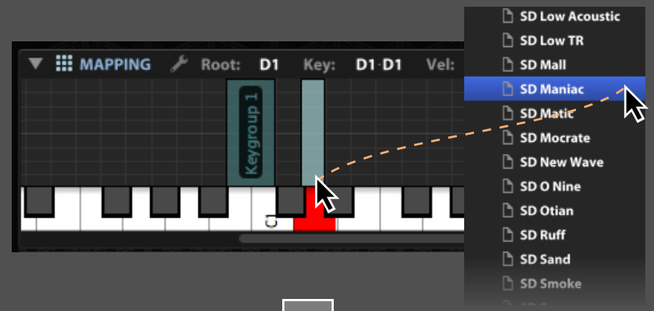
Each slice from the mapped loop is actually referring back to the original sample, with custom start and end markers to define the slice within the larger sample.

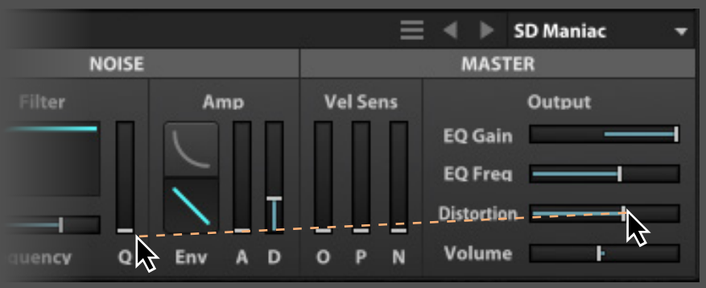
5 To adjust the slice boundaries, select a **KEYGROUP** to toggle the Sample oscillator view and then grab the "**S**" (start) or "**E**" (end) markers and drag them as desired.

6 **DOUBLE-CLICK THE SAMPLE WAVEFORM** between the start and end markers to select it, from here you can **RIGHT-CLICK** to reveal a number of common wave editor commands such as reverse, normalize, fade in/out and silence. Changes made here still reference the original file so they will effect all slices.

Slices can be tweaked and tuned in limitless ways. Try changing the sample oscillator type to Stretch and adjusting the Tempo Factor, or adding effects to a specific keygroup to effect only one slice, or at the layer level to effect them all.







MAKE A DRUM KIT WITH SYNTHESIS
Instead of starting with a looped sample or a collection of sampled drum hits, we can also create entirely new drum sounds from scratch with Falcon's Drum synth oscillator.

1 Open the right-hand sidebar and choose the Oscillators tab. Expand the **SYNTHESIS > DRUM** folders, and you'll see all of the drum synth oscillator preset.

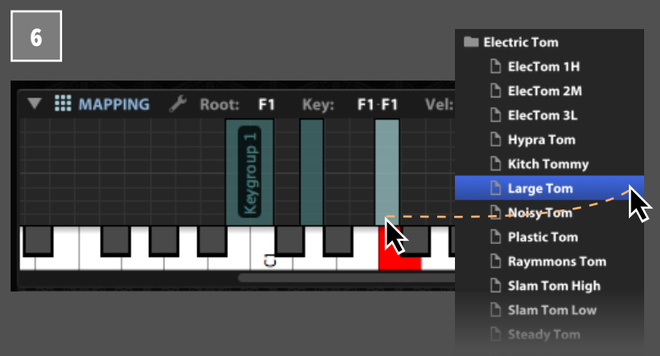
2 Before we get started zoom in a bit in the **MAPPING EDITOR** to see the key range we're going to focus on in greater detail. Click the **+** button on the bottom right of the editor to zoom in.

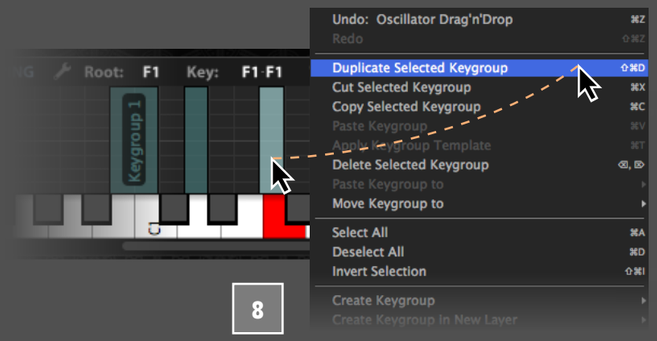
3 Let's start by adding the BD preset '**BD SAVING**' to cover the range B0 to C1. As you drag-and-drop, the vertical position within the Mapping Editor determines the key range of the keygroup, with wider ranges set near the top and narrower ranges near the bottom.

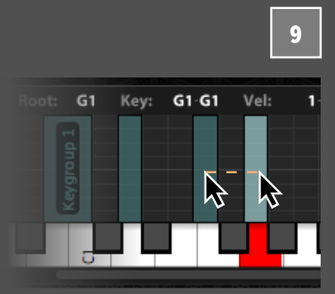
The Drum oscillator consists of two sound generators, a pitched oscillator and a noise generator. The two can be independently edited, then the mix between the two is set the with the Mixer. The Master section adjusts the combined signal, with EQ, distortion, and other settings.

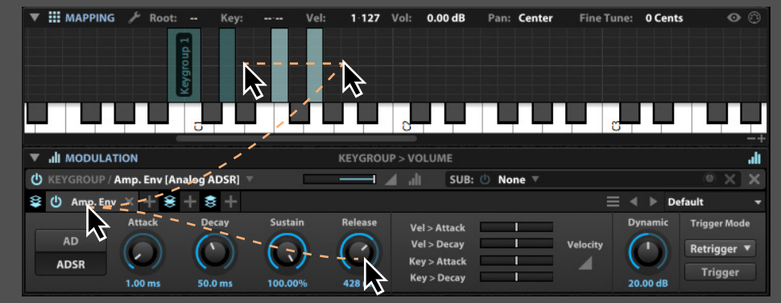
4 To give the kick a little more edge, let's change the Oscillator waveform from sine to **TRIANGLE**, and move the **OSC/NOISE SLIDER** to add a little noise.

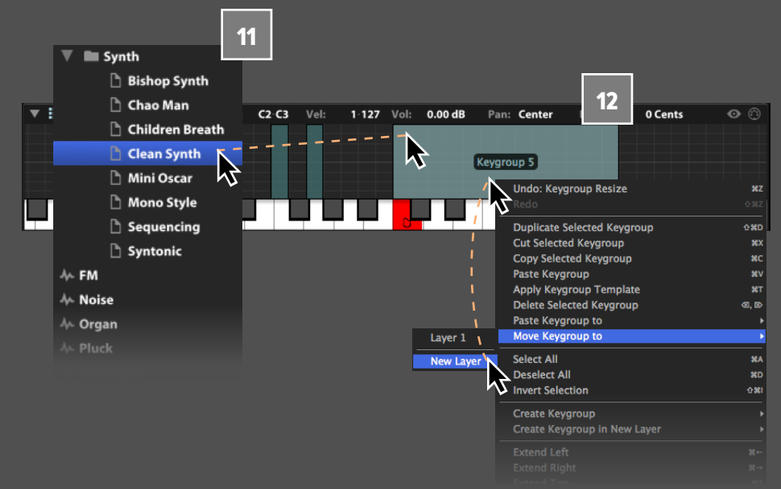
5 Now let's import the '**SD MANIAC**' preset from the SD folder to **D1**, and play a few notes to see how the kick and snare sound. Let's bump up the **DISTORTION**, and lower the **Q** on the noise filter.











6 For toms, let's drag over a preset from the Electric Tom folder, '**LARGE TOM**', to **F1**.

7 We can then tune the tom with the oscillator **FREQUENCY SLIDER**.

8 To use this customized tom as the starting point for additional toms, right-click the keygroup and choose "**DUPLICATE SELECTED KEYGROUP.**"

9 The duplicated keygroup will initially appear stacked on top of the existing one; grab the new keygroup and drag it over to **G1**, then adjust its frequency to change the tom's pitch.

To change the length of time the toms ring out let's tweak their amplitude envelope. If it's not already displayed, toggle visibility of the Modulation Editor with its button in the upper right of the Edit view.

10 Then click and drag a selection over each of the tom keygroups, then click on the "**AMP. ENV**" tab in the **MODULATION EDITOR**. When you adjust the envelope's **RELEASE** knob, you'll be editing the release time for all of the selected keygroups.

11 We can also use the Drum oscillator for synth lead or bass sounds. For example, drag in a preset from the Synth folder, such as '**CLEAN SYNTH**', to cover the range **C2 TO C3**. Moving this keygroup to a separate layer will give us more flexibility with effects routing and other program settings, so let's move the keygroup.

12 Right-click the synth keygroup in the Mapping Editor and choose **MOVE KEYGROUP TO > NEW LAYER**.

LEARNING FALCON 200:
EFFECTS + MODULATION

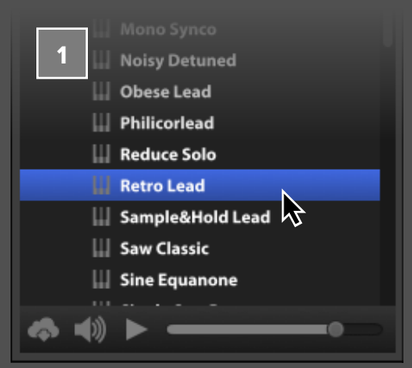
TOPICS:

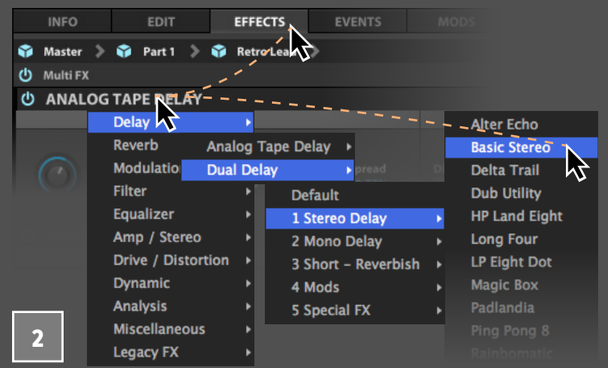
Falcon has an extensive selection of audio effects and modulation sources that can be configured in both simple and extremely complex ways to achieve powerful effects. The majority of these modules all function based on a similar set of principles and interactions.

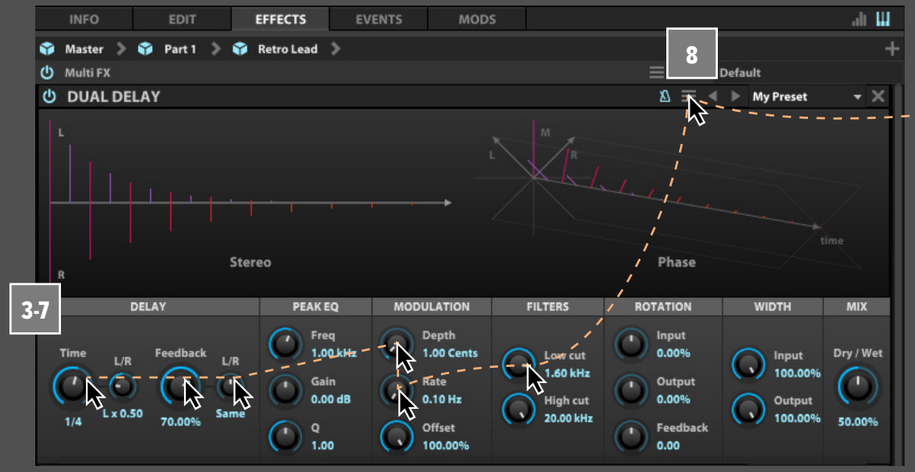
If you've followed the examples in the previous chapter you should already be familiar with the basic concepts and use of effects and modulators in Falcon. Here we'll build on that experience and explore some ways to further enhance your ability to both design sound and get hands-on with your patches.

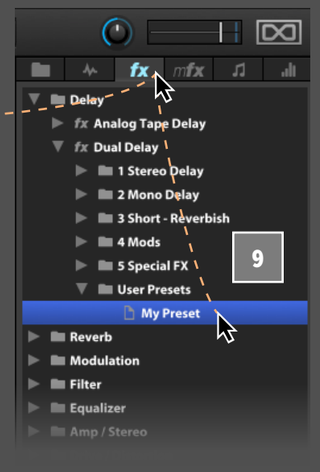
For a detailed overview of each effect module and modulation source please consult:
Appendix: Modules > Effects, and
Appendix: Modules > Modulations.

LEARNING FALCON 201: **USING DUAL DELAY**









USING DUAL DELAY

Dual Delay is a delay effects module that is capable of a wide range of time-based effects, from classic delays to reverb-like decays to more unusual effects, with an immersive interface to visualize the stereo and phase adjustments being made.

1 Let's start with a **LEAD** preset from the **FALCON FACTORY** soundbank, find and double-click '**RETRO LEAD**' to load it.

2 Switch to the **EFFECTS** tab, right-click the Analog Tape Delay effect header and choose the **DUAL DELAY** > **BASIC STEREO** preset.

3 First lets increase **DELAY > TIME** to "**1/4**" for a more pronounced delay effect. The delay time can be specified in milliseconds, or in bars/beats if tempo-sync is enabled (as it is here).

4 The Stereo and Phase graphs are the centerpiece of the Dual Delay interface. As you adjust the parameters below, the graphs are updated in realtime. Let's turn the **DELAY > FEEDBACK** knob up to 70%, you will see both the number of delay taps and their magnitude increase.

5 Time and Feedback can be the same for the left and right channels, or one channel can be shifted relative to the other. Turn the **TIME L/R** knob counter-clockwise to "**L X 0.50**" and you will see the left channel delay taps are half the duration of the right channel delay taps.

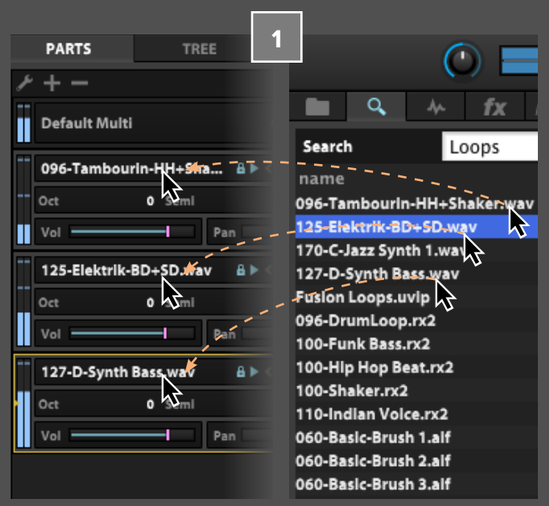
6 Let's add some gentle pitch modulation to our sound to give it a chorusing effect. Change **MODULATION > DEPTH** to "**1.00 CENTS**" and **MODULATION > RATE** to "**0.1 HZ**".

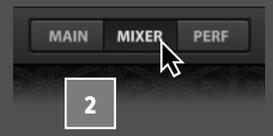
7 Now let's adjust the filter to clean up the low frequency content, set **FILTERS > LOW CUT** to "**1.6 KHZ**".

8 Once you have the effect where you like it you can save it's state as a preset. In the upper right of the effect module, press the Preset File menu and choose **SAVE PRESET**, and enter a name for the preset, here we'll title it "**MY PRESET**".

9 You'll now see your custom preset in the Browser, within a User Preset folder alongside the factory preset for the module.

LEARNING FALCON 202: **USING SPARKVERB**





USING SPARKVERB

SparkVerb is a unique and versatile reverb with an extraordinarily light CPU footprint. A single Size parameter emulates room reflections from 4m to 50m while Decay can be shaped globally and with independent low and high frequency multipliers, each with adjustable crossovers.

1 Let's create a quick set of loops. In this case we using Falcon's search engine to find the loops from entire our soundbanks such as Mayhem of Loops. Navigate to it and create new parts for loop files by dragging them over to the parts list. If the loops aren't playing automatically hit Play in Falcon's header or in your DAWs transport if you're using Falcon as a plugin.

Now that we have some loops let's put SparkVerb on an Aux channel. This will allow us to use one instance of SparkVerb for as many parts as we like. Click the **MIXER** button in Falcon's header to change the current view. Now we can see our 3 instrument parts on the left and 4 aux channels and the master on the right.

2

3 Click the **+** button at the top of the **AUX1** channel and select **REVERB > SPARKVERB > 05 - ROOM > AMBIENCE ROOM**, you should now see the SparkVerb interface at the top.

At the center of the SparkVerb interface is the spectral display. frequency is mapped across the X axis (low to high) and decay time along the Y axis.

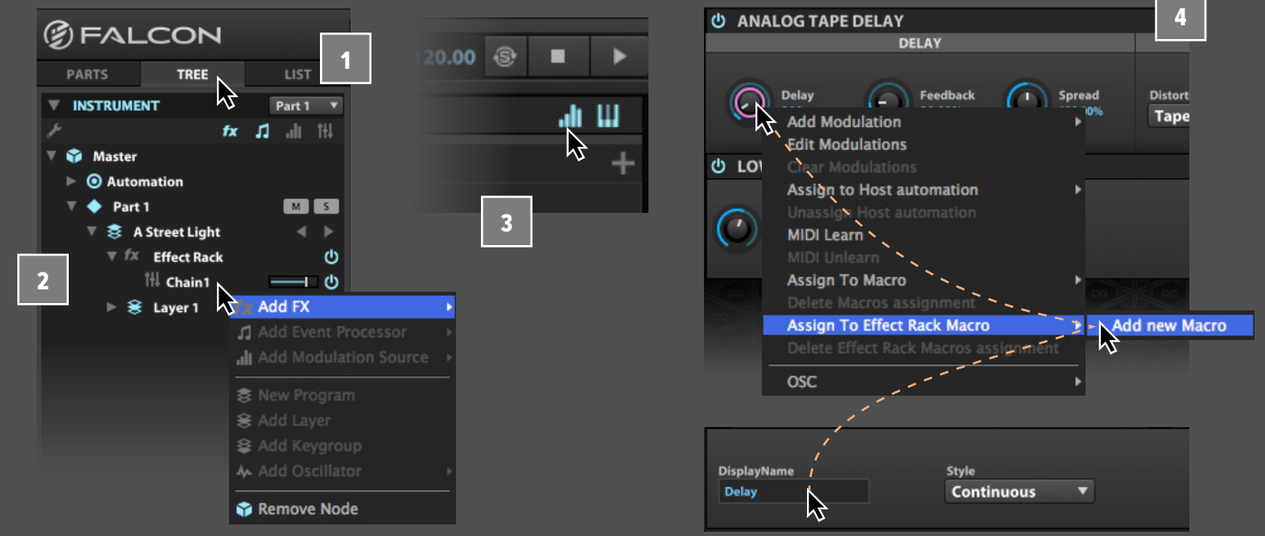
4 Since we've instanced SparkVerb on an effect bus let's turn the **MIX** amount up to "**100%**", as we'll control the wet amount with individual track sends.

5 Let's send some signal from our 3 loops over to SparkVerb. Set the Aux1 sends for them as "**-16DB**", "**-30DB**" and "**-60DB**", respectively. We can now hear all three tracks effected by the reverb.

6 Now, finally, lets toggle SparkVerb's **POWER** button on/off to A/B the results. From here, we can continue exploring SparkVerb's settings and if we find one that works well that we want to save, we can make a preset to recall later.

You can also create interesting textures from SparkVerb's decay with its Freeze function. For example, while a drum loop is playing, press the Freeze button just after a snare hit — the decay will hold indefinitely, even if the drum loop stops. That decay will be held until Freeze is disabled.

LEARNING FALCON 203: **USING EFFECT RACKS**



USING EFFECT RACKS

The Effect Rack is a special kind of effect module that creates a new effects path inline where the Effect Rack module is added, similar to patching in an external rack of effects from a mixing console. Macros can then be added for “front-panel” control of the effects in the Effect Rack’s FX chain.

To see it in action load a program, then switch the **EFFECTS** Tab and add an **EFFECT RACK**.

1 When the Effect Rack is added, it doesn’t add any audio processing on its own; instead, it creates a new FX chain. Navigate to the **TREE** tab and toggle open the our new Effect Rack. Inside we see ‘Chain 1’, can right-click this chain to add as many effects as we like.

2 Let’s add a delay and a filter to chain 1, **ANALOG TAPE DELAY** and **LOWPASS 24**.

3 Enable the Modulation Editor by clicking the **VISIBILITY TOGGLE** in the **EDIT TOOLBAR**.

4 Now right-click the **DELAY** knob in the Analog Tape Delay effect and select ‘**ASSIGN EFFECT RACK MACRO > ADD NEW MACRO’**. In the Editor below you will see the Macro modulator we just created along with all of its editable parameters. Locate a field titled ‘**DISPLAYNAME**’, double-click and rename it to ‘Delay’. Do the same for the filter cutoff, renaming it ‘**CUTOFF**’.

5 Now let’s head back to the Effect Rack “front panel” by selecting the Effect Rack in the Tree view. Now we see our two macros and the names we set for them.

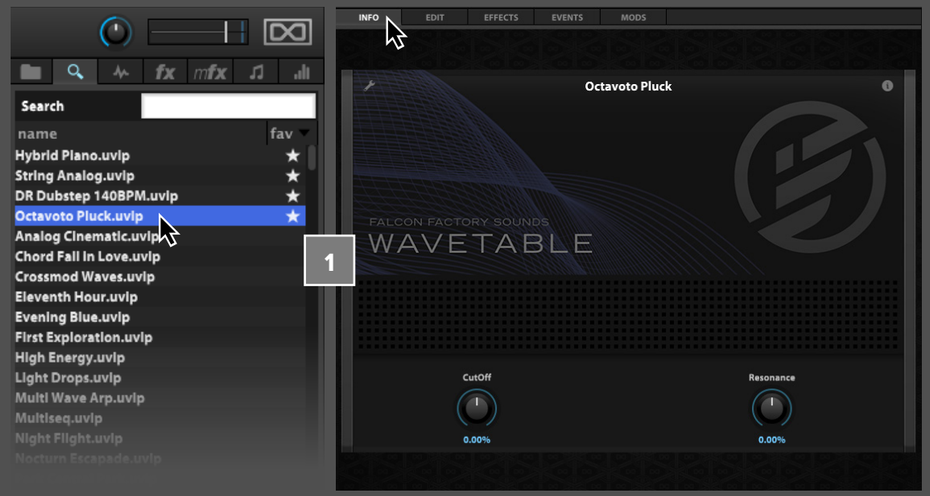
6 If you want to change the layout of the Macro panel hit ctrl+E on Windows or comand+E on Mac to enter **EDIT MODE**. Select both macro knobs and right-click over the background for helpful layout options. You can also add a custom background by dragging an image onto the panel. Hit ctrl+E or comand+E again to exit Edit mode when your changes are complete.

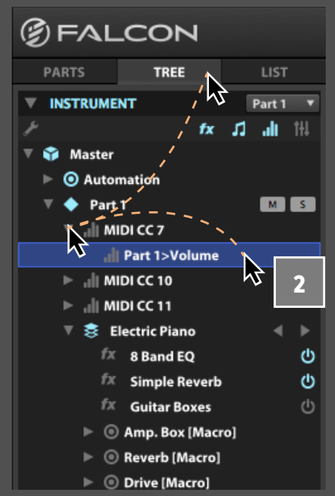
7 To set the overall level of the FX chain, adjust the FX Chain’s **VOLUME SLIDER** in the Tree view.

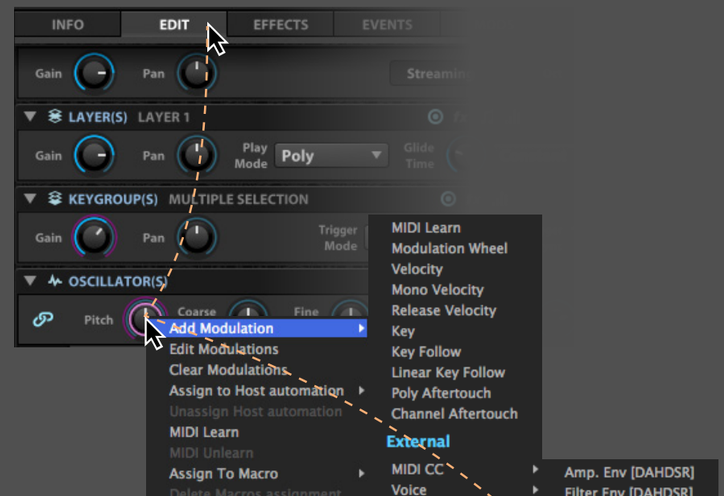
We can even add whole additional FX chains to a single Effect Rack for parallel processing. To do this right-click the Effect Rack in Tree view and select ‘**ADD FX CHAIN**’.

If you save an Effect Rack preset, the settings for all of its loaded effects will also be saved along with all macro assignments and customizations.

LEARNING FALCON 204: **USING MACROS**







USING MACROS

Macros are intermediary modulation sources which modulate other controls, useful for placing a small number of important controls on the “front panel” of a patch. Any parameter that can be modulated can be assigned to a macro, and single macros can drive any number of parameters.

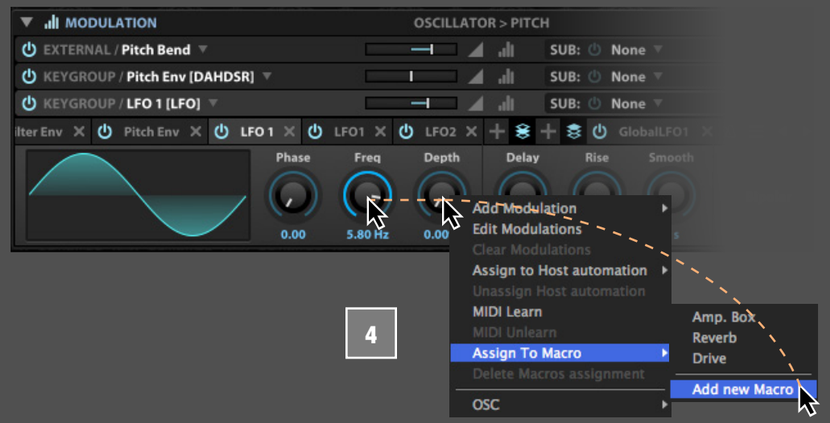
1 Let’s start with a program that already has some macros assigned, such as the **OCTAVOTO PLUCK** program from the **FALCON FACTORY** soundbank. Load the program, then switch to the **INFO** tab in the Main view.

There are two types of macros: continuously-adjustable knobs and on/off toggle buttons. You can adjust these controls just like any other knobs or buttons, and even modulate the macros with other mod sources. For example, you might want to make MIDI or Host Automation assignments so you can control the macros from your MIDI keyboard or host application.

2 To see which parameters the macros are assigned to, switch the left sidebar to the **TREE** view. Press the **ARROW** next to the macro name to expand it and display its assignments.

Let’s create a new macro. To create an adjustable vibrato, we can modulate keygroup pitch with an LFO and assign a macro to control the depth of the LFO.

3 Switch to the **EDIT** view, right-click the Keygroup **PITCH** knob, and choose **ADD MODULATION > KEYGROUP > NEW LFO**.

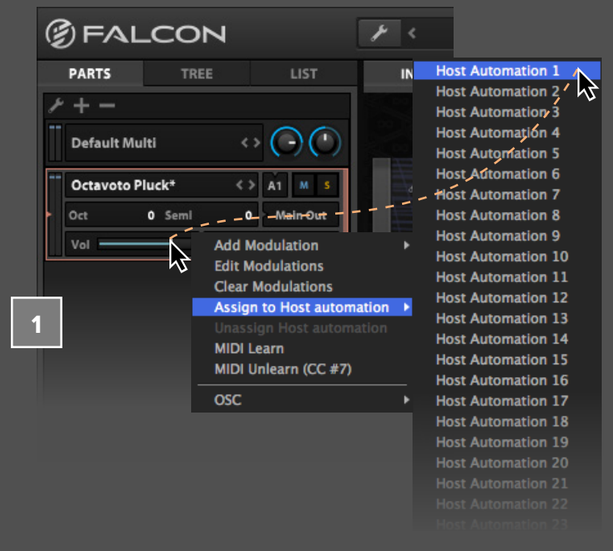


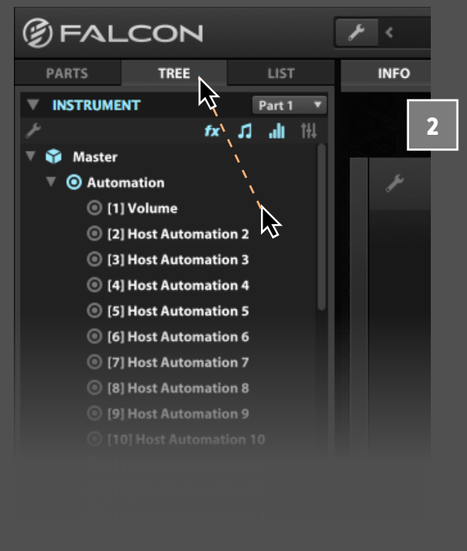
4 On the new LFO, set the **FREQUENCY** to **5.8 HZ** and turn the **DEPTH** knob down to **ZERO**, then right-click it and choose **ASSIGN TO MACRO** > **ADD NEW MACRO**.

5 Switch back to the **INFO** tab, and you'll see the new macro knob. Adjust the **KNOB**, and you can hear the depth of the LFO modulation increasing.

6 To help remember what the macro is modulating, we can give the knob a more meaningful label and move the position to handy of use as well. Press the **EDIT** button in the top left, then move the macro to align existing macros and double-click the label and enter a new name, such as "**VIBRATO**."

You can assign macros one-to-one, for remote control of a single parameter as above, or you can assign one macro to multiple parameters for simple control over complex transformations. For example, you could assign one macro to both filter cutoff and resonance, but with different ratios: 1.0 for cutoff, and -0.5 for resonance. As you turn up the macro knob, it would raise the cutoff frequency but lower the resonance, with the resonance value adjusted by half of the amount that the cutoff value was adjusted.





USING HOST AUTOMATION

In addition to Falcon's extensive internal modulation sources, when using Falcon as a plug-in you can take advantage of your host application's automation capabilities. Each Falcon instance has 128 automation connections that can be assigned to individual controls.

To make a host automation assignment, right-click a parameter, choose Assign to Host Automation, and choose one of the available items.

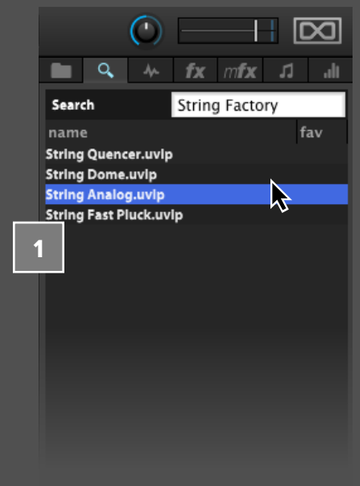
1 For example, right-click Part 1's **VOLUME** slider and choose **ASSIGN TO HOST AUTOMATION > HOST AUTOMATION 1**.

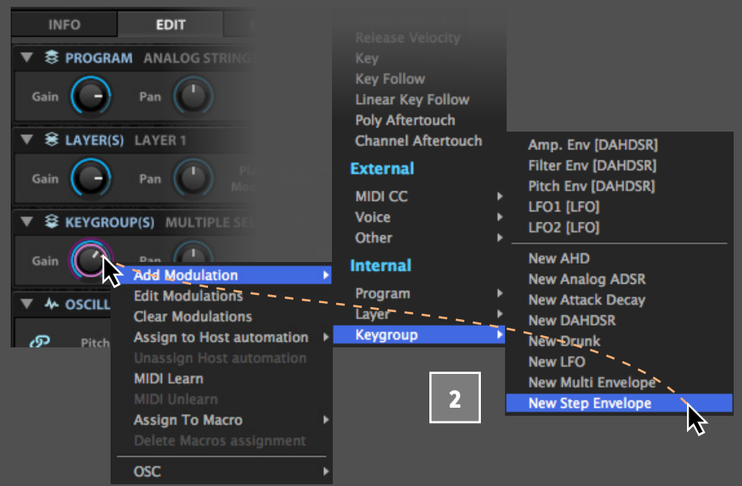
2 The name of the assigned parameter will be displayed in the **TREE** view.

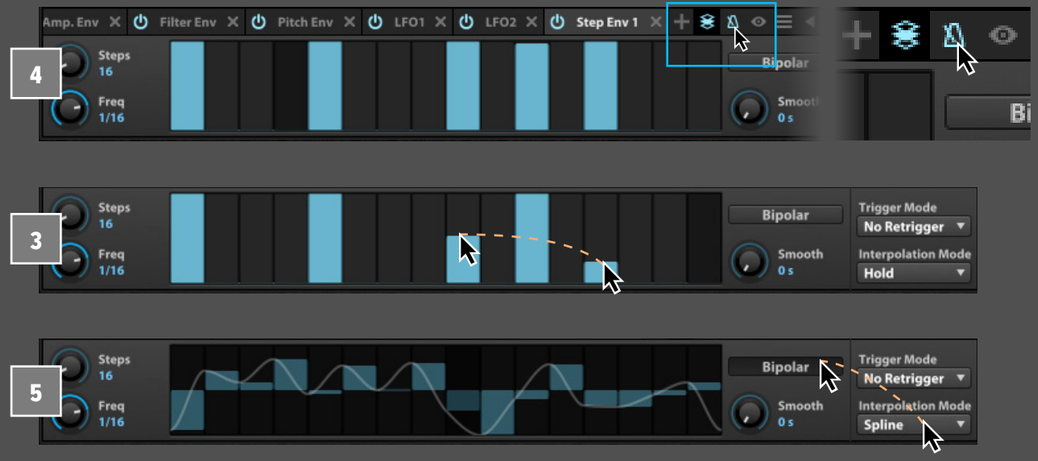
3 If your host application supports it, the name of the assigned parameter may be displayed in the host application. Otherwise, the numbered parameter name (such as "Host Automation 1") will be displayed.

Each host automation connection can be assigned to one parameter at a time. If you assign a host automation connection that's already assigned to a different control, the original assignment will be removed when the new assignment is created. If you want to create a one-to-many connection try first setting up a macro and then assigning the macro control to host automation.

LEARNING FALCON 206: **USING STEP ENVELOPES**







USING STEP ENVELOPES

The Step Envelope is a programmable envelope for creating time-based effects, and makes a great programmable pattern sequencer.

1 A good way to understand the Step Envelope is to use it to modulate keygroup gain. Load the **STRING ANALOG** from the **FALCON FACTORY** soundbank.

2 Right-click the **KEYGROUP GAIN** knob and choose **ADD MODULATION > KEYGROUP > STEP ENVELOPE**. Play a few notes, and you'll hear the signal gated on the empty steps, and full volume on the steps with full bars.

Each step doesn't have to be fully on or fully off, however — you can continuously adjust the value of each step between the two.
Adjust the value of a few steps to be **HALF** or **QUARTER**, and you'll hear an effect similar to delay feedback taps. You can also apply smoothing between steps to avoid transitions that are too abrupt, pop/click, and so on.

3

You can also configure the number of steps, as well as the length (in Hertz, or in bars/beats when the module is tempo-synced). When the Step Envelope is tempo-synced, the number of steps is often set to a multiple of the number of beats in the current time signature. However, non-multiples can result in interesting, shifting patterns that don't obviously loop.

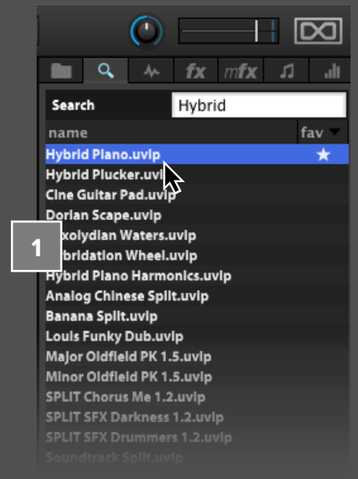
4 To enable **TEMP-SYNC** for the Step Envelope click the sync icon in the **MODULATION HEADER**.

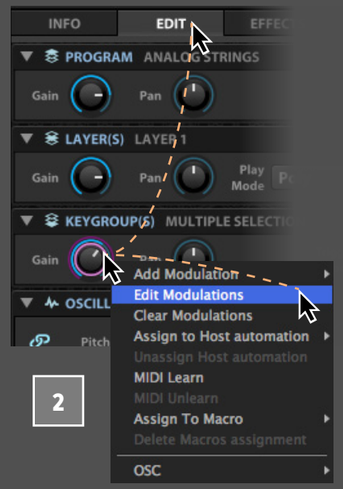
Tempo-syncing can be especially helpful if the envelope is modulating pitch, as can be the Bipolar option. Enabling Bipolar mode puts zero in the center and values can step above to +1 or below to -1. To set the pitch range for the envelope, adjust the modulation ratio. For example, with a ratio of +12 and the Bipolar option enabled, the envelope with modulate ±1 octave (12 semitones).

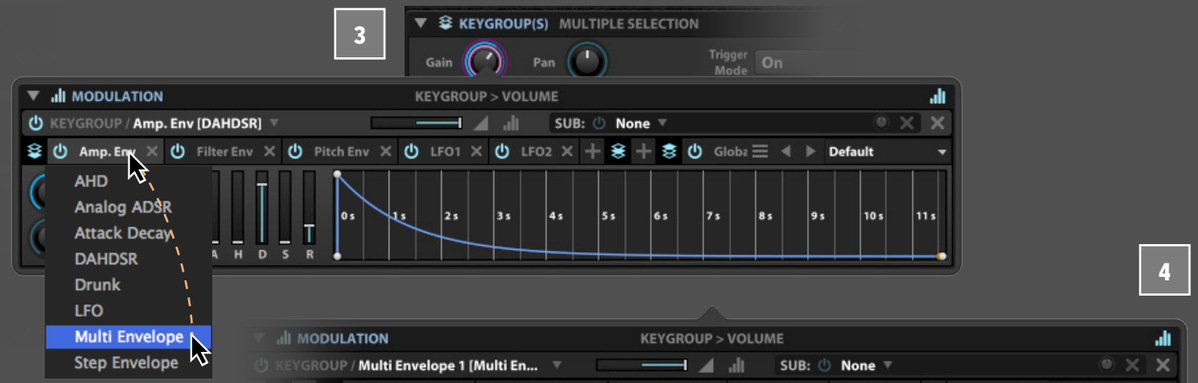
5 You can also create LFO-like patterns that glide smoothly from step to step. With Interpolation Mode set to **SPLINE**, a continuous line is interpolated from the individual bars, creating a continuously variable modulation source that's suited for pitch sweeps, wobbles, and so on.

Be sure to explore the Step Envelope preset folders, as they contain over 1,000 ready-to-use patterns.

LEARNING FALCON 207: **USING MULTI ENVELOPES**







USING MULTI ENVELOPES

The Multi Envelope is an envelope with a user-defined shape, consisting of any number of points. This allows for truly customized envelopes beyond classic DAHDSR envelopes, such as sweeps that evolve over a long period of time or looped LFO-like shapes.

1 A good way to understand the Multi Envelope is to use it to modulate keygroup gain. Load the **HYBRID PIANO** from the **FALCON FACTORY** soundbank.

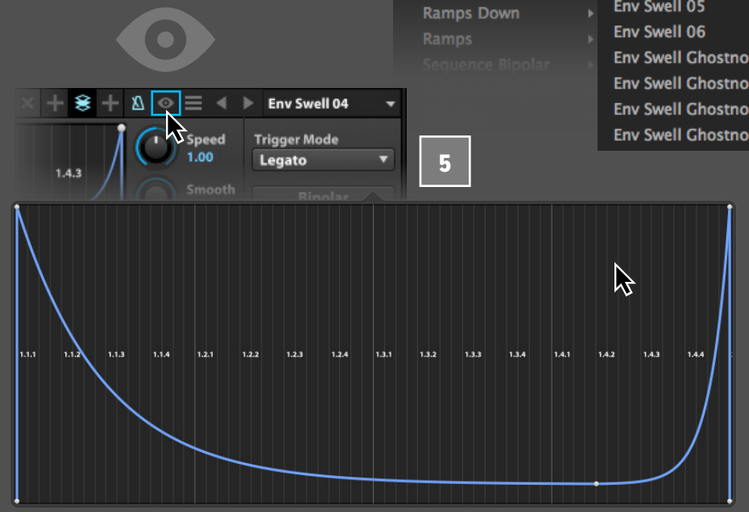
2 Go to the **MAIN > EDIT** view, right-click the **KEYGROUP GAIN** knob and select **EDIT MODULATIONS**.

3 A pop-up editor will appear showing all of the modulation sources linked to the control. Right-click the **AMP. ENV.** name and replace it with a **MULTI ENVELOPE**.

4 Now let's load a Multi Envelope preset, use the **PRESET MENU** to select **ENVELOPES ONE SHOT > ENVELOPE SWELL**, and play a few notes.

To change the envelope shape, grab an existing point and drag it, double-click to insert a new point, or Shift–right-click to remove a point. You can also drag the lines between the points to adjust the curvature of the line.

5 If you'd like a bigger canvas to work on, press the "**EYE**" button next to the Preset File menu.



USING OSC (OPEN SOUND CONTROL)

Open Sound Control is a protocol used to communicate between different computers and other audio devices. OSC is commonly used as a way for remote software control, such as from a central sequencer that's driving Falcon installations on multiple networked computers, or for touchscreen control from a wireless mobile device.

1 To start using OSC in Falcon the OSC server needs to be enabled. Go to Falcon's **PREFERENCES** window, select the **OSC** tab, and enable **OPEN SOUND CONTROL SERVER**. This will make Falcon discoverable on the network by other OSC-enabled applications. Falcon will automatically negotiate a unique name and port number.

Once enabled, Falcon can be controlled remotely by any application or device that supports OSC.

2 Each one of Falcon's parameters that can be controlled externally has an OSC Path that uniquely identifies it, such as "/uvi/Part 3/Program/Layer 1/Gain". When a parameter is right-clicked, the contextual menu displays the parameter's OSC path.

3 There is also a convenient shortcut provided for copying the parameter's OSC path to the clipboard. You can then use that OSC path in any OSC-equipped application to control that parameter.

LEARNING FALCON 300:
EVENTS

TOPICS:

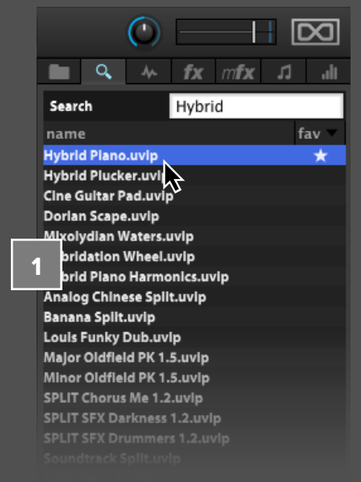
We've looked at ways to create and apply effects to sounds and we've looked at ways to modulate them, now lets take a look at Event processors.

Event modules can generally be thought of as MIDI effects, processing incoming MIDI signals or generating them, though with the Scipt Processor it's possible to extend that paradigm to include extremely sophisticated creative devices and interface customization.

The most commonly used Event processors are the Arpeggiator, Micro Tuner and MIDI filters like the Chorder, Harmonizer and Strum. These are easily mastered devices providing great performance utility.

In the following chapter we'll take a look at a few of these devices and some of the ways that we can effectively implement them in our own projects.

LEARNING FALCON 301: **USING THE ARPEGGIATOR**



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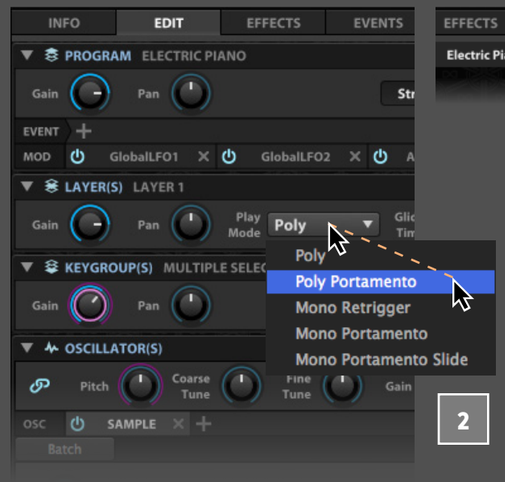

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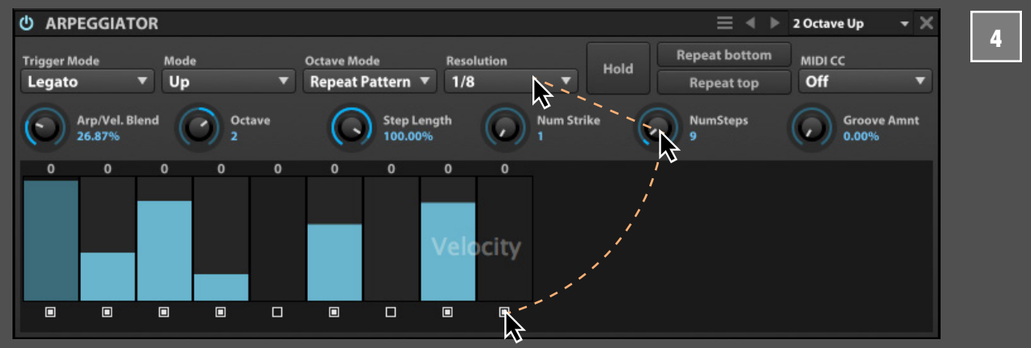


4

USING THE ARPEGGIATOR

The Arpeggiator is a classic synthesizer effect which modifies the incoming notes and plays them in a programmable pattern to create a dynamic sequence.

1 Let's start by loading the **HYBRID PIANO** program from the **FALCON FACTORY** soundbank.

2 In **EDIT** mode change the play mode to **POLY PORTAMENTO**.

3 Switch over to the **EVENTS** tab, hit the **+** button and select the **ARPEGGIATOR > ARP BASIC > 2 OCTAVE UP** preset.

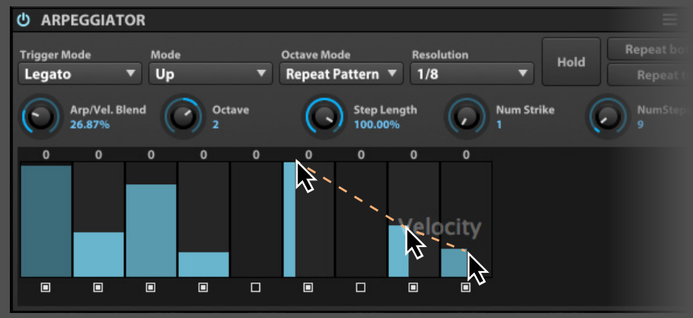
Since the Arpeggiator is always tempo-synced, the number of steps is often set to a multiple of the number of beats in the current time signature. However, especially when layered, non-multiples can result in interesting patterns without obvious loop points.

4 Let's slow the **SPEED** down to **1/8** and add a few more steps to this pattern. Change **NUMSTEPS** to **9** and enable step 9 by clicking the **STEP STATE** box underneath it, so that steps 1, 2, 3, 4, 6, 8, and 9 are On and steps 5 and 7 are Off.

5 Now let's customize the value of these steps, adjust the **VELOCITY** amount by click-dragging in the graph, and modify the **GATE** by shift-click-dragging.

6 To give the pattern a more defined groove let's change **NUM STRIKE** to **2** and shift-click the **STEP STATE** button on step **7** to merge it with the step before it.

5



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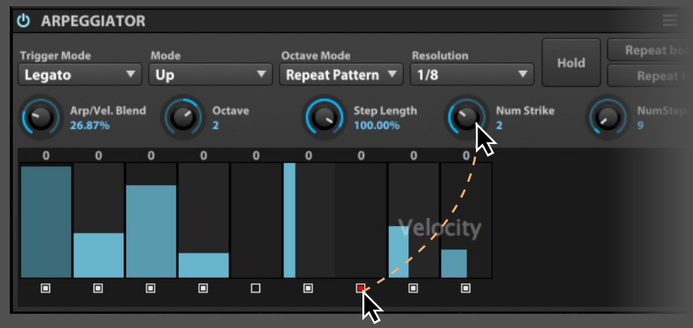
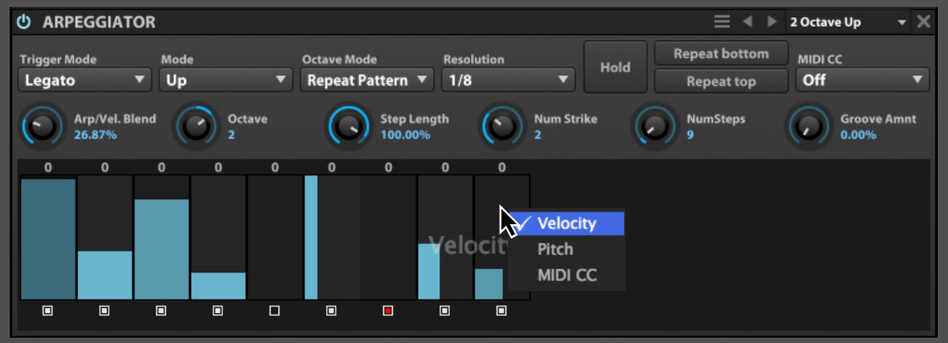


The number of notes played is a combination of the Octave, Repeat Top, Repeat Bottom, and Num Strike parameters. The Octave parameter takes each triggered note and adds octaves of the same note above or below it. Repeat Top and Repeat Bottom will repeat the lowest or highest played note an additional time. Num Strike set the number of consecutive strikes for every note.

The play mode determines how the arpeggiator cycles through the played notes (and any repeated notes and octaves). For example, if the play mode is “Up & Down”, the lowest note will be played first and cycle up to the highest, then cycle down to the lowest. So if C2, F2, and G2 are held, they will be played as C2, F2, G2, F2, C2, F2, and so on. The “Chord” play mode is notable because all held notes are played at once, rather than cycled; the on/off state, velocity, and pitch values are still applied.

7



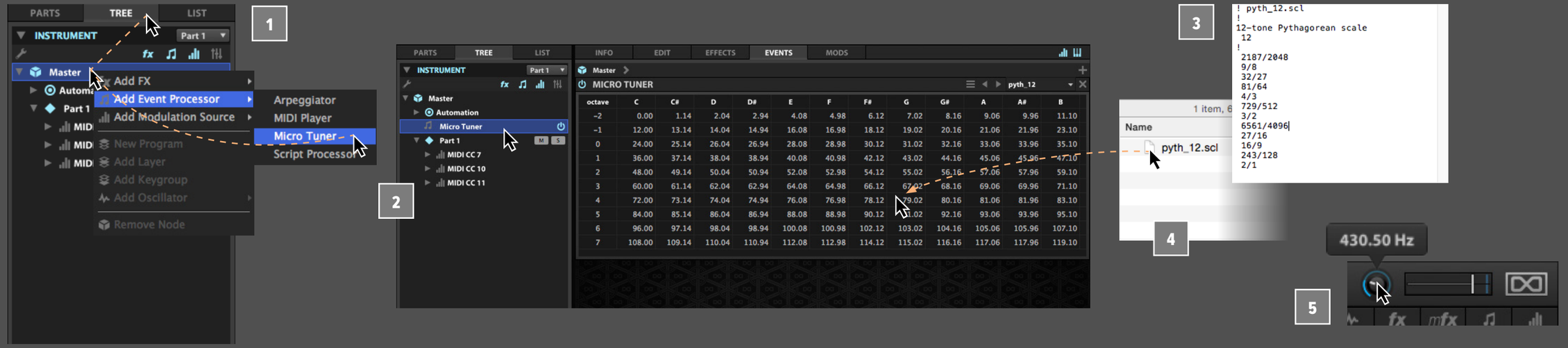
7

The Arpeggiator has three layers: Velocity and Pitch for notes, and MIDI CC for generating a MIDI CC as an additional control signal. Right-click the step grid to change which layer is displayed. The step state (on, off, or merged) is shared between the three layers, but the velocity, pitch, and MIDI CC value for the step is independent.

The Pitch layer has a range of ±48 semitones (4 octaves), with zero in the center. The pitch value of each step is also displayed above the step grid, as is always visible regardless of the layer you’re currently viewing.

The MIDI CC layer is useful for generating an additional modulation source, especially one that is also cyclical. For example, you could modulate the cutoff frequency of a filter in sync with the note pattern of the arpeggiator; in this way, the MIDI CC layer can be thought of as a kind of user-defined LFO. To choose which MIDI CC is generated by the Arpeggiator, set the MIDI CC menu.

LEARNING FALCON 302: **USING THE MICRO TUNER**



USING THE MICRO TUNER

The Micro Tuner allows the exploration of many unique and interesting temperaments, both modern and classical. It also allows ethnic instruments to be played in their natural tuning.

For this example we're going to create an instance of Falcon in 12-tone Pythagorean temperament with C4 at 256Hz. Pythagorean tuning is based on a stack of intervals called perfect fifths, each tuned in the ratio 3:2, and creates exceptional harmonics.

1 Navigate to the **TREE** tab, right-click the **MASTER** node and select **ADD EVENT PROCESSOR > MICRO TUNER**. Placing the Micro Tuner at the Master level means that all parts in Falcon will be effected, this is a great way to ensure that any and all instruments loaded or created from here on out will be in tune.

2 Double-click the new Micro Tuner to reveal it in the **EVENTS** editor to the right. In its default state the Micro Tuner doesn't do anything. From here we could load an existing preset, but for this example we're going to use a custom Scala file.

Let's create a new Scala file to describe 12-tone Pythagorean temperament. Create a new text document and paste in the following:

3

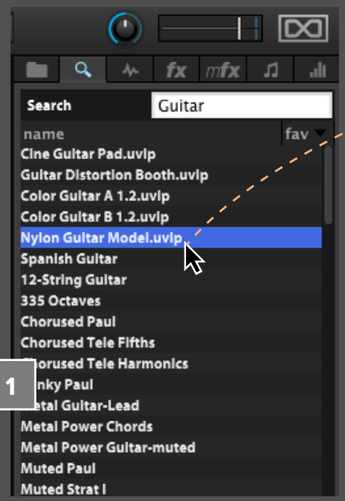
```
! pyth_12.scl
!
12-tone Pythagorean scale
 12
!
 2187/2048
 9/8
 32/27
 81/64
 4/3
 729/512
 3/2
 6561/4096
 27/16
 16/9
 243/128
 2/1
```

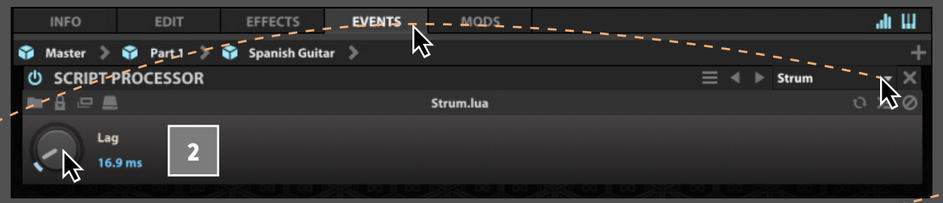
4 Save this document as "**pyth_12.scl**" (UTF-8 encoding) and drag the resulting file onto your Micro Tuner. You can save this as a Micro Tuner preset and it will be available for future projects.

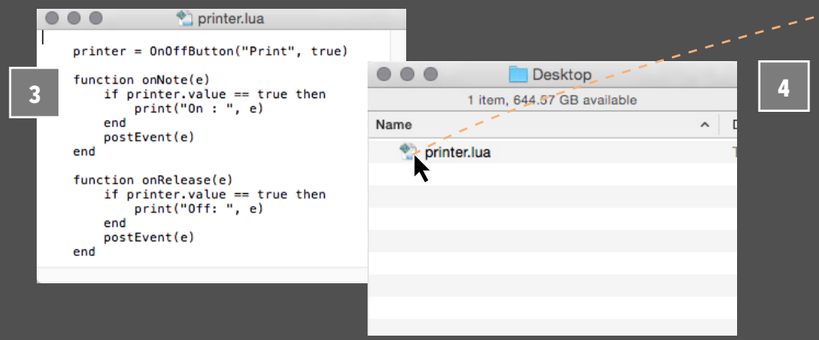
5 Now change the **GLOBAL TUNE** in Falcon's header to **430.5 HZ**. With A4 tuned to 430.5 Hz, C4 will be at 256 Hz. This would be a good time to save out the Multi if you wanted to create a template or even 'Save as Default Multi' if you consistently use a particular tuning.

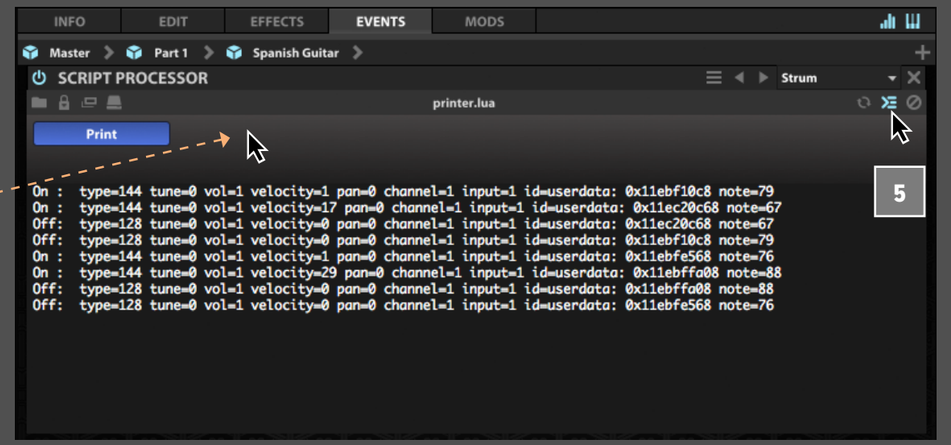
Now lets load a patch to hear the results, something with a long release, try **PADS > BEAUTY IS SIMPLE 2** from the **FALCON FACTORY** soundbank.

There are many Micro Tuner preset that come with Falcon, and that can be expanded easily with custom Scala files.









USING THE SCRIPT PROCESSOR

The Script Processor module provides custom event processing capabilities, using the Lua-based scripting language UVIScript.

The Script Processor module has two primary set of controls: the standard controls for interacting with the script itself, and the controls defined by the loaded script (knobs, buttons, menus, and so on).

1 Let's load the Nylon Guitar Model program from the Falcon Factory soundbank. Then go to the **MAIN > EVENTS** tab, add the Script Processor module, then load the **PERFORMANCE > STRUM** preset.

2 This script has one parameter, Lag, with a value range of 1 to 200 ms. Adjust **LAG** and play a chord, and you'll hear the notes played in succession as if strummed rather than triggered all at once.

Falcon includes numerous factory preset scripts for a variety of purposes, such as automatic harmonization, unison voice generation, MIDI CC filtering, and more. You can also write your own scripts to further customize Falcon.

3 Let's start with a simple script that prints some information about each note to the Script Proccessor console. Enter the following code into a text editor and save the file as "**printer.lua**":

```
printer = OnOffButton("Print", true)
function onNote(e)
 if printer.value == true then
  print("On : ", e)
 end
 postEvent(e)
end
function onRelease(e)
 if printer.value == true then
  print("Off : ", e)
 end
 postEvent(e)
end
```

4 In the Script Processor module, press the **LOAD SCRIPT** button on the left and choose the "printer.lua" file.

5 Then enable the "**SHOW CONSOLE OUTPUT**" option, which is generally used for displaying debug messages, and play a few notes—you will see that as each note is triggered and released, a line of information about the note is printed to the console so long as the script's **PRINT** button is enabled. If you disable the Print button, the messages no longer print to the console.

APPENDIX A: SAMPLING OSCILLATORS

Falcon includes 7 sampling oscillators each equipped with a unique feature set suited for a variety of tasks from basic playback, loop slicing, to advanced time stretching and granular processes.

SAMPLE

The Sample oscillator uses the traditional method of audio sample playback. When a sample is triggered at a pitch higher than its base note, the sample is played back more quickly; when below its base note, the sample is played back more slowly.

SAMPLE START set the starting point for playback when the sample is triggered, as a percentage of the time between the Sample Start and Sample End markers in the sample file (see: [Interface > Main > Sample Editor]).

The **INTERPOLATION MODE** set the quality of the transposition. Choosing Lo-fi will reduce the amount of processing needed to transpose the file compared to Standard mode, and likewise choosing Best will increase the processing overhead. (For other styles of transposition, try the other sampling oscillators as well.)

When **ALLOW STREAMING** is enabled, the sample will be streamed from disk if the program has Streaming enabled. When disabled, the sample will always be played from memory and not streamed from disk, even if Streaming is enabled for the program.

REVERSE sets the sample playback mode to reve.

SLICE

The Slice oscillator is ideal for percussive or strongly rhythmic samples which can be sliced into discrete sections. Slices of the sample can be played back in the original order, or rearranged to create new sounds.

TEMPO

To set the loop's tempo, choose its **TIME SIGNATURE** and enter the loop's duration in **BARS** and **BEATS**. The **BPM** field will update as you change the other tempo parameters.

If you'd like to playback the loop at a multiple of its original tempo, use the **TEMPO FACTOR** parameter for coarse speed adjustments (up to 4x faster or slower).

DETECTION

The **MARKERS** setting determines whether to use slices already saved in the file (imported) or the slices you've defined (user markers). Loops in UVI soundbanks will have imported slices, as will common loop formats such as REX and Apple Loop files.

If you choose to create your own slices, use the **SENSITIVITY** slider to automatically detect and create slices. At the far left, slices will be created only by very prominent beats and there will be a small number of slices; at the far right, slices will be created by more subtle variations in the sample and there will be a larger number of slices.

To add a slice manually, double-click in the space between the sample's waveform and the time ruler. You can also add multiple slices at once on divisions of the musical grid by right-clicking, choosing **ADD MARKERS WITH GRID SETTING**, and choosing a beat division such as eighth note.

Existing slices can be moved by clicking and dragging anywhere along the slice. To protect a slice from being edited, right-click the slice and choose **LOCK**. The slice can be ignored by right-clicking it and choosing **MUTE**, or it can be removed entirely with **DELETE**.

PLAYBACK

A single slice can be auditioned by clicking anywhere on its waveform. When a slice is selected, you can also use the forward/back **AUDITION** buttons to audition the next/previous slice. The Audition play and stop buttons can be used to playback the entire file. When

SLICE

AUTOPLAY is enabled, the loop will be triggered when Falcon's playback begins. (This button is the same as the AutoPlay button in the Parts List.)

SYNC determines how the loop interacts with Falcon's tempo and playback position. When set to "position," the sample is played back at Falcon's tempo and also locks to its playback position; in "tempo" mode, only the tempo is matched. When set to "off," Falcon's tempo and playback position are ignored and the sample is played back at its original tempo.

In all Sync modes, the **START** control set the slice where playback begins when the loop is triggered, with zero being the first slice in the loop. The **SPEED** parameter adjusts the loop's playback tempo, up to 50% faster or slower.

For **MAP**, see: Exporting and converting the loop.

EXTENSION

When the loop's playback tempo is slower than its original tempo, you can choose to extend the slices so that the loop is still continuous. With **SLICE EXTENSION** set to **AUTO**, extension of the slices will be configured automatically. When disabled, use the **AMOUNT** and **TIME** parameters to fine-tune how the slices are extended.

ENVELOPE

You can also optionally enable a slice envelope. When enabled with the **ENVELOPE** button, the **ATTACK**, **HOLD**, **DECAY**, **SUSTAIN** parameters adjust an amplitude envelope that is applied to each slice as it is triggered.

EXPORTING AND CONVERTING THE LOOP

The entire loop can be exported as a new audio file with the **WAV** button. When you press on it and drag, it creates a new audio file that can be dragged to your host application or desktop. The new audio file is created with all of the current settings applied: tempo, envelope, etc.

Or, to export the slices with each as an individual audio file, choose **EXPORT** and specify the folder where the samples will be saved. To save a program with the slices mapped to individual keys, press on the **PART** button and drag it to the Parts List or to the desktop or other folder.

If you would prefer to create a new layer in the current program rather than a separate program, press the **MAP** button in the Playback section. This will Mute and MIDI Mute the original layer, and create a new layer with the slices mapped to individual keys.

This will also change the audio drag & drop button to a **MIDI** button. When you press on it and drag, it creates a MIDI file that can be dragged to your host application or desktop. The MIDI file triggers the slices in their original order and timing, which you can then edit for new arrangements of the slices.

STRETCH

The Stretch oscillator pitch-shifts the sample when triggered above or below its root key, but keeps the speed of the sample constant.

The Stretch oscillator will pitch-shift the sample ±2 octaves from its root key. Beyond that range the pitch will be constant, even if the keygroup's key range extends further.

PLAYBACK

SAMPLE START set the starting point for playback when the sample is triggered, as a percentage of the time between the Sample Start and Sample End markers in the sample file (see: [Interface > Main > Sample Editor]).

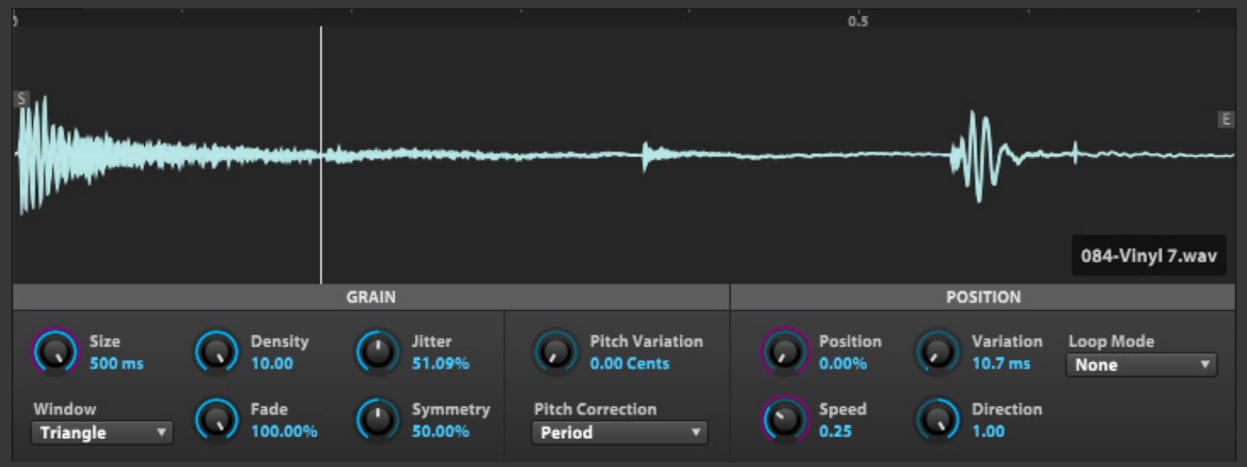
Additionally, when **LEGATO MODE** is enabled, if a new note re-triggers the sample, playback will continue from the current sample position but at the new pitch. With Legato mode disabled, playback will always begin from the sample's start position.

SAMPLE TEMPO

Although the speed of sample playback is constant across its key range, setting the **SYNC** mode to "**TEMPO**" will sync the sample's playback speed to Falcon's tempo. Set the sample's base tempo with the **TEMPO** field, which can be modified with the **TEMPO FACTOR** (± 400%) and **TEMPO FINE** (± 50%) controls.

ANALYSIS

To fine-tune the pitch-shifting, adjust the **GRAIN SIZE** and **SENSITIVITY** parameters. For highly rhythmic or percussive material, try increasing Sensitivity for better transient preservation. Additionally, if a sample contains a solo instrument, try enabling **SOLO MODE** for the best pitch-shifting; for polyphonic samples, turn off Solo Mode.



IRCAM GRANULAR

The IRCAM Granular oscillator uses granular synthesis to create a wide range of sounds. The audio sample is divided into small grains which are then re-combined and played back in new ways to create realistic pitch shifting or as the basis for a textured soundscape.

GRAIN

The **GRAIN** section configures the shape of the grains.

SIZE set the duration of the grains. **DENSITY** determines how many grains will be played at once, with 1.00 representing standard playback. With values less than 1.00, there will be silence between the grains with a rhythmic result similar to tremolo; with values over 1.00, there is increasingly more overlap of grains with a harmonic result similar to a chorus or sometimes a ring modulator. **JITTER** varies the consistency of grain playback timing.

FADE set the amount of the grain affected by the fades of the grain envelope's attack and decay, as a percentage of the full grain size. At the default 100%, the full grain can be faded, which results in a triangle-shaped envelope. At less than 100%, there is a plateau in the middle, resulting in a more trapezoidal envelope.

SYMMETRY changes the skew of the grain window by balancing the grain envelope attack and decay, as percentages of the grain size:

- **0%** set an attack of 0% and decay of 100%; this results in more percussive grains
- **50%** set an attack of 50% and decay of 50%; this is the standard, balanced window
- **100%** set an attack of 100% and decay of 0% means; this results in reversed grains

WINDOW set the shape of the window (an envelope applied to the signal when creating grains); choose from Triangle, Hanning or Welch curves, or Square.

PITCH VARIATION adds randomization to the pitch of each grain, from minor variations of a few cents to an entire octave.

PITCH CORRECTION set how grains will be transposed. The Grain Size option keeps grain size constant, while the Period option adjusts the size of the grain.

IRCAM GRANULAR

POSITION
The **POSITION** section controls determine the playback position in the sample file.

POSITION determines the starting point for playback, as a percentage of the duration between the sample start and end markers. With Speed set at or near zero, this can be used to manually scrub to any location within the file. **POSITION VARIATION** adds randomization to the current position, with a range of zero to 500 ms from the current position.

SPEED set the scrubbing speed factor, with 1.00 as normal speed, zero as staying in place on the current grain, and 10.00 as 10x faster. **DIRECTION** set the direction of scrubbing, from +1.0 for fully forward to -1.0 for fully reverse.

If there is a loop in the audio file, the Loop Mode set how it will be handled:

- **NONE**: The loop will be ignored
- **FORWARD**: The looped section is played forward; when playback reaches the end of the loop, playback begins again from the loop start point
- **FORWARD-BACKWARD**: The looped section is played alternately forward (from the loop start to loop end) and reverse (from loop end to loop start)

IRCAM MULTI GRANULAR

The IRCAM Multi Granular oscillator is a multi-voice variant of the IRCAM Granular oscillator. Each voice can be varied in multiple ways to achieve a range of unison effects.

VOICES

The **VOICES** section set the voice-specific settings. **VOICES** set the number of unison voices. With a single voice, the result will be similar to the standard IRCAM Granular oscillator.

The other Voice controls set relative variations for each voice; **TIME SPREAD** adjusts the timing of each voice's trigger, and **POSITION SPREAD** set the position within the sample file.

GRAIN

The **GRAIN** section shapes the grains themselves. Most of the **GRAIN** parameters are the same for the IRCAM Multi Granular oscillator as the IRCAM Granular oscillator; for details, see: [Appendix A: Modules > Oscillators > IRCAM Granular].

- **SIZE**
- **DENSITY**
- **JITTER**
- **WINDOW**
- **FADE**
- **SYMMETRY**
- **PITCH VARIATION**
- **PITCH CORRECTION**

This module also has additional Grain settings not found in IRCAM Granular:
DURATION VARIATION set the amount of grain size variation. Enable Reverse will reverse the individual grains (not the overall playback direction, which is controlled with Direction).

POSITION

The **POSITION** parameters are the same for the IRCAM Multi Granular oscillator as the IRCAM Granular oscillator; for details, see: [Appendix A: Modules > Oscillators > IRCAM Granular].

- **POSITION**
- **VARIATION**
- **SPEED**
- **DIRECTION**
- **LOOP MODE**

IRCAM SCRUB

The IRCAM Scrub oscillator is similar in usage to IRCAM Granular, with random-access scrubbing and speed/direction control, but uses the same top-quality algorithm as the IRCAM Stretch oscillator. As with IRCAM Stretch, this requires more processing power than the standard granular oscillator.

PLAYBACK

The Playback parameters are the same for the IRCAM Scrub oscillator as the IRCAM Granular oscillator; for details, see: [Appendix A: Modules > Oscillators > IRCAM Granular > Position].

- **SPEED**
- **POSITION**
- **DIRECTION**

ANALYSIS

The Analysis parameters are the same for the IRCAM Scrub oscillator as the IRCAM Stretch oscillator; for details, see: [Appendix A: Modules > Oscillators > IRCAM Stretch > Analysis].

- **WINDOW**
- **PADDING**
- **OVERLAP**

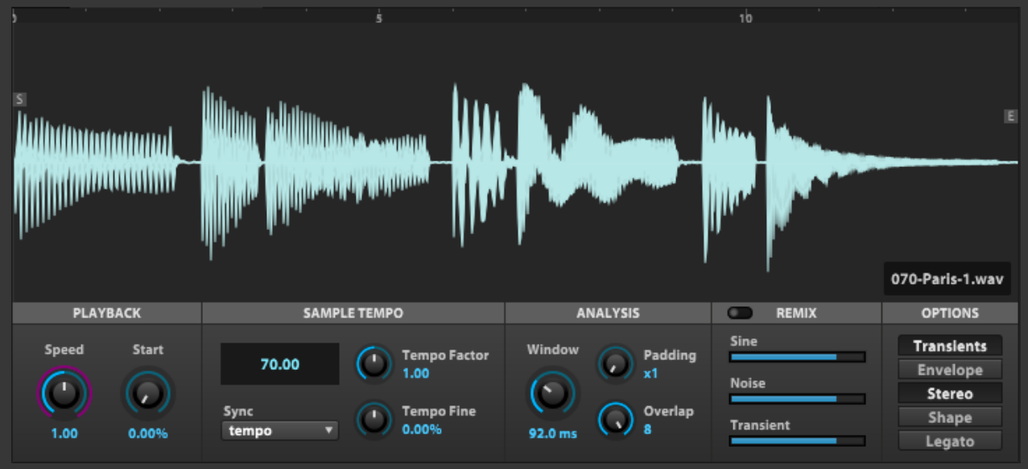
REMIX

Remix mode separates the signal into 3 discrete components and allows you to mix and automate their levels. The 3 signal components are **SINE** (harmonics), **NOISE** and **TRANSIENTS**.

OPTIONS

The Options parameters are the same for the IRCAM Scrub oscillator as the IRCAM Stretch oscillator; for details, see: [Appendix A: Modules > Oscillators > IRCAM Stretch > Options].

- **TRANSIENTS**
- **SHAPE**
- **ENVELOPE**
- **STEREO**



IRCAM STRETCH

The IRCAM Stretch oscillator is similar to the standard Stretch oscillator, but uses very high quality PhaseVocoder time-stretch and pitch-shifting with transient and envelope preservation. This requires more processing power than the standard pitch-shifting used in other oscillators, so it is best used when the source material requires the highest quality pitch shifting.

PLAYBACK

SPEED set the scrubbing speed factor, with 1.00 as normal speed, zero as staying in place on the current grain, and 10.00 as 10x faster. **SAMPLE START** set the starting point for playback when the sample is triggered, as a percentage of the time between the Sample Start and Sample End markers.

SAMPLE TEMPO

The tempo parameters are the same for the IRCAM Stretch oscillator as the standard Stretch oscillator; for details, see: [Appendix A: Modules > Oscillators > Stretch > Sample Tempo].

ANALYSIS

WINDOW set the size of the sampling window for grain size. Grain size is optimally set to a size proportional to the fundamental note of the sample, with grain size twice the duration of the fundamental. **PADDING** set the amount of oversampling, to x1 (no oversampling), x2, or x4. As oversampling is processor intensive, it's recommended to apply oversampling as little as is necessary to reduce unwanted artifacts. Often, no oversampling will be needed. **OVERLAP** set the relative amount of grain overlap. As with oversampling, higher values are more processor intensive.

REMIX

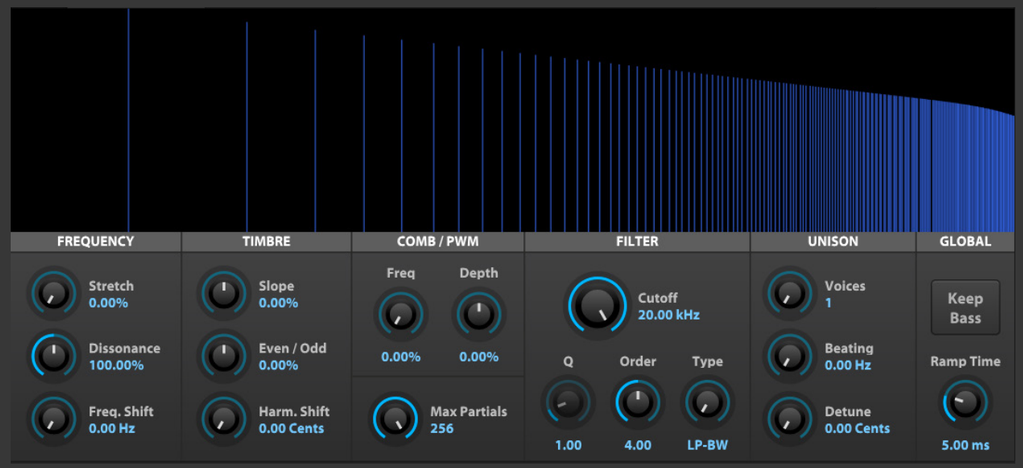
Remix mode separates the signal into 3 discrete components and allows you to mix and automate their levels. The 3 signal components are **SINE** (harmonics), **NOISE** and **TRANSIENTS**.

OPTIONS

- **TRANSIENTS**: Transient preservation; helpful for highly rhythmic or percussive samples
- **ENVELOPE**: Envelope preservation; helpful for avoiding unwanted pitch artifacts with some samples
- **STEREO**: Phase locks between stereo channels
- **SHAPE**: Shape preservation; helpful for preserving the character of voices and other monophonic sounds
- **LEGATO**: New voice playback position will start where currently playing voices are located

APPENDIX A: SYNTHESIS OSCILLATORS

Falcon includes 13 synthesis-oriented oscillators including featured Additive, VA, analog stack, percussion, noise, organ, FM, Texture, wavetable and a physical string modeling oscillator.



ADDITIVE

An easy-to-use additive oscillator inspired by classic subtractive synthesis, with additive twists like partial stretching, frequency shifting, fractional order filtering, even/odd harmonic control, continuous morph from square to saw and more...

MAX PARTIALS set the maximum number of harmonics For example an A2 note has 200 harmonics for a sampling frequency of 44.1kHz. It can be used either for sound design to limit the spectrum or to control the amount of CPU which is proportional to the number of partials.

FREQUENCY

STRETCH set the amount of inharmonicity (partial stretching) of the partials. This is similar to the one present in stiff-stringed instruments like the piano or the guitar, great to spice up static spectrums thanks to the dispersive behaviour.

DISSONANCE disturbs the harmonic series according to the law fn = f * (1 + n * dissonance)

- At 100% the partials are harmonics: f * (1 2 3...)
- At 200% we only have odd harmonics: f * (1 3 5 7)
- At 50% the partials are harmonic but interlaced with the odd partials of its (missing) sub-octave: f * (1 3/2 2 5/2 3) = f * (1 2 3...) + f/2 * (3 5 7...)
- For irrational amounts, the partials are inharmonics

FREQUENCY SHIFT transposes the spectrum by a fixed amount in Hertz, making all the partials inharmonic

TIMBRE

SLOPE set the Slope / Tilt of the Spectrum

- The default position decays as 1/f and generates a sawtooth wave
- At +100% generates a unipolar pulse train with flat spectrum
- At -100% generates a parabolic wave decaying as 1/f^2 (or a triangle wave when even harmonics are ommited (see the Even/Odd parameter)

EVEN/ODD controls the levels of even and odd harmonics

- At +100% removes even harmonics and generates a square wave by default
- At -100% removes odd harmonics and results in the same waveform at the octave e.g. (2f 4f 6f ...) = 2(f 2f 3f ...)

HARMONICS SHIFT simulates transposition of the spectrum up to +48 semitones, but forces the resulting partials to stay in harmonic relation with the fundamental frequency
This can be compared to (soft-)hard-sync of analog oscillators

ADDITIVE

COMB/PWM
FREQUENCY set the relative frequency of a comb filter applied to the harmonic series of the oscillator
This is useful to simulate PWM (Pulse Width Modulation) by sweeping the frequency of notches in the spectrum
DEPTH set the amound of cancellation of the Comb Filter

FILTER
CUTOFF set the cutoff frequency of the fractional order filter
Q set the resonance of the filter (available according to Filter Type)
ORDER adjust the order / slope of the filter
This includes fractional filter slopes from 0.0 to order 8.0 (48dB/octave) that can not be achieved with traditional filters
TYPE set the type of filter among Butterworth Low-pass, Band-pass, High-pass (no Q) and Resonant Low-pass, Band-pass, High-pass

UNISON
VOICES set the number of unison voices
BEATING when Unison is activated, set partials are shifted by a fixed amount in Hertz
This results in natural built-in Amplitude Modulation (with no LFO involved) whose frequency can be controlled by the Beating frequency. (Only possible with additive synthesis)
DETUNE set the detuning in cents of each unison voice

GLOBAL
KEEP BASS forces the fundamental frequency of the oscillator to be preserved
Some spectral modifications like Comb or HarmShift, may result in cancellation of the fundamental frequency which is not always desired. SafeBass retains the fundamental frequency as a reference point while the remaing parts of the spectrum are being processed.
RAMP TIME set the Ramping time between amplitude changes

ANALOG

The Analog oscillator is a classic virtual analog synthesizer.

The Analog section contains the primary oscillator controls. **WAVEFORM** set the shape of the waveform; choose from saw, square, triangle, sine, noise, or pulse. **PWM** (pulse width modulation) modifies the shape of the waveform, and is often modulated with an LFO. **START PHASE** adjusts the point in the waveform at which playback will begin, and **POLARITY** reverses the polarity of the waveform.

The Hard Sync section determines the phase sync between voices. When **SYNC** is enabled, voices are phase-synced to a control oscillator that is not displayed or heard; **SHIFT** set the amount of drift from the control oscillator.

The Unison section set the number of voices and how they will be modified. **VOICES** set the number of simultaneous voices, and **STEREO** toggles between mono and stereo. **PHASE SPREAD** set the style of phase spread for the voices. When stereo is enabled, the **STEREO SPREAD** knob controls the amount of stereo spread and the menu chooses the style of stereo spread. The **DETUNE** knob and menu adjust the amount and style of pitch adjustment to each voice.

ANALOG STACK

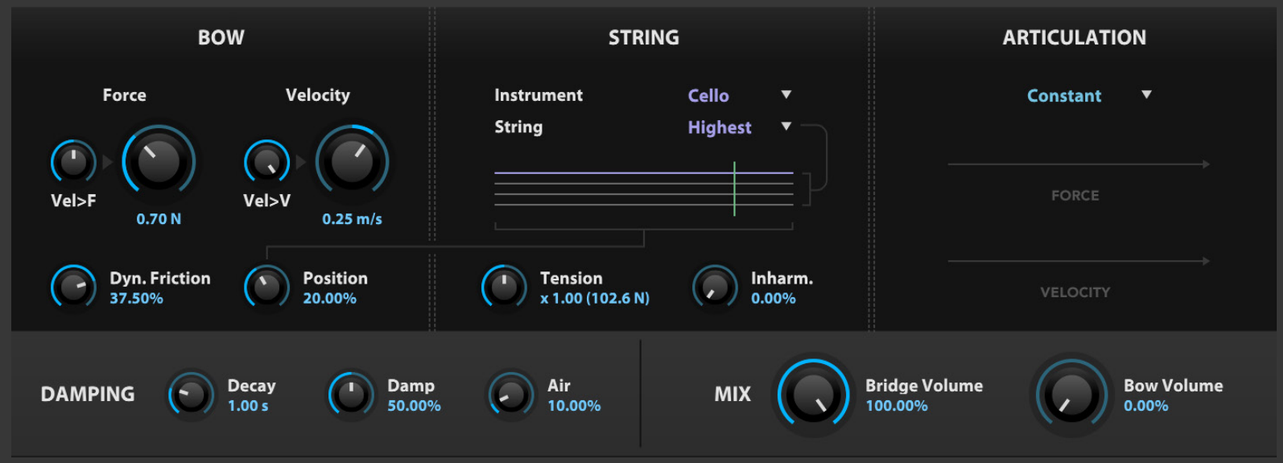
The Analog Stack module is similar to the Analog oscillator, but designed specifically for easily layering multiple oscillators. Each Analog Stack module contains eight oscillators.

Each oscillator has a subset of the controls available on the full Analog oscillator: **ENABLE/DISABLE**, **WAVEFORM SHAPE**, **PWM**, **START PHASE**, and **POLARITY**. For details on those parameters, see: [Appendix A > Oscillators > Analog].

Additionally, oscillators 2-8 have an **SYNC TO OSC 1** option to sync their phase to oscillator 1.

The Mixer section adds **GAIN** and **PAN** controls for balancing the level and stereo placement of each oscillator.

The Transposition section has four controls for adjusting each oscillator's pitch: **OCT** and **SEMI** for MIDI transposition, and **CENTS** and **PITCH** for audio transposition.



BOWED STRING

A bow and string emulation, Bowed String provides in-depth control over numerous articulation modes, capable of creating a variety of tones.

BOW

This section controls the bow action of the instrument. **FORCE** sets how bow pushes the string and **VELOCITY** controls bowing speed. **VEL > F** and **VEL > V** set MIDI velocity modulation amount of force and velocity. **DYN. FRICTION** controls the friction factor of the bowing action. **POSITION** set s the bowing position of strings.

STRING

This section controls the string parameters of the instrument. Choose **INSTRUMENT** type: Violin, Viola and Cello from the menu, and select the **STRING** lowest, low, high and highest from the menu. **TENSION** multiplies the tension factor of the string. **INHARM.** sets the inharmonisity amount when bowing happens.

ARTICULATION

Set the articulation mode from the menu: Constant, Sautillé, Fast Martelé, Staccato, Tremolo, Detaché, Accentue, Bouncing and Manual to play. Additional parameters vary by mode.

Articulation Parameters:

- Stroke Frequency sets the stroke speed/frequently
- Stroke Pulse Width sets the length balance of the stroke up and down
- Stroke Phase Offset sets the stroke start point
- Stroke Duration sets the length of the stroke
- Stroke Attack sets the attack time of the stroke
- Stroke Release sets the release time of the stroke
- Boucing Damp sets the damping factor of the boucing stroke
- Manual Bow for manual control of the bow

DAMPING

Sets the damping factor of the instrument body. **DECAY** sets the decay time of the low frequencies. **DAMP** changes the amount of viscoelastic damping relatively. **AIR** changes the frequency of the air radiation relatively.

MIX

Set the **BRIDGE VOLUME** and **BOW VOLUME** individually.

DRUM

The Drum oscillator is designed for creating percussive sounds. There are two sound sources: a pitched oscillator and a noise generator.

OSCILLATOR

The pitched oscillator begins with a **WAVEFORM SHAPE**; choose from sine, triangle, saw, or pulse. Set the base pitch of the oscillator with **FREQUENCY**, and then use the **PITCH MODULATION** controls to further adjust it. **DEPTH** set the amount of modulation in semitones, and **RATE** determines how quickly that pitch range is modulated. The **SHAPE** of the modulation can be exponential (a rapidly decaying envelope), sine (traditional up and down LFO), or noise (semi-random walk).

The **AMPLITUDE ENVELOPE** is a simple AD envelope, with **ATTACK** and **DECAY** parameters.

NOISE

The Noise generator provides a **FILTER**. The Filter **TYPE** can be set to low-pass, band-pass, or high-pass, and both **CUTOFF FREQUENCY** and **Q** can be adjusted.

The **AMPLITUDE ENVELOPE** offers **ATTACK** and **DECAY**, same as the pitched oscillator. Additionally, you can choose a **DECAY STYLE** of exponential or linear; exponential decay is more rapid at first, while linear decay is a constant rate.

MIXER

The **MIXER** set the relative levels for the oscillator and noise generators. When centered, the two are mixed together in equal amounts; drag the slider up or down for relatively more or less of each sound source.

MASTER

The Master section provides overall adjustment and effects for the oscillator: **EQ GAIN**, **EQ FREQUENCY**, **DISTORTION**, and **VOLUME**.

VELOCITY SENSITIVITY levels can also be set independently for Oscillator Volume, Oscillator Pitch Modulation, and Noise Volume.

FM

The FM oscillator is an FM (frequency modulation) synth. FM synthesis uses multiple signals with frequencies in the audible range to modulate each other and create unique and complex sounds.

OPERATORS

There are four operators. Each operator has a **RATIO** which defines its frequency relative to the base frequency. At 1.0, the frequencies are the same; at 2.0, the frequency of the operator is double the base frequency; and so on.

The **HZ** toggle changes the operator from a relative ratio frequency to an explicit frequency set in Hz.

The **FINE** control provides fine tune adjustment of +/- 1200 cents. If **HZ** mode is enabled the functionality changes to a **FREQUENCY MULTIPLIER**, allowing oscillator frequencies from 0.001 Hz to 20 kHz.

The **PHASE** control set the start phase for the operator.

The **SNAP** toggle locks **RATIO** to harmonic intervals (e.g. x1, x2, x3 etc.). In **HZ** mode this control is disabled.

The **LEVEL** control set the output level for each operator. Depending on the topology chosen, this control will instead adjust the modulation index for operators, B, C, and D.

MASTER

The relationship between the operators and how they modulate each other is chosen with the **TOPOLOGY** menu. Additionally, operator D can be fed back into itself, with the **FEEDBACK** knob setting the amount.

EXCITERS

TRANSIENT oscillator defines the attack portion of the sound. To load an **AUDIO SAMPLE**, press on the menu above the waveform image and choose from the menu of factory preset. **GAIN**, **PITCH** and **TRACKING** set the sample gain, pitch and pitch tracking

TEXTURE oscillator defines the sustain portion of the sound. To load an **AUDIO SAMPLE**, press on the menu above the waveform image and choose from the menu of factory presets. **GAIN**, **PITCH** and **TRACKING** set the sample gain, pitch and pitch tracking. **PITCH** and **TRACKING** set the sample gain, pitch and pitch tracking. **SAMPLE START** determines the starting point for playback, as a percentage of the duration, and **RANDOM** adds randomization to the sample start position.

NOISE generator adds static noise to the sound. **GAIN** and **DENSITY** set the noise level and amount. **CUTOFF** is a one knob low-pass/high-pass filter, defining cutoff frequency.

The **TILT EQ** combines both low and high-shelf EQs into a single knob; turn clockwise for high-shelf, counter-clockwise for low-shelf; while the small knob below sets the cutoff frequency utilized by both.

The **AMP ENV** is a three stage envelope, set the **ATTACK**, **HOLD** and **DECAY** of the sound.

RESONATOR BANK

The 6 bands each offer control of:

- Bypass (power) button
- Coarse to set the filter frequency in semitones
- Fine to fine-tune the filter frequency in cents
- Gain adjusts the band level in dB
- Coupling to sets the coupling amount in Reflect and RotCirc (aka Circular Rotation) modes

DECAY set the filter decays of all-bands's
SCALE controls the amount of decay scaling according to frequency (0%=no scaling, 100%=the higher the frequency, the shorter the decay)
DAMPING adjusts the high frequency damping of each bands
MOD. DEPTH sets the filter modulation depth in cents

Coupling mode sets relationship between the filter bands:

- Parallel mode: processing all bands in parallel (or independently)
- Reflect mode: a weighted sum of each resonator's energy is fed back into all the others
- RotCirc: rotates a small fraction of energy from each band to the next (circularly)

HARMONIC RESONATORS

3 mixable exciter sources (transient, texture, and noise) combine to drive a 6-channel resonator bank with per-channel control over course and fine tuning, and coupling.

NOISE

The Noise oscillator generates a variety of different pre-defined noise types.

The **NOISE TYPES** are laid out on a grid; select a name to choose the noise type. Depending on the selected noise type, a **VALUE** control may be available to changes a characteristic of the noise, such as Rate, Density, Chaos, and so on. (Some noise types, however, don't have any parameters.)

ORGAN

The Organ oscillator emulates an electric organ.

There are eight drawbars, each representing a different harmonic, labeled with the traditional pipe sizes originally used on pipe organs. The 8’ drawbar is the base note, and each doubling or halving of the pipe size represents an octave upward or downward. For example, when a C3 is triggered, 8’ plays C3, 16’ plays C2, and 2’ plays C5.

Each drawbar has **GAIN** and **PAN** controls. The Gain slider is used in the traditional drawbar style, where pulling it towards you (in this case, downward) increases the gain for that harmonic.

The **PERCUSSION** section adds a percussive harmonic, when enabled with the **ON** button. This harmonic is chosen with the **HARMONIC** knob, and the **FAST** mode toggle determines its decay speed. This additional harmonic decays quickly, even when notes are otherwise sustained.

PLUCK

Pluck is a physically inspired string synthesis module, aimed toward synthetic sounds with a natural decay. A short excitation waveform is triggered and fed through a filtered delay line; the characteristics of the decay are determined by the waveform, filter style, and other adjustments.

MIXER

There are three sources for the initial excitation: a pitched oscillator, a noise oscillator, and an audio sample. You can blend the levels of each sound source with the **MIXER** section's **SAMPLE**, **SYNTH** and **NOISE** sliders.

SAMPLE

To load an **AUDIO SAMPLE**, press on the menu above the waveform image and choose from the menu of factory preset samples. Alternatively, you can load your own audio file by dragging and dropping it onto the sample area. **NEXT** and **PREVIOUS** buttons are also present, for browsing samples. **START** set the sample start time. **DETUNE** provides sample pitch control of +/- 48 cents. **KEYFOLLOW** set the amount of influence of key position over filtering. **INTERPOLATION MODE** chooses the quality of sample playback. Standard is ideal for most scenarios.

SYNTH

EXCITATION BRIGHTNESS adjusts the brightness of the excitation sources by changing the duty cycle of the source, similar to pulse width modulation.

PICK

The Pick parameters adjust the character of the plucking point. Enable the **PICK FILTER** to add a picked simulation to the string excitation; set the position on the string with **PICK POSITION** and the intensity of the picking with **PICK DEPTH**.

CONTOUR

SHAPE adjusts the relative roundness or thinness of the excitation sources; negative values are rounder, and positive values are thinner. **ROLLOFF** is a lowpass filter of the excitation sources.

DYNAMICS set the range of high frequency attenuation (in dB) between the minimum and maximum note-on velocity. At lower velocities, more high frequency attenuation is applied.

PLUCK

FINGER

With a **HARMONIC RATIO** of 1.00, the fundamental of the triggered note is played; above 1.00, a harmonic note above the base note is played. The value is a ratio relative to the base note: 2.00 is one octave higher than the fundamental, and so on. Just as with a physical string, not all ratios will produce a clear harmonic tone. Some more commonly used ratios include whole integer values (1.0, 2.0, etc.) and simple integer ratios such as 1.5 (3/2), 1.33 (4/3), and 1.25 (5/4). Additionally, a ratio of 1.01 is useful for simulating a palm-muted string. To dampen the harmonic, increase **HARMONIC DAMP**.

When **STRETCH** is enabled, each sample is either processed through the delay and filter or passed through unprocessed. Increasing the Stretch value will increase the likelihood of samples passing through unprocessed. With more unprocessed samples, there result is a slight buzzing sound which is useful for noise or drum sounds.

TUNING & COUPLING

By default, one plucked string is simulated; for two strings, change the **STRINGS** value. When there are two strings, the **COUPLING MODE** determines how they interact and the **COUPLING** amount set the amount of interaction.

- **SERIAL**: The two strings are in series, with the first feeding the second. With Coupling at zero, only the first string is heard; at 1.00, the first string is not directly heard, and only the second string (excited by the first) is heard. A Coupling of 1.00 results in a slower attack time, similar to a cello.
- **BRIDGE**: A small amount of the first string's energy is fed to the bridge and excites the other string through cross feedback.
- **BEATING**: Strings are coupled trough a rotation matrix, causing the sound to beat at a few Hz. As Coupling increases, the beating will be faster. Detuning the second string also has an impact on the depth and complexity of this beating.
- **INHARMONIC**: Similar to Beating, but the beating frequency is in the audible range. This can result in bell-like or plate-like sounds, similar to a ring modulator.

To tune the second string relative to the first, set **COARSE TUNE** to the interval in semitones (up to +2 octaves) and **FINE TUNE** in cents (up to 20 cents).

Some string materials, such as steel piano strings, are more inharmonic than others, such as nylon guitar strings. **INHARMONICITY** controls the amount of stretch of the string partials from the harmonic series.

DECAY

DECAY and **RELEASE** set the durations for the amplitude envelope decay time. **BRIGHTNESS** highlights or attenuates a high frequency shelf for the decay, and **DECAY CUTOFF** set the cutoff for a lowpass filter.

BRIDGE LOSS set an amount of additional high frequency dampening applied. On physical strings, high frequencies dampen more quickly than lower frequencies; applying some additional dampening can help make the decay sound more natural.

DECAY TYPE chooses the filter type used to dampen the decay:

- **MA**: The classic damping mode as used in the pioneering Karplus-Strong paper on plucked-string synthesis.
- **MA2**: A linear phase damping filter that is more controllable than the MA filter.
- **LP1**: The MA and MA2 have a gentle dampening and may be too bright for some uses. LP1 is a more progressive filter that dampens high frequencies more than MA or MA2. Conversely, LP1 may dampen too much for some sources, but is a good fit for sounds like muted basses.
- **SHELF**: Compromises between MA and LP1; high frequencies are not dampened as much as with LP1, but the filter curve is more progressive than the MA or MA2 filters.

TEXTURE

The all-new Texture oscillator is designed to help you create complex and evolving textures and noise with two channels of sample playback, streamlined controls, filters, blending, and a massive library of preset sounds to get you going.

First, the waves are chosen for each sample slot. Press on the waveform menu to choose from one of the many factory preset waves or use the next/previous buttons to browse. Additionally, you can load your own audio files by dragging and dropping them onto the waveform area.

The **MODE** determines sample plaback derection forward, forward loop, backward and backward loop.

GAIN, **PITCH** and **PAN** set the sample gain, pitch and stereo position for each slot.

LEGATO (tliplet icon) enables legato mode for both slots.

MIX set the balance of two samples, and **WIDTH** set the width of the stereo image of the mix output.

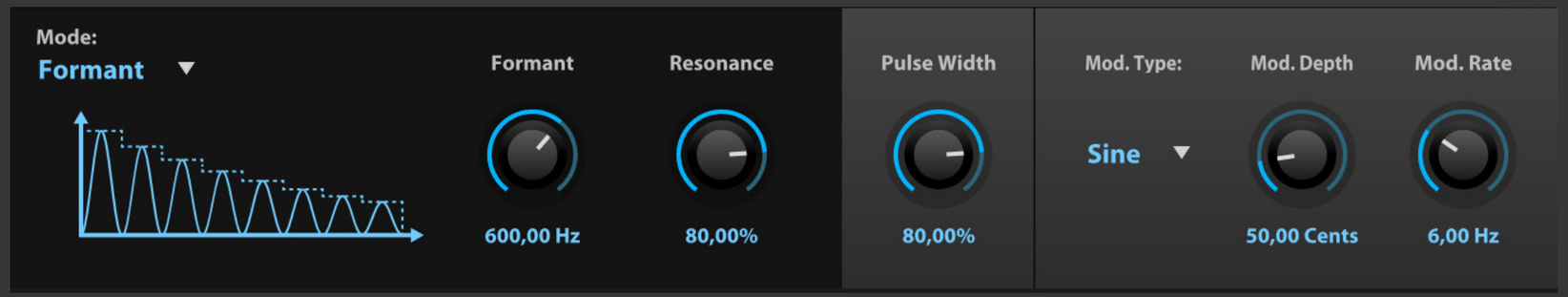
SAMPLE START determines the starting point for playback, as a percentage of the duration, and **RANDOM** adds randomization to the sample start position.

The oscillator employee four built-in filters, band-pass (left one), peak (right one), Highpass and Lowpass at mixout stage.

Click the icon at left of the Width label to **ENABLE** the **BP** filter. **FREQUENCY** sets the filter frequency, the note name corresponding to the frequency is also displayed, for example, 2.00 KHZ (B5). **BANDWIDTH** sets the filter's shape.

Click the icon at right of the Width label to **ENABLE** the **PEAK** filter. **FREQUENCY** sets the filter frequency, the note name corresponding to the frequency is also displayed, for example, 2.00 KHZ (B5). **GAIN** control for boosting or cutting the frequency. **Q** control sets the filter's shape.

HIGHPASS control sets the cutoff frequency of the highpass/low-cut flter, and **LOWPASS** control sets the cutoff frequency of the lowpass/high-cut flter.



VOSIM

A tribute to vintage vocal synthesis, VOSIM offers 2 different oscillator modes; Formant, and Phonem, providing dedicated controls for each synthesis type.

The **MODE** determines oscillation:

FORMANT mode uses formant resonant oscillation. **FORMANT** sets the base frequency of the formant and **RESONANCE** sets the amount of resonance.

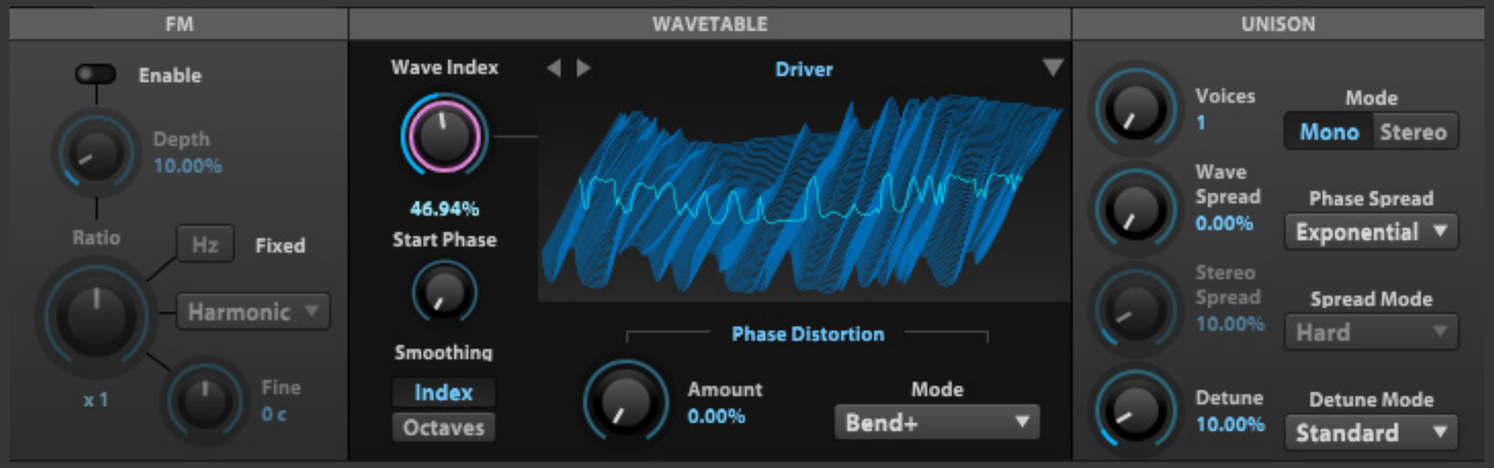
PHONEM mode uses vowel oscillation. The first knob sets the vowel **AA** to **Y**, **FORMANT SHIFT** sets the frequency, **MORPH TIME** sets the transition time when chnaging the vowel while holding the note. **NUM FORMANTS** sets the formant count.

PULSE WIDTH adjusts the formant width (duration)

MOD. TYPE sets the formant modulation **NOISE** or **SINE**

MOD. DEPTH sets the amount of the modulation

MOD. RATE sets the speed of the modulation



WAVETABLE

The WaveTable oscillator uses a table containing multiple waveform shapes. While a single waveform is played at any given time, modulation between the different waveforms produces distinct and unique sounds.

First, a wave is chosen. Press on the waveform menu to choose from one of the many factory preset waves or use the next/previous buttons to browse. Additionally, you can load your own audio files (or even image files) by dragging and dropping them onto the waveform area.

Audio files are imported with one slice per channel. Slices will also be imported if slices are arranged one after the other within an audio file, and the number of samples per slice is specified the end of the file name following an underscore (e.g. “MySweep_128.wav”). Image files are imported with each row of pixels as the wave cycle, with one slice per row. (Very large image files may be resampled or cropped.)

If the wave has multiple slices, the **WAVE INDEX** determines which slice in the wavetable will be played. Commonly, this is modulated to sweep through slices while playing.

Depending on the wavetable, transitioning from slice to slice has the potential to be abrupt. There are therefore two smoothing options: **SMOOTH WAVE INDEX** and **SMOOTH OCTAVES**.

PHASE DISTORTION MODE chooses the style of the phase distortion, and **PHASE DISTORTION AMOUNT** set the amount.

To set the point within the waveform cycle where it will begin when triggered, change the **START PHASE** control. For simple waveforms, the image of the waveform will update to show the result of the phase change.

FM provides frequency modulation of the wavetable by introducing a sine wave modulator. **ENABLE** turns FM on or off. **DEPTH** controls the amount of modulation applied. **RATIO**, by default, set the frequency of the sine wave modulator relative to note pitch. Adjacent to the Ratio knob is a **SNAPPING** menu, which allows Ratio to be set relative to harmonic intervals (Harmonic) or in semitones (Chromatic, Octaves, Oct + 5th, Fourths, Fifths). **FINE** adjusts the Ratio in cents (for best restuls try holding the command/alt key while sweeping values). **HZ** changes Ratio from note-relative to absolute frequency.

The majority of the **UNISON** controls for the WaveTable module are the same as found on the Analog module; for details, see: [Appendix A > Oscillators > Analog > Unison]. There is one additional Unison parameter for the WaveTable oscillator, **WAVE SPREAD**, which set the range of Wave Index values for each voice.

fx

APPENDIX A: EFFECTS

Falcon includes over 100 high-quality effects, categorized for easy navigation: Delays, Reverbs, Modulation, Filters, Equalizers, Amps and Stereo, Drive and Distortions, Dynamics, Analysis and more. With effects suited for nearly every need from creative mangling to precise sound sculpting, mixing and analysis, Falcon provides a tremendous sound design facility.

TEMPO SYNC

fx

ANALOG TAPE DELAY

Analog Tape Delay is inspired by classic analog delays using reel-to-reel tape loops

DELAY

DELAY set the length of delay, in ms or bars/beats (if tempo-synced)

FEEDBACK chooses the percentage of signal fed back into the module

SPREAD set the amount of stereo spread, from zero percent (mono) or 100 percent (full stereo).

DISTORTION

DISTORTION MODE set the style of distortion (Tape, Tape/Tube, and Analog), and **TRASH** set the amount of distortion

MIX

DRY and **WET** knobs set the balance between the dry (unaffected) and wet (affected) signal sent to the module's output

fx

DIFFUSE DELAY

Diffuse Delay is an effect capable of morphing continuously from a pure single tap delay to a very long, dense, and lush bloom of echoes. Fantastic for scrambling voices or other instruments into an ambient wash of echoes.

DELAY TIME set the length of delay, in ms.

DIFFUSION set the amount of diffusion (echo density), and **TIME SPREAD** set the time spread of the diffusion.

FEEDBACK chooses the percentage of signal fed back into the module.

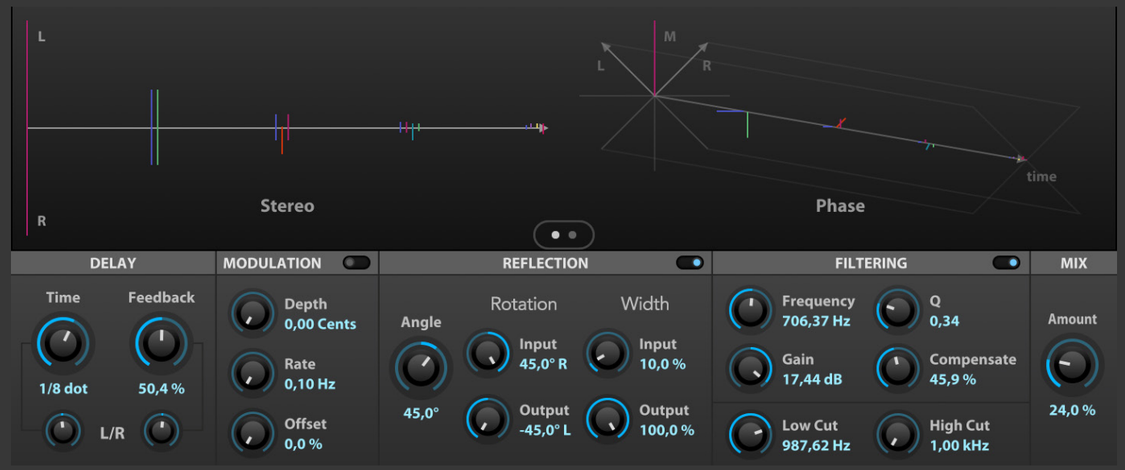
DAMP set the amount of damping factor for feedback loop.

CROSSTALK set the crosstalk amount between the left and right channel of the feedback loop.

MIX set the balance between the dry (unaffected) and wet (affected) signal sent to the module's output

NOTE: Since the Diffuse Delay module will re-calculate the time factor for producing the effect. So manupilating the Delay Time and TimeSpread control will cut the effect for a moment. This means these parameters are not allow the modulation or automation.

TEMPO SYNC



fx

DUAL DELAY X

A versatile delay module with discrete channel controls for creating time-based effects. A sophisticated display visualizes changes to time, stereo and phase. Dual Delay X features built-in dispersion, diffusion, digital grit and tape saturation for a more polished sound out of the box.

NOTE: **Dual Delay** still available as Legacy FX

DELAY

TIME set the length of delay, in ms or bars/beats (if tempo-synced). **FEEDBACK** chooses the percentage of signal fed back into the module. Both Time and Feedback have **L/R** controls to adjust the value for each channel as a percentage of the main value.

MODULATION

Click the Switch to enable the Modulation section.
FREQ set**DEPTH** chooses a detune amount for the delay taps, and **RATE** set the speed of modulation.
OFFSET adjusts the phase offset of the delay line LFO.

ROTATION/REFLECTION

Click the switch to toggle between Rotation and Reflection mode, apply to the stereo feedback
The **ROTATION** section adjusts the phase of the **INPUT**, **OUTPUT**, and **FEEDBACK** signals
The **WIDTH** section adjusts the stereo spread of the signal **INPUT** to the effect, and the spread of the **OUTPUT** signal.

FILTERING

Click the Switch to enable the Filtering section.
A peak EQ located in the feedback loop.
FREQUENCY set the EQ frequency. **GAIN** set the EQ gain amount (+/-). **Q** set the filters bandwidth.
COMPENSATE Set the amount of gain reduction for EQ to avoid feedback instability.
LOW CUT rolls off lower frequencies, and **HIGH CUT** rolls off higher frequencies. The filters affect only the wet signal; the dry signal is not filtered.

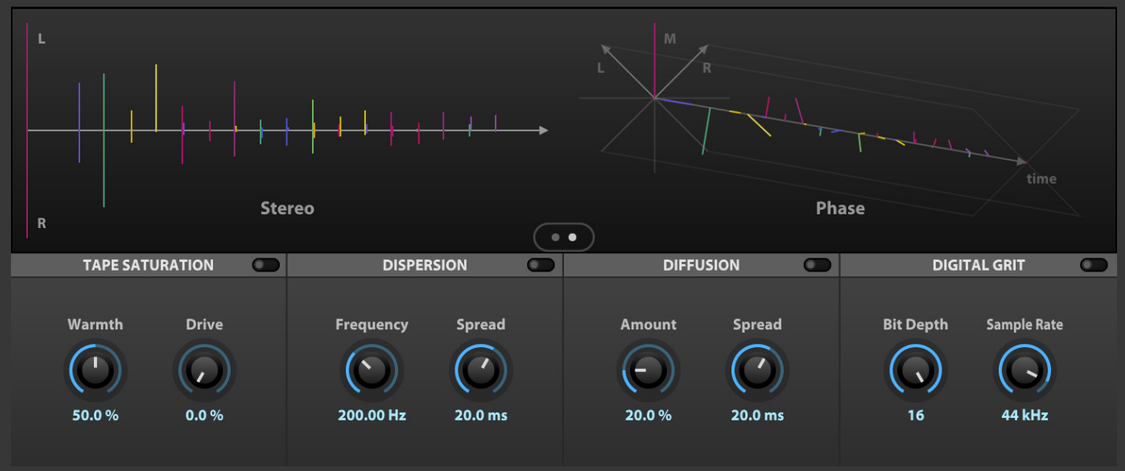
MIX

AMOUNT knob set the balance between the dry (unaffected) and wet (affected) signal sent to the module's output

DISPLAY

The display shows a visual representation of how the controls will affect the **STEREO** and **PHASE** output of the module.
Click the Switch to toggle between main and feedback shaping controls.

TEMPO SYNC



fx DUAL DELAY X

TAPE SATURATION

Click the Switch to enable the section.
WARMOTH set the amount of the pre-emphasis before saturation, and **DRIVE** set the saturation amount.

DISPERSION

Click the Switch to enable the section.
FREQUENCY set the dispersion frequency, and **SPREAD** set the dispersion time in ms.

DIFFUSION

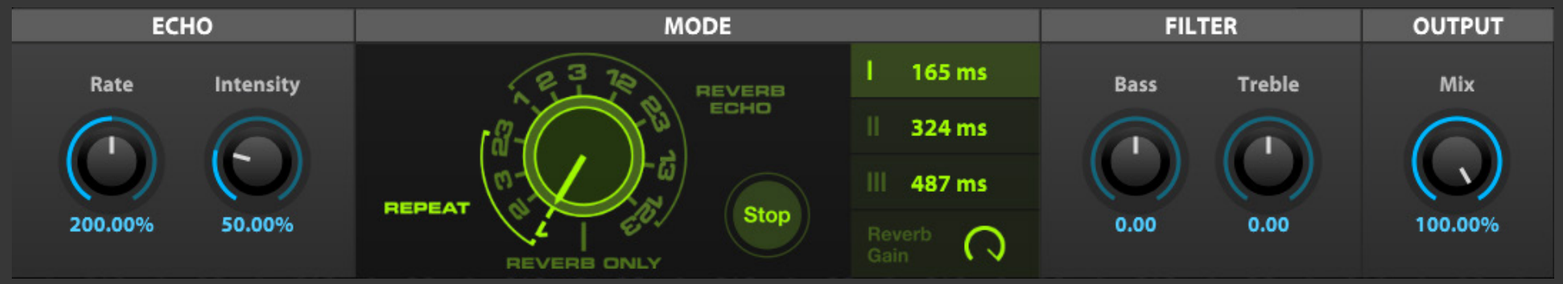
Click the Switch to enable the section.
FREQUENCY set the diffusion frequency, and **SPREAD** set the diffusion time in ms.

DIGITAL GRIT

Click the Switch to enable the section.
BIT DEPTH set the bit reduction, and **SAMPLE RATE** set the sample rate reduction.

DISPLAY

The display shows a visual representation of how the controls will affect the **STEREO** and **PHASE** output of the module.
Click the Switch to toggle between main and feedback shaping controls.



TEMPO SYNC

fx

TAPE ECHO

A recreation of the famous 70's tape delay

ECHO

RATE set the rate of the delay repeats, **INTENSITY** chooses the percentage of signal feed back into the module

MODE

The central **MODE** knob selects between delay, delay + reverb, or reverb only modes

The numeric indicators (1, 2, 3, and combinations) represent which of three discrete delay heads will be utilized

The **DELAY TIMES** for each head can be seen and modified via the I, II, III number boxes on the right

The **STOP** button activates a tape stop effect

REVERB GAIN set the reverb volume

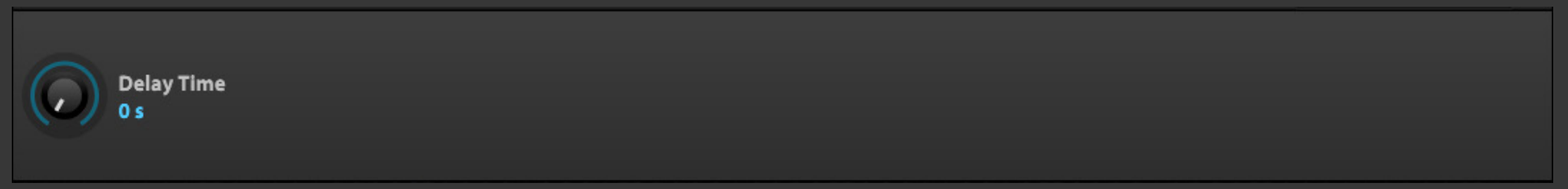
FILTER

The filters effects only the wet signal; the dry signal is not filtered. **BASS** rolls-off lower frequencies, and **TREBLE** rolls-off higher frequencies

OUTPUT

MIX knob set the balance between the dry (unaffected) and wet (affected) signal sent to the module's output

TEMPO SYNC

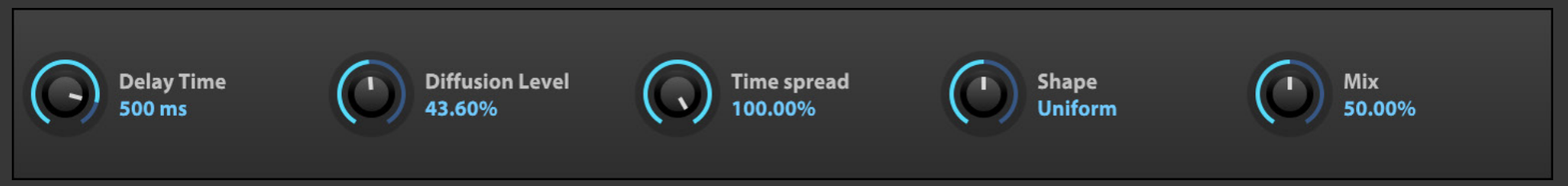


fx

TRACK DELAY

A simple time-shifting of the input using a delay

DELAY TIME set the length of delay, in µs, ms and seconds or bars/beats (if tempo-synced)



fx

VELVET DELAY

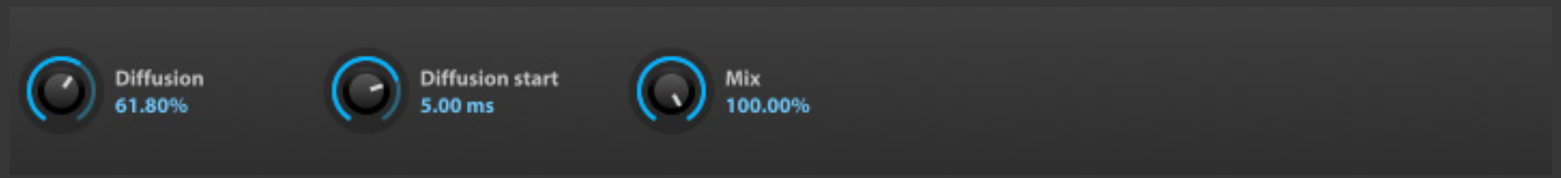
Velvet delay is another take at morphing from a single tap delay to a smooth aura of echoes. Compared to Diffuse Delay, the emphasis is less on maximal diffuseness, but more on the smoothness of the pre and post echoes and precise control of the ratio between specular and diffuse reflections.

DELAY TIME set the length of delay, in ms.

DIFFUSION set the amount of diffusion (echo density), and **TIME SPREAD** set the time spread of the diffusion.

SHAPE chooses the echo shapes, Uniform, Ramp or Exp.

MIX set the balance between the dry (unaffected) and wet (affected) signal sent to the module's output



fx

DIFFUSION

Diffusion spreads the signal over time, creating a simple yet versatile decay with reverb-like results

The **DIFFUSION** control set the amount of diffusion applied

DIFFUSION START chooses the time delay until diffusion beings to be applied

MIX set the balance between the dry (unaffected) and wet (affected) signal sent to the module's output

fx

IREVERB

IReverb is a convolution reverb. Given an impulse response for a physical space or a piece of gear, IReverb can accurately reproduce what the input source would sound like if it were actually in that space or played through that piece of hardware.

If there is audio passing through the IReverb while parameters are being adjusted, the dry signal will be heard momentarily. This is because convolution is a processor-intensive effect and briefly muting the processing signal is necessary to avoid pops/clicks or other artifacts.

IMPULSE
To load an **IMPULSE RESPONSE**, drag and drop an audio file to the sample area, or load one of the factory preset.

REVERB
TIME set the duration of the wet signal, specified as a percentage of the impulse response's duration. **PRE DELAY** set the amount of delay before the wet signal is heard.

WIDTH adjusts the stereo width of the impulse response. At negative values, the left an right channels are swapped.

DAMP
To filter the output, use **LOW DAMP** and **HIGH DAMP** to dampen the low or high frequencies, respectively.

MIX
DRY and **WET** knobs set the balance between the dry (unaffected) and wet (affected) signal sent to the module's output.

IMPULSE FILES
To save the currently loaded impulse, choose **SAVE IMPULSE** to save the current file or **SAVE IMPULSE AS** to save as a new file.

fx

SPARKVERB

SparkVerb is a unique and versatile algorithmic reverb, centered around a frequency-based spectral display.
The sound can be shaped with separate frequency bands, or adjusted globally.

DECAY

The central **DECAY** parameter controls the duration of the reverb decay. Low and Hi frequency bands can further tailor the decay response across frequencies. Choose frequency for each band with **LO XOVER** and **HI XOVER**, and set the decay ratio (relative to the main Decay time) with **LO DECAY** and **HI DECAY**. If you would rather cut the Low or Hi bands instead, use **DECAY LOW-CUT** and **DECAY HI-CUT**.

ROOM

ROOM SIZE set the size of the simulated space, from small rooms (4 meters) to very large rooms (50 meters). **SHAPE** set the delay distribution and distortion of the room, from zero (highest echo density) to 1.00 (highest spectral mode density). **PRE DELAY** set the amount of delay before the wet signal is heard. **DENSITY** changes how dense the reflections will be; lower values will be more like distinct echoes.

MODULATION

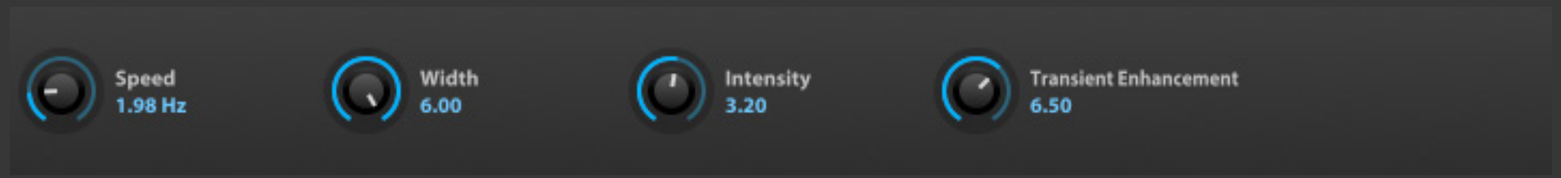
DEPTH chooses the depth of the decay modulation, in cents. **RATE** chooses a relative ratio, from 1/4 to 4x, for each delay line. **MODE** set the modulation interpolation style; choose from Dark (default; some high-frequency decay damping), Lo-Fi (more high frequency diffusion), or Bright (more precise high-frequency response, but more processor intensive).

DIFFUSION

DIFFUSION ON/OFF toggles the short-term diffusion option. When enabled, **DIFFUSION START** set the delay time until the diffusion is heard, and **DIFFUSION AMOUNT** set how much diffusion will be applied.

OUTPUT

MIX set the balance between the dry (unaffected) and wet (affected) signal sent to the module's output. **WIDTH** adjusts the stereo spread of the module's output. **ROLLOFF** set the cutoff frequency of an overall lowpass filter to adjust the brightness of the wet signal. Enabling **FREEZE** will hold the current decay infinitely, until Freeze is disabled.



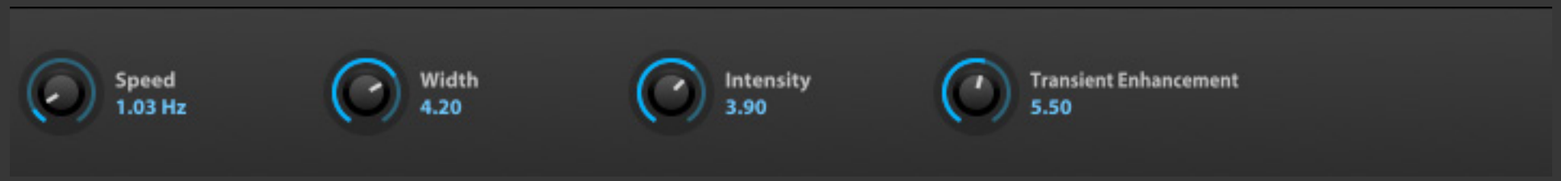
fx

ANALOG CHORUS

Analog Chorus is a chorus module that is inspired by a popular analog effects pedal

SPEED set the speed of the modulation, **WIDTH** adjusts the width of the stereo spread, and **INTENSITY** set the depth of the effect.

TRANSIENT ENHANCEMENT adjusts how much transients are affected by the module. Higher values allow for more prominent, unmodulated transients.



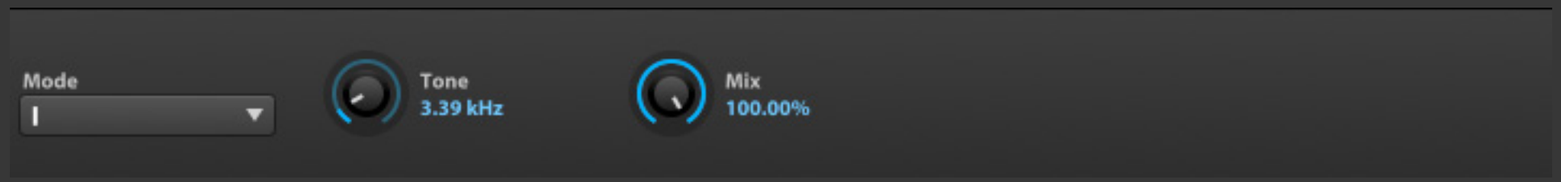
fx

ANALOG FLANGER

Analog Flanger is a flanger module that is inspired by a popular analog effects pedal

SPEED set the speed of the modulation, and **INTENSITY** set the depth of the effect. **WIDTH** adjusts the delay times and modulation depth to increase the stereo width of the effect.

TRANSIENT ENHANCEMENT adjusts how much transients are affected by the module. Higher values allow for more prominent, unmodulated transients.



fx

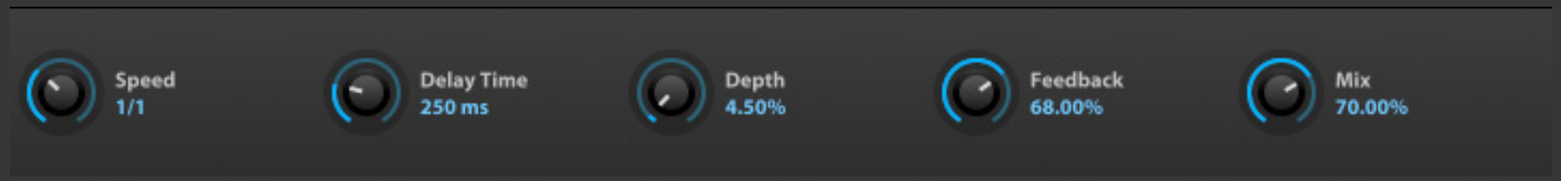
ENSEMBLE 505

Ensemble 505 is an ensemble chorus effect, inspired by the ensemble effect section of a popular synth

MODE chooses the style of ensemble, with mode I being a less pronounced effect and mode III being the most. A lowpass filter is applied after the ensemble; **TONE** adjusts the cutoff frequency.

MIX set the balance between the dry (unaffected) and wet (affected) signal sent to the module's output

TEMPO SYNC



fx

FLANGER

Flanger is a classic flanger effect, where the input signal is delayed with a variable time delay and fed back onto itself

SPEED set the speed of the modulation (in Hz, or bars/beats if tempo-synced)
DELAY TIME adjusts the amount of delay applied,
DEPTH set the depth of the effect.

FEEDBACK set the percentage of signal fed back into the module
MIX set the balance between the dry (unaffected) and wet (affected) signal sent to the module's output

fx

FREQ SHIFTER

Freq Shifter is a frequency linear shifter effect. Shifts all frequencies in the spectrum by a set amount (Hz) for interesting morphing effects, widening, sound thickening and repitching inharmonic sounds like drums.

PRE HP

Click the Switch to enable the section.
CUTOFF set the cutoff frequency of the pre-highpass -24 dB/oct butterworth filter, gets rid of the low end when the shift is too high.

SHIFT

MIRROR adds extra content in the low end when enabled. When the shift is positive, it creates negative frequencies. When the shift is negative, it creates mirrored low positive frequencies.
NOTE : disabling MIRROR will produce aliasing for extreme frequency shifting

COARSE / FINE shifts the spectrum up or down by a constant frequency in Hz such that harmonic sounds becomes inharmonic

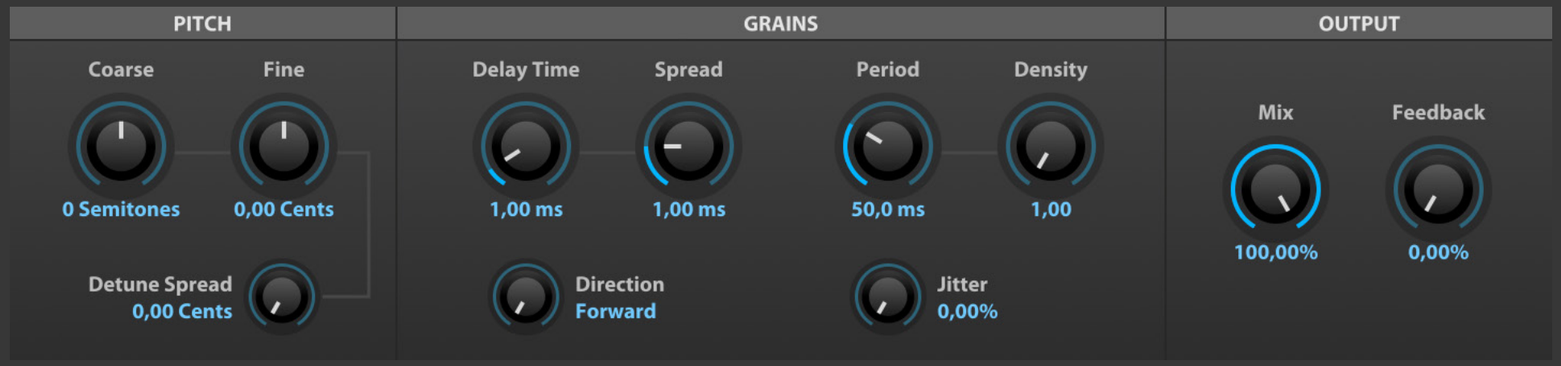
SPREAD adds a shift difference between the channels. Even a slight difference can be used to get a full, wide stereo effect.

X-OVER

Click the Switch to enable the section.
FREQ set the split frequency of a -24 dB/oct crossover filter to allow preservation of the original low-frequency content.

MIX

WET GAIN set the gain of the wet signal
MIX set the dry/wet amount



fx

GRANULIZER

Granulizer can be thought of as the effect equivalent to Falcon's granular oscillator, and is exceptional for creating pads, textures, and ambiance. Instead of splicing grains of sound taken from audio files, grains are extracted directly from audio in realtime. It is possible to shape sound in multiple ways for kaleidoscopic sound deconstruction and reconstruction.

PITCH

COARSE / FINE shifts the grain pitch in semitone and cent. **DETUNE SPREAD** adds detune effect to each grain.

GRAINS

DELAY TIME set the delaytime of the grains in ms, and **SPREAD** adds the variation of the delay time.
DIRECTION sets the direction of scrubbing, Forward, Backward, Alternate and Random.

PERIOD sets the duration of the grains. **DENSITY** determines how many grains will be played at once, with 1.00 representing standard playback. With values less than 1.00, there will be silence between the grains with a rhythmic result similar to tremolo; with values over 1.00, there is increasingly more overlap of grains with a harmonic result similar to a chorus or sometimes a ring modulator. **JITTER** varies the consistency of grain playback timing.

OUTPUT

MIX set the dry/wet amount.
FEEDBACK set the percentage of signal fed back into the module.

TEMPO SYNC

fx

PHASOR

Phasor is a variable 12-order automatic phaser effect

ORDER

NOTCHES changes the number of filters in sequence which correlates to the number of peaks and valleys you see displayed in the visualizer

CONTOUR

In Phasor an LFO sweeps between two variable frequencies, these are controlled with **MIN FREQ** and **MAX FREQ**
FEEDBACK controls the amount of the effected signal reinjected

LFO

SPEED set the speed of the LFO, which defaults to a free-running frequency between 0.01 Hz and 10.00 Hz

Toggling the **TEMPO SYNC** icon in the header allows the LFO to sync'd to the host clock and set between 1/64 tri and 32x
LFO SHAPE controls the shape of the LFO which can be set to TRIANGLE, SINE, S&H or RANDOM

MIX

SPREAD emphasizes the stereo effect. **DEPTH** set the wet/dry mix amount.

fx

ROTARY

Rotary is a highly-customizable speaker emulation effect modeled after the classic two-way rotating designs created for electric organs in the 1940s

CABINET

MODEL changes the cabinet type
DRIVE set the amount of overdrive in the cabinet circuit
GAIN controls amount of output gain

SPEED set the rotary style:
BRAKE = none
CHORALE = slow speeds
TREMOLO = fast speeds

Chorale and Tremolo speeds are controllable with the **CHORALE** and **TREMOLO** knobs below

HORN VOLUME adjusts the rotating horn level
DRUM VOLUME adjusts the rotating drum level

MICS

DISTANCE set the distance of the mics to the cabinet
ANGLE set the angle between the mics relative to the cabinet
WIDTH set the angular separation of the two mics
SKEW set the disparity in distance between mics and cabinet.If set high, one mic will be close and the other will be far from the speaker

BACKPANEL (COGWHEEL ICON) open the settings to access the back panel controls

ROTARY

Directivity Type
- Horn: standard directivity with deflector
- Omni: No AM
- Cardio: Classic polar pattern (sound cancellation when horn is off-axis)
- SoftCardio: Softer version of cardioid (with nooff-axis cancellation)
- Unipolar: heavy pulsating tone (pronounced AM)
- Drum : directivity with less side lobes - less wide sound (usable on horn)
- Drum Cardio: standard drum directivity (usableon horn)
- Drum Cardio 2: More pronounced off-phasesidelobes (drum exclusive)
- Drum Cardio 3: Most pronounced off-phasesidelobes (drum exclusive)

SETTINGS

DELAY COMPENSATION removes latency caused by mic distance.
SPHERICAL DAMPENING controls the amount of attenuation that is applied to reflections with propagation distance
DRIVE PREEMPHASIS controls the amount of pre-emphasis that is applied before amplifier drive
REFLECTION controls the absorption of reflections within the cabinet
ORDER controls the order of ray traced early reflections.
RADIUS changes the length of horn and drum speakers

BOX REVERB

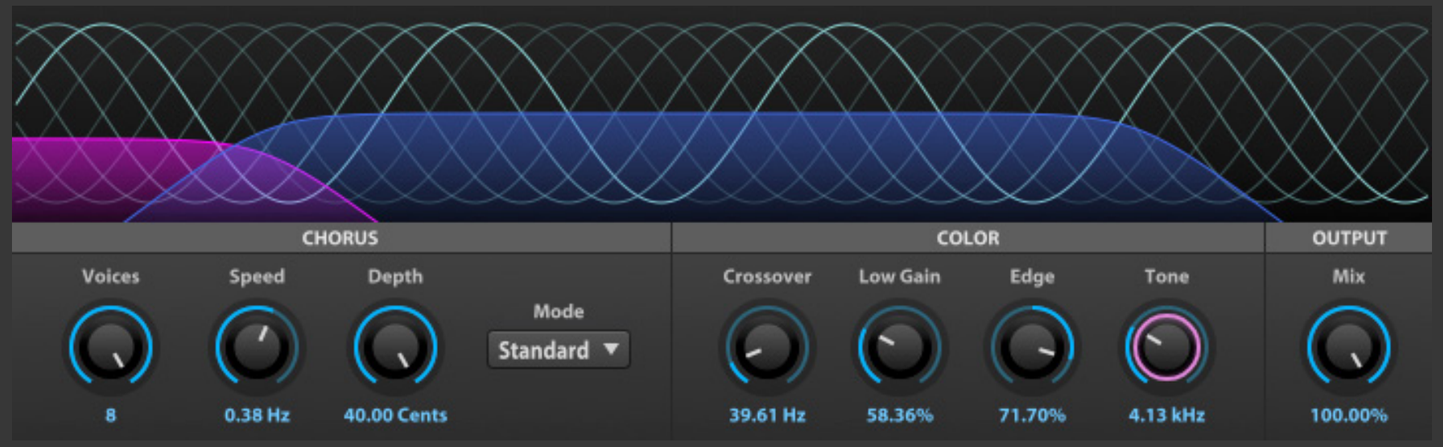
POWER enable diffusion
LEVEL set the amount of diffusion
TYPE set the Cabinet type

HORN

ACCELERATION TIME set the horn acceleration time
DECELERATION TIME set the horn deceleration time
FILTER set the horn frequency response
DIRECTIVITY choose horn directivity type

DRUM

ACCELERATION TIME set the drum acceleration time
DECELERATION TIME set the drum deceleration time
FILTER set the drum frequency response
DIRECTIVITY choose drum directivity type



fx

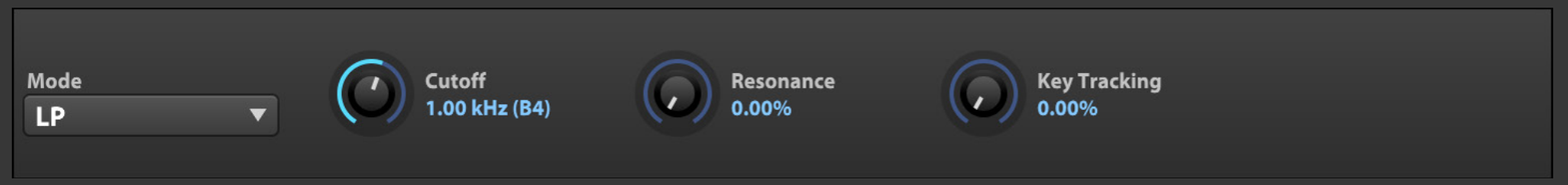
THORUS

Thorus is a variable 8-voice chorus that provides an exceptionally clear effect and a number of useful color controls

CHORUS
VOICES set the number of chorus voices utilized from 2-8
SPEED set the chorus frequency from 0.1 Hz to 1.0 Hz
DEPTH set the pitch modulation depth from 1 to 40 cents
MODE influences the percieved the stereo effect and can set to either Standard or Wide.

COLOR
CROSSOVER set the crossover frequency between the Low (pass-through) signal and the High (chorused) signal
LOW GAIN controls the level of the low (pass-through) signal
EDGE controls the feedback amount of the High (chorused) signal
TONE controls the frequency of the low-pass filter.

OUTPUT
MIX controls the wet/dry mix amount of the effect.



fx

ANALOG FILTER

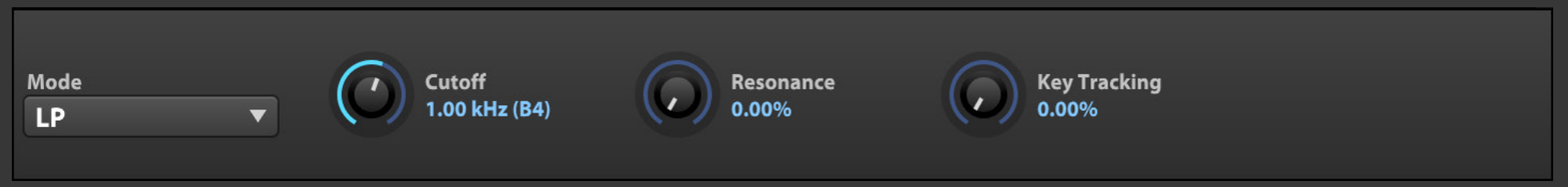
Analog Filter is a multimode filter inspired by the filter section found on a popular American analog synth

MODE chooses the type of filter: low pass (LP), high pass (HP), or band pass (BP)

CUTOFF set the frequency for the filter; the note name corresponding to the frequency is also displayed, for example, 2.00 kHz (B5)

RESONANCE adjusts how much the cutoff frequency is emphasized

KEY TRACKING changes how the cutoff frequency is adjusted relative to the note played



fx

BIQUAD FILTER

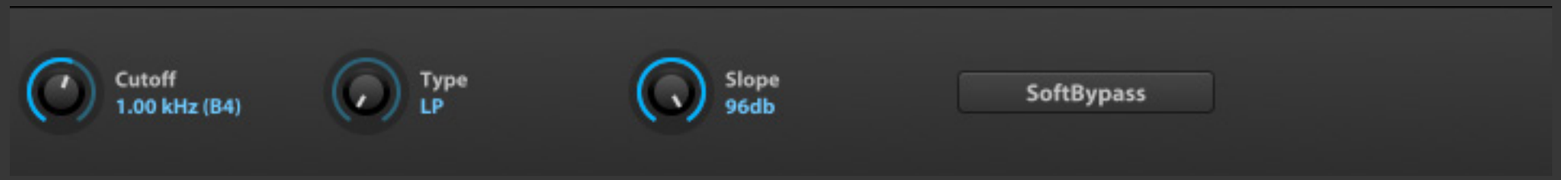
The classic swiss-army knife multimode filter

MODE chooses the type of filter: low pass (LP), high pass (HP), band pass (BP), or notch

CUTOFF set the frequency for the filter; the note name corresponding to the frequency is also displayed, for example, 2.00 kHz (B5)

RESONANCE adjusts how much the cutoff frequency is emphasized

KEY TRACKING changes how the cutoff frequency is adjusted relative to the note played



fx

BRICKWALL FILTER

Brickwall Filter is a filter with a steep slope, for “brickwall” filtering beyond the cutoff frequency

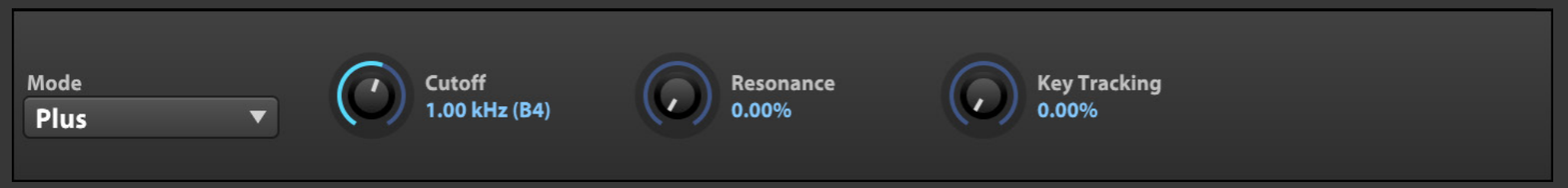
CUTOFF set the frequency for the filter; the note name corresponding to the frequency is also displayed, for example, 2.00 kHz (B5)

TYPE chooses the type of filter: low pass (LP) or high pass (HP)

SLOPE set how sharply the filter slopes downward at the cutoff frequency

SOFT BYPASS lets the signal continue to pass through the module, but the output signal is unaffected

This is an ideal way to bypass the effect while playing, as the regular bypass can potentially pop/click if enabled/disabled during playback



fx

COMB FILTER

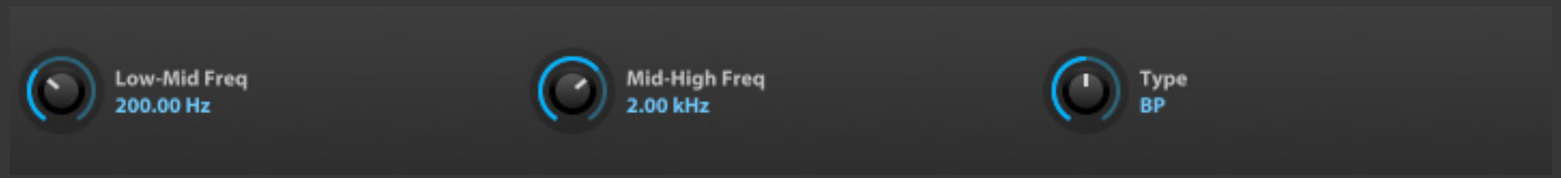
A classic comb filter, where a time delayed version of the signal is fed back into itself and added or subtracted. This results in a unique frequency peaks and valleys where the phase of the signals combine or cancel each other out.

MODE chooses the type of comb filter applied: Plus (frequencies are added) or Minus (frequencies are subtracted)

CUTOFF set the frequency for the filter; the note name corresponding to the frequency is also displayed, for example, 2.00 kHz (B5)

RESONANCE adjusts how much the cutoff frequency is emphasized

KEY TRACKING changes how the cutoff frequency is adjusted relative to the note played



fx

CROSSOVER FILTER

Crossover Filter has a selectable filter type and variable crossover frequencies for the affected band

TYPE chooses the type of filter: low pass (LP), high pass (HP), or band pass (BP)

LOW-MID FREQ and **MID-HIGH FREQ** set the frequency boundaries for the crossover

When Low Pass is chosen, only the Low-Mid knob can be adjusted; the Mid-High Freq knob is disabled

Likewise, when High Pass is chosen, only the Mid-High knob can be adjusted

Both knobs can be adjusted when Band Pass is chosen

fx

DIGITAL FILTER

Digital Filter is a multi-mode filter with variable slope ranging from 6 to 96 dB/oct, spread and keytracking

MODE set the filter mode and filter slope
Click the upper button to switch the filter mode: low-pass, high-pass, band-pass, notch, low-shelf, high-shelf and peak

FREQUENCY set the frequency for the filter

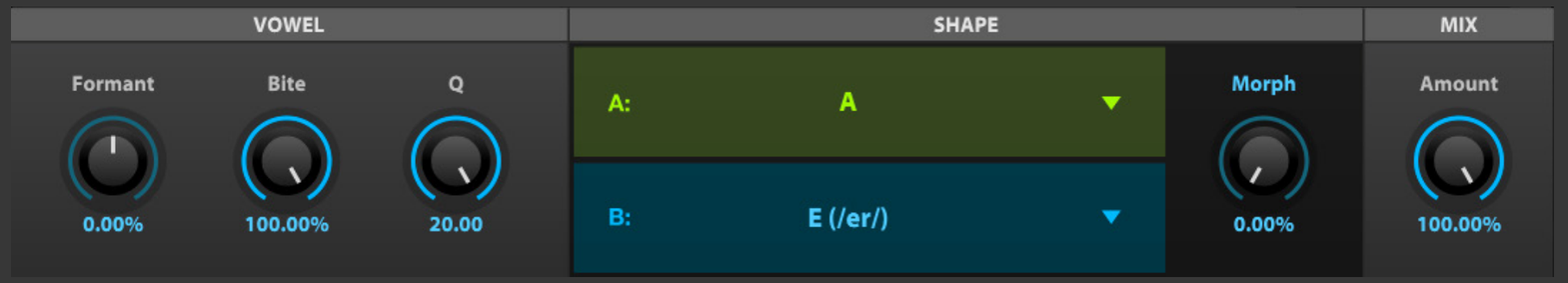
KEY TRACKING changes how the cutoff frequency is adjusted relative to the note played

SPREAD emphasizes the stereo effect

Q adjusts the filter resonance

GAIN adjusts the filter level in dB

BANDWIDTH changes the frequency width



fx

FORMANT CRUSHER

A screaming lo-fi take on formant filtering, (ab)using a resonant filter and a bitcrusher to generate vocal formants; a perfect fit to spice up your talking basses!

VOWEL

FORMANT set whether formant frequencies are shifted higher or lower

BITE adjusts how much the cutoff frequency is emphasized

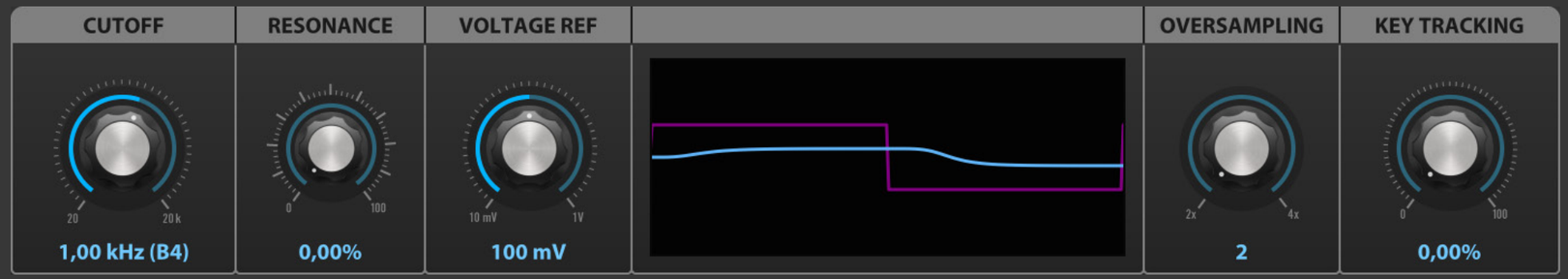
Q sets the filter's width

SHAPE

Two vowel sounds can be chosen for the filter, set via **FILTER A** and **FILTER B**, while the blend of the two is controlled via **MORPH**

MIX

AMOUNT set the balance between the dry (unaffected) and wet (affected) signal sent to the module's output



fx

LADDER

Our take on the classic East Coast lowpass filter sound, capable of everything from smooth tones to ripping sweeps.

CUTOFF set the frequency for the filter; the note name corresponding to the frequency is also displayed, for example, 2.00 kHz (B5)

RESONANCE adjusts how much the cutoff frequency is emphasized

VOLTAGE REF sets the reference voltage of the unit

OVERSAMPLING enables oversampling for the filter and provides the cleanest results when active.

KEY TRACKING changes how the cutoff frequency is adjusted relative to the note played

fx

LOWPASS 12

LowPass 12 is a 12 dB/octave low pass filter

CUTOFF set the frequency for the filter; the note name corresponding to the frequency is also displayed, for example, 2.00 kHz (B5)

RESONANCE adjusts how much the cutoff frequency is emphasized

KEY TRACKING changes how the cutoff frequency is adjusted relative to the note played

fx

LOWPASS 24

LowPass 24 is a 24 dB/octave low pass filter

CUTOFF set the frequency for the filter; the note name corresponding to the frequency is also displayed, for example, 2.00 kHz (B5)

RESONANCE adjusts how much the cutoff frequency is emphasized

KEY TRACKING changes how the cutoff frequency is adjusted relative to the note played

fx

ONE POLE

A gentle and very efficient 6dB/ octave lowpass or highpass filter. The most efficient of all filters by far.

MODE chooses the type of filter: low pass or high pass

CUTOFF set the frequency for the filter; the note name corresponding to the frequency is also displayed, for example, 2.00 kHz (B5)

KEY TRACKING changes how the cutoff frequency is adjusted relative to the note played

fx

PHASOR FILTER

A manual version of the Phasor effect

ORDER

NOTCHES changes the number of filters in sequence which correlates to the number of peaks and valleys you see displayed in the visualizer

CONTOUR

FREQ set the filter frequency

FEEDBACK controls the amount of the effected signal reinjected

KEY TRACKING changes how the cutoff frequency is adjusted relative to the note played

MIX

SPREAD emphasizes the stereo effect. **DEPTH** controls the wet/dry mix amount

fx

REZ FILTER

Rez Filter is inspired by the filter section found on a popular Japanese synth

MODE chooses the type of filter: low pass (LP), high pass (HP), or band pass (BP)

CUTOFF set the frequency for the filter; the note name corresponding to the frequency is also displayed, for example, 2.00 kHz (B5)

RESONANCE adjusts how much the cutoff frequency is emphasized

KEY TRACKING changes how the cutoff frequency is adjusted relative to the note played

fx

SVF

SVF is a state variable multimode filter

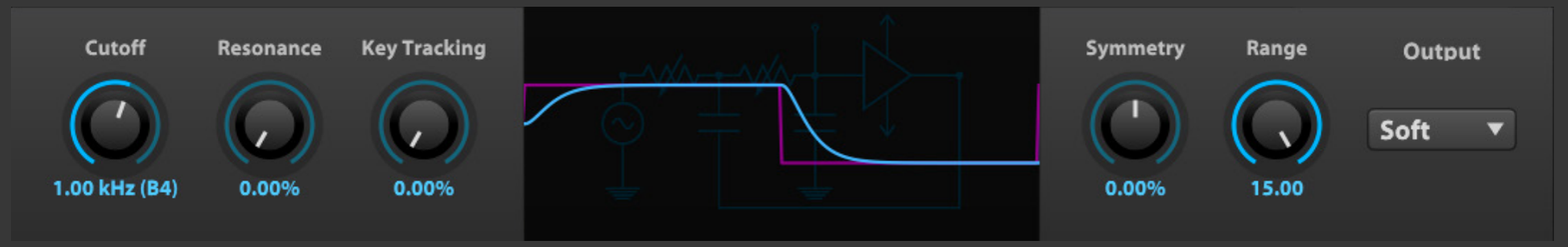
FILTER MODE chooses the type of filter: low pass (LP), high pass (HP), band pass (BP), peak, or notch.

CUTOFF set the frequency for the filter; the note name corresponding to the frequency is also displayed, for example, 2.00 kHz (B5)

RESONANCE adjusts how much the cutoff frequency is emphasized

KEY TRACKING changes how the cutoff frequency is adjusted relative to the note played.

DRIVE MODE chooses the style of overdrive, linear or soft



fx

SALLEN-KEY FILTER

A circuit-modelled second-order single op-amp nonlinear Sallen-Key lowpass filter with controllable asymmetric clipping and power supply starvation

CUTOFF set the frequency for the filter; the note name corresponding to the frequency is also displayed, for example, 1.00 kHz (B4)

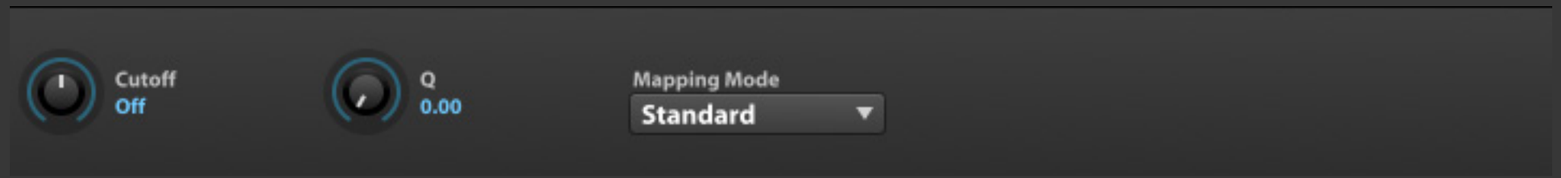
RESONANCE adjusts how much the cutoff frequency is emphasized

KEY TRACKING adjusts how much the cutoff frequency is adjusted relative to the note played.

SYMMETRY shifts the saturation symmetry between the two diodes, effecting the even/odd harmonic ratio

RANGE set the saturation range

OUTPUT set the output gain lower (Soft) or higher (Hard)



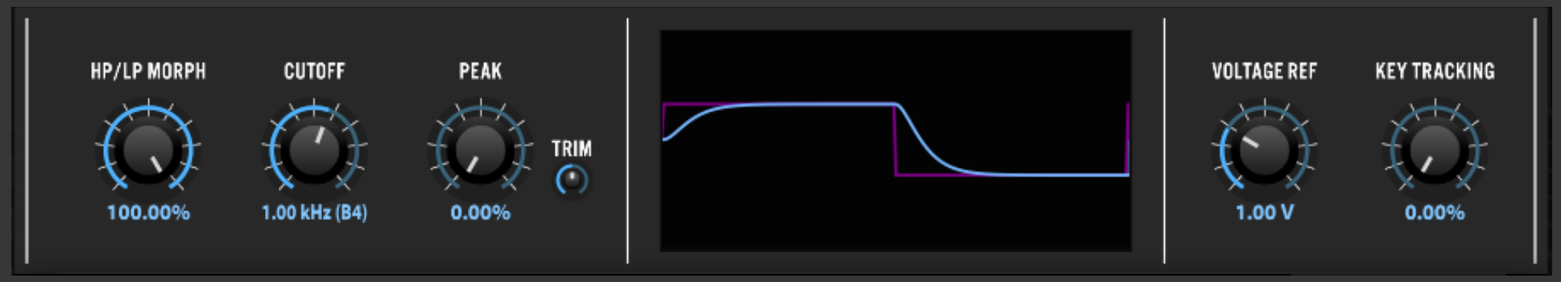
fx

UVI FILTER

UVI Filter is a filter that is continuously adjustable between low pass and high pass modes.

CUTOFF set the type and amount of filter. At the center position, no filter is applied. To the right of center, a high-pass filter is applied, and further to the right raises the cutoff frequency. Likewise, further left of center applies a low-pass filter and drops the cutoff frequency. The **Q** control set the filter's shape.

If you load preset saved in older versions of MachFive or UVI Workstation, **MAPPING MODE** will be set to Legacy; otherwise, use Standard



fx

VCF-20

Emulation of the MS-20 VCF filter (rev-2), single version with HP / LP morphing

HP/LP MORPH sets the balance between the high and low pass filter

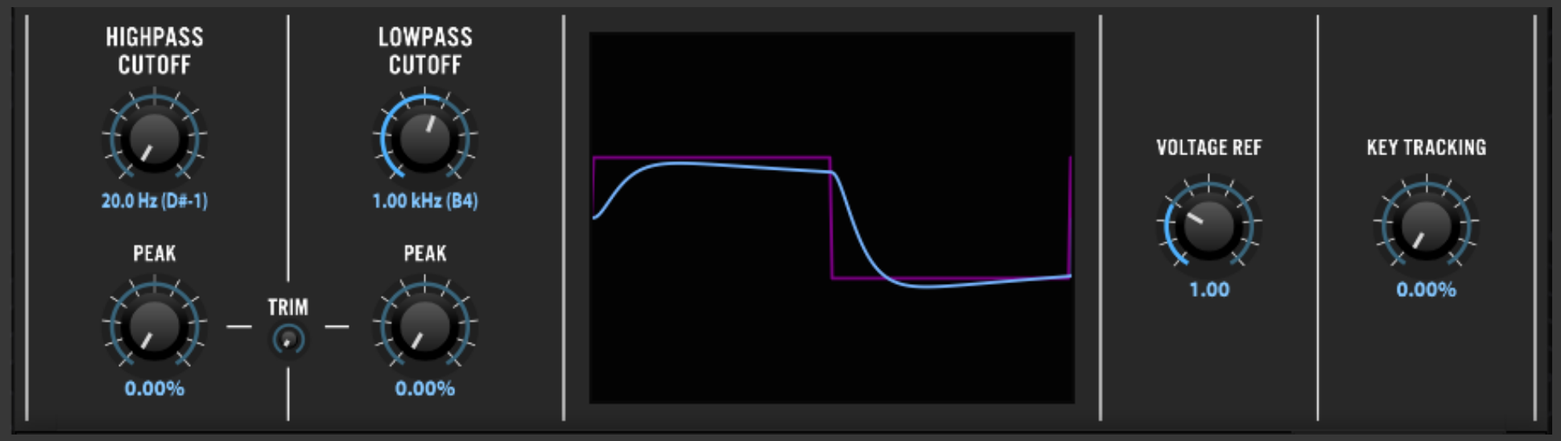
CUTOFF sets the cutoff frequency of the filters

PEAK sets the resonance of the filter

TRIM adjusts the resonance shape

VOLTAGE REF sets the reference voltage of the unit

KEY TRACKING adjusts how the cutoff frequency is adjusted relative to the active note



fx

VCF-20 DUAL

Emulation of the MS-20 VCF filter (rev-2), dual version with discrete LP and HP filters

HIGH PASS FILTER
CUTOFF sets the cutoff frequency of the filter
PEAK sets the resonance of the filter

LOW PASS FILTER
CUTOFF sets the cutoff frequency of the filter
PEAK sets the resonance of the filter

TRIM adjusts the resonancee shape for the both high and low pass filter

VOLTAGE REF sets the reference voltage of the unit

KEY TRACKING adjusts how the cutoff frequency is adjusted relative to the active note

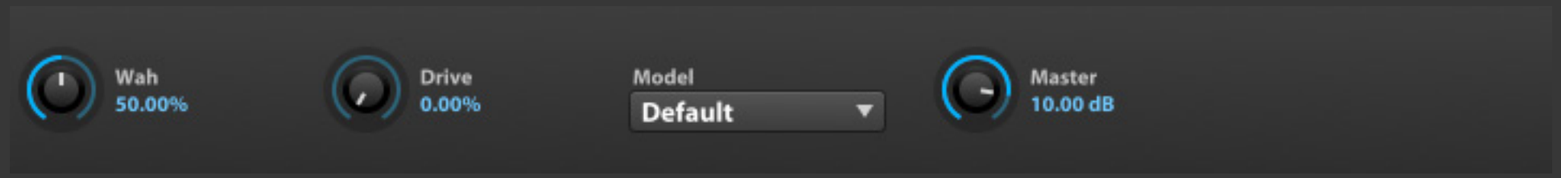
fx

VOWEL FILTER

Vowel Filter is a dual filter version of the classic talkbox effect

MODE chooses the style of filter: low pass (LP2), band pass (BP2), or high pass (HP2). Two vowel sounds can be chosen for the filter, set with **FILTER A** and **FILTER B**, and the blend of the two is controlled with **MORPH**. The **Q** control set the filter's shape.

Set the number of formants with **NUM FORMANTS**, the formant frequencies are shifted higher or lower with the **FORMANT** control



fx

WAHWAH

WahWah is a wah filter effect with full manual control over the wah amount, same as with an effect pedal

WAH set the filter frequency, which is commonly modulated or controlled with a pedal or other MIDI controller

DRIVE set the amount of overdrive applied

MODEL set the style to a variety of common wah pedal models

MASTER set the output gain level

fx

XPANDER FILTER

A highly-customizable multi-mode filter with 37 shapes, vintage and modern algorithms, built-in saturation and oversampling

MODE

MODE set the filter shape. Click the image to choose between 37 different options or use the left/right arrows to scroll through them.

Filter types include:
LP - low pass
HP - high pass
BP - band pass
AP - all pass
PK - peak filter
T - twin filter

The number indicates the order of the filter (e.g. LP1 is a low pass filter with a 6 dB/octave slope)

FILTER

CUTOFF set the frequency for the filter; the note name of the corresponding frequency is also displayed (e.g. 2.00 kHz (B5)). **RESONANCE** adjusts how much emphasis is given to the cutoff frequency. **THICKNESS** overdrives the filter at lower frequencies to compensate for DC gain drop (e.g. crank it when you want more OOMPH than SIZZLE). **KEY TRACKING** changes how the cutoff frequency is adjusted relative to the note played. **ALGORITHM** allows you to choose between two modes: **MODE I** emulates a classic constant-Q filter solver, **MODE II** is a modern zero-delay filter solver. **2X** enables oversampling for the filter and provides the cleanest results when active.

OVERDRIVE

TYPE set the style of overdrive used: Soft Saturation, Hard Clip, or Linear
AMOUNT set the amount of overdrive used

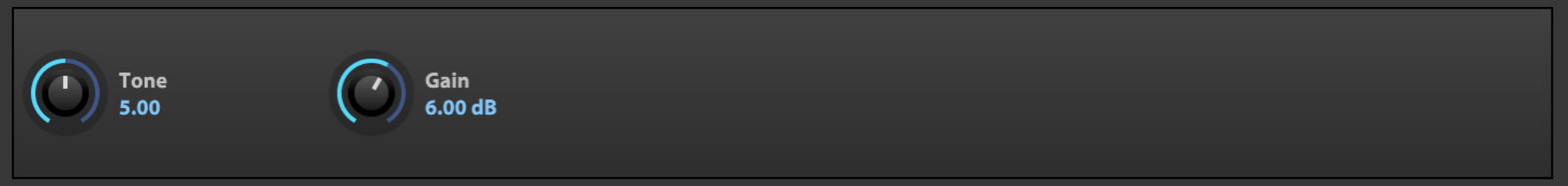
fx

3 BAND SHELF

The 3 Band Shelf has Low, Mid, and High bands. The Mid band is a bell curve, while the Low and High bands are shelves.

The crossover points between the bands are set with the **LOW/MID FREQ** and **MID/HIGH FREQ** controls

Each of the three bands have a **GAIN** control for boosting or cutting its frequency



fx

BIG PI TONE

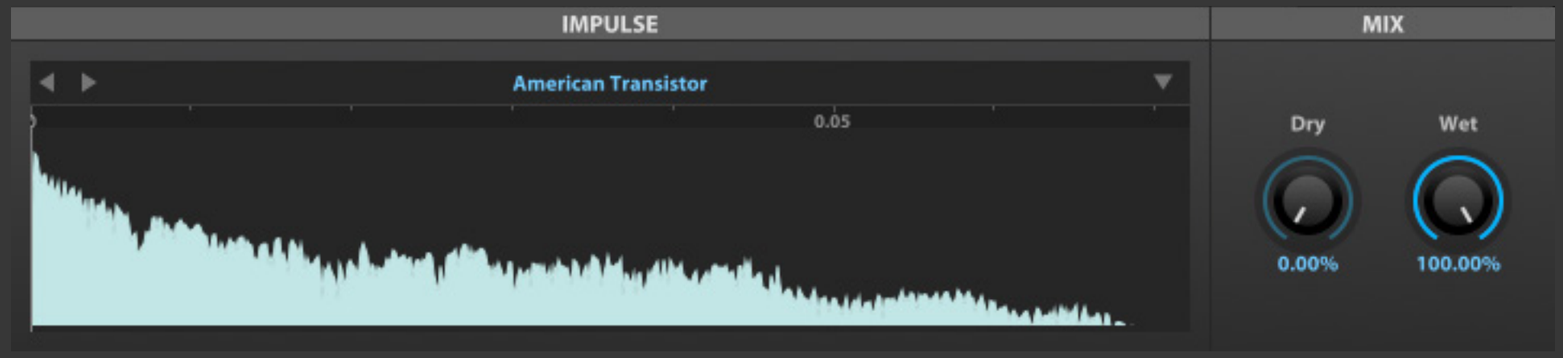
An emulation of the tone circuit in a popular fuzzbox guitar pedal

TONE adjusts the amount and type of filter applied

At zero a lowpass filter is applied, at 10.00 a highpass filter is applied, and the interim values are a blend of the two

The blended result is similar to a shelving filter with a notch in the middle

GAIN adjusts output level



fx

CONVOLVER

Convolver is a simple convolution processor, ideally suited for emulating EQs, cabinets, and so on. For reverb, the IReverb effect is recommended; see: [APPENDIX A > Effects > Reverb > IReverb]

IMPULSE

To load an **IMPULSE RESPONSE**, drag and drop an audio file to the sample area

MIX

DRY and **WET** knobs set the balance between the dry (unaffected) and wet (affected) signal sent to the module's output

IMPULSE FILES

To save the currently loaded impulse, use the Preset File menu and choose **SAVE IMPULSE** to save the current file or **SAVE IMPULSE AS** to save as a new file

DIGITAL EQ

Digital EQ is a parametric EQ with up to 16 bands, variable filter shapes, L/R and M/S modes, interactive graphic display, transpose and keytracking

MODE set the stereo mode to L/R or M/S

The 16 bands each offer control of:

- Bypass (power) button
- Band selector
- Link switch to control left or right channel independently or stereo link of the band
- EQ mode to choose the shape of the band: low-pass, high-pass, band-pass, notch, low-shelf, high-shelf and peak
- Frequency sets the frequency of the band
- Q adjusts the filter resonance
- Gain adjusts the band level in dB
- Bandwidth changes the frequency width

TRANSPOSE shifts all frequency bands

KEY TRACKING changes how the cutoff frequency is adjusted relative to the note played

GAIN adjusts overall output level

SCALE is scaling the all band's gain

In addition to the knobs and toggle switches, the bands can also be edited graphically in the frequency graph:

- Press and drag a point to adjust its frequency by dragging right/left, or its gain by dragging up/down
- Press and drag a band's color bars to adjust Q
- Right-click a point to enable/disable the band
- Double-click a point to return it to its default value
- When a band is selected, an information box is displayed in the upper left. As the band is adjusted, its Gain, Frequency, and Q values update in realtime.

To view a larger graph, drag the bottom edge of the module to resize it

fx

HARMONIC RESONATORS

The effect version of our resonator bank, offering 6-channels with coarse and fine tune, gain, coupling, key follow, and more.

GAIN adjusts overall output level
MIX sets the dry and wet signal balance

The 6 bands each offer control of:

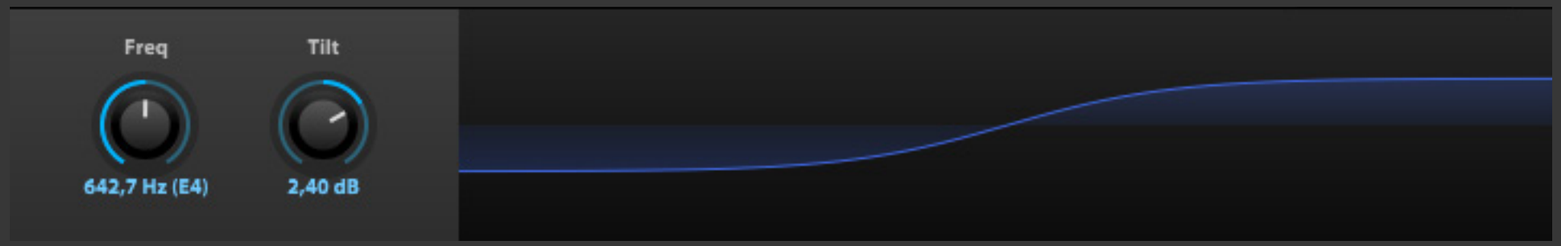
- Bypass (power) button
- Coarse to sets the filter frequency in semitones
- Fine to fine-tune the filter frequency in cents
- Gain adjusts the band level in dB
- Coupling to sets the coupling amount in Reflect and RotCir (aka Circular Rotation) modes

KEY FOLLOW to enable key tracking mode, **NOTE** sets the base note for the filters when Key Follow switch is off

TONE adjusts the high frequency damping of each harmonic resonator
DECAY sets the filter decays of all bands
SCALE controls the amount of decay scaling according to frequency (0%=no scaling, 100%=the higher the frequency, the shorter the decay)
MOD. DEPTH sets the filter modulation depth in cents

COUPLING MODE sets relationship between the filter bands:

- Parallel mode: processing all bands in parallel (or independently)
- Reflect mode: a weighted sum of each resonator's energy is fed back into all the others
- RotCirc mode: rotates a small fraction of energy from each band to the next (circularly)



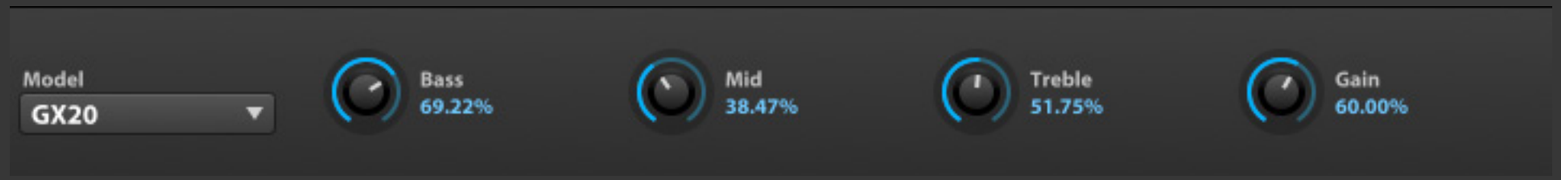
TILT

The Tilt module has two shelf bands, a low shelf and a high shelf, which are applied inversely

The **TILT** control set the amount of gain applied each to band

With negative values, the low shelf is boosted and the high shelf is cut; the opposite occurs with positive values

CUTOFF set the frequency for the EQ; the note name corresponding to the frequency is also displayed, for example, **2.00 KHZ (B5)**



TONE STACK

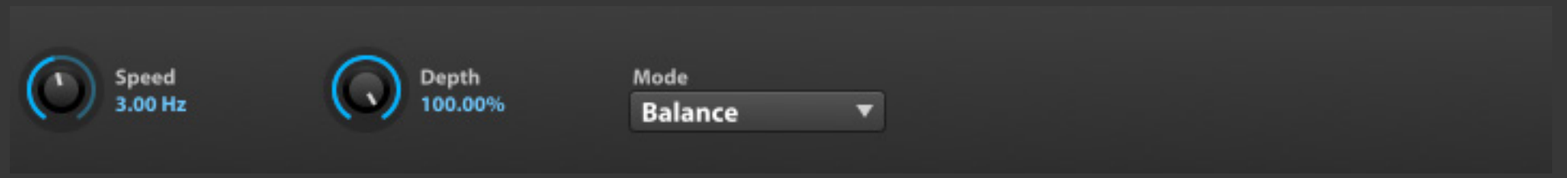
Tone Stack emulates the tone controls found on many common amplifier heads

MODEL chooses the style of amplifier head

BASS, **MID**, and **TREBLE** controls set the relative levels for each tone band

GAIN set the module's output gain, as a percentage of its input

TEMPO SYNC



fx

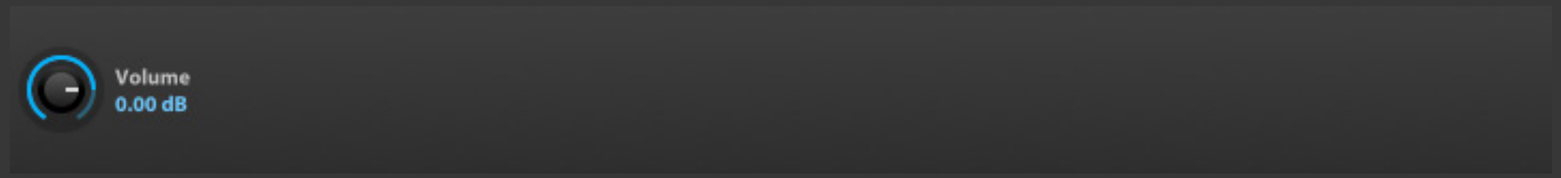
AUTOPAN

Autopan varies stereo panning with an LFO

SPEED set how quickly one auto-pan cycle is completed, in Hz or bars/beats (if tempo-synced)

DEPTH set how far across the stereo field the auto-pan will cover, with 100 percent covering the full distance from hard left to hard right

MODE chooses the pan law for the auto-pan cycle



fx

GAIN

Gain is a simple level adjustment module, used to boost or cut the signal level

VOLUME set the amount of boost or cut, from +12 dB to -∞

in \ out	L	R	C	LFE	Ls	Rs
L	1.00	0.00	0.00	0.00	0.00	0.00
R	0.00	1.00	0.00	0.00	0.00	0.00
C	0.00	0.00	1.00	0.00	0.00	0.00
LFE	0.00	0.00	0.00	1.00	0.00	0.00
Ls	0.00	0.00	0.00	0.00	1.00	0.00
Rs	0.00	0.00	0.00	0.00	0.00	1.00

fx

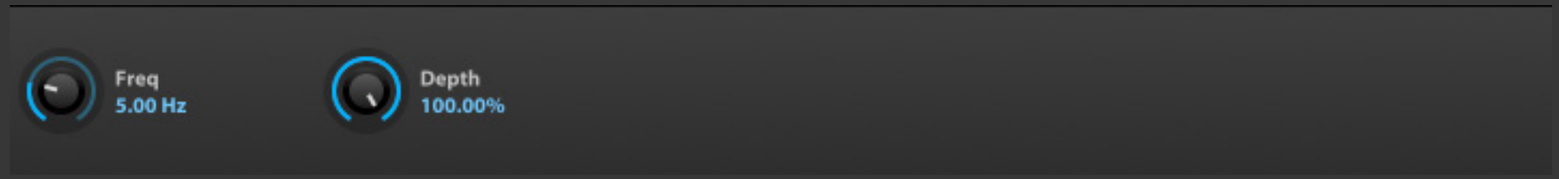
GAIN MATRIX

Gain Matrix set the gain level and phase of each channel. This allows for simple per-channel gain adjustments, or for specialized gain/phase transformations. Factory preset provide some common transformations, such as decoding mid-side to stereo.

The **INPUT** channels are listed down the side, and the **OUTPUT** channels are listed across the top. Each in/out relationship can be edited by typing in a new value or clicking and dragging the value:

- At 1.00, the signal is passed through at full strength and its original phase
- At 0.00, output is silenced for that channel
- At -1.00, the output is passed through at full strength but with the opposite phase

Gain Matrix also supports multi-channel configurations, such as quad, 5.1, 7.1, and others



fx

TREMOLO

Tremolo varies amplitude with an LFO

FREQUENCY set how quickly the LFO cycle is completed, in Hz or bars/beats (if tempo-synced)

DEPTH set how far across the gain range the cycle will cover, with 100 percent covering the full distance from -∞ to 0 dBFS

fx

UVI WIDE

UVI Wide is a stereo width enhancer with a high-shelf filter

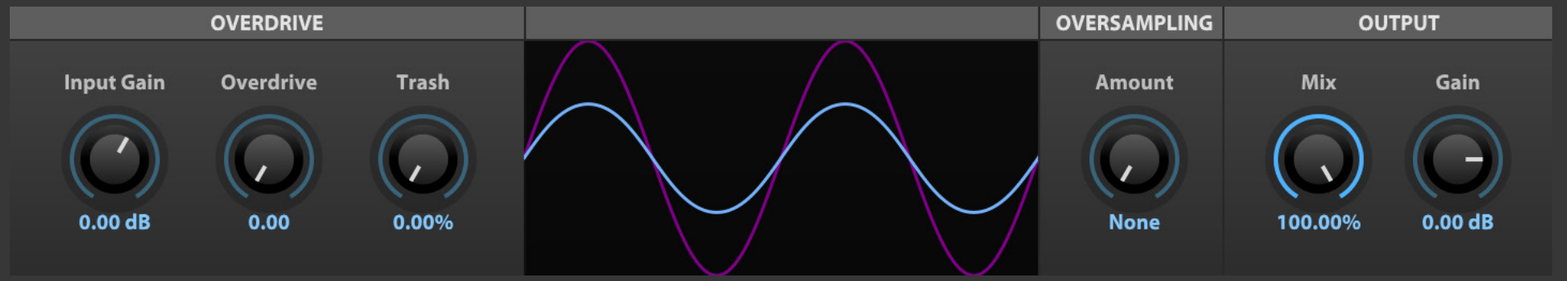
WIDTH adjusts the stereo spread of the module's output. At zero, the stereo image of the input signal is unaffected. Positive values increase the stereo spread and negative values reduce it, down to a mono signal at -100%.

DELAY set the amount of delay applied to one channel to help create a wider a stereo image

EXTRA WIDTH provides additional frequency control by way of a high-shelf EQ

EXTRA WIDTH FREQ set the EQ frequency

EXTRA WIDTH GAIN sets the EQ gain adjustment (+/-)



fx

ANALOG CRUNCH

Analog Crunch is inspired by overdrive/distortion effect pedals commonly used with electric guitars

OVERDRIVE

INPUT GAIN set the gain adjustment into the module, before any distortion is applied

OVERDRIVE and **TRASH** set the amount and character of the distortion

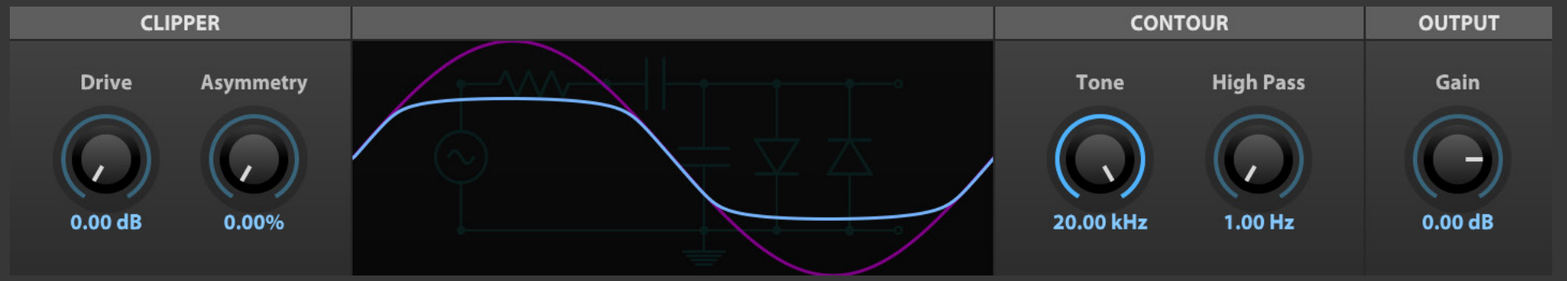
OVERSAMPLING

Set the **AMOUNT** of oversampling applied (if any), from 2x to 16x

OUTPUT

MIX set the balance between the clean and overdriven signals

GAIN set the final, post-distortion gain adjustment



fx

DIODE CLIPPER

Diode Clipper is a circuit-modelled diode clipping stage similar to those found in many overdrive stomp boxes

CLIPPER

DRIVE controls the overall effect intensity

ASYMMETRY shifts the saturation symmetry between the two diodes, effecting the even/odd harmonic ratio

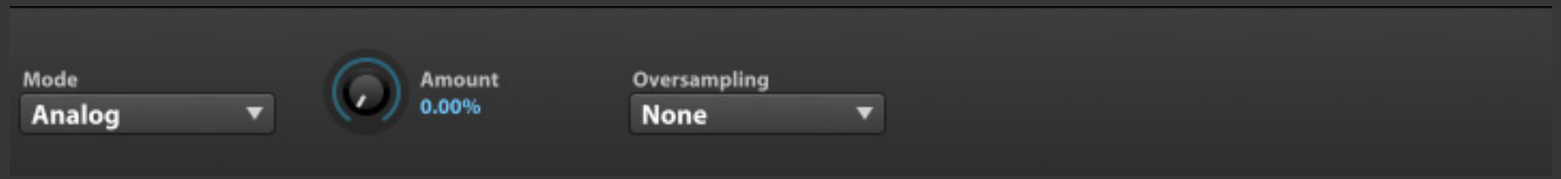
CONTOUR

The circuit of Diode Clipper includes a passive non-linear, dynamic-driven HP/LP filter that exhibits effects like hysterisis when saturated

TONE set the frequency of the LP filter
HIGH PASS controls the HP filter frequency

OUTPUT

GAIN set the final, post-distortion gain adjustment



DRIVE

Drive offers a straight-ahead drive/ distortion, with three different flavors of distortion

MODE set the style of drive (Analog, Mild, or Strong)

AMOUNT set the amount of drive.

Use **OVERSAMPLING** to set the amount of oversampling applied (if any), from 2x to 16x

As oversampling is processor intensive, it's recommended to apply oversampling as little as is necessary to reduce unwanted aliasing

Often, no oversampling will be needed

fx

EXCITER

Exciter is a classic exciter effect, adding brightness and saturation

DRIVE

INPUT GAIN set the gain adjustment into the module, before any distortion is applied

AMOUNT chooses the amount of excitation applied

MODE

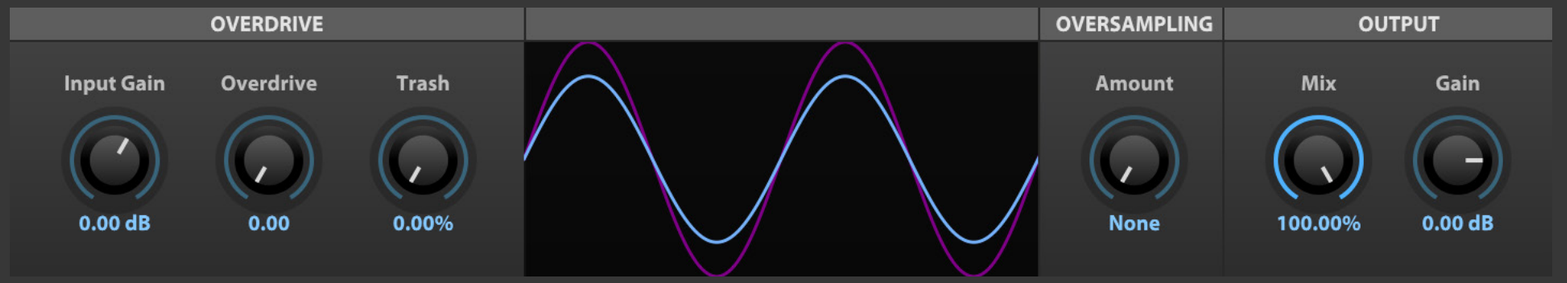
MODE set the style of exciter, using common characteristics of Tape or Tube exciter

Use **OVERSAMPLING** to set the amount of oversampling applied (if any), from 2x to 16x

OUTPUT

MIX set the balance between the clean and excited signals

GAIN set the final, post-distortion gain adjustment



fx

FUZZ

Fuzz is inspired by classic fuzz guitar and bass effect pedals

OVERDRIVE

INPUT GAIN set the gain adjustment into the module, before any fuzz is applied

OVERDRIVE and **TRASH** set the amount and character of the fuzz

OVERSAMPLING

Set the **AMOUNT** of oversampling applied (if any), from 2x to 16x

MODE

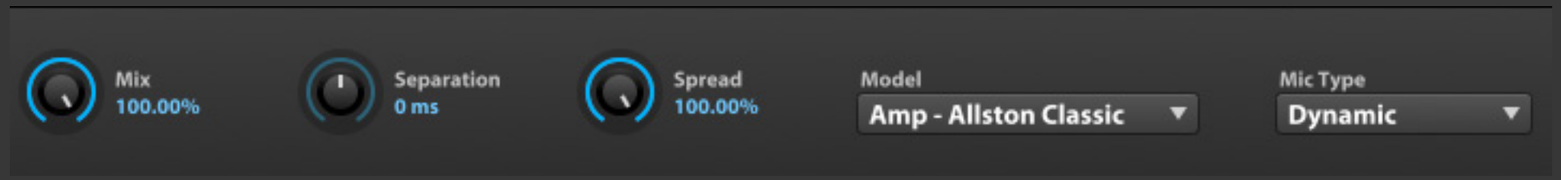
MODE set the style of exciter, using common characteristics of Tape or Tube exciter

OVERSAMPLING set oversampling applied (if any), from 2x to 16x

OUTPUT

MIX set the balance between the clean and excited signals

GAIN set the final, post-distortion gain adjustment



fx

GUITAR BOXES

Guitar Boxes emulates a guitar cabinet, with multiple cabinet models and mic types

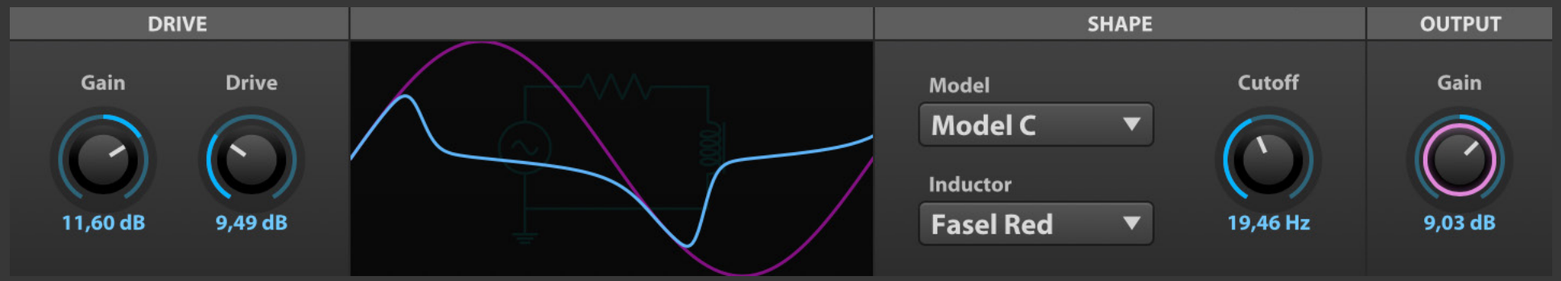
MIX set the balance between the original and amplified signals

SEPARATION set the amount of delay, in ms, from amplifier to the microphone

SPREAD set the amount of stereo spread, from zero percent (mono) or 100 percent (full stereo)

MODEL chooses the style of amplifier, from well-known amp models to general device types to unusual FX simulations

MIC TYPE adjusts the characteristic of the microphone capturing the amplified signal, as a Dynamic, Condenser, or Ribbon mic



fx

MAGNETIC BASS SHAPER

Abuse the saturating hysteretic behaviour of famous inductors to shape and add punch to bass sounds while leaving high frequencies clean

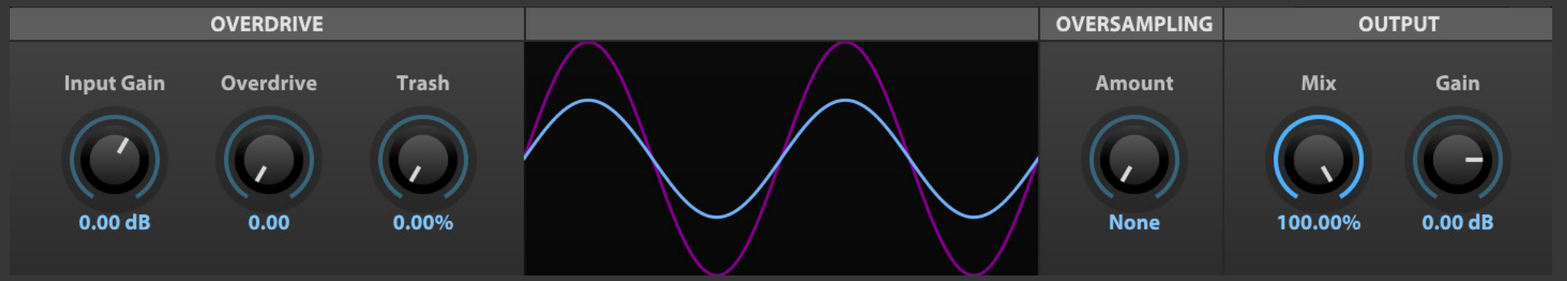
GAIN set the gain adjustment into the module

DRIVE set the amount of the drive applied to the signal

MODEL and **INDUCTOR** set the shape of the inductor model used. Measurements were made using Fasel Red, and Fasel Yellow inductors, each providing a unique distortion profile.

CUTOFF sets the frequency cutoff of the inductor circuit

GAIN set the output gain adjustment



fx

OVERDRIVE

Overdrive emulates overdrive distortion commonly used on guitars

OVERDRIVE

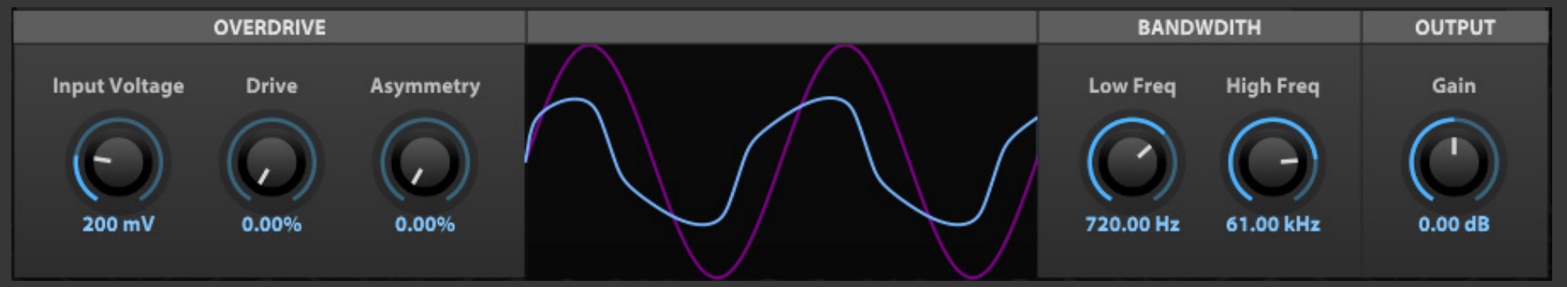
INPUT GAIN set the gain adjustment into the module, before any distortion is applied

OVERDRIVE and **TRASH** set the amount and character of the distortion

OVERSAMPLING
Set the **AMOUNT** of oversampling applied (if any), from 2x to 16x

OUTPUT
MIX set the balance between the clean and overdriven signals

GAIN set the final, post-distortion gain adjustment



fx

TS OVERDRIVE

Drive-stage emulation of the Tube Screamer overdrive pedal with custom mods

OVERDRIVE

INPUT VOLTAGE sets the input voltage adjustment into the module, before any distortion is applied

DRIVE and **ASYMMETRY** set the amount and character of the overdrive

BANDWIDTH

LOW FREQ and **HIGH FREQ** set the low and high cut frequency of the overdrive signal

OUTPUT

GAIN sets the final, post-distortion gain

fx

WAVE SHAPER

Wave Shaper distorts the input signal by transforming the shape of the waveform, which often results in heavily distorted sounds

INPUT GAIN set the gain adjustment into the module, and **PRE FREQ** set the frequency of lowpass filter applied before any waveshaping

Choose the **WAVE SHAPE** by clicking the waveform selecting a wave from the menu, then use **AMOUNT** and **KNEE** to adjust characteristics of the wave shape. (Not available in some shapes)

Use **OVERSAMPLING** to set the amount of oversampling applied (if any), from 2x to 16x. As oversampling is processor intensive, it's recommended to apply oversampling as little as is necessary to reduce unwanted aliasing. Often, no oversampling will be needed.

POST FREQ set the frequency of a highpass filter applied after waveshaping. **OUTPUT GAIN** set the gain adjustment, after waveshaping is applied.

MIX set the balance between the clean and overdriven signals

fx

3-BAND COMPRESSOR

The 3-Band Compressor is a multi-band version of the compressor, with adjustable crossover frequencies

The 3-Band Compressor has Low, Mid, and High bands.

BAND 1-3
Each of the three bands have standard compressor controls: **THRESHOLD**, **RATIO**, **ATTACK**, **RELEASE**, **GAIN** and **MIX**. For more information on compressor settings, see: [Appendix A: Modules > Effects > Dynamic > Compressor Expander]

To select a band to edit, click in the corresponding area of the display - the parameters for that band will be displayed below in a matching color

To change the crossover frequency between bands, click-drag the border line between them

To solo a band, click the [S] button in the upper-left of the band display

MASTER
GAIN IN set the global input gain
GAIN OUT set the global output gain
MIX set the dry and wet signal balance

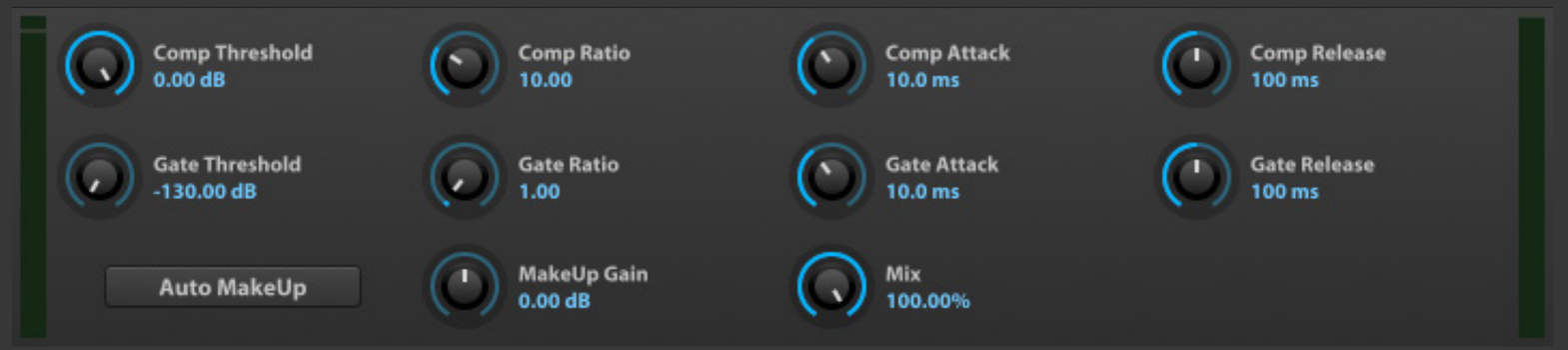
fx

3 BAND LIMITER

The 3 Band Limiter is a multi-band version of the Studio Limiter, with adjustable crossover frequencies

The 3 Band Limiter has Low, Mid, and High bands. The crossover points between the bands are set with the **LOW/MID FREQ** and **MID/HIGH FREQ** controls.

Each of the three bands have standard limiter controls: **THRESHOLD**, **MARGIN**, and **RELEASE**. For more information on limiter settings, see:
[Appendix A: Modules > Effects > Dynamic > Studio Limiter]



fx

COMPRESSOR EXPANDER

Compressor Expander is a dual dynamics processor — the compressor tames signal peaks over a chosen threshold, and the expander gates the signal below a second, independent threshold

Both the compressor and gate have Threshold, Ratio, Attack, and Release controls. **THRESHOLD** set the level at which the compressor or gate will be applied. **RATIO** set the ratio between input gain and output gain. **ATTACK** and **RELEASE** set the speed at which the compressor or gate begins or stops processing the signal after it has crossed the threshold.

MAKEUP GAIN applies a manual gain adjustment to compensate for the gain reduction of the compressor. Or, to have makeup gain applied dynamically, enable **AUTO MAKEUP**.

MIX set the balance between the dry (unaffected) and wet (affected) signal sent to the module's output.

Lastly, the **INPUT METER** on the left side of the module displays the level of the input signal, and the **GAIN REDUCTION METER** on the right side of the module displays the amount of gain reduction applied. Note that the righthand meter is not an output meter.

fx

FEEDBACK COMPRESSOR

Feedback Compressor is a modern take on vintage compression. By focusing solely on feedback designs we wanted to retain the particular behavior and characteristics of old compressors, such as nonlinearly dependent time-constants, limited gain reduction (or very fast attacks but at the same time), full parametric control over the transfer function, soft-knee, makeup gain, and parallel compression.

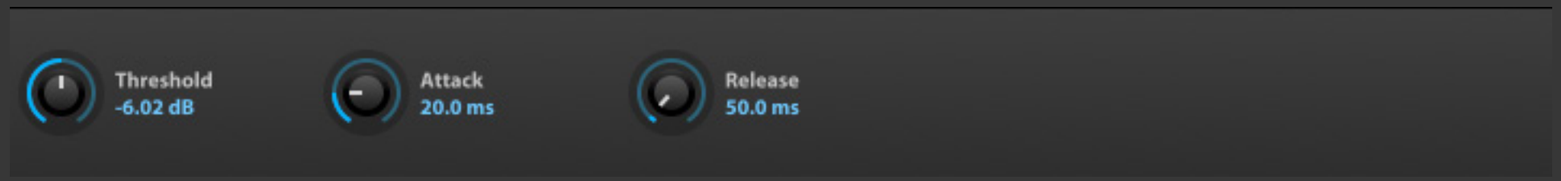
THRESHOLD set the level at which the compressor or gate will be applied. **RATIO** set the ratio between input gain and output gain. **KNEE** adjusts the smoothness of the compression knee. **ATTACK** and **RELEASE** set the speed at which the compressor begins or stops processing the signal after it has crossed the threshold.

The **I O METER** displays the level of the input, gain reduction and output signal, and the switch at bottom of the meters toggle the **TIMELINE** to displays the gain reduction over time.

DYN. RANGE adjusts the overall dynamic range of the compressor.

MAKEUP GAIN applies a manual gain adjustment to compensate for the gain reduction of the compressor.

MIX set the balance between the dry (unaffected) and wet (affected) signal sent to the module's output.



fx

GATE

Gate is a traditional gate, silencing signals below a chosen threshold

THRESHOLD set the level at which the gate will be applied

ATTACK and **RELEASE** set the speed at which the gate begins or stops processing the signal after it has crossed the threshold

fx

MAXIMIZER

Maximizer is a look-ahead limiter with a graphical timeline to visualize the dynamic range of the input and output

THRESHOLD sets the level at which limiting will be applied, and **CEILING** set the maximum output level

LOOKAHEAD sets the amount of time the module will lookahead at the input signal; longer lookahead times can achieve a better response for transients and other sudden changes in amplitude.

RELEASE sets the speed at which the limiter stops processing the signal after it has fallen below the threshold.

The **INPUT METER** on the left side of the module displays the level of the input signal, and the **GAIN REDUCTION METER** on the right side of the module displays the amount of gain reduction applied

Note that the righthand meter is not an output meter

The **TIMELINE** displays the input signal and gain reduction over time. The blue graph rises from the bottom of the timeline and indicates the amplitude of the input signal; the red graph grows downward from the top of the timeline and indicates gain reduction.

OPAL

Based on a classic hardware optical-compressor, Opal provides impressive realism thanks to deep physical modelling. 7 uniquely modeled flavors are available offering a range of useful characters.

MODEL choose a model among seven emulations of real studio leveling amplifiers (optical compressors), each with its own character (dynamic range and response time).

INPUT GAIN controls the gain applied to the signal before compression

PEAK REDUCTION controls the detection threshold. Maximal threshold at 0% peak reduction, minimal threshold at 100 % peak reduction.

RESPONSIVENESS multiplies the response time (attack and release, jointly). The response time is still program-dependent but can be set shorter or longer for a given input.

COMPRESSOR/LIMITER switches the operation mode between compressor and limiter

LINK MODE click to show the drop-down menu to set the stereo link mode based on Left, Right, Mono (LR sum), Max ch (louder between L or R ch) or Unlinked (link off)

MID PRESENCE controls the sidechain filter frequency response, this corresponds to the original R37 “emphasis” control.

TREBLE enables treble boost

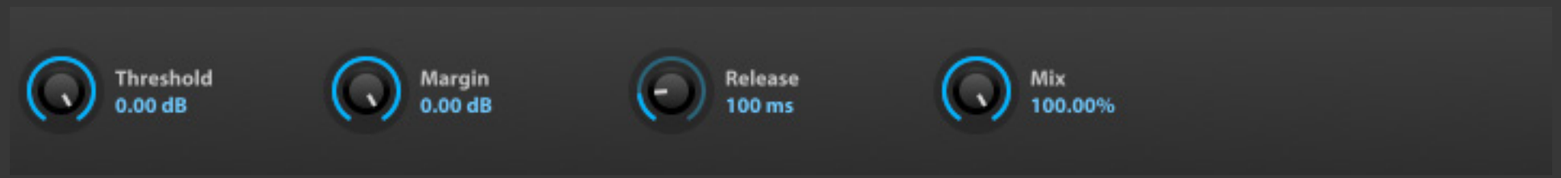
VU METER Indicates output or gain reduction level by **OUT|GR** toggle, the **IO METER** displays the level of the input and output signal

MAKE-UP GAIN applies a manual gain adjustment to compensate for the gain reduction of the compressor.

TUBE SIMULATION turn on or off the full physical-modeling tube simulation for Make Up Gain. More CPU intensive when switched on.

MIX sets the balance between the dry (unaffected) and wet (affected) signal sent to the module’s output.

DRIVE adjusts the gain applied to the signal fed into Make Up Gain when the Tube Simulation is active



fx

STUDIO LIMITER

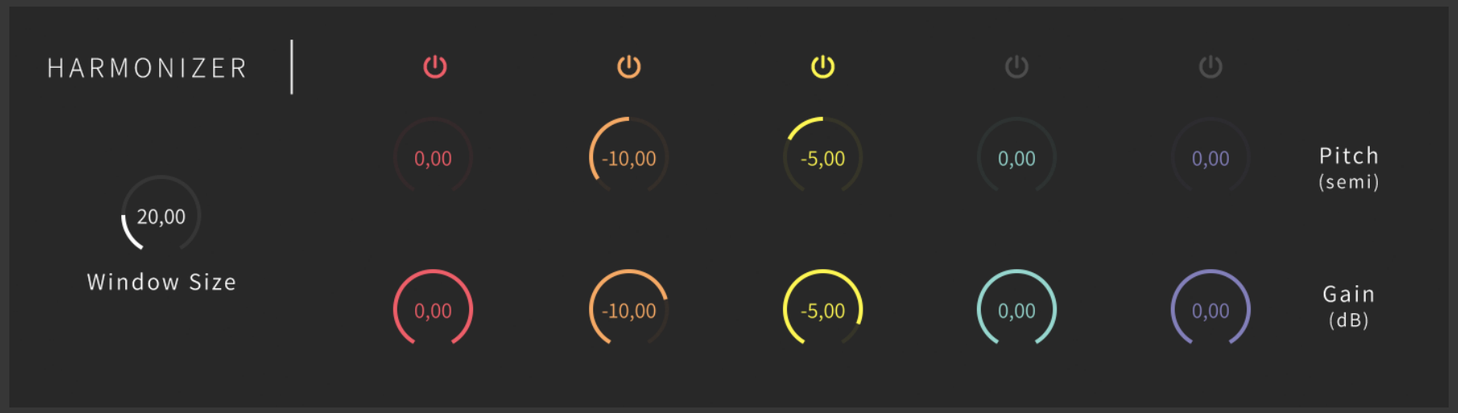
The Studio Limiter is a high-quality limiter, suited for individual parts or for full stereo mixes

THRESHOLD sets the level at which limiting will be applied

MARGIN sets the maximum output level, which can also be thought of as the margin between the maximum signal output by the limiter and zero dBFS

RELEASE sets the speed at which the limiter stops processing the signal after it has fallen below the threshold

MIX sets the balance between the dry (unaffected) and wet (affected) signal sent to the module's output



HARMONIZER

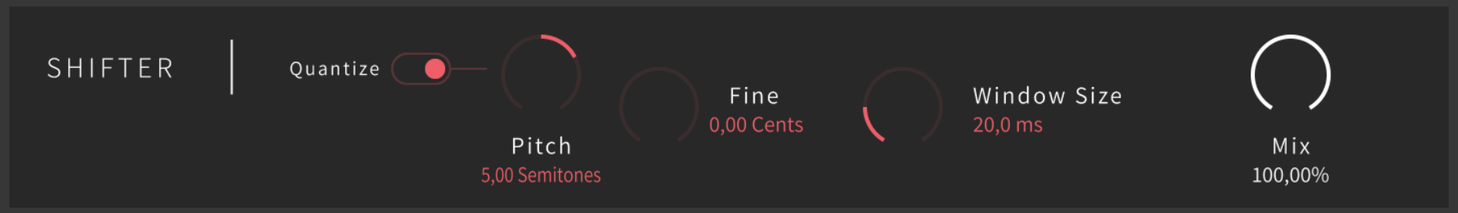
Harmonizer is simple and effective effects to create up to 5-voice harmony. Ideal for sounds that have a dominant monophonic component but are not required to be exactly periodic.

WINDOW SIZE sets the size of the window (a processing unit applied to the signal for pitch shifting).

POWER ⏻ enable the voice.

PITCH sets the pitch shift in semitones (+/-12).

GAIN adjusts the voice gain.



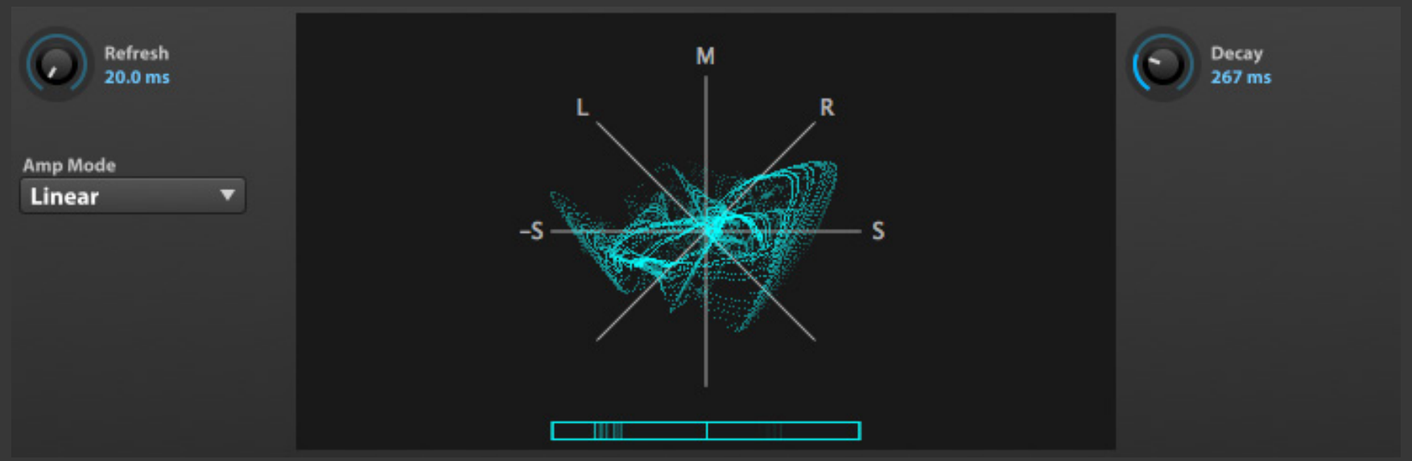
SHIFTER

Pitch Shifter is simple and effective effects using the pitch-shifting engine, ideal for sounds that have a dominant monophonic component but are not required to be exactly periodic.

PITCH sets the pitch shift in semitones (+/-12), and **FINE** adjusts the pitch shift in cents (+/-100). Enable **QUANTIZE** to make stepped pitch bend effect, when realtime control or modulate the pitch control.

WINDOW SIZE sets the size of the window (a processing unit applied to the signal for pitch shifting).

MIX sets the balance between the dry (unaffected) and wet (affected) signal sent to the module's output



POP-OUT EDITOR

PHASE METER

The Phase Meter displays the phase correlation of the signal. When the signal is fully mono, a vertical bar is displayed; with stereo channels that are fully out of phase, a horizontal bar is displayed

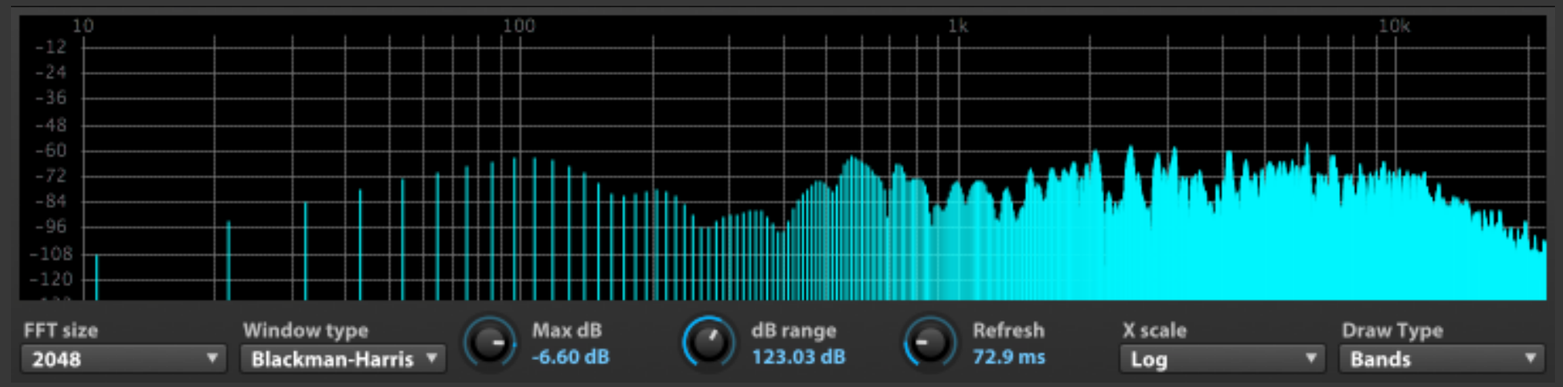
REFRESH set how quickly the audio signal is measured, and **DECAY** set how quickly the measurement fades from the display

AMP MODE chooses a scale for the amplitude of the input signal, Linear or dB

To view a larger meter, drag the bottom edge of the module to resize it

Press the **EXTERNAL WINDOW** button in the module title bar to open the meter in a separate window to view it even larger

POP-OUT EDITOR



fx

SPECTRUM ANALYZER

The Spectrum Analyzer displays the frequency content of the signal. Frequencies are displayed on the X-axis, increasing from left to right, and amplitude is displayed on the Y-axis, increasing from bottom to top.

FFT SIZE defines the length of the frequency sampling window; larger sizes are more precise, but require more processing power

WINDOW TYPE chooses the function used for sampling

MAX DB set the maximum value that can be displayed in the analyzer (the very top of the graph), and **DB RANGE** set the range below the maximum value that will be displayed

X SCALE chooses the scale used for the horizontal axis: Linear, Log, Semitones, or 3rd Octave. The labels on the left and top sides of the graph update as you adjust the Max dB, dB range, and X scale settings.

DRAW TYPE chooses how the frequency response will be drawn on the graph: as a single continuous line (Line), as multiple thin lines (Bin), or thick bars (Bands)

REFRESH set how quickly the graph is re-drawn

To view a larger graph, drag the bottom edge of the module to resize it

Press the **EXTERNAL WINDOW** button in the module title bar to open the graph in a separate window to view it even larger

POP-OUT EDITOR

TUNER

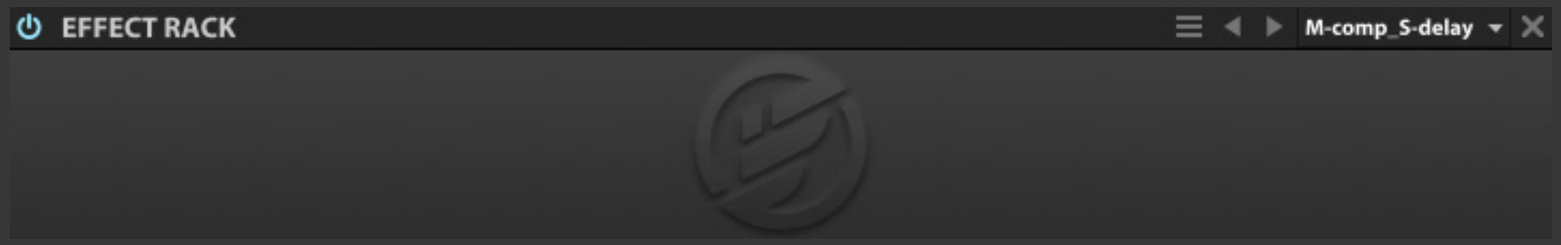
The Tuner is a chromatic tuner with a needle-style meter, accurate to 1 cent increments. The Tuner is a helpful tool when adjusting a sample's pitch with its keygroup Fine Tune parameter.

REFRESH set how quickly the tuner reacts as the audio signal changes

FREQ MIN and **FREQ MAX** set boundaries for the lowest and highest frequencies that the tuner will detect

To view a larger tuner, drag the bottom edge of the module to resize it

Press the **EXTERNAL WINDOW** button in the module title bar to open the tuner in a separate window to view it even larger

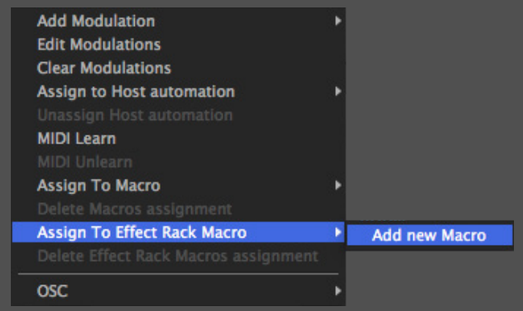


EFFECT RACK

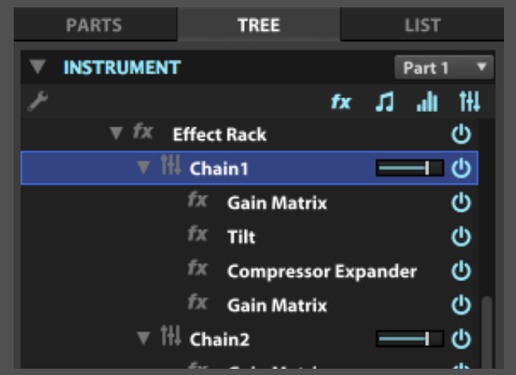
The Effect Rack creates a new effects path inline where the Effect Rack module is added. Macros can be added to the front-panel to control the effects that are added to the Effect Rack's FX chain.

To view and edit the FX chain within an Effect Rack, go to the TREE view, tab open the Effect Rack, and choose the "chain" node. To add FX you can right-click the "chain" node and select new FX from the menu, or navigate to the EFFECTS view in the center column and click "+".

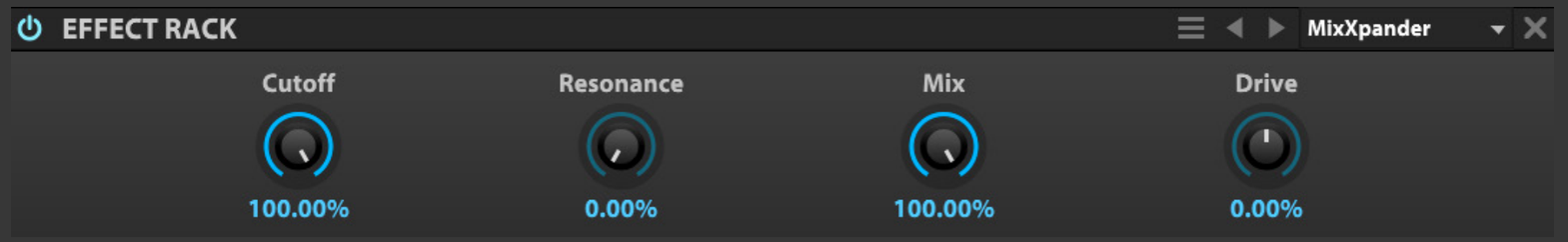
You can add macros to the Effect Rack's **FRONT PANEL** to control any parameter of an effect in the chain. To create a macro, right-click a parameter on an effect in a chain and choose **ASSIGN TO EFFECT RACK MACRO.** To change a macro's name, double-click the macro's name on the Effect Rack and enter a new name.



The overall level of the FX chain can be adjusted in the Tree view, or the chain can be disabled with the **POWER** button.



You can also create additional FX chains within a single Effect Rack by right-clicking the Effect Rack node in the TREE view and choosing **ADD FX CHAIN**. Chains are discrete and run in parallel, but utilize the same front panel for macros.



EFFECT RACK » **FILTER**

Tailor-made filters as Effect Racks

MixXpander (screen example above) is a simple cutoff filter with mix control. Parallel and Stereo Xpander is made with two Xpander filters to create parallel or stereo filter effects.

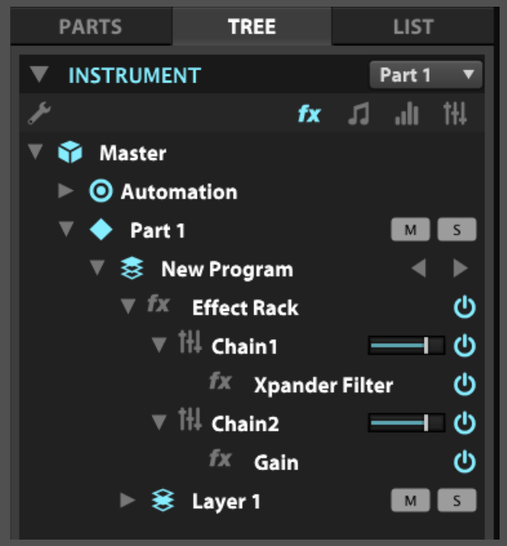
CUTOFF sets the frequency for the filter

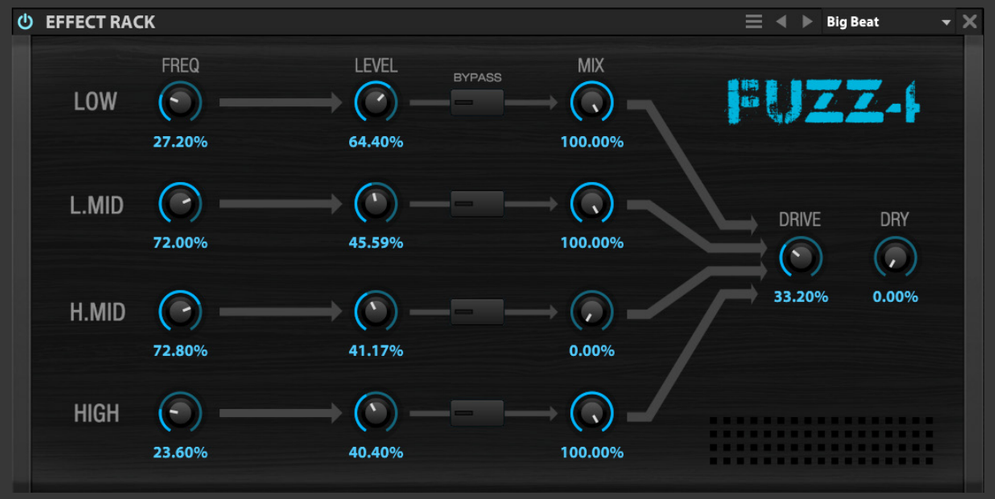
RESONANCE adjusts how much emphasis is given to the cutoff frequency

MIX sets the balance between the dry (unaffected) and wet (affected) signal sent to the module's output

DRIVE sets the amount of overdrive used

You can see the FX chains and edit the modules in the Tree view by choosing the node





EFFECT RACK » **FUZZ4**

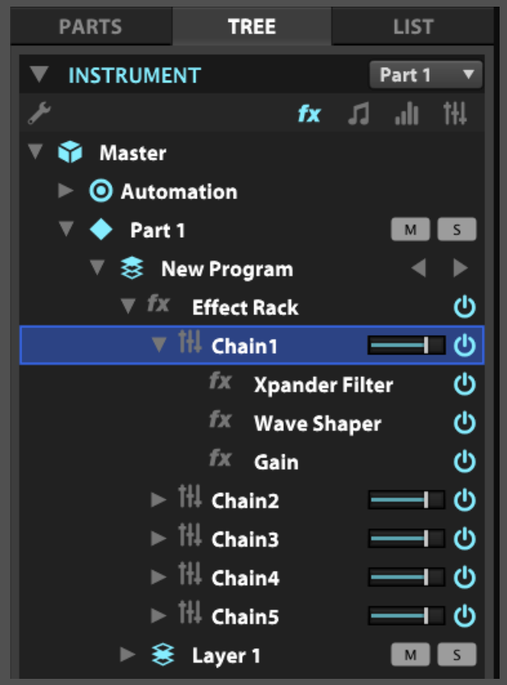
A 4-band distortion effect

FREQUENCY set the band frequency. **LEVEL** set the output volume of the band, **BYPASS** button enables or disables the band (FX chain), and **MIX** set the balance between the dry (unaffected) and wet (affected) signal of the band

DRIVE adjust characteristics of the drive

DRY set the dry (unaffected) signal sent to the module's output

You can see the FX chains and edit the modules in the Tree view by choosing the node



fx EFFECT RACK » MAXMS

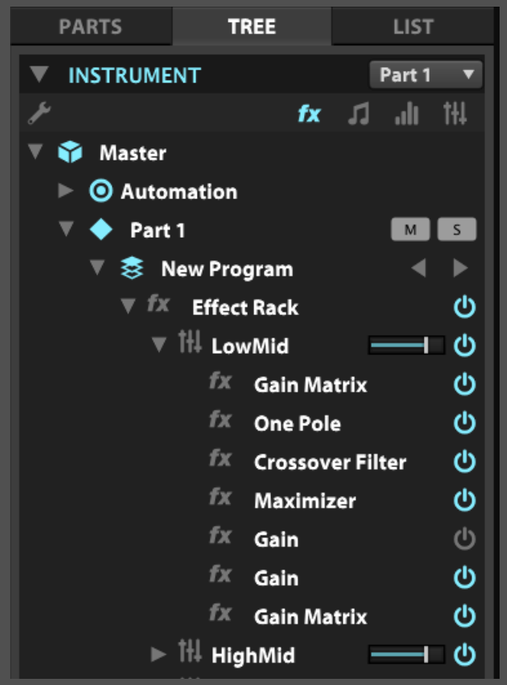
A Mid-Side Mastering module with High and Low band for MID control

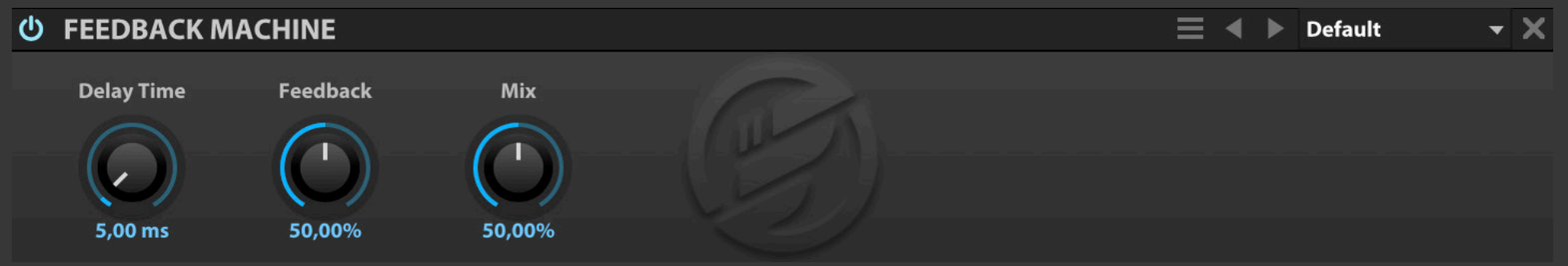
MID
COMP set the compresson amount. Mute the band with **MUTE** switch, and the **GAIN** adjust the band level with GAIN.

CROSSOVER adjusts the frequency of the Low and High Mid bands.

SIDE
COMP set the compresson amount. Mute the band with **MUTE** switch, and adjust the band level with **GAIN**.

You can see the FX chains and edit the modules in the Tree view by choosing the node





FEEDBACK MACHINE

The Feedback Machine is a variant of the standard Effect Rack with a featured feedback loop, providing control over feedback amount, feedback injection delay, and overall mix amount

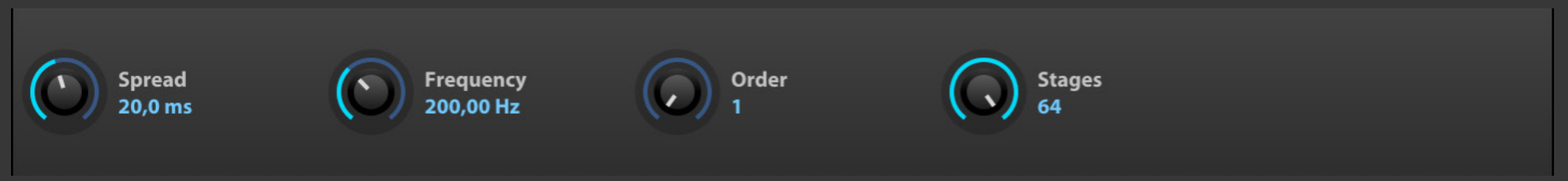
For general instruction on using an Effect Rack see:
[Appendix A: Effects > Effect Rack]

Feedback Machine provides a featured feedback loop to your Chain. In its default state, Feedback Machine is identical to an empty Effect Rack in appearance and function, with the addition of 3 knobs on the front panel:

DELAY TIME sets the time (in milliseconds) to delay the feedback signal before reinjection to the Chain

FEEDBACK sets the amount of the Chain's output to reinject at its input (take care)

MIX sets the wet/dry level of the effect



fx

DISPERSOR

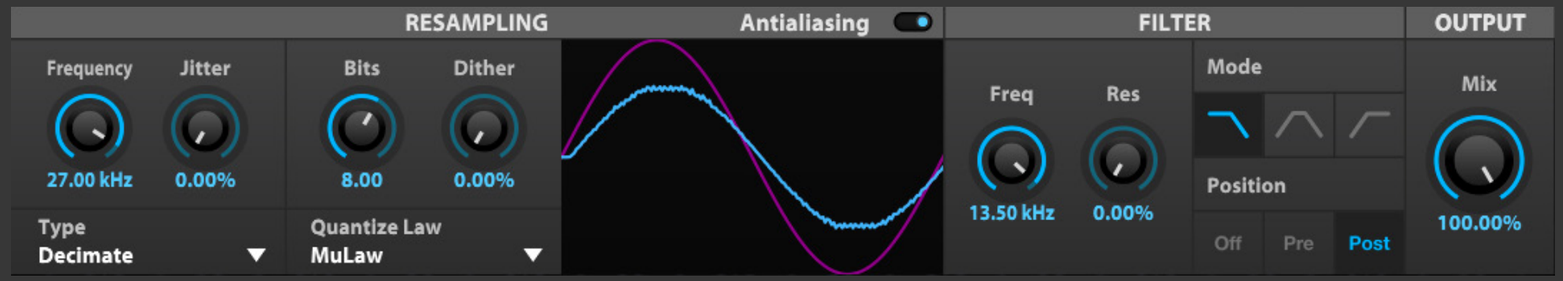
A unique and versatile transient shaper with variable spread, frequency, order, and stages.

SPREAD sets the dispersion duration in milliseconds

FREQUENCY sets the dispersion frequency

ORDER sets the dispersion order 1 or 2

STAGES sets the number of the dispersion stages



REDUX

A resampling effect useful for emulating the lo-fidelity sound of various hardware units or extreme bit reductions, with an entirely redesigned algorithm for analog bit-crushing in Falcon 2

RESAMPLING

FREQUENCY set the resampling frequency, with **JITTER** introducing time variations to the resampling. **BITS** set the bit depth, and **DITHER** set the amount of dither (a type of low-level randomized noise).

TYPE chooses the style of resampling: **DECIMATE** inserts zeroes in between sampled values, and **BLOCKER** holds a sampled value until the next sampled value.

QUANTIZE LAW set the type of quantization to one of two common algorithms: linear or mu-law (also known as μ-law)

The **ANTIALIASING** toggle set whether an anti-aliasing filter is enabled. When disabled, frequencies over the sampling rate may **WRAP AROUND** when resampled and cause unusual harmonics.

FILTER

FILTER FREQUENCY set the frequency for the filter, and **FILTER RESONANCE** adjusts how much the cutoff frequency is emphasized.

FILTER MODE chooses the type of filter: low pass (LP), high pass (HP), or band pass (BP). **FILTER POSITION** chooses whether the filter is Off, before resampling (Pre), or after (Post).

OUTPUT

MIX set the balance between the dry (unaffected) and wet (affected) signal sent to the module's output

UVINYL

UVinyl is a vinyl simulation effect

VINYL

Choose the general vinyl characteristics with **YEAR**, **RPM TYPE**, and amount of **WEAR**

NOISE

To add noise to the record, add **ELECTRICAL NOISE** or **MECHANICAL NOISE** with their Gain control

DUST AND SCRATCH

To add **DAMAGE** to the record, add **DUST** or **SCRATCH** with their Gain controls. The relative frequency of dust and scratches can be adjusted with the **DUST AMOUNT** and **SCRATCH AMOUNT** controls.

OUTPUT

The signal can be folded down to mono with the **MONO** toggle

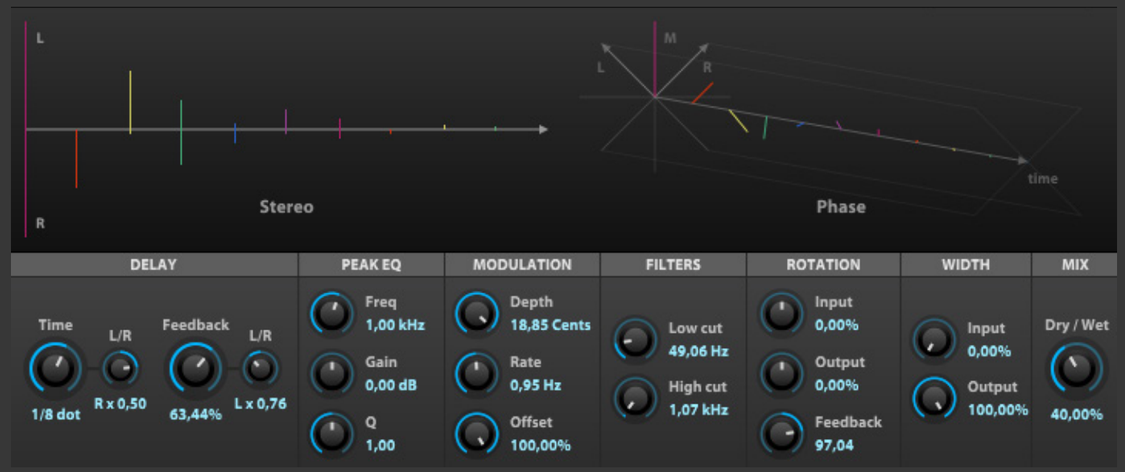
fx

APPENDIX A: LEGACY EFFECTS

The Legacy FX modules were included in past versions of Falcon, UVI Workstation and MachFive. When older program and multi files are loaded, Legacy FX modules may be recalled.

For new programs and multis, it's recommended to use the standard effects modules.

TEMPO SYNC



fx DUAL DELAY

Dual Delay is a delay module with multiple controls for modifying one or both channels to produce a rich array of time-based effects, with an immersive interface to help visualize the stereo and phase adjustments being made.

DELAY

TIME set the length of delay, in ms or bars/beats (if tempo-synced). **FEEDBACK** chooses the percentage of signal fed back into the module. Both Time and Feedback have **L/R** controls to adjust the value for each channel as a percentage of the main value.

PEAK EQ

A peak EQ located in the feedback loop. **FREQ** set the EQ frequency. **GAIN** set the EQ gain amount (+/-). **Q** set the filters bandwidth.

MODULATION

DEPTH chooses a detune amount for the delay taps, and **RATE** set the speed of modulation. **OFFSET** adjusts the phase offset of the delay line LFO.

FILTERS

The filters affect only the wet signal; the dry signal is not filtered. **LOW CUT** rolls off lower frequencies, and **HIGH CUT** rolls off higher frequencies

ROTATION

The Rotation section adjusts the phase of the **INPUT**, **OUTPUT**, and **FEEDBACK** signals

WIDTH

INPUT adjusts the stereo spread of the signal input to the effect, and **OUTPUT** adjust the spread of the output signal

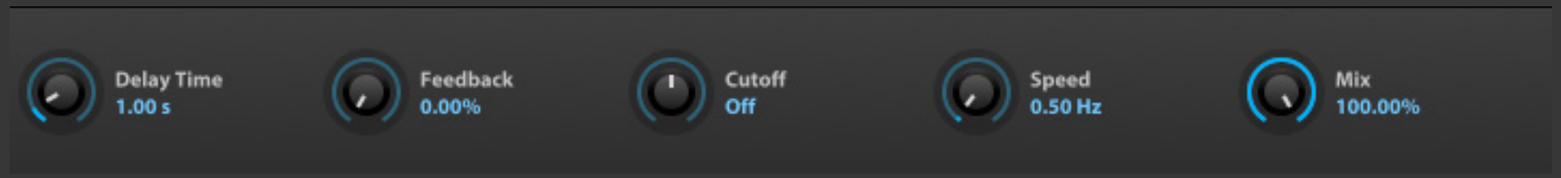
MIX

DRY/WET knob set the balance between the dry (unaffected) and wet (affected) signal sent to the module's output

DISPLAY

The display shows a visual representation of how the controls will affect the **STEREO** and **PHASE** output of the module

TEMPO SYNC



FX DELAY

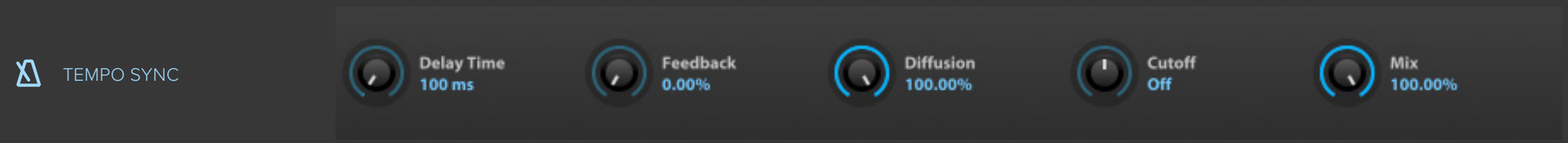
FX Delay is a stereo delay with auto-panned stereo modulation

DELAY TIME set the length of delay, in ms or bars/beats (if tempo-synced), and **FEEDBACK** chooses the percentage of signal fed back into the module

CUTOFF set the type and amount of filter. At the center position, no filter is applied. To the right of center, a high-pass filter is applied, and further to the right raises the cutoff frequency. Likewise, further left of center applies a low-pass filter and drops the cutoff frequency.

The delay is also auto-panned; **SPEED** controls the auto-pan rate, in Hz or bars/beats (if tempo-synced)

MIX set the balance between the dry (unaffected) and wet (affected) signal sent to the module's output



FAT DELAY

Fat Delay uses multiple delay lines and diffusion to produce a dense delay tail

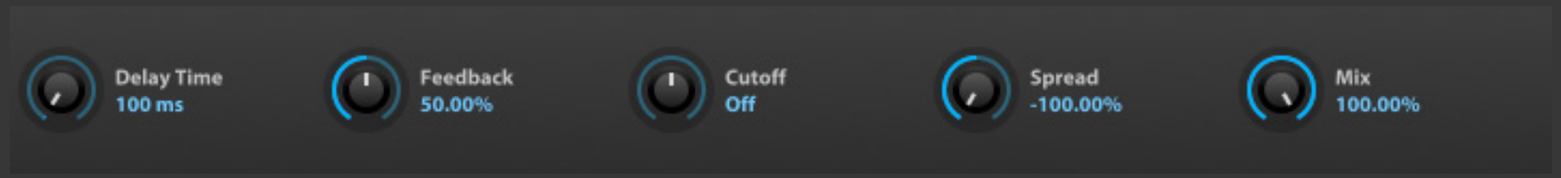
DELAY TIME set the length of delay, in ms or bars/beats (if tempo-synced), and **FEEDBACK** chooses the percentage of signal fed back into the module

DIFFUSION set the density of the delay tap

CUTOFF set the type and amount of filter. At the center position, no filter is applied. To the right of center, a high-pass filter is applied, and further to the right raises the cutoff frequency. Likewise, further left of center applies a low-pass filter and drops the cutoff frequency.

MIX set the balance between the dry (unaffected) and wet (affected) signal sent to the module's output

TEMPO SYNC



fx

PING PONG DELAY

Ping Pong Delay is a standard delay with additional stereo processing

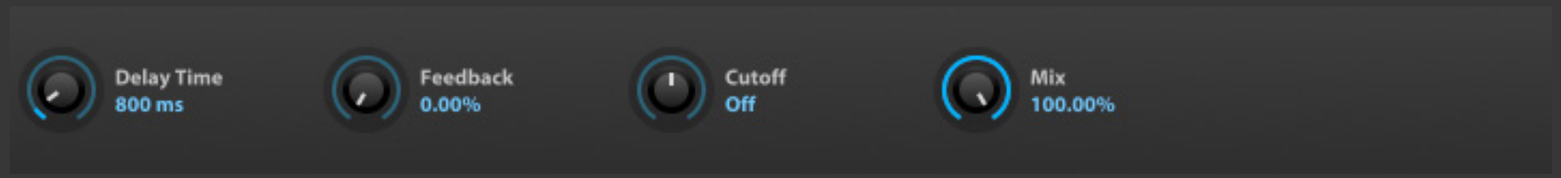
DELAY TIME set the length of delay, in ms or bars/beats (if tempo-synced), and **FEEDBACK** chooses the percentage of signal fed back into the module.

CUTOFF set the type and amount of filter. At the center position, no filter is applied. To the right of center, a high-pass filter is applied, and further to the right raises the cutoff frequency. Likewise, further left of center applies a low-pass filter and drops the cutoff frequency.

SPREAD controls the stereo spread of the module's output. At zero, the output is mono; negative values feed the input to the left channel first, and positive values to the right channel first.

MIX set the balance between the dry (unaffected) and wet (affected) signal sent to the module's output

TEMPO SYNC



fx

SIMPLE DELAY

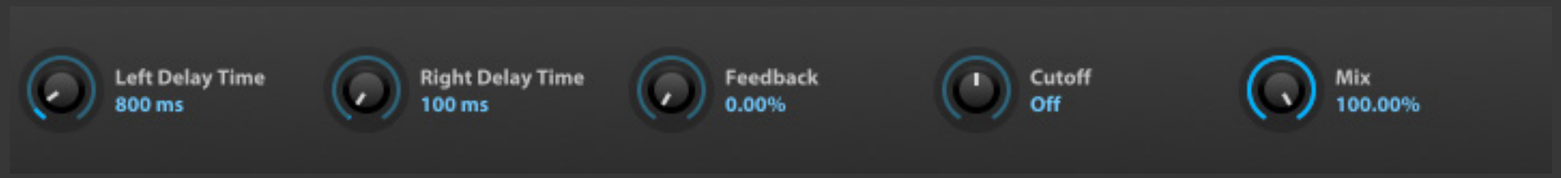
Simple Delay is a general-purpose delay

DELAY TIME set the length of delay, in ms or bars/beats (if tempo-synced), and **FEEDBACK** chooses the percentage of signal fed back into the module.

CUTOFF set the type and amount of filter. At the center position, no filter is applied. To the right of center, a high-pass filter is applied, and further to the right raises the cutoff frequency. Likewise, further left of center applies a low-pass filter and drops the cutoff frequency.

MIX set the balance between the dry (unaffected) and wet (affected) signal sent to the module's output

TEMPO SYNC



fx

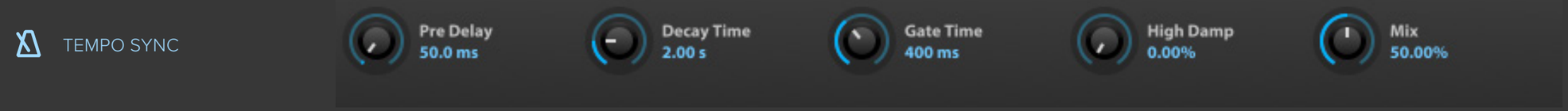
STEREO DELAY

Stereo Delay offers a configurable stereo delay with separate delay paths for the left and right channels

The left and right channels have independent delay time assignments; **LEFT DELAY TIME** and **RIGHT DELAY TIME** set the length of each channel's delay, in ms or bars/beats (if tempo-synced). **FEEDBACK** chooses the percentage of signal fed back into the module.

CUTOFF set the type and amount of filter. At the center position, no filter is applied. To the right of center, a high-pass filter is applied, and further to the right raises the cutoff frequency. Likewise, further left of center applies a low-pass filter and drops the cutoff frequency.

MIX set the balance between the dry (unaffected) and wet (affected) signal sent to the module's output



fx

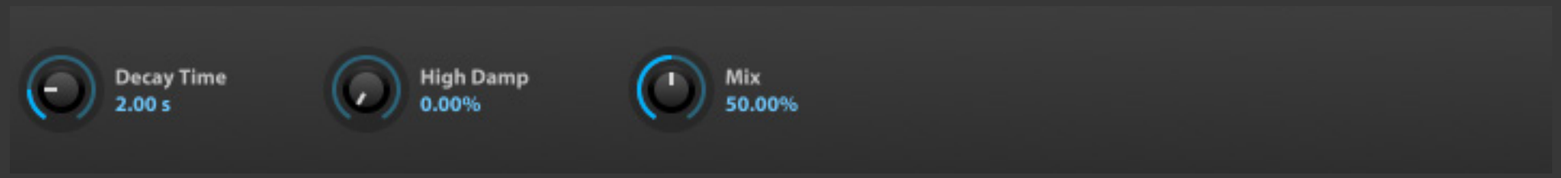
GATE REVERB

Gate Reverb provides a gate for cutting off the reverb decay abruptly

PRE DELAY set the amount of delay before the wet signal is heard, in ms or bars/beats (if tempo-synced), and **DECAY TIME** set the duration of the reverb decay. **GATE TIME** set the time duration, in ms or bars/beats (if tempo-synced), until the gate is applied to the decaying signal.

HIGH DAMP set the amount of dampening applied to high frequencies

MIX set the balance between the dry (unaffected) and wet (affected) signal sent to the module's output



fx

PLAIN REVERB

Plain Reverb is a general-purpose reverb

DECAY TIME set the duration of the reverb decay, and

HIGH DAMP chooses the amount of dampening applied to high frequencies

MIX set the balance between the dry (unaffected) and wet (affected) signal sent to the module's output

TEMPO SYNC

fx

PREDELAY VERB

Predelay Verb is a standard reverb fed through a delay line

PRE DELAY set the amount of delay before the wet signal is heard, in ms or bars/beats (if tempo-synced), and **DECAY TIME** set the duration of the reverb decay. **HIGH DAMP** chooses the amount of dampening applied to high frequencies.

MIX set the balance between the dry (unaffected) and wet (affected) signal sent to the module's output

fx

SIMPLE REVERB

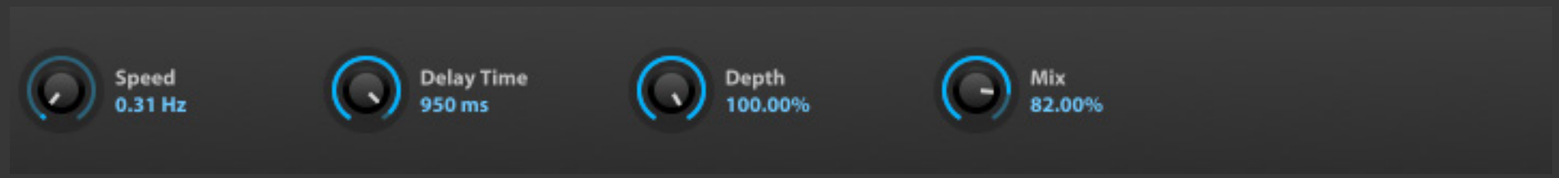
Simple Reverb provides an optional lowpass or highpass filter before the signal is fed into the reverb

CUTOFF set the type and amount of filter. At the center position, no filter is applied. To the right of center, a high-pass filter is applied, and further to the right raises the cutoff frequency. Likewise, further left of center applies a low-pass filter and drops the cutoff frequency.

DECAY TIME set the duration of the reverb decay, and **HIGH DAMP** chooses the amount of dampening applied to high frequencies

MIX set the balance between the dry (unaffected) and wet (affected) signal sent to the module's output

TEMPO SYNC



fx

CHORUS

Chorus is a classic chorus, where the input signal is combined with multiple time- and pitch-modulated variations of the input signal for a shimmering unison effect

SPEED set the speed of the modulation (in Hz, or bars/beats if tempo-synced), **DELAY TIME** adjusts the amount of delay applied, and **DEPTH** set the depth of the effect.

MIX set the balance between the dry (unaffected) and wet (affected) signal sent to the module's output

fx

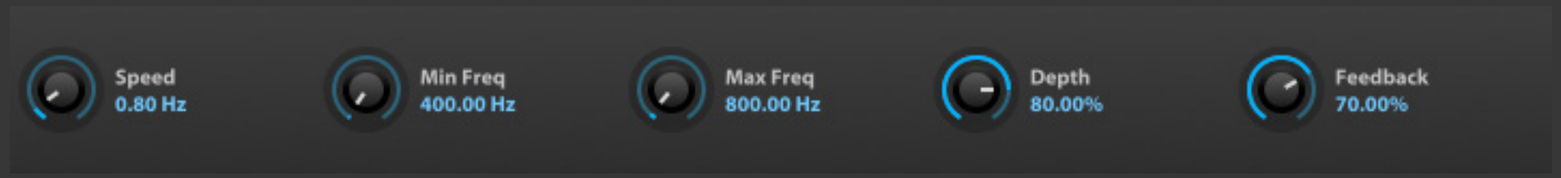
CROSS PHASER

Cross Phaser is a phaser that also applies auto-panning to produce a wider and more varied effect

SPEED set the speed of the modulation (in Hz, or bars/beats if tempo-synced), and **MIN FREQ** and **MAX FREQ** set the minimum and maximum frequencies of the frequency sweep.

DEPTH set the depth of the effect, and **FEEDBACK** set the percentage of signal fed back into the module

TEMPO SYNC



fx

PHASER

Phaser is a classic phaser effect, where the input signal is phase modulated and fed back onto itself

SPEED set the speed of the modulation (in Hz, or bars/beats if tempo-synced), and **MIN FREQ** and **MAX FREQ** set the minimum and maximum frequencies of the frequency sweep.

DEPTH set the depth of the effect, and **FEEDBACK** set the percentage of signal fed back into the module

ROTARY (OLD)

Rotary is a highly-customizable speaker emulation effect modeled after the classic two-way rotating designs created for electric organs in the 1940s

CABINET

MODEL changes the cabinet type. **RADIUS** sets the size of the cabinet. **DRIVE** sets the amount of overdrive in the cabinet circuit.

SPEED sets the rotary style:
BRAKE = none
CHORALE = slow speeds
TREMOLO = fast speeds

Chorale and Tremolo speeds are controllable with the **CHORALE** and **TREMOLO** knobs below.

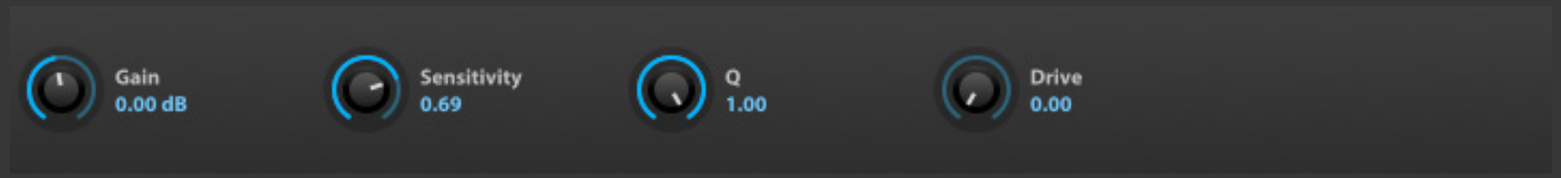
HORN FILTER sets the filter mode of the cabinets horn.
HORN VOLUME adjusts the rotating horn level.
DRUM VOLUME adjusts the rotating drum level.

ORDER sets the number of box reflections being simulated. **REFLECTION** sets the mix amount for the reflected signal.

BOX REVERB arms or disables a reverb on the cabinet.

MICS

MIC DISTANCE sets the distance of the mics to the cabinet.
MIC ANGLE sets the angle between the mics relative to the cabinet.

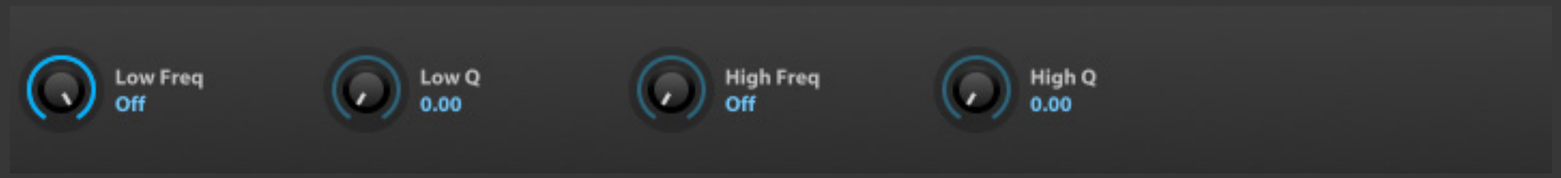


fx

AUTO WAH

Auto Wah is a wah pedal effect, with its filter frequency set automatically from the module's input level

GAIN set the input level to the module. **SENSITIVITY** set the intensity of the auto wah filter, and the **Q** control set the filter's shape. **DRIVE** applies post-filter overdrive.



FX FILTER

The FX Filter module has two filters, lowpass and highpass, applied in series

LOW FREQ enables and set the cutoff frequency for the lowpass filter; likewise, **HIGH FREQ** enables and applies the highpass filter. The **LOW Q** and **HIGH Q** controls set the shape of each filter band.

fx

TALKBOX

Talkbox simulates the vowel shaping and filtering of a classic talkbox effect pedal

FILTER MODE chooses the type of filter: low pass (LP), high pass (HP), or band pass (BP). **VOWEL MODE** chooses the vowel sound for the filter

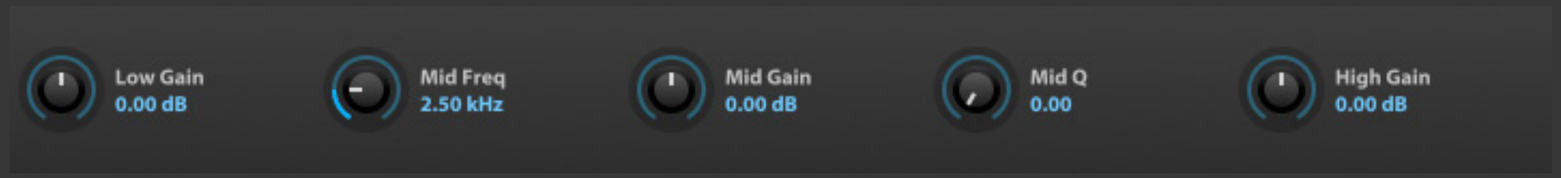
CUTOFF set the frequency for the filter; the note name corresponding to the frequency is also displayed, for example, **2.00 KHZ (B5)**. **RESONANCE** adjusts how much the cutoff frequency is emphasized

fx

2 BAND EQ

The 2 Band EQ has Low and High bands

Both bands have a **FREQUENCY** control for setting its central frequency and a **GAIN** control for boosting or cutting around that frequency



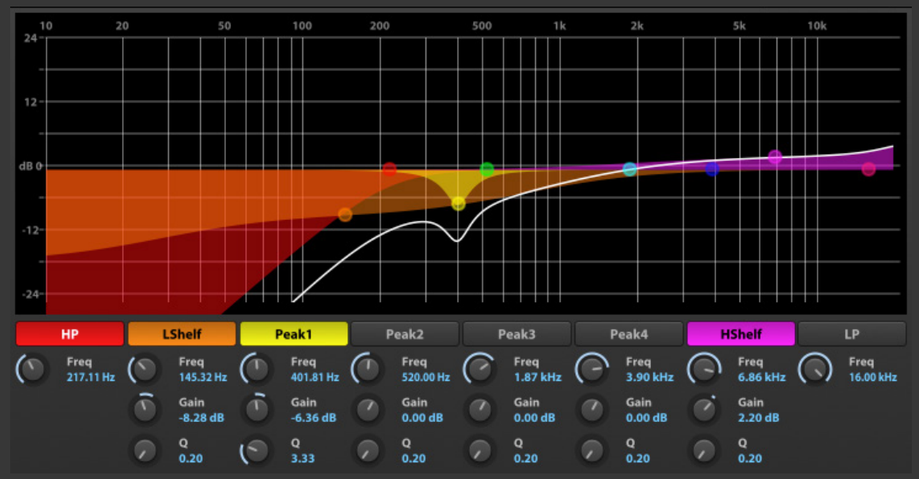
fx

3 BAND EQ

The 3 Band EQ has Low, Mid, and High bands. The Low and High bands have fixed frequency assignments, while the Mid band is adjustable.

The Mid band has a **FREQUENCY** control for setting the band's central frequency and a **Q** control for the band's shape. Each of the three bands have a **GAIN** control for boosting or cutting its frequency.

POP-OUT EDITOR



fx

8 BAND EQ

The 8 Band EQ is a parametric EQ with multiple types of bands, all laid out on a large, graphical display

The eight bands are:

- two rolloffs: high-pass (**HP**) and low-pass (**LP**)
- two shelves: low-shelf (**LSHELF**) and high-shelf (**HSHELF**)
- four peaks: **PEAK1**, **PEAK2**, **PEAK3**, **PEAK4**

Each band can be enabled or bypassed by pressing its name. When enabled, the button is colored in.

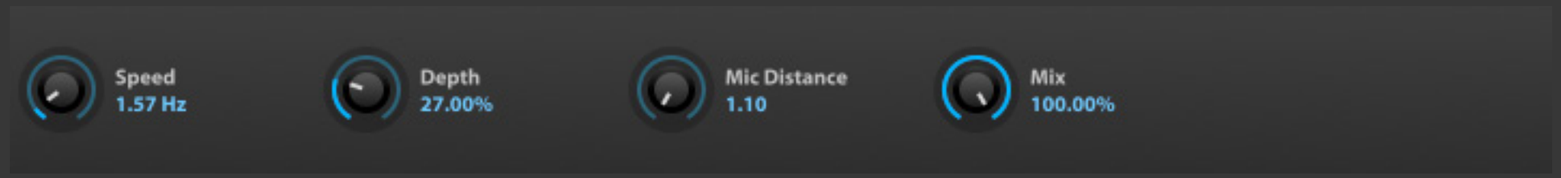
All bands have a fully variable **FREQUENCY**. The high-pass and low-pass bands have a fixed slope, while the remaining shelf and peak bands have adjustable **GAIN** and **Q**.

In addition to the knobs and toggle switches, the bands can also be edited graphically in the frequency graph:

- Press and drag a point to adjust its frequency by dragging right/left, or its gain by dragging up/down.
- Press and drag a band's color bars to adjust Q.
- Right-click a point to enable/disable the band.
- Double-click a point to return it to its default value.
- When a band is selected, an information box is displayed in the upper left. As the band is adjusted, its Gain, Frequency, and Q values update in realtime.

To view a larger graph, drag the bottom edge of the module to resize it.

Press the **EXTERNAL WINDOW** button in the module title bar to open the graph in a separate window to view it even larger.



fx

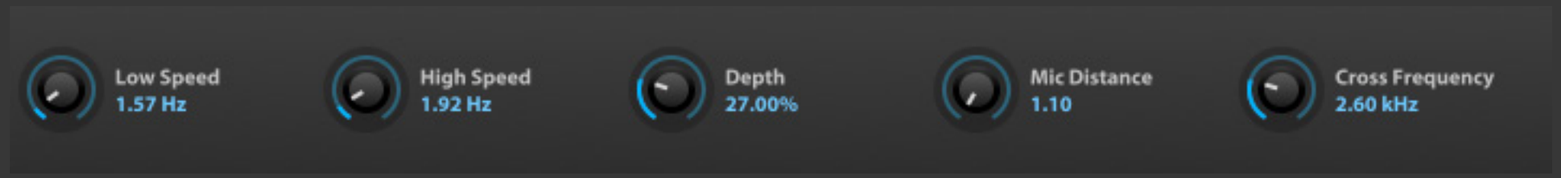
ROTARY SIMPLE

Rotary Simple is a single-speaker emulation of a rotary speaker

SPEED set the rate of the speaker rotation, and **DEPTH** set the intensity of the effect; at higher Depth values, the pitch is also markedly affected

Miking the speaker is also simulated, with **MIC DISTANCE** setting the distance of the mic from the speaker

MIX set the balance between the dry (unaffected) and wet (affected) signal sent to the module's output



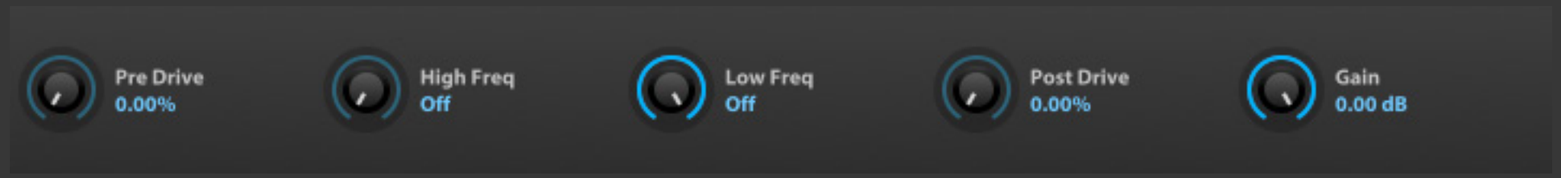
fx

ROTARY SPEAKER

Rotary Speaker is a dual-speaker emulation of a rotary speaker, with an adjustable crossover

CROSS FREQUENCY set the crossover point for the Low and High frequency bands. **LOW SPEED** and **HIGH SPEED** set the rate of the speaker rotation for each band, and **DEPTH** set the intensity of the effect; at higher Depth values, the pitch is also markedly affected.

Miking the speaker is also simulated, with **MIC DISTANCE** setting the distance of the mic from the speaker.

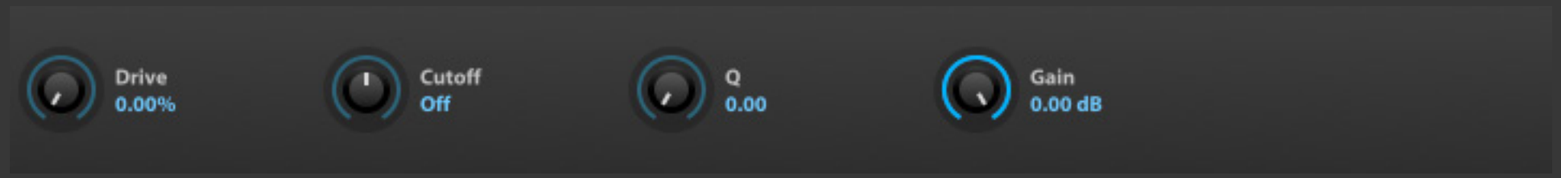


fx

DOUBLE DRIVE

Double Drive is a filter sandwiched by two drive stages

PRE DRIVE set the initial amount of overdrive, followed by the filters. **HIGH FREQ** and **LOW FREQ** controls set the amount of high pass and low pass filter applied (if any). Post-filter drive is applied with **POST DRIVE**, with **GAIN** providing the final output level adjustment.



fx

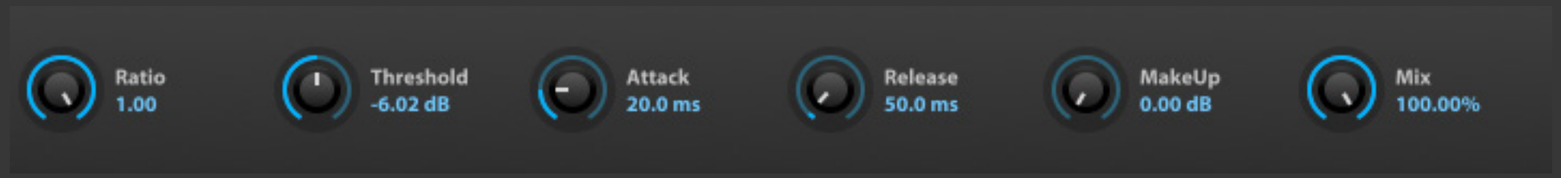
UVI DRIVE

UVI Drive is a drive module with a post-drive UVI Filter included

DRIVE set the initial amount of drive applied, followed by the filter

CUTOFF set the type and amount of filter. At the center position, no filter is applied. To the right of center, a high-pass filter is applied, and further to the right raises the cutoff frequency. Likewise, further left of center applies a low-pass filter and drops the cutoff frequency. The **Q** control set the filter's shape.

GAIN provides the final output level adjustment



fx

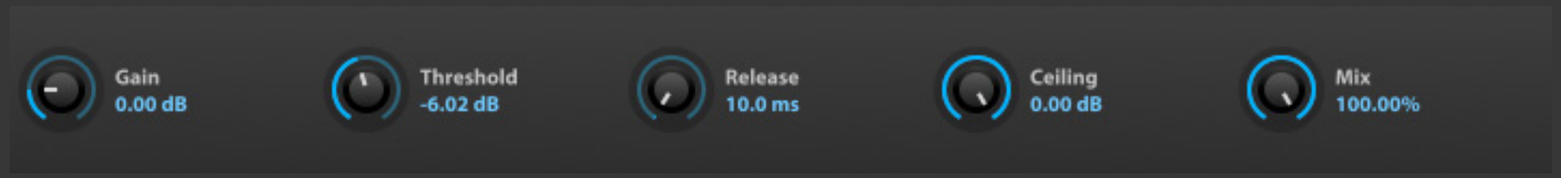
COMPRESSOR

Compressor provides standard dynamics compression

THRESHOLD set the level at which the compressor will be applied; when applied, **RATIO** set the amount of compression applied. **ATTACK** and **RELEASE** set the speed at which the compressor begins or stops processing the signal after it has crossed the threshold.

MAKEUP applies a manual gain adjustment to compensate for the gain reduction of the compressor

MIX set the balance between the dry (unaffected) and wet (affected) signal sent to the module's output



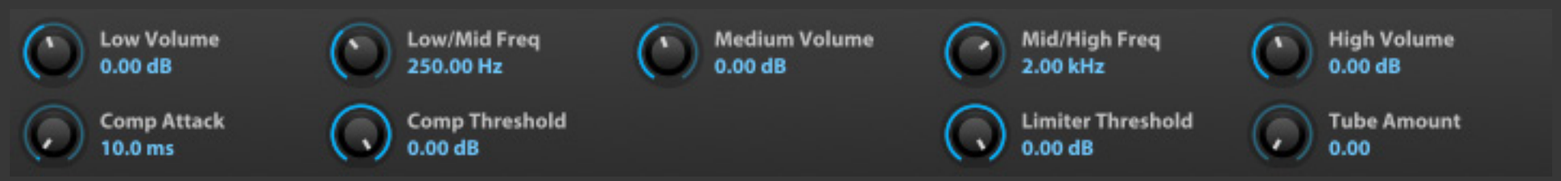
fx

LIMITER

Limiter is a standard limiter, compressing the signal with a fixed ratio that is higher than the ratios available with the Compressor

GAIN set the input level to the module. **THRESHOLD** set the level at which limiting will be applied, and **CEILING** set the maximum output level. **RELEASE** set the speed at which the limiter stops processing the signal after it has fallen below the threshold.

MIX set the balance between the dry (unaffected) and wet (affected) signal sent to the module's output



fx

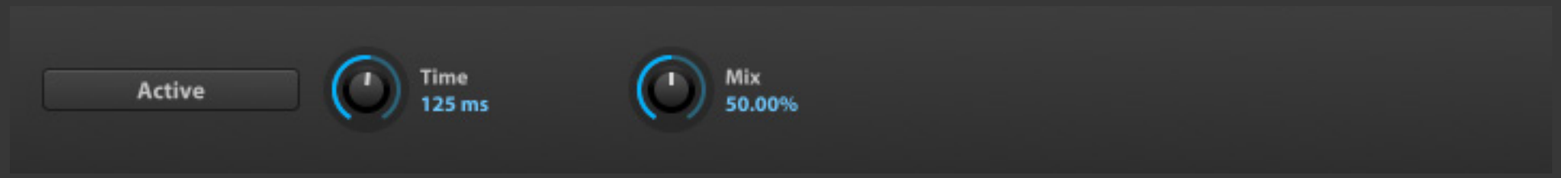
UVI MASTERING

UVI Mastering is a mastering processor for stereo mixes, such as Falcon's main outs. It provides multiband compression, a limiter, and tube saturation.

UVI Mastering has Low, Mid, and High bands. The crossover points between the bands are set with the **LOW/MID FREQ** and **MID/HIGH FREQ** controls.

Each band has a **VOLUME** control, which set the gain of the band before the combined signal is fed to the compressor, limiter, and tube saturator. **COMP ATTACK** and **COMP THRESHOLD** set the compressor attack time and threshold, followed by the **LIMITER THRESHOLD**, and finally, **TUBE AMOUNT**.

TEMPO SYNC



fx

BEAT REPEAT

Beat Repeat slices the incoming audio on the grid that you specify, and when activated will repeat the most recent slice. This enables glitch effects and variations in a live performance or looped samples.

ACTIVE enables beat repeating; the most recent beat will be repeated until beat repeating is disabled. Once disabled, playback continues from where it left off.

TIME set the length of time that will be repeated, in ms or bars/beats (if tempo-synced)

MIX set the balance between the dry (unaffected) and wet (affected) signal sent to the module's output

REDUX (OLD)

Redux is a resampler for creating lo-fi effects such as extreme bit reduction.

RESAMPLING

FREQUENCY sets the resampling frequency, with **JITTER** introducing time variations to the resampling. **BITS** sets the bit depth, and **DITHER** sets the amount of dither (a type of low-level randomized noise).

TYPE chooses the style of resampling: **DECIMATE** inserts zeroes in between sampled values, and **BLOCKER** holds a sampled value until the next sampled value.

QUANTIZE LAW sets the type of quantization to one of two common algorithms: linear or mu-law (also known as μ-law).

The **ANTIALIASING** toggle sets whether an anti-aliasing filter is enabled. When disabled, frequencies over the sampling rate may **WRAP AROUND** when resampled and cause unusual harmonics.

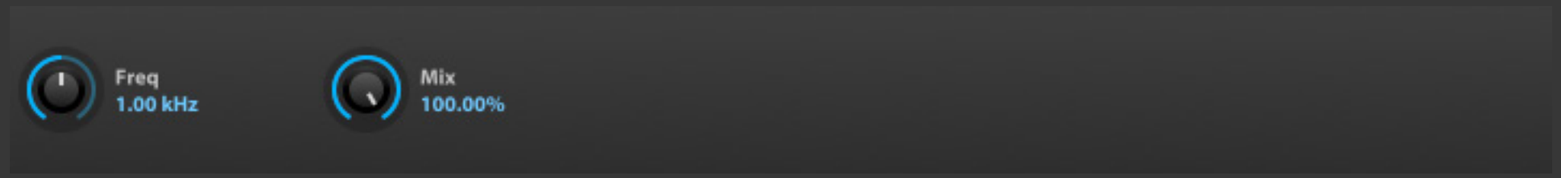
FILTER

FILTER POSITION chooses whether the filter is off, before resampling (pre), or after (post). **FILTER MODE** chooses the type of filter: low pass (LP), high pass (HP), or band pass (BP).

FILTER FREQUENCY sets the frequency for the filter, and **FILTER RESONANCE** adjusts how much the cutoff frequency is emphasized.

OUTPUT

MIX sets the balance between the dry (unaffected) and wet (affected) signal sent to the module's output.



RING MODULATOR

Ring Modulator combines the input signal with a modulation frequency, and both subtracts and adds the modulation frequency to the input frequency. For example, with an input of 600 Hz and a modulation frequency of 250 Hz, the output will include both 350 Hz (600 minus 250) and 850 Hz (600 plus 250).

FREQUENCY set the frequency of the modulation signal

MIX set the balance between the dry (unaffected) and wet (affected) signal sent to the module's output

fx

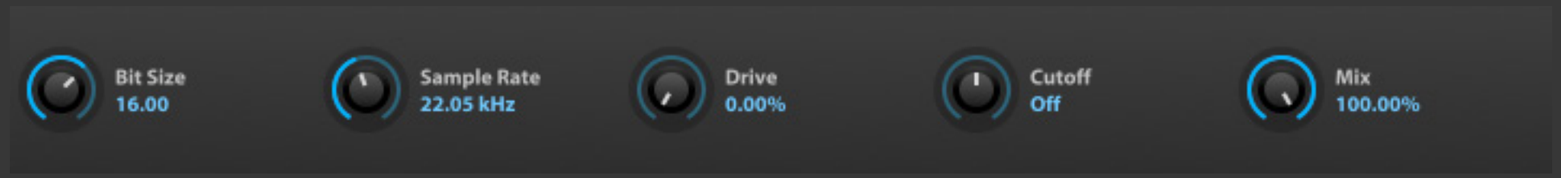
ROBOTIZER

Robotizer starts with a ring modulator, with some additional modulations

FREQUENCY set the frequency of the ring modulation, and **DEPTH** adjusts the intensity of the modulation. **FM** controls a modulation signal that modifies the ring modulation frequency

CUTOFF set the type and amount of filter. At the center position, no filter is applied. To the right of center, a high-pass filter is applied, and further to the right raises the cutoff frequency. Likewise, further left of center applies a low-pass filter and drops the cutoff frequency.

MIX set the balance between the dry (unaffected) and wet (affected) signal sent to the module's output



fx

UVI DESTRUCTOR

UVI Destructor is resampler and bit reducer, with optional overdrive and filter following the bit depth and sample rate reduction

BIT SIZE set the bit depth, and **SAMPLE RATE** set the resampling frequency

DRIVE set the amount of pre-filter overdrive applied

CUTOFF set the type and amount of filter. At the center position, no filter is applied. To the right of center, a high-pass filter is applied, and further to the right raises the cutoff frequency. Likewise, further left of center applies a low-pass filter and drops the cutoff frequency.

MIX set the balance between the dry (unaffected) and wet (affected) signal sent to the module's output

APPENDIX A: EVENT PROCESSORS

Falcon's Event section provides control over pre-synthesis data, namely the manipulation, analysis or generation of MIDI. Event processors can do anything from arpeggiating incoming notes or strumming them like a guitar to applying micro tunings, playing back MIDI files or creating generative sequences.

ARPEGGIATOR

The arpeggiator is a classic synthesizer effect which modifies incoming notes and plays them in a programmable pattern to create a dynamic sequence. Falcon's Arpeggiator provides many advanced features such as per step length, gate, pitch and velocity as well as 27 different performance modes.

PATTERN

STEPS sets the number of steps in the sequence, **LENGTH** sets the gate length of each step, lower values result in more staccato and values >100% will slightly overlap the following note. **STRIKES** sets the number of times each step will be triggered, values above 1 will repeat each step that many times before proceeding.

RESOLUTION sets the step length relative to the global BPM set in the host DAW, from 32 bars down to 64th note triplet. **HOLD** is a manual latch, enable it to infinitely sustain any active notes, disable it to end them.

EXPRESSION

OCTAVE sets the octave range of the pattern, **GROOVE** sets the amount of groove to apply to the pattern, and **ARP/VEL BLEND** sets the blend of the arpeggiator velocity value with the original note-on velocity values. At zero percent, the resulting velocity is fully-controlled by the note velocity setting of the arpeggiator, and at 100% by the incoming note-on velocity values.

MODE

ARP select the arpeggiator pattern to play, from a simple upward progression to zig zags, spirals, and more

TRIGGER sets the arpeggiator trigger mode:

- **NOTE**: Each note reset the arpeggiator position to the first step
- **LEGATO**: When multiple notes are played simultaneously, each new note continues from the current step
- **SONG POSITION**: The arpeggiator continually cycles, and any notes played are triggered at the current step

OCTAVE set whether the pattern of notes will be repeated individually within each octave (Repeat Pattern) or whether the pattern will be completed once in total across all notes in all octaves (Repeat Keys).

MODIFIERS

NOTE REPEAT (BOTTOM / TOP) repeats the top or bottom-most note of the pattern

(continued)

ARPEGGIATOR

MIDI CC
Set the MIDI CC channel that the MIDI CC sequencer lane outputs to, or set to OFF to disable

RECORD
Allows you to record custom arpeggiator sequences using an external MIDI input, or using the built-in virtual keyboard in Falcon.
RECORD click to enable step recording, click again to finish
STEP displays the current step while recording, and total step count when finished
SKIP while recording, inserts a blank step

STEP GRID
Use the **STEP GRID** to set the value for each step. There are three independent layers to the step grid: **VELOCITY**, **PITCH**, and **MIDI CC**.

- Right-click anywhere on the step grid to change the sequencer page; Velocity, Pitch, or MIDI CC

- Click-and-drag across steps to draw values in a continuous motion

- Double-click a step to numerically set the value

STEP VALUE
The size of the vertical bar within the step determines the step's value. The larger the bar, the higher the value. Note that when viewing the Pitch layer, the bar is bipolar, with zero displayed in the vertical center of the step. To change the duration of the step, hold the Shift key while dragging the bar horizontally within its step.

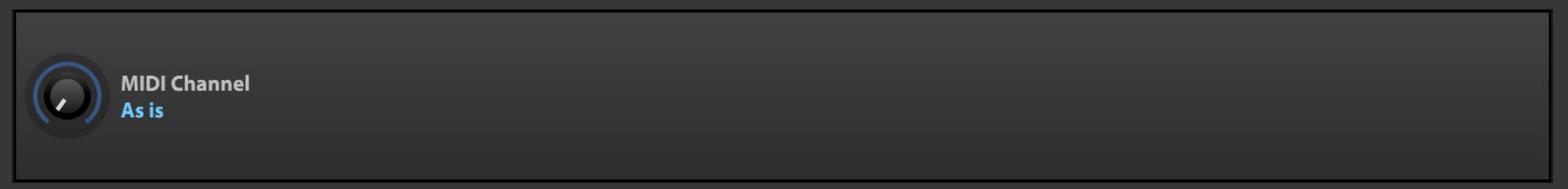
STEP STATE
Beneath each step is a toggle that can be pressed to set the step state. When enabled, the step outputs the value displayed in the bar above; when disabled, the step does not output any value.

Additionally, you can merge a step with the one before it to create steps that are longer than one step of the grid. To merge a step, hold the Shift key when pressing the step state button. The step state button for merged states is red.

Alternatively, you can tie a step to the one before it; the second step will still have a unique value, but it will be triggered in a legato style. To tie a step, hold the Alt/Option key when pressing the step state button. The step state button for merged states is blue.

PITCH OFFSET
The values of the Pitch Layer are displayed as text above each step. You can also edit these values directly for more precise control.

MIDI CC
The values of the MIDI CC Layer are set as values from 0-127. You can double-click steps for precise control.



MIDI OUT

Take control of external software/ hardware directly from Falcon, at any point in your patch

Set **MIDI CHANNEL** for ouput, select **AS IS** to inheret the parts MIDI channel setting, or select any channel from **1** - **16**

MIDI PLAYER

The MIDI Player module plays back a Standard MIDI File, tempo-synced with Falcon.

To load a MIDI file, press the **BROWSE** button and choose a Standard MIDI File using the standard file browser. When a MIDI file is loaded, its name is displayed next to **SEQUENCE NAME**.

The **BASE NOTE** chooses which note will trigger playback of the MIDI sequence. Other notes will play back as usual. When **TRANSPOSE** is enabled, every note will trigger playback of the MIDI sequence, transposed relative to the Base Note. When disabled, only the Base Note will trigger playback.

When the MIDI file is triggered, it will play back once. If **LOOP** is enabled, the MIDI file will be looped continuously. Additionally, **AUTOPLAY** can be enabled to automatically begin MIDI file playback when Falcon begins playing.

By default, the MIDI Player will play back all sixteen channels saved in the MIDI file. Press a channel's **BYPASS** button to bypass it.

octave	C	C#	D	D#	E	F	F#	G	G#	A	A#	B
–2	0.00	0.00	3.52	3.54	4.98	5.05	5.15	7.02	7.02	7.02	10.24	10.30
–1	12.00	12.00	15.52	15.54	16.98	17.05	17.15	19.02	19.02	19.02	22.24	22.30
0	24.00	24.00	27.52	27.54	28.98	29.05	29.15	31.02	31.02	31.02	34.24	34.30
1	36.00	36.00	39.52	39.54	40.98	41.05	41.15	43.02	43.02	43.02	46.24	46.30
2	48.00	48.00	51.52	51.54	52.98	53.05	53.15	55.02	55.02	55.02	58.24	58.30
3	60.00	60.00	63.52	63.54	64.98	65.05	65.15	67.02	67.02	67.02	70.24	70.30
4	72.00	72.00	75.52	75.54	76.98	77.05	77.15	79.02	79.02	79.02	82.24	82.30
5	84.00	84.00	87.52	87.54	88.98	89.05	89.15	91.02	91.02	91.02	94.24	94.30
6	96.00	96.00	99.52	99.54	100.98	101.05	101.15	103.02	103.02	103.02	106.24	106.30
7	108.00	108.00	111.52	111.54	112.98	113.05	113.15	115.02	115.02	115.02	118.24	118.30

MICRO TUNER

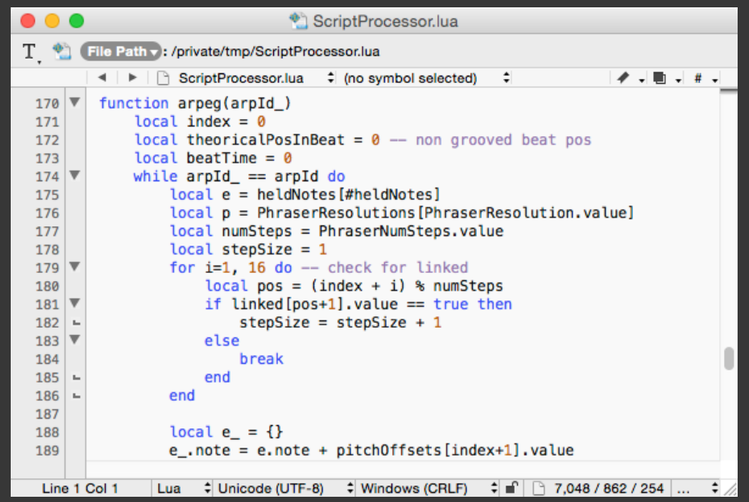
The Micro Tuner provides alternate tunings to the standard twelve-tone equal temperament tuning.

The **NOTE GRID** displays the mapping of each note in each octave. In standard tuning, each note is mapped to a whole number: C-2 = 0.00, C#-2 = 1.00, D-2 = 2.00, and so on. The note grid is display only; to edit the tuning assignments, import Scala files as described below.

The Micro Tuner module's preset browser has two additional items in its Preset File menu

- **IMPORT SCALA TUNING**: Import a .scl file
- **IMPORT SCALA MAPPING**: Import a .kbm file
- **IMPORT ANAMARK TUNING**: Import a .tun file

For more information on Scala, see:
http://www.huygens-fokker.org/scala



SCRIPT PROCESSOR

The Script Processor module provides general event processing capabilities beyond the specific event processors described earlier.

This module has some standard controls at the top, with the script-defined controls below

STANDARD CONTROLS

To load a script, press the **LOAD A SCRIPT** button and choose a UVIScript file from the standard file browser. When a script file is loaded, the **SCRIPT NAME** is displayed in the center of the script module title bar, and its script-defined controls will be displayed below.

To edit the script file, press the **EDIT SCRIPT IN EXTERNAL EDITOR** button and the script file will be opened in your default text editor application.

If you would like to add a password to the current script, press the **PROTECT SCRIPT** button and enter a password. After a script is protected, you must enter the script password to open the script for editing.

Press the **RELOAD CURRENT SCRIPT** button to reload the current script from disk, and reset its parameters to their default values. Hold the Alt/Option key while reloading to keep the current state of the script parameters. The **WATCH FOR SCRIPT CHANGES** option will automatically reload the script whenever the script file is modified; this can be useful while developing a script and making repeated changes.

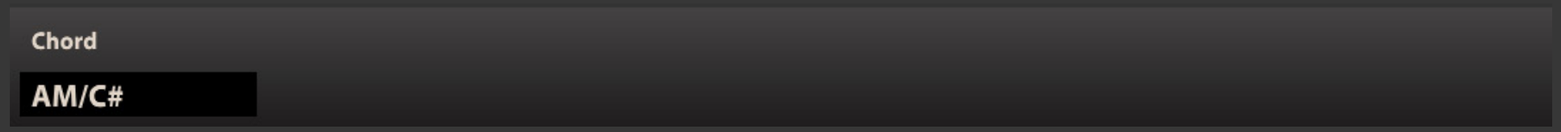
The script console displays debug and print messages and is useful for debugging scripts. Toggle the **SHOW/HIDE CONSOLE OUTPUT** button to show or hide the script console. Press the **CLEAR CONSOLE OUTPUT** button to clear the current console messages.

SCRIPT-DEFINED CONTROLS

The script itself defines what sort of controls will be displayed. This includes knobs, buttons, menus, and other controls similar to those seen in other Falcon modules.

MORE INFORMATION

For more information on UVIScript, see:
[Appendix B: Scripting]



CHORD RECOGNITION

CHORD displays the chord name currently played

Chord recognition: Names chord currently played

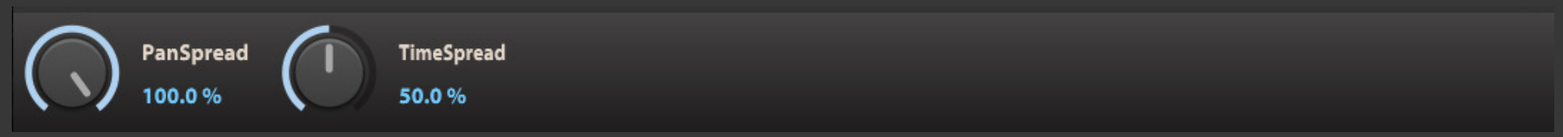
VIRTUAL PITCH

Virtual Pitch: Real-time virtual pitch detection

VIRTUALPITCH displays the note

VIRTUALPITCH2 displays the note

CHOROMATIC DISPLAY displays the played note, the biggest note will be the root pitch

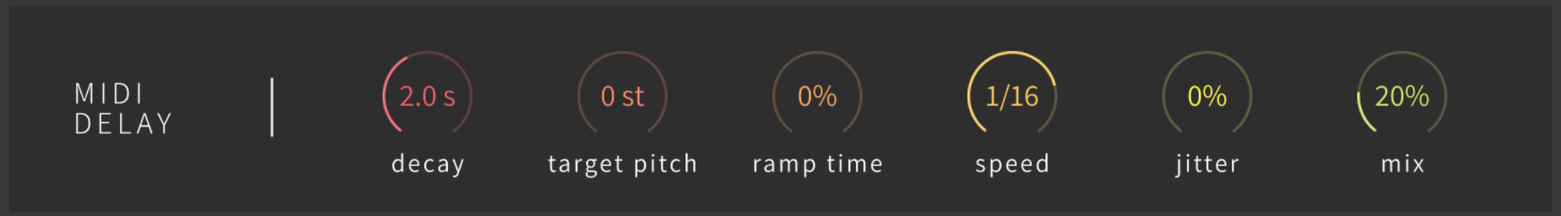


ENSEMBLE

Play 5 voices using adjacent detuned sample-based key zone

PAN SPREAD set the stereo spread of the ensemble voices

TIME SPREAD set the time interval of the ensemble voices



MIDI PITCH DELAY

Classic MIDI event delay with pitch drift support

DECAY sets the decay time of the effect

TARGET PITCH sets the pitch shift amount for incoming note

RAMP TIME sets the ramp time of the effect

SPEED sets the speed of the delay

JITTER sets the swing amount of the speed

MIX sets the mixing level (velocity) of the effect

NOTE PAN

Generate pan values for each key pressed with fixed and random options

MODE set the panning mode per note.

- **FIXED** is a typical pan mode with stereo position setting
- **ALT** is an alternate pan mode with depth amount
- **RND** is a random pan mode with default position setting

LINK enable to adjust all note parameters simultaneously

SHEPARD

Shepard tone effect

PARTIALS set the number of partials

STEP set the number of steps per partial

SPEED set the speed of the pitch change

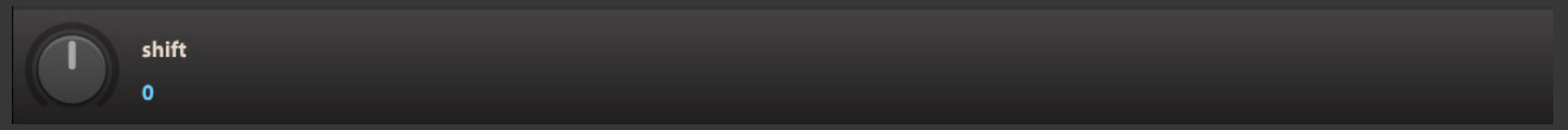
DIRECTION set the direction (up or down) and depth of pitch change

TAPE MODE

Vary your pitch with wow and flutter emulation for a lo-fi vibe

FLUTTER FREQUENCY set the flutter frequency and **DEPTH** set the flutter modulation depth.

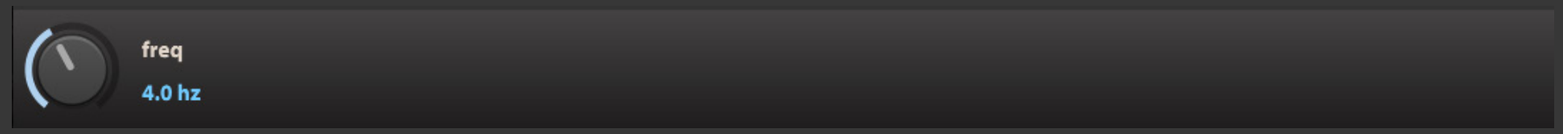
WOW FREQUENCY set the wow frequency and **DEPTH** set the wow modulation depth. **CC** set the MIDI CC number for real time control.



TIMBRE SHIFTING

Use a pitched adjacent sample-based key zone to change the instrument timbre

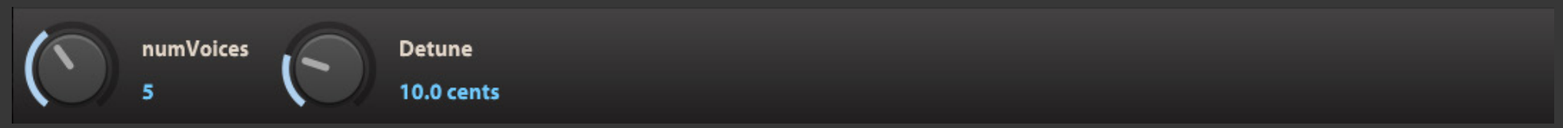
SHIFT changes tonal-color based on the adjacent samples



TREMOLO

A MIDI volume modulator

FREQUENCY set the speed of the effect

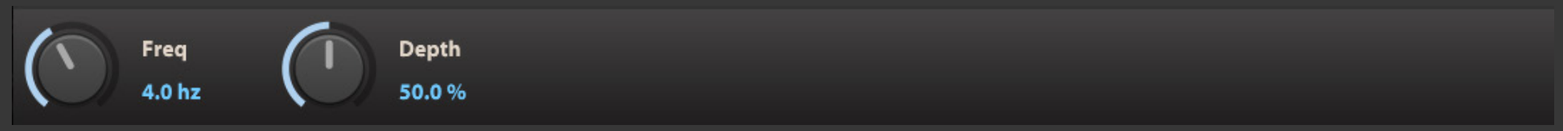


UNISON

Play up to 10 detuned voices

NUMVOICES set the number of the unison voices

DETUNE set the interval spacing of the voices in Cents

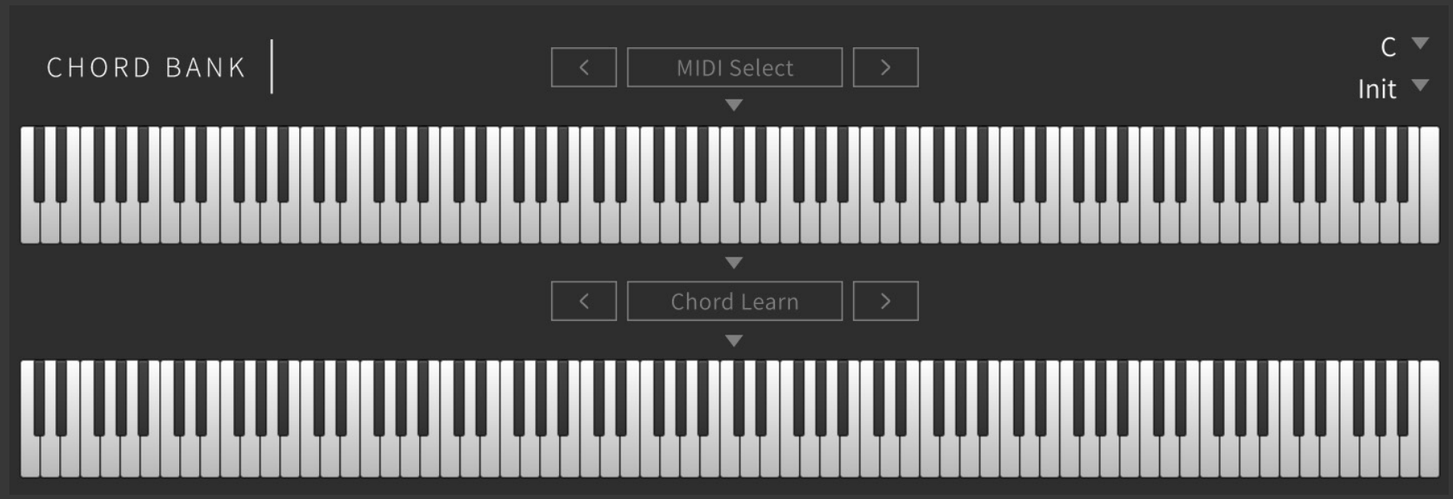


VIBRATO

A MIDI pitch modulator

FREQUENCY set the speed of the effect

DEPTH set the amount of the effect



CHORD BANK

Create and assign chords to each MIDI key independently

Select a root **KEY** and preset from the **CHORD PRESET** menu, or manually create and assign your own.

The **UPPER KEYBOARD** shows your MIDI input, use this to select a key to assign notes to. A **GREEN** key indicates there is an existing, custom note assignment; **RED** indicates the key is selected.

The **LOWER KEYBOARD** will display the note assignments for the key currently selected in the **UPPER KEYBOARD**, the keys currently assigned will show in **RED**.

To create or edit assignments using a mouse:
Select a key in the **UPPER KEYBOARD** and then make assignments in the **LOWER KEYBOARD**

To create or edit assignments using a MIDI keyboard as input:
Click **MIDI SELECT**, then press a key on your keyboard to select a note - it will show as **RED** in the **UPPER KEYBOARD** to indicate it's active
Click **CHORD LEARN**, then press keys on your keyboard to assign or unassign them - they will show as **RED** in the **LOWER KEYBOARD** to indicate they are assigned

Use the **ARROW KEYS** (**<** and **>**) below each keyboard to shift the notes left or right

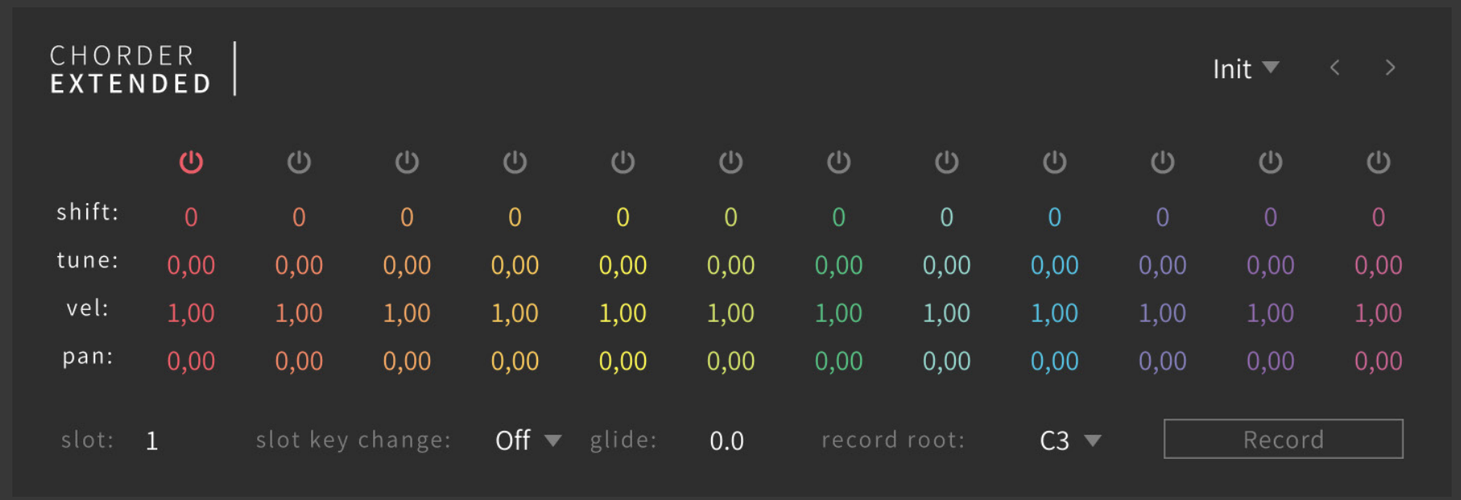
CHORDER

Create up to 6-voice chords using shift with custom velocity

SHIFT sets the semitone offset (+/-36) from the note pressed. The voice will disable when set to 0

VELOCITY sets the MIDI velocity of the corresponding note in the **SHIFT** row

PRESET includes a collection of premade chords



CHORDER EXTENDED

A more featured chord designer, CHORDER EXTENDED (CHORDER 2) allows the creation of 12-note chords with the addition of fine tune, pan and glide

POWER ⏻ toggles the voice on/off

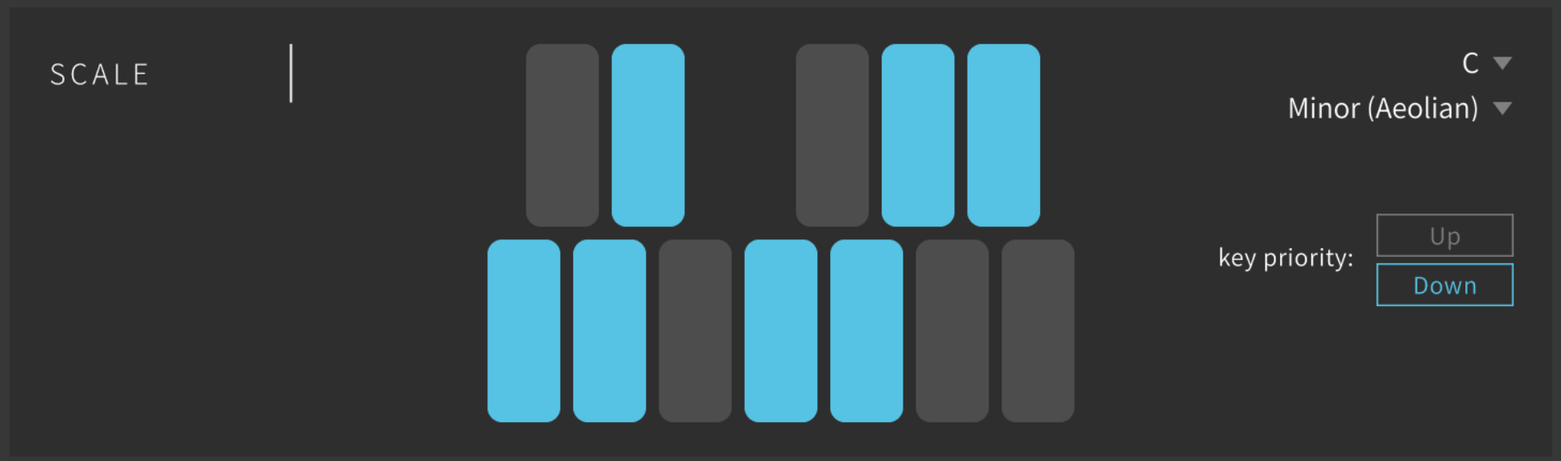
For each note, **SHIFT**, **TUNE**, **VELCITY** and **PAN** can be customized by click-dragging or scrolling with your mouse wheel

CHORD PRESET contains a number of useful premade chord configurations including microtonal variations. You can scroll through these quickly using the < and > buttons.

Chorder 2 allows up to 8 configurations to be stored and recalled at any time using **SLOTS** and key changes (using MIDI notes typically outside of the playable range to change settings)

To use **SLOTS** select a slot by click-dragging or scrolling with your mouse wheel, select which MIDI note you want to recall this slot in the **SLOT KEY CHANGE** menu, choose a chord preset or configure your own. Repeat for each slot as needed, perform with a MIDI keyboard or desired MIDI stream.
GLIDE sets the glide time of the chord changes

RECORD ROOT sets the root key from a drop-down menu, or click **RECORD** button and use an external MIDI keyboard to set



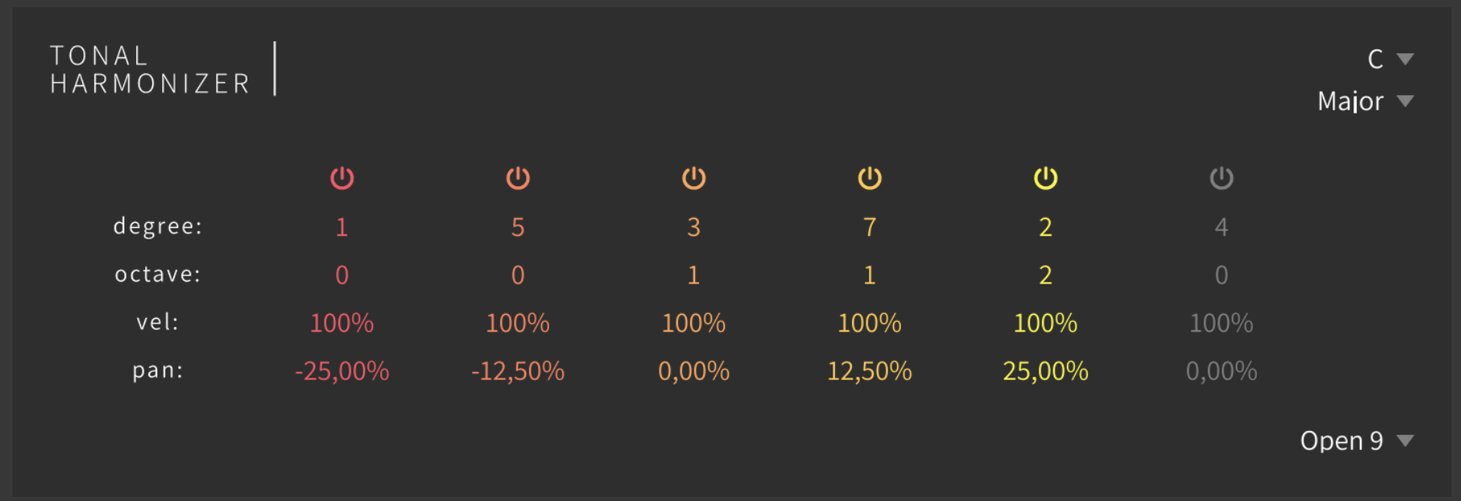
SCALE

Snap notes of your MIDI input to a key and scale of your choice

ROOT and **SCALE** set the root key and the scale from the drop-down menus

NOTE buttons set the allowed notes individually

KEY PRIORITY set the priority of the incoming notes, lowest note or highest note of play



TONAL HARMONIZER

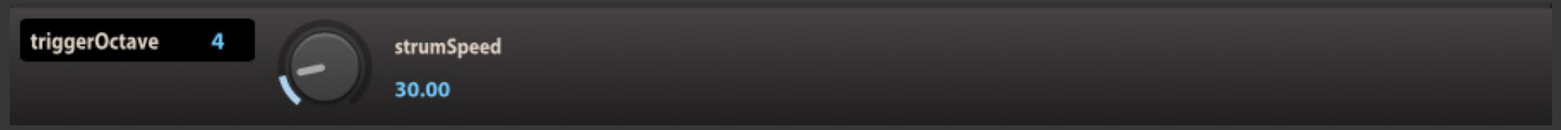
Create chords using scale degrees

Set the **KEY** and **MODE** of the scale using the drop-down menus

POWER toggles the voice on/off

For each note in your chord you can adjust the **DEGREE**, **OCTAVE**, **VELOCITY** and **PAN**

VOICING contains a number of useful presets



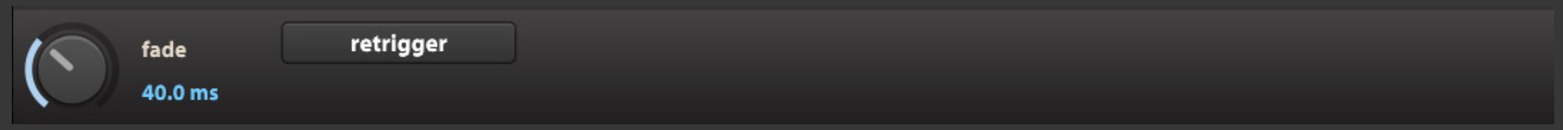
CHORD STRUM

Plays back held notes sequentially at a user defined speed

Hold down any number of notes and press the Trigger Key to play them back sequentially at the Strum Speed. Notes will continue to be sustained until the Trigger Key is released.

TRIGGER OCTAVE sets the note octave of the Trigger Key (C). With the default setting of 4, holding C4 will trigger the strum playback.

STRUM SPEED sets the speed of the strum (inter-note) in milliseconds (1 to 200)

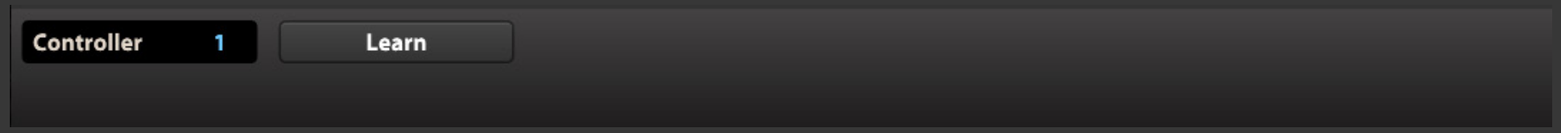


LEGATO

Crossfade the attack of legato-played keys for more realistic performance

FADE set the crossfade time in ms (10-100)

RETRIGGER toggles retrigger mode on/off



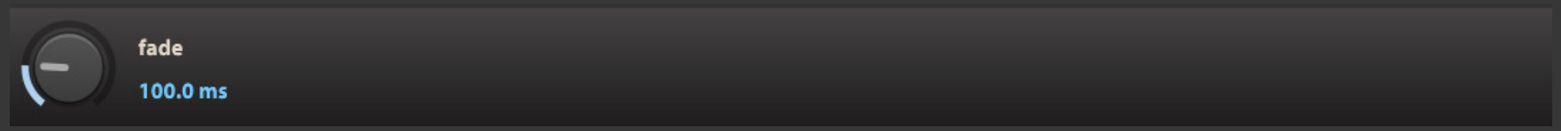
MODWHEEL GLISSANDO

Use MIDI CC to strum pressed keys for a harp or guitar-like effect

Select the desired MIDI CC channel by click-dragging or scrolling with your mouse wheel over the **CONTROLLER** field

Clicking **LEARN** will bind an incoming MIDI CC channel to **CONTROLLER**

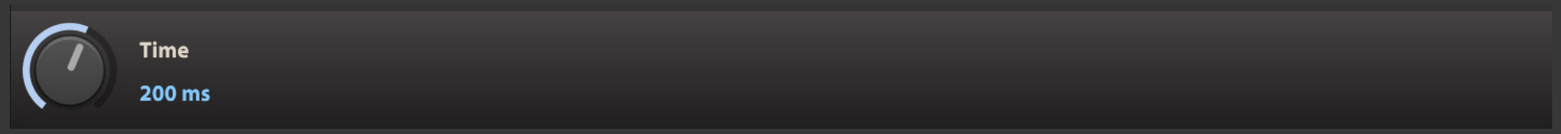
To use: hold down notes and move your keyboards modwheel or MIDI controller to strum the held notes across all octaves



PORTAMENTO

MIDI glide with fade time

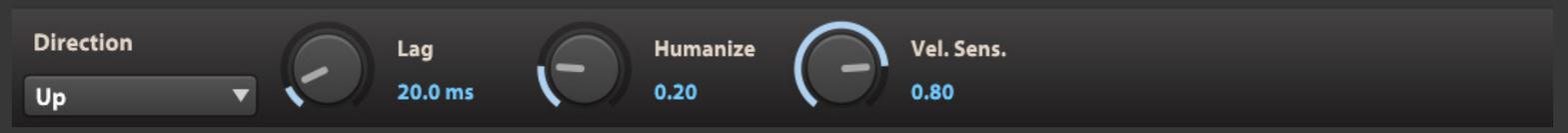
FADE set the portamento glide time in ms (1-500)



PORTAMENTO STEPPED

MIDI step glide with fade time

TIME set the portamento glide time in ms (1-1000)



STRUM

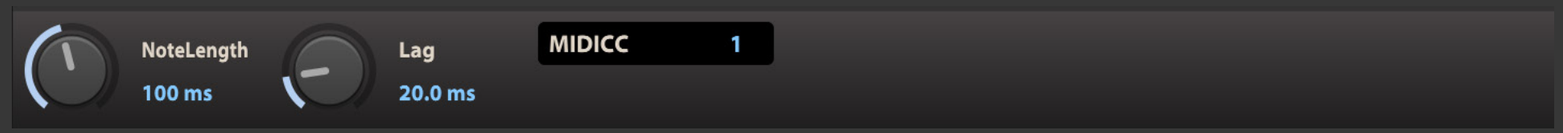
Play incoming MIDI notes like a guitar

DIRECTION set the pitch order in which notes will be played, up, down, up and down or random

LAG set the lag time for incoming notes

HUMANIZE randomizes the trigger timing of incoming notes for a less-perfect sound

VELOCITY SENSITIVITY reduces legato time as the velocity increases



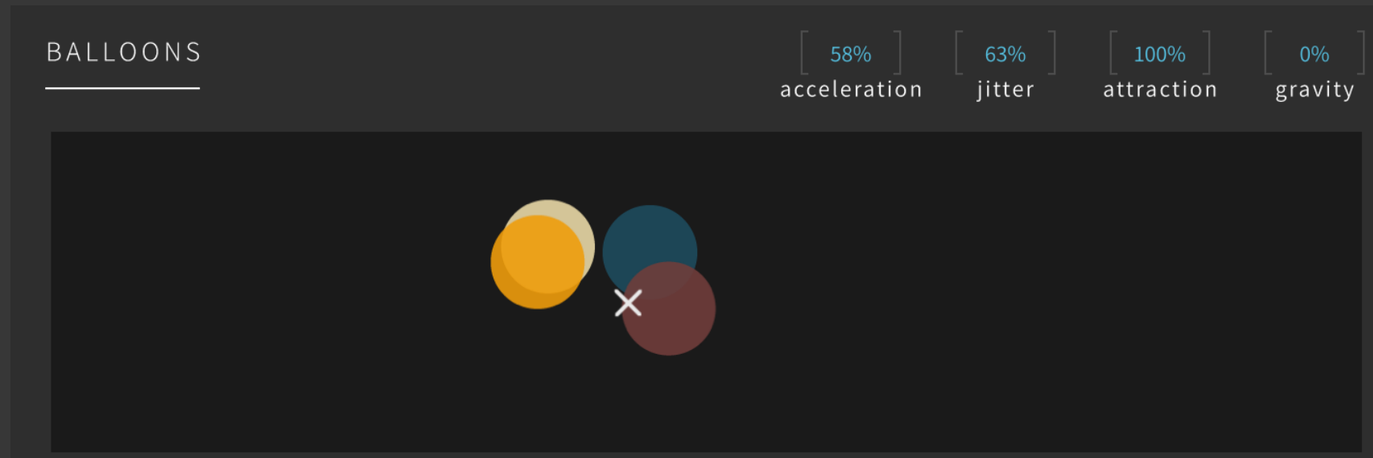
STRUM WHEEL

Harp-like strumming using MIDI CC

NOTE LENGTH set the note duration

LAG set the lag time for incoming notes

MIDICC set the MIDI CC number for control



BALLOONS

Note repeater use balloons bouncing to generate note repeats.

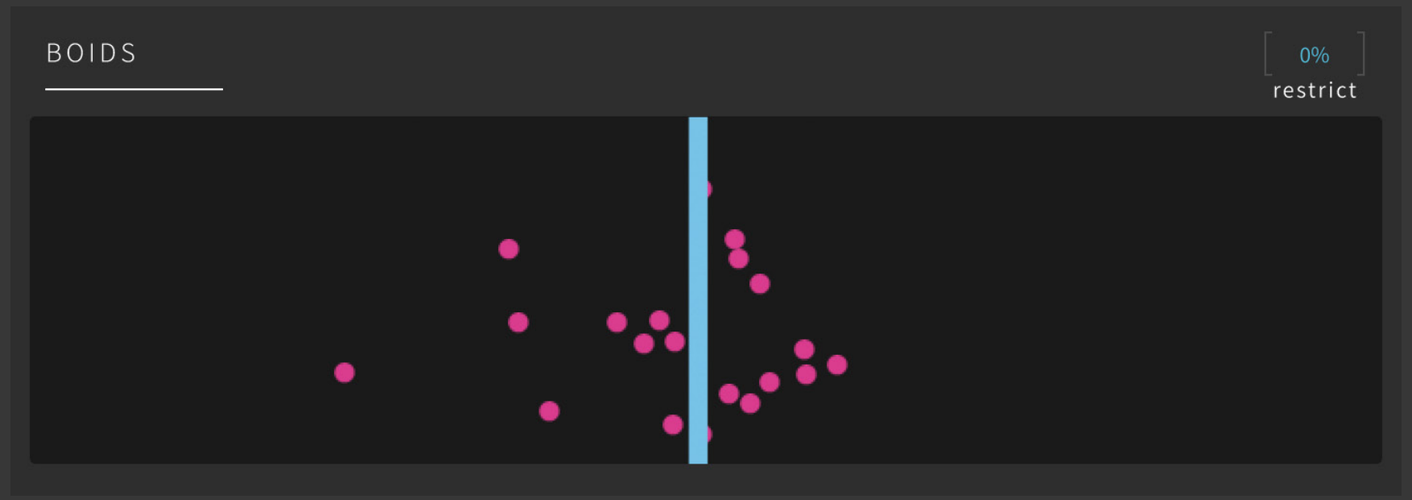
Click and drag the **X** in the ceter display to set the direction of the ballon launches by note trigger.

ACCELERATION set the initial speed of the ballon.

JITTER adds variation (quiver) of the ballon's movement.

ATTRACTION adds the attraction between each ballons.

GRAVITY set the gravity (damping) ballon's vertical movement.

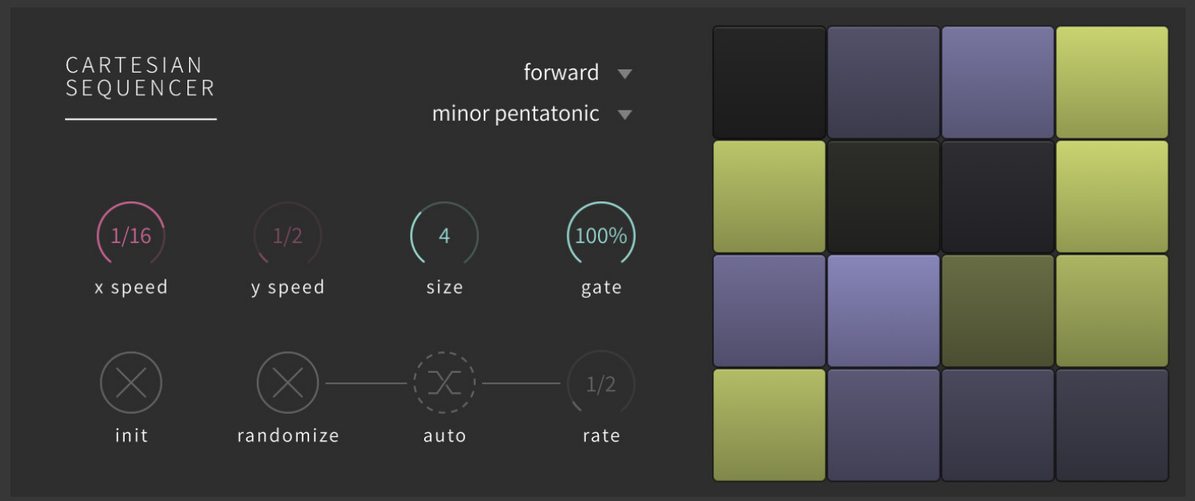


BOIDS

Note repeater use boids hit the boundary to generate note repeats.

The boids will generate the note when they crossing the **CENTER LINE** of the display, and the line can be drag to move the position.

RESTRICT set the size of the space that boids fly arround.



CARTESIAN SEQUENCER

Cartesian sequencer with discrete X/Y movement and auto randomizer

MODE set the sequence direction from the drop-down menu.

- **FORWARD** plays from upper left to right, then next row
- **BACKWARD** plays from upper right to left, then next row
- **SPLIT DOUBLE TRIGGER** plays from upper left depends X and Y speed setting

SCALE sets the scale from a drop-down menu.

SEQUENCE GRID drag the grid to set the pitch-shift value of the grid.

X SPEED sets the playback speed in FORWARD and BACKWARD mode, and the X axis playback speed in SPLIT DOUBLE TRIGGER mode.

Y SPEED sets the Y axis playback speed in SPLIT DOUBLE TRIGGER mode.

SIZE sets the grid size. E.g. “4” is a 4x4 grid, “8” is an 8x8 grid.

GATE sets the gate duration of the next note played.

INIT initializes the grid settings.

RANDOMIZE click to randomize the grid settings.
AUTO enables automatic randomize at an interval set by RATE.
RATE sets the auto randomize trigger interval.

CHIP ARP

Quickly create classic video game arpeggiations

PATTERN set the arp pattern from the drop-down menu.

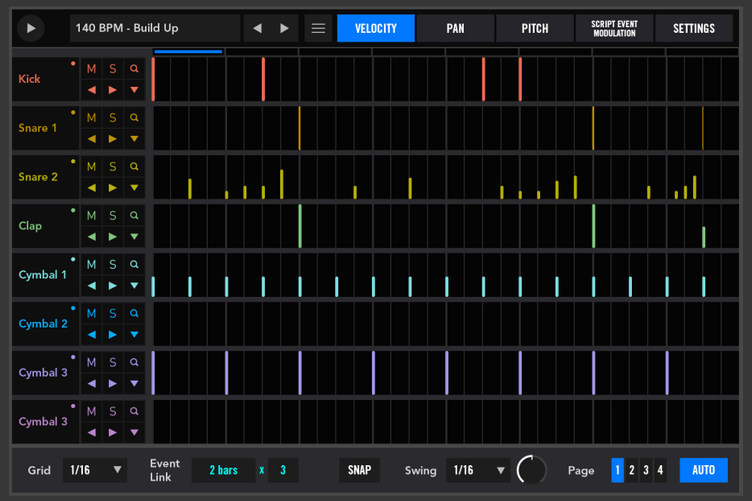
OCTAVE sets the octave shift up or down of the arpeggiation.

NOTE REPEAT set the number of the repeats.

GATE sets the gate duration of the arp notes.

LOOP enables loop arpeggiation.

SPEED sets the rate of the arpeggio.



DRUM SEQUENCER

A featured 8-part, 8-bar X0X-style sequencer with velocity, pan, pitch, swing, external modulation control, preset load/save capability and more

PLAY ▶ (top-left) plays or stops the sequence

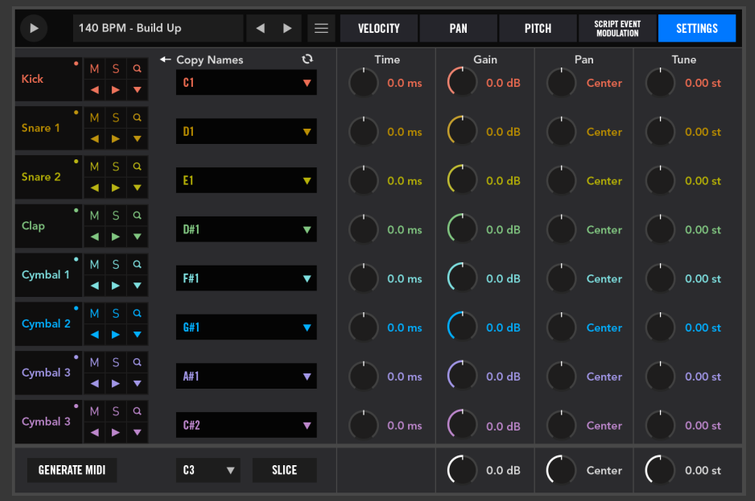
PATTERN PRESET contains a wide range of rhythmical patterns arranged by style and tempo

≡ MENU
CLEAR, reset the current configuration
LOAD, load a preset
SAVE, saves the current sequence
SAVE AS..., saves the current sequence as a new named preset
SAVE ALL AS..., saves the current sequence and settings as a new named preset
STATE A/B, switches between A/B states of the sequencer
COPY A TO B/B TO A, copies the current sequencer state to the alternate slot
COPY SEQUENCE PAGE, copies the current sequencer page (1-4) to the clipboard
PASTE SEQUENCE PAGE, overwrites the visible/selected sequencer page from the clipboard
LOCK MIDI MAP, locks the current parameter values on the Settings page (preserve key bindings while changing preset)
LOCK MUTES AND SOLOS, locks the current part mute and solo settings (preserve mix settings while changing preset)

Part controls are available in the left-most column, including: **NAME** and **MIDI STATUS** (●), **MUTE** (M), **SOLO** (S) and **TRACK ZOOM** (Q), **SEQUENCE NUDGE LEFT/RIGHT** (◄/►) and **FUNCTIONS** (▼)

The main area of the interface is the **GRID EDITOR**, draw in values or double-click to input numerical values, right-click the grid to reset all values. The top of the Grid Editor, a **BEAT INDICATOR** LED that lights up over the current beat.

BOTTOM TOOLBAR
GRID set the sequencer grid resolution
EVENT LINK set the interval of linked edits, with a setting of '1 bar' every edit you make will be repeated in 1 bar intervals
SNAP enables grid snapping
SWING DIVISION set the swing interval
SWING KNOB set the amount of swing
PAGE 1-4 changes the current sequence page
AUTO changes the visible sequencer page with the playhead



DRUM SEQUENCER

SETTINGS

ASSIGNMENTS AND NAMING
PART NAMES double-click a part name to rename it
←COPY NAMES will name the parts according to the instrument names in the **PART NOTE** menu
REFRESH to refresh the **PART NOTE** menu
PART NOTE MENU set which incoming MIDI note will trigger the part

INSTRUMENT SETTINGS
TIME is a bipolar trigger offset in ms (+/-200)
GAIN adjusts the instrument Gain
PAN adjusts the instrument Pan
TUNE adjusts the instrument's pitch

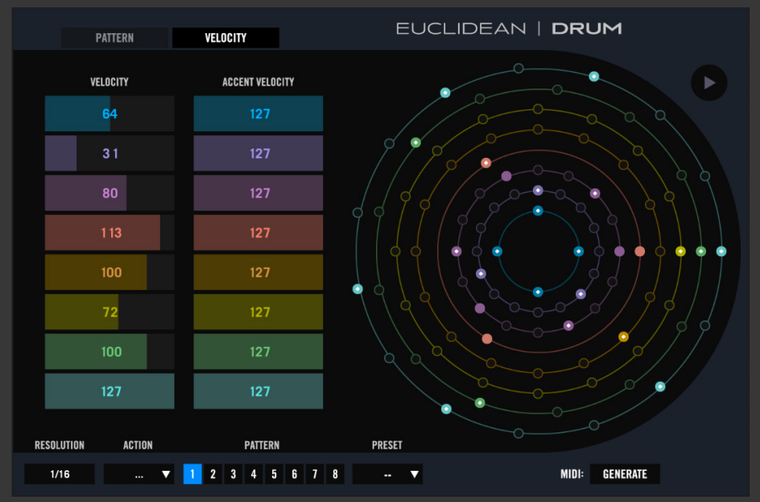
BOTTOM TOOLBAR

GENERATE MIDI creates a MIDI file from the current sequence, which can then be drag-and-dropped anywhere in your system or DAW with via the **DRAG 'N DROP** button

SEQUENCE TARGET NOTE select a note to use to gate playback of the sequence (use multiple Drum Sequencers with different target notes to create macro performances)

SLICE, when enabled splits the sequence into 8 bars and assigns their gated playback to notes chromatically beginning at C3 (perform the sequence like a chopped sample)

GLOBAL GAIN, **PAN** and **TUNE** offset the per-part values



EUCLIDEAN DRUM

8-part sequencer based on euclidean distribution oriented towards drum instruments

PLAY (top-right) plays or stops the sequence

PATTERN PAGE

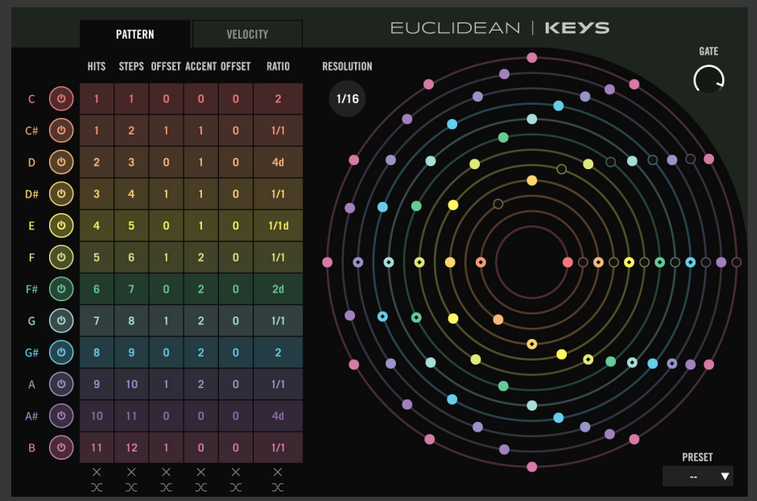
PART CONTROLS
POWER ⏻ toggles the part sequence on/off
HITS set the number of steps that will trigger
STEPS set the number of steps in the sequence
OFFSET offset the sequence by a number of steps
ACCENT set the step interval of accented triggers
ACCENT OFFSET offset the accented triggers by a number of steps
RATIO set the part speed relative to the global resolution
MIDI NOTE set MIDI note number that the part will trigger

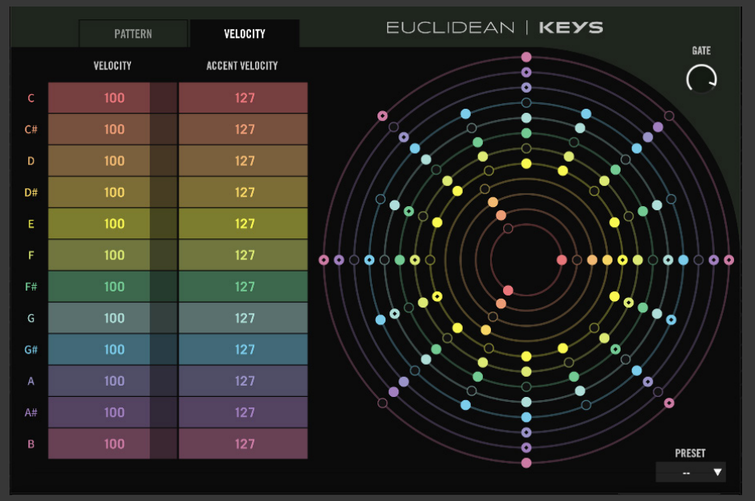
EUCLIDEAN GRID
Displays the current sequencer state of all 8 parts. Active parts are indicated with a connecting circle, of those dimmed and outlined nodes are not triggered, solid-filled nodes are triggered, solid-filled nodes with a white highlight are accented.

VELOCITY PAGE

VELOCITY set the MIDI note velocity per-part
ACCENT VELOCITY set the MIDI note velocity of accented triggers per-part

BOTTOM TOOLBAR
RESOLUTION set the global sequence speed
ACTION MENU allows you to copy and paste the current sequence using the 8 available pattern slots
PATTERN 1-8 changes the current configuration between 1 of 8 available pattern slots
PRESET load a preset sequence into the currently selected pattern slot
MIDI GENERATE creates a MIDI file of the visible sequence that can be dragged anywhere in your system or DAW via the **DRAG 'N DROP** button





EUCLIDEAN KEYS

Generate discrete euclidean-based sequences for each key in the chromatic scale

PATTERN PAGE

NOTE CONTROLS
POWER ⏻ toggles the part sequence on/off
HITS set the number of steps that will trigger
STEPS set the number of steps in the sequence
OFFSET offset the sequence by a number of steps
ACCENT set the step interval of accented triggers
ACCENT OFFSET offset the accented triggers by a number of steps
RATIO set the note speed relative to the global resolution
INIT click X switch at the bottom of each controls to clear the settings
RANDOMIZE click the switch at the bottom of each control to randomize the setting

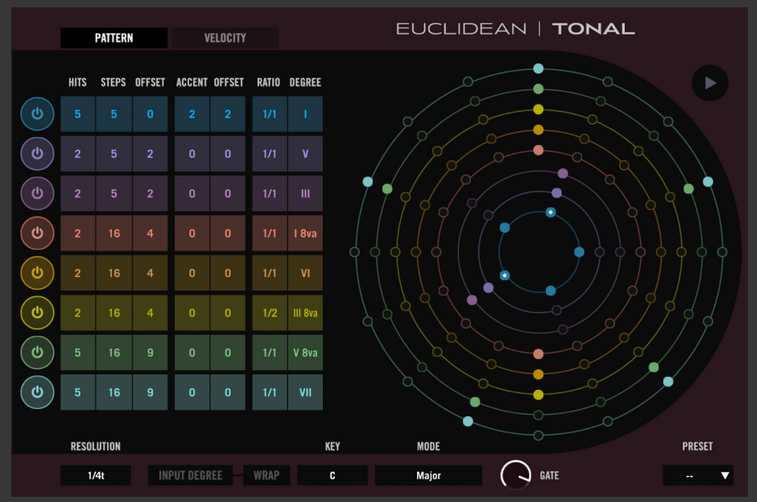
RESOLUTION set the global resolution (sequence speed)

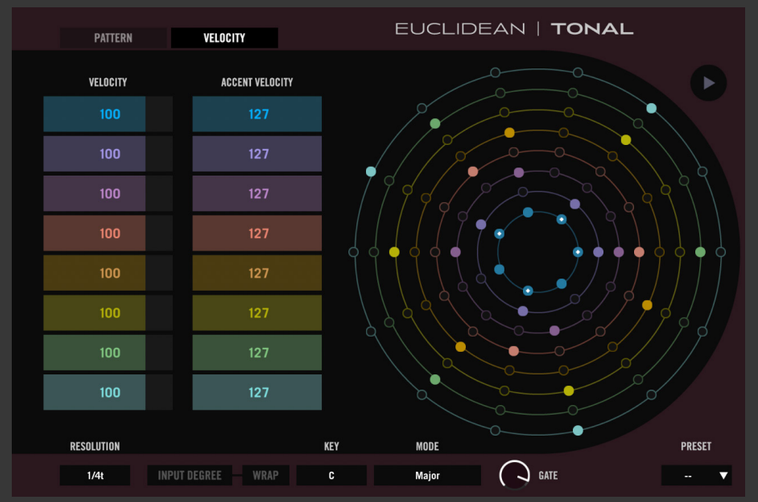
EUCLIDEAN GRID
Displays the current sequencer state of all 11 notes. Active notes are indicated with a connecting circle, of those dimmed and outlined nodes are not triggered, solid-filled nodes are triggered, solid-filled nodes with a white highlight are accented.

VELOCITY PAGE

VELOCITY set the MIDI note velocity per-part
ACCENT VELOCITY set the MIDI note velocity of accented triggers per-part

GATE set the global note gate length
PRESET useful premade sequences (overwrites current sequencer configuration)





EUCLIDEAN TONAL

8-part sequencer based on euclidean distribution oriented towards tonal instruments.

PLAY (passive) will highlight when the sequencer is active

PATTERN PAGE

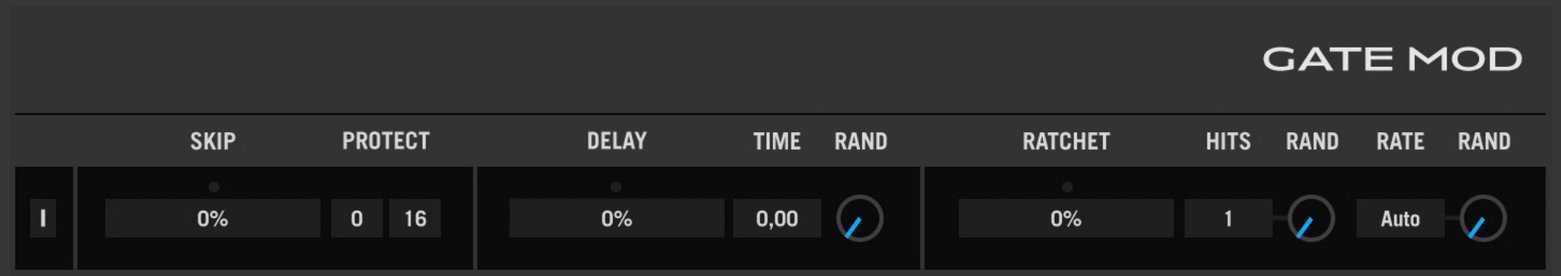
PART CONTROLS
POWER ⏻ toggles the part sequence on/off
HITS set the number of steps that will trigger
STEPS set the number of steps in the sequence
OFFSET offset the sequence by a number of steps
ACCENT set the step interval of accented triggers
ACCENT OFFSET offset the accented triggers by a number of steps
RATIO set the part speed relative to the global resolution
DEGREE set the degree relative to the master key and mode

EUCLIDEAN GRID
Displays the current sequencer state of all 8 parts. Active parts are indicated with a connecting circle, of those dimmed and outlined nodes are not triggered, solid-filled nodes are triggered, solid-filled nodes with a white highlight are accented.

VELOCITY PAGE

VELOCITY set the MIDI note velocity per-part
ACCENT VELOCITY set the MIDI note velocity of accented triggers per-part

BOTTOM TOOLBAR
RESOLUTION set the global sequence speed
INPUT DEGREE activate to dynamically set the sequence key to the lowest held note
WARP while Input Degree is active, snaps pressed keys to tonal grid
KEY set the global key
MODE set the global scale
GATE set the global note gate length
PRESET useful premade sequences (overwrites current sequencer configuration)



GATE MOD

A probability-based multitool which can apply up to 3 functions per note event; Skip (mute), Delay (in ms), and Ratchet

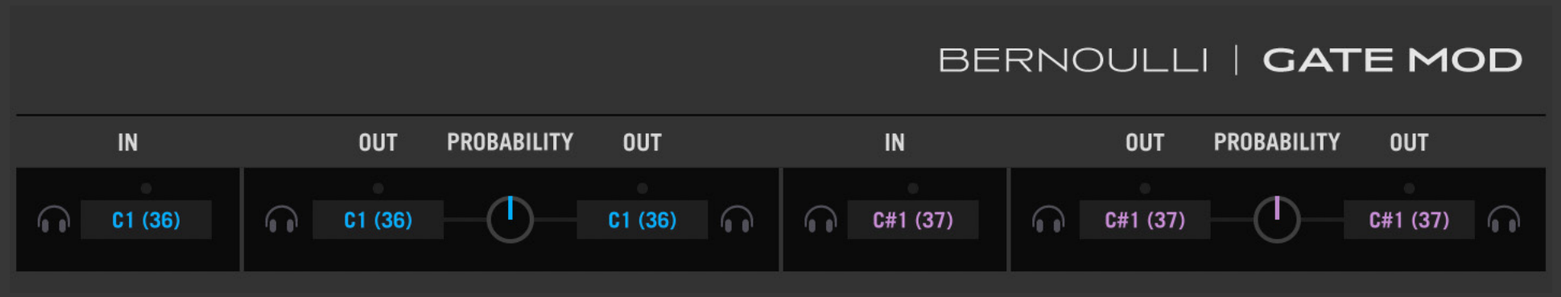
Gate Mod is a probability-based multitool including 3 processors; a skipper with beat protect, a delay, and a ratchetter. Processors are controller by way of their probability sliders which are queried sequentially from left to right for every note received.

[I] click once to initialize the plugin to the default state

PROBABILITY SKIPPER
ACTIVITY LED a small circular indicator, lights up when the processor is triggered (and a note is skipped)
SKIP PROBABILITY sets the probability of skipping incoming note events
PROTECT allows you to prevent notes from being skipped regardless of the probability value, based on their numerical order. This is useful for adding probability to sequences while protecting rhythmic patterns (like downbeats.) For example, a setting of [1] / [4] will protect the first of every four notes, and a setting of [3] / [8] will protect the first three out of every eight notes received.

PROBABILITY DELAY
ACTIVITY LED a small circular indicator, lights up when the processor is triggered (and a note is delayed)
DELAY PROBABILITY set the probability of delaying incoming note events
TIME sets the delay time in ms (0-1000)
RAND randomizes [Time], 0= bypass, >0= randomized, greater values = longer potential time values (up to max)

PROBABILITY RATCHETTER
ACTIVITY LED a small circular indicator, lights up when the processor is triggered (and a note is ratchetted)
RATCHET PROBABILITY set the probability of ratchetting incoming note events
HITS sets the number of times the note will repeat (0-8)
RAND randomizes [Hits], 0= bypass, >0= randomized, greater values = longer potential time values (up to max)
RATE sets the speed at which the notes will repeat (auto, or explicit 1/32 to 1/2), Auto= adaptive (> hits = >speed)
RAND randomizes [Rate], 0= bypass, >0= randomized, greater values = longer potential time values (up to max)



GATE MOD BERNOULLI

A 2-channel probability-based note router, with note learn

A note-focused Bernoulli gate. Assign one source note (IN) and two destinations (OUT), then control the likelihood of which destination gets triggered with the probability knob. Useful for creative applications and variable drum patterns. Includes two discrete channels (blue, and purple) with identical functionality.

IN

[🎧 NOTE LEARN] click to activate Note Learn mode, the channel will bind to the next MIDI note received

ACTIVITY LED a small circular indicator, lights up when the assigned note is detected

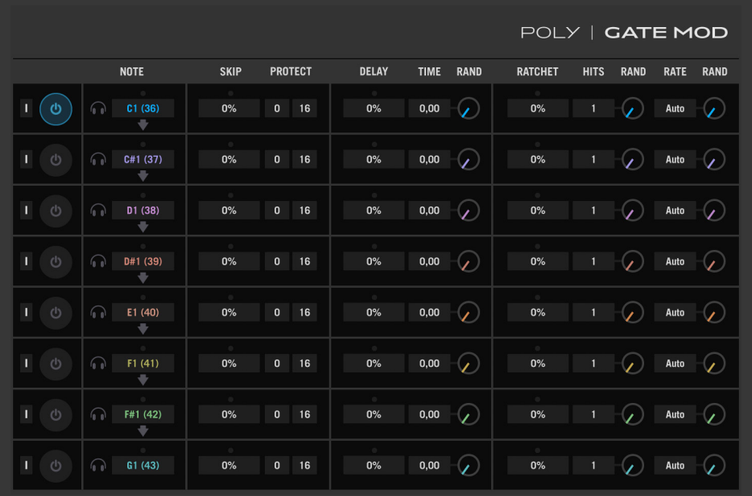
[NOTE IN] click-drag to change the note IN assignment of the channel, double-click for numeric entry

OUT

[🎧 NOTE LEARN A/B] click to activate Note Learn mode, the channel will bind to the next MIDI note received

ACTIVITY LED A/B a small circular indicator, lights up when the assigned note is triggered

A/B PROBABILITY sets the probability of IN notes going to OUT A or OUT B, where value 0%= all note INs go to Out A, and 100%= all note INs go to Out B



GATE MOD POLY

An 8-channel, note-specific variant of the Gate Mod script processor

Gate Mod Poly is an 8-channel variant of Gate Mod, with per-channel bypass, note learn, and auto-assign. It's an ideal pairing for the Drum Sequencer or Euclidean Drum Sequencer scripts, or in any situation where you need note-specific control of Gate Mod to add non-repeating variability and interest to a sequence.

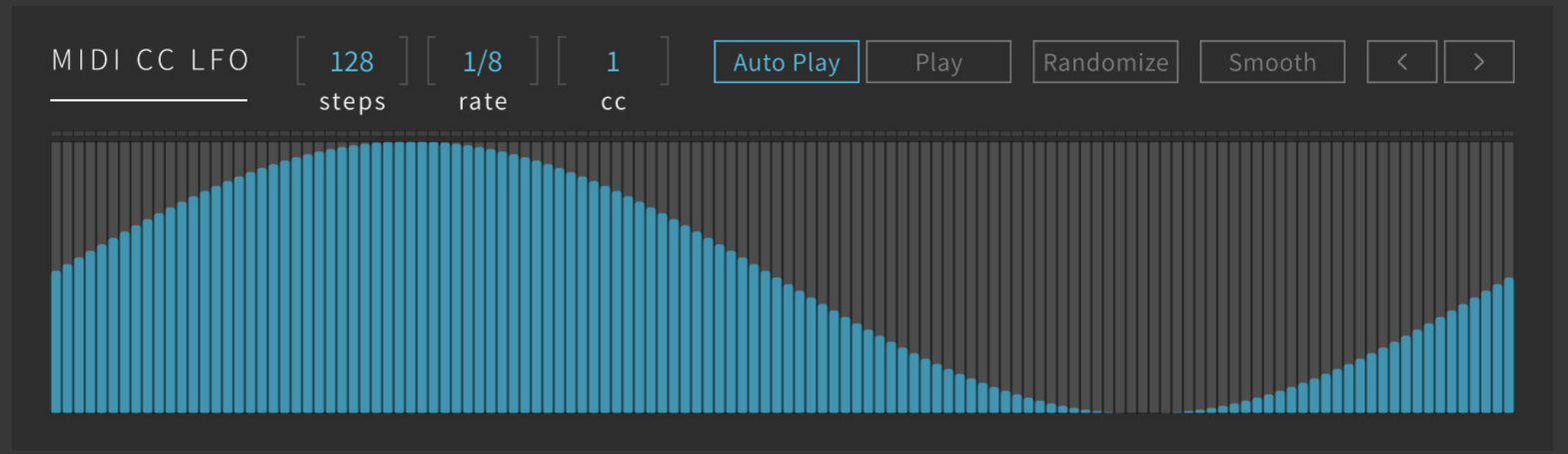
This following section deals only with the unique controls of the poly version, for use of Gate Mod processors see: [Appendix A: Script Processors > Gate Mod]

[⏻ POWER] click to enable/disable the channel

[🎧 NOTE LEARN] click to activate Note Learn mode, the channel will bind to the next MIDI note received

[NOTE] click-drag to change the note assignment of the channel, double-click for numeric entry

[↓ AUTO ASSIGN] assigns notes to all following channels, sequentially from the current note up, for example clicking [Auto Assign] on channel 1 with an assignment of C3 will set the remaining channels to C#3, D3, D#3, E3, F3, F#3, G3, and G#3. Combine with [Note Learn] for setup in 3-clicks.



MIDI CC LFO

A multi-step MIDI CC modulator

STEPS sets the number of steps to be played

RATE sets the step length

MIDI CC set the target MIDI CC number

AUTO PLAY enables retrigger mode

PLAY enables free running mode

SEQUENCER click to change values, double-click for numerical entry, or click-drag across the sequencer to draw custom modulation shapes

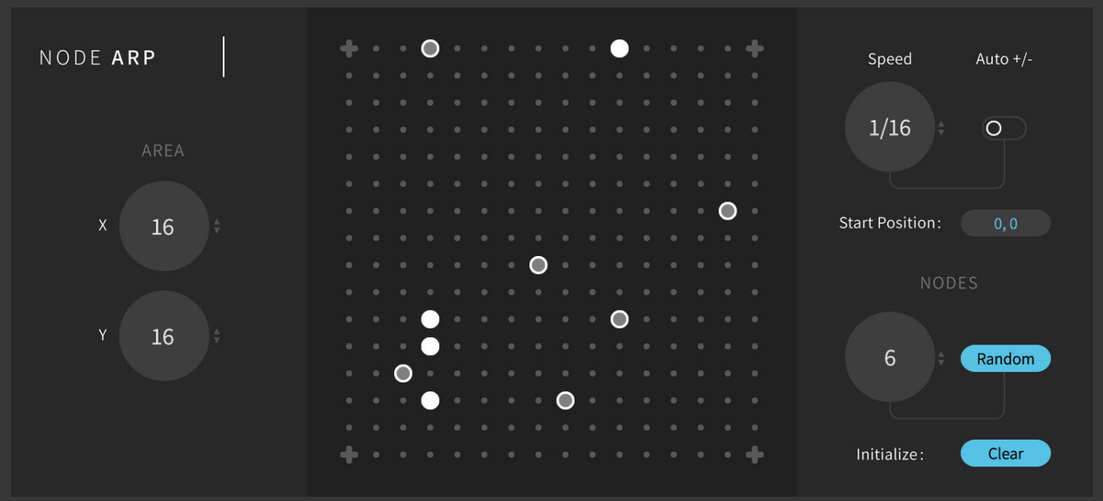
MOTION GRID

A logic-based grid sequencer driven by directional nodes

SCALE sets the scale of the arpeggiation
GATE sets the gate amount (limitation of the note length)
Click the **RANDOM** button to randomize grid node direction and start points

Click the corner or side of each grid to set the moving **DIRECTION**

Settings for each voice:
ON/OFF switches voices on or off
RATE sets the speed of the voice movment
Click the **RANDOM** button to randomize the voice speed



NODE ARP

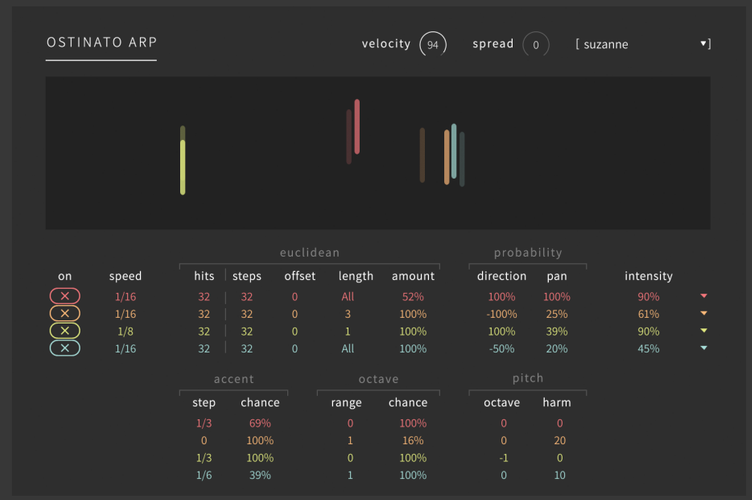
A logic-based grid sequencer
driven by active/passive nodes

AREA sets the matrix size, **X** and **Y** individually

Clicking dots in the matrix to **ADD** or **REMOVE** the **NODES** manually

SPEED sets the speed of the playheads
AUTO enables the randomizing playheads speed
START POSITON set where (X,Y) the playhead starts

NODES sets the number of nodes by random generation
Click the **RANDOM** button to randomly generate nodes
Click the **CLEAR** button to remove all nodes from the matrix



OSTINATO ARP

Four arpeggiators in parallel creating rhythmic and hypnotizing patterns.

GLOBAL CONTROLS

VELOCITY set the note velocity

SPREAD set the note spread

[MENU] to choose the preset from the list

PER ARPEGGIATOR CONTROLS

ON set the arpeggiator enable (x) or disable (+)

SPEED set the rate of the arpeggiator.

EUCLIDEAN
HITS set the number of steps that will trigger
STEPS set the number of steps in the sequence
OFFSET offset the sequence by a number of steps
LENGTH set the pattern length from 1 to 16 or all notes
AMOUNT set the amount of the euclidean pattern posibility

PROBABILITY
DIRECTION set the direction chance, -100% = down, 0% = up-down, 100% = up
PAN set the randomness of the pan position

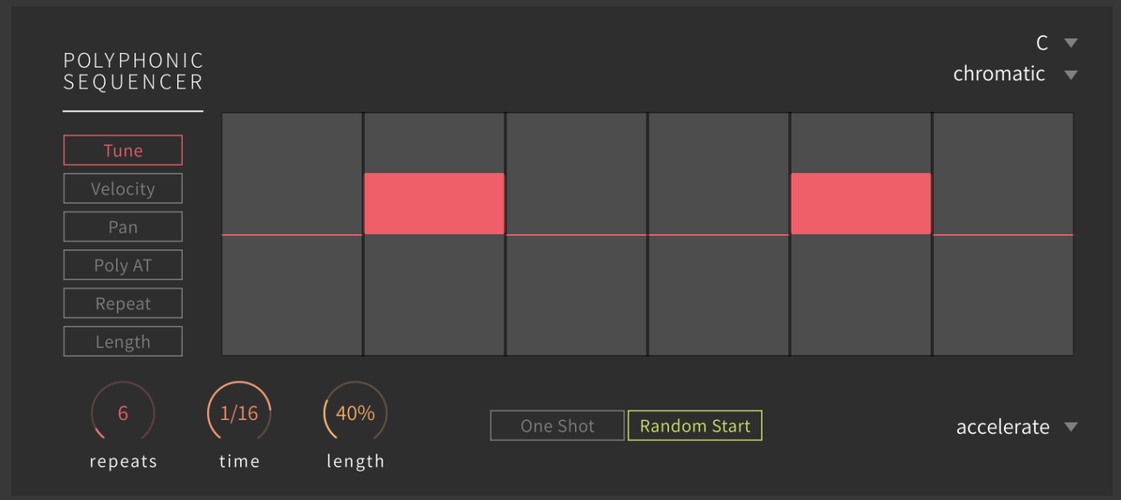
ACCENT
STEP set the accent step
CHANCE set the amount of the accent pattern posibility

OCTAVE
RANGE set the octave range of the arpeggio pattern
CHANCE set the amount of the octave range shift posibility

PITCH
OCTAVE shifts the octave up to +/- 2 octaves
HARMONIZE set the amount of the harmonization

INTENCITY set the note intensity of the arpeggio.

Click the ▼ button to initialize or copy, paste pattern



POLYPHONIC SEQ

Polyphonic sequencer with one sequencer running per key pressed with volume, pan, pitch and timing support

SCALE ROOT set the root key of the sequence

SCALE set the scale of the sequence phrase

REPEATS set the number of steps to be played (1-64)

TIME set the step length

LENGTH set the step length (0-150%)

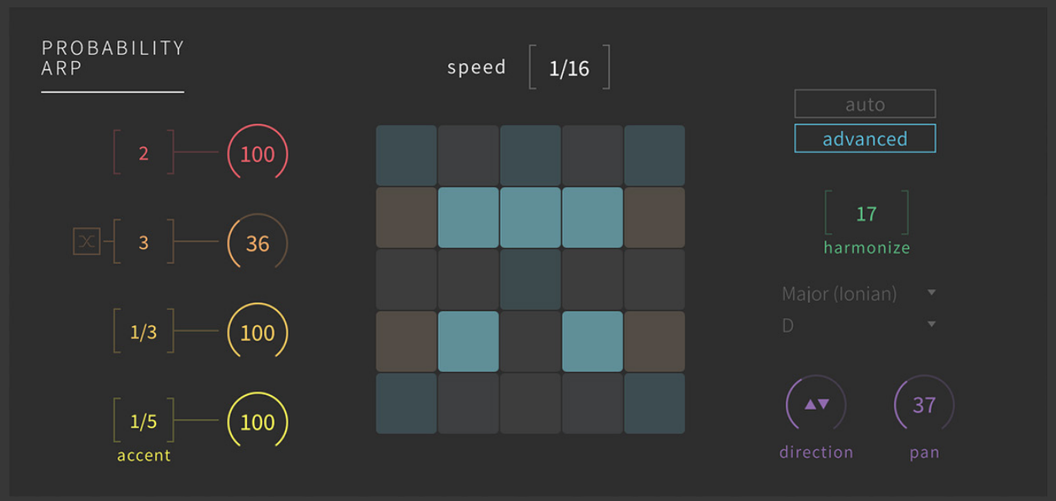
ONE SHOT disables looped sequence playback

RANDOM START enables random start position of the sequence

SEQUENCER PAGES

TUNE set the pitch offset in semitones (+/-24)
VELOCITY set the note velocity multiplier (0-200%)
PAN set the absolute pan value (L/R)
POLY AFTERTOUCH set the aftertouch volume amount (0-127)
REPEAT set the note repeat amount (0-8)
LENGTH set the note gate length (0-100%)

PRESET a selection of useful sequencer preset



PROBABILITY ARP

Arp with chance-based octave, ratchet, skip, accent, direction, pan, and harmonization

SPEED sets the sequence speed

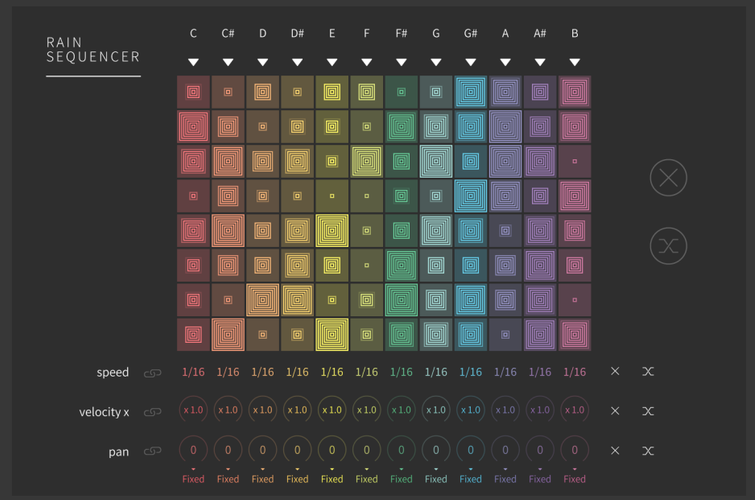
LEFT CONTROLS
OCTAVE sets the octave range with probability amount
RATCHET sets the count of ratcheting incoming note events, randomize with probability amount
SKIP sets the count of skipping incoming note events with probability amount
ACCENT sets the accent count with probability amount

RIGHT CONTROLS
AUTO / ADVANCED MODE switch between automatic chord/scale detection or advanced (manual) mode

HARMONIZE sets the probability of the harmonization

MODE sets the global scale
KEY sets the global key

DIRECTION randomizes the arp direction
PAN randomizes the pan setting



RAIN SEQUENCER

12 note-based vertical sequencers with discrete speed, velocity, and pan modifiers

MENU ▼

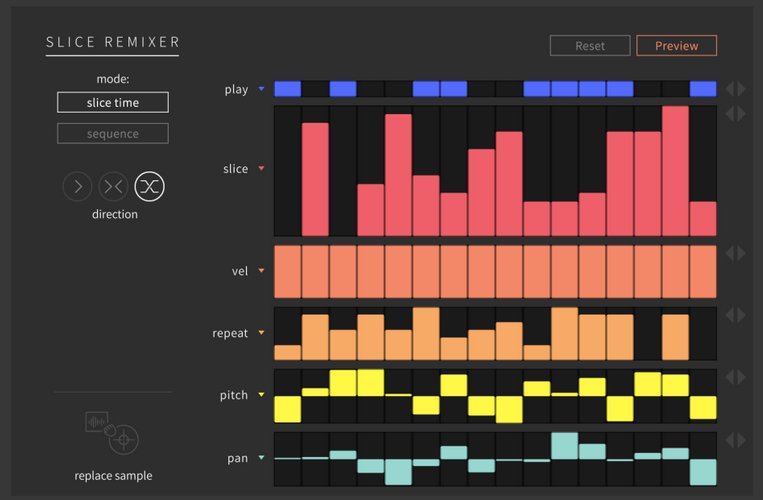
- **INIT** initializes the values of the line
- **CLEAR** clears the values of the line
- **RANDOMIZE** randomizes the values of the line
- **COPY TO** copies the values of the row and pastes to the line of your choice
- **TEMPLATES** applies a template pattern to the line

STEP EDITORS drag to set the velocity of the step
INIT (X) initializes the values of all row steps
RANDOMIZE randomizes the values of all row steps

SPEED sets the step speed per note
VELOCITY sets the step velocity multiply amount per note
PAN sets the MIDI panning mode per note

- **FIXED** is a typical pan mode with stereo position setting
- **ALT** is an alternate pan mode with depth amount
- **RND** is a random pan mode with default position setting
- **NONE** has no panning effect

LINK allows you to edit all rows simultaneously
INIT (X) initializes the parameter values for all notes at once
RANDOMIZE randomizes the parameter values for all notes at once



SLICE REMIXER

Conjunction with Slice sample oscillator, quickly remix sliced loops to create new patterns.

The sample loads into the Slice oscillator, the slice will add to the Slice Remixer and the keys will mapped from C3/note#60 for each slice.

Use C2 / note#48 to trigger the Slice Remixer.

RESET click to reset the Slice oscillator. This is useful when replacing the sample in the oscillator.

PREVIEW enables preview when tweaking the Slice IDs.

MODE sets which slice timing mode to use, **SLICE TIME** uses slice timing from the sample, **SEQUENCE** uses fixed timing set by **RATE** and **STEPS**

DIRECTION sets playback direction: **FORWARD**, **PING PONG** (atlernate forward and backward) and **RANDOM**

Drag sample to **REPLACE SAMPLE** icon to swap the sample for slicing

PLAY sets the step to play or mute. Click the ▼ button to initialize or randomize the steps, and use the ◀▶ buttons shift the steps left or right.

SLICE ID sets the slice to use for the steps. Click the ▼ button to initialize or randomize the steps, and use the ◀▶ buttons shift the steps left or right.

VELOCITY sets the slice velocity. Click the ▼ button to initialize or randomize the steps, and use the ◀▶ buttons to shift the steps left or right.

REPEAT sets the number of times the step should repeat. Click the ▼ button to initialize or randomize the steps, and use the ◀▶ buttons to shift the steps left or right.

PITCH sets the per-step semitone offset (-24 to 24). Click the ▼ button to initialize or randomize the steps, and use the ◀▶ buttons to pull or push shift the steps

PAN sets the per-step MIDI panning. Click the ▼ button to initialize or randomize the steps, and use the ◀▶ buttons shift the steps left or right.

SNOWFLAKES

A 12-note based sequence modifier turning sustained notes into fluttery staccato

TIME SCALE sets the speed of event generation (partcles falling)

SNOWFLAKES sets the number of particles in each note dispay (note generation)

STEP ARP

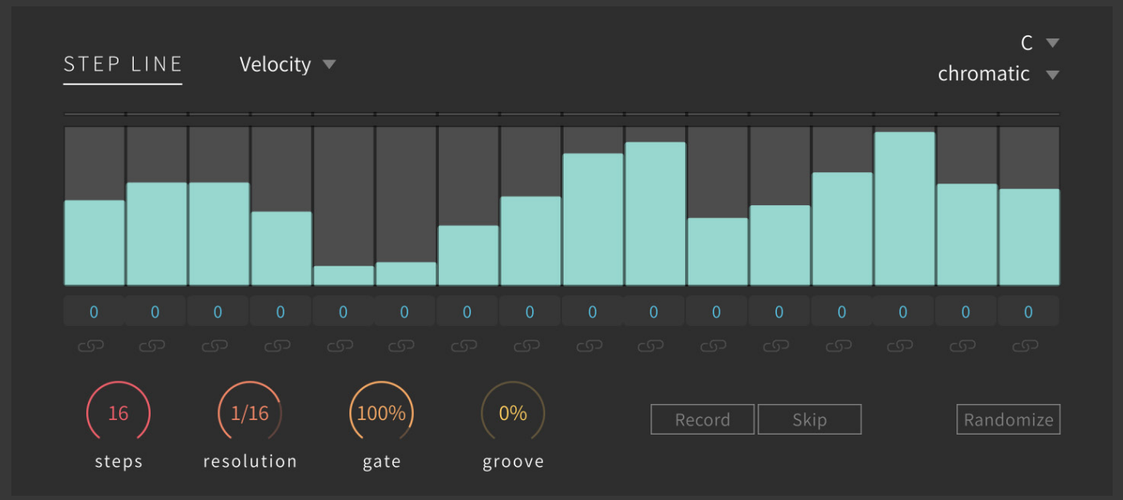
A featured step-based arpeggiator with type, ratio, velocity, gate, MIDI CC, mode, repeat, pan, octave, pitch and probability per-step, with independent length control for each channel

HEADER
STEPS sets the number of steps for the sequence
RESOLUTION set the step length (1/32nd to 1/2 beat) based on the BPM of the host
GATE set the gate amount (0-110%)
OCTAVE set the octave range of the sequence (-3 to +3)
PRESET select a factory preset configuration
PRESET ▶ select the next preset
PRESET ◀ select the previous preset

STEP PARAMETERS
GLOBALS (CHANNEL HEADERS)
[I] initialize the values of the row
[R] randomize the values of the row
[-] set the step length of the row independently from the main step length, allowing for varied and polyrhythmic sequences

STEP TYPE set the step function; Empty= does nothing, Note= plays a note, Repeat= repeats the last note, Glide= sustains the last note
RATIO sets step length relative to the main resolution, clicking the in channel header allows you to set all steps at once

VELOCITY set the per-step velocity amount (0-127)
GATE set the per-step gate amount (0-100%)
MIDI CC select the CC channel to modulate by clicking in the header row, then set the modulation value per-step (0-127)
ARP TYPE set the arpeggiator sequence shape
REPEAT set the number of times the step should repeat
PAN set the per-step MIDI panning
OCTAVE set the per-step octave (-2 to 2) relative to the global octave setting
PITCH set the per-step semitone offset (-24 to 24)
PROBABILITY set the per-step probability amount (0-100%)
RESET toggle on to activate, when a RESET step is played the ARP TYPE sequence resets to the first note



STEP LINE

Bassline-oriented sequencer

SEQUENCER PAGES

VELOCITY sets the per-step velocity level
PITCH sets the per-step pitch offset (+/-48 semitones)
LENGTH sets the per-step gate amount
CC1/2 sets the per-step modulation level to send on CC1/2

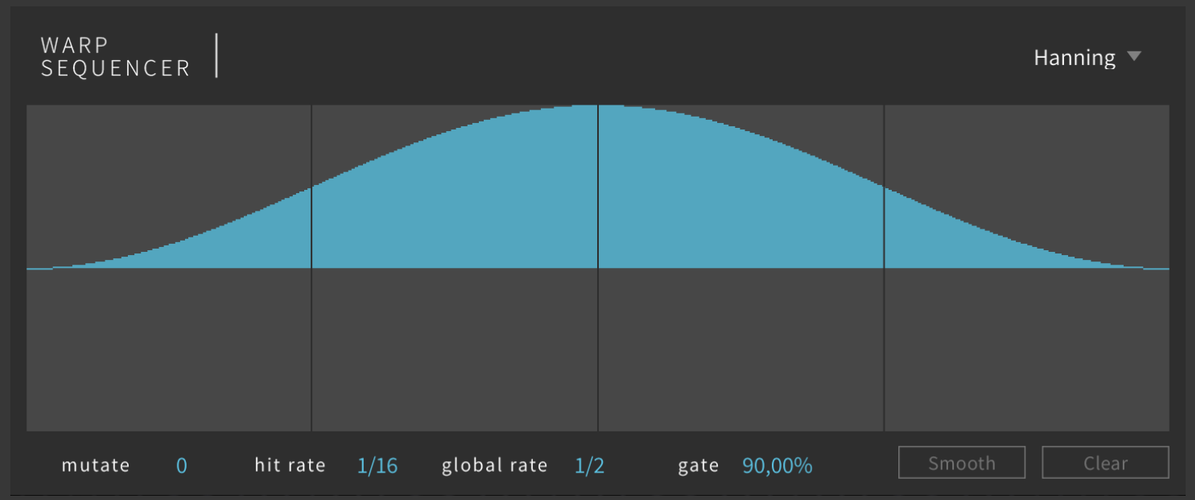
SCALE ROOT sets the root key of the sequence
SCALE sets the scale of the sequence phrase

SEQUENCER
PLAYBACK INDICATORS (passive) display the current step being played back
SEQUENCER click to change value, double-click for numerical entry, click-drag to create custom modulation shapes
PITCH VALUE display the current step pitch value (double-click for numerical entry)
LINK (Tie) combines adjacent steps into a single step, using their combined duration and value

STEPS set the number of steps to be played (1-16)
RESOLUTION sets the step length (1/32nd to 1/2 beat)
GATE sets the gate amount (0-110%)
GROOVE sets the groove amount (0-50%)

RECORD switch enables phrase record mode - use to quickly program pitch sequences
SKIP (in RECORD mode) skips over the next step

RANDOMIZE randomizes all step values



WARP SEQUENCER

Generate chord-based sequences with hand-drawn speed curve

PRESETS ▼ select a sequence presets from the menu

SEQUENCE EDITOR draw a sequence by click-and-drag

MUTATE sets the mutation rate of the sequence

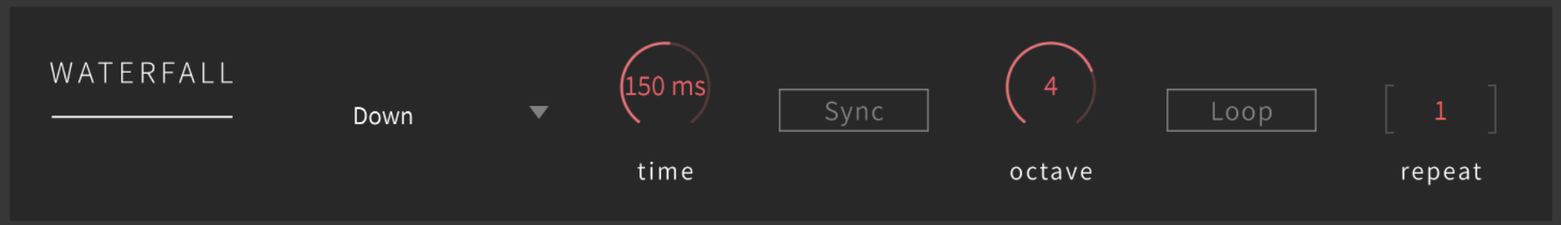
HIT RATE sets the sequence hit rate

GLOBAL RATE sets the global speed of the sequence

GATE sets the gate amount

SMOOTH click to apply a slight smoothing to the sequence shape after hand-drawing

CLEAR clear the sequence form



WATERFALL

Arpeggios with a twist

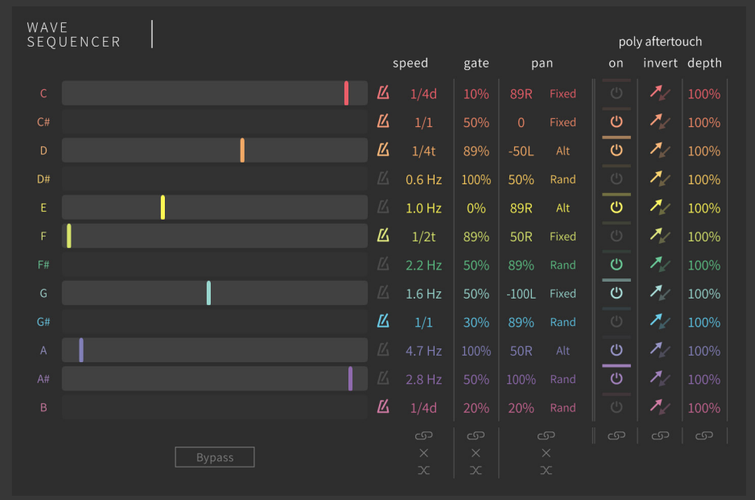
MODE set the arpeggio mode up or down

TIME set the interval of the arpeggio in ms or musical interval with **SYNC** on.

OCTAVE sets the otave range up to 5.

LOOP enables loop arpeggiation.

REPEAT sets the number of the note repeat up to 5.



WAVE SEQUENCER

12 note-based clocked event generators with poly aftertouch output

SPEED sets the step speed in Hz or note duration (sync on) per note

GATE sets the gate amount per note

PAN sets the MIDI panning mode per note
- **FIXED** is atypical pan mode with stereo position setting
- **ALT** is an alternate pan mode with depth amount
- **RND** is a random pan mode with default position setting
- **NONE** has no panning effect

LINK lets you adjust values for each note simultaneously

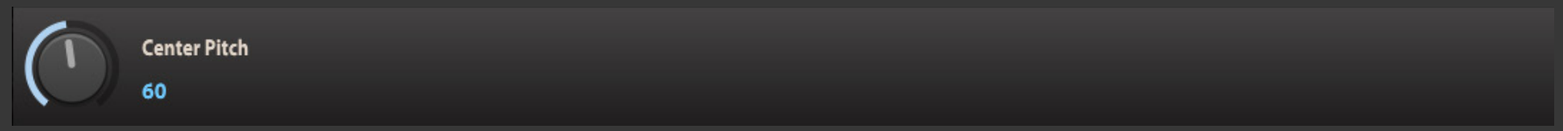
INIT (X) initializes the parameter values for all notes at once

RANDOMIZE randomizes the parameter values for all notes at once

BYPASS disables the sequence

POLY AFTERTOUCH

ON enables poly aftertouch per note
INVERT switches the aftertouch modulation direction, normal or inverted per note
DEPTH sets the aftertouch modulation depth per note
LINK lets you adjust values for each note simultaneously
SKIP (in RECORD mode) skips over the next step

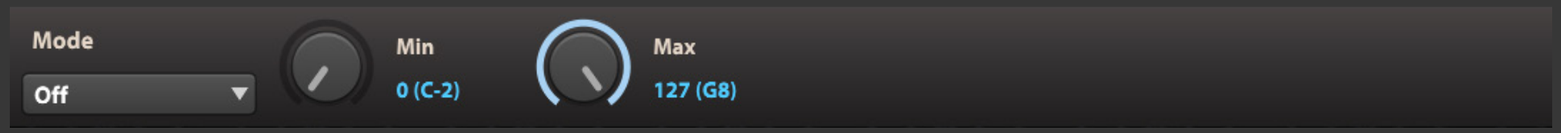


INVERT PITCH

Invert the pitch of the incoming MIDI note

All incoming notes will be transposed by inversion relative to the **CENTRAL PITCH** MIDI note number.

For example; setting the Central Pitch to C3 and playing C2 will result in C4



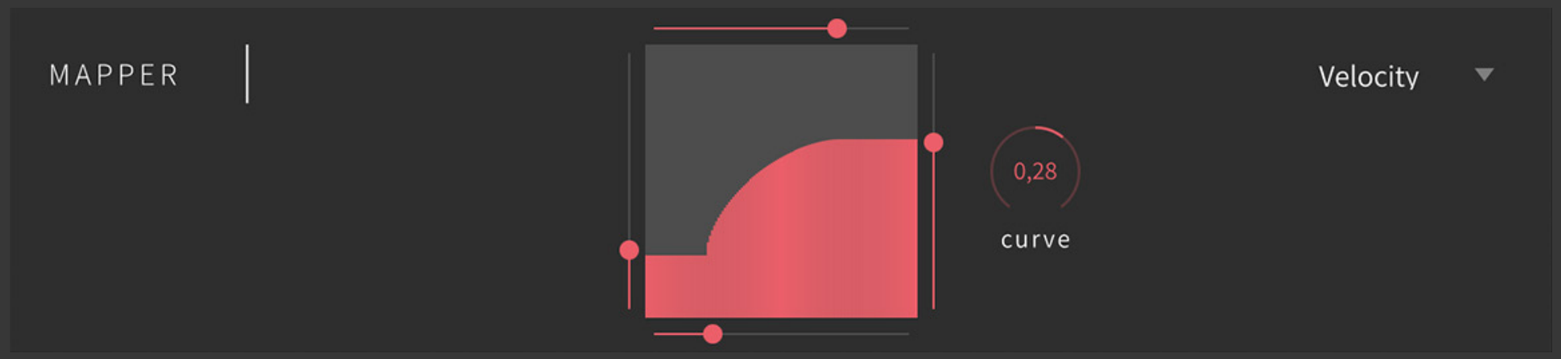
LIMIT RANGE

A range limiter of incoming MIDI notes

MODE to deal with the notes out of the limiting range

- **OFF**: mute the notes out of the range setting
- **NEAREST OCTAVE**: the notes out of the range will be shifted to the nearest octave in the range
- **REPEAT RANGE**: the limiting range will be duplicated across whole key range
- **LIMIT**: all notes out of the range will transposed to thelowest note and highest note of the range
- **SINGLE**: limit to a single note

MIN set the lowest note of the range
MAX set the highest note of the range



MAPPER

A MIDI signal range re-mapper

TARGET sets the incoming MIDI message to re-map

Click-drag the **DISPLAY** to draw the desired curve shape

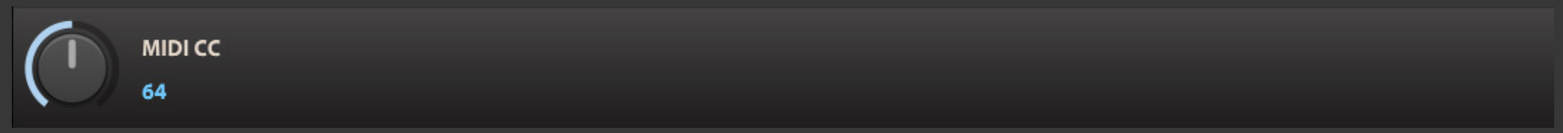
MINIMUM SLIDER (left side of the dispay) sets the mimimum incoming value

MIXIMUM SLIDER (right side of the dispay) sets the maximum incoming value

MINIMUM X SLIDER (bottom of the dispay) sets the mimimum output value

MAXIMUM X SLIDER (top of the dispay) sets the maximum output value

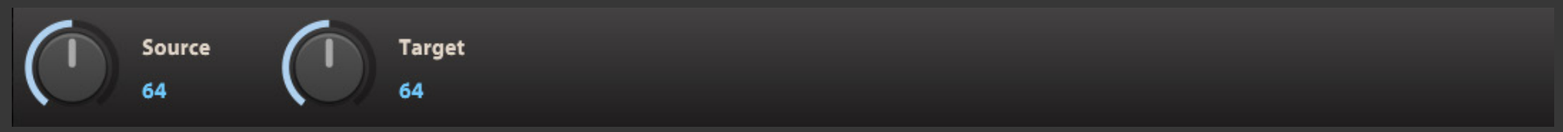
CURVE knob sets the re-mapping curve



MIDI CC FILTER

Filter the incoming MIDI CC

MIDI CC set the incoming MIDI CC message number to filter

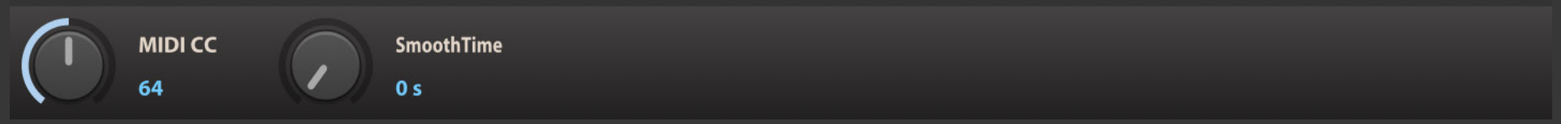


MIDI CC REDIRECT

A MIDI CC message re-mapper

SOURCE set the incoming MIDI CC message number

TARGET set the output MIDI CC message number

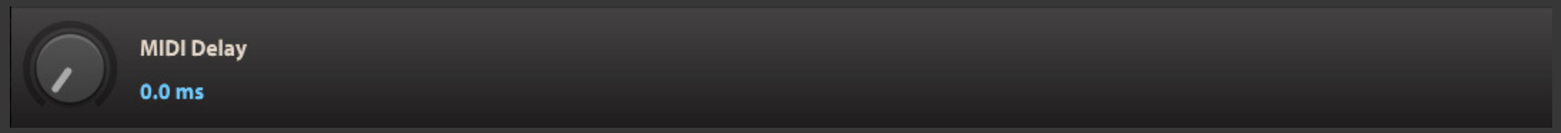


MIDI CC SMOOTHER

Slew, or smooth-out MIDI CC values over time

SOURCE sets the incoming MIDI CC message number

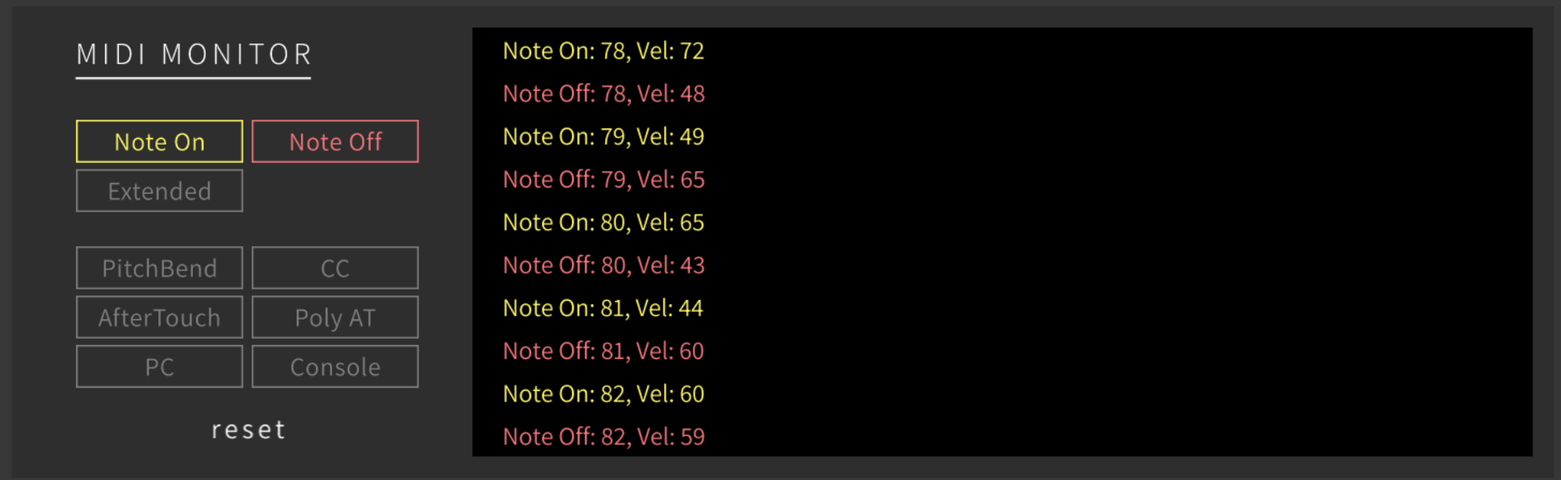
SMOOTH TIME sets the smooth time of the message



MIDI DELAY

Delay the incoming MIDI data

MIDI DELAY set the delay time of the incoming MIDI messages in ms (0-200)



MIDI MONITOR

MIDI input monitor with event type filters, useful for debugging

Click the message buttons on the left to control which event types are shown in the output display

Click the **RESET** button to reset the display

MIDI RECORD

Record events to a MIDI file with drag-n-drop support

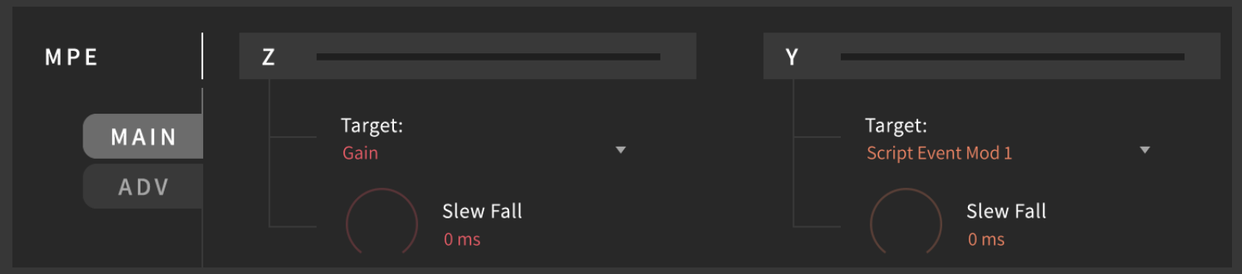
Hit the **RECORD** button to start recording MIDI events

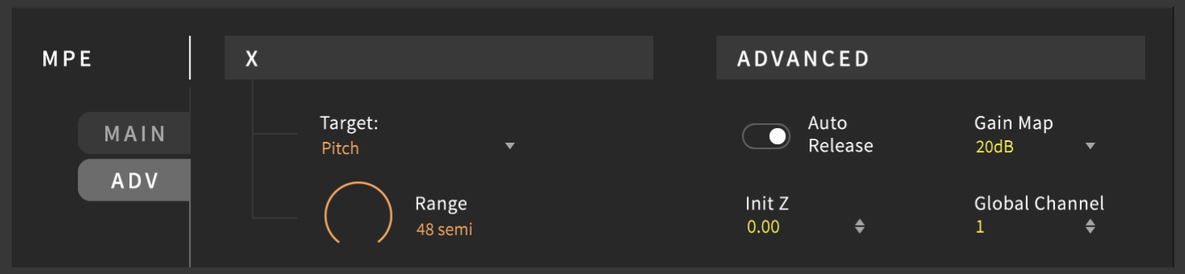
The **BUFFER** indicator will show the length (beats) and number of events that have been recorded

PLAY will play back the recording

CLEAR (X) will clear the recording

Use the **DRAG & DROP** to export the recordings as a MIDI file, try dragging to a DAW MIDI track or your desktop





MPE

Helper for MPE controllers

MAIN

Z (PRESSURE) sets the Z axis message of the MPE controller
Y (TIMBRE) sets the Y axis message of the MPE controller

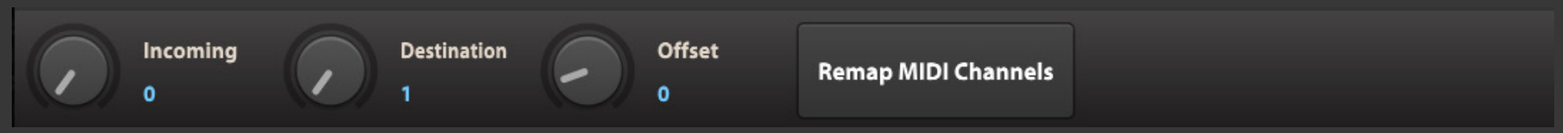
Choose control target (modulation source) from **TARGET:** menu. **SLEW FALL** sets how quickly to follow the control changes (release smooth time) in milliseconds

MAIN

X (PITCH) sets the X axis message of the MPE controller

Choose control target from **TARGET:** menu. **RANGE** sets bipolar pitchbend range in semitones, usually set 24 or 48.

ADVANCED SETTINGS
AUTO RELEASE enables auto release Z axis on note-off
GAIN MAP sets the gain mapping curves. This is an automatic gain remapping when Z axis is used to control Gain.
INIT X sets the initial value of Z axis
GLOBAL CHANNEL sets the global MIDI channel of the MPE controller



PGM CHANGE SWITCHER

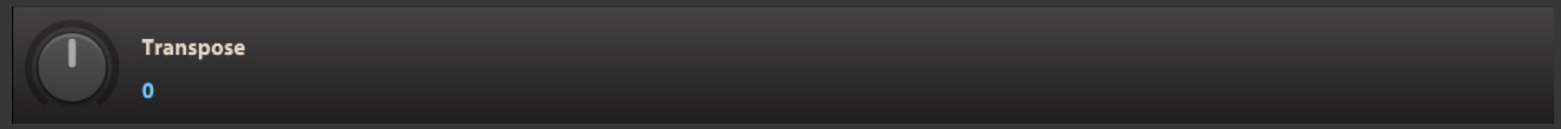
Use MIDI Program change message as a switch to route events to different channels

INCOMING set the incoming MIDI channel of the program change message

DESTINATION set the output MIDI channel of the program change message

OFFSET transporse the MIDI program change message

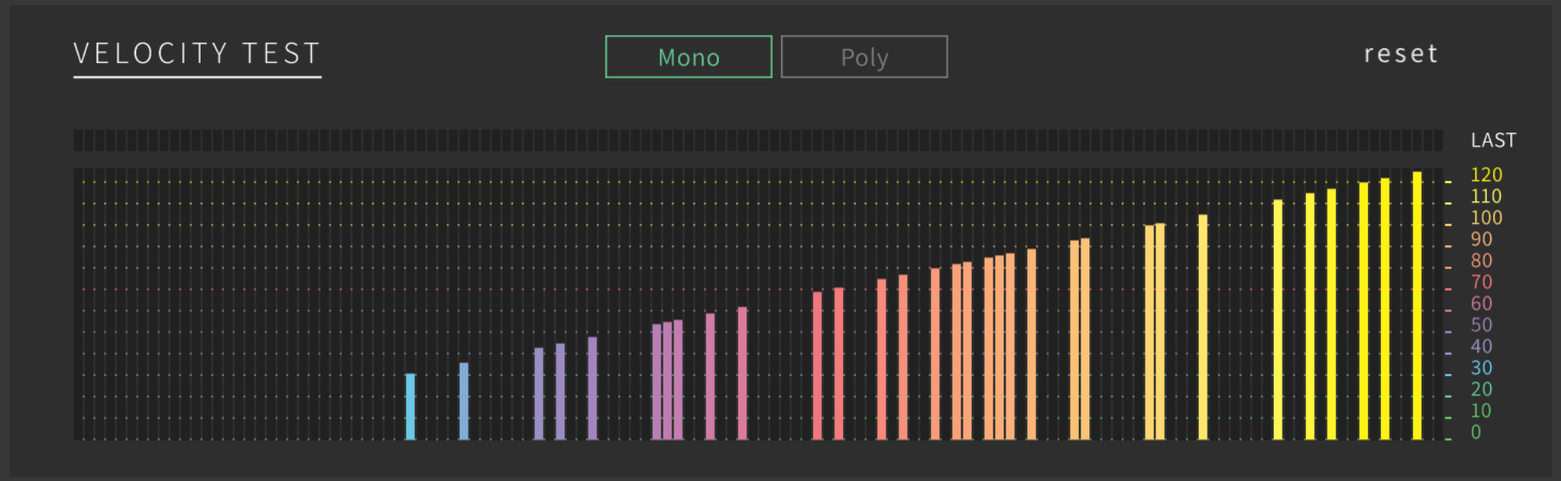
REMAP MIDI CHANNELS remaps MIDI channels incrementally from A1 onwards



TRANSPOSE

A MIDI transposer

TRANSPOSE set the transposition of incoming MIDI note in semitones



VELOCITY TEST

Note velocity monitor with mono and poly modes, useful for debugging

MONO / POLY switch between MONO or POLY modes

RESET resets the display

APPENDIX A: MODULATORS

Modulation generators can be instanced at any level in a patch allowing them to control nearly any parameter, be it on an oscillator, effect or even on another modulator. This system allows you to paint motion into your sounds almost effortlessly, from subtle variation over time to complex on-demand sequences.

AHD

The AHD envelope (attack, hold, and decay) is a simpler envelope than a full DAHDSR envelope, similar to envelopes found on some classic synths.

The **ATTACK**, **HOLD**, and **DECAY** values can be set by the sliders, or by adjusting the points in the envelope editor. Additionally, the curve of the Attack and Decay ramps can be changed by dragging the line itself. For more details on editing the envelope graphically in the envelope editor, see: [DAHDSR > Envelope Editor]

To choose if and how velocity will affect the envelope, use the **VELOCITY AMOUNT** and **VELOCITY SENSITIVITY** controls, as described in: [DAHDSR > Velocity Amount and Sensitivity]

ANALOG ADSR

The Analog ADSR envelope (attack, decay, sustain, and release) is an envelope with decay characteristics similar to classic analog envelopes, providing a more vintage feel than a precise digital ADSR.

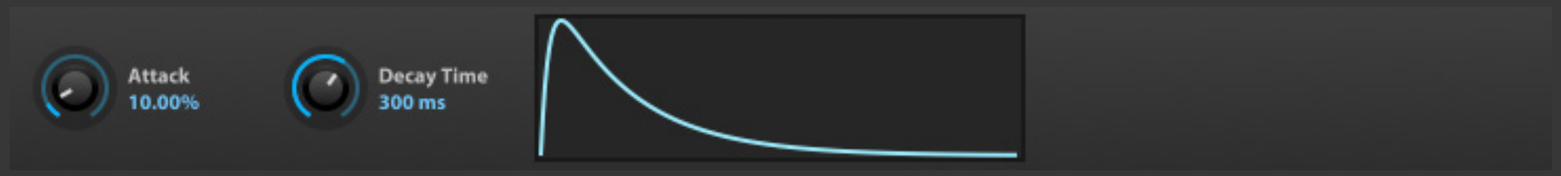
The **ATTACK**, **DECAY**, **SUSTAIN**, and **RELEASE** controls set the basic envelope shape, and **DYNAMIC RANGE** controls the amount of the output range controlled by the trigger velocity.

Two modes alter how the envelope is triggered and processed. If the **ATTACK/DECAY** mode is set to **AD**, only the attack and decay phases of the envelope are used; sustain and release will have no effect. When set to **ADSR**, all phases of the envelope can be configured. The Analog ADSR's **TRIGGER MODES** are the same as for the LFO module; for details, see: [LFO>Trigger mode].

You can choose how velocity affects the envelope's attack and decay with the **VEL > ATTACK** and **VEL > DECAY** controls. Additionally, you can **INVERT VELOCITY** to invert the velocity values as they affect they envelope from the actual played velocity.

Likewise, you can choose how key follow affects the envelope's attack and decay with the **KEY > ATTACK** and **KEY > DECAY** controls.

The manual **TRIGGER** button allows for the envelope to be triggered on-demand, and can be controlled remotely via automation or modulation.



ATTACK DECAY

The Attack Decay envelope is the simplest modulation envelope provided. An Attack Decay envelope is often used for percussive sounds that don't need a sustain or release.

DECAY is set to a time value, and **ATTACK** is set as a percentage of the Decay time.

DAHDSR

The DAHDSR envelope (delay, attack, hold, decay, sustain, and release) is a classic synthesis envelope style. It is an extension of the common ADSR envelope, with an additional delay phase at the beginning and a hold phase between attack and decay.

The **DELAY**, **ATTACK**, **HOLD**, **DECAY**, **SUSTAIN**, and **RELEASE** values can be set by the sliders, or edited graphically by using the envelope editor.

To choose if velocity will affect the envelope, use the **VELOCITY AMOUNT** control. At zero percent, velocity will have no effect. **VELOCITY SENSITIVITY** remaps the velocity input curve; values between zero and 100% use a progressively more exponential curve, and values between -100% and zero use an increasingly logarithmic curve.

The **ENVELOPE EDITOR** is a graphical, interactive display of the envelope shape. Each point represents a phase of the envelope. Points can be adjusted by dragging or double-clicking, and the curve of ramps can be changed by dragging the line itself.

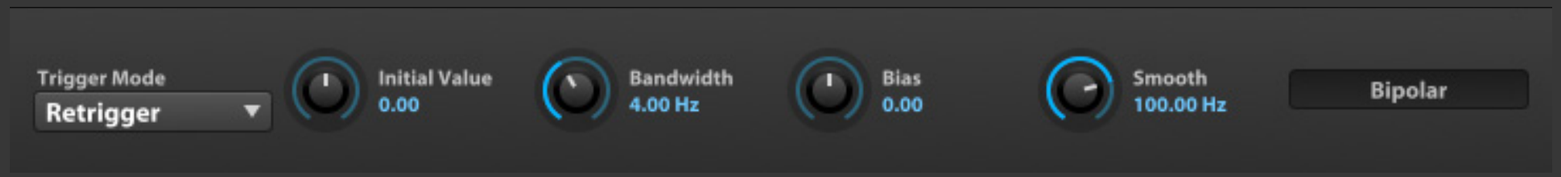
When dragging points, you can hold different modifier keys to adjust the result:

- Shift: fine control
- Command (Mac) » Control (Windows): constrain to vertical movement only
- Alt/Option: constrain to horizontal movement only
- Shift+Command (Mac) » Shift+Control (Windows): temporarily change absolute/relative mode (see below)

When a point is adjusted, it will affect the values on both sides of the point while keeping the shape of the overall envelope constant. For example, when the Hold point is moved, both the Hold time before the point and the Decay time after the point will be adjusted, but the total envelope time will remain the same. If you would like to adjust the value of only one envelope segment at a time, enable **RELATIVE MODE** under the Envelope Editor's menu. The menu can be opened by right-clicking anywhere in the envelope display.

While a note is held, the envelope loops on the sustain phase by default. However, you can change the looped portion of the envelope by right-clicking a point and choosing **SET AS LOOP START** or **SET AS LOOP END**. Loop endpoints are highlighted orange.

Scrolling up and down with your mouse or trackpad will zoom the editor's display in and out, and the Auto Zoom to Fit option snaps the display to the current size of the envelope.



DRUNK

The Drunk module generates a random walk signal which simulates the natural randomness that occurs in cases such as the drift in pitch or amplitude of a sustained note.

The **INITIAL VALUE** set the starting point for the signal. From there, the signal varies semi-randomly around that value, fluctuating with the **BANDWIDTH** speed. The signal varies up or down, weighted according to the **BIAS**. The **SMOOTH** speed determines the rate of smoothing applied as the value varies.

The default range of the Drunk module is bidirectional from the starting value (bipolar). For a range that moves in a single direction relative to the starting value (unipolar), disable **BIPOLAR** mode.

The Drunk module's **TRIGGER MODE** determines how the module is triggered. The trigger modes are the same as for the LFO module; for details, see: [LFO > Trigger mode].

TEMPO SYNC

POP-OUT EDITOR

LFO

The LFO, or low frequency oscillator, is an oscillator that generates a cyclical modulation signal below the audible threshold.

The LFO **WAVEFORM** can be one of the classic LFO shapes (Sine, Square, Triangle, Ramp Up, Ramp Down), or one of these additional shapes:

- **ANALOG SQUARE**
- **RANDOM SAMPLE & HOLD**
- **CHAOS LORENZ**
- **CHAOS ROSSIER**
- **USER**

The **FREQUENCY** control set the duration of one cycle of the LFO. When **TEMPO SYNC** is enabled, the cycle duration ranges from 32 bars down to 64th-note triplet, synced to Falcon's tempo. When **TEMPO SYNC** is disabled, the cycle duration is in Hz (cycles per second).

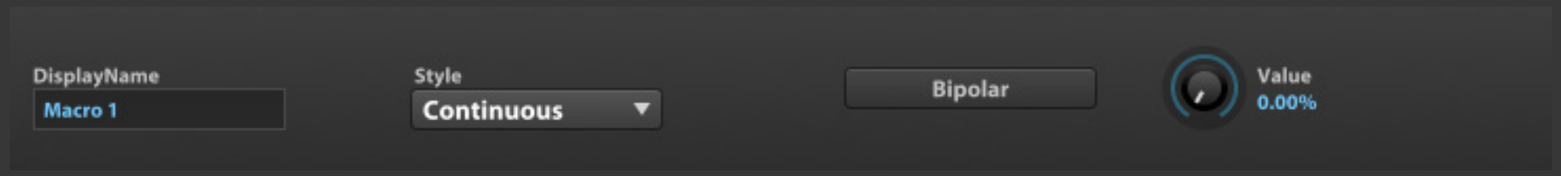
To set the point within the LFO cycle where it will begin when triggered, change the **PHASE** control. The image of the waveform will update to show the result of the phase change (except for random/chaos waveforms, as the images are approximations of randomly-generated waveforms). The User waveform is a custom, editable waveform shape. To edit the waveform, right-click to open it in a large overlay view. Click and drag to draw a waveform shape, or right-click and choose **RESET TO DEFAULT** to start over. Press anywhere outside the overlay to close it.

DELAY TIME is a time delay between when the LFO is triggered and when LFO playback begins. **DEPTH** controls the vertical value range of the LFO's cycle, and **RISE TIME** is a time period during which the Depth ramps up to its full range. **SMOOTH** set a time value that smooths out transitions between values in the LFO's cycles. These adjustments can be used to create more varied and nuanced modulations, such as a subtle vibrato that occurs only while a note is sustaining after its initial attack and decay.

The default range of the LFO cycle is from -1 to +1 (bipolar). For a range of zero to +1 (unipolar), disable **BIPOLAR** mode.

TRIGGER MODE determines how the LFO is triggered:

- **RETRIGGER**: Each trigger of the LFO starts from the beginning of the LFO's cycle.
- **LEGATO**: Any simultaneous triggers of the LFO will not trigger the LFO again, and will start at the same place as any other triggers currently. All triggers will be released together when the last one is released.
- **NO RETRIGGER**: The LFO runs continuously, triggering from the beginning when Falcon's playback starts or stops.
- **SONG**: The position will sync with the host position in bar/beat



MACRO

Macros are a special type of internal modulation. When a macro is added, a corresponding control appears on the Info tab. When this macro control is adjusted, so is the control assigned to it.

A control can be assigned one-to-one to a macro, as a shortcut for a commonly used control in the program, or multiple controls can be assigned to a single macro, for complex transformations of multiple controls by adjusting a single knob or button.

NOTE: Although macros can be assigned to any control in a program that can be modulated, the macros themselves are only added to the Program node.

The default range of a macro is from zero to 100% (unipolar). For a range of -100% to +100%, enable Bipolar mode.

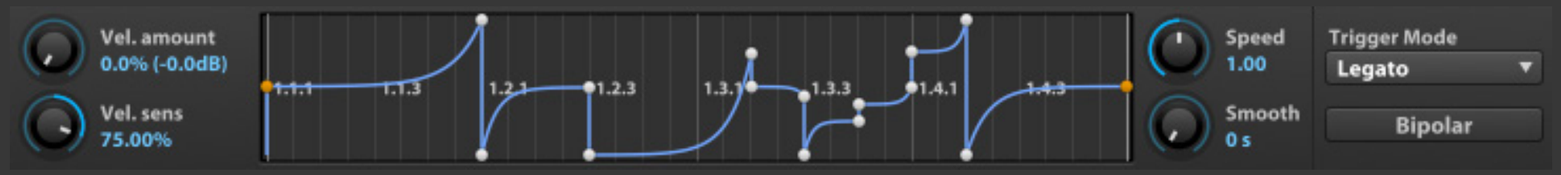
VALUE is the actual value sent when the macro is adjusted, either directly via this knob or via the macro's control on the Info tab.

STYLE chooses the style of control that will appear on the Info tab for the macro. **CONTINUOUS** displays a continuously-variable knob, and **ON/OFF** displays a toggle button with only two states.

To change a macro's name, double-click the macro's **DISPLAY NAME** and enter a new name. This will change the macro's displayed name on the Info tab and in the modulation assignment menu.

TEMPO SYNC

POP-OUT EDITOR



MULTI ENVELOPE

A user-definable envelope that can be created with any number of points and interactive curve shapes by manually drawing or drag'n-dropping MIDI or audio files. Allows for long and highly-expressive modulation sequences and can be looped for LFO-like behavior.

The Multi Envelope can be tempo-synced or set to discrete time values.

Because there can be any number of points in the Multi Envelope, unlike the other envelope modules in Falcon, there are no knobs or sliders for setting the values of each envelope phase. All editing is done in the graphical Envelope Editor. In addition to the Envelope Editor's basic usage described in [DAHDSR > Envelope Editor], the Envelope Editor for the Multi Envelope has a number of additional features:

- Shift-click or double-click: Add a new point
- Shift-right-click an existing point: Remove the point
- Right-click an existing point: Contextual menu, with options to remove the point or set it as the loop start/end
- Alt/Option-click-drag: Draw line to create two new points

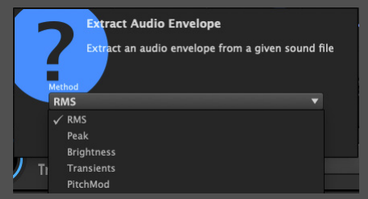
The Multi Envelope has two loop options. By default, the envelope is looped, but the loop can be removed via the **REMOVE LOOP** option in envelope editor's contextual menu. If you wish to add the loop back, choose Add Loop. The envelope release is not looped by default, but you can change this via the **SET RELEASE LOOPED** option in the menu. To change it back, choose **SET RELEASE NOT LOOPED**.

When **TEMPO SYNC** is enabled for the Multi Envelope, the **GRID** option in the Envelope Editor menu becomes available and set the metric division of the grid. **SPEED** set the time factor for the envelope. At 1.0, the time is as shown on the grid. At larger values, the speed is multiplied and the envelope plays back more quickly; at smaller values, the opposite. For an example value of 200 ms between points, with Speed = 1.0 the transition will be 200 ms, Speed = 0.10 will be 2000 ms, and Speed = 10 will be 20 ms. **SMOOTH** set the amount of smoothing applied to each step. The Multi Envelope's **TRIGGER MODE** determines how the envelope is triggered. The trigger modes are the same as for the LFO module; for details, see [LFO > Trigger mode].

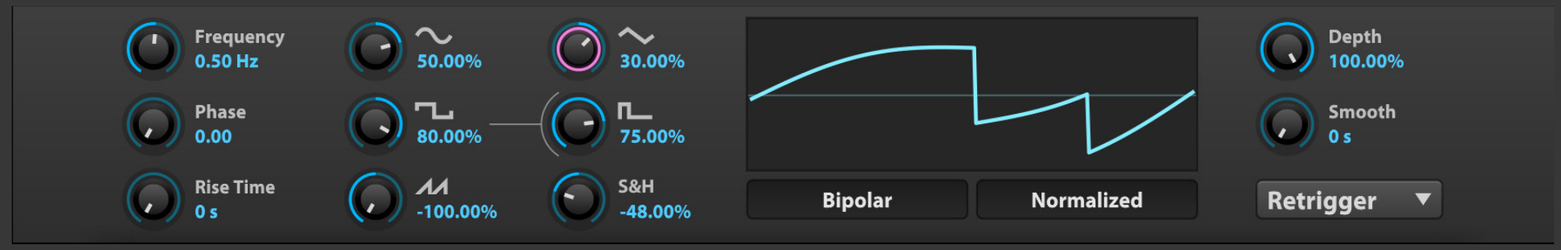
To choose if and how velocity will affect the envelope, use the **VELOCITY AMOUNT** and **VELOCITY SENSITIVITY** controls, as described in [DAHDSR > Velocity Amount and Sensitivity].

DRAG-n-DROP AUDIO to create envelope points, then choose an extraction method from the following:

- **RMS**: extract the average level of the audio file
- **PEAK**: extract the peak level of the audio file
- **BRIGHTNESS**: extract the brightness envelope (i.e. spectral centroid / center of mass evolution over time) of the audio file
- **TRANSIENTS**: extract the transients of the audio file
- **PITCHMOD**: extract the pitch of the audio file



TEMPO SYNC



MULTI LFO

Complex LFO with sine, triangle, square, saw, and random contribution.

The Multi LFO can be tempo-synced or set to discrete time values.

The **FREQUENCY** control set the duration of one cycle of the LFO. When **TEMPO SYNC** is enabled, the cycle duration ranges from 32 bars down to 64th-note triplet, synced to Falcon's tempo. When **TEMPO SYNC** is disabled, the cycle duration is in Hz (cycles per second) with super high speed up to 20Hz.

To set the point within the LFO cycle where it will begin when triggered, change the **PHASE** control. The image of the waveform will update to show the result of the phase change.

RISE is a time period during which the Depth ramps up to its full range.

SINE, TRIANGLE, SQUARE + PLUS WIDTH, SAW and **S&H** controls the vertical value (amplitude) range of the LFO's cycle. All the values are sum to create LFO shape.

DEPTH controls the total vertical value (amplitude) range of the LFO's cycle.

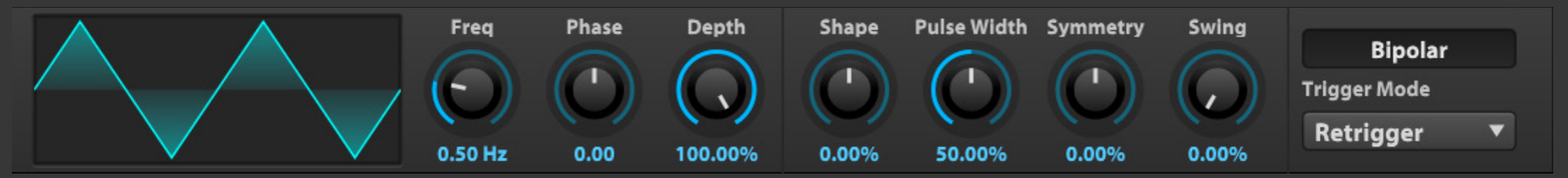
The default range of the LFO cycle is from -1 to +1 (bipolar). For a range of zero to +1 (unipolar), disable the **BIPOLAR** mode button.

NORMALIZED button to enable maximized the LFO's cycle.

TRIGGER MODE determines how the LFO is triggered:

- **RETRIGGER**: Each trigger of the LFO starts from the beginning of the LFO's cycle
- **LEGATO**: Any simultaneous triggers of the LFO will not trigger the LFO again, and will start at the same place as any other concurrent triggers. All triggers will be released together when the last one is released
- **NO RETRIGGER**: The LFO runs continuously, triggering from the beginning when Falcon's playback starts or stops
- **SONG**: The position will sync with the host position in bar/beat

TEMPO SYNC



PARAMETRIC LFO

[Low Frequency Oscillator] generates a cyclical modulation using parametric control such as Shape, Symmetry, Pulse Width and Swing for a totally unique waveform that can evolve in real time.

The **FREQUENCY** control set the duration of one cycle of the LFO. When **TEMPO SYNC** is enabled, the cycle duration ranges from 32 bars down to 64th-note triplet, synced to Falcon's tempo. When **TEMPO SYNC** is disabled, the cycle duration is in Hz (cycles per second) with super high speed up to 50Hz.

To set the point within the LFO cycle where it will begin when triggered, change the **PHASE** control. The image of the waveform will update to show the result of the phase change.

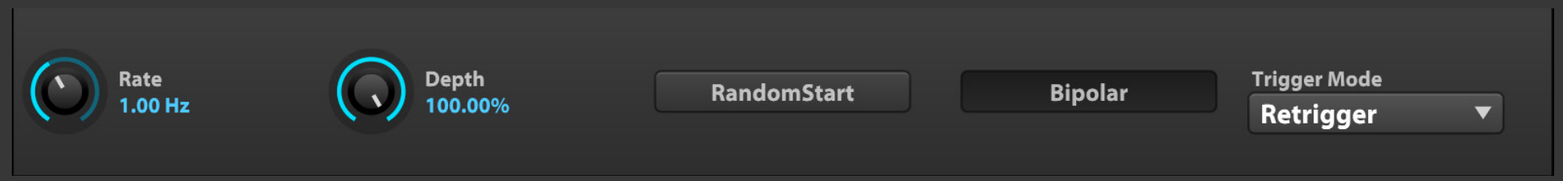
DEPTH controls the vertical value (amplitude) range of the LFO's cycle.

SHAPE morphs through classic shapes such as zero, triangle, sine and square; **PULSE WIDTH**, **SYMMETRY**, and **SWING** can be utilized to generate waves such as sawtooth ramp-up and down.

The default range of the LFO cycle is from -1 to +1 (bipolar). For a range of zero to +1 (unipolar), disable the **BIPOLAR** mode button.

TRIGGER MODE determines how the LFO is triggered:

- **RETRIGGER**: Each trigger of the LFO starts from the beginning of the LFO's cycle
- **LEGATO**: Any simultaneous triggers of the LFO will not trigger the LFO again, and will start at the same place as any other concurrent triggers. All triggers will be released together when the last one is released
- **NO RETRIGGER**: The LFO runs continuously, triggering from the beginning when Falcon's playback starts or stops
- **SONG**: The position will sync with the host position in bar/beat



SMOOTH RANDOM

Random LFO generator with smooth evolution.

RATE can sets the modulation speed up to 1kHz.

DEPTH controls the vertical value range of the modulation.

RANDOM START to enable the random start when each triggers received.

BIPOLAR mode set the modulation range as bipolar (-1 to +1) or unipolar (0 to +1).

TRIGGER MODE determines how the LFO is triggered:

- **RETRIGGER**: Each trigger of the LFO starts from the beginning of the LFO's cycle.
- **LEGATO**: Any simultaneous triggers of the LFO will not trigger the LFO again, and will start at the same place as any other triggers currently. All triggers will be released together when the last one is released.
- **NO RETRIGGER**: The LFO runs continuously, triggering from the beginning when Falcon's playback starts or stops.

TEMPO SYNC

POP-OUT EDITOR

STEP ENVELOPE

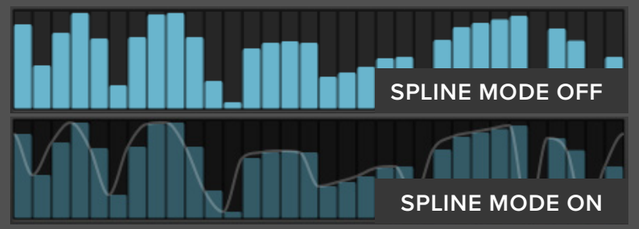
The Step Envelope is a programmable pattern sequencer. The Step Envelope can be tempo-synced for steps of musical divisions, or set to discrete time values.

The value of each step can be set by clicking and dragging vertically. You can also click and drag horizontally to draw a shape over multiple steps. To clear all steps, right-click and choose **RESET TO DEFAULT**. To view the step editor in finer detail, choose edit button in the module header to open it in a large overlay view. Press anywhere outside the overlay to dismiss it.

The number of steps in the grid is set with **STEPS** control, from 1 step up to 128 steps. The **FREQUENCY** control set the duration of each step. When **TEMPO SYNC** is enabled, step duration ranges from 32 bars down to 64th-note triplet, synced to Falcon's tempo. When tempo sync is disabled, step durations are in Hz (steps per second).

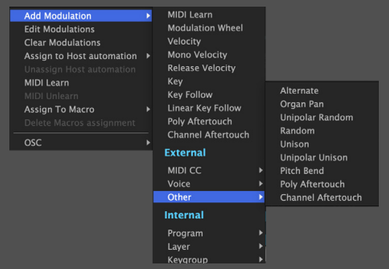
The default range of each step is from zero to +1 (unipolar). For a range of -1 to +1, enable **BIPOLAR** mode, which is useful for LFO-like patterns.

The Step Envelope's **INTERPOLATION MODE** determines how each step's value transitions to the next. With the default Hold mode, each value is held for the duration of the step, then immediately jumps to the next step's value; with the alternate Spline mode, each value transitions to the next with a continuous spline curve.



The Step Envelope's **TRIGGER MODE** determines how the envelope is triggered. The trigger modes are the same as for the LFO module; for details, see [LFO > Trigger mode].

SMOOTH set the amount of smoothing for each step.



EXTERNAL SOURCES

MODULATION SOURCES

The modulation sources menu is split into three sections, quick, External and Internal.

A quick overview of the available sources:

MIDI Learn	open MIDI learn dialog to quickly assign a control message from your MIDI controller
Modulation Wheel	uses the modwheel (or CC#1) of your controller
Velocity	uses MIDI note-on velocity
Mono Velocity	uses the last incoming MIDI note velocity
Release Velocity	uses MIDI note-off velocity
Key	uses MIDI notes as unipolar value from left to right
Key Follow	uses MIDI notes as a bipolar value (C3 centered) with a curve
Key Follow Linear	uses MIDI notes as a bipolar value (C3 centered) with no curve
Poly Aftertouch	uses Polyphonic aftertouch messages
Channel Aftertouch	uses Channel (mono) aftertouch messages
MIDI CC	manually assign a MIDI control change message from the menu
Alternate	alternate the value by each note
Organ Pan	uses organ-style panning
Unipolar Random	creates a randomized unipolar value for each note press
Random	creates a randomized bipolar value for each note press
Unison	uses unison messages
Unipolar	uses unipolar unison messages
Pitch bend	uses the pitchpitch-bend message of your controller

APPENDIX B:
SCRIPTING IN Lua

SCRIPTING IN LUA

Scripting in Falcon uses UVIScript, a domain-specific scripting language built on top of the Lua scripting language. Scripts in Falcon are essentially MIDI effects with advanced capabilities, with access to all of Falcon's synthesis engine modules. Scripts can also define their own interface, so that you can interact with the script in realtime.

UVIScripts are saved as text documents with a `.lua` extension, and loaded with Falcon's Script Processor module. For general information on using the Script Processor module, see [Interface > Main > Events Tab] and [Appendix A > Event Processors].

EXAMPLE

To help demonstrate UVIScript, here's a simple example script for a pitch inverter (available in the Script Processor module as a factory preset, under Utilities > Invert Pitch).

```
    CenterPitch = Knob("Center Pitch", 60,
0, 127, true)
    function onNote(e)
        local center = CenterPitch.value
        local delta = e.note-center
        local note = center - delta
        if note>=0 and note<=127 then
            playNote(note, e.velocity)
        end
    end
    function onRelease()
        --
    end
```

1 Here's what this script looks like in Falcon's script processor.

This script creates one knob, which set the script's center pitch value (line 1). When a Note-on event occurs (line 3), the note's pitch value is evaluated and modified relative to the center pitch value (lines 4-6), and then the note is played with its modified pitch value (lines 7-8). For example, if the center pitch is set to C3, when a C2 is triggered a C4 would be played instead.

FULL DOCUMENTATION

For more information on writing your own UVIScripts, please refer to the latest online documentation at: http://www.uvi.net/uviscript/

For more information on the underlying Lua scripting language, see http://www.lua.org/docs.html

APPENDIX C:
FALCON FACTORY PRESET

FALCON FACTORY

Falcon Factory presets are provided separate with the program. If you didn't install yet, please find it at UVI Portal or My Product page of your UVI account.

Ambient

- Abyss
- Aerith
- After Midnight
- Ambidrone
- Arena
- Below The Surface
- Black Fields
- Bowed Cymbals RR
- Confused
- Dark Nights
- Digital Drone
- Discolored
- Distant Memory
- Downfall
- Dune
- Dust Clouds
- Earth Stood Still
- Far Beyond
- Flute Dreamer
- Ghostphone
- Granular Cave
- Haunted Town
- Lonely Guitar
- Lost Highway
- Midsummer
- Monster Horn Orcs
- Night Travel
- Orbit Drones Split
- Outside
- Paradise
- Piano Mantras Split
- Pieces of Star
- Purple Gaze
- Rigel
- Runes
- Sawdust
- Shimmering
- Sonar Drops
- Spectral Flute Mystery
- Spheres
- Storm Synth
- Stratosphere Drone
- String Dome
- Sub Sine City
- Subject 939
- Submarine Escape
- Supernova
- Surreal Cicadas
- The Depths
- The Faculty
- Urban Mantra Split
- Vocal Spheres
- Void Confort
- Vulcan Rumble
- Washed Out
- Water Resonances
- Whale Drum Drones Split

Arpeggiated

- 303 Motion
- Arp Hopwood A
- Arp Hopwood B
- ARP Voyage
- AxySystematic
- Bass Trance Motion
- Beats
- Blue Vibe
- Breather
- Cheap Synth Clouds
- Click Gear
- Concert Echo
- Convolve
- Dark Digital
- Dee Tiv
- Desert Highway
- Dirty Money
- Disto Box
- Divider Arp
- Dream Generator
- Evening Pluck
- FM Dream
- Fractalized
- Fraction
- Fragile Arpeggio
- Freq Man
- Fresh Air
- Gate on Wheel
- Goa Motion
- Hiccup Wheel
- Holiday
- Hotaro
- Hybridation Wheel
- Hypnotic Arp
- Ja Tmospheric
- Key Bell Magic Motion
- Level Two
- Magic Run
- Marimbox Wheel
- Mayhem Cycle
- Melatonine
- Micro Arp
- Minor Redux
- Monoslide
- Motifs
- Multiverso
- Nightlife Red
- Oniric
- Opossum
- Organic TM
- Ostinarp
- OT Bass Line
- Pad Peggio
- Padouble Arp
- Perc Lead Arp
- Petite Musique
- Popcorn One
- Proto Kalimba
- Psy Bass Motion
- Pulsation
- Radio Lines
- Random Motion A
- Random Motion B
- Real E.T
- Retro Nostalgia
- Round Chordinet
- Round Robinet
- Run Baby Run
- Runner
- Sand
- Santa
- Scavengers
- Shaker Dance
- Simple Efficient
- Skylight Add
- Smooth Crime
- Smooth
- Sofitel Night
- Solar System
- Solarize
- Souz AcidB
- Space Christmas
- Spiral Arps
- Sport Arpeggio
- Stargazers
- Stellar Pax
- Stranger Synth
- String Quencer
- Strum the Folk Up
- Strum the Funk Up
- Sunday
- Sweep Arp
- Tape Trash
- Textravaganza
- Time Stood Still
- Trance Arp
- Trance Pluck
- Tremolo Arp
- Tri Split Analog
- Typewriter
- Vintage Arp
- Violet Sky
- Wake up the Arp
- Weaver Mono
- Welcome Martin
- White Swarm
- Willow Pattern
- Xylo Dancing
- Yorubai

Bass

- 100in1
- 303 Possibilities
- 303 Stab Bass Dirt
- 808 Line
- 808 Mate
- Afford
- Angry Bot
- Angry Louis
- Angry Motion
- Army Of Bass
- Arpenta
- AV-98
- BA Shomp
- Bad Dreamer
- Balarbas
- Basil
- Bass Add Reina
- Bass Analog A
- Bass Analog B
- Bass Starter
- Bass Story
- Big Sleep
- Biggy
- Blizzard

Blur
Brick Vince
Brutalis
Cheap Tuned
City Bass
Clipping Aggression
Coastal Halftones
Couka Growla
Crime
Cyber Brahms
Cymbal Bass
Dancing Fifth Bass
Dbstp Pattern A
Dbstp Pattern B
Dbstp Pattern C
Dbstp Wanna Growl
Dharma Bass
Digital Bananas
Digital Ghosts
Dirty Wooble
Dist Leadbass
Disto Eight
Disto Run
DnB Reese A
DnB Reese B
DnB Run
Doggy Dog
Down Bass Motion
Drive Presence
E-Bass
Fat Phaser Bass
Fedde Le Grandiose
Fireworks Bass
Flux
FM Hammer
FM Morph Wheel
FM Vee Bass A
FM Vee Bass B
Foxy Bassy
Freaky Freaky
Funky Bron
Funky Magination
Future Shock
Gamma Bass
Gauss Bass
Genesis
Grinder
Growl Alarma
Growl Pro Talk
Growlin
Growling
Hard Wheel
Harsh Bass
Hawkins Lab
Heldens
Hex Bass
Hi Five
Hiccup
Hollow Price
Hot Bananas
House Brute
I Am The Law
Impact Disc
Justice Bass
Kalach Mikos
Line
LoFi Cinematic
London Funk
Low Five
Magnetic 1
Magnetic 2
Metal Skin 1
Metal Skin 2
Metropolis
Mister
Model Bass
Modular Phase
Monster Growl
Morphine
Nasty BasSci
Nasty Line
Night And The Bass
Noisy Org
Noisy Suba
Oak
Orgones
Out Run
Overdrive
Oy
Paris Hilpluck
Party Enclume
Piano Hammer
Pluck Acidified
Plucked 7th
Polymer
Psy Bass Trance
Pulse 1
Pulse 2
Pulse Bass
Pure Sub
PWM Closing
PWM Sweep
Rando Bass
Rational
Reso 1
Reso 2
Retro Line
Retro SciFi
Ride On
Rocket Man
Rude
Saw Glide
Saw TB Clean
SciFi Classics
Screamtable
Sea Cyber Dog
Selmer
Seq Triplets
Seventh Rise
Sexy Growl
SH101 Basic Saw
Shatter Bass
Shine
Shorty Wheel Bass
Show Me Robin
Sine FoldBack Wheel
Skid Tomcapt
SoBadBass Wheel
Softcastel
Square Percussion
Square Pump
Stab Bass
Stealth Bass
Studio 54
Sub Finger Chorus
Sub Sine Driwheel
Sub-Grime Bass
Subline
Suction Bass
Sumerian
SuprAnalog
Swordfish II
Sync Force
Sync PWheelM
Tape Bassline
TB Drive Wheel
Techno Caravan
Texturalis
The Hell
Tokyo Funk
Torn
Train Spotting
Transformer
Typical 80s A
Typical 80s B
Undercover Bass
Very LoWuis
Wandering Bass
Warming
Wave FM
Wheel Angry Growl
WO Damian Harley
WO Dub Shake
WO Jerk
WO NRV
WO Razor
WO Rolling
WO Scratch Growl
WO Slide
WO Somersault
WO Zombie Glide
WO Zombie
Wolves
World Up
Xbass Wheel
XBeat Bass A
XBeat Bass B
Xicyber

Bells

1985
Bella Dictive
Bike Bells
Box of Bells
Bright Slider
Can Keys
Castle
Cathedral
Chime Glide
Clots
Composite Glass
Cristal Clear
Dark Bell
Dark Wind Bell
Delicate Keys
Digi Bells
Eight Grains
El Bastos
Ethereal Bells
Everlight
Expressive
Falcontasia
Fog Chime
Glowing
Humiditey
Kalimbellish
Lowdrive FM
Manga BellZ
Memories
Mix Bellissima
Mystic Bowls
Old Bell
Organic Bottom
Organpad Bells
Pink Bottle
Play With Me
Relax
SoToy
Sweep Phase Bells
Syn Bell Motion
Synthetic Bells
Thai Bells
That Moment
Thorus Bell
Tubular FM
Vick Celeste
Wavetable Bell 1
Wavetable Bell 2
Wha Wheel Bell
Whistle Pad
Wide Keys
Winter Keys
Xmas Analog 1
Xmas Analog 2

APPENDIX C: PRESET LIST - FALCON FACTORY

Brass
- A Boffins Prescription
- Alternate
- Bouncing Brass
- Brass Colors
- Brassy Arpeggios
- Brassy Saw
- Burgandy Bass
- Caelus Texture Synth
- Chordalis 1
- Chordalis 2
- Dark Chamber
- Detuned Saw Brass
- FM Old School Brass
- Full Analog Brass
- Funky Poly Brass
- Gotham Brass
- Jazzy Ambient
- Last Minute Brass
- Lush Saw
- Majestic Saw
- Majestic Soft
- Mamy G Brass
- OB Expression
- Odd Brass
- Plastic Trumpet
- Safe Bicycle
- Saw Motion
- Saxofon
- Scanner Synth
- Soft Synth Brass
- Stab for Chords
- Steady Analog Brass
- SY Brass Rhythm
- Wave Brassy Bell
- Yes Bari

Chords
- 8bit Catharsis
- A Street Light
- Ambi Strum
- Bass Minor
- Beauty Bed
- Cheezily
- Chord Saw Min7911
- Chord Sine FM Min7
- Chord Sine Min7911
- Chord Tek
- Chord to Jump
- Chorder SEQ
- Dreams Made
- Dust Chord
- Gliss Phaser
- Glitz Bells
- Hong Kong Pad
- Love Chord
- Neon Chord
- Night Garden
- Poison
- Retro Wave Chord
- Roxy Moxy
- Scout Bass
- Session Stones
- Simplicity
- Sing To Sleep
- Sloppy Saw
- Stab Chords BP
- Stab Chords LP
- Stop Rocking
- Syn Accordeon 80s
- Tropicalouis
- Vangelis Chords Cm
- Violet Drive
- Vowheel Morph
- Winter

Experimental
- A Long Way
- Almost Music
- Ambient Pad Quencer
- Aquatic Apes
- Attack Synth
- Auto Caroussel A
- Auto Caroussel B
- Bowed Crotales Cloud
- Calmy T Jane
- Chimes Story
- Complex Lander
- Contremy Bass
- Cosmic Grain Pad
- Cosmic Phases
- Dark Pad Wheel
- Descender
- Diminished Scanner
- Drunken Master
- Electrons
- Endomorphine
- EP ON LOoPp
- Fibonacci Synth
- Flower Synth
- Glass Drones Split
- Gramuller Xperience
- Granular Arp Scape
- Granular Bells
- Granular Lounge
- Gravitational 1.6
- Gulp Cello
- Hybrid Piano Harmonics
- Interferencing
- Interstellar Emy
- Labratory
- Misty Morning
- Noise Quencer
- Orion Core
- PicthApAd
- Prehistoric
- SE Machines Wheel
- Secret Facility
- SnH Layering
- Space Violin
- SPLIT SFX Darkness
- SPLIT SFX Drummers
- Subban
- Superglider
- Surreal Singer Split
- Swordfish World
- The Glacier
- Thingamajig
- Tin Can Program
- Tinkle Textures
- Tyranic Symphony
- Urban Step Wheel
- Valse
- Vaporave
- Vocal Wall

Expressive E
- Adrialik
- Africa
- Amidio
- Angrybass
- Bellissima
- Bladum
- Bloom
- Blute
- Brown
- Burton
- Calculator
- Clavisquare
- Deadpool
- Dreaded
- Duplo
- Erlin
- Ether
- Fulldisclosure
- Gloomy
- Grabuj
- Green Parrot
- Hauntingbit
- Helium - Arpbonus
- Helium - Bassbonus
- Helium - Keybonus
- Helium - Leadbonus
- Helium - Padbonus
- Horns
- Ishtar
- Jaz
- Jungleboogie
- Kermit
- Kokiri
- Madarp
- MakeSomeNoise
- Marthe
- Mercury - Arpbonus
- Mercury - Bassbonus
- Mercury - Leadbonus
- Mercury - Pluckbonus
- Mercury - Stabbonus
- Musicismath
- Nightcall
- Padira
- Roybgiv
- SqrFilter
- Steel
- Tiesta
- Tycho
- Vanity
- Woody

Fretted
- Broken Guitars
- Color Guitar A
- Color Guitar B
- Cyber Guitar
- Dream Guitar
- EGuitarella
- Nylon Guitar Model
- Nylon Harmonics
- Old Guitar Pluck
- Orguitar Dream

FX
- Arpeggio Rain
- Bells 2019
- Bouncing Pluck
- Bow Braam
- Bowed Cymbal Mystery
- Chainsaw A
- Chainsaw B
- Cheers
- Chopper
- Circle UFO
- Computer Wheel
- Crickets
- Dbstp Riser Long
- Downer Beast
- Drum Electric Tom
- Drum Noise Hit
- Eucl. Square Drops
- FM Dancer
- FM Pointillism
- FM Random Wheel
- FM Tronics
- FM UFO
- FMayhem
- Freeze Coin
- FX Furtive
- FX Orbital Junk
- FX Unsync Riser
- Game Over
- Garbled Well
- Ghost Flutes
- Heartbeat
- Hit Elevator Down

Insect Swarm
Landing FM Patch
Liquid Scapes
Los Bomberos
Mario Die Wheel
Mario Jump
Mario Pipe Wheel
Mayhem Muller
Medispace
Noisotron
Noisy Filth A
Noisy Filth B
Non Sensor
Outer Space Radio
Phase One
PolyQuencer
Predator Scan
Puke Man
Radio Traffic
Rain Heavy
Retro Gaming
Rise 02B
Saturn Rings
Saw Ramp Down
Saw Ramp Up
Sewer FX
Sine Ramp Down
Space Boomerang
Space InvaWheels
Spastic Game
Star Traveler
Surfer Gutural Brain
Synced Mini-Licks
Talking Droids
The End
The Hammerites
Theater X Intro
Time Machine
Venus Crier
Vinyl Noise
Wind Freezing
Zebuwheelon

Keys

Ballad Plucker
Ballad
Belladonna
Board Toronto
Brightpop Keys
Busy Bee
Cassette Sines MW
Chillbeats
Chorde Piano
Christmas Tape
Clavi Station
Clockworks
Cloud Keys
Crystal Piano
Days Of Old
Delta
Dirty Toy Piano
Doom Metal
Doom Octaver
Doorways
DX Mania
Eighty Nine
End of Summer
Evanescense
Fader Ash
Feather Swells
FM Dark Keys
FM Electric Grand
FM Groover
FM Sitar
FM Softly
FM Tremolo
Gaze
Ghost Pianissima
Glassphone
Glassy Key
Glide Mod
Gradient Byzantine
Hollow Piano
Hybrid Piano
Hyperdiffused
Just A Warm Sine Wave
Key Battered
Key Frost Piano
Key Therapy
Keys 90 Pads
Keys Airfall
Keys Vocalight
Kley
Luminous
Meadows EPiano
Meadows
Miyaky
Moonbeam Keys
Morning Keys
Mutant Nylon
N-Circuit
Old Skull
Old Town
Paul Wurlitzer
Placid Keys
PolySaw
Power Keys SnH
Pure FM Tines
Sky Cities
Slide Bright
Small Keys
Smooth E-piano
Snowfall
Soft Glide
Step FM Keys
Strum Vater
Strum Zilo
Super Soft EP
Superstar
Sync Ambient Keys A
Sync Ambient Keys B
Synth Antic
Tajine Night
Tapelt
Textural Keys
Thorus Softkeys
Thumb War
TimpEthnic
Tiny Harp
Toy Klimb
Vaporsine
WahKey
WaterKeys

Lead

Aged Grit
Ali3n
Arcade A
Arcade B Wheel
Around Lead
Avicclead
Awesome Perc Lead
Bite Lead
Blue Lead
Blur High
Blur Low
Chamalead
Chiffer Flute
Chinese Violin
Cinton in Da Space
Cold Water
Companion
Crossfade Hardlead
DaMt Punk
Derailer
Digitalead
Dirty VI Lead Bass
DistortedSK
Double Strike
Dream Funk
Fa Dunk
Flat Heat
FMish MonoPoly
Forest Green
Franken Lead
Funka Nada
Funky Frog
Funky Res
Funky Synth
Future High
Germanic Lead
Glider Pluck
Gonzalead
Hardsync Spice
Haric Hoover
Ice Planet
Innocent Leader
Jaw Lead Sequence
Jimmy Digi
Keytar Hero
Lead Acid Distortion
Lead Angry Saw
Lead Brass Soft
Lead Clean SuperSaw
Lead Clean SuperSquare
Lead Noisy Fat
Legato
Lux Lead
Mad Mono Stack
Mayfield Flute
Mercury Lead
Metalizer
Mini Ribbon
Mono Synco
Moore Loud
Mouth Lead
Muddy Lead
Nasty Shaper
Neige
Noisy Detuned
Nostalgia
Obese Lead
Octaves Glider
Outer Invasion
Panflute
Philicorlead
Play Me Low
Power Lead
Psychotic Tac
Reduce Solo
Retro Lead
Sample Hold Lead
Saw Classic
Saxy Wave Solo
Screaming Lead
Shaba Duo
Sine Equanone
Singing
Single Saw Brass
Sino Lead
Soft Mood
Soviet Vintage
Sparks
Speculos
Split PWM
Sunny Lead
Swell Harp Funk
Synker Kraut
Synth Lead Prodigy A
Synth Lead Prodigy B
Synth Lead Prodigy C
Tape Saw
Theremin Mania
Traced Circuit

- Trap Oriental
- Ultra Noisy Lead
- Ultra Skinny
- Winderland
- X-Breather
- Xtreme Saw
- Ze Brocante
- Zoologic

MPE

- Analog Cello
- Basic Sine PD
- Basic Wavetable Index
- Basic Wavetable Step
- Chameleon Synth
- Chiffer Flute
- Clean SuperSaw
- Clean SuperSquare
- Contremy Bass
- Daft
- Dafta Wheela
- Double 5th Pad
- Eye Lead
- Fibonacci Synth
- Funk Synth A
- Funk Synth B
- Ghost Bell
- Haric Hoover
- Majestic Soft
- Marimbox
- Meditation Pluck
- Noisy Detuned
- Pluckzicato
- PW Pad
- Soft Killing me
- Softcastel
- Solo Flight
- Space Violin
- Step It Up
- StepOminous Pad
- Sweep Pad
- Table Arp
- Time Bubbles
- Wave Guide

Organ

- Blues Jazz
- Caroussel
- Crazy Organ
- Cyber Pipes
- Dirty B3
- Doors 2015
- Dracula Night
- Drawbar Soft
- Explosion of Blues
- Full Distospeed
- Gold Times A
- Gold Times B
- Gold Times C
- Gold Times D
- Las Vegas Church
- Morgan Free
- NoisOrg
- Organ Jumper
- Organalog Perc
- Organwheel Pad
- Oto Disco
- Overtone Synth
- Santanorgan Soft
- Self Playing Organ
- Simple One
- Sixty One
- Soft Modeled One

Pad

- 16th Chill
- A Free World
- Aeternal
- Animator
- Aqua Move
- Arctic Pad
- Arrival
- Beauty is Simple
- Bells Pad
- Blade 2000
- Bowed Cymbal Pluck
- Bryan Fairies
- Burning Rain
- Calm FM Fifth
- Calm Morpher
- Calm Shores
- Cinema
- Cinerain
- City Pad
- Days Gone
- Digimotion
- Dream Synth
- Dusty Night
- DX FM Pad
- Ether Cellos
- Ethereal Walls
- Evolver
- Experiwheel
- Feed Me Pad
- Flourished
- Forgery
- Geometry Drone Wheel
- Ghetto Cloud
- Glass Ring
- Glass Slow
- Glass World
- Glide Sine Lead
- Godrays
- Granular E-Bow
- Green Earth
- Harp Stretch Resonance
- Impulse Strings
- Interferoid
- Island Cello
- JMJ Satellite
- Land of Nowhere
- Last Minutes
- Living Harmonics
- Lonely Pad
- Lost in Pad
- Lost Tape
- Lunar Mission
- Lush Chords
- Meteor 1
- Meteor 2
- Midnight Organ
- Moki
- Morning Pad
- Multi Saw Pad PK
- Nasal Pad
- Nashville Loops
- Night Feed
- No Justice No Peace
- Novachord Noir
- Octawheel
- Odd Even Synth
- Olympus Mons
- Orchestral Grains
- Organic Pad
- Pad Ethereal
- Pad Generic
- Pad Motion
- Pad Visor
- Padditive
- Pan Mod Pad
- Parabol
- Phasor Pad Gold A
- Phasor Pad Gold B
- Philadelphia
- PizzNL
- Play G Minor
- Pluck and Pad
- Pluck Box Wheel
- Pluck Delays
- Pluckzicato
- PPG Dream
- Primus Pad
- Probabilism
- Pulsate Pad 1
- Pulsate Pad 2
- Pulsating Pad
- Purity Scanner
- Raffle
- Rainbow Wheel
- Realistrings
- Regular
- Reminisence
- Reversity
- Rich Pad
- Robotized Pad
- Salling Phase
- Score Twheelve
- Shiny
- Sine Dark
- Sines FM and Feedback
- Singing Glass
- Slow Motion A
- Slow Motion B
- Slow Space
- Slowdrive
- Soft Killing me
- Soft Light
- Soften
- Solar Winds
- Spinning Leaves
- Stalag Wheel
- Stallar
- Star Shine
- Static Pad
- StepOminous Pad
- String Analog
- Strum Chaos
- Subtle Animated
- Sunrise Pad
- Sunrise
- Sunshine Stream
- Temptation
- The Return
- Thorus Pad 1
- Thorus Pad 2
- Tomb Raider
- TV Space
- Upside Down
- Vanilla
- Vantage
- Vintage Planar
- Vintage PWM
- Vinyl Whistle
- Wheel Multipluck Pad
- Wide Drive
- Wrong Dance
- WT Harmonics
- Xtreme Wet Pad
- Yannification

Pluck

- Asian Plucker
- Barrel
- Beauty Island
- Bell Center
- Bright Club
- Cerulean
- Chip TV
- Comb String
- Cooder
- Drum Pluck
- Endless Takassim
- Fast Harp Bell
- Film Pluck

Fizzy Drink
Fractured Vibes
Frostbite
Gamelan Plucker
Garbage
Happy Steel
Harpluck
Hit Pluck
Hosono
Impulse Pluck
Kalimba Clouds
Key Bell Darbuka
Kyoto Strum
Lazer Harper
Lefty
Malletophone
Marimbox
Mecha
Meditation Pluck
Melodeek
Metallic Flute Pluck
Metsine
MicroAb
Mine de Rien
Minnow Perc
Multisampluck A
Multisampluck B
Multisampluck C
Multisampluck D
Multisampluck E
Mutan Mute
NeoSoul Red
Noisy Poly
Noisytron Flute
Organism
Oriental Plucker
Over Dreaming
Pad Mullerizer
Perc Pluck
Permuda
Pluck Mix
Reverse Mallet
Ricochets
Rituals
SciFi Harp
Short Plucksyn
Snow Land
Snowflakes
Soft Intro
Space Pop Corn
SteeLemmons
Stick Corn
Strum Gebob
Tempitar
Tinker Town
Tower
Tropical Pluck
Tube Add
Vibra Plucker
Water Pluck
Wonder Pluck
Wood Plucker
Wooden Blocks
Yamaho
Zonophone

Polysynth

Air Her
Analog Chinese Split
Analog Super Saws
Assault
Attack Pad A
Attack Pad B
Big Washer
Bubble Gnome
Chirping Lead
Clean SuperSaw
Clean SuperSquare
Cymatic Polyscape
Dafta Wheela
Dbstp Long Pattern A
Dbstp Long Pattern B
Dbstp Long Pattern C
Dbstp Long Pattern D
Dbstp Long Pattern E
Dbstp Mosntry Growls
Dee Add
Dirty Moving
Disto Box
Down Side
Drama Queen
Dual Poly Filter
Dub Short Stab A
Dub Short Stab B
Duosphere
Explorer
Fresh Funky
Full Vintage
Funky Step Wheel
Grunge Tabler
Guitar Distortion Booth
House Classic Gate
Jim Star Boner
Louis Funky Dub
Major Oldfield
ME Drumin Vowels
Minor Oldfield
Motion Prodigy
Mullerade
Noisy Wob
One Bass Army
Oyster Harp
PoLFO Lee
Poly 8Fifty
Poly Blue Rim
Poly Noisy Fat
Polystic
Pop Sync
Pure Saw
Pure Square
Pure Triangle
Right Nowwheel
Saw and Pepper
SAWarmer
Short Growl Stab
Slow Burn
Solo Flight
Soundtrack Split
Split Fire
Spy Noso
Stabby FM
Stinger Synth
Syn Prod Motion A
Syn Stab
Syncpad Lead
Tangerine Split
Thorus Cindy Pluck
Thrillorus
Trance Step
Vanilla
Velocity Pluck
Washed Out
Wavetable FM Evo A
Wavetable FM Evo B
Wheelcome Sample
Wheeltable Pluck
Witchcraft

Pulses

Crazy Louis
Crush Pad
Dark River
FM Walled City
Goa Pulses
Hovering
Long Journey
Megagate Power
Minions
Minor Arp Mayhem
Minor Table Quencer
Neon Memories
Oliwheel Madness
Prisunic
Pulse Day One
Pulse Day Two
Pumping Split
Runaway
Saw Bandpass
SH Play
Skizze
Table Quencer
Vintage Motion

Rhythmic

8Bit Drum Loop
Anticipate
Attack Analog Drums
Axe Loop
BD Simple
BS Groover
Cerebraloop A
Cerebraloop B
Computer Synth
Dbstp Noisy Pattern A
Dbstp Noisy Pattern B
DR 8Bit Dnb 174BPM
DR Big Room 128BPM
DR Dance 128BPM
DR Dubstep 140BPM
DR Triplet Trap 130BPM
DR Zouk 110BPM
Drive Thru
Drum Sequencer Kit Basic
Drum Sequencer Kit Multi
Finger On
Full Fuzz
Future House 1
Future House 2
Future House 3
Gaming Memories
Hoohah
Hotliner
Jungle Road
Moombah
Net Sphere Engineer
Night Percs
Nightfall
P-5000
Poly Trig Arp
Popcorn Train
Prehistory 1
Prehistory 2
Prehistory 3
Randomatron
Retro Finger
Rythm Poly Cycle
Tri Tek
Tribal Generation
Very Sketchy

Sequences

8Bit Soundtrack
8Fifty
Adventure
Agitated
Analog Drops
Analogica
Approach Vector
Automata Chimes
Banana Split
Before the drop
Bis2fly
Bliss Seq 1K
Boids Nebulae

Bouncing
Brothers
Butterfly Chords
Chain
Ching Sequence
ChordArp
Chorus Me
Cityscapes
Cleansing
Closer
Colors
Crepuscular 1K
Dancing Sines
Dark Knight
Decisions
Deep Bass
Descent
Documentary
Dynamic Synstring
Eden
Electric Church
Ember Sequence
Endless Droids
ET did Tic
Euclidean Eight
Euclides Meets Bernoulli
Exploration
Far
Fast
Fezz Omy E
Follow Me
Forgotten
Foundry
Gameboy Bass
Gameboys
Gate Poly Mod
Glass 1K
Glockenny
Happen 20 1K
Harper
Haunted Plates 1K
Hologram
HolowGramm
Hon Jopkins 1K
Hours
House Clock
House Mania
Kensei
Lalalalala
Levels
Light Exploration
Light Motion
Lurk
Mambo Break
Many Things
Matrix Break
Megatron
Minor 7th Run
Mist
Motor
MS Dot 1K
Multi Bassline
Multi Env Sync
Multi Fannix
Mysteriousity
Neptune
New Game
Night Move
Noise
Norma 1
Norma 2
North Sequence
Octavoto Pluck
Ominous 1K
Ominous Bassline 1K
Pagoda
Poly Layer
Poly Precious
Protected
Pure Sine Concert
Racer Spe
Random Scanner
Ravers Night
Reflection
Reneal 1K
Retro SciFi II
Ringmod Circuits
Rubbery Glitch
Rush
Scene Change
Sea Motion
Seq Addiction A
Seq Addiction B
Seq Addiction C
Serenity 1
Serenity 2
Shatterhand
Sinephony
Slow Bass
Slow Movements
Snowflakes
Soaring
Soft Marimbas
Somnium
Space Tour
Sparks Around
Static and Noise 1K
Step It
Strange Line 1K
String It
String Reflection
Structure Drone
Strumming in the Rain
Subway Pulses
Taper Sawyer
Territory
Textronic
The Forest Ensemble
Thug Bass Wheel
Time
Transformations
Tri Layering
Tribal Road 1K
Triple Triangle
Tunnel Sequence
Turbolence
Two Hands Split
Ultra Ring 1K
Under Pizzi
Underscore
Velocity Quencer
Voltage Reso
Wake up the Sun
Warpy
Waterfalling Mallets
Wave AnaSeq
Worlds 1K

Strings

Alchemical Strings
Ana Pizz
Analogica
Constellation
Distant Memories
Dreamy Strings
Flyby Cello
FM String
Hybrid Sautill
Low and High
Maelstrom
Noise Wonders
Old Times
Permafrost
Physical Cello
Retro
Serendipity Pick
Shivers
Silver String
Square Ensemble
Stretch Bow
String Fast Pluck
Strings Bidule
Symphonica
Uneasy String
Warm Strings

Sweep

Big Table Synth Wheel
Diverise A
Diverise B
Riser 1bar
Riser 2bar
Riser Growl
Sample and Whold
Saw Detune 8bar Up Down
Short Analog Sweep
Soft Saw 5th
Sweep Trance Gate
Transition Growl
Ultra Soft 5th Res

Voice

Almost Natural Oohs
Arabic Aah
Choir Boys
Choir Hopwood
Cinematic Vox
Circle Formant
Counter Formants
Cyber Choirs 1
Cyber Choirs 2
Dark Choir Males
FAirLightCON
Formant Analog Choir
Gate Ooh Atmos
Guardian Angel
Les Formants
Little Monster Wheel
Mahavish
Melchior
Ooh Choir
Pheromones
SC Vocal
Subalterne
Swirl
Syncotron
Talking Keys
The Voice Inside
Uni Vox Wheel Morph
Vibrez
VO Gate
Vocal Growl Bass
Vocal Meditation Drone
Vocal Trap PK
VocaLead
Vox A Loid

Winds

Alto Flutish
Analog Lament
Dark Majestic
Delicate
Disto Analog
Flutey Noise
Imaginary Blower
Panoptic
Pipes
Places
Retrowind
Simple Analog Flute
Synthax
Wind Playground

LINKS

UVI

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FAQ	uvi.net/faq
Tutorial and Demo Videos	youtube.com
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EXTENDING FALCON

UVIscript	http://www.uvi.net/uviscript
Lua	http://www.lua.org/docs.html
OSC	http://opensoundcontrol.org
Scala	http://www.huygens-fokker.org/scala

ILOK

Home	ilok.com
iLokLicenseManager	ilok.com/ilm.html
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