



# STRAYLIGHT

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Software version: 1.5 (11/2019)

## 2. WELCOME TO STRAYLIGHT

STRAYLIGHT is an instrument that provides unique cinematic soundscapes, transitions, and ambient tones. It combines a purpose-built sound library with specialized grain and sample playback modules, effects, and a powerful performance-based X-Y modulation matrix.

STRAYLIGHTS' bespoke granular engine places the source audio into a powerful and specialized easy-to-use interface. The result is lush, organic timbres that can defy time and pitch, yet still retain the character of the source sounds (strings, glass, stone, membranes, and more), and sonically evolve over time. Small sounds can be vastly magnified in size and scope without sacrificing their sound quality or character. The granular engine is then paired with a reinforcing sample layer, offering the same level of editing and modulation.

Special attention is given to STRAYLIGHTS' modulation and effects sections, ensuring a fast, creative workflow. The precise X-Y control enables expressive direct-to-picture performance and the kind of extremely detailed control over intensity and timing required for cinematic sound design. Up to fourteen simultaneous effects can be applied and modulated, taken from ten different categories, including specially captured reverb impulse responses designed exclusively for STRAYLIGHT.

Thank you for choosing STRAYLIGHT.

### 2.1. What's New in STRAYLIGHT 1.5

STRAYLIGHT 1.5 contains the following new features and improvements:

- You can now import your own samples by dragging and dropping them on to the waveform displays. See, [Importing Your Own Samples \[8\]](#).
- Added high-quality modulation effects using Choral, Flair and Phasis algorithms available in all effect slots. See, [Mod Effects \[54\]](#).
- Added 'Grain Rate Interval sync' functionality which allows you to lock the grain generation to the tempo of your DAW. See, [Grains \[18\]](#)
- Added 68 additional presets using the new features of version 1.5 for a total number of 452.
- Improved the handling of main page waveforms range locators is now easier when the cursor reaches the edges

## 3. BASIC WORKFLOWS

The following key features facilitate the STRAYLIGHT workflow:

- **Main Navigation:** Selects between the five main pages; Perform, Grain, Sample, Effects, and Master.
- **Perform page:** The XY pad at the centre of the Performer page works as the key interaction for shaping the sound. The main change in the character of the sound will take place using the XY pad. This page also hosts four Macros that provide quick access to control and change the assigned parameters. For more information, refer to [Perform Page Overview](#).
- **Grain page:** The Grain page covers all parameters related to playback within the Grain engine. The lower area has separate navigation, displaying either Send FX, Macros or Modulation. For more information, refer to [Grain Page](#).
- **Sample page:** The Sample page covers all parameters related to playback within the Sample engine. For more information, refer to [Sample Page](#).
- **Effects page:** The Effects page contains a flexible FX chain for both the Grain engine and Sample engine, with a large XY Pad in the middle for mapping effects parameters. For more information, refer to [Effects Page](#)
- **Master page:** The Master page allows for mapping of MIDI CCs to the XY Pad and includes a third effects chain which affects the combined Grain and Sample layers. For more information, refer to [Master Page](#).
- **Macros:** The lower area has a separate navigation, displaying either Send FX, Macros or Modulation. For more information, refer to [Macros Pane](#)
- **Random:** The Random icon is located in the header sections of both the Grain and Sample pages. When the icon is pressed, random values are set for all applicable parameters.

### 3.1. Saving and Loading Snapshots

Snapshots are your own personalized user presets, which you can save and recall at a later time. Once you have assigned your Macro controls and adjusted your settings, you can save your sound.

The Snapshot menu is displayed by clicking on the camera icon.

To save a Snapshot as you are working on it:

1. Click the Save button. The Save button is represented by a floppy disk icon. This will open a standard Save dialog which will allow you to save your .nksn file in the User Snapshot Library.
2. Name your new Snapshot and click 'Save'.
3. Once the Snapshot.nksn file is saved into User Snapshots folder, it will appear in the Snapshot browser accessed by clicking on the name above the five navigation tabs.

**Naming a new Snapshot.**



To load a Snapshot:

1. Click the arrow next to the Snapshot name field
2. Select 'User' and browse the menu for your Snapshot.
3. Once clicked, the Snapshot will be loaded.

Loading a Snapshot.

## 3.2. Using Browsers

STRAYLIGHT offers three individual browsers to directly search for Snapshots, Grain Source presets and Sample Source presets. In each of these browsers you can limit the search in the Results list by selecting tags from several sound categories. Besides limiting the search, you can also mark presets as favorites and filter by favorites in the Results list.

In this section you are provided with an overview of the browser and you will learn how to work with the browser.



The designs and workflows of the individual browsers are identical. The overview and workflows are written globally.

### 3.2.1. Opening and Closing Browsers

To open a browser:

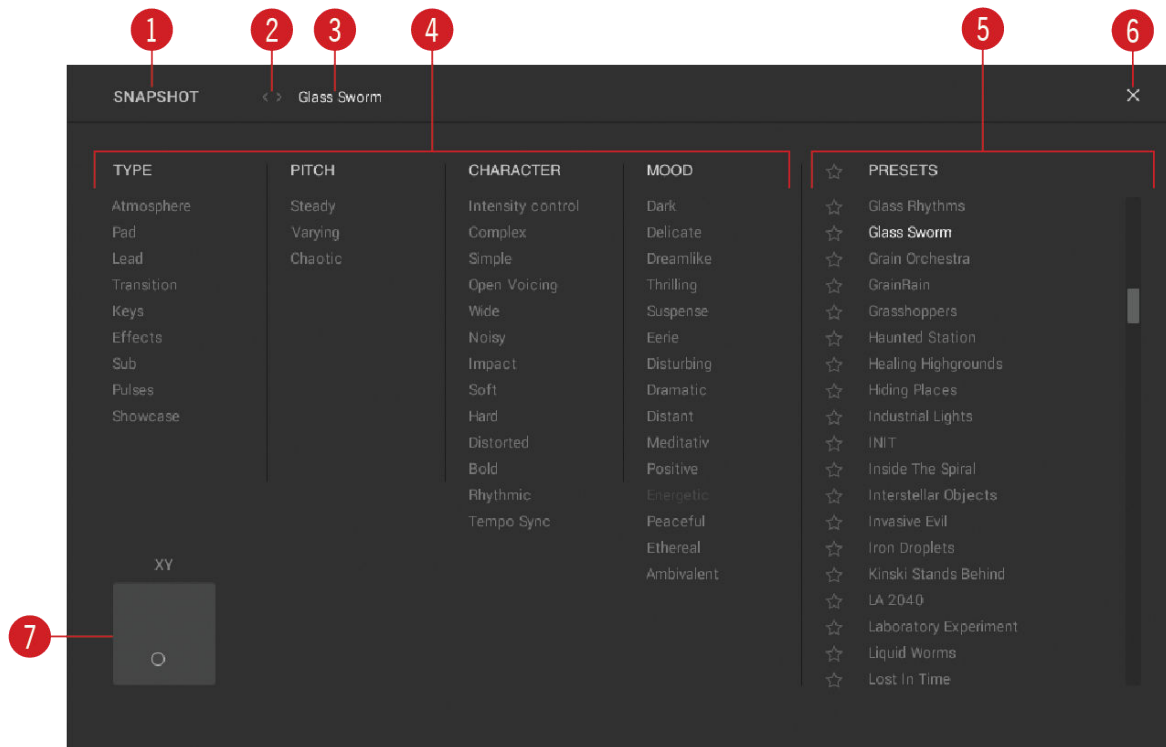
- Click on the Snapshot name, or on the Grain Source label, or on the Sample Source label on the pages.  
The corresponding browser opens.

To close a browser:

- Click on the cross icon at the top left to close the browser.

### 3.2.2. Browser Overview

Each of the browsers contain the following elements:



**Browser.**

(1) **Browser label:** Displays the name of the file type you are currently browsing. This can either be **SNAPSHOT**, **GRAIN SOURCE**, or **SAMPLE SOURCE**.

(2) **Previous and Next buttons:** Loads the previous and next Snapshot or preset from the Results list in the browser. If sound category tags are selected for limiting the search in the Results list, the buttons appear filled out.

(3) **Snapshot label / Preset label:** Displays the name of the loaded Snapshot highlighted in white, Grain Source preset or Sample Source preset highlighted in yellow.

(4) **Sound Categories:** This area contains different sound categories with several tags each. You can use these tags to limit your search in the Results list. For more information, refer to [Snapshots – Sound Types and Tags](#).

(5) **Results list:** Provides you with the results defined by the search criteria in the sound categories. You can also mark Snapshots and presets as favorites and filter the results list by favorites. For more information, refer to [Marking Snapshots and Presets as Favorites](#).

(6) **Close icon:** Use this icon to close the browser.

(7) **XY Pad:** A smaller version of the main XY pad that displays the position for the X and Y parameters of the selected Snapshot. You can also use this XY pad to control the sound of the selected Snapshot. For more information, refer to [XY Pad](#).

For more information on browsing for Snapshots and presets, refer to [Limiting the Browser Search in the Results List](#).

### 3.2.3. Limiting the Browser Search in the Results List

In each browser you can limit the search criteria by selecting tags in several sound categories:

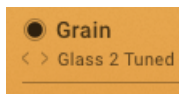


- Select the tag(s) in the sound category of your choice.  
Selected tags are highlighted, and items in the Results list are limited accordingly. You can also multi-select tags within or across sound categories to further refine your search.

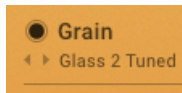
## Preserved Tag Settings

After closing the browsers, STRAYLIGHT preserves the tag settings for each browser. After exiting a browser, its tag settings are also reflected in the corresponding next preset and previous buttons within the headers. The next preset and previous buttons indicate if they step through all available items (Snapshots or presets) or if a filtered search is in use:

- If there are no tags selected in the browser, the next preset and previous buttons appear as open brackets:



- If any tags have been selected, the Results list contains filtered items, the next preset and previous buttons appear as filled triangles:



## 3.2.4. Snapshots – Sound Types and Tags

This section gives you an overview of the sound types and a brief explanation of the tags you can use to limit your search for Snapshots in the Snapshot browser.

STRAYLIGHT Snapshots are often designed to cover a wide range of the sonic spectrum, meaning that they can cover a whole movie scene but have to be thinned out to work in a fuller musical arrangement. Thinning can easily be achieved by disabling one of the layers and/or applying the High/Low Pass filters, which are setup up on the Macros A and B for the majority of the presets. Often the character of the sounds can widely be controlled by the number of notes played and the octave range where you play them. STRAYLIGHT is very sensitive to the voicing. Wide chords with few notes will often give you better results than a common, narrow keyspacing, which you might use to play a standard piano patch.

### Types

The sound type Types contains the following tags:

- **Atmospheres:** The sound is best played using a single note or just a few notes. Try octaves in the lower register and one or two additional notes in the higher range. Atmospheres can also be atonal or noisy soundscapes and are often more complex than pads.
- **Pads:** Sounds playable much like a typical polyphonic synthesizer. Not as “complex” as the Atmosphere category but more suitable in typical arrangements with other instruments.
- **Lead:** Sounds which can function as lead sounds in a higher octave range.
- **Transistion / Risers:** The sound contains a spectral transition or movement, which is either scanned through automatically synced to the host clock or the transition is the main parameter on the XY pad allowing realtime control of the spectral change.
- **Keys:** The sound is based on keyboard instruments like pianos and organs.

- **Effects:** All kinds of real time controlled cinematic sound effects. There is some overlap with Atmospheres and Transitions here but it still makes sense to look at it as a separate category. These sounds are mostly atonal.
- **Sub:** Sounds with remarkable subharmonic content. These are best played monophonic or in octaves.
- **Pulses:** Contain a rhythmic, arpeggiated or gated element. Sometimes the rhythm is bound to the host clock in other cases it is more fluid.
- **Showcase:** Indicates a representative selection of STRAYLIGHT sounds. Listen to these to get a first impression of the product.

## Pitch

Pitch contains the following tags:

- **Steady:** The sounds feature a steady pitch suitable for chords.
- **Varying:** The sounds might change to a different note over time (for example, a recording of a overtone series) but is steady for the majority of the sample / modulation range.
- **Chaotic:** The sound has no dedicated root pitch and can change continuously.

## Character

Character contains the following tags:

- **Intensity control:** The XY pad assignments of the sound is setup to be able to control the 'intensity' of the sounds. Often it means the Snapshot sounds more dramatic when the Y axis amount it at the top.
- **Complex:** Indicates that a higher amount of spectral change over time occurs in the sound. This can be an indicator of how easy it is to combine the preset with other instruments in an arrangement.
- **Simple:** Indicates that the sound feature a small amount of spectral change over time and is easier to integrate with other sounds in a musical arrangement.
- **Unrestricted Voicing:** Sounds with this tag can be played with a narrow, piano style voicing. You can use this tag to remove Snapshots from the Results list which require a wider voicing or sound best with few notes.
- **Wide:** Either stereo spread or depth of dimension are extraordinary in sounds featuring this tag.
- **Noisy:** The sound contains a remarkable noise amount.
- **Impact:** The sound contains an attacking element. This can be either at the beginning of the note or within a soundscape or pulsating snapshot.
- **Soft:** The sound has a damped or soft spectrum and soft volume transition.
- **Distant:** The sound has remarkable amount of reverb or delay applied. Attacks might be softened or washed out.
- **Hard:** The sound has a higher or hard spectrum and might contain dissonant elements.
- **Distorted:** The sound features distortion either in the layer sources or applied via the STRAYLIGHT effects chains.
- **Bold:** Sounds which cover a wide range of the sonic spectrum and might be the main sound in a scene.

- **Rhythmic:** The sound contains a rhythmic element, which can be either a repeating spectral changes or an attacking or noise-like component.
- **Tempo Sync:** The rhythmic element either follows the host tempo or the transition speed is synchronized to the DAW's clock.

## Mood

Mood contains the following tags:

- **Dark:** The sound might be suitable for a sinister scene and often features detuned, modulated, distorted aspects.
- **Delicate:** The sound is relatively thin and clean.
- **Dreamlike:** The sound is beautiful or has an utopian, unreal character to it.
- **Thrilling:** Depending on the voicing, the sound can create a thrilling mood. Thrill is not used in the context of horror here but rather like excitement.
- **Suspenseful:** Depending on the voicing, the sound can create a mood of suspense and uncertainty.
- **Eerie:** Depending on the voicing, the sound can create a scary atmosphere and might contain dissonant elements or transitions.
- **Disturbing:** The sound contains an unexpected, annoying or impacting element.
- **Dramatic:** Depending on the voicing the sound can be used to increase the level drama by riding the Macros.
- **Meditative:** The sound has calm, sometimes slightly repetitive mood.
- **Positive:** Depending on the voicing, the sound can be used to convey a confident and positive vibe.
- **Energetic:** Depending on the voicing, the sound has an active, driving mood. Often, a rhythmic elements is involved.
- **Peaceful:** Depending on the voicing, the sounds create a quite, balanced and beautiful mood.
- **Ethereal:** Depending on the voicing, the sounds create a light, mystic or arcane mood.
- **Ambivalent:** Some presets can change their mood quite drastically, depending on the played voicing and the settings of the macro controllers.

## 3.3. Importing Your Own Samples

STRAYLIGHT allows you to import your own samples. This feature can be used when designing your own Snapshots allowing you to utilize the processing power of the specialized grain and sample modules, effects, and the powerful performance-based X-Y modulation matrix.

### How to Import Samples

Samples can be added to STRAYLIGHT by simply dragging and dropping them from your operating system or from **Files** folder in KONTAKT, directly onto the waveform displays in the Perform page, the Grain page, or the Sample page.

Compatible audio file formats are: .wav, aif, and ncw. Compressed files such as .mp3 do not work but can be converted to one of the compatible formats using third-party file conversion software.

To add your own sample:

1. Using the mouse, click-and-hold the audio file you want to add.
2. Drag the file to a waveform display on the Performance page, Grain page or Sample page.
3. Release the mouse button.

Once a file has been imported Kontakt will automatically try to detect the root key. You can also set the root key of the imported sample manually using the up/down arrows of the Sample Layer Root Key in the top right corner of the Grain or Sample Waveform display. For more information, refer to [Grain Page Overview \[17\]](#) or [Sample Page Overview \[23\]](#).

For information on importing files from the KONTAKT File menu, refer to the KONTAKT Manual available from the Native Instruments website.

## 4. AN OVERVIEW OF CREATING A SOUND

The STRAYLIGHT is built from a custom granular engine with hand-tailored audio sources routed through matching effects and modulators. In addition to the primary granular engine, there is also a sample layer that can be used for complimentary sonic tasks like background noise, envelope attacks, tonal centering or pads.

To build your own sound and get a feel for the STRAYLIGHT workflows, follow these steps:

### Grain Engine

1. Select your Grain source and determine the behavior of the Granular engine. Sources for the Granular engine can be chosen at the top left of the instrument, and using the Search Icon you can browse Presets that are categorized by Origin, Pitch, Style and Character.
2. Adjust the Start position and set the Range and Length of the Grain sample playback.
3. Introduce some movement into your sound by adjusting the Scan and Jitter parameters in the Cursor section. The Scan control will determine the speed and direction in which the cursor moves, and the Jitter control will determine the random position of each grain.
4. Adjust the envelope section to determine the attack and decay of the Grain source.
5. Assign the Detune control to the X axis and apply a subtle Modulation Amount. As you move the cursor of the XY pad, you will hear the fine deviations in pitch.

### Modulation and Effects

1. In the Modulation pane, route an LFO to the Shaper and assign the Shaper to any modulatable parameter by choosing S1 from the corresponding menu. Adjust the modulation amount with the slider underneath the drop down menu.
2. Open the Send FX pane and turn up the level of the Delay for the Grain layer. Now select a preset from Effect type dropdown until you find a delay character that works with your Grain sound. Assign the Time and Feedback parameters to the X and Y axis respectively.
3. In the Effect page, select a Filter and assign the Cutoff to the Y axis. Assign the Resonance control to the X axis, and move the cursor up and down to hear the filter open as the Delay send effect becomes more intense.

### Sample Engine

1. Sources for the Sampler engine can be chosen at the top right of the instrument. Using the Search Icon allows you to browse sample presets that are categorized by Type, Pitch, Origin and Style.
2. Transpose the Sample layer to -1 octave or use the Tune to finely tune the sample to complement the Grain sample source.
3. Extend the Filter Modulation and Amp envelopes to create a more expansive sound, then assign LFO 2 to the Volume parameter to create a tremolo effect.
4. In the Modulation pane, set LFO 2 to a fast setting to create the rapid deviations in volume that define tremolo.

## Master FX

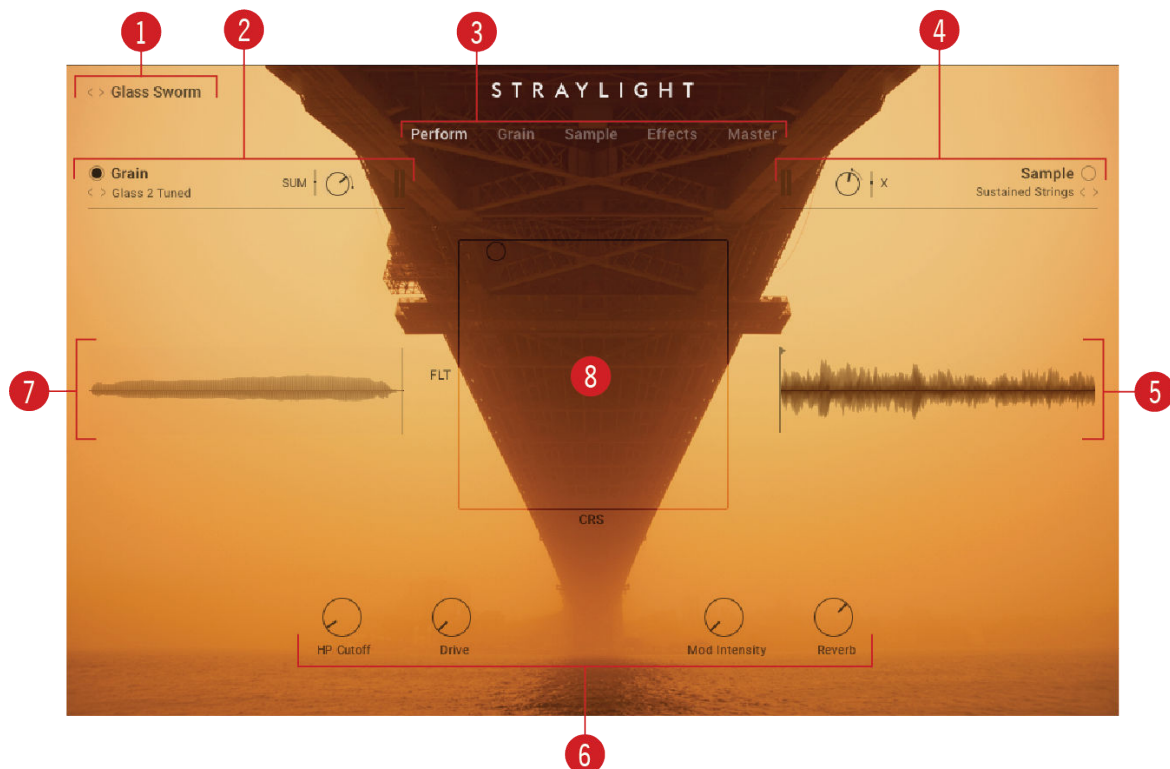
1. A final Master FX chain applies effects to the combined Grain and Sample layers.
2. Explore adding other Effects and assigning their parameters to the XY pad. Using your ears, following your intuition and experimenting is the best way to find your own signature sound.
3. Note that due to a technical limitation the send effects are not routed through the Master FX chain.

## 5. PERFORM PAGE OVERVIEW

The Perform page is the main view of STRAYLIGHT which gives you direct access to the main controls on the other pages. You can use the XY pad at the center of the Perform page for shaping the sound. Furthermore, you can instantly switch to another Grain Source and Sample Source, and adjust their output levels. The four macro controls below the XY pad are freely configurable and provide quick access to control and change the assigned parameters.

### 5.1. Perform Page Overview

The following section provides an overview of the Perform page.



Perform page overview.

(1) **Snapshot Browse controls:** Contains global browse controls to select another Snapshot and to access the Snapshot browser. For more information, refer to [Snapshot Browse Controls](#).

(2) **Grain Header:** Contains global functions including selection of the source sample, access to the Grain Source browser, and overall volume level control for the Grain layer. For more information, refer to [Grain Header](#).

(3) **Top Navigation:** Contains buttons to display the other pages of STRAYLIGHT.

(4) **Sample Header:** Contains global functions including selection of the source sample, access to the Sample Source browser, and overall volume level control for the Sample layer. For more information, refer to [Sample Header](#).

(5) **Sample Waveform display:** Displays the Sample Source waveform and visualizes the play-head position.



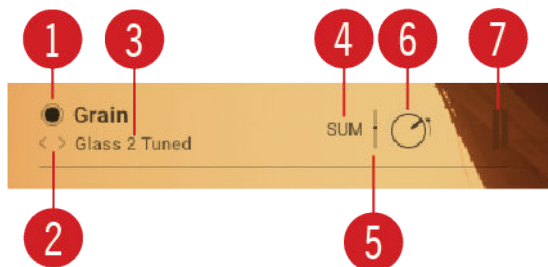
(6) **Macro controls:** These top level parameters can be assigned to multiple targets at the same time. You can select the labels corresponding to the parameters. For more information, refer to [Macros Pane](#).

(7) **Grain Waveform display:** Displays the Grain Source waveform and visualizes the Grain Cursor position of up to ten notes. You can also directly jump to the Grain page by clicking the within the waveform.

(8) **XY Pad:** Controls the sound of the current Snapshot in realtime according to the modulation assignments for the X and Y parameters. For more information, refer to [XY Pad](#).

## 5.2. Grain Header

The Grain Header contains global functions including selection of the source sample, access to the Grain Source browser, and overall volume level control for the Grain layer. The Grain Header is available on the Perform page, on the Grain page, and on the Effects page. It contains the following controls:



Grain Header.

(1) **Grain Active button:** Enables or disables the Grain layer. When enabled the Grain Active button is filled out.

(2) **Previous and Next Grain Source buttons:** Loads the previous and next Grain Source from the Results list in the Grain Source browser. If tags are selected for limiting the results in the GRAIN SOURCE browser, the buttons appear filled out. For more information, refer to [Limiting the Browser Search in the Results List](#).

(3) **Grain Source label:** Displays the name of the loaded Grain Source. Clicking it opens the GRAIN SOURCE browser. For more information, refer to [Browser Overview](#).

(4) **Modulation connector:** Selects the modulation source to be applied to the parameter.

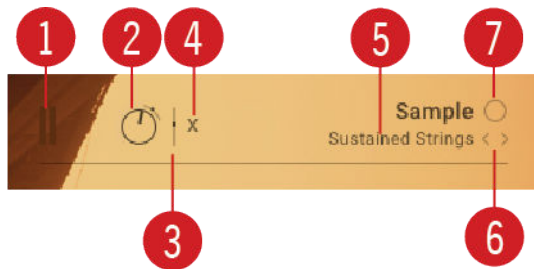
(5) **Grain layer volume modulation:** Sets the amount of modulation applied to the parameter by the selected modulation source.

(6) **Grain layer volume control:** Sets the master volume for the Grain layer which is applied after the Grain Layer effects and before the MASTER FX chain and the Send FX chain.

(7) **Level meter:** Displays the current output volume level for the Grain Layer.

## 5.3. Sample Header

The Sample Header contains global functions including selection of the source sample, access to the Sample Source browser, and overall volume level control for the Sample layer. The Sample Header is available on the Perform page, on the Sample page, and on the Effects page. It contains the following controls:



Sample Header.

- (1) **Level meter:** Displays the current output volume level for the Sample layer.
- (2) **Sample layer volume control:** Sets the master volume for the Sample layer which is applied after the Sample Layer effects and before the MASTER FX chain and the Send FX chain.
- (3) **Sample layer volume modulation:** Sets the amount of modulation applied to the parameter by the selected modulation source.
- (4) **Modulation connector:** Selects the modulation source to be applied to the parameter.
- (5) **Sample Source display:** Displays the name of the loaded Sample Source. Clicking it opens the Sample Source browser. For more information, refer to [Browser Overview](#).
- (6) **Sample Active button:** Enables or disables the Sample layer. When enabled the Sample Active button is filled out.
- (7) **Previous and Next Sample Source buttons:** Loads the previous and next Sample Source from the Results List in the Sample Source browser. If tags are selected for limiting the results in the Sample Source browser, the buttons appear filled out. For more information, refer to [Limiting the Browser Search in the Results List](#).

## 5.4. Snapshot Browse Controls

With the Snapshot Browse controls you can load another Snapshot and access the Snapshot browser to search for a specific Snapshot. The Snapshot Browse controls are available on any page in STRAYLIGHT.



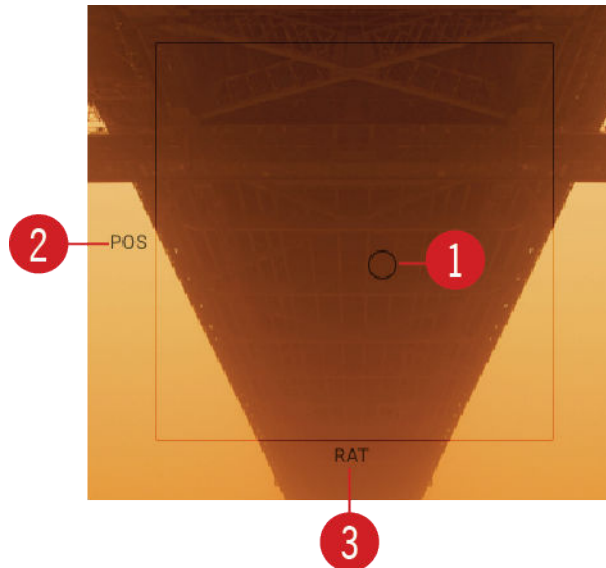
Snapshot Browse controls.

**Previous and Next Snapshot buttons:** Loads the previous and next Snapshot from the Results List in the SNAPSHOT browser. If tags are selected for limiting the results in the SNAPSHOT browser, the buttons appear filled out. For more information, refer to [Browser Overview](#).

**Snapshot label:** Displays the loaded Snapshot name. A Snapshot contains a complete STRAYLIGHT preset. Clicking it opens the SNAPSHOT browser. Snapshots can be saved with KONTAKT's Snapshot functionality in the Instrument header. For more information, refer to [Saving and Loading Snapshots](#).

## 5.5. XY Pad

The XY pad at the center of the Perform page controls the sound of the Snapshot in real-time according to the modulation assignment of the X and Y parameters. The XY pad also appears on some of the other pages of STRAYLIGHT as well as in the browsers. The XY pad contains the following elements:



XY pad.

(1) **XY Cursor:** Controls the sound of the Snapshot in real-time according to the modulation assignment of the X and Y parameters. For more information, refer to [XY Pad Assignment](#). You can also assign MIDI controllers to control the X and Y axis on the Master page. For more information, refer to [Assigning X and Y Axis to a MIDI Controller](#).

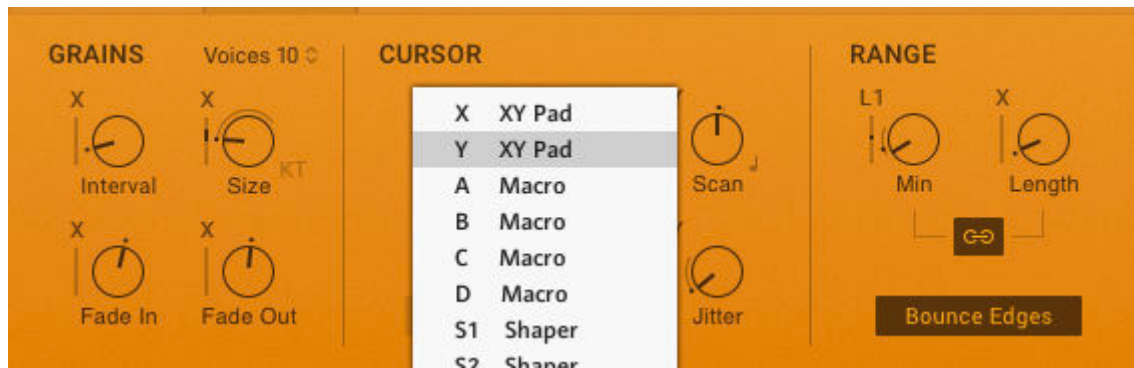
(2) **Y axis label:** Selects a label for the Y axis functionality. For more information, refer to [XY Pad Assignment](#).

(3) **X axis label:** Selects a label for the X axis functionality. For more information, refer to [XY Pad Assignment](#).

### 5.5.1. XY Pad Assignment

The XY pad should operate the most important real time parameters. The main purpose of the Y axis should be to control the Intensity. To assign a control to the X or Y axes:

1. Right-click on the control parameter you want to assign.
2. Select the **X XY Pad** to assign the parameter to the X axis, or the **Y XY Pad** to assign to the Y axis.
3. The parameter is now assigned to the XY Pad.



#### Assigning the XY pad

Below are some examples of suitable parameters for the XY pad:

#### Grain Settings:

- Grain Detune
- Cursor position / Range
- Scan speed
- Grain Rate and Volume compensation
- Grain Fade In/Fade Out

#### FX:

- Filter Cutoffs
- Dry Wet or FX send levels
- Delay Feedback

#### Sources:

- Level / Balance control layers

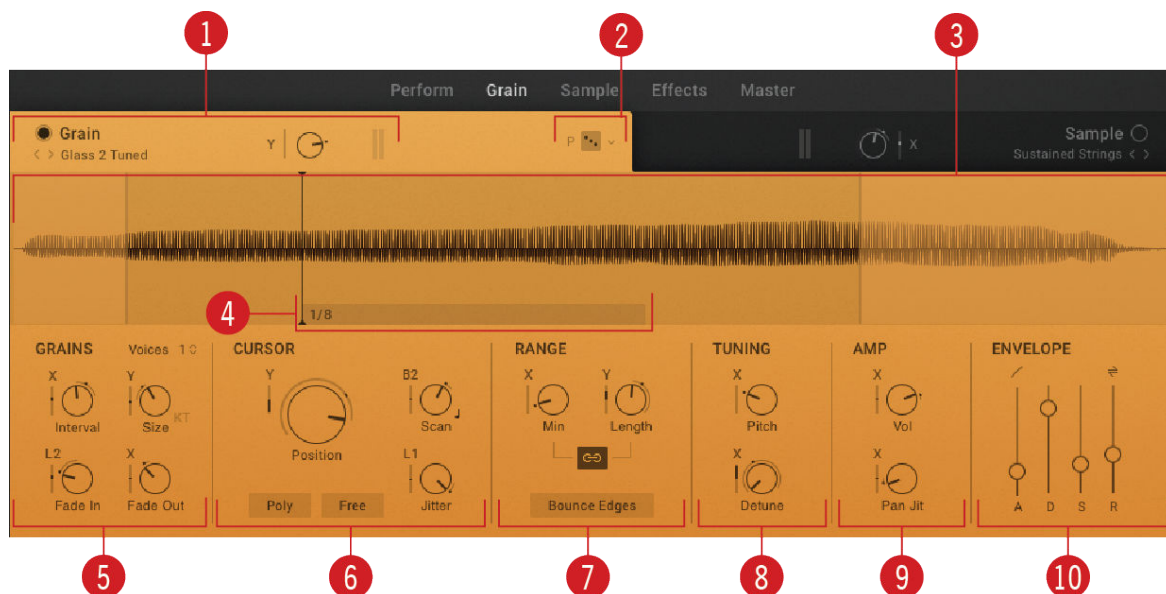
## 6. GRAIN PAGE

The Grain page controls STRAYLIGHT's Grain layer, which offers unique ways to play and manipulate the layer's source sample by means of granular synthesis. The result is lush, organic timbres that can defy time and pitch, yet still retain the character of the source sounds (strings, glass, stone, membranes, and more), and sonically evolve over time. Small sounds can be vastly magnified in size and scope without sacrificing their sound quality or character.

Granular synthesis uses an audio sample as the basic sound source and divides it into small segments, called grains. The duration, or size of a single grain is typically around a tenth of a second and below (< 100 ms). In STRAYLIGHT, you can set grain sizes ranging from 10 ms to 1000 ms. If all grains are played consecutively, the result approximates the original sample. The power of granular synthesis lies in the flexibility of completely changing the playback order and speed of the grains, and apply processing to each individual grain (duration, fades, level, pitch) for dramatic effects.

### 6.1. Overview

The following overview shows you all sections on the Grain page.



Grain page.

(1) **Grain Header:** Contains global functions including the selection of the source sample, access to the Grain Source browser, and overall volume level control for the Grain layer. For more information, refer to [Perform Page Overview](#).

(2) **Grain Random:** Randomizes the Grain page. The drop-down menu next to the Grain Random button (dice symbol) selects whether the parameters and the source sample are randomized (**S Include Source**), or only the parameters (**P Parameters only**). The randomization of the source sample is limited by the tags selected in the browser.

(3) **Grain Waveform display:** Displays the source sample's waveform and visualizes the Cursor position for up to ten notes simultaneously. You can adjust the Cursor Range by clicking and dragging the left and right boundaries in the waveform. For more information about the Cursor Range, refer to [Range](#). In Scan Sync mode, the display additionally shows the sync anchor (4).

You can import your own sample by dropping your sound onto the waveform. Kontakt will try to detect the root key automatically when the sample is loaded. You can also set the root key of the imported sample manually using the up/down arrows of the Grain User Sample Root Key in the top right corner of the Waveform display. They allow you to increase or decrease the root key of the imported user sample by one octave. Hold down the option key to change the key in semi-tones. For more information on adding samples, refer to [Importing Your Own Samples \[8\]](#).

(4) **Sync Anchor:** Sets the Cursor's synchronization point in Scan Sync mode. In this mode, the **Scan** control in the **CURSOR** section adjusts the time it takes the Cursor to move from the **Start** position to the sync anchor. Note that the Sync Anchor can be positioned outside of the cursor range. For more information, refer to [Cursor](#).

(5) **GRAINS:** Contains controls related to the basic generation of the individual grains and their shape. For more information, refer to [Grains](#).

(6) **CURSOR:** Contains controls related to the Cursor and how it moves through the source sample. The Cursor represents the read-out position of the grains. For more information, refer to [Cursor](#).

(7) **RANGE:** Contains controls related to the Cursor Range, which sets boundaries for the read-out position of the grain in the source sample. For more information, refer to [Range](#).

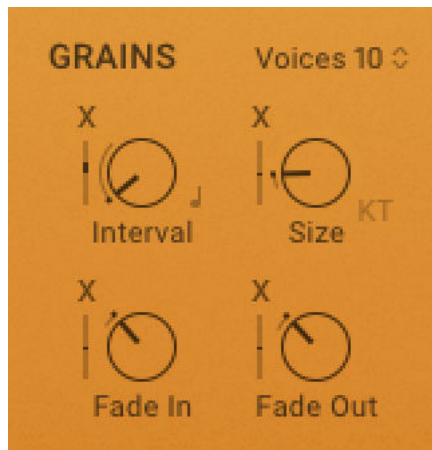
(8) **TUNING:** Contains controls related to the pitch of the individual grains. For more information, refer to [Tuning](#).

(9) **AMP:** Contains controls related to the volume level of the individual grains. For more information, refer to [Amp](#).

(10) **ENVELOPE:** Contains controls related to the Grain layer's volume envelope. For more information, refer to [Envelope](#).

## 6.2. Grains

This section contains controls related to the basic generation of the individual grains and their shape. This way you can define the basic character of your sound. **Interval** and **Size** are fundamental to the way the sound transforms the source sample. High **Interval** values can be used for more consistent and slowly evolving sounds, while low values can create lively or erratic results that change at a high rate. Use high values for **Size** to allow more of the character of the source sample to shine through the sound, or dive fully into abstract micro sound with low values. **Fade In** and **Fade Out** can be used to make the sound smoother at high values, or more textured and angular at low values.



Grain page – GRAINS

- **Voices:** Sets the maximum number of voices the Grain layer can play at the same time.
- **Interval:** Adjusts the time between the generation of individual grains from the source sample.
  - **Grain Interval Sync:** Allows you to set the grain interval in relation to the host tempo.
- **Size:** Adjusts the duration of each individual grain until it is faded out.
  - **KT:** Enables key tracking mode for the Size parameter. When enabled, the grain duration is compensated according to the pitch of the MIDI note: high pitches result in short-grain durations, while low pitches result in long-grain durations.
- **Fade In:** Adjusts the fade applied at the beginning of each individual grain. You can use this to soften the edges of the grains.
- **Fade Out:** Adjusts the fade applied at the end of each individual grain. You can use this to smoothen the release of the grains.

### 6.3. Cursor

This section contains controls related to the Cursor and how it moves through the source sample. The Cursor represents the read-out position of the grains. By changing the **Start** position, you can explore the source sample for new sonic material to build your sound. **Scan** and **Jitter** determine the movement of the Cursor during note events. Therefore, they strongly contribute to the character of the sound and how the original sample is transformed. The additional **Poly** and **Free** modes make it possible to adjust the Cursor's behavior in relation to how the instrument is played via MIDI.



Grain page – CURSOR.

- **Start:** Adjusts the position of the Cursor in the source sample. The Cursor represents the read-out position of the grains. The position is set as percentage of the range between the left and



right boundaries of the Cursor Range. For more information about the Cursor Range, refer to [Range](#).

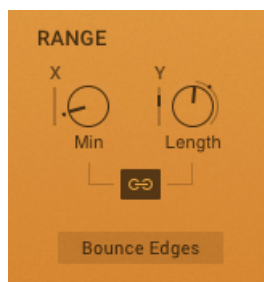
- **Poly**: Enables Poly mode. When enabled, each incoming MIDI note has its own dedicated Cursor. Therefore, each note can play grains from different read-out positions. When disabled, all MIDI notes coming in at the same time are locked to the Cursor position of the first played note.
- **Free**: Enables Free mode. When enabled, the Cursor position moves freely within the Cursor boundaries and according to the **Scan** parameter once a note event has started. In this case, modulation applied to the Cursor boundaries or the **Start** do not change the Cursor position. When disabled, modulation applied to related parameters during a note event change the Cursor position accordingly.
- **Scan**: Adjusts the Cursor's speed and direction as it moves across the source sample during a note event. Negative values let it move backwards, positive values let it move forwards. Note that related parameters including **Bounce Edges**, Release direction (option above the envelope's **R** stage), **Free** mode and the Cursor Range boundaries interact with **Scan**.
- **Scan Sync**: Enables Scan Sync mode, which synchronizes the scan speed to the host clock. When enabled, **Scan** is set in musical note divisions relative to the host clock. The note duration is the time it takes the Cursor to move from the **Start** position to the sync anchor as set in the waveform display.
- **Jitter**: Adjusts the range of random position changes applied to the Cursor position. The maximum value corresponds to 40% of the Cursor Range.

## 6.4. Range

This section contains controls related to the Cursor Range, which sets boundaries for the read-out position of the grain in the source sample. By setting the range you can generate grains only from a specific part of the source sample, or you can apply modulation to the controls to access different parts of the source sample dynamically. Since the source samples contain evolving and dynamic tone colors, you can use this to morph your sound in interesting ways.



When **Free** is enabled in the **CURSOR** section, the Cursor can move past the boundary's position and bounces back into the Cursor range in a spring-like movement. When **Free** is disabled, the Cursor cannot move past the boundary's position.



Grain page – RANGE.

- **Min**: Adjusts the position of the Cursor Range's left boundary in the source sample.

- **Length/Max:** Adjusts the position of the Cursor Range's right boundary in the source sample. When **Grain Range Link** is enabled, the **Length** control adjusts the size of the Cursor Range. This way you can move the Cursor Range through the source sample at a fixed length using the **Min** control. When **Grain Range Link** is disabled, the **Max** control adjusts the absolute position of the right boundary.
- **Grain Range Link:** Sets the behavior of the **Length/Max** control. When enabled, the control is switched to **Length**. When disabled, the control is switched to **Max** (see **Length/Max** for more information).
- **Bounce Edges:** Sets the Cursor's behavior when hitting the Cursor Range's boundaries. When enabled, the Cursor rebounds from the position of the boundaries and continues to move in the opposite direction.

## 6.5. Tuning

This section contains controls related to the pitch of the individual grains. By using the **Pitch** control, you can transpose grains in the range of four octaves. This way you can subtly detune the source sample or completely change its character. Applying modulation creates interesting vibrato effects. The **Detune** control randomizes the pitch of individual grains and can turn any sample source into an otherworldly sound effect.



Grain page – TUNING.

- **Pitch:** Transposes the grains in cent from -2400 cent (-24 semitones, or -2 octaves) to +2400 cent (+24 semitones, or +2 octaves).
- **Detune:** Adjusts the range of random pitch deviations added to each grain in one cent intervals from 0 to 50 cents.

## 6.6. Amp

This section contains controls related to the volume level of the individual grains. Using **Vol** you can set a suitable level for the output signal going into the Grain Effects, or apply modulation for tremolo effects. **Pan Jit** randomizes the stereo position of grains and can be used to create a wide and lively stereo image.

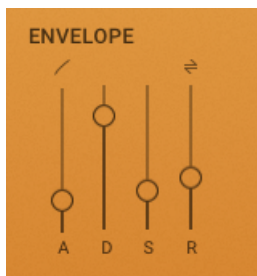


Grain page – AMP.

- **Vol:** Adjusts the volume level of the grains.
- **Pan Jit:** Adjusts the amount of random panning introduced to each individual grain.

## 6.7. Envelope

This section contains controls related to the Grain layer's volume envelope. It is triggered by incoming MIDI notes and used to dynamically control the amplitude of the Grain layer's output signal. By adjusting the envelope stages, you can define the overall character of the sound from plucked and percussive to bowed and sustained. The additional Release Direction settings is used to define the behavior of the Cursor once a note is released, allowing you to fine-tune the release behavior of the sound.



Grain page – ENVELOPE.

- **Attack Curve:** Adjusts the shape of the envelope's attack stage from a exponential response with a slow onset (-100%) to a logarithmic response with a fast onset (100%). At center position (0%), the response is linear, making the attack stage rise evenly for its entire duration.
- **Release Direction:** Sets the direction of the Cursor's movement during the release stage. When set to **Continue**, the Cursor maintains its direction. When set to **Force Cursor Left**, the Cursor moves to the left once the MIDI note is released. When set to **Force Cursor Right**, the Cursor moves to the right.
- **Attack (A):** Adjusts the duration of the envelope's attack stage, which is the time the envelope takes to rise from zero to peak level.
- **Decay (D):** Adjusts the duration of the envelope's decay stage, which is the time the envelope takes to fall from peak to sustain level.
- **Sustain (S):** Adjusts the level of the envelope's sustain stage, at which the envelope stays as long as a note is held.
- **Release (R):** Adjusts the duration of the envelope's release stage, which is the time the envelope takes to fall from sustain level to zero.

## 7. SAMPLE PAGE

The Sample page controls STRAYLIGHT's Sample layer, which provides a range of parameters that allow you to shape and manipulate the playback of the selected source sample. When combined with the Grain layer, results are diverse in their sonic character and effect. Sounds can range from moody, dissonant atmospheres to gritty, textured drones. Modulation inputs enable parameter adjustments that evolve over time, allowing you to create intricate unfolding soundscapes and nuanced timbral effects.

The Transpose control enables you to pitch the sample an octave higher or lower in relation to the Grain layer, creating a full, robust blend. The Tune control allows for subtle detuning when modulated, to replicate the desired detuning effect found in analog synthesizers. Modulating the Start point can also create timbrally captivating effects, that add depth and interest to the sample playback.

### 7.1. Overview

The following overview shows you all sections on the Sample page.



Sample page.

**(1) Sample Waveform display:** Displays the source sample's waveform and visualizes the playback Start position. You can move the Start position by adjusting the Start Offset control. Some sample sources can only be played monophonically, indicated by the **Mono** tag in the top right corner of the Waveform display.

You can import your own sample by dropping your sound onto the waveform. Kontakt will try to detect the root key automatically when the sample is loaded. You can also set the root key of the imported sample manually using the up/down arrows of the Sample Layer Root Key in the top right corner of the Waveform display. They allow you to increase or decrease the root key of the imported user sample by one octave. Hold down the option key to change the key in semi-tones. For more information on adding samples, refer to [Importing Your Own Samples \[8\]](#).

(2) **Sample Random:** Randomizes the Sample page. The drop-down menu next to the Sample Random button (dice symbol) selects whether the parameters and the source sample are randomized (**S Include Source**), or only the parameters (**P Parameters only**). The randomization of the source sample is limited by the tags selected in the browser.

(3) **Sample Header:** Contains global functions including the selection of the source sample, access to the Sample Source browser, and overall volume level control for the Sample layer. For more information, refer to [Header](#).

(4) **PITCH:** Contains controls related to tuning and transposition. For more information, refer to [Pitch](#).

(5) **START:** Sets the start point from which the sample will playback. For more information, refer to [Start](#).

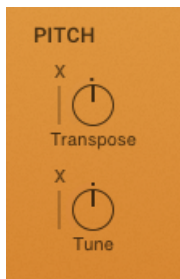
(6) **FILTER:** A tool that removes frequencies as determined by the Filter type and Cutoff frequency. For more information, refer to [Filter](#).

(7) **FILTER MODULATION:** Contains envelopes that modulate and shape the filter and the Cutoff frequency of your sample. For more information, refer to [Filter Modulation](#).

(8) **AMP:** Contains envelopes that modulate the Sample layer's volume. For more information, refer to [Amp](#).

## 7.2. Pitch

The Pitch section relates to the tuning and transposition of the sample playback. Each control has its own Modulation source which can be used for classic vibrato effect or more extreme sound design. Use the Tune control to fine-tune your sample to the Grain layer.

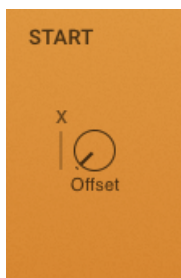


Sample page – Pitch.

- **Transpose:** Determines the MIDI transposition of the notes before entering the sample layer. It can be adjusted within +2 octaves and -2 octaves.
- **Tune:** Transposes the sample in cents from -2400 cent (-24 semitones, or -2 octaves) to +2400 cent (+24 semitones, or +2 octaves).

## 7.3. Start

The Start section sets the point from which the sample will playback. The start point can be modulated to create more dynamic timbres.

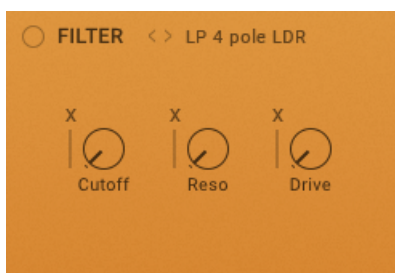


Sample page – Start

- **Start Offset:** Determines where the sample starts to play when a note is triggered.
- **Start Offset Modulation:** Sets the amount of modulation applied to the parameter by the selected modulation source.

## 7.4. Filter

The Filter takes the raw sample and removes certain frequencies as determined by the Filter type and Cutoff frequency. This changes the harmonic content of the signal and shapes the tone of the sound. This change can be varied over time using the Filter Envelope or modulated to produce more dynamic animated timbres. You can select from 29 different Filter types, including HP, LP, BP, Notch and Vowel, for variation in spectral character. For more information on the different Filter types, refer to [Filter](#).

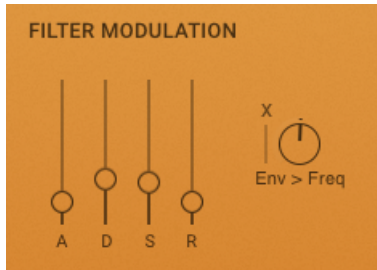


Sample page – Filter.

- **Active:** Activates the Filter section in the Sample layer.
- **<>:** Browses the different Filter type options.
- **Filter Type:** Selects the Filter type used for the Sample layer.
- **Cutoff:** Sets the Filter Cutoff frequency of the selected Filter type.
- **Resonance:** Sets the Resonance or peak of the selected Filter type.
- **Drive:** Sets the amount of Drive for the selected Filter type.

## 7.5. Filter Modulation

The Filter Modulation section contains envelopes that allow you to modulate and shape the filter and the Cutoff frequency of your sample. Use the Envelope Amount to determine the intensity of the envelope over the Cutoff frequency. Modulating the Envelope Amount can create subtle movements or dramatic timbral changes.



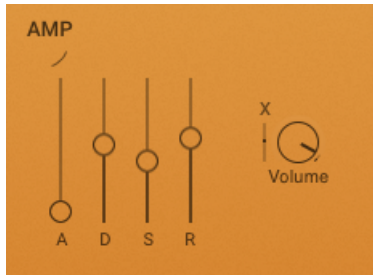
Sample Page – Filter Modulation.

- **Attack (A):** Adjusts the duration of the envelope's attack stage, which is the time the envelope takes to rise from zero to peak level.
- **Decay (D):** Adjusts the duration of the envelope's decay stage, which is the time the envelope takes to fall from peak to sustain level.
- **Sustain (S):** Adjusts the level of the envelope's sustain stage, at which the envelope stays as long as a note is held.
- **Release (R):** Adjusts the duration of the envelope's release stage, which is the time the envelope takes to fall from sustain level to zero.
- **Envelope Amount:** Determines to which extent the Filter envelope modulates the Filter frequency. This works on a polyphonic level.

## 7.6. Amp

The Amp section contains controls related to the Sample layer's volume envelope. It is triggered by incoming MIDI notes and used to dynamically control the amplitude of the Sample layer's output signal. By adjusting the four envelope stages, you can define the overall character of the sound, from snappy, percussive plucks to sustained, elongated drones. Modulate the Volume control with an LFO to create a classic tremolo effect.





Sample page – Amp.

- **Attack Curve:** Adjusts the shape of the envelope's attack stage from an exponential response with a slow onset (-100%) to a logarithmic response with a fast onset (100%). At center position (0%), the response is linear, making the attack stage rise evenly for its entire duration.
- **Attack (A):** Adjusts the duration of the envelope's attack stage, which is the time the envelope takes to rise from zero to peak level.
- **Decay (D):** Adjusts the duration of the envelope's decay stage, which is the time the envelope takes to fall from peak to sustain level.
- **Sustain (S):** Adjusts the level of the envelope's sustain stage, at which the envelope stays as long as a note is held.
- **Release (R):** Adjusts the duration of the envelope's release stage, which is the time the envelope takes to fall from sustain level to zero.
- **Sample Volume:** Determines the volume of the sample before entering the sample layer effects chain.

## 8. EFFECTS PAGE

On the Effects page, you can apply effects to the audio signals coming from the Grain layer and the Sample Layer. For each layer, there is a dedicated Effects section containing an effect chain. Each effect chain consists of four effect slots for loading individual effects. You can choose from nine effects which can be operated in several modes. Depending on the effect mode, there will be different parameters/controls for the select effect.

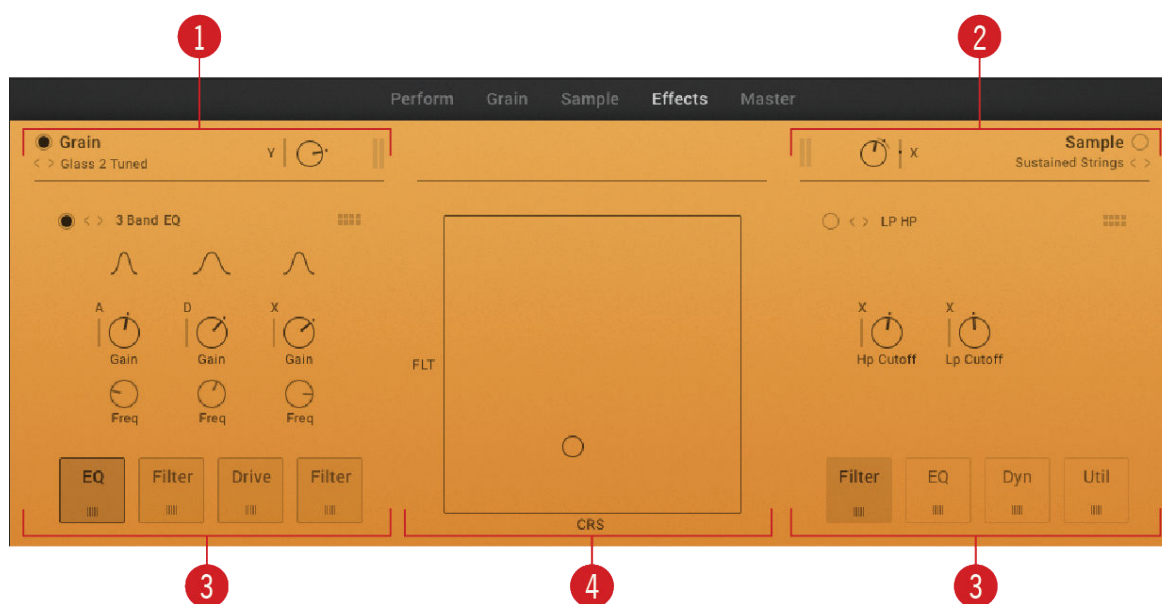
This section contains an overview of the Effects page. Here you will learn how to load effects into effect slots and how to select an effect mode. You will also learn how to reorder and to disable effect slots within the effect chain.



The procedures for the Effect sections explained here are the same for the Grain Layer, the Sample Layer, and the MASTER FX section on the Master page.

### 8.1. Effects Page Overview

The Effects page contains the following elements and controls:



Effects page overview.

(1) **Grain Header:** Contains global functions including selection of the source sample, access to the GRAIN SOURCE browser, and overall volume level control for the Grain layer. For more information, refer to [Grain Header](#).

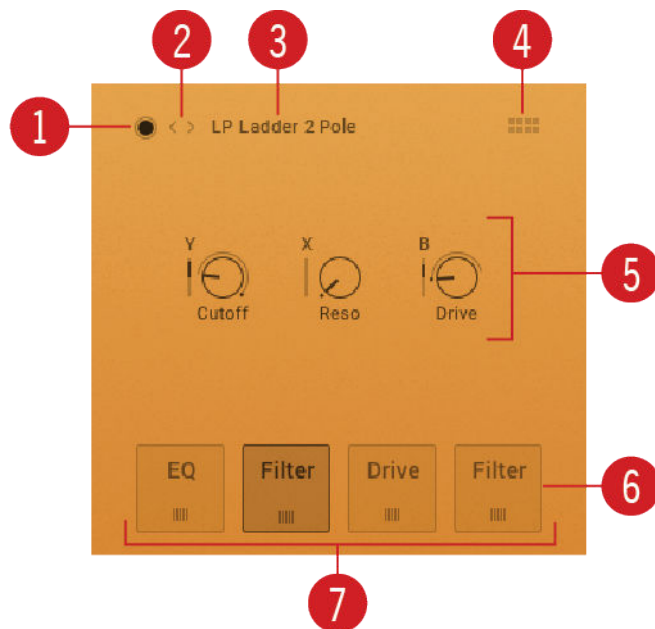
(2) **Sample Header:** Contains global functions including selection of the source sample, access to the SAMPLE SOURCE browser, and overall volume level control for the Sample layer. For more information, refer to [Sample Header](#).

(3) **Effect sections:** The Grain layer and the Sample layer each have a dedicated Effects section. Effects for the Grain layer are located on the left side and effects for the Sample layer are located on the right side. For more information, refer to [Effects Section Overview](#).

(4) **XY Pad:** With the XY Pad you can shape the sound of the Snapshot in realtime according to modulation assignment for the X and Y parameters. The axis labels provide a hint of what to expect when moving the Cursor. You can assign MIDI CCs for the XY pad on the Master page. For more information, refer to [Assigning X and Y Axis to a MIDI Controller](#).

### 8.1.1. Effects Section Overview

The Effects page contains two Effect sections: one for the Grain layer and one for the Sample layer. The Master page contains another Effect section to further process the audio signal mixed from the Grain layer and the Sample layer. Each Effect section contains the same controls and works similar. Any Effects section contains the following elements and controls:



Effects section.

(1) **Effect On / Off button:** Switches the effect in the selected effect slot on or off. For more information, refer to [Disabling Effect Slots](#).

(2) **Previous and Next Effect Mode buttons:** Selects the previous or next effect mode for the effect in the selected effect slot. For more information, refer to [Selecting Effect Modes](#).

(3) **Effect Mode label:** Displays the selected effect mode. Clicking it opens a drop-down menu to directly select an effect mode for the effect in the selected effect slot. For more information, refer to [Selecting Effect Modes](#) and [Effect Reference](#).

(4) **Effect selector button:** Opens the Effect selector to load one of nine effects into the selected effect slot. For more information, refer to [Effect Selector](#).

(5) **Effect parameters:** Each effect provides you with up to three individual parameters for adjusting the effect's sound. For more information, refer to [Effect Reference](#).

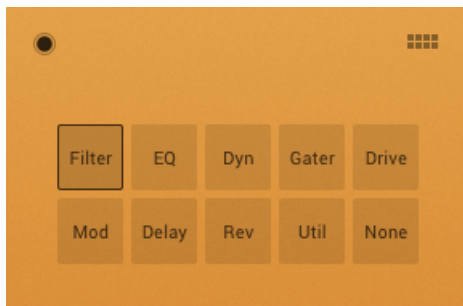
(6) **Effect slot:** Each effect slot can load one effect. Selecting an effect slot displays the parameters of the loaded effect. For more information, refer to [Loading Effects into Effect Slots](#).

(7) **Effect chain:** The effect chain contains four effect slots to load individual effects. The effect slots can be moved/rearranged within the effect chain. For more information, refer to [Moving Effect Slots within the Effect Chain](#).

### 8.1.2. Effect Selector

When clicking the Effect selector button in the Effect section, the Effect selector opens. With the Effect selector you can choose one of nine different Effect types for loading it into the selected Effect slot. You can also select **None** to leave the selected Effect slot empty. As soon you select an effect the Effect selector closes.

For more information on the effect types, refer to [Effect Reference](#).



Effect selector.

## 8.2. Loading Effects into Effect Slots

To load an effect into an effect slot:

1. Select an effect slot in the effect chain.
2. Click the effect selector button to open the effect selector.
3. Select an effect to load it.

The effect is loaded into the effect slot. The effect selector closes. You can now adjust the effect's parameters.

## 8.3. Selecting Effect Modes

Any effect can be operated in various modes to change the general behavior of the effect. When selecting another effect mode, the behavior of the effect changes, whereas the parameters and values may remain.

To select an effect mode:

1. Click the Effect preset label to open the effect mode drop-down menu.
2. Select the effect mode to your liking.

The effect mode is changed.

Alternatively, you can skip to the next or to the previous effect mode using the previous and the next effect mode buttons.

For more information on effect modes, refer to [Effect Reference](#).

## 8.4. Moving Effect Slots within the Effect Chain

You can move effects slots within the effect chain to change the resulting sound of the effect chain.

To move effect slots within the effect chain:

1. Click and hold the bottom middle of the effect slot.
2. Drag it left or right within the effect chain and release.

## 8.5. Disabling Effect Slots

You can disable individual effect slots in the effect chain to compare the sound with or without particular effects.

To disable an effect slot:

1. Select the effect slot you want to disable in the effect chain.
2. Click the effect slot active button.  
The effect slot is disabled indicated by the empty effect slot active button and the missing frame around the effect slot.

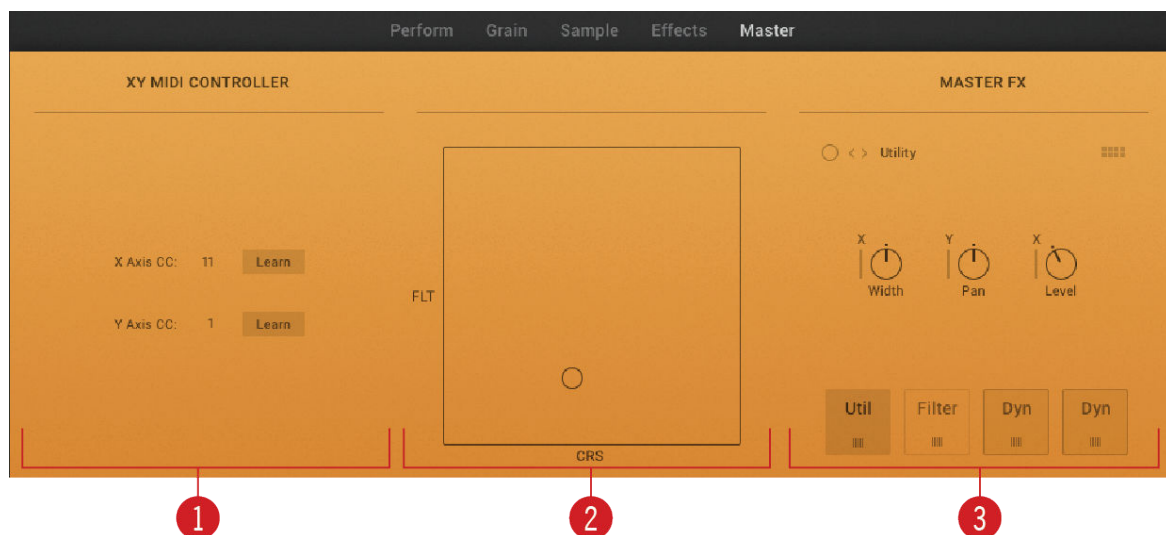
## 9. MASTER PAGE

On the Master page you can further process the mixed audio signal coming from the Grain layer and the Sample layer, and you can assign the X and Y axis of the XY Pad to the controls of your MIDI controller. For this you have the MASTER FX section on the right side and the XY MIDI CONTROLLER section on the left side.

In this section you are provided with an overview of the Master page and you will learn how to assign the X and Y axis to your MIDI controller.

### 9.1. Master Page Overview

The Master page contains the following sections:



Master page overview.

**(1) XY MIDI CONTROLLER section:** Use the Learn buttons to assign MIDI messages of your MIDI controller to the X and Y axis of the XY Pad in the middle or directly select the desired MIDI CC number. For more information, refer to [Assigning X and Y Axis to a MIDI Controller](#).

**(2) XY Pad:** Controls the sound of the current Snapshot in realtime according to the modulation assignments for the X and Y parameters. For more information, refer to [XY Pad](#).

**(3) MASTER FX section:** The MASTER FX section further processes the audio signal coming from the Grain layer and the Sample layer. The MASTER FX section works similar to the effects sections on the Effects page. For more information, refer to [Effects Section Overview](#).

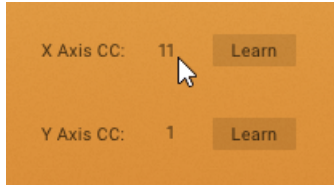
### 9.2. Assigning X and Y Axis to a MIDI Controller

You can also control the X and Y axis of the XY Pad with your MIDI controller. For this, you need to assign the X and Y axis to your MIDI controller either by directly selecting the MIDI CC number or by using the MIDI learn function on the Master page. In this section you will learn both of these methods.

## Selecting the MIDI CC Numbers

To directly select the MIDI CC number for the X or Y axis:

1. Click the MIDI controller number for the corresponding axis to open the MIDI CC number drop-down menu.



2. Select the desired MIDI CC number.

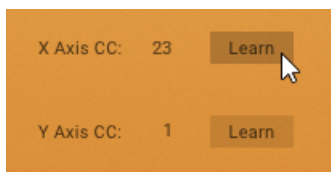


The MIDI CC number is assigned to the axis. Repeat these steps for the other axis.

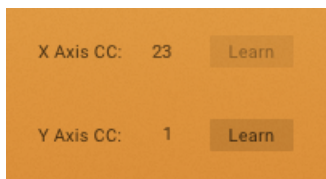
## Using the MIDI Learn Function

To assign the X and Y axis using the MIDI learn function:

1. Click the **Learn** button of the corresponding axis to enable the MIDI learn function.



The **Learn** button starts to flash.



2. Move the control on your MIDI controller you want to assign to the axis.  
The control is assigned to the axis. The **Learn** button has stopped flashing. Repeat these steps for the other axis.

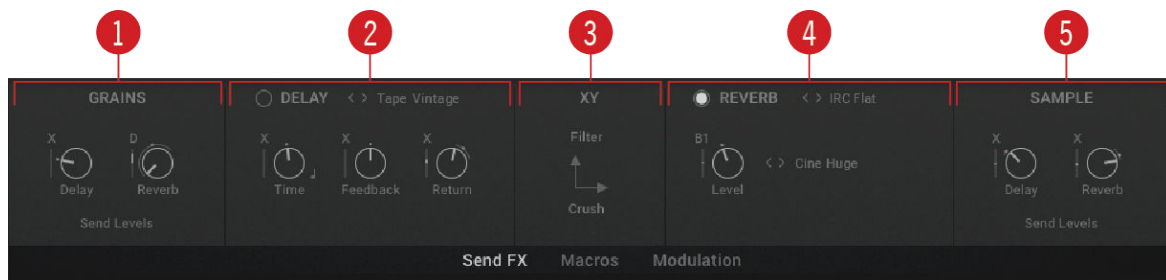


## 10. SEND FX PANE

The Send FX Pane is where the global Delay and Reverb send effects are contained. Each effect has parameter controls that determine their behavior and sonic character. Level controls dictate the amount of effect signal that is returned. Also located in the Send FX Pane are Level controls for the Grain and Sample layers' global effects sends. Use this section to manually adjust the Send amount, or apply modulation to change the amount of effect over time. Controls for Delay and Reverb can be modulated in tandem or with disparate modulation sources to create unique interactions. Note that the send effects are not routed through the master effect chain. If you need to apply additional effect such as compressor to your reverb tail, you can use a reverb module in one of the master effect chain slots.

### 10.1. Overview

The following overview shows you all sections on the Send FX pane.

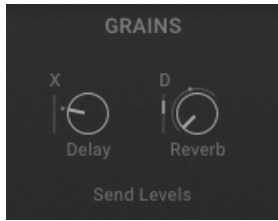


Send FX pane.

- **(1) GRAINS:** Contains Send Level controls that determines the amount of the Grain layer output that is sent to the global Delay and Reverb. For more information, refer to [Grains](#).
- **(2) DELAY:** Contains controls that determine the character of the global Delay effect. For more information, refer to [Delay](#).
- **(3) XY Pad:** Controls the sound of the snapshot according to the modulation assignments for the X and Y parameters. For more information, refer to [XY](#).
- **(4) REVERB:** Contains controls that determine the character of the global Reverb effect. For more information, refer to [Reverb](#).
- **(5) SAMPLE:** Contains Send Level controls that determines the amount of the Sample layer output that is sent to the global Delay and Reverb. For more information, refer to [Sample](#).

### 10.2. Grains

This section sets the Grain layer's Send Level to the global Delay and Reverb. These sends can be individually modulated to create subtle alterations, or wild sweeping effects.

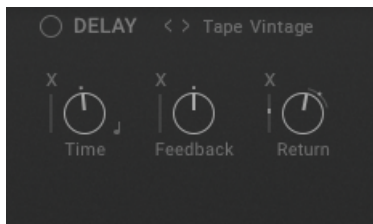


Send FX pane – Grains.

- **Delay:** Sets the amount of the Grain layer output sent to the global Delay send effect.
- **Reverb:** Sets the amount of the Grain layer output sent to the global Reverb send effect.

### 10.3. Delay

The global Delay send effect offers 24 different Delay types ranging from the classic sound of Tape Delays and BBDs (Bucket Brigade Device) to Diffused spacey delay effects. Modern and Clean types provide the tone of contemporary delay, alongside distinctive Ping-pong delay types. Modulating the Feedback control can create anything from soft, subtle echoes to intense exaggerated sonic artifacts, depending on the type and rate of modulation. Syncing the Delay time to the master clock enables you to create precise delay repeats that can be used for creating rhythmically complex patches.

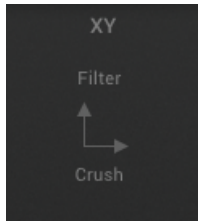


Send FX pane – Delay.

- **Active:** Activates the global Delay send effect.
- **< >:** Browses the different Delay types.
- **Delay Type:** Selects one from 24 Delay types.
- **Time:** Determines the Delay time of the global delay send effect. Note that continuous modulation of this parameter can cause a high CPU load.
- **Sync (crotchet icon):** Determines if the Delay time is set in milliseconds, ranging from 0.00ms to 2.0k ms, or in relation to the master clock as a musical duration. When the icon is lit, the Delay time is set as divisions of musical timing, which are displayed when the Time control is adjusted.
- **Feedback:** Determines the amount of feedback of the global Delay send effect.
- **Return:** Determines the return level of the global Delay send effect.

### 10.4. XY

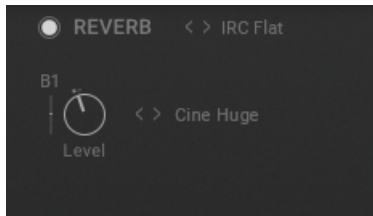
The XY Pad allows you to control the sound of the snapshot in realtime, according to the modulation assignments for the X and Y parameters. The axis labels indicate what parameter is being affected when moving the cursor.



Send FX pane – XY.

## 10.5. Reverb

The global Reverb send effect offers nine different Reverb types that provide varying spatial and sonic effects. Use the Wide Hall Reverb to add vast spaciousness to your Grain and Sample layers, or the Plate reverb for its character metallic tone and smooth tail. Room Reverbs can be used to add natural liveliness to the sound source, without losing detail in overly dense reverb tails. Modulating the reverb level can create interesting effects from soft swells to dramatic bursts of reverberant echo. Note, that the reverb is alternating between different reverb engines depending on the selected preset, this leads to different controls in the interface.

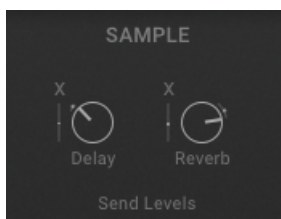


Send FX pane – Reverb.

- **Active:** Activates the global Reverb send effect.
- **< >:** Browses the different Reverb types.
- **Delay Type:** Selects one from nine Reverb types.
- **Time:** Determines the time or return (Impulse response mode) of the global Reverb send effect.
- **Size:** Determines the room size of the global Reverb send effect.
- **Level:** Determines the return level of the global Reverb send effect.

## 10.6. Sample

This section sets the Sample layer's Send Level to the global Delay and Reverb. These send levels can be individually modulated to create subtle movement or more erratic sonic effects.

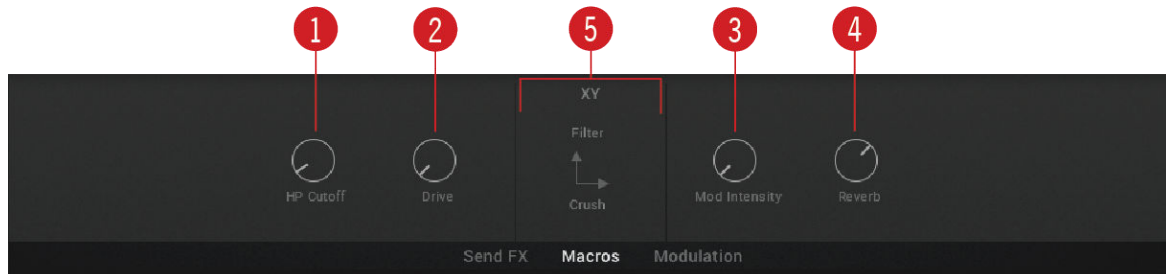


Send FX pane – SAMPLE.

- **Delay:** Sets the amount of the Sample layer output sent to the global Delay send effect.
- **Reverb:** Sets the amount of the Sample layer output sent to the global Reverb send effect.

## 11. MACROS PANE

The Macros are designed to give easy access to settings which are important in production, for example an lowpass filter, or controls that may require quick accessibility, like a Send FX.



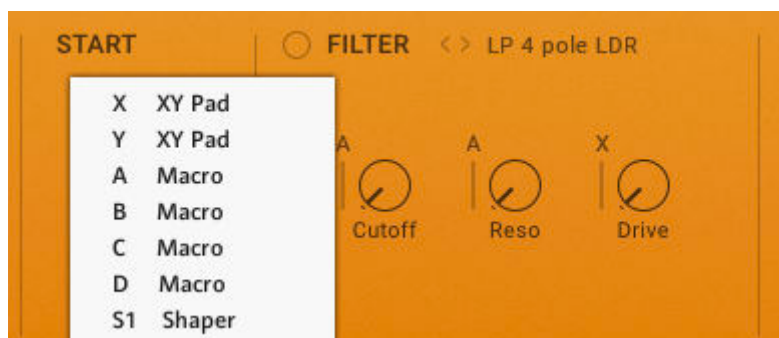
Macros pane.

- **(1) Macro A:** This top level parameter can be assigned to multiple modulation targets at once.
- **(2) Macro B:** This top level parameter can be assigned to multiple modulation targets at once.
- **(3) Macro C:** This top level parameter can be assigned to multiple modulation targets at once.
- **(4) Macro D:** This top level parameter can be assigned to multiple modulation targets at once.
- **(5) XY Pad:** Controls the sound of the snapshot according to the modulation assignments for the X and Y parameters. MIDI controllers for the XY pad can be assigned on the Masters page. For more information, refer to [XY Pad](#).

### 11.1. Macro and Modulation Assignment

The Macros should be assigned to parameters that give quick access to important production settings, but do not necessarily require real time control. To assign parameters to a Macro control:

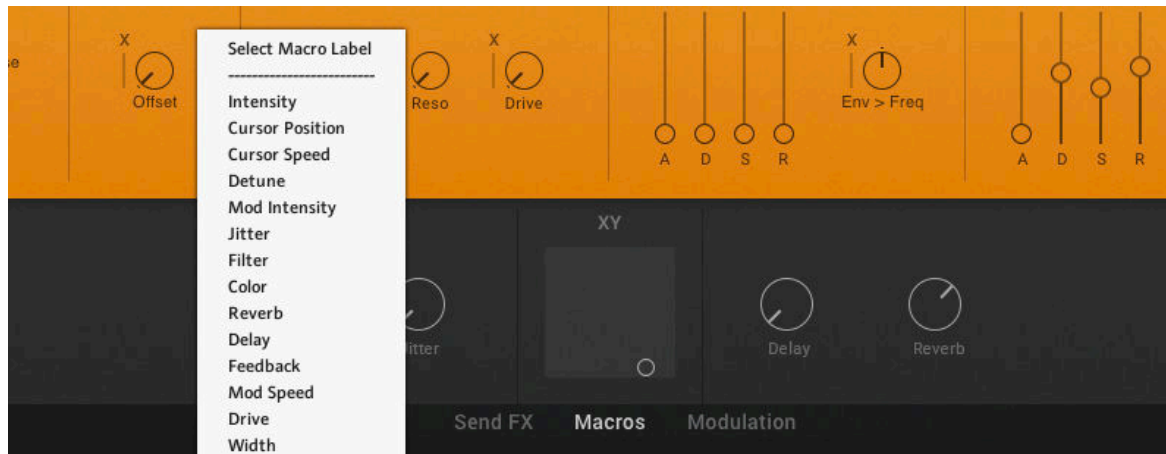
1. Click on the Modulation Connector of the parameter you wish to assign.
2. From the drop down menu, select the Macro control that you want the parameter to be assigned to.
3. If you want to assign multiple parameters to the same Macro control, repeat this process.
4. The assigned parameter/s will display an A, B, C or D, indicating the Macro they are assigned to.



Assigning a Macro control to a parameter

Assigning a label to the Macros can help quickly determine what the Macro control's primary function is. This is particularly useful if you are assigning multiple parameters to create a specific control. To assign a label to a Macro control:

1. In the Macros pane or the Perform page, click on the Macro control that you wish to assign to.
2. From the drop down menu, select the parameter you want to assign to the Macro control.
3. The label is now assigned to the Macro control.



Selecting a Macro label.

Below is a suggested setup for the Macro controls:

### Macro A - Filter / Bass Control

- Filter or EQ to quickly control the frequency range (bass)
- Other parameters mentioned in the XY section can go here when no bass control is required

### Macro B - Filter / Treble Control:

- Filter or EQ to quickly control the frequency range (treble)
- Other parameters mentioned in the XY section can go here when no treble Control is required

### Macro C - Motion

- Anything that creates motion in addition to the XY pad.

### Macro D - FX Amount (Reverb, Delay)

- FX level control, enabling you to quickly turn down effects levels.

## 12. MODULATION PANE

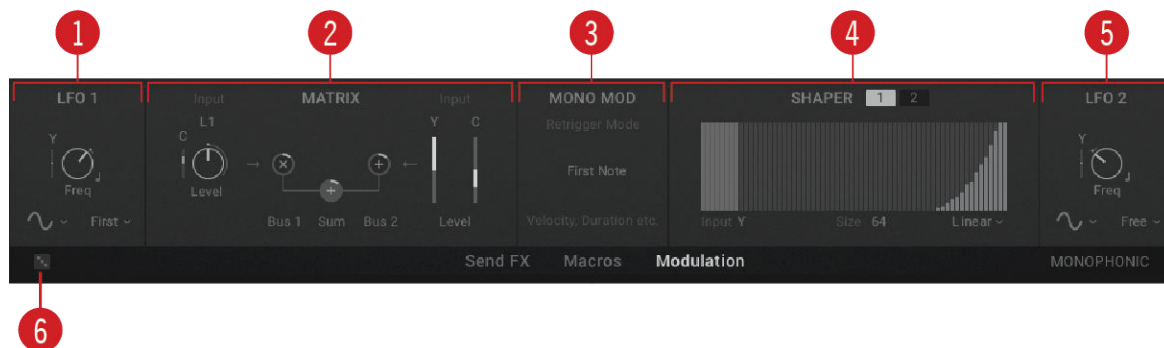
The Modulation pane is where the STRAYLIGHT comes to life, hosting the modulation sources that bring movement and dynamics to your sound. The Modulation pane contains two LFO, two Shapers and a Matrix for altering and combining modulation sources. The powerful routing Matrix encourages interesting modulation combinations that inspire creativity and foster unique sonic results. In this section you can create elaborate modulation sources tailored to your Sample and Grain layers. Use the Matrix section to combine multiple modulators, for example an LFO and a Macro control, to create a complex chain of modulators that allow for intricate shaping and manipulation. Due to the option of modulator chaining, all modulators are unipolar.

The modulation direction can be simply swapped by holding [Option+Shift] whilst clicking on each knob. Hold down [Option] on a Modulation knob to adjust the knob value and the modulation range simultaneously.

The signal of the individual voices is mixed down to one stereo stream at the output of the corresponding layer engine, before the FX chain is entered. Polyphonic modulation is only possible before the mix down.

### 12.1. Overview

The following overview shows you all sections on the Modulation pane.



Modulation pane.

- **(1) LFO 1:** A modulation source that can be assigned to adjust parameters of the STRAYLIGHT. For more information, refer to [LFO 1](#).
- **(2) MATRIX:** Contains two Buses, which can either work in attenuation or summing mode. For more information, refer to [Matrix](#).
- **(3) XY Pad:** Controls the sound of the snapshot according to the modulation assignments for the X and Y parameters.
- **(4) SHAPER:** A Shaper is used to define a new output value for every input value. For more information, refer to [Shaper](#).
- **(5) LFO 2:** A modulation source that can be assigned to adjust parameters of the STRAYLIGHT. For more information, refer to [LFO 2](#).
- **(6) Randomize:** Produces random values for all parameters in the Modulation pane.

## 12.2. LFO 1

The Modulation pane provides two LFOs which can be assigned to modulate parameters of the STRAYLIGHT. Combining different LFOs in the Bus Matrix can create complex modulation sources that unfold slowly over time. Eight different waveforms provide options for intricate modulation effects, and five Trigger modes determine the behavior of the LFO.



Modulation pane – LFO 1.

- **Freq:** Sets the oscillation frequency of the LFO. This parameter can be synchronized to the master clock.
- **Sync (crotchet icon):** Determines if the LFO speed is set in Hertz or in relation to the master clock as a musical duration. When the icon is lit, the LFO speed is set as divisions of musical timing, which are displayed when the Freq control is adjusted.
- **Waveform Type:** Select the Waveform type from Sine, Triangle, Square, Ramp up, Ramp down, Random, Seek 1 and Seek 2. Seek 1 and Seek 2 provide smooth, random LFOs.
- **Trigger Mode:** Selects one of five modes (Free, First, Retrigger, Once, 1st 1x), which determines the retrigger behavior of the LFO. **Free** mode provides polyphonic modulation with random start phase. **First** mode restarts the LFO with the first note only. In **Retrig** mode, the LFO restarts for each key pressed. **Once** mode triggers only one LFO cycle. **1st 1x** triggers one LFO cycle for the first note only.

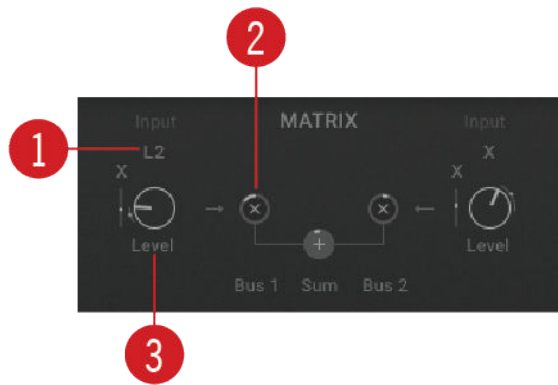
## 12.3. Matrix

The Matrix section is where you can combine sources to create more complex modulators. The Matrix contains two Buses, which can either work in Attenuation or Summing mode. Each Bus features two inputs which are processed and sent to the modulation targets Bus 1 and Bus 2. These two Buses can then be individually sent to any assignable parameter. The

In Attenuation mode, as indicated by an **x**, the attenuator works as a multiplier. In Summing mode, as indicated by a **+**, the two modulation sources are added together. Each Bus can be assigned to a different mode and there is also the Sum of both buses available as a modulation source. You can monitor the result of each Matrix output with level indicators.

### Attenuation Mode

The following controls are available in Attenuation mode. Controls are the same for Bus 2.

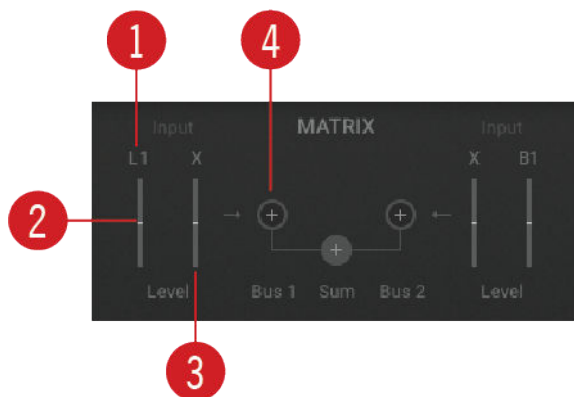


Modulation pane – Matrix in Attenuation mode.

- (1) **Modulation Source:** Selects the modulation source applied to this parameter. Note that some modulations, for example the Grain parameters, are polyphonic and others are mono-phonic.
- (2) **Bus 1 Mode:** Determines whether the corresponding Matrix Bus works as a modulatable attenuverter/multiplier or as a simple modulation source mixer which adds the two modulation signals together.
- (3) **Bus 1 Level:** Determines if the input value is decreased, amplified or optionally inverted. The result is available as Bus 1 in the Modulation source menu. The range spans from -200% to 200%.

## Summing Mode

The following controls are available in Summing mode. Controls are the same for Bus 2.



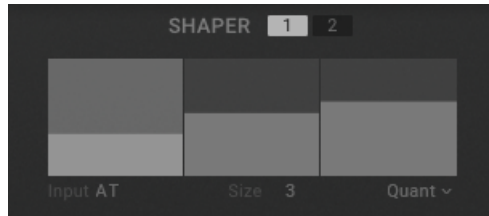
Modulation pane – Matrix in Summing mode.

- (1) **Modulation Source:** Selects the modulation source applied to this parameter. Note that some modulations, for example the Grain parameters, are polyphonic and others are mono-phonic.
- (2) **Bus 1 Mix 1:** Determines if the input modulation value is decreased or optionally inverted and subsequently summed to Matrix Bus 1. The range comprises -100% to 100%.
- (3) **Bus 1 Mix 2:** Determines if the input modulation value is decreased or optionally inverted and subsequently summed to Matrix Bus 1. The range comprises -100% to 100%.
- (4) **Bus 1 Mode:** Determines whether the corresponding Matrix Bus works as a modulatable attenuverter/multiplier or as a simple modulation source mixer which adds the two modulation signals together.



## 12.4. Shaper

The Modulation pane provides two Shapers that can be used to define a new output value for every input value. By using an LFO as the input of the Shaper and painting in the desired curve, you can generate many different types of waveforms. This enables you to create more interesting and elaborate modulation sources, that can achieve targeted results. The Shaper also offers different options of interpolation, which allows for smooth transition from one step to the next.

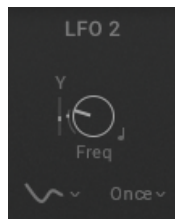


Modulation pane – Shaper 1.

- **1/2:** Toggles between the two available Shapers.
- **Input Source:** Selects the modulation source that is applied to the Shaper.
- **Size:** Determines how many steps the Shaper provides. The maximum number of steps is 128.
- **Interpolation Mode:** Determines how the Shaper interpolates when transitioning from one step to the next.

## 12.5. LFO 2

The second LFO provided in the Modulation pane can be assigned to modulate parameters of the STRAYLIGHT. Eight different waveforms provide options for varied modulation effects, and five Trigger modes offer further control over the behavior of the LFO. Use the Bus Matrix to combine multiple LFOs and create elaborate modulation sources that evolve unexpectedly over an extended period of time.



Modulation pane – LFO 2.

- **Freq:** Sets the oscillation frequency of the LFO. This parameter can be synchronized to the master clock.
- **Sync (crotchet icon):** Determines if the LFO speed is set in Hertz or in relation to the master clock as a musical duration. When the icon is lit, the LFO speed is set as divisions of musical timing, which are displayed when the Freq control is adjusted.
- **Waveform Type:** Select the Waveform type from Sine, Triangle, Square, Ramp up, Ramp down, Random, Seek 1 and Seek 2. Seek 1 and Seek 2 provide smooth, random LFOs.
- **Trigger Mode:** Selects one of five modes (Free, First, Retrigger, Once, 1st 1x), which determines the retrigger behavior of the LFO. **Free** mode provides polyphonic modulation with random start phase. **First** mode restarts the LFO with the first note only. In **Retrigger** mode, the LFO re-

starts for each key pressed. **Once** mode triggers only one LFO cycle. **1st 1x** triggers one LFO cycle for the first note only.

## 13. EFFECT REFERENCE

In this section you are introduced to all available effects and to all the modes they can be operated in.

### 13.1. Delay

This delay module is based on Native Instruments' dedicated Replika XT delay plug-in. It features different modes - Modern, BBD, Tape, Vintage and Diffusion - that add distinct color to your sound. All modes offer controls for time, feedback level, a low cut filter, a high cut filter, and ping pong effect. Each mode also provides a unique range of parameter controls to tailor the effect to your specific needs.



Delay effect.

### Parameters

The following parameters are available for all effect modes:

- **Time:** Adjusts the delay time in milliseconds. To synchronize the time to your host or Master Editor tempo, click the Time control's unit display [ms] and choose a note length value from the drop-down menu.
- **FX Sync:** Sets the effect's time based parameter in sync with the master clock.
- **Feedback:** Adjusts the level of the signal that is fed back to the delay's input. Increasing Feedback adds delay repeats. Levels above 100% create swelling echo repeats up to self-oscillation.
- **Level:** The range is from 100 / 0 % to 0 / 100 %.

### Effect Modes

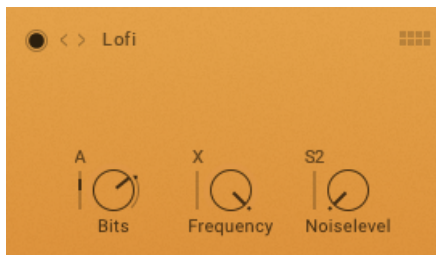
The following effect modes and its variations are available:

- **Modern (Saturation, Dark, Ping Pong):** Modern mode is a clean delay, with saturation and filter controls that allow you to add warmth and color to your sound. It is a pristine and transparent delay, well-suited to acoustic instruments like guitar and piano. When changing the delay time, pitch stays constant.
- **BBD (Clean, Warm, Dark, Grunge, Ping Pong, Vibrato LR):** Analog mode offers four Bucket Brigade delay models that replicate the character sound of BBD chips. From subtle distortion and warmth, to clean, smooth sounds, each model emulates desired characteristics of classic analog delay units.

- **Tape (Fresh, Vintage, Dark, Dark LR):** Tape mode reproduces the sound of tape delay, modeled on the physical mechanisms that make up early tape machines. Controls for Tape Age, Flutter and Saturation allow you manipulate the noise, hiss and color of the effect.
- **Vintage (Ping Pong, Mod, BP):** Vintage mode emulates the sound of early digital delay units. Select between four quality levels that model the behavior of vintage delays with a limited sample memory size. Increasing the delay time causes the sampling rate to decrease, introducing audio artifacts. The sample quality and interpolation vary for each of the four quality levels.
- **Diffusion (Dense, Small LR, Gentle, Cloud Pan, 4 Times):** Diffusion mode can produce a standard delay effect, but it is best used for its huge, diffusion-based reverb sound. Thicken the density of delay repeats with the Dense, Modulation and Size controls to create a full sounding reverb effect. This mode is ideal for ambient music and sound design.

## 13.2. Drive

The Drive effect can be used to apply specific saturation to the sound. Several effect modes for different saturation sounds are available which are explained in more detail below.



Drive effect.

### Lofi

This module adds various digital artifacts, like quantization noise or aliasing, to a clean signal. It's great for roughing up sounds that would otherwise be too plain and featureless.

The following parameters are available:

- **Bits:** Re-quantizes the signal to an adjustable bit depth. Fractional bit levels (such as 12.4 bits) are possible and can add considerable "grit". Audio CDs have a quantization depth of 16 bits, old samplers frequently used 8 or 12 bits, and 4 bits evoke memories of countless irritating children's toys.
- **Frequency:** Adjusts the frequency characteristic of the noise and acts as a low-pass filter.
- **Noiselevel:** Adds hiss to the audio signal.

### Tape

The Tape Saturator emulates the soft compression and distortion of recording to tape. It can be used lightly to add warmth and coloring to the sound, or heavily to add aggressive distortion.

The following parameters are available:

- **Gain:** Controls the input gain of the effect. This will increase the amount of tape distortion and compression.
- **Warmth:** Controls the low frequency boost/cut of the effect.

- **Damp:** Attenuates high frequencies in the output signal, thereby counteracting the brightness caused by the artificial harmonics.

## Jump Treble, Jump Hi Gain

The Jump effect simulates the classic tone of British guitar amplifiers. It is ideal for creating smooth, singing lead sounds. The Jump effect is available on both the Group and Instrument level.

The following parameters are available:

- **Preamp:** Sets the amount of gain added by the preamp. Turning it clockwise adds drive, distortion and edge to the sound.
- **Treble:** Adjusts the high frequency response.
- **Master:** Adjusts the amp's master volume.

## Twang Bright, Twang Bite

The Twang effect simulates the rich tube sound of classic guitar amps from decades ago. It's ideal for screaming leads and crunchy rhythm guitar sounds, as well as clean sounds with personality.

The following parameters are available:

- **Gain:** Controls the input level. In contrast to the Output knob, which merely adjusts the overall level of the module, this knob works like the gain control of a guitar amp and affects the amount of distortion.
- **Bass:** Adjusts the level of the signal's low frequency components.
- **Treble:** Adjusts the level of the signal's high frequency components.

## Tube Crunch

The following parameters are available:

- **Drive:** Adjusts the amount of distortion.
- **Treble:** Adjusts the level of the signal's high frequency components.
- **Master:** Adjusts the amp's master volume.

## Tube Creamer

The following parameters are available:

- **Tone:** Controls the brightness of the sound. Turning this knob clockwise will result in a more pronounced top-end, which works great on bright, screaming leads and biting rhythms. Turning it counter-clockwise results in a mellower, darker sound.
- **Output:** Adjusts the module's output level.

## Enh Shaping

The following parameters are available:

- **Drive:** Adjusts the amount of distortion.
- **Output:** Adjusts the module's output level.

## Tube Warming

The following parameters are available:

- **Drive:** Adjusts the amount of distortion.
- **Damp:** Attenuates high frequencies in the output signal, thereby counteracting the brightness caused by the artificial harmonics.
- **Output:** Adjusts the module's output level.

## AC Box Brilliant, AC Box Trem

The ACBox models the guitar amplifier sound that powered the British Invasion of pop music. There were many versions of this highly original amp made, each having a different character. We chose a model that stands out with a unique flavor and includes the famous Top Boost channel!

The following parameters are available:

- **Gain:** Sets the level for the Brilliant channel.
- **Hi Cut:** Controls a low-pass filter. By turning the knob clockwise treble in the output of the Normal channel is reduced.
- **Output:** Adjusts the module's output level.

## 13.3. Dyn

The Dyn (Dynamics) effect can be used, for example, to reduce the level of loud passages in the audio signal. The available parameters and effect modes are explained in more detail below.



Dyn (Dynamics) effect.

### Parameters

The following parameters are available. Their appearance depend on effect mode:

- **Threshold:** Sets a level threshold above which the Compressor starts working. Only levels that rise above this threshold will be reduced by the compression; signals that stay below it will be left unprocessed.
- **Ratio:** Controls the amount of compression, expressed as a ratio of “input level change” against “output level change”. A Ratio of 1:1 means that no compression will be happening. For example, a Setting of 4 represents the ration 4:1, which means for every 4 decibel increase of amplitude above the threshold, the output will increase by only 1 decibel.
- **Makeup:** Controls the output gain of the compressed signal. Used to compensate for the gain reduction of the effect.

- **Input:** Controls the input gain to the effect.
- **Attack:** Adjusts the time the Compressor will take to reach the full Ratio value after an input signal exceeds the Threshold level.
- **Sustain:** Controls the scaling of the sustain portion of the input signal's volume envelope. Increasing this parameter will add more body to the sound and decreasing it will reduce the sound's tail.
- **Release:** Adjusts the time the compressor will take to fall back to non-compression after the input signal falls below the threshold.
- **Output:** Controls the module's output level.

## Bus Comp Effect Modes

Compressors are dynamic tools which automatically reduce the level of loud passages in a signal, thereby affecting the signal's dynamic range. The Solid Bus Comp is modeled after a classic analog bus compressor. It offers a more characteristic dynamic control than KONTAKT's standard compressor.

## Feedback Comp Fast Effect Modes

Compressors are dynamic tools that automatically reduce the level of loud passages in a signal, thereby affecting the signal's dynamic range. A feedback compressor is a type of compressor that compares the amplifier's output signal, rather than the input signal, to a threshold level. When the threshold level is reached, the compressor reduces the signal's gain level. The Feedback Compressor is modeled after a classic feedback compressor known for its bright and punchy sound.

## Transient Master

The Transient Master is an easy to use compressor designed to control the attack and sustain of a sound. Instead of following the amplitude of the sound like a traditional compressor, it follows the general envelope and is thus not as susceptible to changes of input gain. It is best used on sounds with fast attacks, like percussion, pianos or guitars. The Transient Master can also be quite extreme in some cases, so use it with caution.

## Limiter

Limiters are actually a special form of compressors with a ratio of one to infinity, a threshold just below the maximum level, and a very short attack time. They act as a "safety net" to keep short signal peaks from overloading the system, which would result in audio clipping. While compressors have a range of artistic applications, limiters are usually used for technical reasons — they can tame signals with peaks which would otherwise overload the output, without requiring you to turn the signal's overall volume down.

## 13.4. EQ

Fully parametric peak equalizers allow for a wide range of tonal alterations and corrections. Use the EQ to boost or cut selective frequencies of the audio signal. The EQ is mainly a tool to tailor your audio signal to taste by cutting out selected frequencies or boosting others. The EQ can be operated in a 1 Band EQ and in a 3 Band EQ which are explained in more detail below.

## 1 Band EQ

The 1 Band EQ is a simple equalizer.



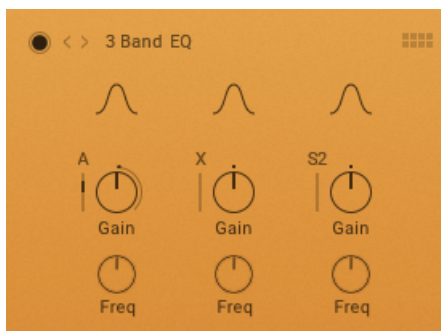
1 Band EQ effect.

The following parameters are available:

- **Freq.** (Frequency): Adjusts the center frequency at which the boost or cut will occur.
- **Width** (Bandwidth): Adjusts the width of the frequency range that will be affected in octaves (bell shape).
- **Gain**: Adjusts the amount of boost (positive values) or cut (negative values) at the center frequency.

## 3 Band EQ

Using up to three EQ bands, you can boost or cut any frequency range throughout the entire spectrum by up to 18 dB, with an adjustable Bandwidth parameter allowing you to choose between gentle corrections or very steep edits.



3 Band EQ effect.

The following parameters are available:

- **Equalizer Q**: Controls the Quality (or Q) of the frequency band. For most EQs, the higher the quality, the narrower the frequency band. For most EQs, the higher the quality, the narrower the frequency band, but with this EQ the control is reversed to match the hardware it emulates and becomes a bandwidth control.
- **Gain**: Adjusts the amount of boost (positive values) or cut (negative values) at the center frequency.
- **Freq.** (Frequency): Adjusts the center frequency at which the boost or cut will occur.



## 13.5. Filter

A filter is a signal processor which changes the frequency content of a signal that passes through it. This means that in contrast to effects like distortion, reverb, or chorus, it only changes the amplitude and phase of frequency components which are already present in your signal, without creating new frequency content.



Filter effect.

### Parameters

The following parameters are available depending on the effect mode:

- **Cutoff:** Adjusts the frequency below which signals will be attenuated.
- **Reso:** With a value greater than 0, this control will boost a small frequency range around the cutoff frequency.
- **Width:** Controls the gap between the cutoff frequencies of the two filters, with the low-pass filter's cutoff always above that of the high-pass. The gap is generated around a central point controlled by the Cutoff control.
- **Drive:** Adjusts the amount of distortion.
- **Gain:** Controls the amplitude increase after the filter. This control can be used to compensate for amplitude reduction due to the filter, or to increase the soft saturation of the effect.
- **HP Cutoff:** Controls the cutoff frequency of the High Pass filter.
- **LP Cutoff:** Controls the cutoff frequency of the Low Pass filter.
- **Talk:** Controls the frequency response of the filter. Can be used to morph between vowel-sounds.
- **Sharp:** Increases and decreases the peaks and notches in the response respectively, analogous to the resonance control of the other filters.
- **Size:** Controls the center of the frequency response, analogous to the cutoff control of the other filters.

### LP Ladder 2 Pole

Based on the classic ladder circuit used in early synthesizers, these filters would be a first choice for synthetic sounds, but can work well on any signal. The LP2 is a 2-pole low-pass, which attenuates frequencies above the cutoff at a rate of -12 dB/octave.

## LP Ladder 4 Pole

Based on the classic ladder circuit used in early synthesizers, these filters would be a first choice for synthetic sounds, but can work well on any signal. The LP4 is a 4-pole low-pass, which attenuates frequencies above the cutoff at a rate of -24 dB/octave. The Ladder LP4 filter also includes the following controls:

## LP SV 2 Pole

The State Variable (SV) filters have a clean characteristic that can be used for all kinds of audio signals. The LP2 is a 2-pole low-pass, which attenuates frequencies above the cutoff at a rate of -12 dB/octave.

## LP SV 4 Pole

The State Variable (SV) filters have a clean characteristic that can be used for all kinds of audio signals. The LP4 is a 4-pole low-pass, which attenuates frequencies above the cutoff at a rate of -24 dB/octave.

## HP Ladder 2 Pole

Based on the classic ladder circuit used in early synthesizers, these filters would be a first choice for synthetic sounds, but can work well on any signal. The HP2 is a 2-pole high-pass, which attenuates frequencies below the cutoff at a rate of -12 dB/octave. The Ladder HP2 filter also includes the following controls:

## HP Ladder 4 Pole

Based on the classic ladder circuit used in early synthesizers, these filters would be a first choice for synthetic sounds, but can work well on any signal. The HP4 is a 4-pole high-pass, which attenuates frequencies below the cutoff at a rate of -24 dB/octave. The Ladder HP4 filter also includes the following controls:

## HP SV 2 Pole

The State Variable (SV) filters have a clean characteristic that can be used for all kinds of audio signals. The HP2 is a 2-pole high-pass, which attenuates frequencies below the cutoff at a rate of -12 dB/octave.

## HP SV 4 Pole

The State Variable (SV) filters have a clean characteristic that can be used for all kinds of audio signals. The HP4 is a 4-pole high-pass, which attenuates frequencies below the cutoff at a rate of -24 dB/octave.

## BP Ladder 2 Pole

Based on the classic ladder circuit used in early synthesizers, these filters would be a first choice for synthetic sounds, but can work well on any signal. The BP2 is a 2-pole band-pass, which attenuates frequencies above and below the cutoff at a rate of -12 dB/octave. The Ladder BP2 filter also includes the following controls:

## BP Ladder 4 Pole

Based on the classic ladder circuit used in early synthesizers, these filters would be a first choice for synthetic sounds, but can work well on any signal. The BP4 is a 4-pole band-pass, which attenuates frequencies above and below the cutoff at a rate of -24 dB/octave. The Ladder BP4 filter also includes the following controls:

## BP SV 2 Pole

The State Variable (SV) filters have a clean characteristic that can be used for all kinds of audio signals. The BP2 is a 2-pole band-pass, which attenuates frequencies above and below the cutoff at a rate of -12 dB/octave.

## BP SV 4 Pole

The State Variable (SV) filters have a clean characteristic that can be used for all kinds of audio signals. The BP4 is a 4-pole band-pass, which attenuates frequencies above and below the cutoff at a rate of -24 dB/octave.

## LP HP

This very clean sounding filter lacks any pronounced resonance and is ideally suited for removal of low frequency rumble and high frequency issues like harshness and excessive noise without coloring the filtered signal.

The HP filter is a 2-pole (12 dB/octave), whereas the 1-pole LP has a more gentle slope of 6 dB/octave.

## Phaser

This effect continually changes the phase relationships in your signal with an all-pass filter. This results in a comb filtering effect, which attenuates some frequencies while boosting others. The sound is similar to that of a Flanger but in a more subtle manner.

## Vowel A

This filter simulates the resonant frequencies of the human vocal tract; when forming a vowel, the throat and mouth cavities will change their shape in order to create a complex, natural filter which emphasizes certain frequencies in the sound created by the vocal chords. These characteristic frequencies, called formants, allow the human hearing to discern between different vowels, and are being replicated by this filter.

## Vowel B

This filter works similarly to the Vowel A module, but has a slightly different sonic character.

## Formant

Formants are acoustic resonances. The term often applies to the phonetics of human speech, as such, the formant filters are designed to mimic the frequency response of the human vocal tract. These filters can be used to emulate the “talk box” effect.

## LP Draft

The Daft filter has been adapted from MASSIVE and is a more aggressive synthesizer filter design. The response of the filter is a 2-pole low-pass, which attenuates frequencies above the cutoff at a rate of -12 dB/octave. The daft filter also includes a **Gain** knob that controls the amplitude increase after the filter. This control can be used to compensate for amplitude reduction due to the filter, or to increase the soft saturation of the effect.

## HP Draft

The Daft filter has been adapted from MASSIVE and is a more aggressive synthesizer filter design. The response of the filter is a 2-pole high-pass, which attenuates frequencies below the cutoff at a rate of -12 dB/octave. The Daft filters also include the following controls:

## Notch SV4 Pole

The State Variable (SV) filters have a clean characteristic that can be used for all kinds of audio signals. The Notch 4 is a 4-pole notch filter, which attenuates frequencies at the cutoff.

## AR LP 2

The Adaptive Resonance (AR) filters follow the amplitude of the input signal and adjust the resonance accordingly. At higher input levels, the resonance will reduce, and for lower levels it will increase, this avoids unpleasant peaks. These filters work best on full loops or drums. The LP2 is a 2-pole low-pass, which attenuates frequencies above the cutoff at a rate of -12 dB/octave.

## AR LP 4

The Adaptive Resonance (AR) filters follow the amplitude of the input signal and adjust the resonance accordingly. At higher input levels, the resonance will reduce, and for lower levels it will increase, this avoids unpleasant peaks. These filters work best on full loops or drums. The LP4 is a 4-pole low-pass, which attenuates frequencies above the cutoff at a rate of -24 dB/octave.

## AR HP 2

The Adaptive Resonance (AR) filters follow the amplitude of the input signal and adjust the resonance accordingly. At higher input levels, the resonance will reduce, and for lower levels it will increase, this avoids unpleasant peaks. These filters work best on full loops or drums. The HP2 is a 2-pole high-pass, which attenuates frequencies below the cutoff at a rate of -12 dB/octave.

## AR BP 2

The Adaptive Resonance (AR) filters follow the amplitude of the input signal and adjust the resonance accordingly. At higher input levels, the resonance will reduce, and for lower levels it will increase, this avoids unpleasant peaks. These filters work best on full loops or drums. The BP2 is a 2-pole band-pass, which attenuates frequencies below and above the cutoff at a rate of -12 dB/octave.

## HP LP Serial

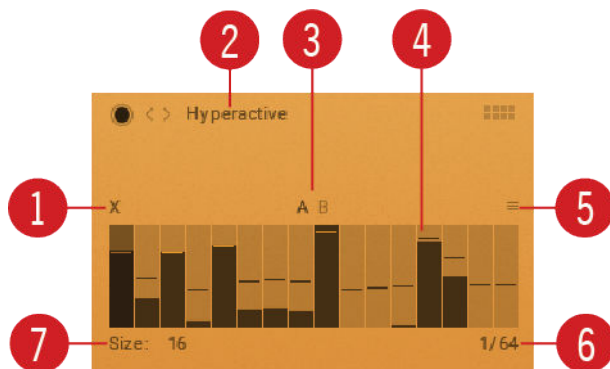
The State Variable (SV) filters have a clean characteristic that can be used for all kinds of audio signals. The Ser. LP/HP is the combination of a high-pass filter routed serially after a low-pass filter. The result is similar to a band-pass filter.

## 13.6. Gater

The Gater controls the volume of a sound with the help of two step sequencers. This can be used to rhythmically chop the signal and make it stutter or sound staccato. The Gater has two individual rhythms **A** and **B** which you can crossfade using the applied modulation source.



The Gater effect can only be used once in STRAYLIGHT.

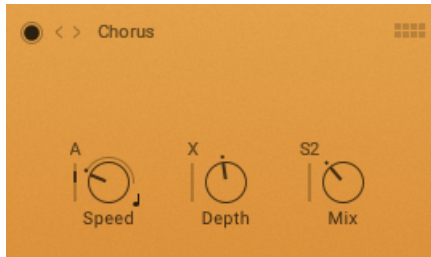


Gater effect.

- (1) **Modulation Connector:** Selects the modulation source to be applied to the parameter.
- (2) **Presets:** Selects a preset for the Gater effect.
- (3) **Rhythm A and B:** Switches between the rhythms **A** and **B**.
- (4) **Stepping area:** Adjust the steps for the selected rhythm by dragging the bars up or down.
- (5) **Context menu:** With the options in this menu you can, for example, copy or swap the rhythms from **A** to **B**.
- (6) **Division of musical timing:** Determines how fast the Gater is stepping forward. You can select from 1/4 to 1/ 64 of a beat.
- (7) **Size:** Determines how many steps the Gater provides. You can select between 2 to 32 steps.

## 13.7. Mod

The Mod (Modulation) effect modifies the sound in certain ways. Depending on the selected effect mode, the effect can, for example, "thicken" the sound or split the audio signal up and delays one version in relation to the original signal. The available effect modes with all parameters are explained in more detail below.



**Mod (Modulation) effect.**

## Chorus and Chorus Phase

The Chorus module “thickens” the audio signal by splitting it up and detuning one version in relation to the original. Separate LFOs with an adjustable phase relationship detune each stereo channel independently for creating wide-panorama effects.

- **Speed:** Adjusts the LFO speed. To synchronize the speed to your host or Master Editor tempo, click the Speed parameter’s unit display and choose a note length value from the drop-down list.
- **FX Sync:** Sets the effect's time-based parameters in-sync with the master clock.
- **Depth:** Adjusts the range of modulated detuning. Higher values give a more pronounced chorusing effect.
- **Mix:** Adjusts the respective levels of the original and processed signals. Note that the typical phasing effect is created by the combination of both signals, so setting these to the same levels results in the most pronounced effect.

## Flanger and Flanger Color and Flanger Reso

This module splits the audio signal up and delays one version in relation to the original signal. By modulating the delay time, as well as feeding an adjustable amount of the output signal back into the input, the Flanger creates a characteristic “whooshing” sound. Just like the Phaser module, the Flanger uses a separate LFO for each stereo channel, with the phase relationship between both LFOs being adjustable.

## Phaser Subtle and Phaser Feedback

This effect continually changes the phase relationships in your signal with an all-pass filter. This results in a comb filtering effect, which attenuates some frequencies while boosting others. The sound is similar to that of a Flanger but in a more subtle manner.

**FX Sync:** Sets the effect's time-based parameters in sync with the master clock.

- **Speed:** The LFO modulation speed. To synchronize the speed to your host or Master Editor tempo, click the Speed control’s unit display and choose a note length value from the drop-down list.
- **FX Sync:** Sets the effect's time-based parameters in-sync with the master clock.
- **Depth:** The amount of LFO modulation. Higher values cause the Phaser effect to sweep over a wider frequency range.
- **Mix:** Adjusts the respective levels of the original and processed signals. Note that the typical phasing effect is created by the combination of both signals, so setting these to the same levels results in the most pronounced effect.

## Rotator and Rotator Room and Rotator Slow Acc and Rotator Fast Acc

The Rotator effect realistically simulates the sound of rotating speaker cabinets, which are commonly associated with drawbar organs that became popular in rock music of the 60s and 70s. Although the effect is almost intrinsically tied to "the" prototypical drawbar organ sound, it works equally well on guitars, synth pads, and a wide range of other sounds.

- **Speed:** Although this parameter appears as a knob in order to facilitate automation, it has two positions Slow and Fast. A change of this setting realistically simulates the acceleration or braking of the rotor.
- **Balance:** Controls the relative levels of the cabinet's treble and bass parts.
- **Wet:** Adjusts the level of the original and processed signal.

## Choral Synth, Feedback, Ensemble, Dimension, and Sauce

Choral features four distinct chorus modes, ranging from the subtle sound of classic studio rack processors to the large ensemble sound of early string synthesizers. Choral contains the following effects:

- **Synth:** This mode is inspired by the choruses of polyphonic synthesizers from the late seventies and early eighties. Its sound characteristic is dark and vintage. The modulation behavior is tuned for rich and dispersed sounds.
- **Ensemble:** This mode is inspired by the choruses of string synthesizers from the seventies. Its sound characteristic is warm and lush. The modulation behavior is tuned for animated and lively sounds.
- **Dimension:** This mode is inspired by the choruses of studio rack processors from the early eighties. Its sound characteristic is bright and transparent. The modulation behavior is tuned for wide and consistent sounds.
- **Universal:** This mode is a more generic chorus implementation. Its sound characteristic is clean and modern. The modulation behavior is tuned for a range of sounds from consistent to lively, depending on the number of Voices.

### Choral Parameters

- **Mix:** Adjusts the respective levels of the original and processed signals. Note that the typical phasing effect is created by the combination of both signals, so setting these to the same levels results in the most pronounced effect.
- **Depth:** Adjusts the range of modulated detuning. Higher values give a more pronounced chorusing effect.
- **Speed:** Adjusts the LFO speed. To synchronize the speed to your host or Master Editor tempo, click the Speed parameter's unit display and choose a note length value from the drop-down list.

## Flair Standard, Resonance, Unison, Scan on C, Stairways

Flair features five flanger modes that offer different approaches to a range of effects from flanging to harmonization. The effect is produced by up to four comb filters, called Voices. Further expanding on the original concept of a flanger, the flanger voices have a harmonic relationship based on a wide selection of preset chords (Chord parameter).

Flair contains the following effects:

- **Standard:** Each flanger voice behaves like a basic flanger effect, creating harmonically related peaks and notches in the frequency spectrum
- **Thru Zero:** Each flanger voice is duplicated. The duplicated instances of the flanger voices are excluded from the modulation and thus rest at their respective base pitch. When modulation is introduced, the flanger voices shift against the duplicated instances in time. This creates the strong thru zero flanging effect with its characteristic signal cancellation, similar to the flanging effect originally created with two tape machines.
- **Scan:** Instead of adding the flanger voices to form a chord, the effect scans through them one after the other. This is similar to how an arpeggiator on a keyboard plays the notes contained in a chord as a sequence.
- **Scan on C:** A “ringing” tone is added in the key of C.
- **Stairways:** An ascending resonance is created.

#### Flair Parameters

- **Speed:** The LFO modulation speed. To synchronize the speed to your host or Master Editor tempo, click the Speed control’s unit display and choose a note length value from the list.
- **FX Sync:** Sets the effect's time-based parameters in-sync with the master clock.
- **Depth:** The amount of LFO modulation. Higher values cause the effect to sweep over a wider frequency range.
- **Mix:** Adjusts the respective levels of the original and processed signals.

### Phasis Animator, 6 Notches, Complex Low, and High Scanner

Phasis is a new take on the phaser concept with additional features that have been carefully chosen to allow for more sophisticated and extreme sounds than possible with common phasers while staying true to the ease of use and clarity associated with these devices.

Phasis contains the following effects:

- **Animator:** classic, subtle two-notch phaser stereo effect.
- **6 Notches:** medium phaser effect with higher resonance.
- **Complex Low:** Complex nine-notch phaser with the center frequency in the lower spectrum at around 300 Hz.
- **High Scanner:** intense four-notch phaser effect in the upper mid-range at 3.2 kHz and obvious feedback setting.

#### Phasis Parameters

- **Speed:** The LFO modulation speed. To synchronize the speed to your host or Master Editor tempo, click the Speed control’s unit display and choose a note length value from the list.
- **FX Sync:** Sets the effect's time-based parameters in-sync with the master clock.
- **Depth:** The amount of LFO modulation. Higher values cause the effect to sweep over a wider frequency range.
- **Mix:** Adjusts the respective levels of the original and processed signals.



## 13.8. Rev

With the Rev (reverb) effect you can adjust the size of the sound.



Rev (Reverb) effect.

### IRC Flat and Low Cut

This module simulates the natural reverberation that occurs when a sound source is placed in an acoustic environment, thus adding a feeling of spaciousness to the sound.

The following parameters are available:

- **Level:** Adjusts the reverb's output level.
- **Room size menu:** Adjusts the size of the simulated room. This affects the duration of the reverb trail.

### ALG Effect Modes

This algorithmic reverb offers Room and Hall modes. Room mode generates a natural reverb with strong initial reflections and a quick decay. You can use this to simulate the natural sound of a small acoustic space. With a faster reverberation time, it is particularly suited to drums and guitars.

Hall mode emulates the immensity of a large hall space, with a warm and rich sounding reverb. This can be used to replicate a vast, natural space. The large reverberation and long decay time make it a great tool to experiment with on a variety of sounds.

The following parameters are available:

- **Time:** Adjusts the duration of the reverb effect.
- **Size:** Adjusts the size of the room simulated by the reverb effect. Higher values replicate larger rooms.
- **Level:** Adjusts the reverb's output level.

### ALG Plate

Plate reverb was developed as an early method of generating an artificial reverb effect. A vibrating sheet of metal is employed to simulate reflection patterns in acoustical spaces. Since the sheet of metal vibrates across a two-dimensional plane, the echo density is higher and more evenly distributed than in a three-dimensional space. It is a good choice if you want to brighten a sound source. Plate reverb has a smooth reverb tail, allowing you to lengthen a sound without pushing it back in the mix. For this reason plate reverbs are most commonly used on vocals and snare drums. The Damping control affects the overall tone, so applying it to a bright source warms the sound.

The following parameters are available:

- **Decay:** Adjusts the duration of the reverb effect.
- **Low Shelf:** Attenuates or amplifies the low-frequency content of the reverb signal.
- **Level:** Adjusts the reverb's output level.

## 13.9. Util

With this effect you can control the width of your signal's stereo base and change the panning.



**Util (Utility) effect.**

The following parameters are available:

- **Width:** Collapses or expands the signal's stereo base. At the far left position, stereo signals will be summed to mono. Positive values will result in an artificial widening of stereo sources that has a tendency to apparently expand beyond the speakers, but watch out, this tends to cause mono incompatibilities in your mix.
- **Pan:** This control allows you to place your signal within the stereo field. It works exactly like the Pan control of the Amplifier module.
- **Level:** Adjusts the effect's output level.

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