

POLYPLEX

Manual



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1 Welcome to POLYPLEX

1.1 Basic Information

Thank you very much for downloading this REAKTOR ensemble from Native Instruments in collaboration with Twisted Tools. This new and exciting drum- and one-shot instrument can be used either with the free REAKTOR PLAYER, or the full version of REAKTOR 5.9 (or above). On behalf of the entire Native Instruments team, we hope this product will inspire you.



To get the best from this instrument please read the manual in its entirety.

Manual Conventions

This manual uses particular formatting to point out special facts and to warn you of potential issues. The icons introducing the following notes let you see what kind of information is to be expected:



Whenever this exclamation mark icon appears, you should read the corresponding note carefully and follow the instructions and hints given there if applicable.



This light bulb icon indicates that a note contains useful extra information. This information may often help you to solve a task more efficiently, but does not necessarily apply to the setup or operating system you are using; however, it's always worth a look.

Furthermore, the following formatting is used:

- Text appearing in (drop-down) menus (such as *Open...*, *Save as...* etc.) and paths to locations on your hard drive or other storage devices is printed in *italics*.
- Text appearing elsewhere (labels of buttons, controls, text next to checkboxes, etc.) is printed in **light blue**. Whenever you see this formatting applied, you will find the same text appearing somewhere on the screen.
- Important names and concepts are printed in **bold**.
- ▶ Single instructions are introduced by this play button type arrow.

→ Results of actions are introduced by this smaller arrow.

1.2 About POLYPLEX

Polyplex is a percussive one-shot instrument made up of an eight part polyphonic sampler. There are four voices per part that are layered together to make one composite sound and the eight parts can be played back polyphonically for a total of 32 voices. You can also MIDI learn parts to the same MIDI note to play them back polyphonically (up to 32 voices can be played back simultaneously). The main purpose of POLYPLEX is to make interesting one-shots that are made up of complex layered sounds. It works great with drums, sound effects and one-shots of any kind.

2 Installation and Activation

2.1 Installing POLYPLEX

The following section explains how to install and activate POLYPLEX. Although this process is straightforward, please take a minute to read these instructions, as doing so might prevent some common problems.

- To install POLYPLEX, double-click the installer application and follow the instructions on the screen. The installer application automatically places the new ensemble file into a REAKTOR PLAYER directory. Alternatively, during the installation process, choose the directory where you would like to have POLYPLEX installed.

The full version of REAKTOR (5.9 or later) or the free REAKTOR PLAYER is required to play REAKTOR Instruments and Effects. You can download the free REAKTOR PLAYER from the Native Instruments website.

2.2 Activating POLYPLEX

When installation is finished, start the Service Center application, which was installed with POLYPLEX. It will connect your computer to the Internet and activate your POLYPLEX installation. In order to activate your copy of POLYPLEX, you have to perform the following steps within the Service Center:

Log in: Enter your Native Instruments user account name and password on the initial page. This is the same account information you used in the Native Instruments Online Shop, where you bought your REAKTOR Instrument, and for other Native Instruments product activations.

Select products: The Service Center detects all products that have not yet been activated and lists them. You can activate multiple products at once—for example, several REAKTOR Instruments.

Activate: After proceeding to the next page, the Service Center connects to the Native Instruments server and activates your products.

Download updates: When the server has confirmed the activation, the Service Center automatically displays the Update Manager with a list of all available updates for your installed products. Please make sure that you always use the latest version of your Native Instruments products to ensure they function correctly.



Downloading updates is optional. After activation is complete, you can always quit the Service Center.

3 How to Use POLYPLEX

The following sections will give you a brief overview over some basic operations: you will learn how to open POLYPLEX, how to explore the factory-set Snapshots and how to load and play POLYPLEX Snapshots from the Header and the Sidepane.



For latest information on REAKTOR PLAYER files and using Snapshots please refer to the REAKTOR Getting Started Guide.

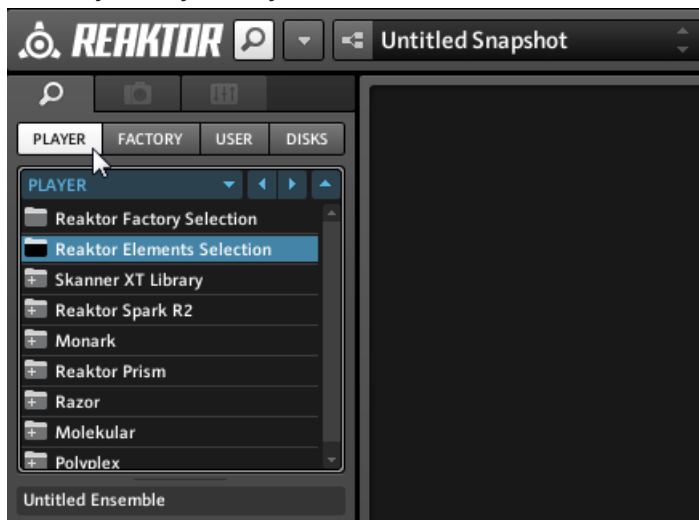
- To load REAKTOR or REAKTOR PLAYER into your sequencer software, follow the common procedure of your sequencer software.

3.1 How to Open POLYPLEX

This is how to open POLYPLEX in REAKTOR or REAKTOR PLAYER:

1. Start REAKTOR or REAKTOR PLAYER respectively.

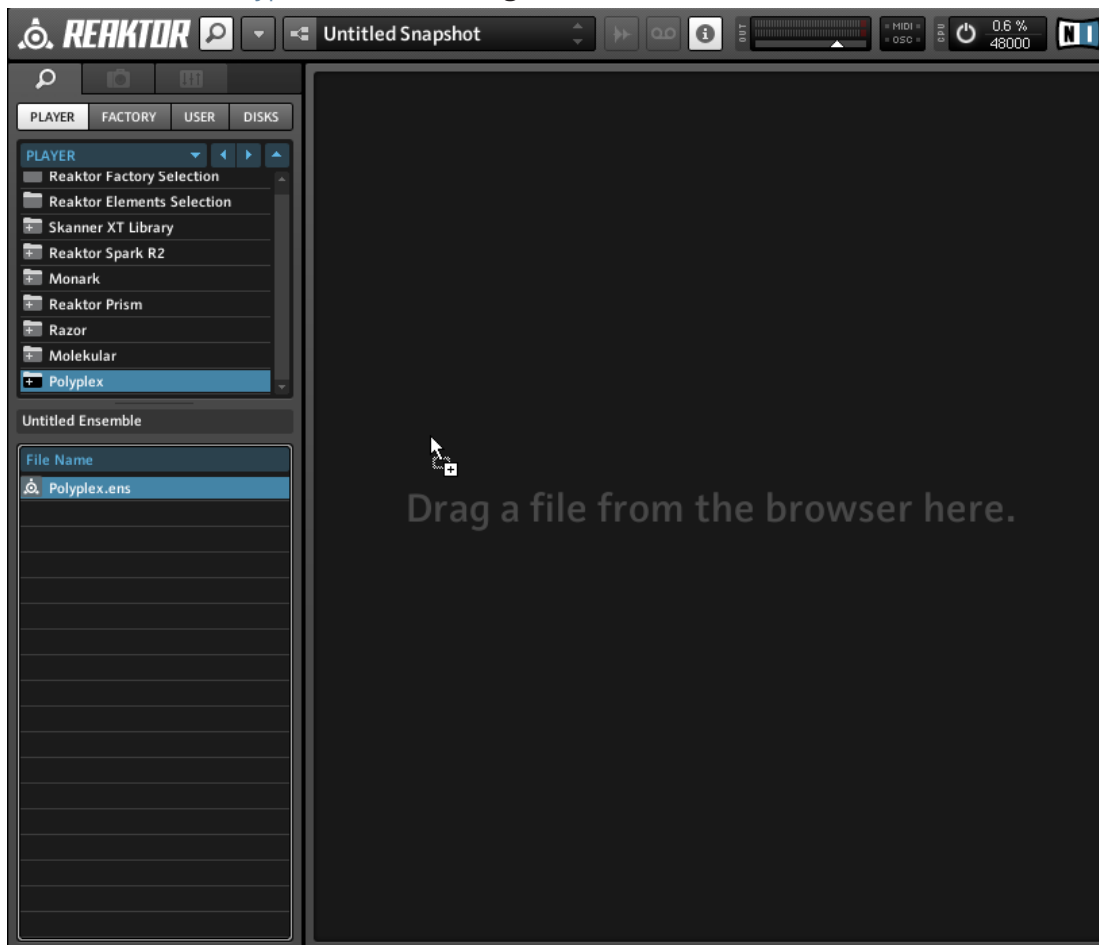
2. In the Browser on the left side of the REAKTOR / REAKTOR PLAYER window, click the **PLAYER** button to show the REAKTOR PLAYER files (you can open the browser with the [F5] key from your keyboard).



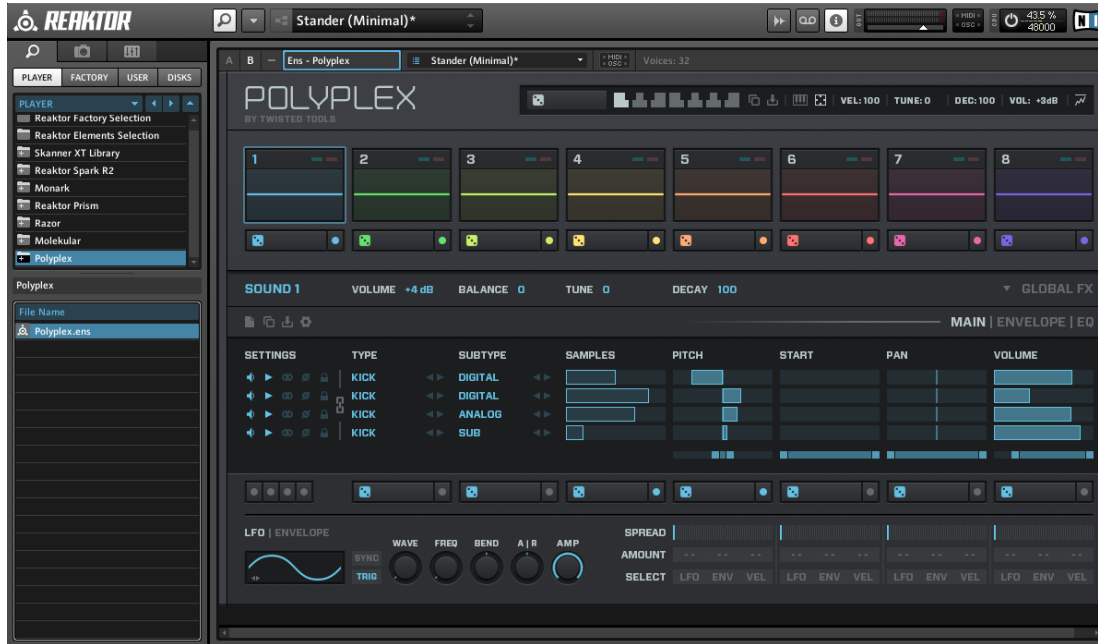
3. Click the **POLYPLEX** folder. The content of the folder will be displayed in the lower section of the browser.



4. Double-click the [Polyplex.ens](#) file, or drag it into the main screen.



5. POLYPLEX will be loaded in REAKTOR / REAKTOR PLAYER:



3.2 Exploring Factory-set Snapshots

Record some notes in the range of the C3 octave in your DAW software and play them back to get an idea of what the Ensemble sounds like. Then, let's change the sound completely by loading a different Snapshot.



A Snapshot is REAKTOR's notion for a sound, preset, or patch. POLYPLEX can hold banks of Snapshots, and loading any of these Snapshots will set each control of that Instrument to a specific value, and re-create a particular sound.

The Snapshots of POLYPLEX are accessible from the central control in REAKTOR PLAYER's Header (Main Bar) or from the Sidepane.



The POLYPLEX interface with Snapshot list in the Sidepane.

- (1) Sidepane button
- (2) Snapshot drop-down menu
- (3) Snapshot tab
- (4) Snapshot Banks
- (5) Snapshots

3.2.1 Loading a Snapshot from the Sidepane

If not already visible after startup, you need to open the Sidepane. The Sidepane holds a full overview of REAKTOR's Snapshot Banks and Snapshots from the currently selected Snapshot Bank.

1. Click the Sidepane button **(1)** in the Header to open the Sidepane.
 2. Click the Snapshot tab **(3)** to access Snapshots.
 3. Select a Snapshot Bank **(4)**.
 4. Select the name of a Snapshot entry **(5)**.
- The name of the selected Snapshot will be highlighted in the Sidepane, and the Snapshot loaded and ready in POLYPLEX.

3.2.2 Loading a Snapshot from the Header

Loading a Snapshot from the REAKTOR PLAYER drop-down menu in the Header is the simplest way to interact with Snapshots.

1. Click the Snapshot drop-down menu **(2)**. The menu holds all Snapshots and Banks of the Instrument.
2. Click an entry to select it.

3.3 Saving a Snapshot

Snapshots can only be saved when using the full version of REAKTOR, however, all your settings will be recalled perfectly in a host if you are using REAKTOR PLAYER, so you can tweak a sound perfectly for your song. All parameter settings made in POLYPLEX will be saved as part of your DAW project and/or as a REAKTOR Preset. Please read the REAKTOR documentation for more information on plug-in mode.



For the latest information on REAKTOR PLAYER please refer to the REAKTOR Getting Started Guide.


3.4 Selecting POLYPLEX A and B Panel Views

REAKTOR allows for each Instrument to have two separate panel layouts, A and B. You can switch between the A and B panel views by right-clicking on an empty space of POLYPLEX's interface and clicking the appearing *View A* or *View B* context menu entry.

View A



POLYPLEX View A

 Settings and controls in View A are not MIDI learnable. **VOLUME**, **TUNE** etc must be MIDI learned from View B. They are also not automatable from the View A, only from View B.

View B



POLYPLEX View B

4 POLYPLEX Overview

POLYPLEX is heavily based on the ability to randomize most settings. Randomization works top-down but you can lock sounds and samples in order to keep the ones you like while auditioning them together with new ones.



The POLYPLEX interface

(1) **Header controls:** Use these controls to set global settings, switch between kit variations and to activate the master random button. For details, see section [↑5, Header Controls](#).

(2) **Kit:** Use the pads to play the ensemble, either by clicking them or assigning them to you MIDI controller via MDI Learn. Every pad contains four sample layers that each can be randomized. For details, see section [↑6, The Kit](#).

(3) **Edit section:** Use this section to access controls for editing the sounds. Each sound has four sample layers each with a set of controllable parameters that can be randomized. For details, see section [↑7, Edit Section](#).

(4) **Modulation:** Use this section to modulate sound parameters. Select between LFO, envelopes, and velocity. For details, see section [↑8, Modulation](#).

(5) **FX:** Use this section to apply up to two insert effects and two send effects to the kit. For details, see section [↑9, Global FX Section](#).

5 Header Controls

The header contains controls that influence the entire ensemble. For example, clicking the master random button randomizes all specified sample layers of all sounds simultaneously.



Header controls

(1) **Undo randomization (arrow icon):** Undo for the latest clicked randomizer button. The undo randomization button only becomes visible when your settings have been randomized.

(2) **Master randomization:** Randomizes the current kit. Randomization works in a top-down fashion: clicking the master randomization button passes a random-message to all the sound pads that have their randomization indicator on (the colored dot next to their corresponding randomization button). You can specify randomization even further by activating or deactivating the colored dots in each sound's layer parameters. If the dot next to a randomization button is off, it is isolated from being affected by parent randomization, but you can still use the individual randomization buttons directly by clicking them. Learn more about randomization in [section 6, The Kit](#) and [7.2, Creating a Sound for Your Kit](#).

(3) **Kit variations (key octave):** Stores and recalls all the settings of the current kit, including the master [VEL](#), [TUNE](#), [DEC](#), and [VOL](#) settings.

(4) **Copy kit:** Copies the current kit variation.

(5) **Paste kit:** Pastes the kit placed in the clipboard to another kit variation.

(6) **MIDI settings:** Opens the MIDI settings page. To MIDI learn a sound to your keyboard or controller, click a pad, activate MIDI learn and play a note on your MIDI control surface.

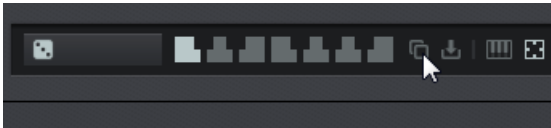
(7) **Follow:** If on, the edit section shows the settings of the last played/clicked sound. If off, the edit section won't update as you play. It will stay fixed on whatever the last clicked pad was. You can still manually switch which edit section is displayed without playing it by clicking the number in the upper left corner of each pad.

- (8) **VEL**: Turns on global velocity-sensitivity. This setting is stored with each kit variation.
- (9) **TUNE**: Globally adjusts tuning of all sounds in the Kit.
- (10) **DEC**: Globally adjusts decay length of all sounds in the Kit.
- (11) **VOL**: Globally adjusts volume of all sounds in the Kit.
- (12) **Limiter**: Limits the final output (clipper). The amount of limiting can be adjusted by using the master volume (**VOL**), which is pre-Limiter. In other words, increasing the master volume pushes harder into the limiter. If you want to adjust the level of the actual audio output, you'll want to use REAKTOR's volume control or DAW channel strip because POLYPLEX volume feeds the limiter and the sound will change if you take it down there and are using the limiter.

5.1 Copying and Pasting Kit Variations

To copy and paste a kit into another kit variation:

1. To copy the current kit, click the Copy kit button in the header.



2. To switch to another kit variation, click the corresponding key in the selector.



3. To paste the kit currently placed in the clipboard into the selected kit variation, click the Paste kit button in the header.



→ The kit you copied is now placed in the new variation as well and is ready to be edited.



You can also copy/paste kit variations from one Snapshot to another.

5.2 MIDI Settings

Use the MIDI settings page to assign the pads of your kit to a MIDI surface via MIDI learn.

- To open the MIDI settings page, click the MIDI settings button in the POLYPLEX header.



The following controls are available on the MIDI settings page:



MIDI settings

- (1) **MIDI settings:** Opens and closes the MIDI settings page.
- (2) **Pads:** With MIDI LEARN activated, click to assign a pad to a MIDI keyboard.
- (3) **MIDI LEARN:** Activates MIDI learn.
- (4) **ISOLATE:** Isolates the MIDI settings. If inactive, MIDI settings will be part of the active Snapshot.
- (5) **QUICK FILL:** Selects a key range and automatically assigns the kit those keys. The kit variations are pre-assigned to C2, so **QUICK FILL** is available between C3 and C7.
- (6) **CHROMATIC:** Applies **QUICK FILL** according to the chromatic scale.
- (7) **WHITE KEYS:** Applies **QUICK FILL** to white keys only.

6 The Kit

The kit is made up of eight pads, each containing a sound that in turn consists of four layers. Trigger sounds in the kit either by clicking them directly or assigning them via MIDI. Every sound can be further tweaked in the edit section—located in the lower half of the interface—with parameters for envelopes, EQs, and modulation.



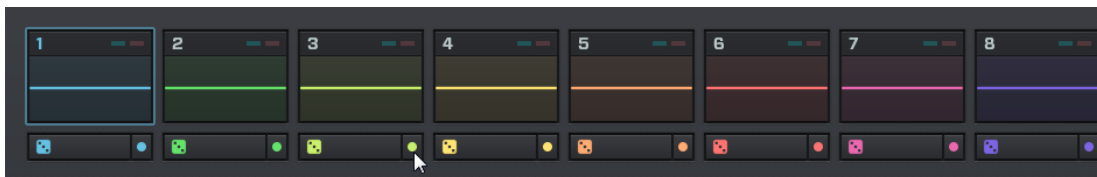
The kit containing eight sounds spread over eight pads

- (1) **Pad header:** Selects the pad for editing without triggering the sound.
- (2) **Solo:** Solos the corresponding sound.
- (3) **Mute:** Mutes the corresponding sound.
- (4) **Pad (with **waveform display**):** Selects and triggers the pad. The waveform display depicts the pad's sound as it is being played back.
- (5) **Sound randomization:** Randomizes the corresponding sound's parameters in the edit section below. Clicking the bar on the right side equals higher grade of randomization, whereas clicking the left side gives you a lesser amount of randomization. Only sound settings that have their randomization indicator lit are randomized. For details on the sound settings in the edit section, see section [↑7, Edit Section](#).
- (6) **Randomization indicator:** Enables the pad for global randomization.

6.1 Randomizing a Kit

To create a kit from “scratch” by randomizing all parameters, follow the steps below.

1. Ensure that all sounds—or the sounds that you want to randomize—have their randomization indicator enabled.



2. To randomize the contents of each sound, click the master randomization button in the header.



→ All sounds are randomized.



If you are unhappy with the result of the randomization, either click the arrow-shaped undo button to the left of the randomize-sound button or try randomizing all sounds again.



To audition your entire randomized kit, try playing a MIDI pattern while clicking the randomize-sound button. This way you will immediately hear how well the sounds of your kit fit together.



For detailed information on how to create your own sounds, see section [↑7.2, Creating a Sound for Your Kit](#).

6.2 Randomizing Sound Settings

To randomize a sound's parameters:

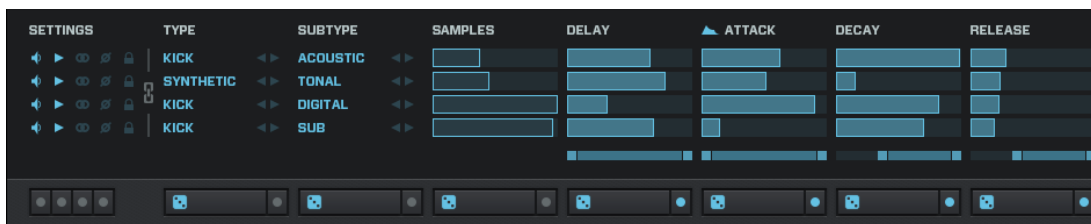
1. To enable parameters for randomization, click their corresponding randomization indicators at the bottom of the edit section.



2. To randomize a sound's settings, click the sound-randomization button below the corresponding pad. The further right you click the button, the larger the amount of randomization.



- All parameters of the sound's settings that have their randomization indicators enabled are randomized.



Keep doing this until you find a sound that you are happy with. You can always undo randomization with the undo button in the header (see section [↑5, Header Controls](#)).



For more information about the sound settings found in the edit section, continue reading in section [↑7, Edit Section](#) below.



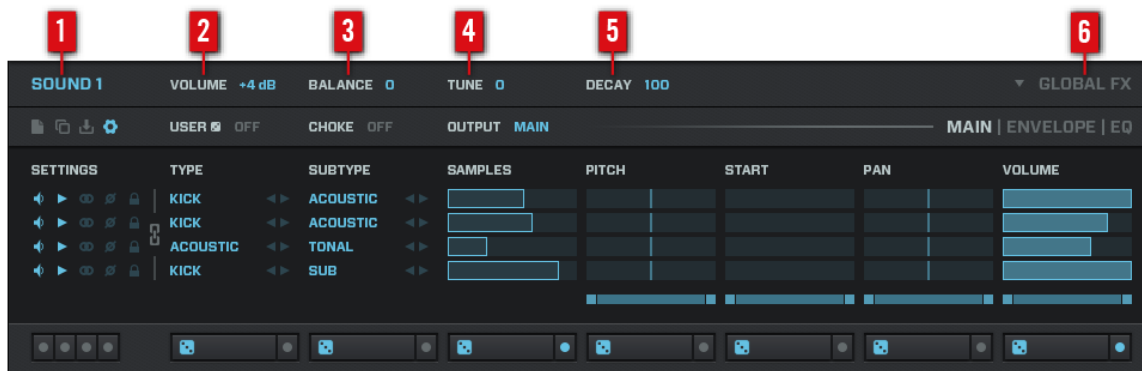
For detailed information on how to create your own sounds, see section [↑7.2, Creating a Sound for Your Kit](#).

7 Edit Section

Use this section to edit sound settings. Each sound has vast possibilities to alter and edit its character. You can edit parameters in small increments by hand or randomize them in selectable quantities to achieve overhauling changes instantly. For details on how to adjust the settings in the edit section to create your own sounds, see section [↑7.2, Creating a Sound for Your Kit](#).

7.1 Layers and Sound Settings

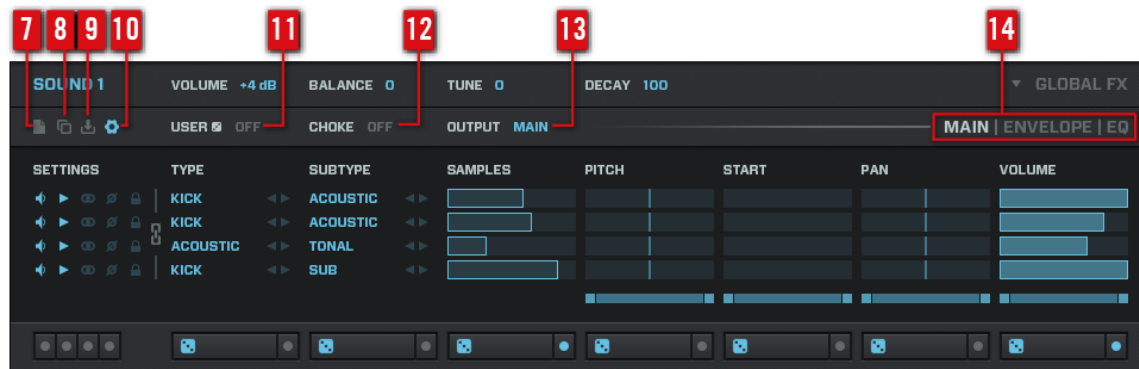
Use this section to set each sound's parameters and to select sample layers.



Edit section: sound settings

- (1) **SOUND**: Opens the sound page and displays the selected pad number, 1-8.
- (2) **VOLUME**: Sets the level of the selected sound in dB.
- (3) **BALANCE**: Adjusts the overall left/right stereo balance of the selected sound.
- (4) **TUNE**: Adjusts the tuning of the selected sound.
- (5) **DECAY**: Sets the decay time of the selected sound.

(6) **GLOBAL FX**: Switches between the **GLOBAL FX** page and the **SOUND** page. For more information about the **GLOBAL FX** page, see section ↑9, **Global FX Section**.



Edit section: sound settings

(7) **New sound**: Resets all parameters of the selected sound to default values.

(8) **Copy sound**: Copies the sound with its current settings.

(9) **Paste sound**: Pastes the sound currently places in the clipboard.

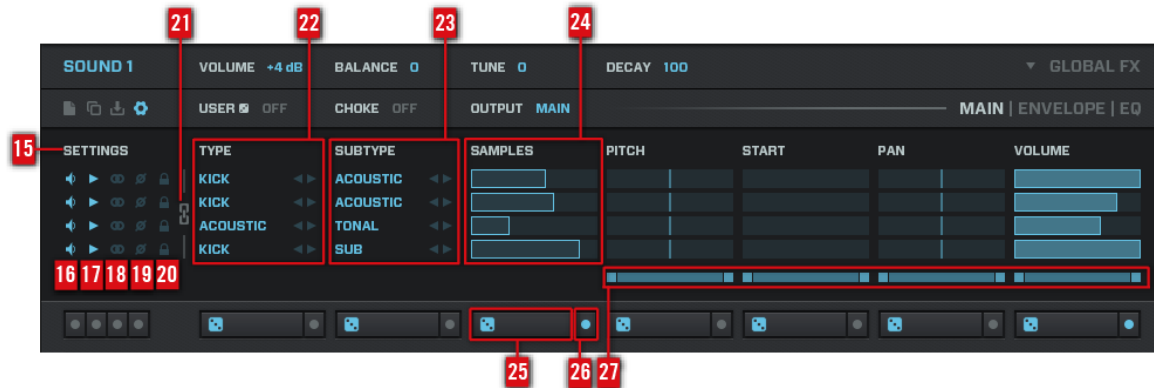
(10) **Additional settings**: Shows/hides further sound settings (11), (12), and (13).

(11) **USER**: Includes/excludes *USER* samples from **TYPE** randomization.

(12) **CHOKE**: Allows you to assign sounds to one of four voice groups. Click and drag up or down to change the group.

(13) **OUTPUT**: Allows you to assign sounds to individual stereo outputs. Click and drag up or down to change the output channel.

(14) **Page selector**: Selects the set of sound parameters to display: **MAIN**, **ENVELOPE**, or **EQ**. Each set contains controls that can be adjusted for each individual layer of a sound. For details, continue reading below.



Edit section: sound settings

(15) **SETTINGS**: These settings control each sample layer individually:

(16) **Layer on/off**: Switches the selected layer on or off. Use these on all four layers to solo and/or mute.

(17) **Playback direction**: Switches between playing back the sample forward or reversed.

(18) **Stereo/mono**: Switches between playing the sample in stereo or mono.

(19) **Phase (inversion)**: Switches between playing the sample back as is and phase-inverted.

(20) **Lock layer**: Locks the selected layer from editing and randomization.

(21) **Link layers**: Links the values of all layers to each other. With this option activated, setting a value for one layer parameter automatically sets all other layers' corresponding parameters to the same value (unless they have been locked with the lock layer button (20)).

(22) **TYPE**: Selects the sample type. Eight types are available in a drop-down menu: *KICK*, *SNARE/CLAP*, *HIHAT*, *CYM/PERC*, *TOM/PERC*, *ONESHOT 1*, *ONESHOT 2*, and *USER*. The *USER* option is empty by default and lets you add your own samples using REAKTOR's Sample Map Editor. For information on REAKTOR's Sample Map Editor, refer to the REAKTOR documentation.

(23) **SUBTYPE**: Selects one of five subtypes for each of the **TYPES** except *USER*. *USER* is empty by default and lets you add your own samples using REAKTOR's Sample Map Editor. For information on REAKTOR's Sample Map Editor, refer to the REAKTOR documentation.

(24) **SAMPLES**: Lets you decide what sample to play back for each layer and is set as a MIDI value between 0 and 127.

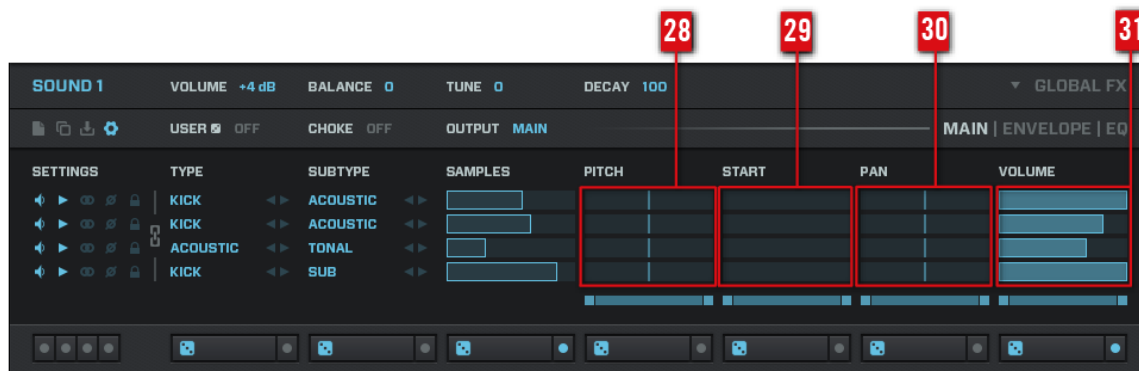
(25) **Parameter randomization**: Randomizes the value of the above parameter for all layers of the sound simultaneously. You can use (20) to lock a layer and bypass randomization.

(26) **Randomization indicator**: Includes the above parameter in global randomization.

(27) **Parameter range**: Sets the min/max range at which the above parameter can be modified.

The Main Page

The following parameters are visible and editable when the **MAIN** page is selected. All settings are pro layer.



Edit section: sound settings, MAIN page

(28) **PITCH**: Lets you tune each layer to your liking.

(29) **START**: Lets you set the start position of the layer.

(30) **PAN**: Sets the panning of the layer.

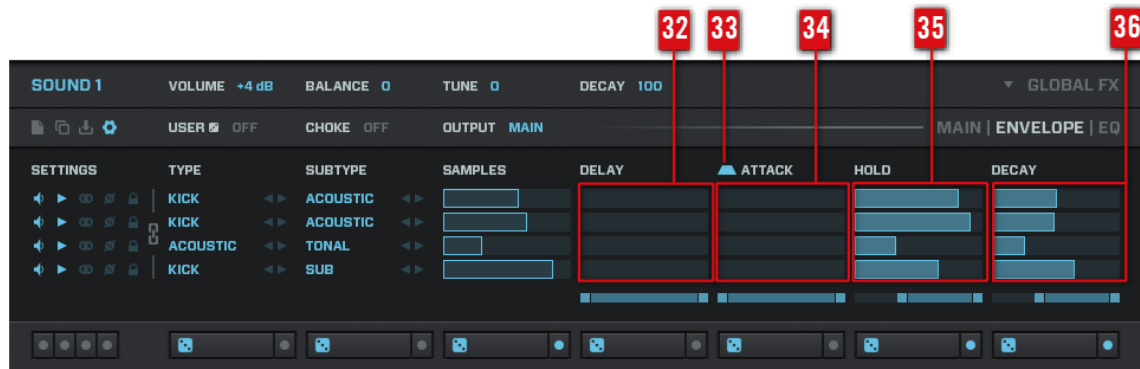
(31) **VOLUME**: Sets the level of the layer.



You can right-click ([Ctrl]-click on Mac) the tab labels to reset all sliders and range controls for that page. For example, right-click the **MAIN** label and all the sliders for **MAIN** reset.

The Envelope Page

The following parameters are visible and editable when the **ENVELOPE** page is selected. All settings are pro layer. Two envelope modes are available and each gives you a different set of parameters.

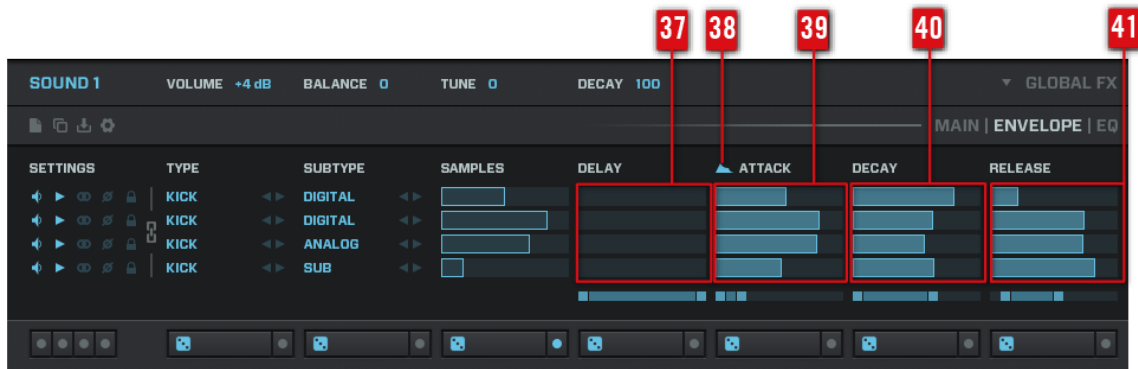


Edit section: sound settings, ENVELOPE page depicting AHD mode

- (32) **DELAY**: Sets an offset start-time in ms to the layer.
- (33) **Envelope mode**: Switches between AHD and ADR type envelopes.
- (34) **ATTACK**: Sets the attack time for the layer.
- (35) **HOLD**: Sets the hold time for the layer.
- (36) **DECAY**: Sets the decay time for the layer.



You can right-click ([Ctrl]-click on Mac) the tab labels to reset all sliders and range controls for that page. For example, right-click the **ENVELOPE** label and all the sliders for **ENVELOPE** reset.



Edit section: sound settings, ENVELOPE page depicting ADR mode

(37) **DELAY**: Sets an offset start-time in ms to the layer.

(38) **Envelope mode**: Switches between AHD and ADR type envelopes.

(39) **ATTACK**: Sets the attack time for the layer.

(40) **DECAY**: Sets the decay time for the layer.

(41) **RELEASE**: Sets the release time for the layer.



You can right-click ([Ctrl]-click on Mac) the tab labels to reset all sliders and range controls for that page. For example, right-click the **ENVELOPE** label and all the sliders for **ENVELOPE** reset.

The EQ Page

The following parameters are visible and editable when the **EQ** page is selected. All settings are pro layer.



Edit section: sound settings, EQ page

(42) **LO SHELF**: Sets the frequency band of the low shelf.

(43) **LO GAIN**: Sets the amount of low-shelf boost.

(44) **HI SHELF**: Sets the frequency band of the high shelf.

(45) **HI GAIN**: Sets the amount of high-shelf boost.



You can right-click ([Ctrl]-click on Mac) the tab labels to reset all sliders and range controls for that page. For example, right-click the **EQ** label and all the sliders for **EQ** reset.

7.2 Creating a Sound for Your Kit

To create a sound that you like and to use it in your kit, follow the steps described below.



POLYPLEX gives you many possibilities to create new sounds, e.g. by randomizing parameters, and the following workshop is meant to show you some of the ways you can achieve your own sounds.

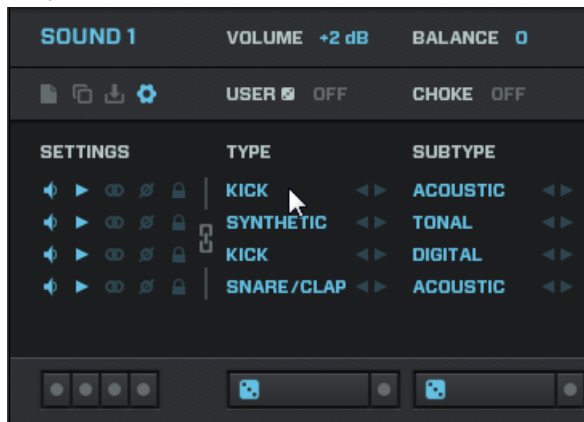
7.2.1 Selecting Layer Types

Start by selecting the type of layers you want to use for your sound. Here, we will start with a kick drum, but you can just as well create complex otherworldly sound effects.

1. To select the sound for editing, click the corresponding pad in the kit.



2. To select layer types for each of the four layers of the selected sound, click the **TYPE** drop-down menu.



3. Select the type from the appearing menu.

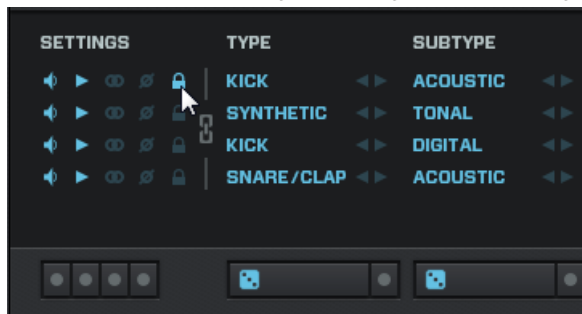


Combining different types is a good way to make our kick drum both full-bodied and snappy at the same time.

7.2.2 Randomizing Layer Subtypes

Once you have selected the types of layers you want for your kick drum, let's further define the kind of sound we want by selecting subtypes. This time, try randomizing the layers according to the already set types.

1. To lock one or more layers that you are already happy with, click the key lock icon.



This ensures that the layer stays even if you randomize the settings of the selected sound.

- To randomize the other three layers' **SUBTYPEs**, click the parameter-randomization button below the **SUBTYPE** column.



The three layers are randomized, whereas the locked layer at the top stays the same.

- Repeat the previous step while listening to the sound of the pad until you find a sound that you like. Then move on to another pad to put together an entire kit of your own sounds.

7.2.3 Adjusting Sound Parameters

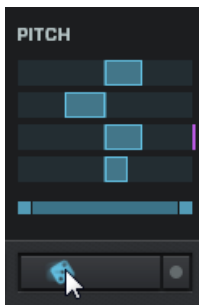
If you've found a sound that you like, but you want to tweak it further, adjust the sound parameters. For example, let's alter the pitch of our kick drum.

- To lock a single parameter from being altered, double-click the corresponding slider.



The parameter now displays a pink indicator to reflect that it has been locked.

2. To randomize the pitch of the remaining layers, click the parameter-randomization button at the bottom of the column.



3. To fine-adjust the result, click and drag the sliders in the column until the sound suits your needs.



The value of the layer you are editing is displayed in the upper right corner of the column.



To reset any parameter to its default state, right-click the corresponding slider.



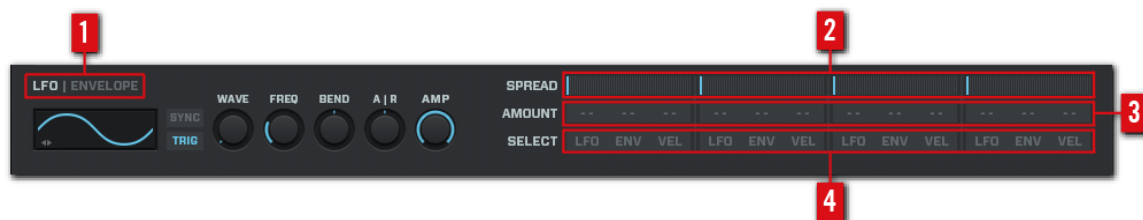
Remember that if you don't like the way your sound turned out after randomizing any parameter, you can always click the undo button at the top of the interface.



Remember that if you don't like the way your sound turned out after randomizing any parameter, you can always click the undo button at the top of the interface.

8 Modulation

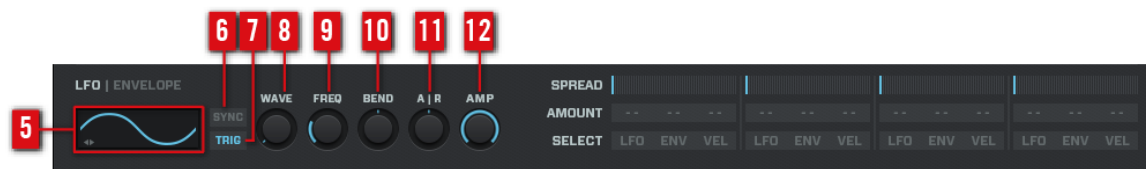
Modulation can be assigned for each individual sound. You can apply modulation in the form of LFOs, envelopes, and velocity to every available slider parameter (except **SAMPLES**) in each sound's edit section. Using modulation adds interesting sound variations over time and makes your kit sound more dynamic.



Modulation section

- (1) **LFO | ENVELOPE**: Switches between displaying controls for **LFO** and **ENVELOPE**.
- (2) **SPREAD**: Offsets the modulation for each voice, which adds interesting variations for the layers.
- (3) **AMOUNT**: Sets the amount of modulation from the corresponding source for the selected parameter. Click and drag upward for positive modulation and downward for negative polarity.
- (4) **SELECT**: Switches the corresponding modulator on or off for the selected parameter.
 - **LFO**: Switches LFO on or off for the selected parameter.
 - **ENV**: Switches the envelope on or off for the selected parameter.
 - **VEL**: Switches modulation via MIDI note velocity on or off for the selected parameter.

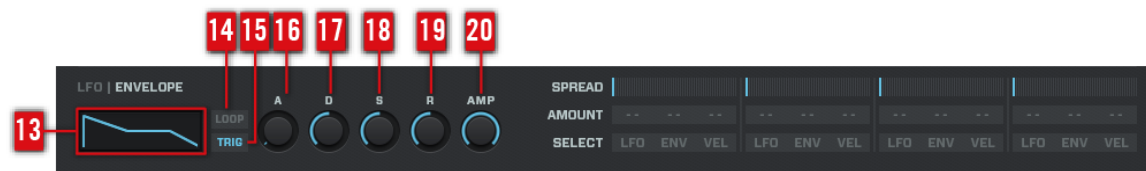
LFO Controls



Modulation section: LFO controls

- (5) **LFO phase:** Click and drag the waveform in either direction to alter the phase of the LFO.
- (6) **SYNC:** Synchronizes LFO to host tempo.
- (7) **TRIG:** Retriggeres the LFO with each incoming MIDI note.
- (8) **WAVE:** Sets LFO waveform. When set fully left sine wave is used, turn clockwise for triangle, pulse, ramp, sawtooth, random stepped, and random respectively.
- (9) **FREQ:** Sets LFO rate.
- (10) **BEND:** Uses an exponential curve to bend the shape of the LFO.
- (11) **A | R:** Attack/release time envelope for **AMP**. **A** sets the time it takes to reach max amplitude; **R** sets the time it takes to return to zero.
- (12) **AMP:** Controls the amount of LFO output.

Envelope Controls



Modulation section: Envelope controls

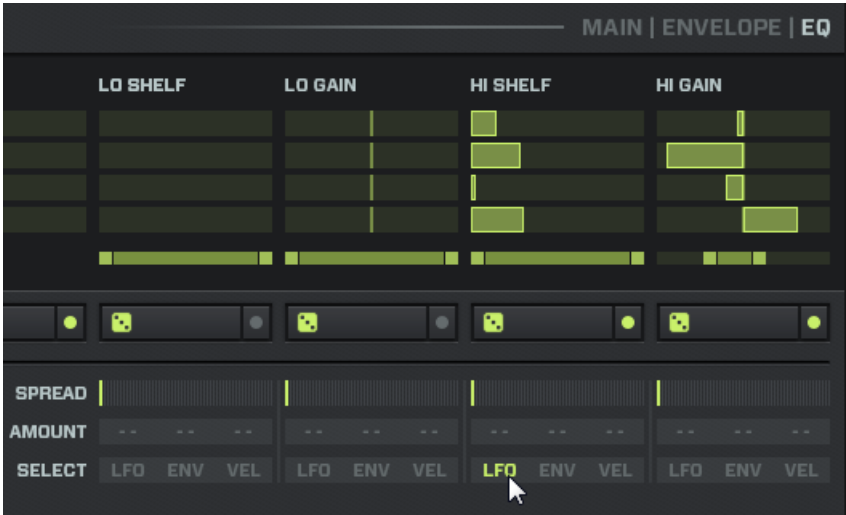
- (13) **Envelope display:** Depicts the current state of the ADSR controls.
- (14) **LOOP:** Cycles the envelope.
- (15) **TRIG:** Retriggeres the envelope with each incoming MIDI note.

- (16) **A**: Sets the attack time of the envelope.
- (17) **D**: Sets the decay time of the envelope.
- (18) **S**: Sets the sustain time of the envelope.
- (19) **R**: Sets the release time of the envelope.
- (20) **AMP**: Controls the degree to which the envelope shapes the assigned parameter.

Modulating Parameters

To add interesting alterations to your sounds, use the modulation section at the bottom of the edit section. As each sound is a unique combination of four layers and their corresponding parameter settings, you can achieve great variations simply by adding a bit of modulation to, e.g., the **VOLUME** and/or **PITCH** parameters on the **MAIN** page or the **SHELF** and **GAIN** parameters on the **EQ** page. It is completely up to you what you want to modulate. To do so, follow the steps below:

- 1. To assign a modulator to a modulation destination, select the modulation type at the bottom of the corresponding column.

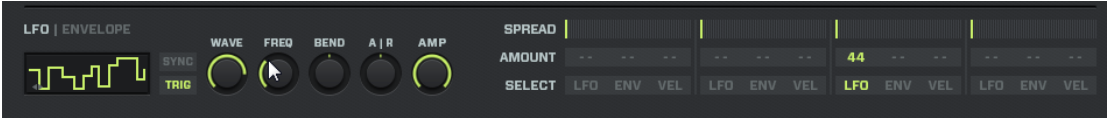


2. To set the amount of modulation, click and drag the **AMOUNT** control below the column.

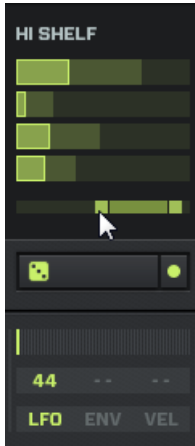


The modulation offset is visible as shaded sliders in the **HI SHELF** column.

3. To set the rate of the modulation, click and drag the **FREQ** knob on the left side of the modulation section.



4. To zero in on a min/max range for the sliders, make more accurate adjustments, or restrict parameter randomization to stay within a certain range, click and drag the parameter range slider for the selected column.



Even more interesting results can be achieved if you turn off [TRIG](#) for [LFO](#), or switch the [ENVELOPE](#)'s [TRIG](#) off and activate [LOOP](#).

9 Global FX Section

This section covers the 18 available effects of POLYPLEX and how to use them.

- For general information and detailed descriptions of all shared controls, see section [↑9.1, FX Overview](#).
- For information on how to load and use the effect units, see section [↑9.2, Using Effects](#).
- For a reference chapter describing all controls available for the different effect units, see section [↑9.3, FX Reference](#).

9.1 FX Overview

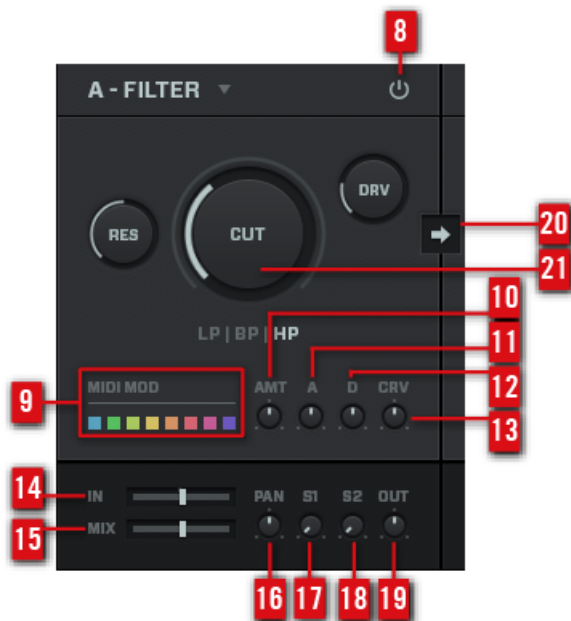
POLYPLEX gives you a well-equipped effects section that lets you apply both insert- and send effects. Use it to alter the sounds of your kit one by one or to for example add some reverb or compression in order to make them sit together in the mix.



GLOBAL FX, effect units switched off

(1) **SOUND [NR]**: Displays the sound selected for editing.

- (2) **INSERT A**: Switches insert effect **A** on or off for the selected sound.
- (3) **INSERT B**: Switches insert effect **B** on or off for the selected sound.
- (4) **SEND 1**: Sets the amount of send effect **S1** for the selected sound.
- (5) **SEND 2**: Sets the amount of send effect **S2** for the selected sound.
- (6) **GLOBAL FX**: Switches between the **GLOBAL FX** page and the edit section.
- (7) **FX menu**: Opens a drop-down menu of all available effects. The 18 selectable effects are:
 - *AUTOPAN*
 - *COMPRESS*
 - *DELAY*
 - *DISTORTION*
 - *FILTER*
 - *FLANGER*
 - *FM-AM*
 - *FREQ SHIFT*
 - *GRAIN DELAY*
 - *LOFI*
 - *NOISE GEN*
 - *PHASER*
 - *PITCH RAMP*
 - *REVERB*
 - *SPREAD*
 - *STRETCH*
 - *STUTTER*
 - *SUB GEN*



GLOBAL FX, effect unit switched on

(8) **On/off**: Switches the effect on or off.

(9) **MIDI MOD**: Selects up to eight color-coded sounds that act as MIDI triggers for an envelope that modulates the center control of each effect. The center control is individual for every effect type. For details on this feature, see section [↑9.2.3, Triggering MIDI Modulation](#).

(10) **AMT**: Sets both amount and polarity of the envelope depending on the direction you turn.

(11) **A**: Sets the time of the attack for the envelope.

(12) **D**: Sets the time of the decay for the envelope. When set fully right, as the attack phase is completed its position is held infinitely. This way, it can be described as a hold option that causes an infinite hold at the attack maximum.

(13) **CRV**: Controls the exponential curve of the modulation envelope.

(14) **IN**: Adjusts the level into the effect from all sounds simultaneously.

(15) **MIX**: Adjusts the mix of dry and wet signal.

(16) **PAN**: Sets the panning of the output.

(17) **S1** (available for insert effects A and B only): Sets the amount of send effect being sent from insert to the **S1** effect buss. This allows you to use the inserts as a subgroup for processing and then send the entire group to, e.g., a reverb or delay.

(18) **S2** (available for insert effects A and B only): Sets the amount of send effect being sent from insert to the **S2** effect buss. This allows you to use the inserts as a subgroup for processing and then send the entire group to, e.g., a reverb or delay.

(19) **OUT**: Sets the level of the output of the effect.

(20) **Series mode**: Daisy chains the output of **INSERT A** to the input of **INSERT B**. This way you can route sounds to several FX in series without hearing the dry signal when used together with the **MIX** parameters.

(21) **Center control**: The function of the center control varies with each effect unit. It is always located at the center of the effect's interface and controls the most prominent feature of the effect. The **MIDI MOD** envelope modulates this control only. The various functions of the center control are described in detail in section [↑9.3, FX Reference](#).



For detailed descriptions of all controls found on the various effect units, see section [↑9.3, FX Reference](#).

9.2 Using Effects

In this section we will take a look at how you can use effects to adjust the sound of your kit with subtlety as well as completely overhaul the entire sound by applying effects.

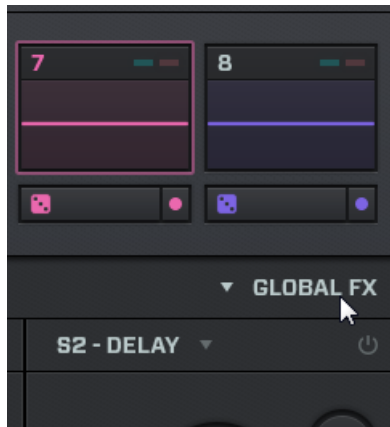


Insert effects route the output of the sound directly into the insert effect slot; whereas send effects are parallel. This means that sends work like splits that send signals out to the effect to be processed, but that the dry signal remains unaffected.

9.2.1 Inserting an Insert Effect

Sending one or more sounds into an insert effect effectively routes the output of these sounds into the effect. They then behave like a subgroup where adjusting the controls of the effect affects all sounds in the subgroup simultaneously. To apply insert effects to a sound, follow the steps below.

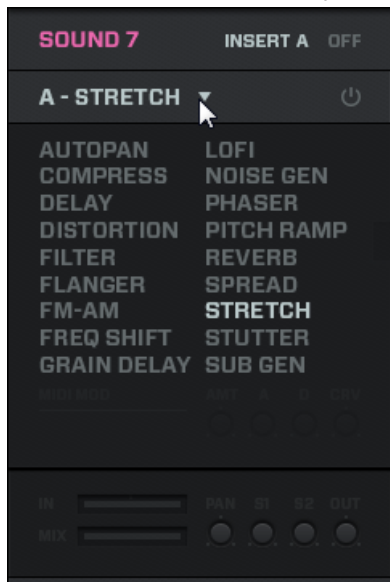
1. To open the FX page, click the **GLOBAL FX** button to the very right of the interface.



The **GLOBAL FX** page opens.



2. To select an effect unit, open the FX menu and click the effect's name.



3. To assign the selected sound to an insert effect, switch **INSERT A** to **ON**.



4. To switch insert effect **A** (the leftmost one) on, click the power switch in its upper right corner.



The effect's controls become visible.

5. Adjust the controls until you achieve a sound you like.

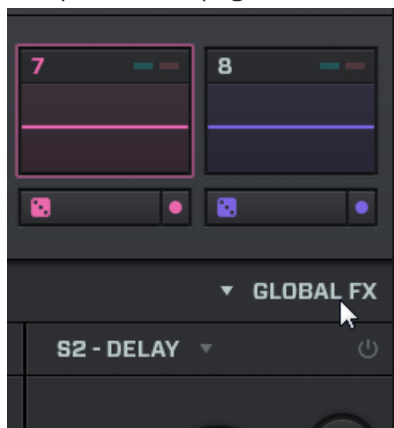
6. To crossfade between the dry signal on the one hand and the wet signal on the other, click and drag the **MIX** slider at the bottom of the effect unit.



9.2.2 Setting up a Send Effect

To set up a send effect, follow the steps below.

1. To open the FX page, click the **GLOBAL FX** button to the very right of the interface.



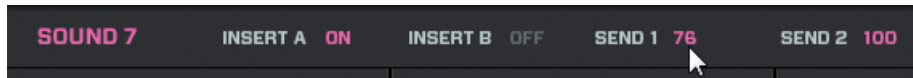
The **GLOBAL FX** page opens.



2. To select an effect unit, open the FX menu and click the effect's name.



3. To set the amount of send effect for the selected sound, click and drag the **SEND 1** value.



4. To switch send effect **S1** (second from the right) on, click the power switch in its upper right corner.



The effect's controls become visible.

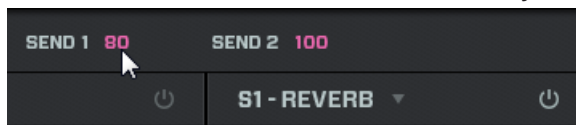
5. Adjust the controls until you achieve a sound you like.

6. In most situations, to get the most out of your send effect, you will want to set the **MIX** slider at the bottom of the effect unit fully right.



If you are using an insert effect and a send effect simultaneously, **MIX** crossfades between the output of the insert effect on the on hand and the send effect on the other.

7. To set the amount of send effect used for your sound, adjust the level for **SEND 1**.



9.2.3 Triggering MIDI Modulation

MIDI MOD lets you trigger an envelope via MIDI from each of your sounds. The envelope modulates the center control of any loaded effect unit and can be adjusted via the knobs on the bottom right of each effect's interface. To set up the MIDI modulation envelope, follow these instructions:

1. To select the sounds you want to use as triggers, click the color-coded squares so that only the ones you want to use are illuminated.



2. To set the envelope to you liking, adjust the controls of the envelope located to the right of the color-coded squares.



- When you play back the illuminated sounds either via a MIDI pattern in your host or by clicking them directly, the center control of the effect unit is modulated according to the settings of the envelope.

9.3 FX Reference

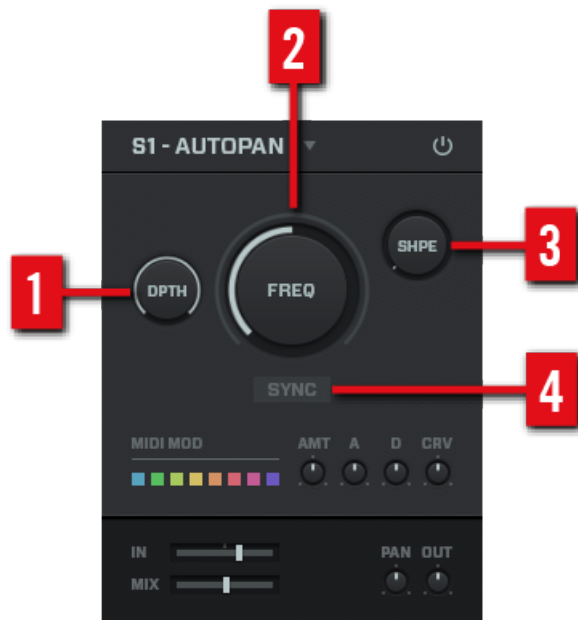
In this section you find details of all available effect units and their controls.



All knobs found on the effect units are macros. This means that by using MIDI learn, you can use the same MIDI controls to adjust the parameters of any loaded effect unit.

9.3.1 Autopan

An autopanner that pans each assigned sound back and forth in the stereo field according to the settings of the settings of the parameters.



AUTOPAN

(1) **DPTH**: Sets the depth of the stereo panning. Fully right equals panning sounds hard left and right.

(2) **FREQ**: Sets the rate at which sounds pan from one side to the other (and back again). Higher settings can yield unexpected results for many sounds.

(3) **SHPE**: Adjusts the shape of the panning. This control crossfades between a sine wave at fully left to a pulse signal at fully right. Use it together with **DPTH** to create the best setting for your sounds.

(4) **SYNC**: Synchronizes the panning to host tempo.

9.3.2 Compressor

A common compressor that lets you add more punch to the sound of your kit.



COMPRESSOR

(1) **RATIO**: Determines the ratio at which the compressor will attenuate the audio level.

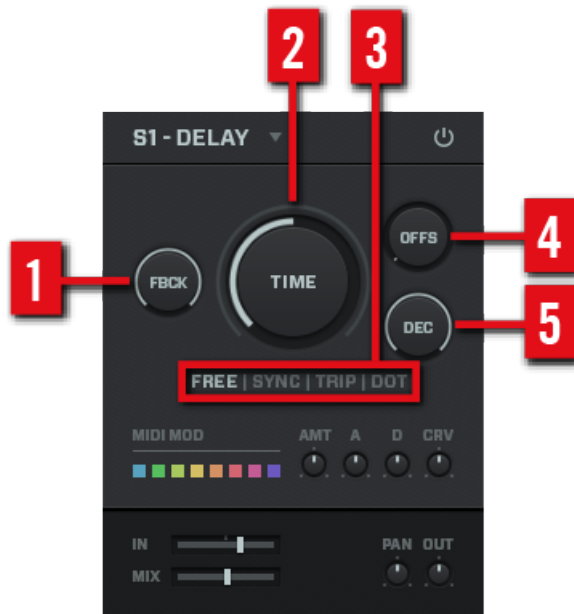
(2) **THLD**: Sets the threshold level at which the compressor will attenuate the audio level.

(3) **ATTK**: Adjusts the attack phase of the compressor to determine when compression will begin.

(4) **REL**: Adjusts the release phase of the compressor to determine when the level set with **RATIO** will be achieved.

9.3.3 Delay

A musical delay effect that lets you select delay time in terms of musical values.



DELAY

(1) **FBCK**: Sets the amount of feedback into the delay.

(2) **TIME**: Sets the length of the delay depending on the time mode selected below.

(3) **Time mode**:

- **FREE**: Sets the delay time in milliseconds.
- **SYNC**: Synchronizes the delay to host tempo.
- **TRIP**: Sets delay time in triplets.
- **DOT**: Sets delay time in dotted notes.

(4) **OFFS**: Determines the level of offset for the delay.

(5) **DEC**: Sets the decay time of the delay.

9.3.4 Distortion

An overdrive effect that adds warmth and color to your sounds. At extreme settings it can really bring out completely new aspects of a sound.



DISTORTION

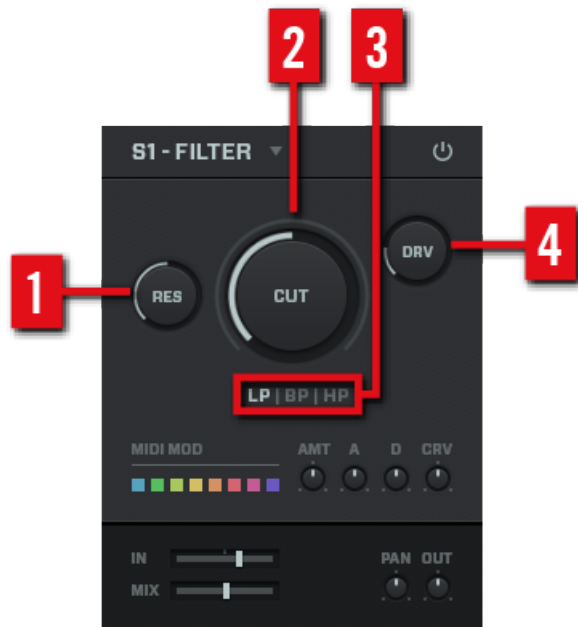
(1) **LOW**: Boosts the lower frequency spectrum.

(2) **DRIVE**: Sets the amount of distortion.

(3) **HI**: Boosts the higher frequency spectrum.

9.3.5 Filter

A multimode filter with parameters for resonance and overdrive to add grit to the sound.

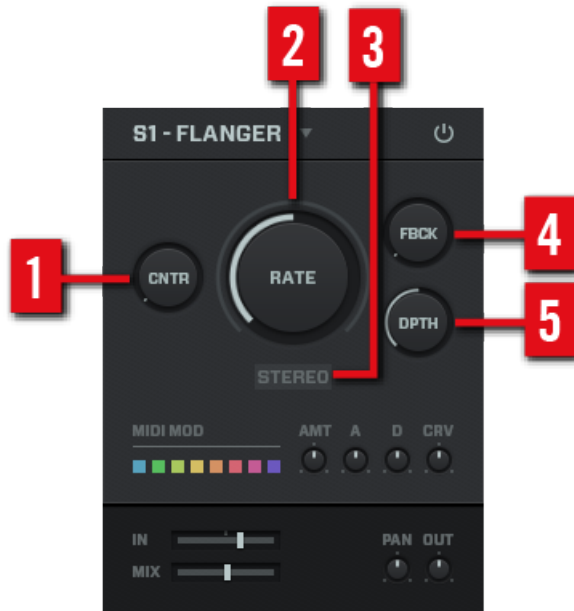


FILTER

- (1) **RES**: Adjusts the amount of resonance.
- (2) **CUT**: Sets the low-, hi-, or center frequency of the filter, depending on the selected filter mode.
- (3) **Filter mode**:
- **LP**: Low-pass mode lets you set the upper cut frequency with the **CUT** control.
 - **BP**: Bandpass mode lets you set the center frequency of the bandpass with the **CUT** control.
 - **HP**: High-pass mode lets you set the lower cut frequency with the **CUT** control.
- (4) **DRV**: Introduces an overdrive circuit to the filter to distort the output.

9.3.6 Flanger

A flanger effect that splits the input in two channels and introduces LFO modulation and a slight delay to one of them.



FLANGER

- (1) **CNTR**: Sets the delay time of the delayed channel. Turn it fully left for a wobble-like effect and fully right for metallic sounds.
- (2) **RATE**: Sets the frequency of the LFO modulator.
- (3) **STEREO**: Switches stereo modulation on or off.
- (4) **FBCK**: Adjusts the amount of feedback.
- (5) **DPTH**: Sets the amount of delay applied to the delayed channel.

9.3.7 FM-AM

A modulation effect with separate modes for frequency modulation and amplitude modulation.



FM-AM

(1) **AMOUNT**: Sets the amount of modulation, depending on the selected modulation mode.

(2) **Modulation mode**:

- **FM**: Selects frequency modulation
- **AM**: Selects amplitude modulation.

9.3.8 Freq Shift

A frequency shifter that lets you adjust the frequency of the input. It can be useful e.g. when tuning drums.

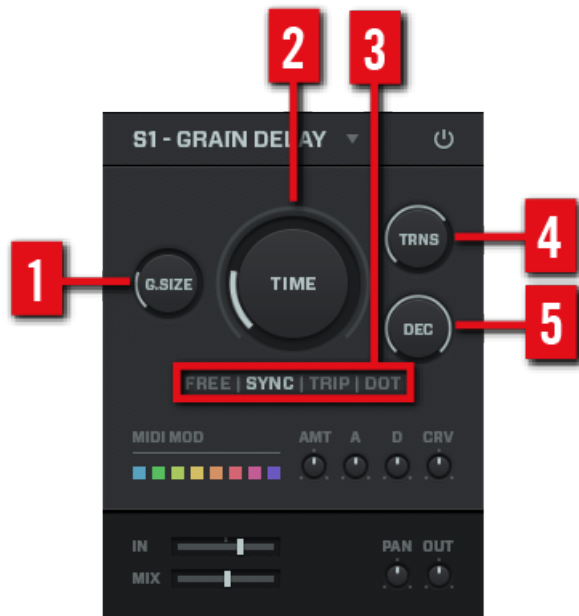


FREQ SHIFT

- (1) **FBCK**: Adjusts the amount of feedback.
- (2) **FREQ**: Sets the frequency of the output.
- (3) **INVERT**: Inverts the phase of the frequency-shifter modulator.
- (4) **STER**: Introduces stereo panning of the sound.

9.3.9 Grain Delay

A multimode granular delay effect.



GRAIN DELAY

- (1) **G.SIZE**: Sets the size of the grains sent into the delay unit.
- (2) **TIME**: Sets the delay time in accordance with the selected time mode.
- (3) **Time mode**:
 - **FREE**: Sets the delay time in milliseconds.
 - **SYNC**: Synchronizes the delay to host tempo.
 - **TRIP**: Sets delay time in triplets.
 - **DOT**: Sets delay time in dotted notes.
- (4) **TRNS**: Transposes the output.
- (5) **DEC**: Adjusts the decay time of the effect.

9.3.10 Lo-Fi

A bit depth and sample rate reduction effect that creates a crushing lo-fi sound.

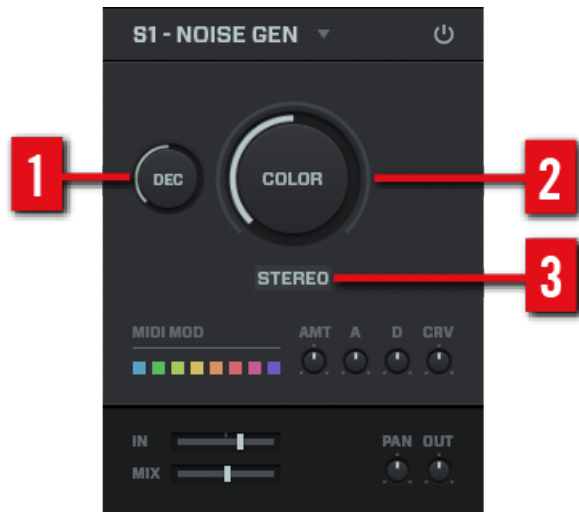


LOFI

- (1) **BIT**: Introduces a distortion-like effect by reducing the bit depth from 16 to 1.
- (2) **SR**: Reduces the sample rate from current audio rate to 200 Hz.

9.3.11 Noise Gen

An envelope is used to detect the input signal, which triggers a noise generator.

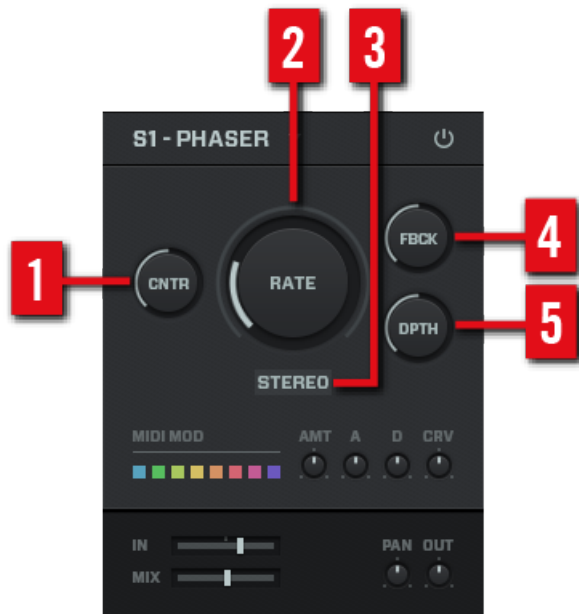


NOISE GEN

- (1) **DEC**: Adjusts the decay phase of the input envelope.
- (2) **COLOR**: Crossfades from pink noise to white noise generation.
- (3) **STEREO**: Sets signal detection and output to stereo.

9.3.12 Phaser

A modulation effect that sends the input through a set of all-pass filters, adds LFO modulation and then mixes the resulting signal with the dry input.

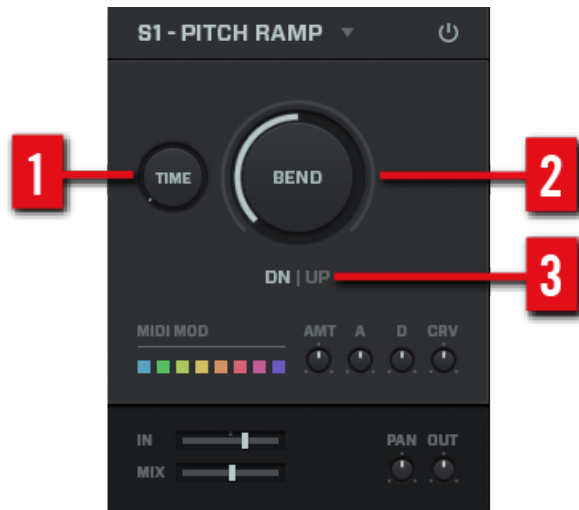


PHASER

- (1) **CNTR**: Sets center frequency for the modulation. The value of **DPTH** control is then added to this frequency.
- (2) **RATE**: Sets the frequency of an LFO modulator.
- (3) **STEREO**: Switches stereo modulation on or off.
- (4) **FBCK**: Adjusts the amount of feedback.
- (5) **DPTH**: Sets the amount of LFO modulation as an offset to **CNTR**.

9.3.13 Pitch Ramp

A pitch ramp effect that lets you pitch bend sounds up or down.



PITCH RAMP

- (1) **TIME**: Sets the length of the playback.
- (2) **BEND**: Sets the exponential curve of the pitch ramp.
- (3) **Bend mode**:
- **DN**: Tunes the pitch downward.
 - **UP**: Tunes the pitch upward.

9.3.14 Reverb

A double-filter reverb effect that adds dimension to your sounds and lets them sit in the mix.



REVERB

- (1) **LP**: Sets the cutoff frequency of the low-pass filter.
- (2) **SIZE**: Adjusts the size of the room and in turn the length of the reverb tail.
- (3) **HP**: Sets the cutoff frequency of the high-pass filter.
- (4) **HLD**: Sets the length of the output sound. Use the hold time to, e.g., create gated reverb-type effects.

9.3.15 Spread

An effect unit that split mono signals into stereo.



SPREAD

(1) **SPREAD**: Controls the amount of stereo panning.

9.3.16 Stretch

Stretch allows you to slow down the speed of the incoming audio by repeating fragments of audio called grains.



STRETCH

- (1) **STR**: Sets the amount of grain stretching.
- (2) **GRAINSIZE**: Determines the size of the repetitions (grains).

9.3.17 Stutter

A buffer stutter effect with filter modulation. The buffer is triggered via MIDI note-on messages of input sounds.



STUTTER

- (1) **FILTFX**: Adjusts a pitch bend function. Turn it left to tune the sound upward and turn it right to tune the sound downward.
- (2) **SIZE**: Determines the length of the repeated audio slice. Lower values create a metallic sound, whereas larger values create a delay-like effect.
- (3) **RES**: Controls the amount resonance.
- (4) **DEC**: Sets the decay phase of the effect. Use it in combination with **SIZE** to create note repeat-style sounds.

9.3.18 Sub Gen

An envelope is used to detect the input signal, which triggers a mono sub-bass oscillator.



SUB GEN

- (1) **BOOST**: Controls the level of the frequency band set with the **FREQ** control.
- (2) **FREQ**: Sets the frequency band for the **BOOST**.
- (3) **SAT**: Adjusts the level of saturation.
- (4) **DEC**: Sets the decay phase of the sub-bass.

10 Credits

Instrument by Twisted Tools

Product Design: Josh Hinden & Igor Shilov

Instrument Developer: Igor Shilov

GUI Design: Josh Hinden, Igor Shilov, Efflam Le Bivic, Goesta Wellmer

Sound Design: Jamil Samad, Antonio Blanca, Angelos Liaros, Antonio de Spirt, Justin Myracks, Tommaso De Donatis, Robert Linke

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Documentation: Gustav Sto. Tomas

Project Management: Marin Vrbica

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