

# TIM EXILE

# SLOR

Resonator Swarm FX Processor



Manual

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# Intro

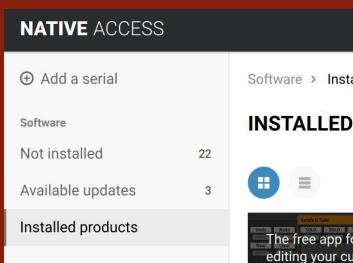
SLOR is a powerful creative FX processor for transforming beats, found sounds and any other audio source you can think of into lush chords, evolving rhythmic sequences and complex textures. The morph bar creates drastic or subtle shifts in the sound by morphing between two different sets of parameters.

SLOR uses 32 parametric infinite resonators controlled by powerful LFOs and modulation to create subtle reverbs, dense chords, self-generating musical structures and more all from whatever you feed its input.

## Installation

Firstly unzip the zip file to a sensible location of your choosing.

Then download, install and launch the Native Access application from Native Instruments' website [here](#)



Once Native Access is launched, click 'Add Serial' and enter the serial number you have received.

You will then be asked to browse to the location where you unzipped the file and select the folder which contains SLOR.nicnt.

Once you confirm the folder selection Native Access will install SLOR.

For support enquiries related to installation please contact [Native Instruments support](#)

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# Overview



The unique sound of SLOR comes from two things. Firstly the interaction between the 32 parallel resonators when their parameters swarm in a pattern by a certain distance from a central point. Secondly the way these parameters morph between the lefthand and righthand voice parameter settings.

The best way to get to know the sound of SLOR is to explore the presets in the preset toolbar on the lefthand side. There are 4 banks with chords, drones and ambiances, single notes and percussive.

There are 5 main sections on the interface

## 1 Swarm Patterns and Swarm Pattern History



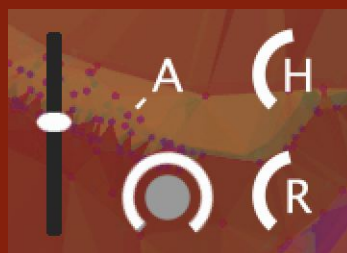
The two global randomise buttons randomise the parameter spreads for the lefthand or righthand parameter sets. The history wheel stores the results of the last 16 randomise actions. Moving the clock hand recalls the stored random values. History recall can also be automated in different ways by transient events in the incoming audio.

## 2 Morph bar



The morph bar controls the morphing between the lefthand and righthand parameter sets. Morphing can also be controlled by a dedicated envelope follower.

## 3 Trigger and Amplitude Envelope settings



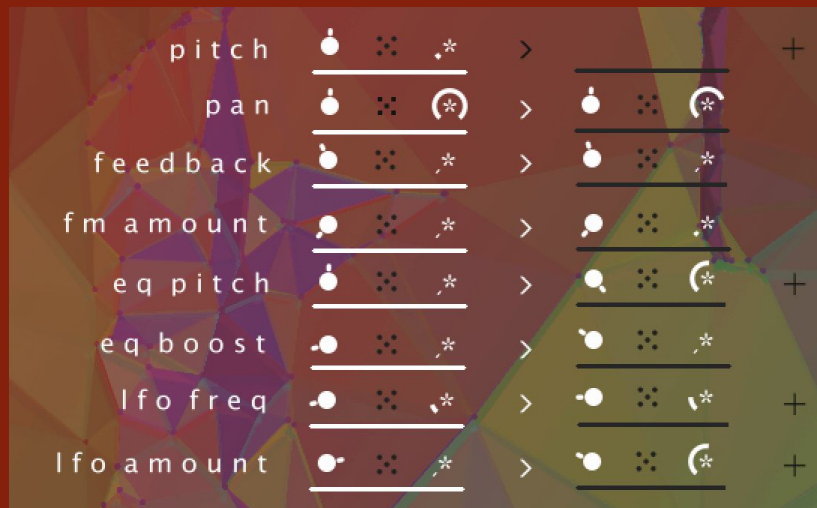
The controls in this section define the response of the global amplitude envelope to the incoming audio.

## 4 Scales



The single octave piano keyboard allows the pitch of each resonator to be remapped to a certain note in a scale. There are 5 scales which can be selected using the radio buttons to the righthand side of the piano keyboard.

## 5 Resonator parameters



There are 8 main parameters for the resonators: Pitch, Pan, Feedback, FM Amount, EQ Pitch, EQ Boost, LFO Frequency and LFO Amount. For each parameter there are centre, pattern and distance controls which set how the 48 voices swarm around a central point. Pitch, EQ Pitch, LFO Frequency and LFO Amount have additional parameters in their respective + pages.

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# Swarm Patterns and Pattern History



This section generates, stores and recalls swarm patterns. Swarm patterns govern how each voice's individual parameter relates to a single central point.

## A note about swarm patterns

We need to talk about birds.

Let's say there are 48 birds in our flock. They can be close to each other or far apart. This has a big impact on how the flock looks. But they also have a particular pattern in relation to each other - their swarm pattern - which stays the same whether they're flocking close together or far apart.

Let's say some birds have red feathers and others blue. If the blue and red feathered birds are all evenly distributed the flock will look purple whether it's close or far away. But if the blue birds tend to fly at the head of the flock and the red ones at the tail the flock will look more like a gradient. If we add more bird 'parameters', such as wingspan or beak length we get an exponential rise in how the relative distribution of the birds' 'parameters' affects the overall appearance of the flock.

The relative distributions of a certain parameter in the flock such as feather colour is called a swarm pattern. Whether the birds are flocking close together or far apart they still have the same swarm pattern but at a different distance.

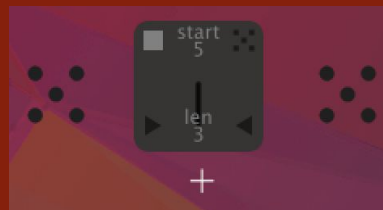
Each parameter in SLOR has a swarm pattern. The complexities of SLOR's sound arise from how these swarm patterns interact between the different parameters. Swarm patterns are generated randomly and automatically stored in the history wheel by hitting the randomise button next to a parameter. Alternatively you can generate new



swarm patterns for all parameters on one side of the morph bar by hitting one of the two large pattern buttons at the top.

Each time a new swarm pattern or group of swarm patterns is generated the history rotates one position clockwise and stores the new patterns. Rotating the arm of the pattern history recalls the values generated by any one of the last 16 randomise actions. Depending on how the voice parameters are configured this can create dramatic shifts in the sound and is handy for rapid sound design and comparison.

### **Bonus function: recalling Random History by transient**



While I was building the swarm pattern architecture I lost a few hours along the way just rotating the pattern history wheel and listening to the results. So I decided to make it automatable. It's great for giving your audio source that extra bit of character - especially useful if you're working inside the box.

Recall of pattern history via transient events can be set up in the automator page which is accessed via the + button beneath the pattern history wheel. The histories which are available to recall by note-on are set using the Start and Len controls. Start sets the first history in the sequence which can be recalled, Len sets the length of the sequence of histories which can be recalled.

There are 4 modes for note-on history recall. Click on one of the icons to select one of these modes:

Off (top lefthand corner) - histories are not recalled by note-on events

Random (top righthand corner) - a random history within the sequence is selected at note-on

Forwards (bottom lefthand corner) - histories are recalled in a forwards sequence, looping round to Start

Backwards (bottom righthand corner) - histories are recalled in a backwards sequence, looping round to Start + Len

# Morph Bar



This controls the crossfade between the parameter settings on the lefthand side and those on the righthand side. The lefthand side parameters are the parameters that you'll hear when the morph bar is completely to the lefthand side. The parameters on the righthand side are the parameters that you'll hear when the morph bar is completely to the righthand side. As you drag the morph bar from left to right you'll hear more and more influence of the righthand side parameters and less and less of the lefthand side parameters until you hit 100% righthand side parameters on the far righthand limit.

The Morph Bar can be controlled either on the graphic interface, via automation or from the modwheel of a MIDI keyboard. Consult the manual for your DAW to find out how to route MIDI to SLOR.

## **Bonus functions: Morph Envelope Follower, Smoothing and Curve**



These bonus functions are in the Morph Bar + page

### **Morph Envelope**

This modulates the position of the Morph Bar in dependence on the level of the source signal. The rise and fall times of this modulation is set using the A (attack) and D (decay) faders respectively. These affect how the modulation signal changes over time in response to note events. The amount of influence the Morph Envelope has over the Morph position can be set with the 'env' fader.

### **Smoothing**

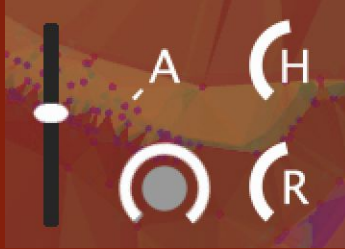
Moving the Morph Bar abruptly can cause a big jump in the sound which may not be desirable so the speed at which the morph catches up with morph bar movements can be set using the smth fader.

### **Curve**

Sometimes a linear morph just ain't right so you can set the curve of the morph with the crv fader. Higher settings result in a more logarithmic curve which favours the righthand side of the morph bar. This function is useful for adjusting the feel of Morph Envelope settings with fast attack or decay times.

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# Gate and Amplitude Envelope



This section controls how the overall output level of the resonators changes over time in response to the incoming audio signal. This level is controlled by an envelope generator triggered by a transient detector which controls the output level of the resonators.

The 'Trigger Threshold' fader on the lefthand side sets the sensitivity level of the trigger detection. The lower the fader is set, the more sensitive it is to the incoming audio signal and the more transients it detects.

The 'Envelope Amount' knob on the bottom left sets how much influence the envelope generator has over the level of the resonators. At its lowest setting the envelope generator has no effect over the level of the resonators, at its highest setting the level of the resonators is controlled entirely by the envelope and once the envelope release phase has completed there will be no level passed to the output.

A sets the attack time of the envelope, H sets the hold time and R sets the release time. For each control the longest times are achieved at their highest setting.

# Scales



The pitch of the resonators can be forced to stay in key using the scale functions, and the timing of gate events can be forced to stay in time using the live quantise functions.

Scale mode has 4 static scales C, A, L and E which can be set up in advance and switched between live to create shifting chord sequences. The first scale, S, is dynamic and updated live in response to incoming note events. In this mode the pitches which the oscillators are remapped to are recalculated based on incoming note events.

To select one of the 5 scales click on its respective letter icon.

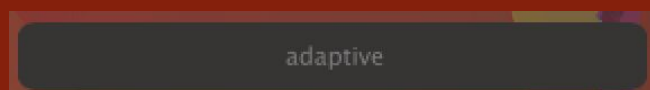
The note map for the selected scale is displayed on the scale map display to the right of the S, C, A, L and E buttons.

## **Bonus functions: Editing Scales, Dynamic Scale Mode**

These bonus functions are in the Scales and Live Quantise + page.

### **Editing Scales**

When C, A, L or E are selected the + page shows an editable display of how pitches are remapped within the scale. To change how a pitch is remapped for a key click and hold the key and drag the mouse up and down.



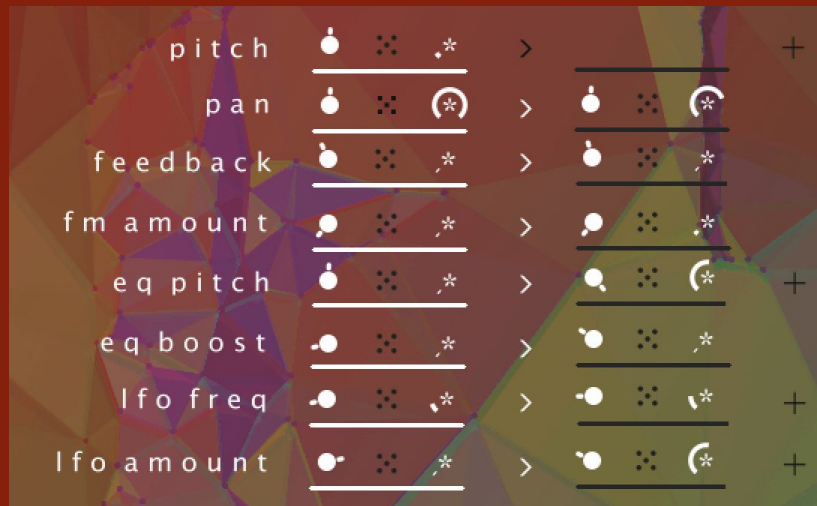
When the dynamic scale S is selected you can select from 3 behaviour modes which control how the pitches are distributed between the voices. To select one of them, click on the word to cycle through the 3 options.

In mono mode only one note per octave is available at once. This results in a monosynth-like sound. In poly mode the scale map is made up of any notes which have been pressed. This results in a polyphonic-like sound. In adaptive mode the scale map defaults to mono unless two or more notes are played at once on an attached MIDI

keyboard in which case polyphonic mode is enabled. This allows a flexible playing style for keyboardists.

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# Resonator Parameters



## Resnator Parameters Overview

The 8 global voice parameters Pitch, Pan, Feedback, FM Amount, EQ Pitch, EQ Boost, LFO Frequency and LFO Amount control the global voice parameter settings and how the infinite resonators sound.

## About Infinite Resonators

I've been working on the infinite concept for some years now. The idea is to create a delay line with a feedback path where any kind of DSP processing can be inserted without causing the feedback to grow out of control, decay unexpectedly quickly, click, pop or allow any loud transients through, regardless of the settings of the DSP in the feedback path or how they're being modulated. The result is a very versatile, lively and unique sound which does all the standard resonator stuff while also veering into wavetable and FM-sounding territory.

## Parameters

Each global parameter has a lefthand and a righthand setting. The lefthand setting controls the voices when the Morph Bar is fully left, the righthand setting controls the

voices when the Morph Bar is fully right. When the Morph Bar is between the left and right the voice parameters will be a combination of these values.



Each setting has 3 controls. The lefthand knob controls the centre point of the flock, the middle button generates a new swarm pattern for the voices and the righthand side knob controls the distance the values for each voice swarm from the central point. With the A knob fully down the individual random offsets have no effect on that parameter for any of the voices. Turning the distance knob up introduces more and more influence from the swarm pattern. With the distance knob fully up the parameters swarm at their furthest point from the centre.



The Morph button in between the left and right settings controls whether the parameter is included in the morph. When Morph is disabled the righthand settings become invisible and the settings for that parameter are controlled by the lefthand settings at all positions of the Morph Bar.

## Pitch



These parameter settings control the pitch of the resonators. These pitches are added to the pitch of the root note to create chords, harmonies or spectral effects or to allow the pitches to be played using a MIDI keyboard.

### **Bonus Functions: Spread, Scale Mapping, Bend and Glide**



These bonus functions are accessed in the Pitch + page



## Spread

Additionally to the main page pitch control the pitches of the oscillators can be spread by micro-tuned increments using the 'sprd' vertical fader. This function has the most impact when all oscillators are at the same pitch and produces a thickening effect to the sound. There is a separate spread setting for the lefthand and righthand sides of the morph.

## Scale Map

The pitches of the oscillators are mapped to the currently selected scale when the grid icon is highlighted. Scale map can be disabled by clicking the icon which becomes dark. When disabled oscillators can take any pitch including microtones. There is a separate scale map setting for the lefthand and righthand sides of the morph as well as for the morph itself (the centre grid button).

## Glide

The time it takes for oscillators to glide up to a new pitch is set using the 'gld' vertical fader. At the bottom pitches move instantly, at the top they take a long time to glide to their new pitch.

## Pan



These parameter settings control the left/right pan position for each resonator

## Feedback



These parameter settings control the feedback amount for each resonator

## FM Amount



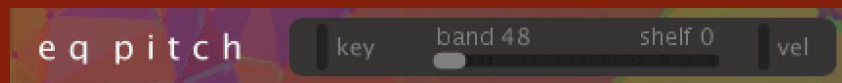
These parameter settings control the amount of the frequency modulation for each resonator

## EQ Pitch



These parameter settings control the cutoff frequency of the filter for each oscillator

### **Bonus Functions: Key Amount, EQ Type Distribution, Velocity Amount**



These bonus functions are accessed in the filter + page

### **Key Amount**

The 'key' vertical fader controls the amount that the current global root pitch influences the cutoff pitches of the filters. At the bottom the root pitch has no effect. At the top the pitch of the keyboard is added in full to the current cutoff pitches of the filters.

### **EQ Type Distribution**

The horizontal fader on the + page sets the distribution of the filter types. When full left, all 48 filters will be bandpass filters. As the fader moves towards the right from

the left, more and more of the filters will become shelf filters until the fader is fully right at which point all 48 oscillators are shelf filters.

### Vel Amount

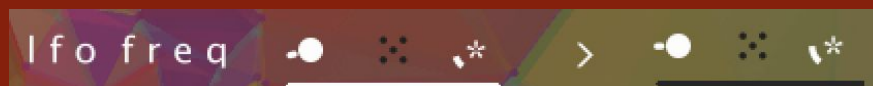
The 'vel' vertical fader controls the amount that the current transient peak influences the cutoff pitches of the filters. At the bottom the transient peak has no effect. At the top the transient peak is added in full to the current cutoff pitches of the filters.

## EQ Boost



These parameter settings control the boost settings for each resonator's EQ

## LFO Frequency



These parameter settings control the resonances of each filter.

### Bonus Functions:



### Retrigger, Shape, Shape Spread, Width, Width Spread, Curve, Curve Spread, Morph Enable, Sync Mode, Sync Clock Rate

The LFO Frequency bonus functions are an entire world unto themselves, helping to create anything from slowly shifting drones to complex polyrhythmic melodies.

## **Retrigger**

When 'retrig' is enabled (bright), all LFOs are restarted by new note-on events. When disabled LFOs run free without ever being restarted.

## **Shape**

The shape vertical fader controls the shape of the LFO. The shape can be continually adjusted from a downward saw wave at the bottom through a symmetrical up-down wave in the middle to an upward saw at the top. Whatever the value of this parameter the peak of each LFO cycle always appears in the same place allowing rhythmic settings to always stay in time with the grid.

## **Shape Spread**

The shape spread bi-directional knob controls the amount that the shape of each of the 48 LFOs is offset from the global value by a spread value which is different for each voice.

## **Width**

The width vertical fader controls the pulse width of each LFO cycle. At the lowest setting the shape of each LFO cycle is executed in a very small percentage of the total cycle length. The output of the LFO remains at its lowest for the rest of the cycle. At the highest setting the shape of each cycle takes the full length of the cycle to execute and the LFO cycles round again just at the point the LFO shape has been completed. Whatever the value of this parameter the peak of each LFO cycle always appears in the same place allowing rhythmic settings to always stay in time with the grid.

## **Width Spread**

The width spread bi-directional knob controls the amount that the width of each of the 48 LFOs is offset from the global value by a spread value which is different for each voice.

## **Curve**

The curve vertical fader controls the curve of the LFO as it executes its shape. The curve can be continually adjusted from a sine function at the lowest setting through a linear function in the middle to a logarithmic function at the top.

## **Curve Spread**

The curve spread bi-directional knob controls the amount that the curve of each of the 48 LFOs is offset from the global value by a spread value which is different for each voice.

### **Morph Enable**

The LFO shape, width and curve controls and their spread controls are duplicated with one set for each side of the Morph Bar. Morphing is enabled when the > button is bright. When disabled (dark) the righthand morph parameters disappear from the interface.

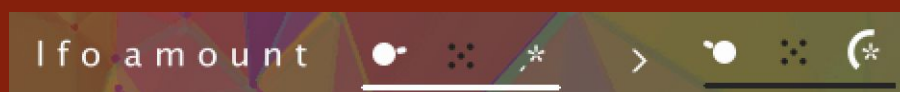
### **Sync Mode**

The LFOs have 3 sync modes: free, soft and hard which affect how the LFO relates to the current tempo and clock. In free mode the LFO frequencies bear no relation to the current tempo and move freely. In soft mode the LFO frequencies are mapped to musically sensible mathematical subdivisions of the current tempo but they are free to move independently of the sync clock so if an LFO frequency changes mid-cycle its phase may become arhythmically offset from the clock. In hard mode the LFO frequencies are mapped to musically sensible mathematical subdivisions of the current tempo and are hard-synced to the sync clock. If an LFO receives a new frequency mid-cycle it waits until its cycle is completed, adopts the new tempo and waits for the next clock pulse to restart.

### **Sync Clock Rate**

This controls the minimum LFO rate when sync mode is soft or hard.

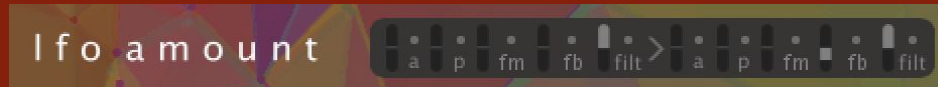
## LFO Amount



These parameter settings control the resonances of each filter.

### **Bonus Functions:**

## **Amplitude Amount, Amplitude Amount Spread, Pitch Amount, Pitch Amount Spread, FM Amount Amount, FM Amount Amount Spread, FM Pitch Amount, FM Pitch Amount Spread, Filter Pitch Amount, Filter Pitch Amount Spread, Morph Enable**



The LFO Frequency bonus functions are yet another entire world unto themselves, allowing close control over the shape of the sound and how it moves. The parameter names get a little ridiculous here - amount amount amount - but it's cool. You can do cool things with it.

### **Amplitude Amount**

The bipolar vertical fader 'a' controls the amount of influence the LFO has on the amplitude of the voice. In the middle the LFO has no influence. At the highest setting the LFO has a full positive influence. At the lowest setting the LFO has a full negative influence

### **Amplitude Amount Spread**

The bi-directional knob 'a' controls the amount that the amplitude amount of each of the 48 LFOs is offset from the global value by a spread value which is different for each voice.

### **Pitch Amount**

The bipolar vertical fader 'p' controls the amount of influence the LFO has on the pitch of the voice. In the middle the LFO has no influence. At the highest setting the LFO has a full positive influence. At the lowest setting the LFO has a full negative influence

### **Pitch Amount Spread**

The bi-directional knob 'a' controls the amount that the pitch amount of each of the 48 LFOs is offset from the global value by a spread value which is different for each voice.

### **FM Amount**

The bipolar vertical fader 'fm' controls the amount of influence the LFO has on the FM Amount of the voice. In the middle the LFO has no influence. At the highest setting the

LFO has a full positive influence. At the lowest setting the LFO has a full negative influence

### **FM Amount Spread**

The bi-directional knob 'fm' controls the amount that the FM Amount amount of each of the 48 LFOs is offset from the global value by a spread value which is different for each voice.

### **Feedback Amount**

The bipolar vertical fader 'fmp' controls the amount of influence the LFO has on the FM Pitch of the voice. In the middle the LFO has no influence. At the highest setting the LFO has a full positive influence. At the lowest setting the LFO has a full negative influence

### **Feedback Amount Spread**

The bi-directional knob 'fmp' controls the amount that the FM Pitch amount of each of the 48 LFOs is offset from the global value by a spread value which is different for each voice.

### **EQ Pitch Amount**

The bipolar vertical fader 'filt' controls the amount of influence the LFO has on the Filter Pitch of the voice. In the middle the LFO has no influence. At the highest setting the LFO has a full positive influence. At the lowest setting the LFO has a full negative influence

### **EQ Pitch Amount Spread**

The bi-directional knob 'filt' controls the amount that the Filter Pitch amount of each of the 48 LFOs is offset from the global value by a spread value which is different for each voice.

### **Morph Enable**

The LFO amounts and their spread controls are duplicated with one set for each side of the Morph Bar. Morphing is enabled when the > button is bright. When disabled (dark) the righthand morph parameters disappear from the interface.

## Appendix 1 - Automation IDs

Automation ID	Parameter
1	Master Volume
2	Morph
3	Random History
4	Scale
5	Hold
6	Attack
7	Decay
8	Sustain
9	Release
10	Pitch centre left
11	Pitch distance left
12	Pitch centre right
13	Pitch distance right
14	Pan centre left
15	Pan distance left
16	Pan centre right
17	Pan distance right
18	FM pitch centre left
19	FM pitch distance left
20	FM pitch centre right
21	FM pitch distance right
22	FM amount centre left
23	FM amount distance left
24	FM amount centre right
25	FM amount distance right
26	Filter pitch centre left
27	Filter pitch distance left
28	Filter pitch centre right
29	Filter pitch distance right



30	Filter resonance centre left
31	Filter resonance distance left
32	Filter resonance centre right
33	Filter resonance distance right
34	LFO Frequency centre left
35	LFO Frequency distance left
36	LFO Frequency centre right
37	LFO Frequency distance right
38	LFO Amount centre left
39	LFO Amount distance left
40	LFO Amount centre right
41	LFO amount distance right
42	Oscillator type
43	Pulse width
44	Morph Envelope Attack
45	Morph Envelope Decay
46	Morph Envelope Sustain
47	Morph Envelope Release
48	Morph Envelope Amount
49	Pitch glide
50	Pitch snap left
51	Pitch snap right
52	Key to FM Pitch
53	FM Pitch Snap left
54	FM Pitch Snap Right
55	Filter type
56	Key to Filter Pitch
57	Velocity to Filter Pitch
58	LFO Shape Left
59	LFO Width Left
60	LFO Curve Left
61	LFO Shape Right
62	LFO Width Right
63	LFO Curve Right

64	LFO Sync
65	LFO Grid
66	LFO > Amp left
67	LFO > Pitch left
68	LFO > FM Amount left
69	LFO > FM Pitch left
70	LFO > Filter left
71	LFO > Amp right
72	LFO > Pitch right
73	LFO > FM Amount right
74	LFO > FM Pitch right
75	LFO > Filter right

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