



 **KFLUX**

The KFLUX logo consists of a white icon on the left, which is a square with a horizontal line extending from its top-left corner, and the word 'KFLUX' in a bold, white, uppercase, sans-serif font to its right.

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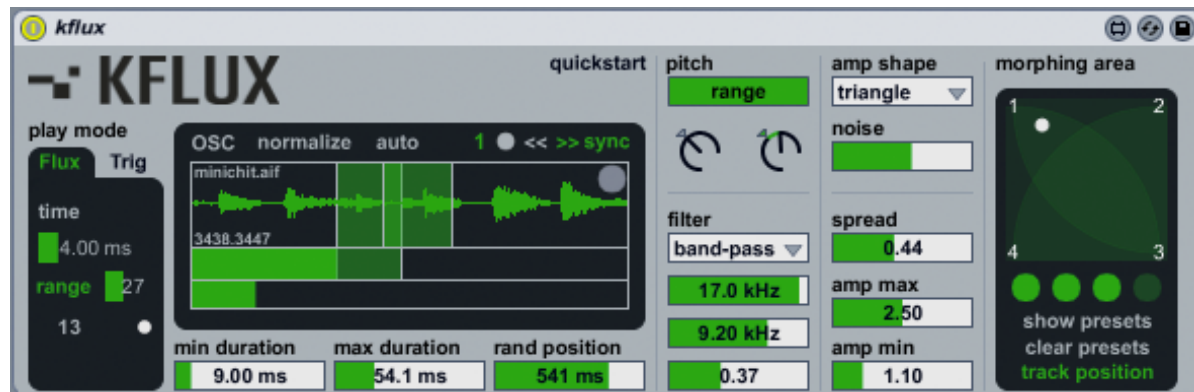
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1 This is Kflux

Thank you for choosing Kflux!

Kflux is one of the three MaxForLive devices we produce for sound granulation.



Kflux contains in addition to the software, a copy of this manual, which can help you to better understand this software and its potential.

This document will guide you through a complete overview of the product. After reading it, you should be able to use it on perfect, so we recommend that you take the time to read this guide in its entirety.

Ableton Live 8 and the MaxForLive add-on are required (refer to our website to know which are the Live version supported for every released version): Kflux is a MaxForLive instrument and works both on Mac OS® X and Windows®.

Kflux is currently available as single product and contained in the Kflux Bundle, with Kfluxin and Kfluxsy.

Kflux comes unlocked: it means that you can easily unlock it and take a look on the inside.

Thanks to the Max For Live total integration, you will find a description for each Kflux parameter in the Live Info View, and you can easily automate each parameter inside Live.

Kflux is fully OpenSoundControl compatible: the software is provided with iOS Lemur and TouchOSC templates, and this manual contains the OSC implementation chart.

Please refer to our [website](#) for any update.

K-Devices

2 Notes About Sound Granulation

Sound granulation is the process of slice audio in very small parts, so called grains, and re-compose them in a new defined order and space.

The granulation of sound is very useful to generate complex organic textures, noises, time-stretch effects, and many others usual and unusual sound design techniques.

If you want go deep on this subject, we suggest to take a look to the fundamental text *Microsound*, written by Curtis Roads, edited by MIT Press.

3 Notes About Unlocked

This software comes unlocked: it means that you can open the device and explore it. This is very helpful for learning Max/MSP via the reverse engineering. At the same time the device or its parts cannot be re-used or recycled in other devices or patches.

You are free to modify it for your self only.

K-Devices does not offer support for modified devices.

Installing the device on your computer means that you have read and agree K-Devices End-User License Agreement. You have a copy of it downloaded with this software.

4 Installation

To install the device double click on the .alp file contained in the downloaded file. Device, presets, and Live Lessons will be automatically installed.

Kflux device and presets will be installed in the Ableton Live Library:

Instruments / Max Instrument / Kflux by K-Devices

To see the Kflux Live Lesson please go to:

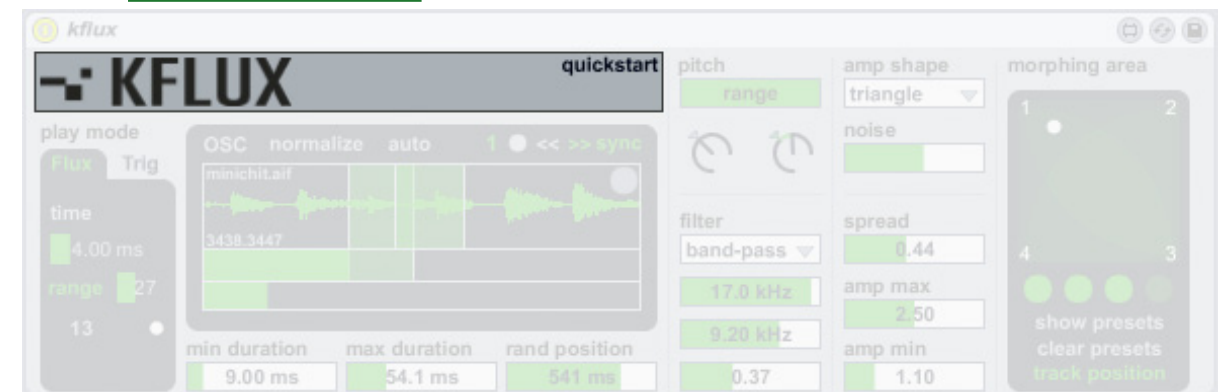
View / Help View / Lessons / Show all add-on Lessons / Kflux by K-Devices

5 Interface Overview

The interface is divided in 6 main areas:

- Info Area
- Play Mode Area
- Generation Area
- Filter
- Amplification Area
- Morphing Area

5.1 Info Area



Kflux button shows the about window, wich includes the software version and the link to K-Devices website and social networks.

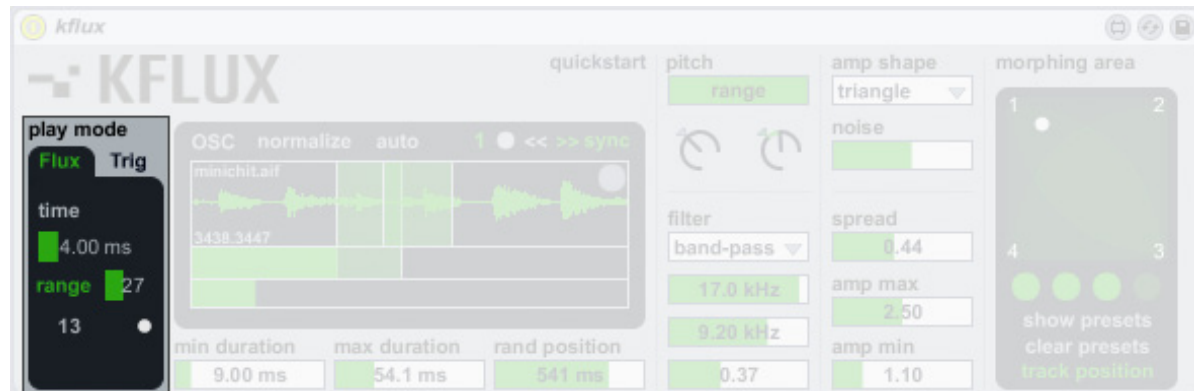
Quickstart shows the quickstart built-in guide.

5.2 Play Mode Area

The play mode area is the first Kflux section and decides the way grains are generated. There are two ways of work: **Flux** and **Trig**. In **Flux** mode, grains are generated continuously,

while in **Trig** mode the grain stream is generated according to a trig, such as incoming MIDI notes. You can easily switch mode by clicking the desired mode in the head of the dark tab.

5.2.1 Flux Mode



The parameters in this section are used to set the lapse of time between consecutive grains.

Static/Range switch lets you use a fixed or a random time value between grains. In **Static** mode, **Time** sets the fixed time between grains.

In **Range** mode things are different. **Time** is used in conjunction with **Range**: just set two different values in these two parameters and the lapse of time is randomized between the minimum and the maximum value (it does not matter if you set the higher value in **Range** or in **Time**).

The **value** in the bottom left of this section indicates the time elapsed between grains: it is constantly updated.

The **led** in the bottom right has two colors: white indicates that generated grains ends before the following grain starts. When a grains ends after the start of following grain led

becomes red. This may generates artifacts like pops or clips. We suggest to take the time needed to test every sound generated in “white” or “red” mode: sounds created can be very interesting even with artifacts!

5.2.2 Trig Mode



As said, this play mode needs a trig to generate grains. Trigs are generated by incoming MIDI notes.

The **note in** section displays incoming MIDI notes.

MIDI notes may also sets the amplitude of the grains and the position of the playhead.

When **amp = range**, grains amplitude is managed by the range produced with **amp min** and **amp max**. Otherwise, if **amp = vel**, amplitude is linked to the velocity of the MIDI note used to trig that grain.

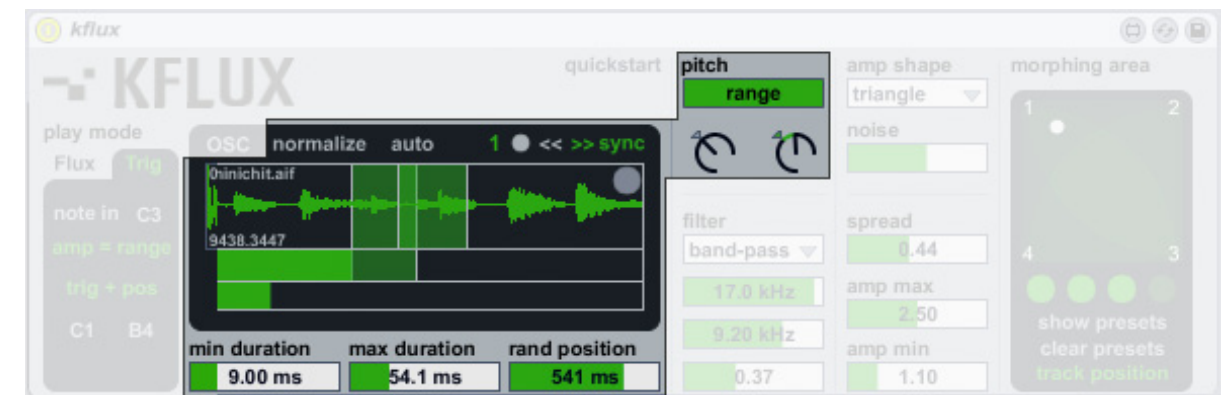
Also the playhead position can be modified by MIDI notes. **Trigger / Trig+Pos** switch is created for this purpose.

When **Trigger** mode is activated only trigs are generated when a MIDI note is received, and it does not matter which pitch it has.

When **Trig+Pos** is activated the playhead position will be varied in function of the pitch of the MIDI note received, then a grain will be generated in conjunction to that playhead position change.

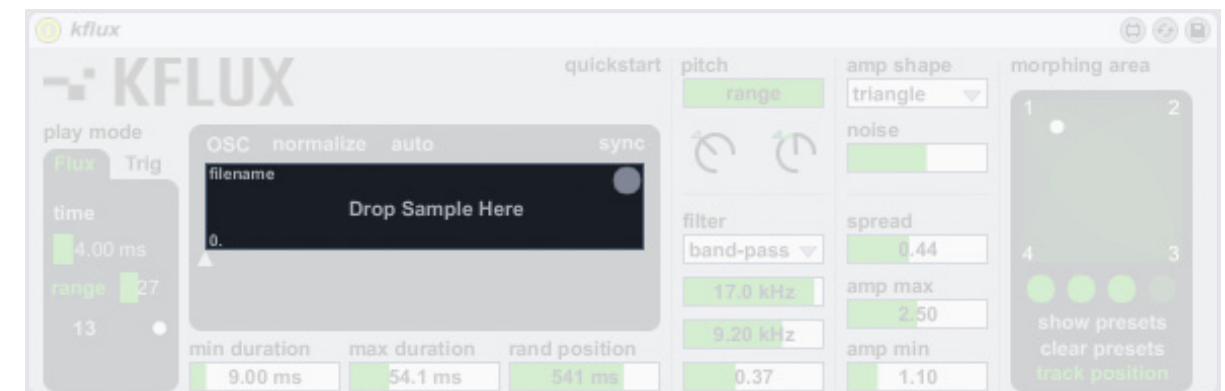
You can easily adjust the MIDI note range in function of the playhead position using the **lowest MIDI notes parameters**.

5.3 Generation Area



This area is the core of Kflux. The parameters on its inside are used to control the way grains are generated.

To generate grains Kflux needs to load a sample: just drag and drop the sample in the **sample area** and the engine is ready!

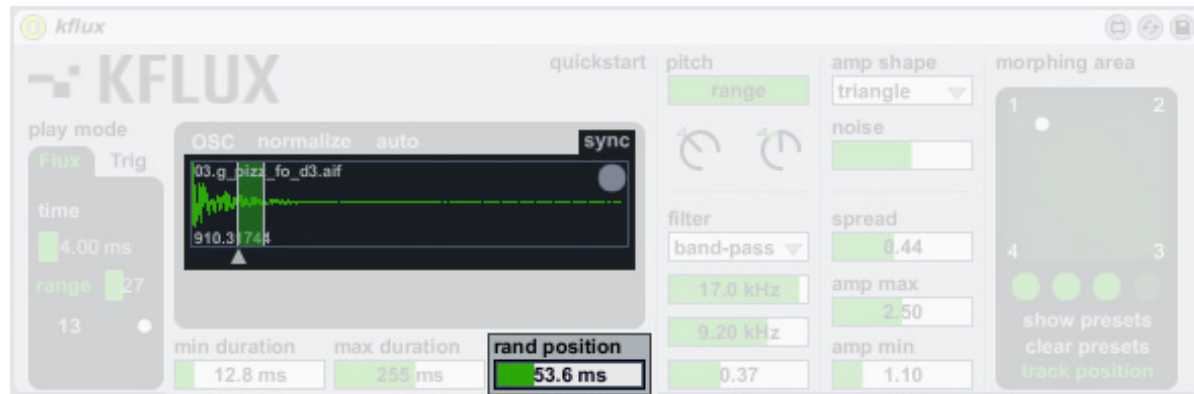


The **normalize** button above the sample area normalizes the loaded sample manually, while the **auto** button on its right normalizes every sample loaded automatically.

Two different modes of generation are available: **in-sync** and **off-sync**.

In **off-sync** mode (gray sync button), Kflux uses a fixed **playhead** position using the small **triangle** under the **sample**

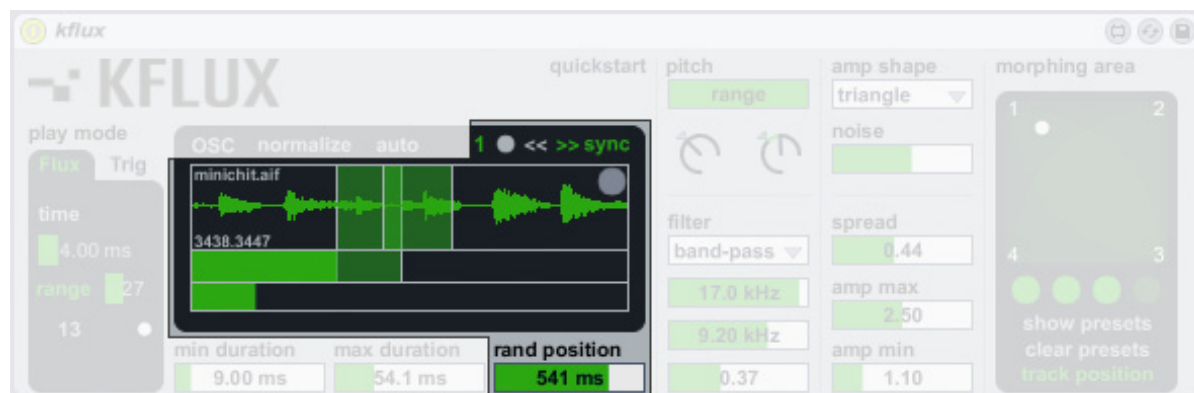
area: grains are generated from the same sample position.



Rand position increases the range of grains that can be generated: setting it to 0, Kflux always generates the same grain. Increasing that value, Kflux generates grains randomly, basing on a bigger part of the sample. The affected part of the sample is highlighted with a green bar over the sample area, as shown in previous picture.

Sync mode (green sync button) uses a dynamic beat-synchronized grains generation.

It means that playhead is constantly moving back or forth (it depends by the **sync direction** switch, situated on the left of the green sync button, << or >>).



Playhead moves inside the sync area, which can be easily defined with the two new sliders under the **sample area**. As

you can see in this mode, the **playhead position triangle** is no longer available. By the way, two new controls appeared: the **sync area** and **sync offset** sliders.

Sync area is the lower one and sets percentage of sample used by the sync: it works in conjunction with the **sync offset**, the one between the **sync area** slider and the **sample area**, which lets you move the synced area in the desired position around the sample.

You can reset the synced area from a small section to the entire sample length via the **sync reset** button, the gray button located at the left of the **sync direction** switch).

The playhead moves inside the selected sample area back or forth in sync with Live's transport. With the **sync duration** you can select how many beats the playhead takes to "read" the entire sample area. Selecting 1, means that in one beat the playhead completes the movement and restarts from the begin. Selecting for example 32 it will requires 32 beats to complete the movement. Even there the **random position** slider is available, and adds a random section (from 0 to 1000 milliseconds) to the playhead position.

Grains length is defined by a random value contained in the range created by the **min duration** and **max duration** sliders.

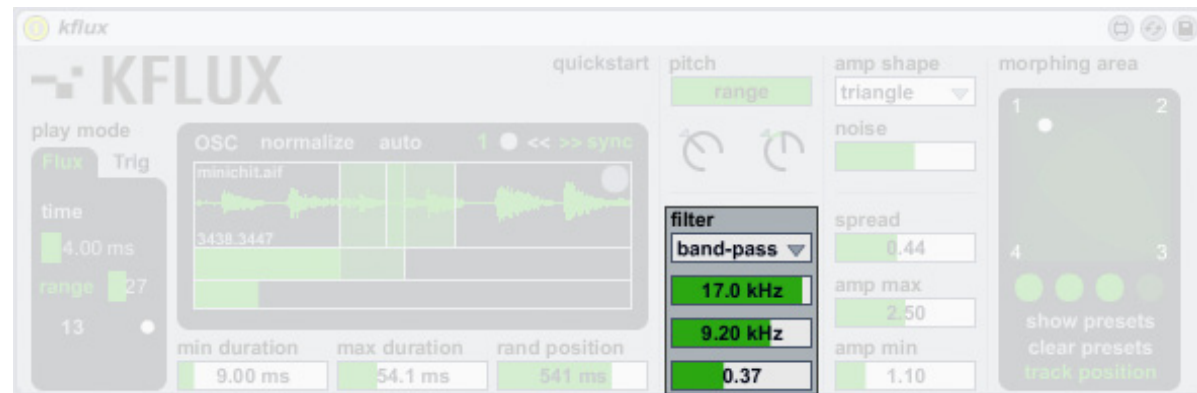
Static/Range switch in the pitch section is used to set a fixed or a random pitch, in a defined range, for each grain. In **Static** mode the left dial is used to define the fixed pitch. In **Range** mode the two dials works together to define the range of possible pitches for the grains.

5.4 Filter

After the generation area all the grains are processed by a multi-mode filter.

It has four filter modes:

- low-pass
- high-pass
- band-pass
- notch



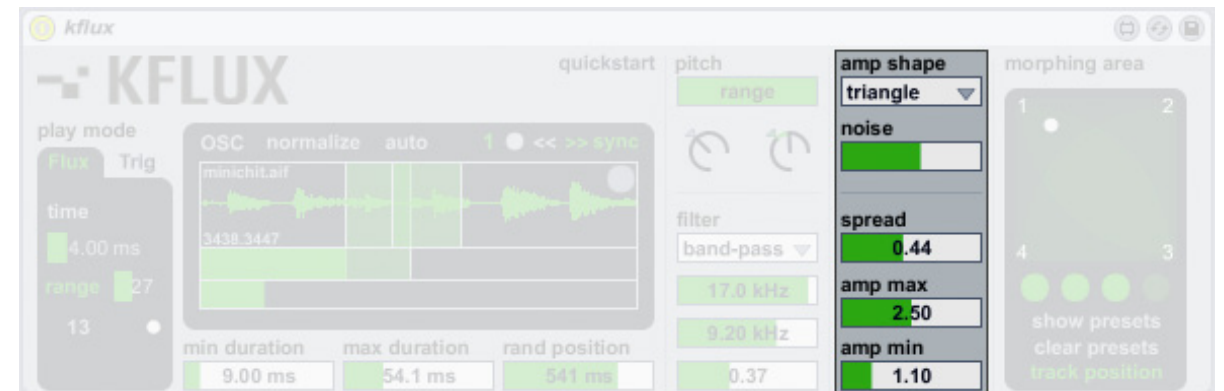
This filter works very similar to other Kflux parameters. There are two frequencies, **freq min** and **freq max**. Together these values create a defined range. The filter will be set with a random frequency value between this range for each grain.

The slider under the frequencies is the **Q factor**, and it is used to set the filter shape.

5.5 Amplification Area

Kflux has seven different amplification algorithms, called **amp shapes**. Each one provides a different way to amplify grains:

- gaussian
- blackman
- three stage linear
- triangle
- expodec
- repodec
- noise



A noise generator is also available: with the **noise** slider you can blend the amount of grains to the amplification algorithm (as noise oscillator which modulates the selected amplitude algorithm).

Spread controls the opening of the grain-stream in the stereo panorama.

As in many other parameters, the amplification can be

randomized inside a defined range, defined by **amp min** and **amp max**.

5.6 Morphing Area

This section presents a 4 pole xy **morph pad**. Each pole can store one Kflux snapshot.



Before start dragging in the pad you need to store the snapshots: just shift+click on one of the dark green buttons under the pad and the actual Kflux configuration will be stored (snapshots are from 1 to 4, from left to right). Lighted green button means that a snapshot is already stored.

Clear preset clears all the stored snapshots.

Show presets helps you to include or exclude specified parameters from the morphing, and to show and modify parameters already stored.

When activated (green), **track position** include the playhead position in the morphing. By default it is excluded.

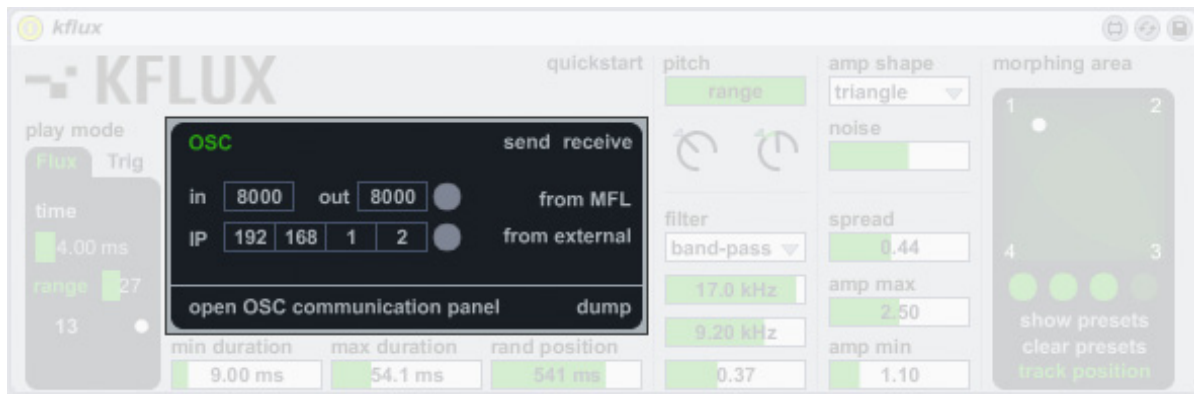
Click and drag with the mouse to move the white ball and start morphing the presets, and the grains!

6 Open Sound Control

Kflux now offers a complete integration with the ultra-flexible and powerful Open Sound Control protocol.

For more information about OSC protocol please take a look [here](#).

To use OSC in Kflux you need to access and configure it, via the OSC Panel. Click on the **OSC** button above the sample area to open it.



6.1 OSC Panel Overview

In sets the input port. If you only need to control Kflux from a remote OSC application, you only need to set up this port in Kflux, and enable the **receive** button in the top right of the panel (when enabled it becomes green). Then click the **gray button** on the right of the out box to enter the value.

By the way, if you move parameters on your computer and on your OSC remote controller, you may have a response from Kflux updating parameters on your controller.

In this case you have to setup also the destination **IP** address

and the **out** port, and enable the **send** and **receive** button in the right of the panel. Then click the two **gray buttons** on the right to enter the values.

From MFL displays messages from Kflux in the Max window.

From external displays incoming messages in the Max window.

Open OSC communication panel button opens Max window.

The **dump** button sends current status of each parameter to OSC external device. This is very helpful to update all the parameters in your OSC remote.

6.2 Touch Templates

Kflux comes with iOS Lemur and TouchOSC templates.



6.3 OSC implementation chart

OSC					Function
Address	Data Format	Input Values	Recognized	Transmitted	
/Kflux/time_mode	integer	0-1	O	O	0 for Flux Mode, 1 for Trig Mode
/Kflux/time	floating	0.÷1.	O	O	Time between grains
/Kflux/static_range	integer	0-1	O	O	0. for Static Mode, 1 for Range Mode
/Kflux/time_max	floating	0.÷1.	O	O	Max time range between grains
/Kflux/trig_amp_mode	integer	0÷1	O	O	MIDI amp mode
/Kflux/trig_pos_mode	integer	0÷1	O	O	MIDI trig mode
/Kflux/range_min	integer	0÷127	O	O	min MIDI note value
/Kflux/range_max	integer	0÷127	O	O	max MIDI note value
/Kflux/position	floating	0.÷1.	O	O	grains position
/Kflux/duration_min	floating	0.÷1.	O	O	min duration
/Kflux/duration_max	floating	0.÷1.	O	O	max duration
/Kflux/position_random	floating	0.÷1.	O	O	random position
/Kflux/sync	integer	0÷1	O	O	0 for Sync Off, 1 for Sync On
/Kflux/sync_offset	floating	0.÷1.	O	O	Sync Offset
/Kflux/sync_area	floating	0.÷1.	O	O	Sync Area
/Kflux/sync_dur	integer	1÷64	O	O	Sync Duration in Beats
/Kflux/sync_dir	integer	0÷1	O	O	Sync Direction
/Kflux/pitch_mode	integer	0÷1	O	O	0. for Static Mode, 1 for Range Mode
/Kflux/pitch_min	floating	-1.÷1.	O	O	Min grain transp / transp in static mode
/Kflux/pitch_max	floating	-1.÷1.	O	O	Max grain transposition
/Kflux/filt_mode	integer	0÷4	O	O	0 Off, 1 LP, 2 HP, 3 BP, 4 Notch
/Kflux/filt_freq_min	floating	0.÷1.	O	O	Min Filter Frequency
/Kflux/filt_freq_max	floating	0.÷1.	O	O	Max Filter Frequency
/Kflux/filt_q	floating	0.÷1.	O	O	Filter Q Factor
/Kflux/amp_envelope	integer	0÷7	O	O	0 gaussian, 1 blackman, 2 three stage linear, 3 triangle, 4 expodec, 5 recodec, 6 noise, 7 pulse
/Kflux/noise	floating	0.÷1.	O	O	Adds noise to the amp envelope
/Kflux/spread	floating	0.÷1.	O	O	Spread
/Kflux/amp_min	floating	0.÷1.	O	O	Lower Amp Value
/Kflux/amp_max	floating	0.÷1.	O	O	Higher Amp Value
/Kflux/morphing	floating list	0.÷1. 0.÷1.	O	O	Morphing Area (first y, second x)
/Kflux/morph_set	integer	0÷4	X	O	0 reset, 1 2 3 4 stores actual setting