

KULT
USER GUIDE ^{1.0}



One must still have chaos in oneself to be
able to give birth to a dancing star.

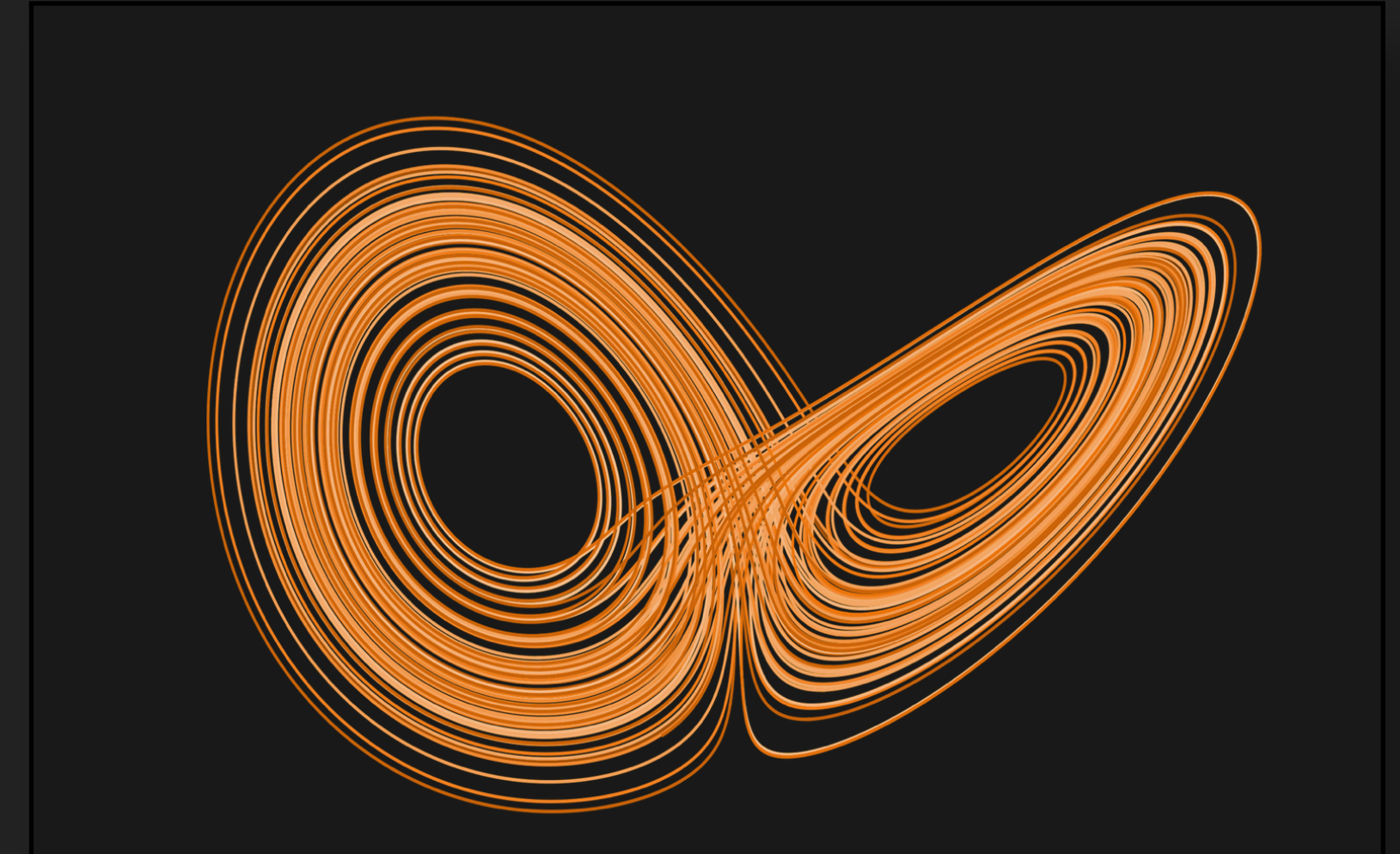
Friedrich Nietzsche

THANK YOU

KULT is a (not so) classical synth.

The oscillators are based on so called “Strange Attractors”. These are objects from the mathematical theory of Chaos. Compared to classical OSCs these sound less sterile and have an inherent organic quality, offering a very warm and - if you want - delicately gritty sound.

Strange Attractors are curves that evolve over time in 3D space, while sound usually is a movement in one dimension over time. The conversion from 3D to 1D enables innovative sound-shaping capabilities that you won't find in other synths.



KULT has been designed with great care and dedication to give your creative hands the best possible tool. I hope you will find lots of fun and inspiration while exploring its exciting sonic possibilities!

You can contact me via peter@dawesomemusic.com



All the best
Peter (Dawesome)

GETTING STARTED

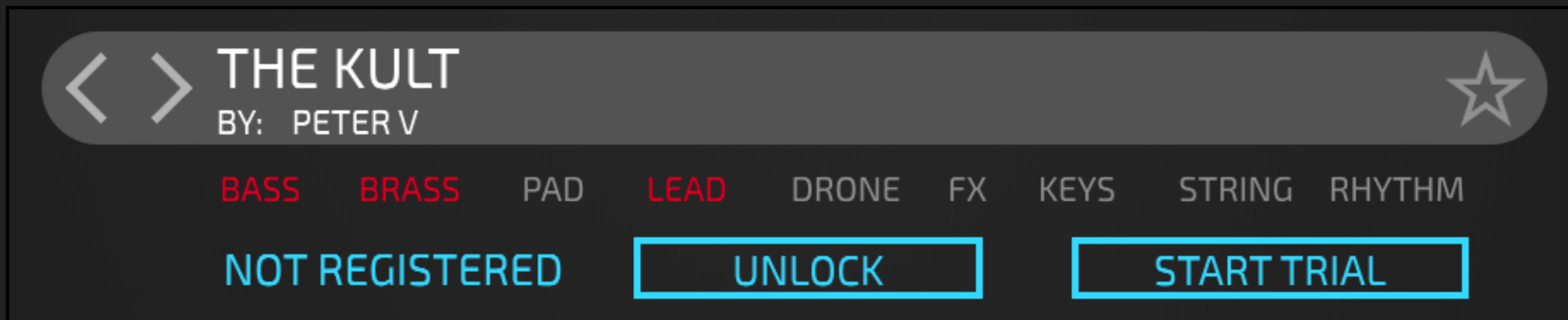
This involves two steps:

1 Install the software

This is straight forward: download the right installer for your system (.pkg for Mac and .exe for Win). You can start the installer with double-click ... I guess you have done this before.

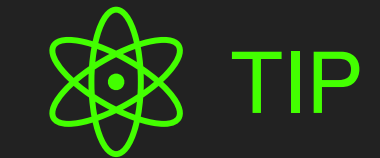
2 Start your free 90 days trial

We provide a free trial for 90 days without limitations. To start your trial: Open *one instance* of KULT in your DAW. Click “**START TRIAL**” and provide your tracktion.com credentials.



If you have purchased KULT the activation works in the same way: Open *one instance* of KULT in your DAW, click “**UNLOCK**” and provide your tracktion.com credentials.

Now you can start to explore KULT - enjoy and have fun!



KULT has an online help. You can de-/activate it with the green question mark in the lower left.

When you hover any element with the mouse you will see a short explanation.

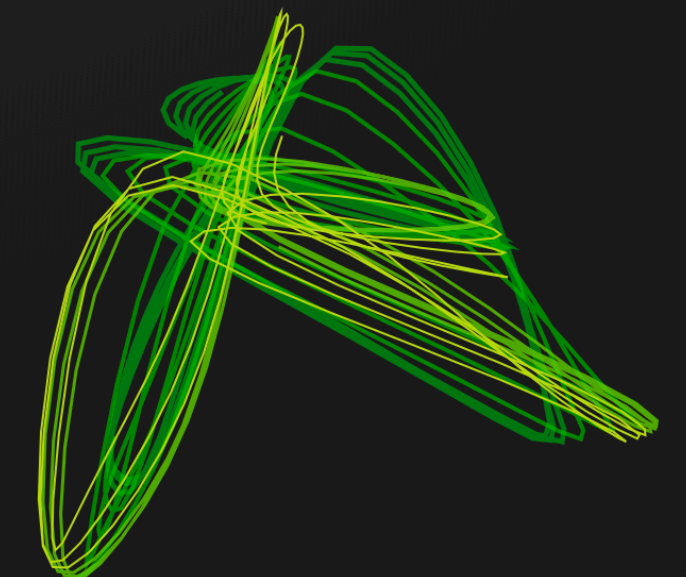
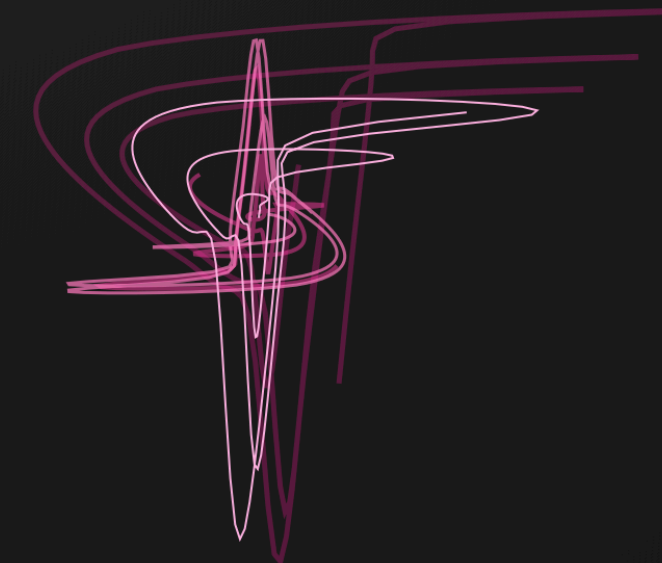
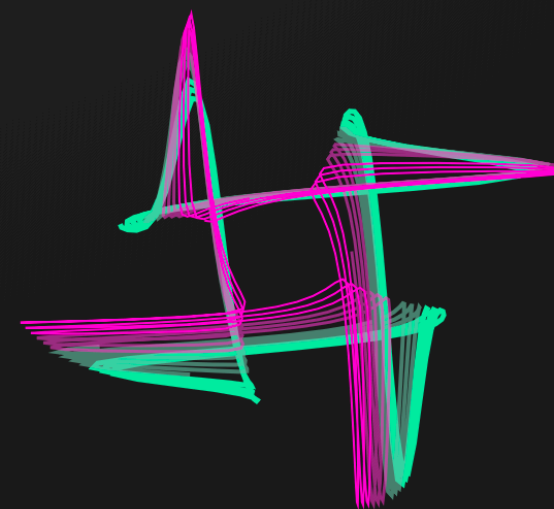
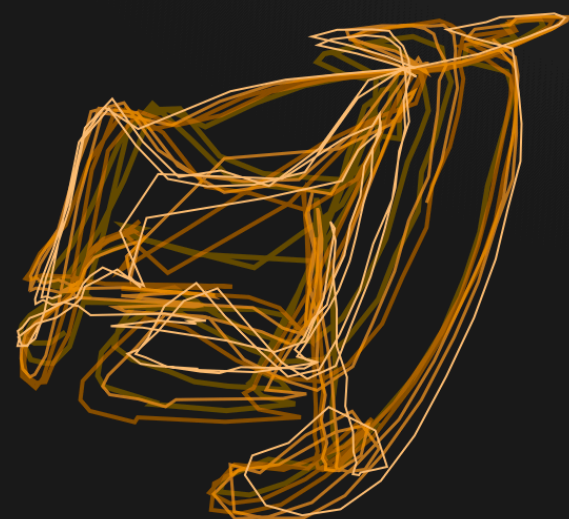
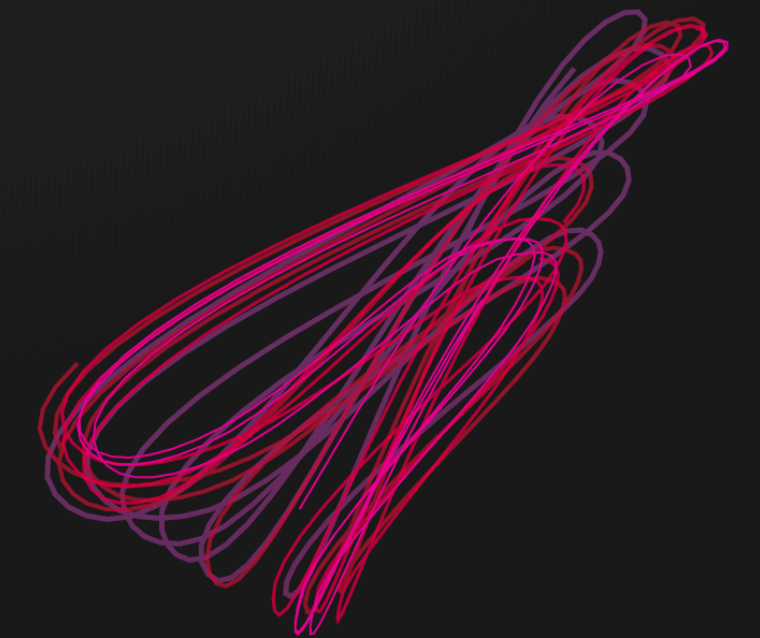
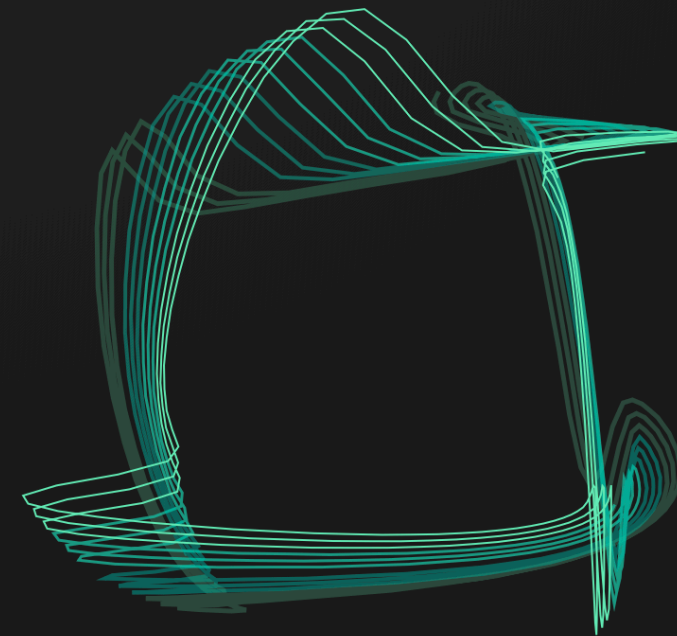
Can't hear sound? First make sure that KULT receives midi notes. Any incoming midi note is displayed in the virtual keyboard at the very bottom of the plugin.

In the lower right there is a level meter displaying the generated output that is sent to your DAW. Some patches have a slow attack, you may need to hold notes for longer time.

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KULT



OVERVIEW

Use the main burger menu ☰ to access patches directly or change settings.

Go to next or previous patch in the list of patches in the right sidebar.

Click to edit the current name and save the patch with the new name

Click to save the patch. Turns blue if there are unsaved changes

Click to list only patches of certain categories

Undo and Redo of last operation

Modulators that are used in the patch

Displays the OSCs of the current patch

Click to enable or disable tooltips

The virtual keyboard displays incoming midi notes

Select Pages for editing the current patch

The UI is resizable. Drag to shrink or expand

Enter a text to filter patches that appear in the browser below

Scroll to browse Patches.

Click to load a patch. Right click to reveal the patch file or to make this your init patch.

To open a patch either right click or drag and drop on the Patch Selector

The FX section. Click the + to add FX.



BROWSING PATCHES

Every pack shows up here with one letter. The **PATCH-LIST** displays only the patches from selected packs.

F = FACTORY U = USER

If you install additional sound packs each will show up here with one letter.

If active only favourited patches are shown in the list.

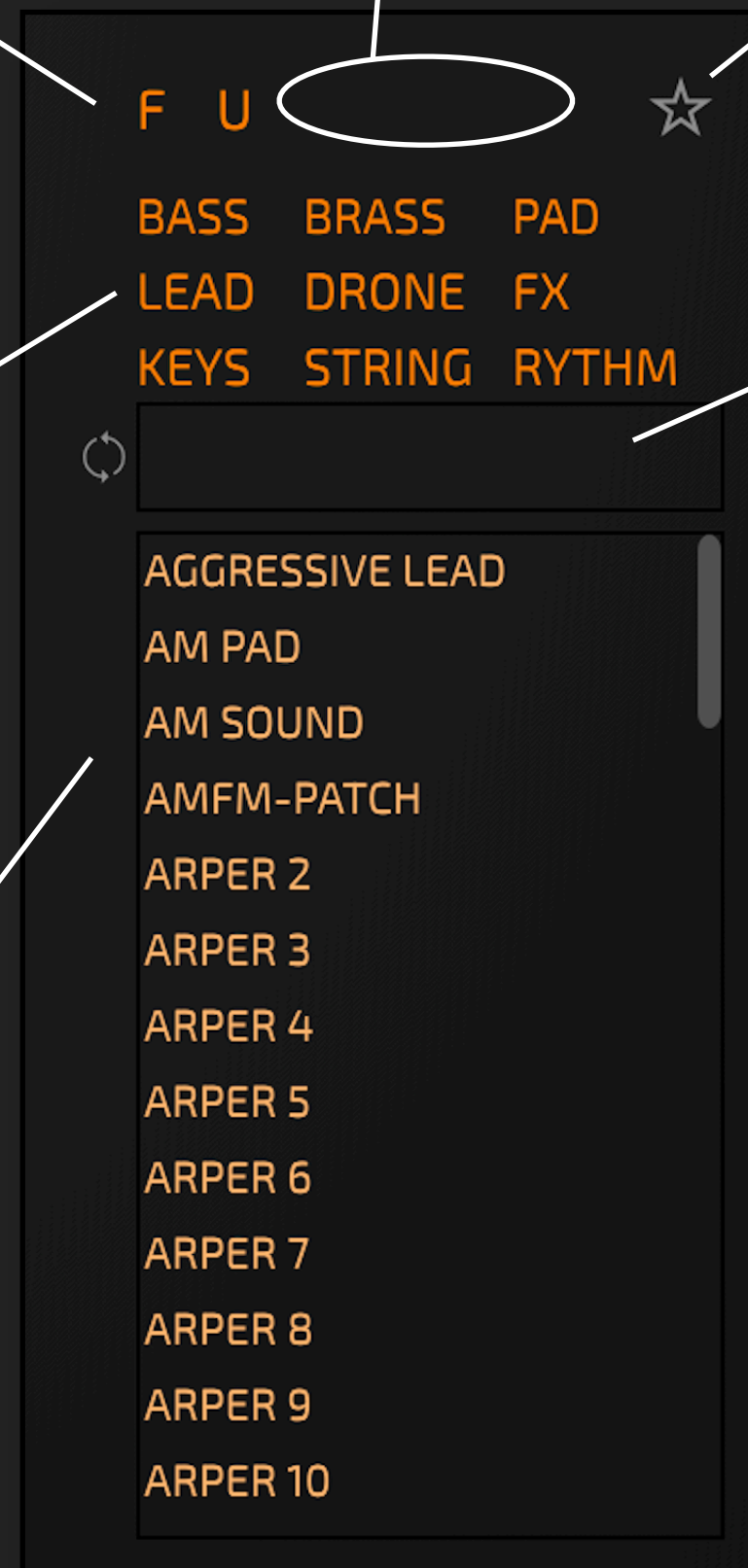
Every patch can belong to multiple categories.

Here you can choose which categories you want to have listed.

Scroll to browse Patches, click to load a patch.

Right-click for more options.

LOAD
REVEAL IN DIR
MAKE THIS THE INIT PATCH
RENAME PATCH
DELETE PATCH



Enter a text to filter patches that appear in the list

TIPS

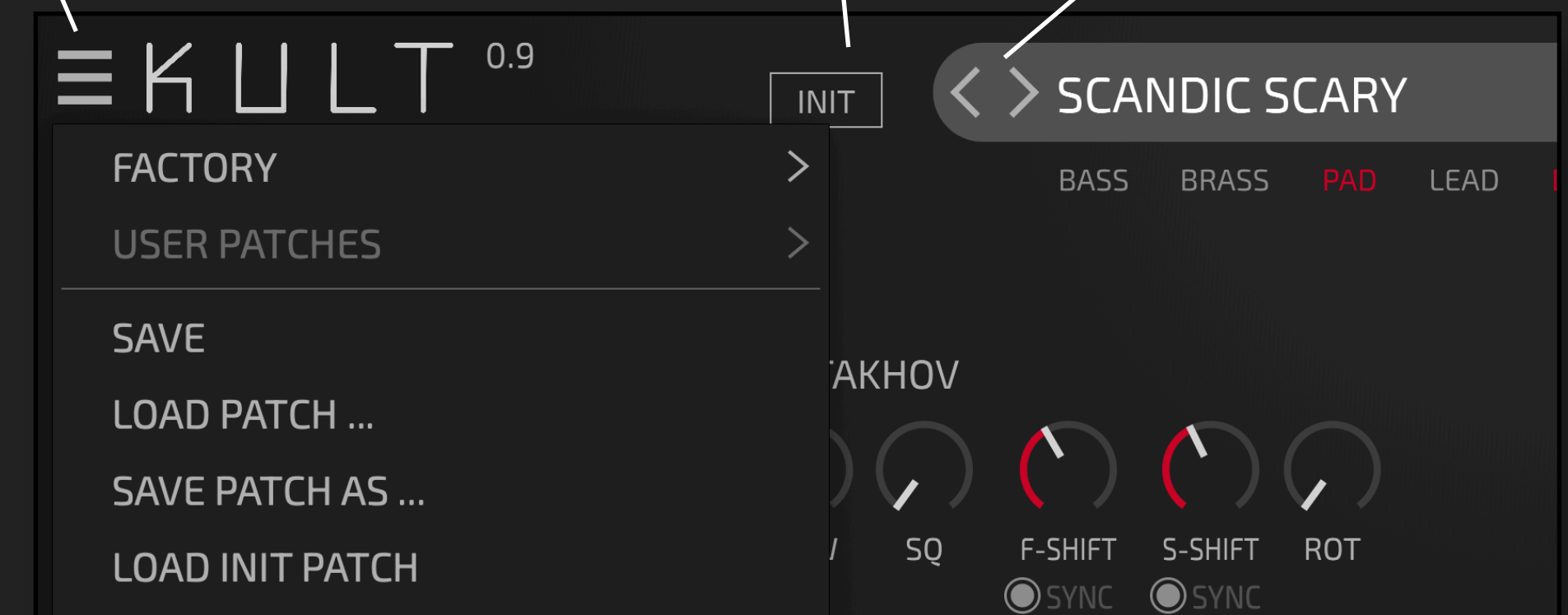
- Feel free to explore and just try things out. KULT is a creative tool and you can always use UNDO if something is messed up.
- KULT is highly optimised, but it needs to perform complex computations. Hence some patches require a few moments to load.

The main “burger” menu ≡ in the upper lists the Factory- and User-Patches for direct access.

Also all your installed sound packs will show up here.

This loads the **INIT** patch. You can reset **INIT** to another patch by right clicking it in the patch list.

Go to **NEXT** or **PREVIOUS** patch in the list of patches.



CATEGORIES

Click here to make this patch one of your favourites.

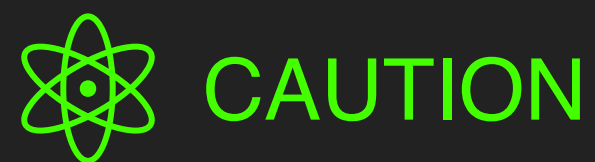
< > SCANDIC SCARY

BASS BRASS PAD LEAD DRONE FX KEYS STRING RYTHM

Every patch can belong to one or more of up to nine categories.

In this example the patch **SCANDIC SCARY** belongs to two categories: PAD and DRONE.

You can choose the categories here.



This information is stored as part of the patch file, so if you change the categories don't forget to (re-)save.

In the sidebar you can choose which categories you want to have included in the patch list.

With SHIFT-click you can select multiple patch categories. This does not narrow the search but expands it.

In this example the patch **SCANDIC SCARY** belongs to category PAD and the category PAD is also active, hence the patch shows up in the list.

If this is active only favourited patches are shown in the list.

F U

BASS BRASS PAD

LEAD DRONE FX

KEYS STRING RYTHM

↻

PAD STRINGS 2

PAD STRINGS 3

SCANDIC SCARY

SCANDIC SCARY 2

SEQUENCED

SLOW PAD

SOFT PAD

OSCILLATORS

SAW alters the wave-shape such that it becomes more SAW-like while maintaining the original sound character.

SQ alters the wave-shape such that it becomes more square-like.

F-SHIFT is a frequency shifter.

Low values add slow variations. To have more control you can **SYNC** the frequency to the DAW tempo.

Higher values can be used to add inharmonicity, for this use-case **SYNC** should be deactivated.

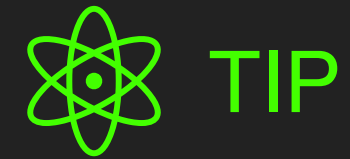
S-SHIFT is something you won't find on other synths. It is a bit hard to explain, but it is worth experimenting. You can view it as an LFO on the **PHASE** parameter.

You need to put **SAW** to a value above 0, otherwise it does not impact the sound.

It also interacts with **F-SHIFT** in nonlinear ways, so lots of room for interesting sounds.

To have more control for low frequencies you can **SYNC** it to the DAW tempo.

PHASE shifts the phase of the waveform.



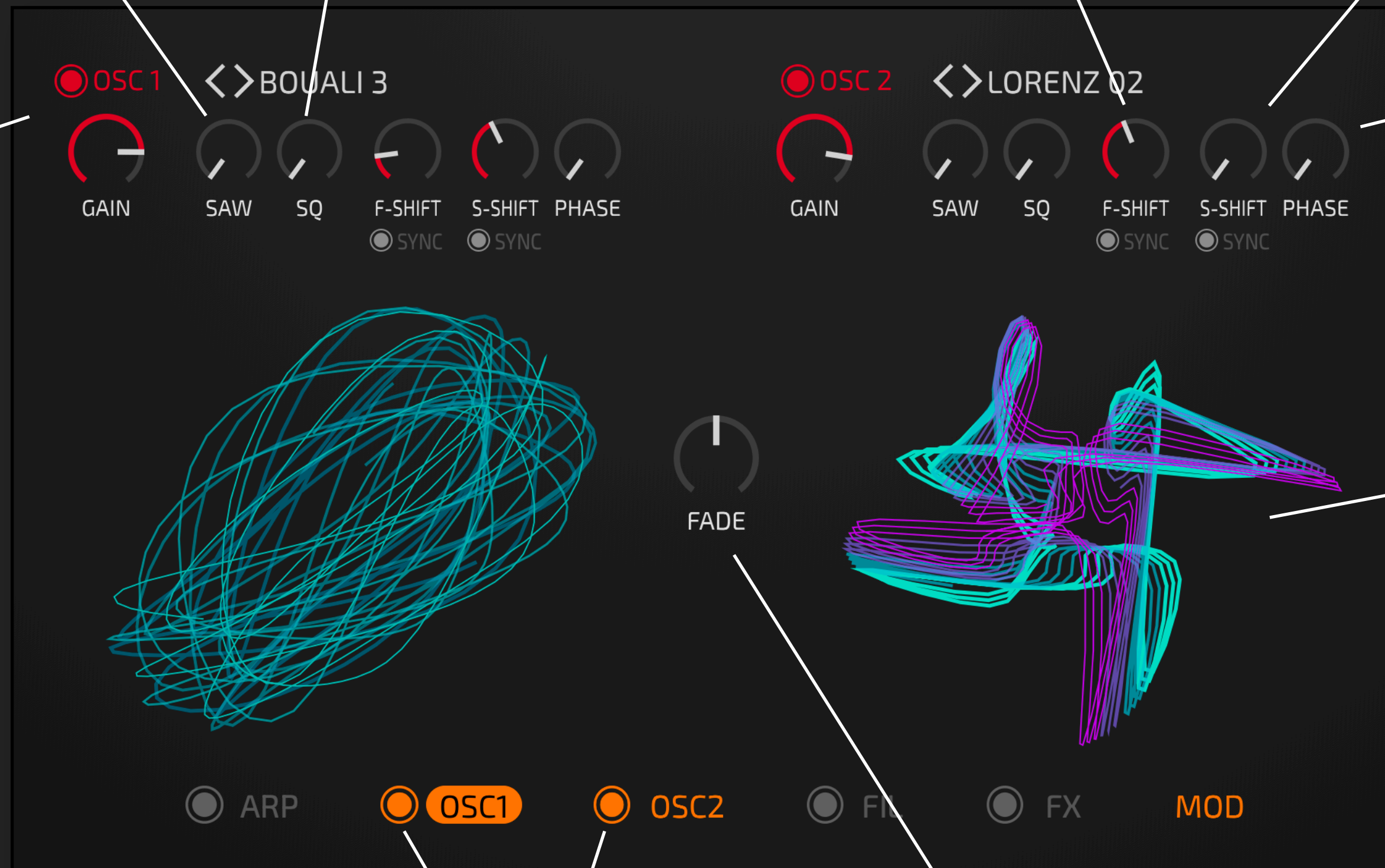
This sometimes sounds subtle, but you can modulate this value with a fast LFO.

Each patch can have one or two* OSCs.

What? Only two OSCs? Why not three? Plugin XYZ has 3 OSCs - isn't this better?

Please note that the OSCs in KULT are complex and allow a lot of sonic changes and modulation.

Actually in many cases you will find that one OSC is more than enough.



Click here to switch the OSCs on or off.

Use this to fade between OSC 1 and OSC 2

Right-click the OSC display to pick any other OSC source.

LORENZ 01	GRITTY	ASTAKHOV	CHEN 3	VELOCITY FORCED 2
LORENZ 02	SQUARE 1	SINUS	DEQUAN LI	SIQUA 1
LORENZ 03	SQUARE 2	BOUALI 1	VAN DER POL 1	SIQUA 2
LORENZ 04	ORGANIC SINUS	BOUALI 2	VAN DER POL 2	SIQUA 3
SAW 1	WHITE	BOUALI 3	FITZHUGH NAGUMO	CHUA 1
SAW 2	MALASOMA 1	CHEN 1	RAYLEIGH	CHUA 2
TRI 1	MALASOMA 2	CHEN 2	VELOCITY FORCED 1	CIRCULANT

OSC - PAGE

Each OSC has its own page with additional settings.

TRANSpose the OSC.

If QUANT is active the transposition snaps to integer semitones.

Tune the OSC in the range of 100 cents up or down.

If FIXED is active the midi note is ignored. Instead you can use the dial to choose a specific fixed note that will sound regardless of the notes played on the keyboard.

The underlying technology of KULT allows Frequency modulation (FM) synthesis.

You can use this to achieve the iconic sound of the 80s.

The FM-RATIO alters the timbre. Use QUANT to have the ratio snap to semitones, this allows to create more harmonic timbres.

AM alters the amplitude of the oscillator.

Use the LFO with AMT-LFO to create tremolo effects.

Use AM-RATIO with AMT to modulate the amplitude with audio frequencies. This creates a different sort of inharmonicity.

Use QUANT to have the ratio snap to semitones, this allows to create more harmonic timbres.

Use SYNC to select the rate of the LFO as a multiple of your host tempo.



This is a vowel filter (per OSC).

This emphasises typical formants of the vocal tract. Use this to give sounds a vocal flavour.

With VOW you can choose the amount of the effect.

With AEIOUA you can select the vowel. Please note that this also depends on the incoming signal.

FORMANT shifts the frequencies down (lower voice) or up (higher voice).

Choose how much of the OSC signal should be processed in the filter section.

TIPS

All parameters can be modulated.

You can use very slow modulations to add slight timbral variations.

You can assign controller data like modwheel or aftertouch to make your patches more expressive.

Especially FM and AM are well suited to give sounds a natural attack. To do so assign an ADSR on FM-AMT and/or AM-AMT.

UNISON creates up to five copies of the OSC that sound in unison.

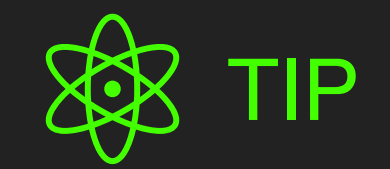
If OCT is active the pitches of the copies sound in octaves.

You can choose the amount of DETUNE for the unison copies.

SPREAD places the copies in the stereo panorama.

FILTER

You can switch the entire filter section on or off.

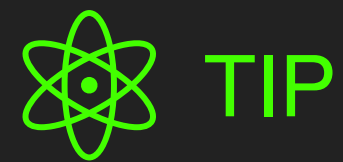


The settings of the **COMB** filter interact with each other.

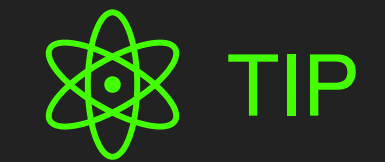
Tiny modulations of **PITCH** or **INHARM** can create very delicate and interesting timbral variations.

Distortion creates harmonic overtones.

SOFT is a saturation, **HARD** is an overdrive and **NOISE** is ... noisy.



In the signalflow the distortion unit is before the **COMB**-filter. You can use the distortion unit to “drive” the comb-filter.



Each section can be switched on/off separately. For CPU efficiency it is better to switch it off than to set its amount to 0.

A comb filter adds harmonic sounds. Use **AMT** to select the amount of comb filtering.

You can select the **PITCH** of the comb filter (relative to the pitch of the note played)

FB is the feedback of the comb filter. It can be negative or positive, sounding very different.

HARMONIC alters the timbral character of the signal.

A classical “analog” filter.

You can choose between modes (Lowpass, Highpass, Bandpass) and slope (12/24 dB)

With **TRACK** the cutoff frequency is adjusted according to the note played on the keyboard.

DRIVE refers to the analog saturation of the filter.



Always have some amount of **DRIVE** when you are using high values of **RESO**nance.

There are two independent analog filters.

Both use **CUTOFF**, but the second filter can have an **OFFSET** to the cutoff-frequency.

STEREO adds different offsets to the cutoff for the left and right stereo channel. You can use this to widen the sound.

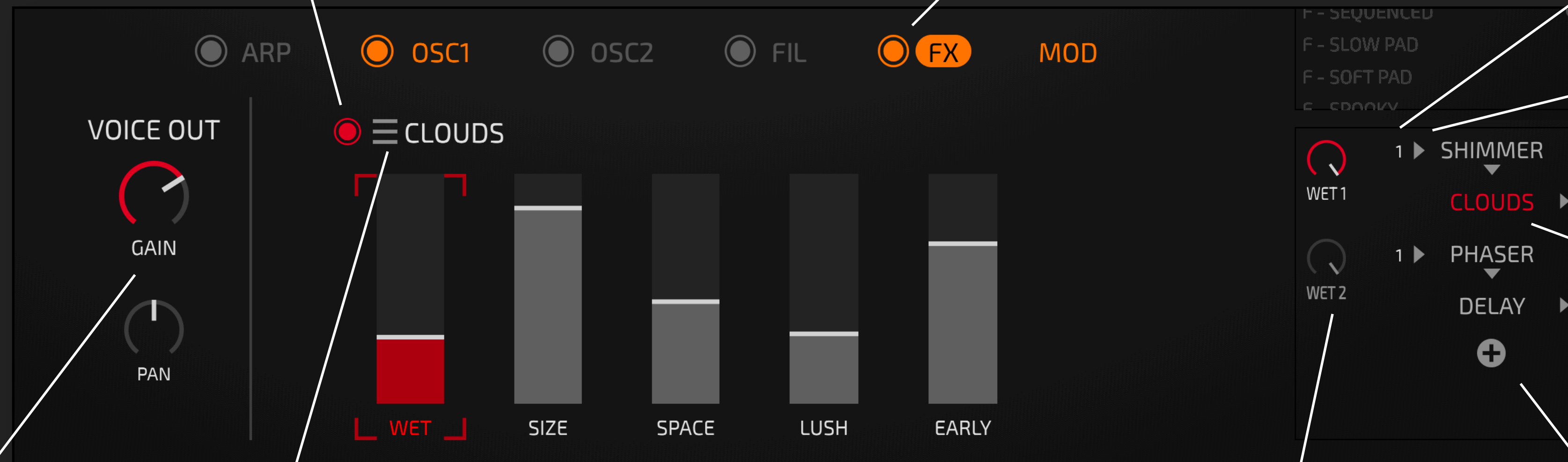
You can choose if they should be in **SERIAL** or in **PARALLEL**.

STEREO FX

You can enable / disable the specific FX here.

You can switch the entire FX section on or off. The whole FX section is stereo, including every individual effect

There are two busses for FX. You can switch between **BUS 1** and **BUS 2** by clicking on the little number on the left.



You can change the routing of FX by clicking on the little triangles that indicate the signal flow: either the FX are chained top to bottom, or the FX are parallel.

Click to select an audio FX effect and edit its parameters.

Click the **+** to add a new audio effect.

Here you can adjust the gain and pan of the signal coming out of the filter section before it goes into the FX.

Every FX has some presets. You can select these with the burger menu **≡**.

You can also store your current setting as a preset. Click the burger menu **≡**, choose **SAVE AS** and enter a name for the preset.

- SAVE AS
- SLOW RESO
- SLOW CLASSIC
- PULSING
- HELICOPTER
- VERY SLOW
- VOCAL

Choose the dry/wet for each bus separately.

ARPEGGIATOR



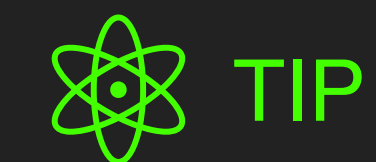
You can combine sections to create specific effects. For example you can use CHORD to play multiple notes at the same time, and use scale to limit the note to a specific scale. In this way you can play chords within a scale with one finger.

All dials in this section can also be modulated, eg by **RANDOM** or **LFO** or the **MODWHEEL**. Use this to create interesting variations of the patterns.

THE **SCALE** device allows to choose which pitchclasses are part of the scale.

You can choose from plenty of pre-defined scales by clicking on the burger menu ☰.

You can define your own scales by clicking on the circles.



When you click on the burger menu ☰ you can save the current scale to reuse it later.

You can enable / disable the entire ARP section here.

Every section can be enabled / disabled separately.

The **CHORD** section creates additional notes. In this way you can play entire chords with one finger.

The **PATTERN** section takes all notes that are currently played (either on the keyboard or through the **CHORD** section) as an input for an arpeggio.

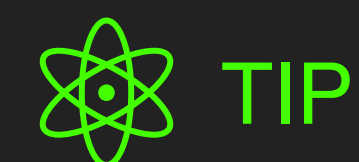
GATE specifies the duration of every note, **PAT** chooses the pattern.

With **OCT** the pattern is played with the incoming notes and its octavated copies. The higher OCT the higher notes you will hear in the arpeggio.

With **LEN** (Length) you can choose the amount of steps before the pattern repeats.

If **RETRIG** is active the pattern will

The **PITCH** section allows you to transpose incoming notes either by semitones or by octaves.



If the **SCALE** section is activated you can modulate **PITCH** and always stay in the scale.

EDIT PARAMETERS

Modulating a parameter is really simple: click on the parameter to select it. The red corners show that this parameter is selected.

Once a parameter is selected its name shows up on top of the modulators.

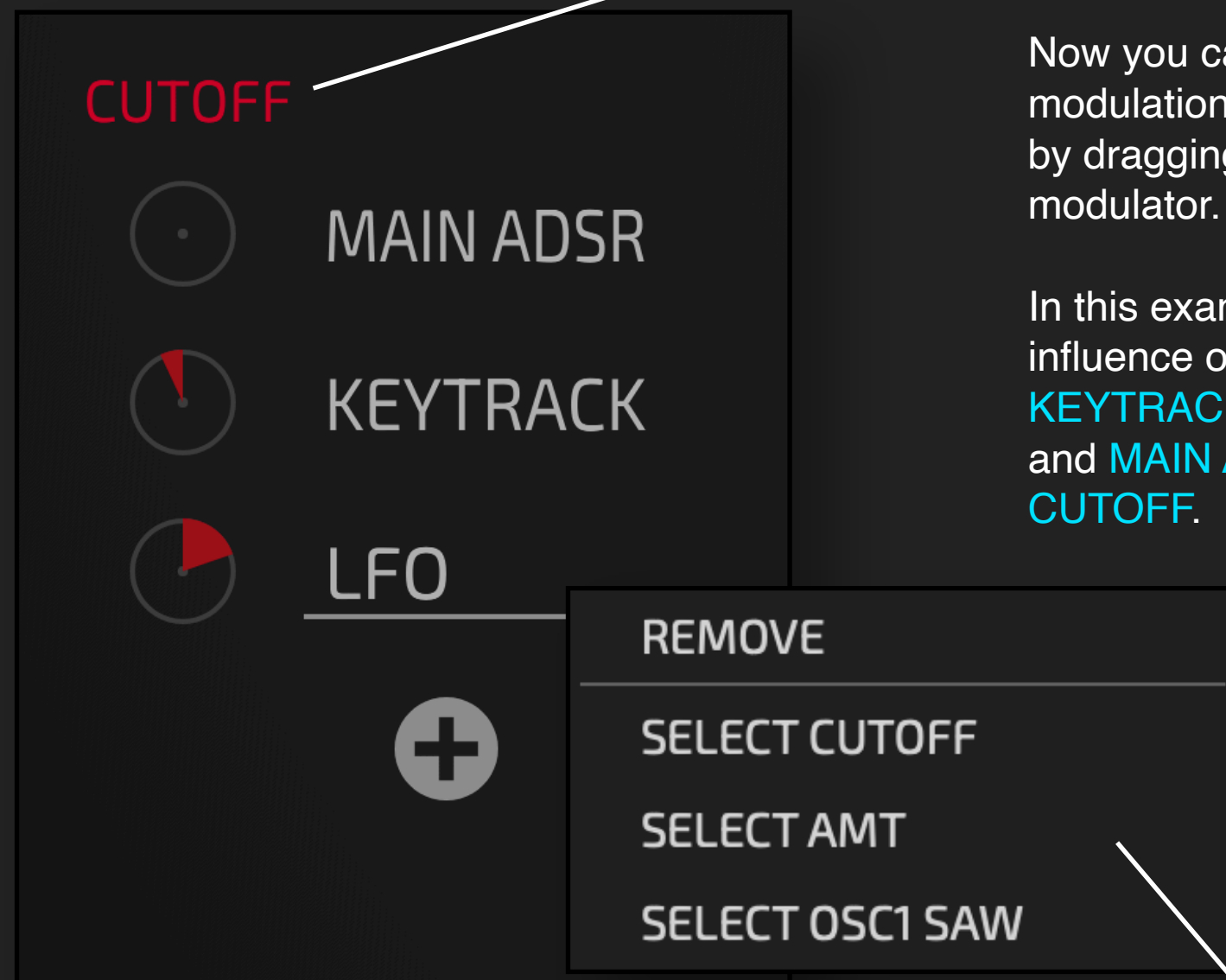
Now you can choose the depth of modulation for the selected parameter by dragging the circle next to the modulator.

In this example **LFO** has a positive influence on **CUTOFF**. The **KEYTRACK** has negative influence, and **MAIN ADSR** does not impact the **CUTOFF**.

Click and drag a **DIAL** or **SLIDER** to change the value. You can drag horizontally or vertically.

When holding **SHIFT** you can fine-tune values.

Double click resets the parameter to its default value.



The modulators are listed in the left sidebar of KULT.

You can click **+** to add a new modulator.

You can open a context menu with **RIGHT-CLICK** on the modulator to remove it and to show all parameters that are modulated by this modulator.



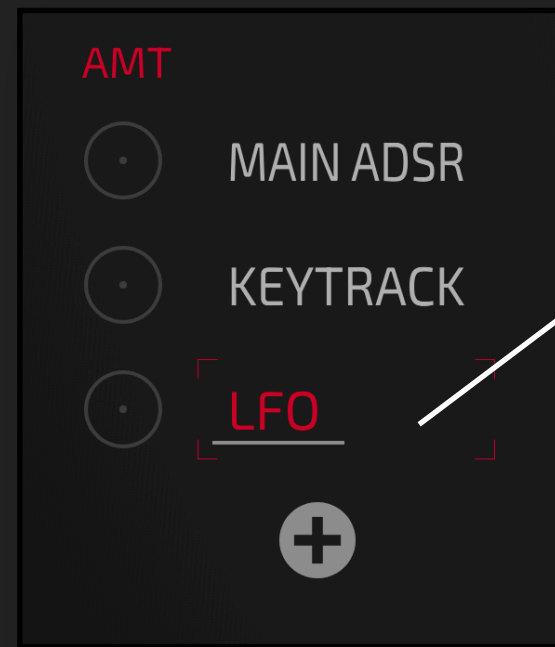
When a parameter is modulated the coloured ring indicates the current value. Every parameter can have as many modulations as you want. The modulations are added together.

MODULATION



With a few modulations you can turn any boring sound into something that sounds alive and interesting. Almost any parameter in KULT can be modulated.

You can also modulate the parameters of the Modulators. For example you can modulate the rate of one LFO with another LFO. This allows you to setup complex, chaotic movements in your sound.



Click to select a modulator.
You can now edit the settings in the detail page.

You can set multiples of the **RATE** by clicking here. If you have SYNCed to your host tempo this ensures that you have multiples of the host tempo.



Here all parameters are listed that are modulated by the **LFO**.

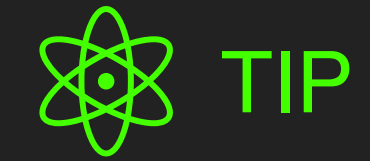
You can click this to **REMOVE** the modulation or to **LOCATE** the slider in the UI.

Click to choose from multiple pre-defined waveforms for the LFO.

Either each voice has its own LFO or there is one LFO that is shared between all voices.

The **AMT** slider allows you to change the strength of the LFO. This becomes powerful once you modulate this (with a different modulator).

MONO MODE



If other MPE or MIDI data is relevant for your sound you can see it in the left sidebar that lists all the modulators that you use in the patch. For example, if you need **MODWHEEL** just click on the + symbol and add **MODWHEEL** as modulator.

These ranges can be **GLOBAL** (indicated by a blue G) or per **PATCH** (indicated by a gray P). Click to change.

The range of the MPE dimension **GLIDE** and the range of the **PITCHBEND** wheel in semitones per octave.

The screenshot shows the KULT software interface. On the left, there are settings for **GLIDE G 12**, **PB P 12**, and **MASTER 440**. Below these is a green question mark. In the center, there are two radio buttons: **MONO** (selected) and **GLISS**. To the right of these is a **TIME** knob. On the right side, there is a virtual MPE keyboard display with several red circles representing notes. One circle is labeled **C3**. The size of the circles varies, indicating pressure or aftertouch, and the filled area indicates velocity.

You can click to change the master pitch. It is given as frequency of A above middle C.

Normally KULT is a polyphonic synth. By activating **MONO** you can make it a monophonic synth with legato function.

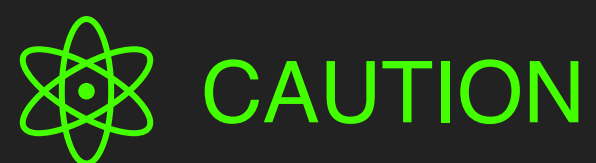
With **TIME** you can control the legato speed.

When **GLISS** is active you will also have a glissando between two notes if you play legato.

Incoming notes are displayed on the virtual MPE keyboard display.

The size of the outer circle line indicates (polyphonic) **PRESSURE** or **AFTERTOUCH**.

The filled circle area indicates the **VELOCITY**.



MASTER pitch is a global setting and it is valid for ALL instances of KULT running on your system.

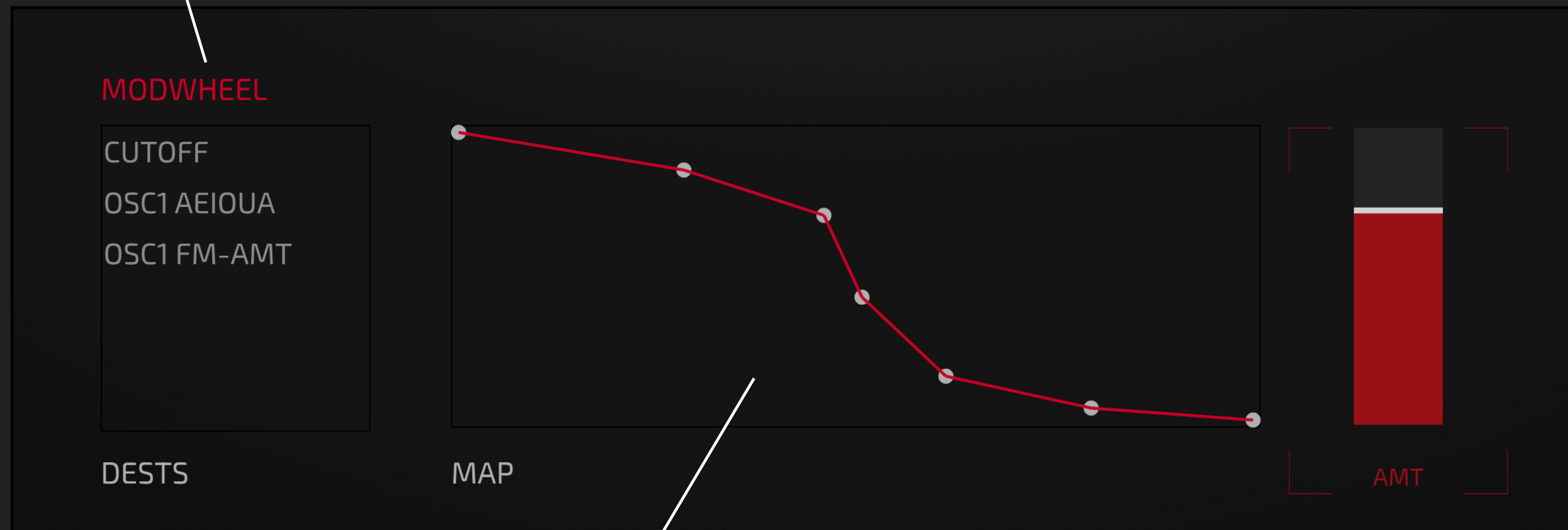
MIDI AND MPE



Good musical instruments respond sensibly to user input. In KULT you can achieve this by modulating parameters with midi input.

KULT also offers MPE - this is really powerful and intuitive for sound design. It allows you to “play” timbre with **PRESSURE** and **SLIDE** ... and it does not require advanced keyboard skills.

Click here to change the CC, eg from **MODWHEEL** to CC11 (Expression).

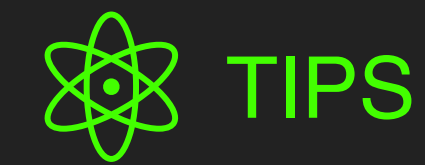


Edit the MAP to impact how the **MODWHEEL** should influence the sound.

Double click to remove a point, click to move / add points.

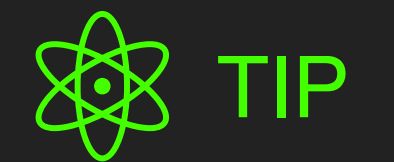
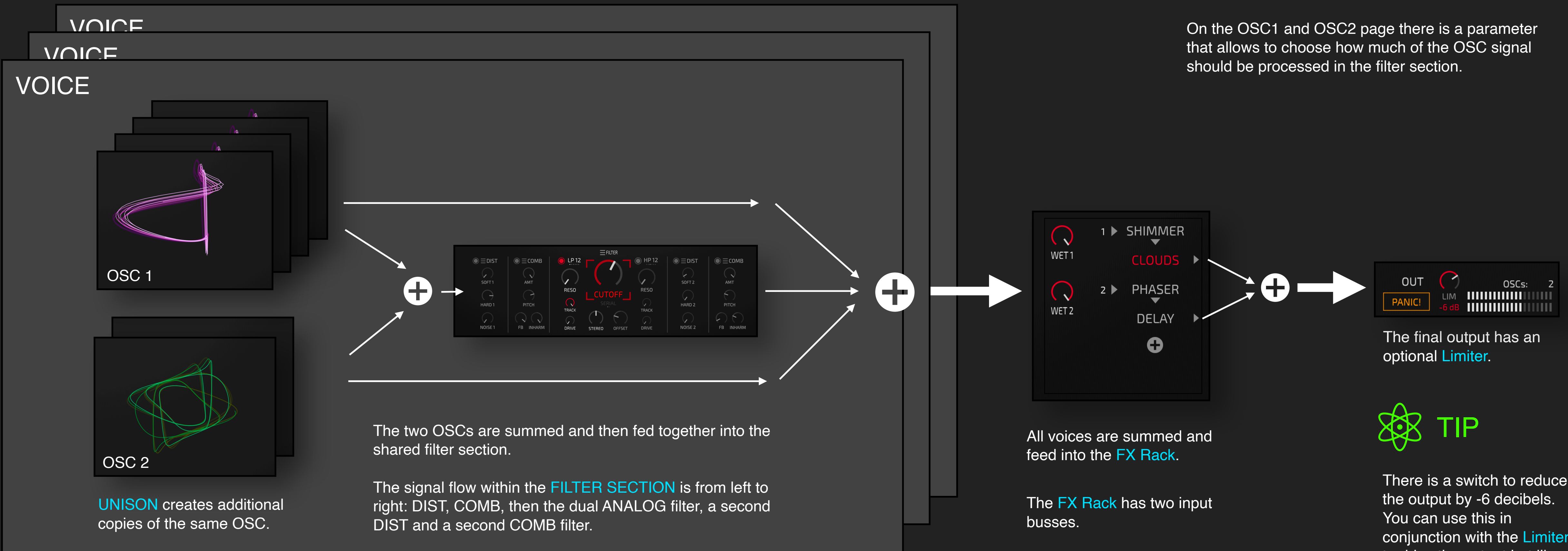
In this example low values of **MODWHEEL** will have maximum impact, and if you turn the modwheel up on your midi controller the influence will be less.

SIGNAL FLOW



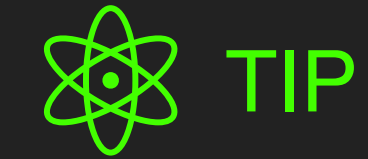
In the filter section there is always one **DRIVE** before the **COMB**. The **DRIVE** settings can be used to shape the sound of the **COMB** filter.

On the OSC1 and OSC2 page there is a parameter that allows to choose how much of the OSC signal should be processed in the filter section.



There is a switch to reduce the output by -6 decibels. You can use this in conjunction with the **Limiter** to drive the output hot like you would do on an analog mixing console and then use the -6 dB switch to bring the signal level down.

CPU Performance

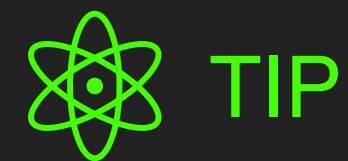


Of course, if several notes sound simultaneously, more OSCs have to be calculated. This is especially true when using **CHORD** of the arpeggiator.

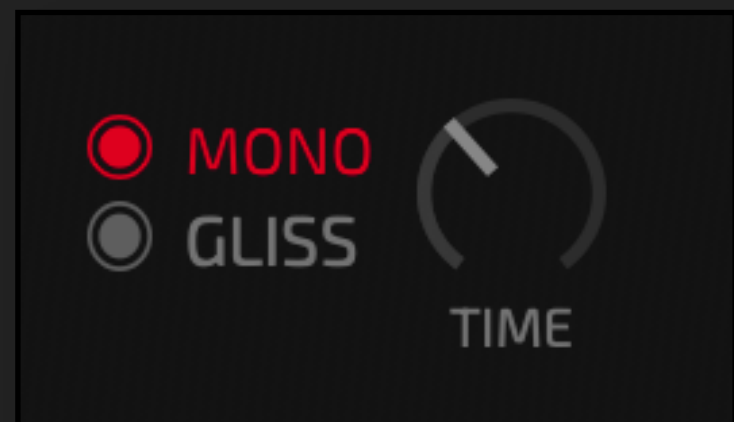
Long **RELEASE** times are often problematic, especially with exponential decay. If the release curve is set to be more linear, the release time can be reduced, often without any noticeable loss of sound. In this way, the CPU performance can often be greatly reduced, especially when using **ARP**.

UNISON isn't just a cheap audio effect, it's implemented as real unison: with a value of 5, there are actually 5 different OSCs for each note.

Obviously - adding more stereo FX to a patch needs more CPU performance.



Obviously, the number of OSCs in **MONO mode** is limited in a natural way - and this also relieves the CPU.



Here you can see the number of simultaneously processed OSCs.

The maximum number of OSCs can be limited here. At "G" a general value for KULT can be set - it applies to all instances of KULT. Set this value such that it fits the performance of your system.

At "P" a value can be set for the current patch, which can also be used creatively.

The smaller of the two values is actually used.

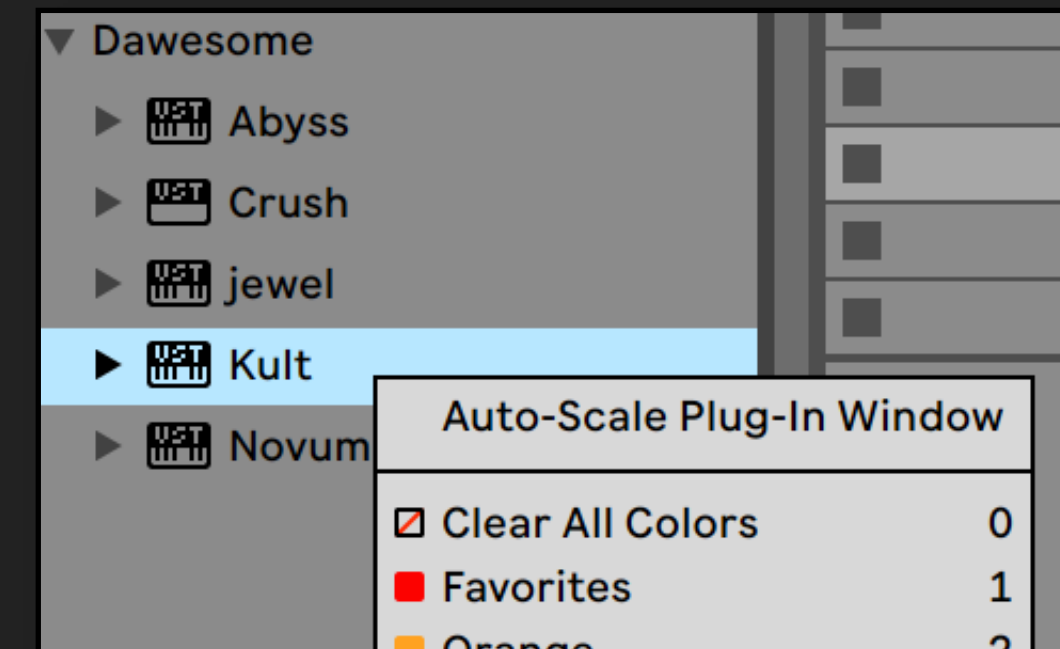
OVERSAMPLING can be used to reduce sonic artifacts caused by aliasing. In most cases, **ECO** is a healthy compromise between sound and CPU. Higher settings such as **HIGH**, **EXTREME** or **ULTRA** also require significantly more CPU performance.

KULT uses **ADAPTIVE OVERSAMPLING**, which depends on the pitch of the played sound.

FAQ / Troubleshooting

Q: The video looks pixelated / distorted

A: In the main burger menu in the upper left there is an entry to **DISABLE OPEN GL**. Please try to activate this setting, then reload your project - the plugin needs to be reloaded to make this change active. If you are using **Ableton LIVE** on **Windows**: make sure, that Auto-Scale Plug-In Window is **NOT** activated.

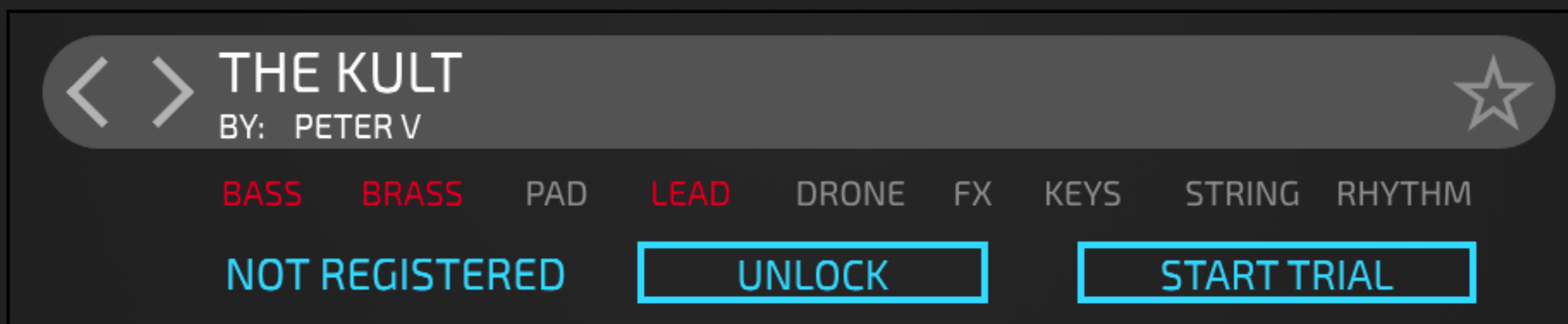


Q: I can't hear anything!

A: First make sure that KULT receives midi data - you can see incoming midi notes in the virtual (MPE) keyboard display at the bottom of KULT. Each note is displayed with a circle. Next check if KULT generates audio - you can see this in the meter display at the lower right. Please try this with one of the factory patches. If this did not help: is at least one of the OSCs active? Is your **Attack** time very slow? Is the **AMT** of the Main **ADSR** set to a very low value? Is the **FILTER** blocking the audio (try to deactivate the whole filter section)? Is the voice gain (on the **FX tab**) set to a very low value? Is the **OUT** parameter set to a very low value?

Q: Every few minutes there is annoying noise - I thought this has a 90 days unconstrained demo period?

A: You need to start your 90 days trial period. To do so just click on **START TRIAL** and enter your traction.com user credentials. The free trial is unconstrained for the entire 90 days - no one should purchase KULT without being convinced about it!



FAQ / Troubleshooting

Q: I installed KULT, but it does not show up in my DAW?

A: In most DAWs plugins are listed by manufacturer name. You find KULT listed under DAWESOME. If this does not help - please make sure that VST3 (or AU) is activated in your DAW.

For **Protools** users: plugins come in various formats; the most common are VST, VST3 (and AU on Mac) - these are the industry standard. Protools has a proprietary plugin format and is not able to host VST or AU plugins. Kult is available only as VST3 and AU. But there is a workaround: you can use a wrapper plugin. There are two that I can recommend:

- [BlueCatAudio Patchwork](#)
- [KushView Element](#) - this one is even free

You load the wrapper Plugin in Protools, and then you insert Kult in the wrapper - its simple and works like you had opened Kult in Protools itself. The advantage is: there are many plugins on the market that are available only as VST or AU - with this wrapper you can use them all in Protools.

Q: I am experiencing audio drop outs - what a lousy plugin!

A: I can understand your frustration! Rest assured that I spend an insane amount of work to make the underlying technology CPU efficient and to support aged hardware and OS versions. As a designer I could easily limit the polyphony to a low number to make sure it will always run smoothly on all kind of hardware, but that would also limit the possibilities for users with high spec systems. Please have a look on the page about [CPU Performance](#). I recommend to set a (G)lobal limit to the maximum count of OSCs. KULT uses a smart algorithm to choose which OSCs to fade out.

If this does not help - most likely something is wrong. Please drop me a short description to peter@dawesomemusic.com - ideally with the information of your computer, your DAW, your OS and the specific patch that causes the issue.

FAQ / Troubleshooting

Q: I want to automate a parameter of one of the stereo audio effects - but it does not show up in my DAW?

A: The existing plugin standards like VST3 and AU operate with a fixed set of automation parameters. A plugin tells the DAW what parameters it has when it is loaded into the DAW; but there is no mechanism to change this afterwards. As every patch in KULT has different set of effects also the parameters are changing.

But there is a workaround: you can add a Midi-CC modulator to your patch in KULT and use this to modulate the FX parameter you actually want to change. Then in your DAW you automate the MIDI-CC.

Q: How can I modulate a parameter?

A: Please check [this page](#) - its explained here.

Q: Why are Scala tuning files not supported?

A: Because there is a much better solution! It's called [Entonal Studio](#). It's a plugin that I recommend to every musician interested in microtonal. It allows loading and editing of tunings and uses MPE to then play instruments microtonally.

Q: I have a cool idea for a great feature!

A: Cool - if you want to share this idea with me please drop me an email to peter@dawesomemusic.com. Please note that I may have had the idea before and hence I won't pay you license fees or whatever if I choose to implement this idea or a related idea in one of my plugins. If you believe your idea has tremendous commercial potential make sure to get a signed agreement *before* sharing the idea with me / anyone.

FAQ / Troubleshooting

Q: Why are all your plugins so expensive - you are ripping me off!

Q: Why are all your plugins so cheap - this is too good to be true?

A: I am a single person indie developer. Mainly I follow my heart and create the instruments I'd like to use on my own as a musician. I do not aspire to get rich in money with it, I aspire to get rich in contentment and fulfillment. However, I also need to pay my bills, and I also want to pay sound designers fairly for their work. I am trying to give my products the lowest prices possible to make a living, and I am not going to be a millionaire anywhere soon (or ever).

Q: I have a question / feedback - where can I leave it?

A: Just drop me an email to peter@dawesomemusic.com - I appreciate any kind of constructive feedback and I am trying my best to have any user satisfied, regardless wether you purchased or not. Usually I try to answer within a few days.

Q: I like your work - how can I support you?

A: Thank you - this is my real reward for the work I am doing! I hope you will find lots of fun and inspiration with KULT or my other plugins. If you want to support me: spread the word - many (most?) people simply have not heard about my plugins.

THE UNDERLYING TECHNOLOGY

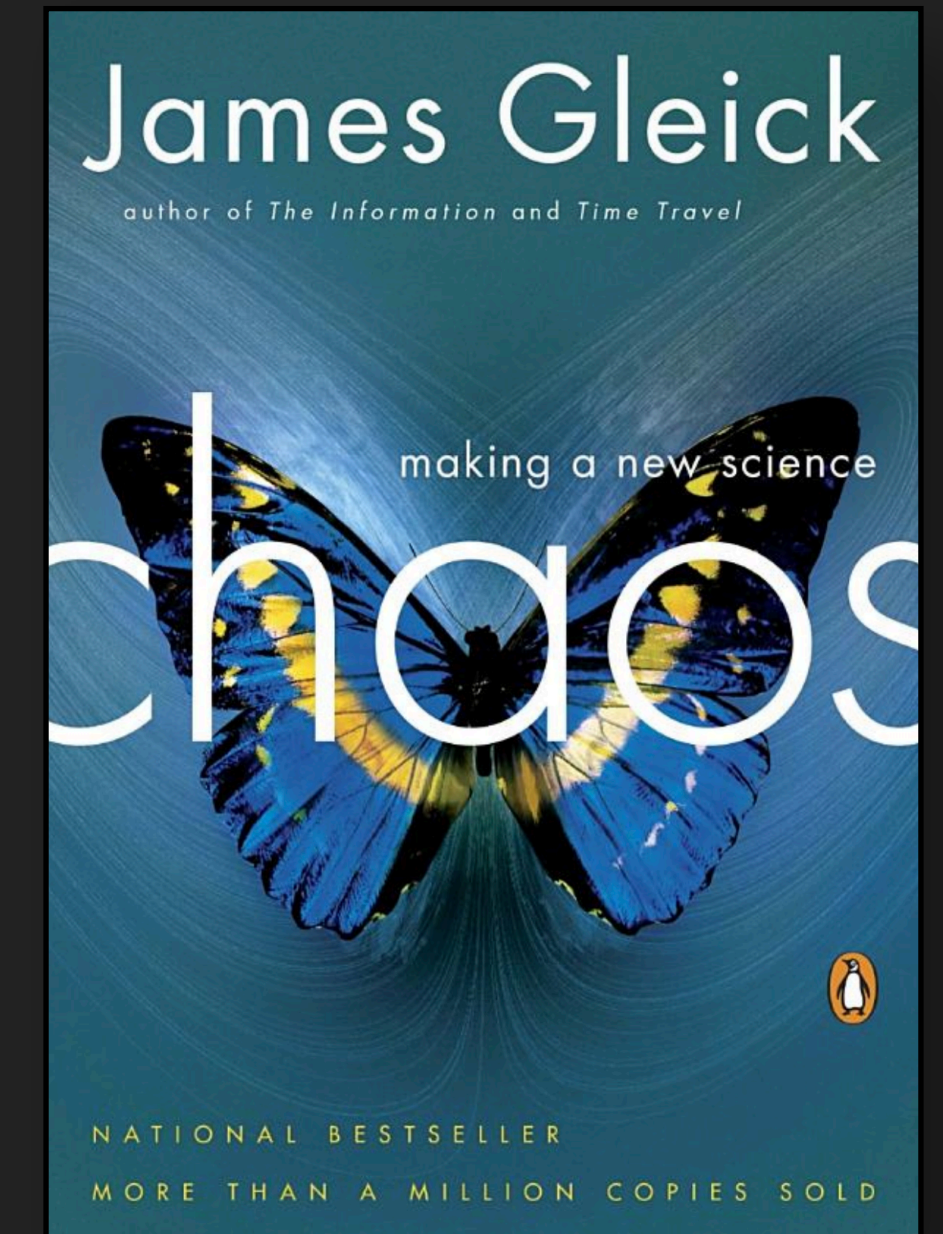
The engine of KULT works with unique complex oscillators based on the theory of [Strange Attractors](#). This stems from a branch of mathematics that deals with nonlinear dynamic systems and describes the behaviour of motion in space under forces. These objects are curves in 3D space, and they often exhibit quasi-periodic or chaotic behaviour. Most famous is the so called [Lorenz-System](#). This was discovered when Lorenz examined the behaviour of global air convection.

The topic of [Chaos Theory](#) and its applications may seem dry, but it is utterly fascinating and surprising! I recommend the book “Chaos: Making a new science” by James Gleick - this book does not require any math background and reads like a page turning thriller.

Even though these Strange Attractors live in 3D space they have some kind of oscillatory behaviour, which can be translated into sound. The first experiments created very rough noise, barely usable for delicate sounds. So I approached it from the other end: taking normal sound and transforming this into a curve in 3D space. This allowed me to visualise and understand certain characteristics of sound, and to alter sound by transforming the 3D space. [SYNTIFY](#) in the granular synthesiser Novum was the first application.

In this way the natural chaotic behaviour of Strange Attractors can be translated into sound, such that it becomes a very musical oscillator. Small amounts of chaos create lush warm sounds, higher amounts of chaos can be used to create grit and bite. The representation of sound in 3D space also allows for Frequency Modulation, offering even richer sonic possibilities. Or you can use a very rough oscillator model to drive a comb-filter for physical modelling. Or ... well ... the possibilities are endless.

The downside of this approach was CPU efficiency. The initial versions took minutes to compute a few seconds of audio. Another challenge is [precision](#): the nature of dynamic systems require a certain amount of computations, and this grows with the frequency. Hence especially higher notes are extremely expensive to compute. To make things worse - also [Aliasing-Artefacts](#) become a problem with higher frequencies, usually solved with oversampling (meaning much more computations). So in order to take it from theory into practice a lot of optimisations had to be developed to make KULT a reality.



CREDITS - THANK YOU!

Many, many people supported the creation of KULT:

- [tracktion.com](#) - like a band needs a label, every plugin designer needs a partner. I enjoy the excellent cooperation within their unique [Tracktion presents](#) program
- KULT is implemented in C++ using the [Juce Framework](#). I am grateful for its existence and for the community of JUCE developers.
- [Nigel Redmon](#) has published an intriguing [series](#) about analog ADSRs. I took inspiration and design choices from his series.
- [Valdemar Erlingsson](#) is the creator of the gorgeous free reverb plugin called [Cloud Seed](#). I took inspiration from his work for the CLOUDS effect in KULT

Sound Designer / Early Access / Beta testing

- [Yuli Yolo](#) is well known for his sound design work with U-He, UVI, Arturia, Tracktion and many more. He provided feedback and created a lovely set of sounds that showcase the wide range of sounds you can create with KULT
- [Databroth](#) was supportive with ideas, feedback and gorgeous patches. If you haven't done it already: [go and subscribe to his channel](#)
- [Resonate Sound Design](#) tested KULT and provided not only a comprehensive set of patches, but also a lot of feedback
- [Tomavatars](#) has been amongst the first users, found bugs, and provided feedback
- [Spektralisk](#) has given a lot of feedback and created lush patches for KULT
- [sadà\exposadà](#) has given feedback and donated patches for KULT
- [C-You FX](#) helped plating out a lot of issues, tested Mac OS 10.13 compatibility and donated patches
- [Pier Bover](#) provided a video and comprehensive, essential feedback for KULT
- [Bee Abney](#) provided essential feedback, spent a lot of time to review and improve the KULT user guide and donated patches
- [Daniel Alflatt](#) provided feedback, sparring and patches, he also created the preset demo video
- [Temme Sikkema](#) (aka doctoremmet) helped me to get in touch with a lot of people and was always encouraging
- [Florian Mrugalla](#) develops plugins and created insightful video of his first hours with KULT
- [Douglas Hill](#) aka tau(n)t did a lot of bug hunting and gave important feedback
- Felix Petrescu aka [Makunouchi Bento](#), Steven Frazier aka [Saf Ro](#), and [Philip Rampi](#) all provided important feedback
- Like always my first users where my kids [Kiro](#) and [Aya](#). They told me "this sucks" on early versions until I got it right. [Kiro](#) sketched a lot of drawings how he imagines sound does look like, this heavily inspired the waveform visualisation.

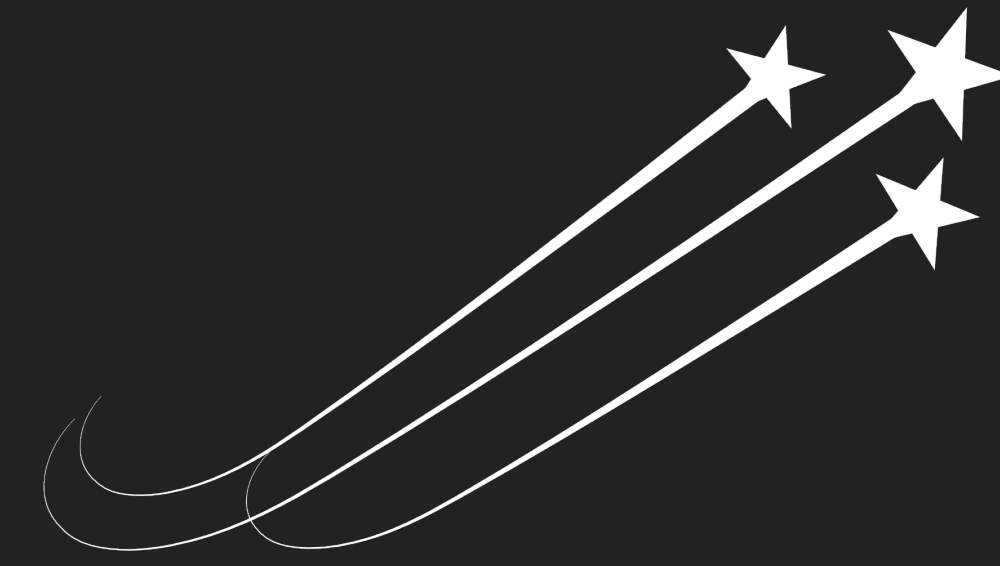
ABOUT ME



My name is **Peter** and I am the creator of **KULT**. It is my 4th instrument after **Abyss**, **Chop Suey** and **Novum**.

I am a musician at heart, playing the bassoon and contrabassoon in multiple ensembles and I have a lifelong passion for synthesisers.

With a PhD in maths - I love maths - and getting paid for it I can proudly call myself a professional nerd.



DAWESOME

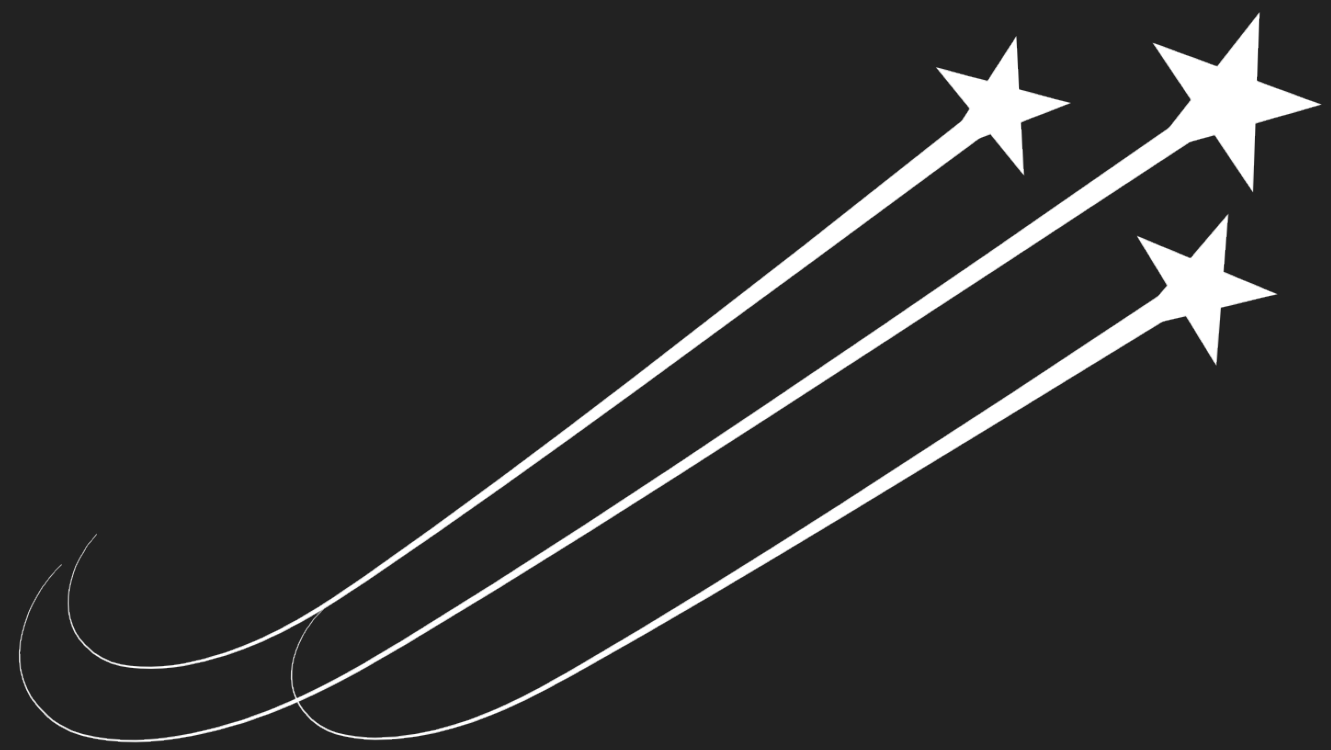
I have a few core beliefs that drive my work:

- **Creativity is fun** - I am dedicated to make your creative process a joy ride.
- **Intuition over numbers** - when I make music, I rarely (want to) think in numbers and maths, I want the creative process to flow with intuition.
- **Nuanced response** - as a wind instrument player I am used to feeling united with my bassoon while playing - the instrument responds to every subtle change in tension, breath or posture. It is this musical quality I am striving for in the design of my virtual instruments.
- **Simplicity rules** - life is already complex enough. User interfaces shall be as simple as possible, and it's worth going the extra mile.
- **Quality over Marketing** - I believe creating innovations and paying attention to details is a better use of my resources than running marketing campaigns or spamming your inbox. **Please spread the word if you want to support my work!**

Thank you very much for your interest and support!

A handwritten signature in white ink that reads "Peter" followed by a large checkmark.

PS: you can always contact me via peter@dawesomemusic.com



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