NOVUM

User Guide / Tutorial 1.0

EXPLORATION IS OUR NATURE

“The open road still softly calls, like a nearly forgotten song of childhood. We invest far-off places with a certain romance.

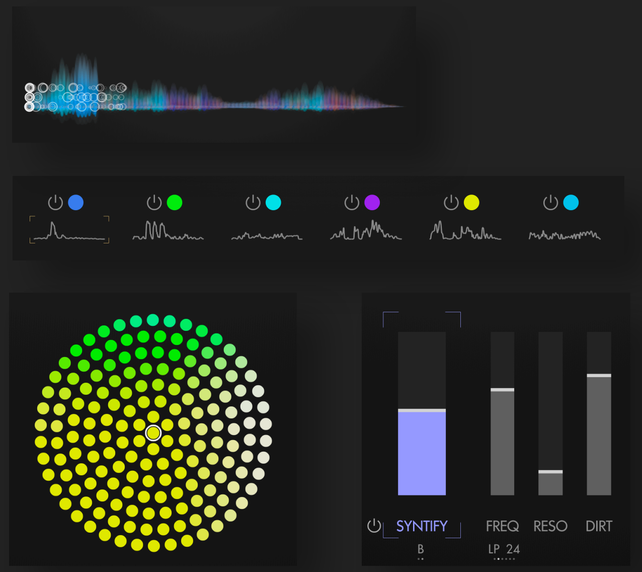
Herman Melville, in Moby Dick, spoke for wanderers in all epochs and meridians: I am tormented with an everlasting itch for things remote. I love to sail forbidden seas…

Maybe it’s a little early. Maybe the time is not quite yet. But those other worlds —promising untold opportunities— beckon. Silently, they orbit the Sun, waiting.”

Carl Sagan

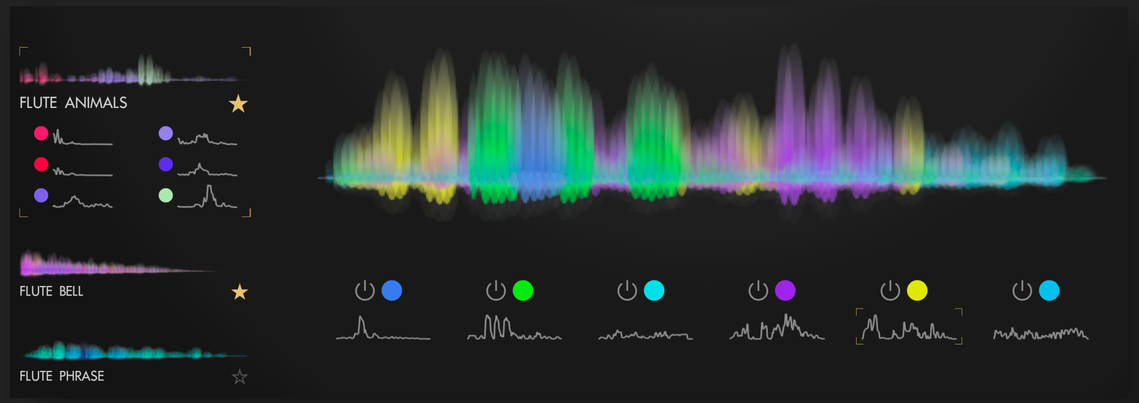
THANK YOU …

… for your interest in NOVUM!



NOVUM extends the possibilities of creative sampling:

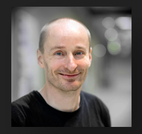
- Decomposing one sound into 6 layers that can be edited separately
- A unique representation of sound where timbre is separated from temporal evolution
- Granular synthesis engine with 6 individual layers
- Classical sound shaping like analog modelled filter and comb filter
- Innovative sound shaping like the “Timbre Flower” or “Syntify”
- An inspiring drag and drop workflow to extract and combine elements from different patches



NOVUM 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 V



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.

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

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

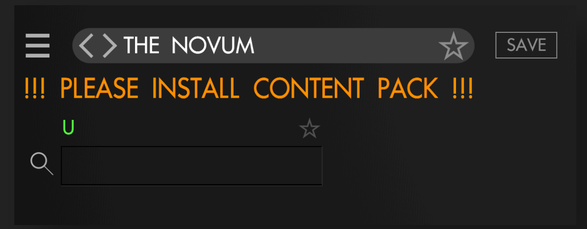
2 Install the Basic Sound Pack

NOVUM comes with a pack of samples and patches. This is a separate download - you don’t want to download multiple GB for every tiny software update.

Download the BasicsPackNovum.zip and unzip it. You can freely chose a location for storing this pack, SSD is recommended.
Open NOVUM in your DAW and drag and drop the unpacked folder “BASICS” to the NOVUM plugin.
This registers the pack with NOVUM and now all sounds from the pack are available in NOVUM.

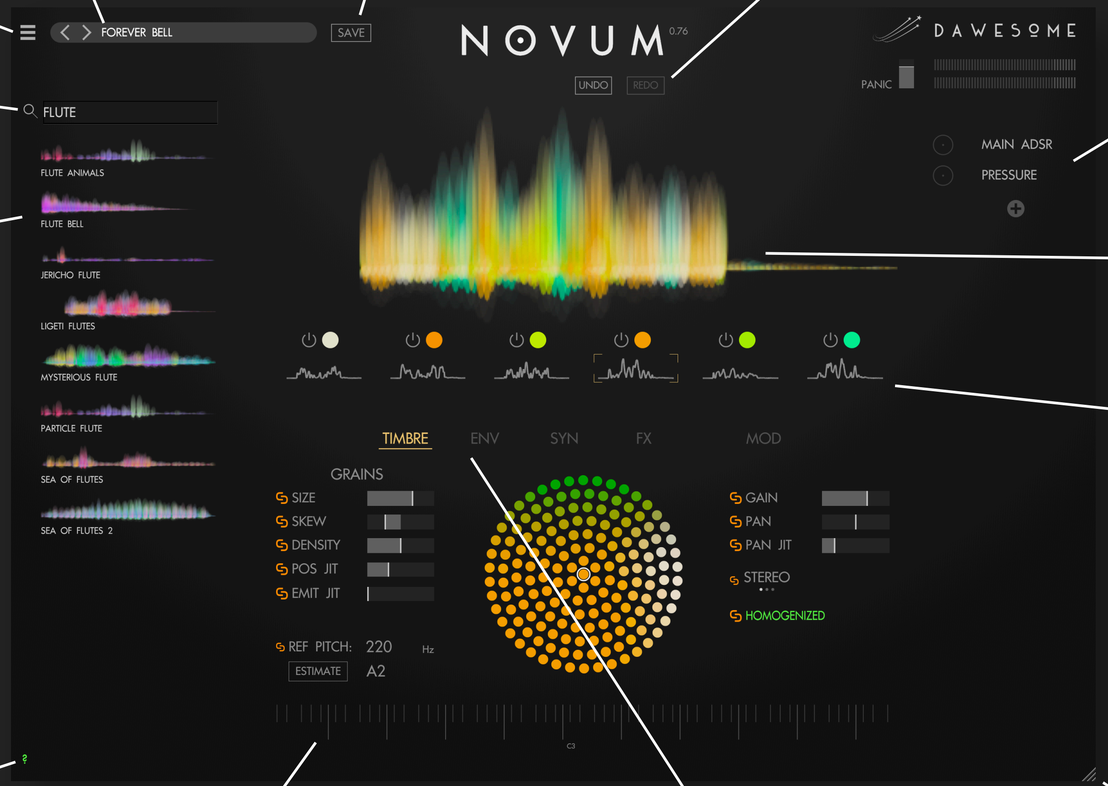
Now you can start to explore NOVUM - enjoy and have fun!
You may also want to have a look to some short tutorials.

TIP



Novum gives an indication if the content pack has not been installed. Don’t forget the second step!

OVERVIEW



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

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

Undo and Redo of last operation

Select Patches here

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

Scroll to browse Patches

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

Modulation sources that are used in the patch

Displays the waveform of the current patch

Click to switch between the 6 layers

Click to enable or disable tooltips

Displays incoming midi notes

Select Pages for editing the current patch

The UI is resizable. Drag to shrink or expand

LOAD AND STORE PATCHES

START HERE

1. Click and enter “FLUTE” to filter the patches

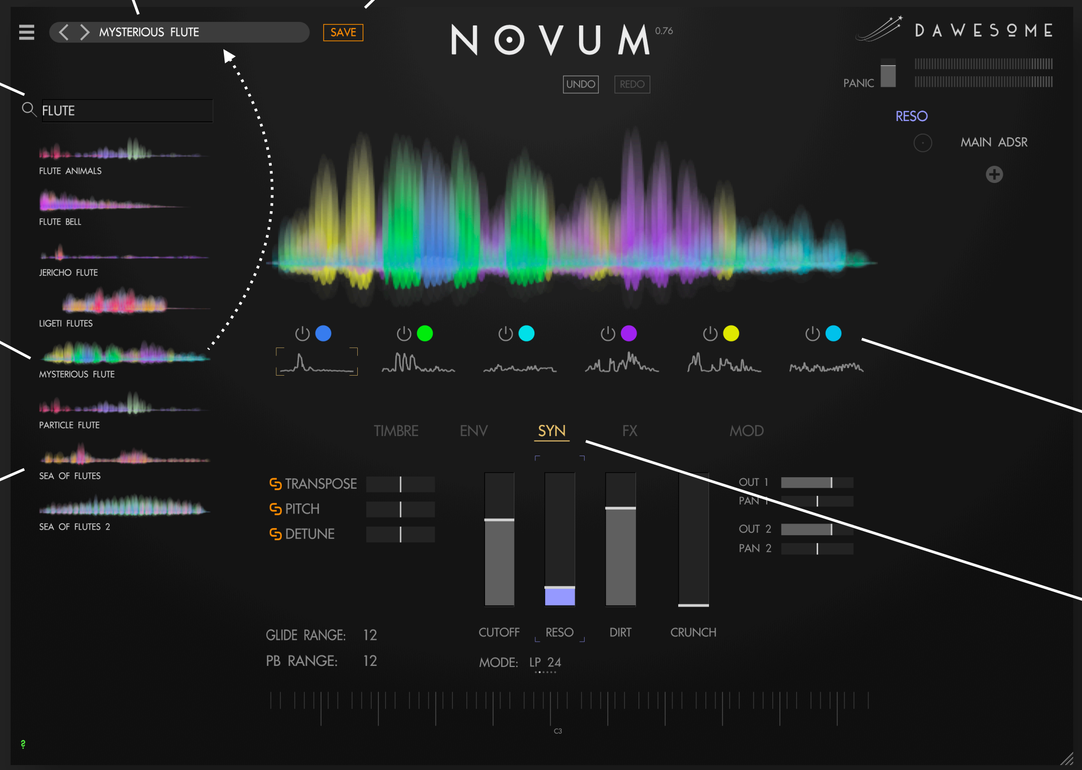
2. Drag and drop one patch from the sidebar to the patch selector.

   The patch is now loaded.

7. If the new patch name matches the filter it will appear in the side bar.

6. Click and type a name for your new patch. Press the SAVE button to store your patch.

5. The SAVE button has turned orange - this indicates unsaved changes.



4. Click on the power buttons to switch individual layers off or on.

3. Click on SYN and change a few sliders, eg the filter cutoff and dirt to your liking.

TIPS

- Feel free to explore and just try things out. NOVUM is a creative tool and you can always use UNDO if something is messed up.
- You can also click on the “Burger Menu” in the upper left - this opens a popup-menu that gives organised access to all patches.
- Novum is highly optimised, but it needs to perform complex computations. Hence some patches require a few seconds to load. This is indicated with “PROCESSING …” below the waveform.
- Can’t hear sound? First make sure that NOVUM receives midi notes. Any incoming midi note is displayed in the virtual keyboard at the very bottom of the plugin.

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

BROWSING PATCHES

START HERE

1 This displays the name of the current patch.

2 Use < and > to load the next or previous patch in the current selection of patches in the sidebar.

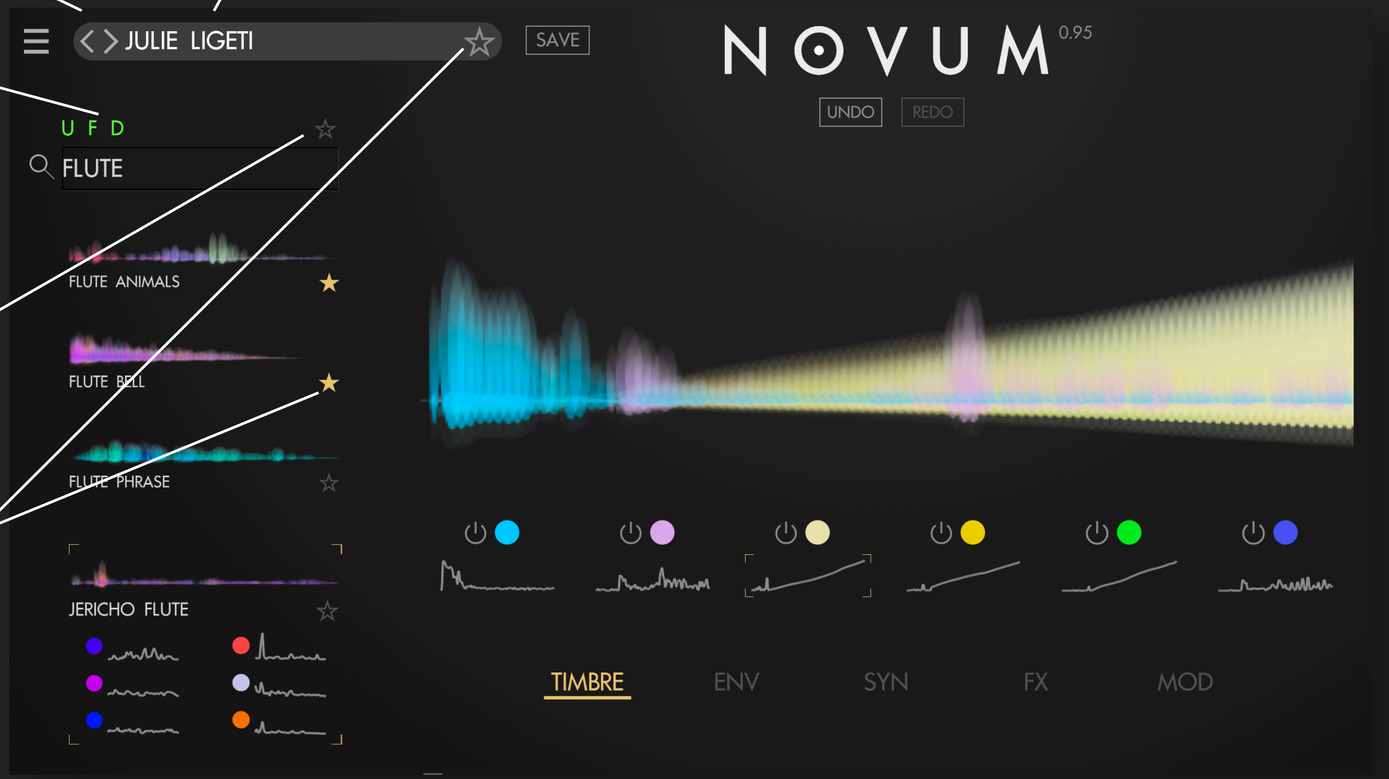
3 Activate FILTERS for each pack.

F - Factory
U - USER

Any other letter stands for one pack of patches that you have registered.

4 Click on the star symbol to select only your favourites.

Click on the gold star next to a patch to make it a favourite.



TIPS

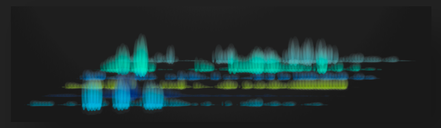
- When you hoover over the filter letter you can see the full name of the pack below in the plugin in the info line.

TIMBRE & COLOUR

TIPS

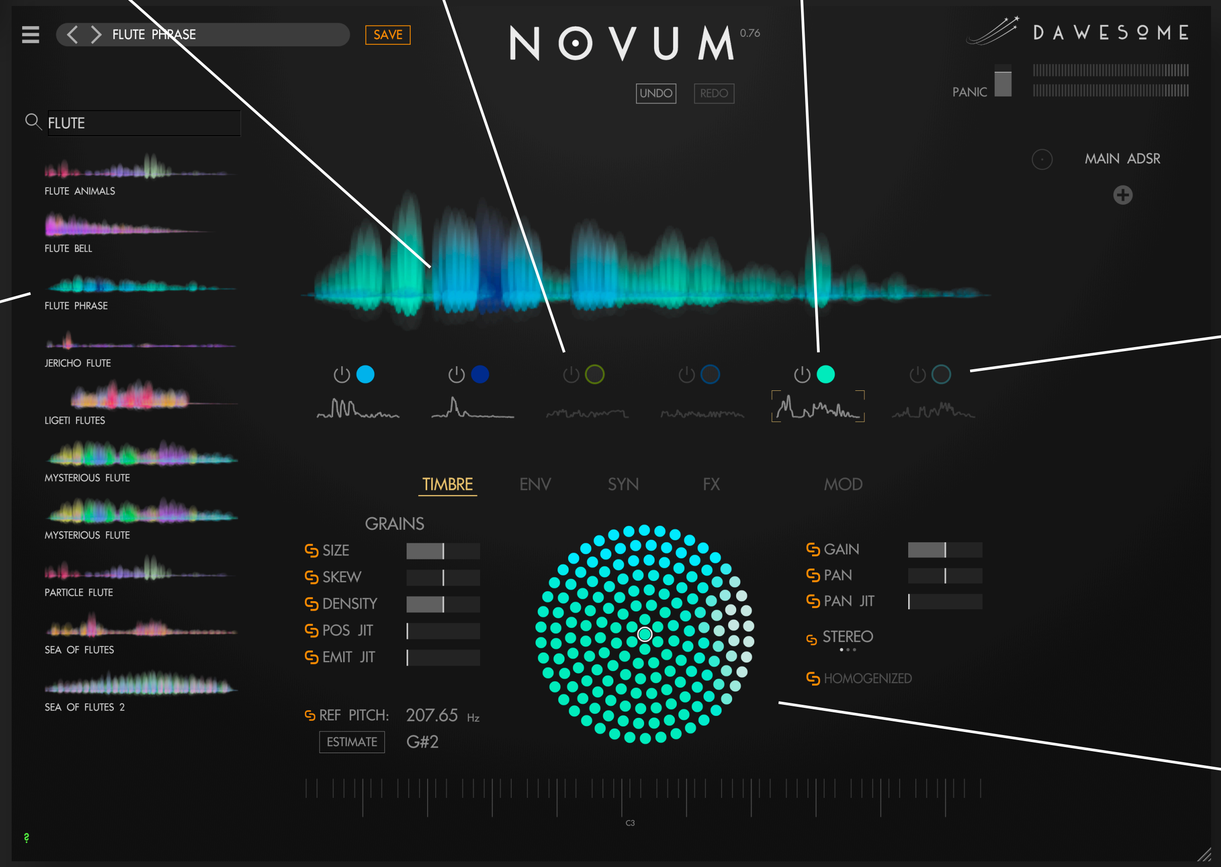
- You can shift-click the on/off buttons for soloing a layer. This is especially handy to modify a sound.
- Sometimes the sound of a single layer will be very … irregular. Try “HOMOGENIZED” to get a better quality of a single layer. This setting will be explained later.

2 Click and drag on the wave display to see the individual layers.



3 Switch individual layers on and off.

4 Select a different layer by clicking.



1 Load the patch “FLUTE PHRASE”

START HERE

6 Left-click the timbre dot to edit the colour.

5 The “Timbre flower” offers variations of the sound of the current layer. The original timbre is in the center. To the right the timbre becomes more noise like, to the top the sound becomes softer and duller, to the bottom more synth like. Best way to understand this is by soloing the layer and to experiment.

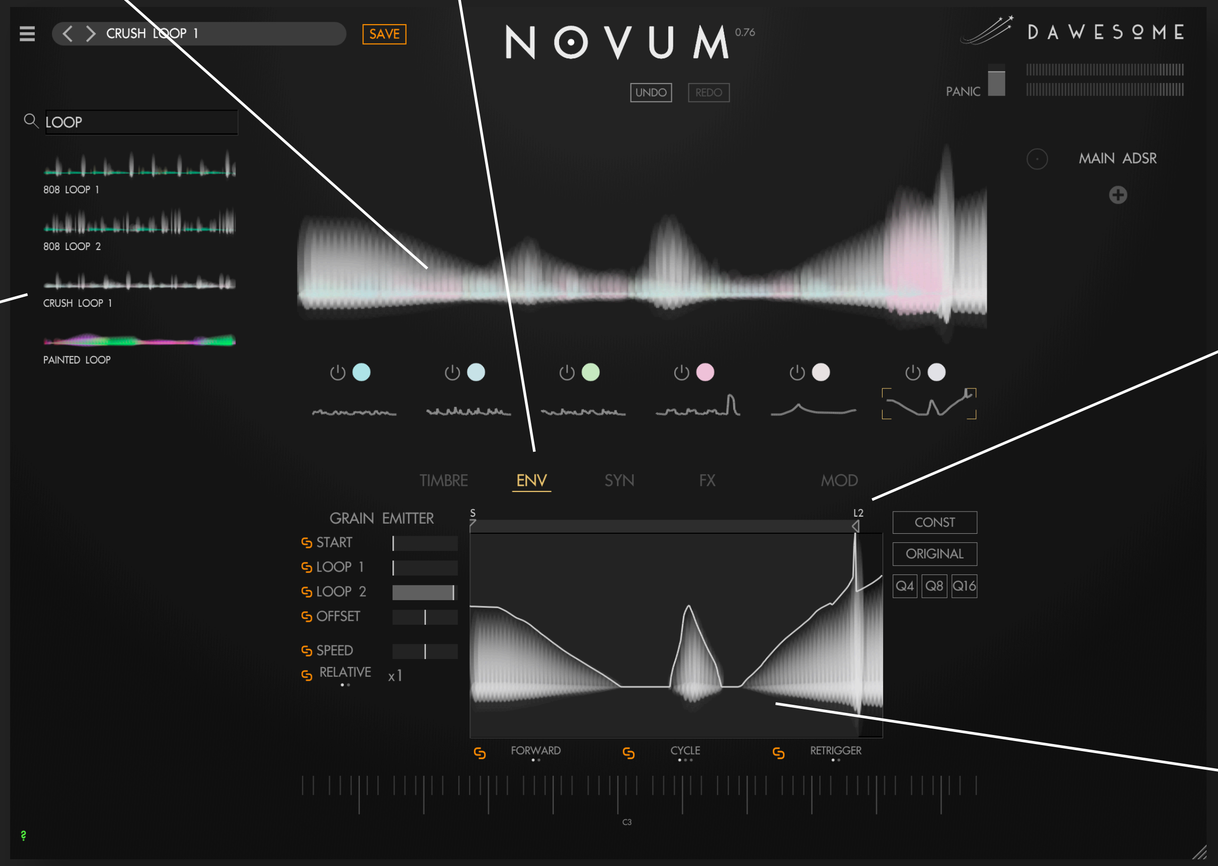
ENVELOPES

TIPS

- When editing envelopes you may sometimes experience a somewhat crushed sound quality. Go to the TIMBRE tab and try “HOMOGENIZE”. This will be explained later.

2 Switch individual layers on and off.
Select a different layer by clicking.

3 Click on ENV to edit the envelope.



1 Load the patch
“CRUSH LOOP”

START HERE

4 Edit the loop range and start point.
Or use the sliders for this.

5 Draw a new envelope.

Messed it up? Click “ORIGINAL” to start again.
Or use UNDO / REDO.

COMBINE SOUNDS

START HERE

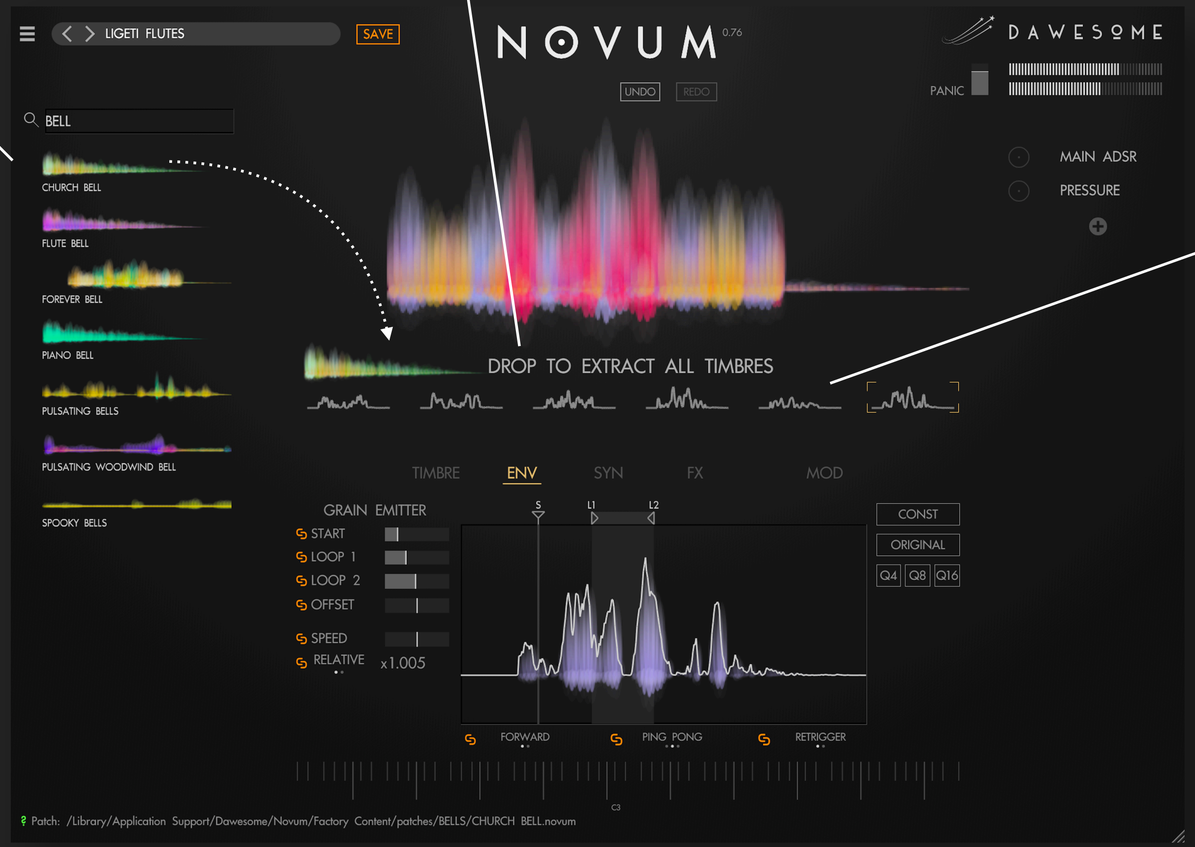
1. Load the patch “LIGETI FLUTES”

2. On the FX page switch off the SHIMMER to make the following changes better audible.

3. Type “BELL” in the search field.

   Then drag the patch “CHURCH BELL” onto the line of timbre dots.

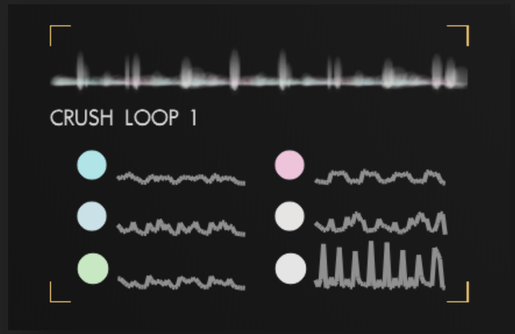
4. When you drag the patch all timbres from the current patch (LIGETI FLUTES) will be exchanged with the timbres from the patch CHURCH BELL



5. Now find the patch “808 LOOP” and drop it on the line of envelopes. This exchanges the existing envelopes with the one from the patch you dropped.

   This is a powerful way to combine the temporal characteristics of one sample with the timbral characteristics of a different sample.

6. Sometimes you want to exchange only a single timbre or a single envelope. To do this click the patch in the sidebar. It opens a detailed view. From there you can drag and drop single timbres or envelopes and drop them onto a layer.



TIPS

- When editing envelopes you may sometimes experience a somewhat crushed sound quality, especially if your sound material has a lot of transients in it.

  In such cases you can use “HOMOGENIZE” from the timbre tab - this removes the “phase” information in the sound while maintaining the envelope.

DRAG AND DROP

This is an overview of the various ways to drag and drop elements from other patches to create new ones.

DROP

Drop to the PATCH NAME to open the patch.

Drop to the WAVE DISPLAY to exchange all timbres and envelopes. It will leave filters, modulations, FX unchanged.

Drop here to exchange timbres and/ or envelopes (depending on what you actually dragged).

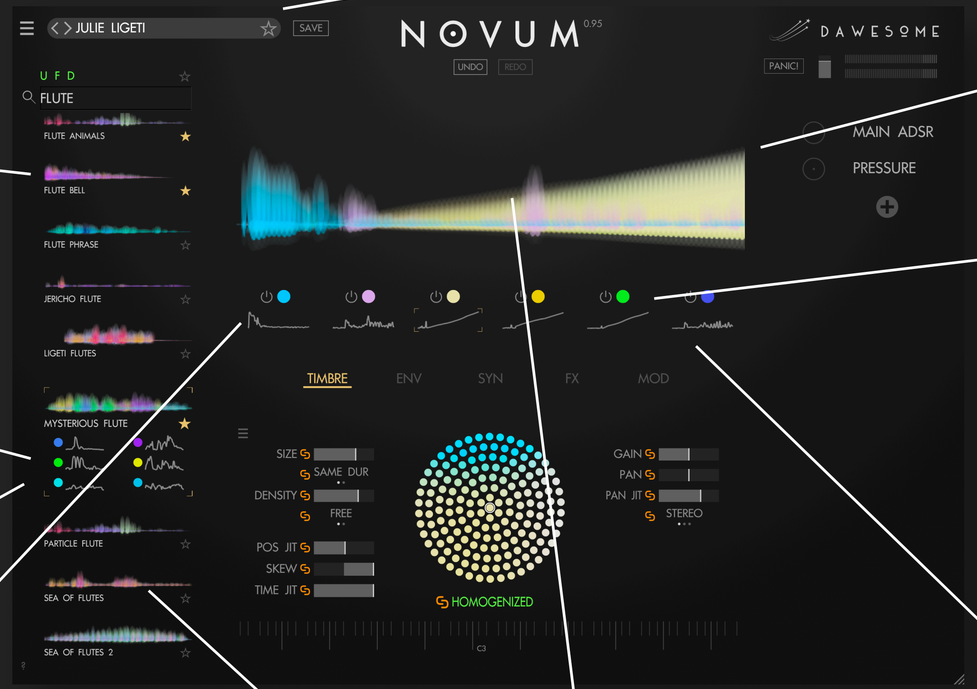
DRAG

Drag the WAVEFORM from the sidebar to drag all envelopes and timbres at the same time.

Click a patch to show its elements. Drag from there to exchange only one timbre + envelope.

If you only want a timbre (w/o the envelope) or only an envelope (wo timbre) hold SHIFT before starting the drag.

You can also drag envelopes / timbres from one layer of the current patch to another layer of the current patch.



AUDIO FILES

.wav

You can drag audio files from your file system.

Drop any audio file on the WAVE DISPLAY to decompose the audio into 6 layers.

If you drop an audio file to the sidebar NOVUM will first load the INIT sound and then decompose the audio into 6 layers.

Drop an audio file here to import it as a sample for this specific layer.

IMPORT SAMPLES

START HERE

1. Take any audio sample from your computer and drop it on a layer to import it.

.wav

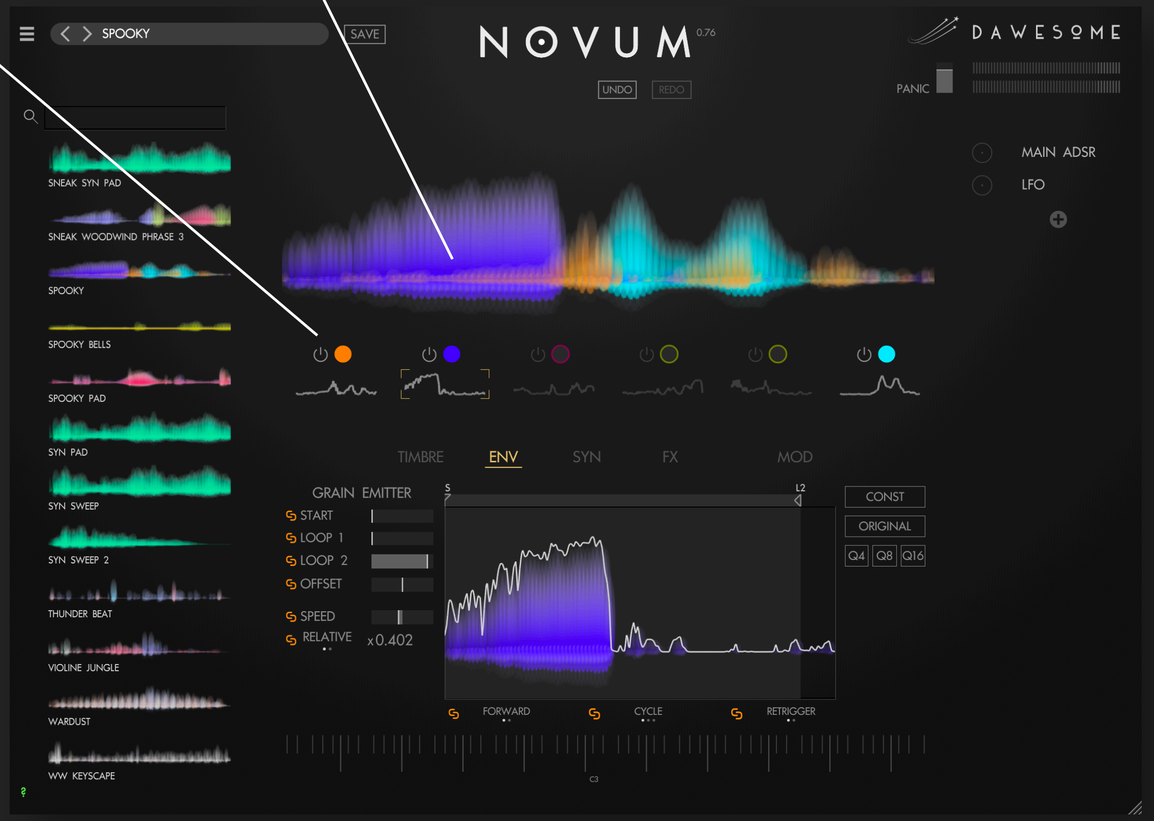
2. Repeat this with different samples on different layers to create complex layerings.

3. Now take an audio sample and drag it on the wave display. By doing so the sample will be analysed and “decomposed”:

   NOVUM creates 6 timbres and 6 envelopes from your sample.

   NOTE: all other settings of the existing patch remain unchanged. So you will get very different results depending on the patch you have loaded before importing.

4. When you drop a sample on the sidebar NOVUM will first load the “INIT” file and afterwards decompose your sample.



TIPS

- Decomposing samples involves a lot of complex computations and may hence take a while. Usually samples of 5 - 30 seconds length are handled reasonably fast due to the highly optimised code of NOVUM
- It is not recommended to use mp3 compressed audio if you can avoid this. The compression artifacts become more pronounced through the decomposition and pitching happening in NOVUM.
- 44.1 or 48 khz sampling rate works perfectly fine for almost all cases. Sometimes 96 kHz samples can even degrade the sound quality, as there is more information that needs to be encoded in the decomposition.
- When all the 6 layers of a decomposed sound are played back simultaneously you hear the original sample with no quality loss. However, the sound engine uses granular synthesis, so depending on the settings for GRAINS and GRAIN EMITTER (and the filter and FX) the sound you hear may be completely different from your original sound.
- NOVUM uses machine learning algorithms to decompose audio. These have been optimised to work well in a musical instrument - that is: low or no polyphony.

GRANULAR ENGINE

START HERE

1 Load the patch “FLUTE PHRASE”

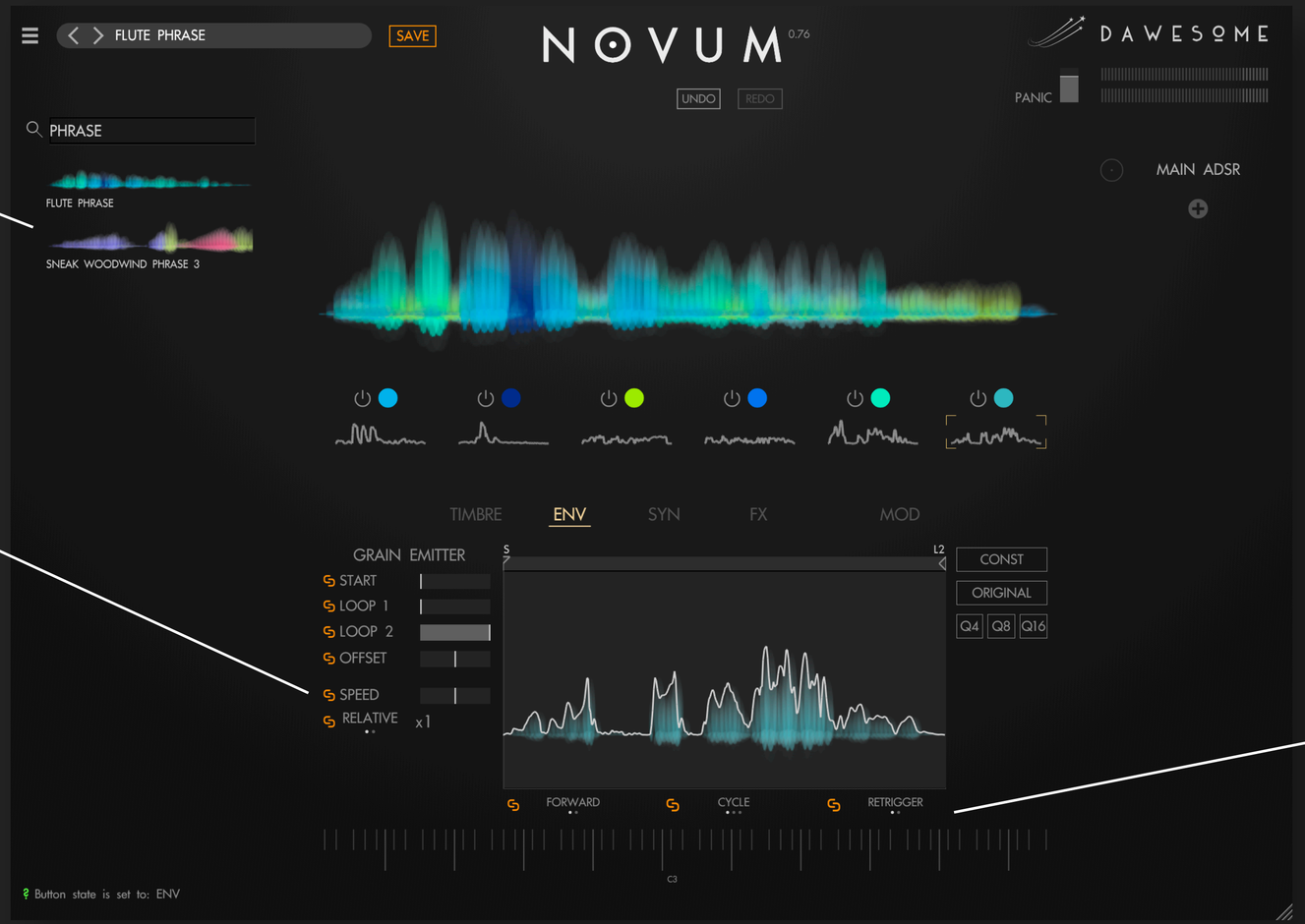
If you press the key Ab3 you hear the a short flute - exactly as it has been recorded.

2 If you play a chord you will notice that the playback speed does not change with pitch - hence the sample plays back in harmony.

3 You can alter the playback speed, independent of the pitch.

There are two modes for the playback speed. In RELATIVE mode the center position of speed refers to the original speed of the recording.

In ABSOLUTE mode the center position is one Hz: the whole sample will playback once per second.



4 There are a couple of settings for the playing direction.

TIPS

- Granular synthesis works by playing a lot of tiny snippets of the source audio - these are called grains.

- Located on this tab there are all the settings for the start position of the grains. Especially the loop points are referring to the *start position* of the grains. If a grain starts short before the end of the loop, but has a long duration you will still hear audio from beyond the loop locator!

  To avoid this you can work with short grains.

GRANULAR SYNTHESIS

START HERE

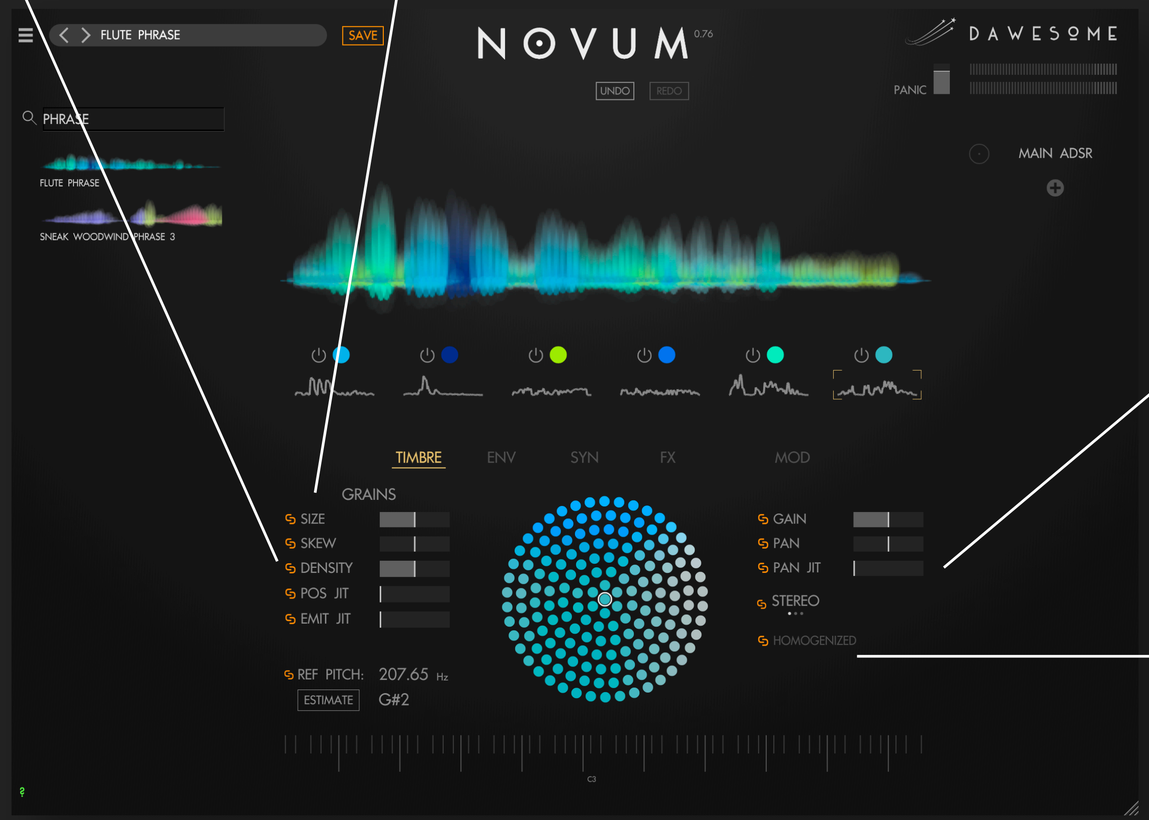
1 Grain size refers to the length of each grain.

2 First put a lower value to density. You will now hear that the sound fades in and out rhythmically. That's a nice effect, but its more important that you understand, why this is happening: as we have have fewer grains playing, there are times where no grain is playing.

3 If you now reduce the SIZE the grains become shorter. To maintain the same average density more grains need to be generated per second - the pulsation goes faster.

4 So far the pulsation is very regular. We can add randomness to the "birth date" of grains with EMIT JIT. Increase this to make the pulsation go wild.

5 POS JIT adds randomness to the grain position within the sample. This is one of the most important parameters to shape the granular sound.



6 PAN JIT works in a similar way and adds randomness to the panning of each grain. This can create rich stereo even from mono material.

7 When "HOMOGENIZED" is active it is displayed green. Use this when:

- ✓ you want a smooth sound
- ✓ you want to remove transients
- ✓ you want to edit / exchange the envelope

TIPS

- In addition to being so much fun Granular synthesis is one of the most powerful techniques around. In the very beginning it takes a bit until you are familiar with it and how to twiddle the parameters to achieve what you want. However: the end result is worth it!
- Did you know? Almost all professional techniques to alter playback speed, for example in your DAW, work based on granular synthesis.

EDIT PARAMETERS

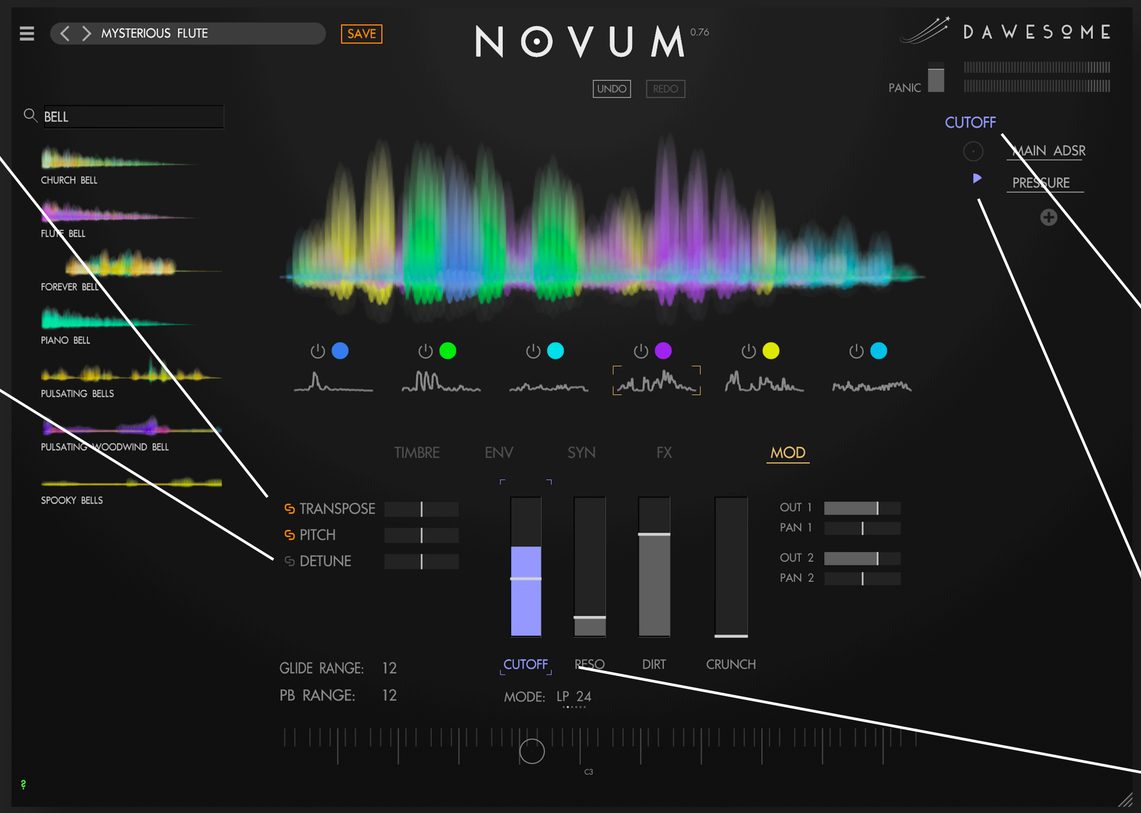
START HERE

1. Many parameters are available per layer. But always editing everything 6 times can be tedious.

   If the LINK symbol is orange the parameter is the same for all 6 layers. This is the normal and convenient way.

2. Click on the link symbol to unlink or link a parameter. When a parameter is unlinked it can have different values for each layer.

3. When a parameter is unlinked you can modulate it for each layer separately.



4. The name of the currently selected slider is always displayed here.

5. Modulating a parameter is really simple: click on the parameter and then dial in the modulation amount (positive or negative) with the circular dial next to the modulation source.

TIPS

- The combination of linking sliders and allowing individual modulations is powerful but needs to be tamed a bit to remove unrewarded complexity. In NOVUM it works like this: every slider exists 7 times - 6 for individual ones for each layer and a “global” slider that is used in the “LINKED” case.

  Modulations are always assigned to exactly one of these sliders. So if you add modulations in the “LINKED” state and then UNLINK them, these are not transferred to the individual layers. If you LINK again you will have your original modulations back. Sounds complicated? Just try it out - you will see that this is really simple.

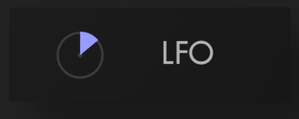
MODULATION SOURCES

START HERE

1 Load any patch that you like and switch to the MOD tab.

2 Click the + and add an LFO

3 Go to the SYN page, click on FREQ so that it turns purple and then dial in some amount of LFO influence with the circle dial next to the LFO



4 Change the RATE of the LFO.

Click SYNC to take the tempo from your host.

5 Click Burger Menu to select a different waveform. Or draw it with the mouse.

You can also drag and drop any envelope from your sound or from the sidebar to the LFO.

6 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.

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

TIPS

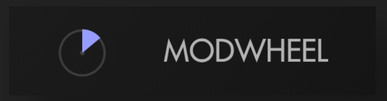
- With a few Modulations you can turn any boring sound into something thats interesting. Almost any parameter in NOVUM can be modulated.
- You can also modulate the parameters of the Modulators. For example you can modulate the rate of one LFO with another LFO. This allows you to setup complex, chaotic movements in your sound.

MIDI AND MPE

1 Click the + below the Modulator section to the right and select “CC”. This will add a CC Modulator.

Per default it listens to MODWHEEL.

2 Go to the SYN page, click on FREQ so that it turns purple and then dial in some amount of CC influence with the circle dial next to the Modulator.



On the MOD page you can now see that this modulator acts on FREQ.

3 Turn the modwheel on your controller. You can now hear that the modwheel influences the filter cutoff frequency.

5 Click here to change the CC, eg from Modwheel to CC11 (Expression).

4 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.

TIPS

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

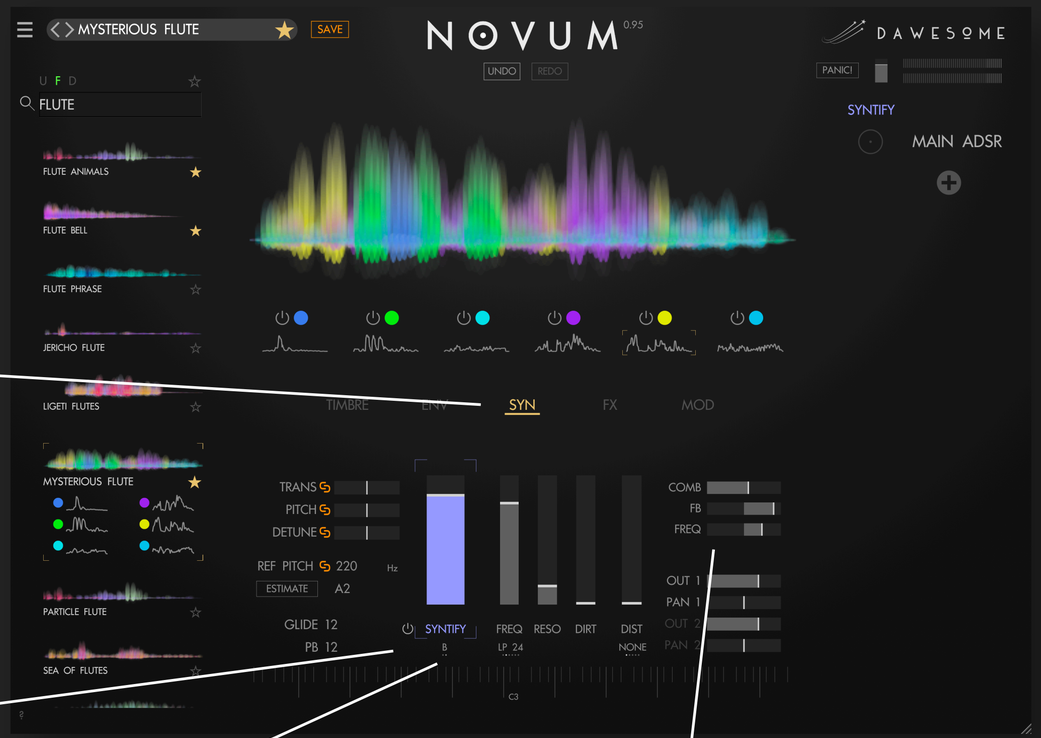
FILTERS, DISTORTION AND SYNTIFY

START HERE

1. Load the patch “MYSTERIOUS FLUTE”

2. Go to the SYN page and play with the DIRT. This is a nonlinear distortion in the feedback path of the analog filter - it interacts with your settings of resonance and cutoff frequency.

3. Now switch on SYNTIFY and play with the slider. This takes any sound and transforms it as if a synthesizer generated it.



4. There are two different modes A and B for SYNTIFY with a different sound character. This of course highly depends on your source material.

5. Now dial in some amount of the COMB filter. Most likely the effect will be subtle unless you also dial in some amount of feedback.

   Now play with the FREQ of the COMB filter. Especially try values close to -1 and 1 and the extremes.

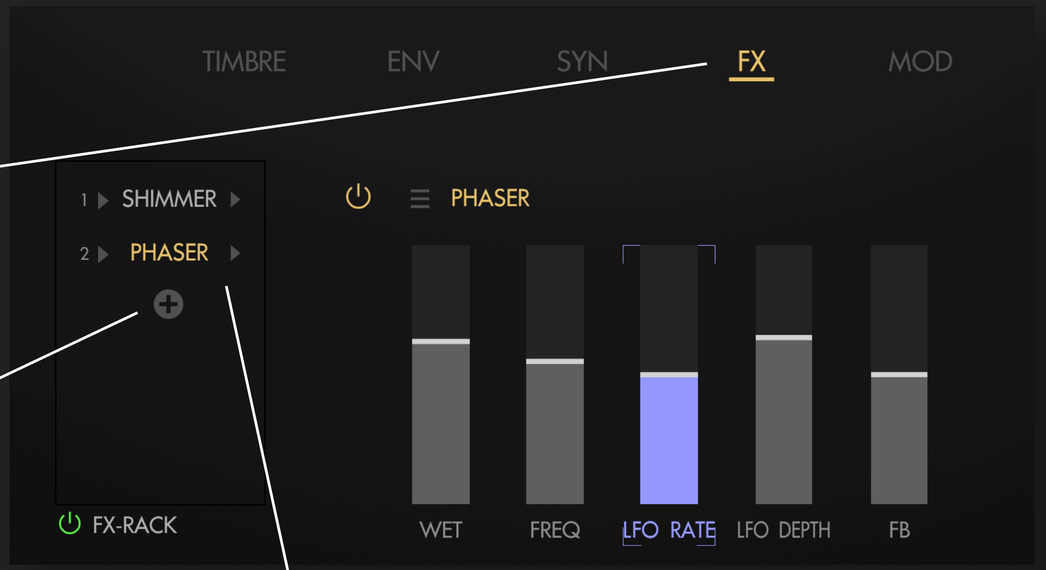
6. Also try SYNTIFY and COMB on different material, eg drum loops. There are vast possibilities and its fun to explore and experiment!

TIPS

- SYNTIFY works best with material that does not contain too much sustained noise and lower pitches.
- You can also use SYNTIFY to give dull synth sounds more clarity, dirt and bite.
- COMB filters are the most underrated tool in electronic music despite having many applications. Use them to add a slight gloss of light and air - in a way that can’t be achieved with an EQ. Or to give any sound a metallic flavour. Modulate the frequency to add interest and complexity.
- COMB filters are also excellent on transient material like drum loops or field recordings. With high amount of feedback they “ring” on transients similar to a plucked string.

FX

START HERE



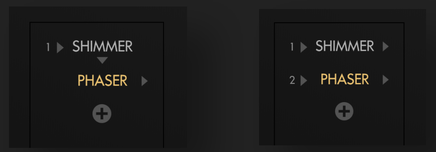
1. Load any patch that you like and switch to the FX tab.

2. Click the + and select any effect to add a new audio effect.

   Audio effects in the signal chain are after the filter section. All voices are summed and the combined output goes into the FX section.

3. You can change the sequence of FX simply by drag and drop.

4. You can change the routing of FX by clicking on the little triangles: either the FX are chained, or the FX are parallel.



5. Every FX has additional parameters to tweak it. You can switch between FX by clicking on the FX in the FX-Rack.

   The current FX is displayed in gold colour.

6. 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.

TIPS

- You can bypass the FX section by clicking on the green power switch (it will turn gray).

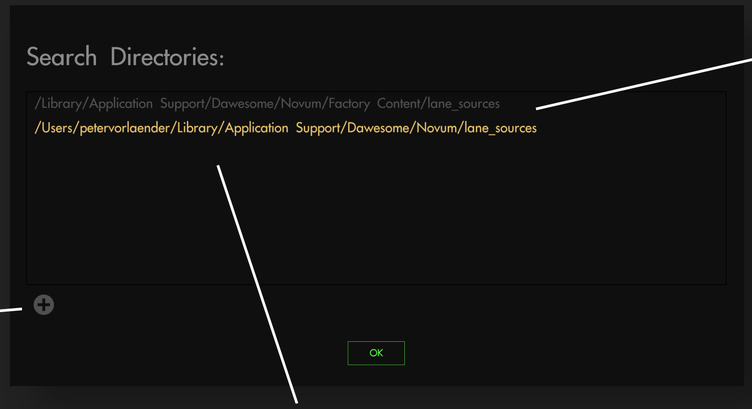
- PRO-TIP: There are two busses for FX. You can switch between BUS 1 and BUS 2 by clicking on the little number on the left.
  On the SYN tab there are two sliders OUT1 and OUT2. By modulating these sliders you can send different amounts of your signal to OUT1 and OUT2. By doing so you can have your FX respond differently per voice.

SAMPLE MANAGEMENT

NOVUM is based on samples, and hence the sampling content needs to be stored somewhere. Normally NOVUM takes care for this completely in the background, but you can also tweak the behaviour if you want/need.

Normally the patches do store only references to the sample data. This has two advantages: patches can be stored and loaded via the DAW *much* faster. And multiple patches can share the sample as it is stored only once. If you want to exchange a few patches with someone else you can select “EMBED SAMPLES IN PATCH” via the main burger menu. CAUTION: don’t forget to deactivate this afterwards - otherwise opening projects in your DAW my take quite a long time - not recommended!

If you are dealing with tons of samples you may want to specify the location *where* sample data is stored. In NOVUM you can add multiple locations. To do so click “MANAGE SAMPLE LOCATIONS” in the main burger menu.



To add or remove locations use the context menu.

Note: packs do contain their own sample data. These are not listed here, NOVUM takes care for this in the background when you register a pack

Click + to add a new location where you want to store sample content for NOVUM.

When you import audio to NOVUM the audio file is processed, and NOVUM creates its own files to store the processed sample data. Hence there always needs to be one “active” location, where new audio data is stored. This is displayed in gold. You can make a new location to be the “active” location via context menu.

TIP

When you import audio NOVUM will always create its own representation of the sample. So it does not matter if you erase or move the original sample.

CREATE A PATCH PACK

Sometimes you want to create a PACK to distribute your patches to other people.
NOVUM has built-in support to make this a simple task.

1 Create a folder that contains all your patches for the pack

You don’t have to do this in NOVUM, you can simply use your filesystem and copy the patches where you want them. You can have one level of subfolders. The names of these subfolders will later appear as categories in your pack.

2 CAUTION: Make a copy of this folder

According to Murphy's law something will go wrong, you don’t want to loose your work!

3 Collect all the samples for the pack

In the main burger menu select “COLLECT SAMPLES …”
Afterwards you can select a folder with patches.
Novum will now go through all the patches and collect all sample data needed and copy it into one subfolder called “lane_sources”

4 Zip the folder and distribute it

Whomever wants to use your pack simply unzips the pack on their system and then uses drag and drop of the unzipped folder to NOVUM. This will register the pack in NOVUM - all patches are now available.

PRO-TIP

- It is recommended to normally not use “EMBED SAMPLES IN PATCH”. But you may find yourself in the situation that you have a few patches that have their samples embedded.

  For such a case there is a hidden special function. Hold SHIFT and click the main burger menu. Now there will be an additional menu entry “CREATE PACK …”

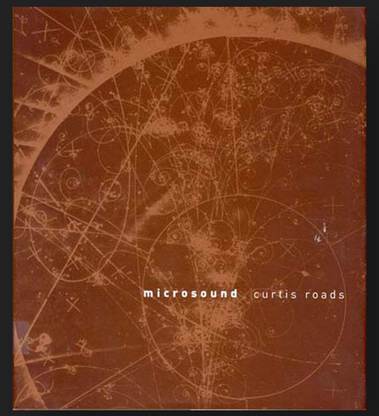
  The difference with “COLLECT SAMPLES …” is that it will also go through all patches, load them and re-saves them without samples embedded.

  CAUTION: this may take a while. You will get a short notification in the info bar below.

  CAUTION: this overwrites your existing patches in the pack folder. Hence I STRONGLY ADVISE to make a copy before - otherwise this may end up in catastrophic loss of your patches if something goes wrong.

THE UNDERLYING TECHNOLOGY

The engine of NOVUM works with granular synthesis. This cuts the sound in hundreds and thousands of tiny particles, each may be only a few ms of length. This is quite an interesting technique, its simple and powerful at the same time. If you want to really go deep I recommend the book “Microsound” by Curtis Roads.



The decomposition uses a machine learning technology called “Non-negative Matrix Factorisation (**NMF**)”. There is a huge body of research around NMF and a myriad of variations and applications. NMF works on the Short-Time-Fourier-Transformation (**STFT**), so it takes the signal and creates a 2D representation. This is interpreted as a matrix and NMF computes a low-rank approximation of the Matrix. You can afterwards use Wiener-Filtering to recover the individual layers in a way that the sum of layers gives you back the original sound. There are a couple of caveats with the normal NMF algorithms when applied to sound: the phase information is not used, transients get muddy, the envelopes are often not intuitive. So it has been a long journey for me to address these issues and come up with my own solutions - such that it really works in the context of a sound design / music instrument.

A very important aspect of designing an instrument is its interface. This goes far beyond matters of taste and how things look like. One of the advantages of representing sound with NMF layers is that you can mix and match individual elements. But for doing so you need to have some visual hints, otherwise you will always operate in the blind. This problem is one of the origins of the “represent timbres with colours” concept in NOVUM and Abyss. For doing so any sound is translated first into a frequency representation. You can view this as a point in a (very) high dimensional space. But the colour space has only 3 dimensions, so you take hundreds and thousands of timbres and then apply dimension reduction techniques. This allows you to assign a colour to every timbre. It requires some additional work to make this intuitive (for example such that noises are gray/white or warm sounds are more orange etc).

As NOVUM anyways needs to compute the fourier transform this can also be used to modify the spectrum, by using so called “**spectral**” techniques. These can be very powerful, but there are two disadvantages: it's heavy on CPU and when modulating you get very ugly sound artefacts. Hence I carefully chose a few things that can be done only in the spectral domain, but computing this in the background.

SYNTIFY is another innovation in NOVUM. It is based on the idea of representing sound neither in the time domain, nor in the frequency domain, but in a so called “nonlinear phase state”. In this way sound becomes a trajectory of an object flying through a high dimensional abstract space. And then you can change the physics of this space to modify the trajectory and hence the sound. This is based on the theory of **nonlinear dynamic systems** and **differential equations**. It took me quite a while to make this applicable to sound, but I believe this approach is very powerful and SYNTIFY is just the first application. This is unexplored ground and currently my main area of research, so you can expect to see and hear more applications of this over the next years.

CREDITS - Part 1

I am standing on the shoulder of giants, and many people supported the creation of NOVUM:

- **EIGEN** is a C++ template library for linear algebra. NOVUM uses the MPL2-licensed features. A copy of the MPL2 license is available here
- **Nigel Redmon** has published an intriguing series series about analog ADSRs. I took inspiration and design choices from his series.
- **Valdemar Erlingsson** is the creator of the gorgeous reverb plugin called Cloud Seed . I took inspiration from his work for the CLOUDS fx in NOVUM
- NOVUM is implemented in C++ using the Juce Framework. I am grateful for its existence and for the community of JUCE developers.
- Some patches use CC0 samples from **Versilian Studios** **Chamber Orchestra Community Edition**
- **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

Sound Designer and Early Access

- **DATABROTH** has been tremendous supportive with ideas and feedback starting from the first concepts of NOVUM. His channel is an everlasting source of surprise inspiration - if you haven't done it already: **go and subscribe to his channel**!
- **Yuli Yolo** is well known for his sound design work with U-He, UVI, Arturia, Tracktion and many more. He provided feedback, encouragement and also found a few bugs.
- **Tomavatars** has been amongst the first users and provided a lot of detailed feedback. NOVUM has become a better tool because of his feedback.
- **Resonate Sound Design** tested NOVUM, provided feedback and contributed some lovely patches
- **Andrew Madden aka Audilepsy** has been a creative sounding board when NOVUM was more of a pipe dream then a concept
- **C-You FX** helped plating out a lot of small issues, tested Mac OS 10.13 compatibility and provided patches
- **the_jules** found bugs and had multiple useful suggestions that found its way into NOVUM
- Chris from **Synphaera Records** provided valuable feedback on the plugin and the manual
- Felix Petrescu aka**Makunouchi Bento** provided feedback and samples

CREDITS - Part 2

Beta Testing:

- **Philip Rampi** - especially helped me to get this running on “ancient” laptop
- **Florian Mrugalla** develops plugins and created insightful videos of his first hours with NOVUM
- **Benjamin Harrison aka c0nsilience** spent a lot of his time to review this manual and correct my spelling. He is an inspiring renaissance man and has every plugin that I have ever heard of (and many more). He always pushes me to strive for perfection.
- Douglas Hill aka tau(n)t
- Steven Frazier aka Saf Ro
- lab by the sea
- Sven Stumm - provided essential feedback on design aspects of the UI

Last not least:

- **Margrit Töpfner** played the flute and provided a grand piano to sample from
- **Bee Abney** and **Thomas Schimmack** provided samples as challenges for my wild claim: “**you can make nice instruments from *any* sample**”
- The **VI-control forum** has been supportive and acted as a nice sounding board for ideas and concepts
- **Temme Sikkema** (aka doctoremmet) helped me to get in touch with a lot of people and was always encouraging
- My kids **Aya** and **Kiro** have been very generous with feedback (“papa, this sucks”). After many frustrating approaches one day I had a version of NOVUM that got them really hooked, and I watched how they explored mangling sounds and “painting” sound waves. This was the point where I knew that I got the interface just right - we can learn a lot from the playful approach of children!

ABOUT ME

My name is Peter V and I am the creator of Novum.
It is my third instrument after Abyss and Chop Suey.

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

Also I have a PhD in maths (I love maths!) - which I guess qualifies me as a professional nerd.

DAWESOME

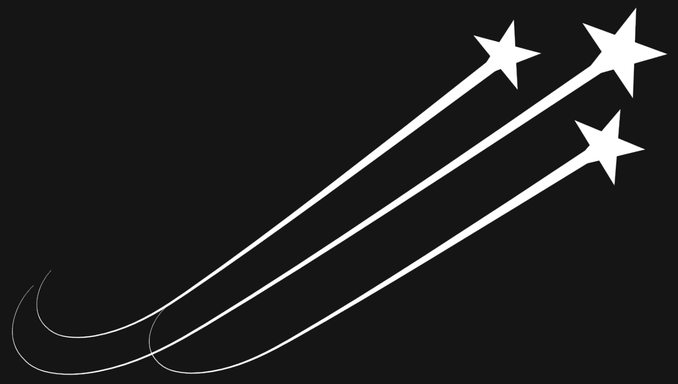
I have a couple of core beliefs that drive my work:

- **You have the talent.** And I am so curious to hear what's possible with the instruments I make.
- **Visual Arts can be a source of inspiration** for sound design and music and enriches the way you think and create sound.
- **Intuition over numbers**. When I make music, I rarely (want to) think in numbers and maths, I want my creative process to flow with intuition.
- **Nuanced response.** When I play the bassoon it feels like the instrument and I are united - the instrument responds to every subtle change in tension, breath or posture. This nuanced response is the quality of any good instrument and its this quality I am striving for in the design process of my instruments
- **Simplicity rules.** Life is already complex enough. User interfaces shall be as simple as possible, and its worth to go the extra mile.
- **Quality over Marketing.** I believe paying attention to details and striving for the near-perfect is a better use of my resources then running expensive marketing campaigns. Please spread the word if you want to support my work!

Thank you very much for your interest and support!

Peter V

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



DAWESOME